

THE BLACK SEA IN ANTIQUITY

REGIONAL AND INTERREGIONAL
ECONOMIC EXCHANGES

BLACK SEA STUDIES

6

THE DANISH NATIONAL RESEARCH FOUNDATION'S
CENTRE FOR BLACK SEA STUDIES

THE BLACK SEA IN ANTIQUITY

REGIONAL AND INTERREGIONAL ECONOMIC EXCHANGES

Edited by
Vincent Gabrielsen and John Lund

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THE BLACK SEA IN ANTIQUITY

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Detail from the Sarcophagus for Kornelios Arrianos found at Yali, now in the
Sinop Museum, inv. no. 16.1.98. 1st-2nd century AD. Photo: Jakob Munk Højte.

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Contents

<i>Vincent Gabrielsen and John Lund</i> Introduction	7
<i>Alan Greaves</i> Milesians in the Black Sea: Trade, Settlement and Religion	9
<i>Marina Ju. Vachtina</i> Greek Archaic Orientalising Pottery from the Barbarian Sites of the Forest-steppe Zone of the Northern Black Sea Coastal Region	23
<i>David Braund</i> Black Sea Grain for Athens? From Herodotus to Demosthenes	39
<i>Alfonso Moreno</i> Athenian Wheat-Tsars: Black Sea Grain and Elite Culture	69
<i>Lise Hannestad</i> Timber as a Trade Resource of the Black Sea	85
<i>Andrei Opaïț</i> A Weighty Matter: Pontic Fish Amphorae	101
<i>Tønnes Bekker-Nielsen</i> The One That Got Away: A Reassessment of the Agoranomos Inscription from Chersonesos (VDI 1947.2, 245; NEPKh II, 129)	123
<i>Alexander V. Karjaka</i> Amphora Finds of the 4th Century BC from the Settlements of the Lower Dnieper Region	133
<i>Yvon Garlan</i> Échanges d'amphores timbrées entre Sinope et la Méditerranée aux époques classique et hellénistique	143

<i>Vladimir F. Stolba</i> Local Patterns of Trade in Wine and the Chronological Implications of Amphora Stamps	149
<i>Krzysztof Domzalski</i> Changes in Late Classical and Hellenistic Fine Pottery Production in the Eastern Mediterranean as Reflected by Imports in the Pontic Area	161
<i>John Lund</i> The Circulation of Ceramic Fine Wares and Transport Amphorae from the Black Sea Region in the Mediterranean, c. 400 BC–AD 200	183
<i>Sergej Ju. Saprykin</i> The Unification of Pontos: The Bronze Coins of Mithridates VI Eupator as Evidence for Commerce in the Euxine	195
<i>Denis V. Žuravlev</i> Lighting Equipment of the Northern Pontic Area in the Roman and Late Roman Periods: Imports and Local Production	209
<i>Alexandru Avram</i> Some Thoughts about the Black Sea and the Slave Trade before the Roman Domination (6th-1st Centuries BC)	239
<i>Zofia Halina Archibald</i> Contacts between the Ptolemaic Kingdom and the Black Sea in the Early Hellenistic Age	253
<i>Gary Reger</i> Traders and Travelers in the Black and Aegean Seas	273
<i>Vincent Gabrielsen</i> Trade and Tribute: Byzantium and the Black Sea Straits	287
Abbreviations	325
Bibliography	327
Indices	375
Contributors	395

Introduction

Vincent Gabrielsen & John Lund

The present volume contains the acts of the conference *The Black Sea in Antiquity: Regional and Interregional Economic Exchanges*, which was held at the Sandbjerg Estate near Sønderborg, the main conference centre of the University of Aarhus, from the 26th to the 30th of May 2004. The two editors of this volume organized the conference on behalf of the Danish National Research Foundation's Centre for Black Sea Studies.

The purpose of the meeting was to bring together specialists in various fields and disciplines, who would undertake to explore the nature, intensity and, whenever possible, the volume of the economic exchanges in which the Black Sea region was involved from the seventh century BC to the fourth century AD. In particular, we wished to elucidate the economic interplay between the various areas within the Black Sea region itself and also between the Black Sea and the Mediterranean. Consequently, trade, especially maritime trade, stood out as one of the dominant themes of the conference. Yet, even though trade was allotted a privileged position, we deemed it necessary and important that "production", too, should receive its due share of attention. We use "production" in a broad sense to allow the inclusion of all kinds of commodities (including coins) as well as production facilities and manpower. All along, we were well aware of the enormity of the task and particularly of the severe challenges it poses, not least that of achieving even a reasonable degree of coverage, thematic as well as chronological. Nevertheless, we thought it worthwhile to take the risk.

In order to make the conference a forum for a successful inter-scholarly discussion, we invited a broad range of internationally acknowledged historians and archaeologists to contribute on a topic within their particular field of expertise. In addition, each participant was asked to address explicitly a number of issues, of which the most important were the following: (1) *Types of sources and methodological approaches*: What types of evidence are available for elucidating the particular topic treated by the paper, and which research methodologies are likely to yield the most rewarding results? (2) *Regional and inter-regional patterns of exchanges*: What are the goods and/or services that are being exchanged with nearby or distant commercial partners? Can these exchanges be expressed quantitatively (i.e. volume and value of imports and exports)? How did the wealth generated thereby affect the public and private sectors? (3) *Transport and infrastructure*: Is it possible to detect improvements in transport technology and in trade infrastructure? What is the degree and nature of

investment – public or private – in these areas? (4) *Public and private institutions*: What are the institutional settings within which economic interaction unfolds? Can we observe any institutional innovations? Is there a convergence between public and private concerns? (5) *Commercial actors and politics*: Is it possible to map out relatively stable or shifting partnerships? What might be the factors conditioning these partnerships in the short and long run? To what degree do politics and hegemonic or imperial structures affect economic processes? How does production and trade between “barbarian” centres and Greek cities affect political relationships between these two types of community?

Naturally, most, if not all, of these issues are interrelated, and the majority of the papers do, in fact, address more than one of them. In the end, therefore, the thematic priorities and methodological preferences of the individual author have been allowed to take precedence over the editors’ initial (and perhaps rigid) wish list. And, consequently, the thematic focus is maintained less rigorously in this publication than was envisaged in our original plan. What is gained, in return, is a greater variety of approaches to our overall theme and a much richer ensemble of issues that receive thorough treatment. As regards the sequence in which the contributions appear, we have opted for an arrangement which assembles into clusters papers dealing with the same (or similar) kind of commodity or commodities (e.g. timber, slaves, wheat, wine, fish, pottery and other ceramics); in between these clusters we have placed papers that focus on such general issues as tribute and taxes, traders and travellers, coin circulation and relations between the Black Sea region and Ptolemaic world.

It was never the intention of the editors to seek a consensus amongst the authors, let alone to impose our own views on their papers. We deemed it vital that the articles should reflect as accurately as possible the on-going scholarly debates about the issues raised. Hence, none should be surprised to find divergent opinions (or even strong disagreement) from one chapter to the next – for instance, on the economic significance of the Black Sea region as a supplier of grain to the Mediterranean. The issues involved are far too complex for simplified solutions, and the time has not yet come for drawing definite conclusions. But at least – and that may indeed be salutary – the discussion has begun.

The present publication would not have materialized without the generous assistance we have received from the staff of the Danish National Research Foundation’s Centre for Black Sea Studies, in particular from Jane Hjarl Petersen, Jakob Munk Højte, Kristina Winter Jacobsen, and Vladimir Stolba. In addition, Robin Wildfang has improved the English language of several of the papers, while Sanne Lind Hansen and her colleagues at the Aarhus University Press have embraced the project with their characteristic enthusiasm and professionalism. To all of them we extend our warmest thanks.

Unless otherwise indicated, all line drawings of complete amphorae in this volume are reproduced to the scale of 1:10, fragments and other finds of vessels to 1:2, and lamps to 1:4.

Milesians in the Black Sea: Trade, Settlement and Religion

Alan Greaves

Introduction

Miletos was, without doubt, the single most important *polis* involved in the Greek colonisation of the Black Sea. Estimates vary as to how many Black Sea colonies Miletos established. Pliny the Elder tells us it was 90 (*HN* 5.122) and some modern scholars have seen this as a slight exaggeration or underestimate.¹ Herodotos gives us further insight when he mentions that there were numerous trading posts (*emporía*) around the Black Sea. Our initial impression therefore is that of a single *polis* that had established a staggering number of colonies, exclusively in the Black Sea region, for the sole reason of trade.

There has been much discussion of the motivations and methods of the Archaic Greek colonial movement. Popular explanations for the colonial movement include trade, population, the search for metals, political dissatisfaction and other factors that prompted the otherwise home-loving Greeks to relocate to the farthest corners of the Mediterranean and Black Sea. There can be no single unifying factor that can successfully explain such a widespread phenomenon. The population, resources and political character of each *polis* community were unique, as were the experiences and motivations of each individual within that community.

In this paper, I would like to examine the role that trade played in the foundation of Miletos' colonies. I hope to show that trade needs to be understood within the broader context of the diachronic socio-economic and environmental history of the *polis* and its *chora*.

One often-cited motivating factor for Greek colonisation is political upheaval within the *metropolis*. From Herodotos and other sources we know of incidents, such as the *stasis* (in the case of Miletos, between the *aeinautai* and the *cheiromachei*), the rule and deposition of various kings and tyrants (including Koos and Kretines, who left Miletos to found Sinope) and other political events that may have played some role in the sending out of Milesian colonies. However, politics will not be included in this discussion because, in my opinion, the historical sources that support such interpretations are too limited to be relied upon solely to explain such a mass colonisation movement. Isolated political events, such as the deposing of a dynast, cannot be seen as

a long-term process within the history of a city that might result in sustained mass colonisation on the scale seen at Miletos. Although turbulent, the history of Miletos is no more bloody and unsettled than that of any of its peers in Archaic Greece and it is much less well documented. Also, this paper aims to explore the interface between the archaeological and historical evidence, and as political events in the *metropolis* can only ever at best be cautiously linked to archaeological phenomena, politics is not included here.

Trade

In his article "Traders and ports-of-trade in the Black Sea in antiquity", John Hind collected together the diverse literary references to *emporoi* and *emporía* in Greek literature.² This survey shows that Herodotos names Olbia and Kremnoi in particular as *emporía* and also makes more general statements about numerous other *emporía* in the Black Sea. Reading Herodotos therefore led scholars to make the general assumption that trade was the *raison d'être* for the numerous Milesian colonies in the Black Sea region.

The assumption that trade played a central role in the Greek colonial process suited the preconceptions of colonial and post-colonial anglophone scholars in the early 20th century. This attitude is encapsulated in what was, until recently, the only English language history of Miletos: Adelaide Glynn Dunham's *The History of Miletus: Down to the Anabasis of Alexander* (1915). The overall impression that the reader of this book is left with is that Miletos created, through trade, a homogenous empire of colonies that turned the Black Sea into a "Milesian Pond". The idea that trade and colonialism were linked is neatly summed up by Blakeway's now much commented upon words "...the flag followed trade". The conflation of the concepts and language of British colonialism with that of Greek Archaic colonisation has been slow to change and has only recently been discussed head-on as a separate issue by Anthony Snodgrass in his article "The history of a false analogy".³

It is now generally agreed that Miletos was not creating, through trade and its many *emporía*, a single unified imperial entity. Miletos clearly had an enormous influence in the Black Sea from the Archaic period onwards, but it is the role that trade played in the creation of the multifarious Milesian colonial identities in settlements around the Black Sea region that I would like to explore in this paper.

Clearly, we must strive to avoid the use of the English word "colony", which is loaded with unhelpful meaning and connotations, when what we are actually referring to are Greek *emporía* or *apoikiaí*. But which of these two words would best describe Milesian settlements in the Black Sea? Is it right for Herodotos (or ourselves) to describe Milesian colonies in the Black Sea solely as *emporía*? This term in itself may conjure images of a purely commercial entity that may not be a true representation of such early Greek communities, but the alternative is perhaps worse. How can we call Milesian settlements in

the Black Sea *apoikia* and conceive of them as fully fledged *polis* communities, when the concept of the *polis* itself was still in the process of formation?⁴

Trade was an important factor from a very early date. Leaving aside the controversial subject of Mycenaean trade with the Black Sea, there is archaeological evidence for early trade. For example, the needs of trade can be seen to have influenced the choice of colonial sites. This early choice was to have a lasting impact on their character as settlements and communities (and our perceptions of them as such) for a long time to come. However, finding secure archaeological evidence for early trade is difficult. The identification of very early Milesian (or other Greek) pottery in the Black Sea is made difficult by a number of factors: the rise in Pontic sea level; an overburden of occupation material from later periods of history at the majority of sites; the presumed trade in archaeologically invisible materials; and (until recently) lack of stratified pottery studies at Miletos itself. There is, however, historical evidence for the early role of trade in the life of the Pontic colonies in the form of the ubiquitous *emporoi* mentioned in literature from Herodotos onwards.⁵

Thomas Figueira defined Miletos as having both a developed agricultural economy and a trading role.⁶ I will go on to discuss its agricultural base presently, but for now I will briefly consider what commodities *emporoi* may have been trading to Miletos from the Black Sea. One of the most striking features about Miletos' territory is the fact that it is almost completely lacking in any kind of mineral ores.⁷ This is something with which the South Pontic region in particular was well endowed. The location of Milesian colonies such as Apollonia Pontike (Sozopol) near the copper-rich Meden Rid hills would appear to be a reflection of this desire to procure metals. Gold from Kolchis and iron from northern Anatolia may also have been traded. With all these commodities, though, there are alternative sources in the Mediterranean basin, yet it was in the Black Sea that Miletos appeared to colonise so intensively. Likewise, grain could be sourced from a number of regions, of which the Black Sea was only one. Analysis of iron found at Miletos appears to show that it did come from the South Pontic Belt,⁸ but a lead ingot inscribed in Lydian shows that the Black Sea was not Miletos' only source of metals.⁹ Perhaps, like grain in times of crisis, metals were simply too important to rely on a single source for their supply. More likely, the unplanned and uncontrolled nature of ancient trade, in the hands of numerous private individuals, resulted in a diverse pattern of trade, into which the evidence cited above gives us just a glimpse. The notion of a mutually exclusive Milesian trading bloc constituting Miletos and its colonies must surely have no place here.

Other commodities which the Black Sea is assumed to have traded in, and which may have had distinctive regional characteristics that made them desirable, may have included: timber (including charcoal), fish and slaves. However, all of these commodities are effectively archaeologically "invisible" and this hampers any attempt at trying to quantify (or even qualify) their role in ancient trade networks.

"Visible" and "invisible" archaeological materials

It seems appropriate here to expand slightly on the definition of archaeologically "invisible" and "visible" commodities. Materials that are archaeologically "visible" are those that can survive in the soil and, under normal conditions of deposition and preservation, usually do. Archaeologically "invisible" commodities are generally those that are biodegradable and in normal soil conditions, where there is water, air and warmth, these commodities will form food for bacteria and decay into nothingness.

By far the most familiar and important "visible" material is pottery. Pottery can be either coarseware or fineware (i.e. everyday or decorated pottery) and can also be used for transport or storage vessels (i.e. amphorae or *pithoi*). For each of these, one would expect there to be very different trade patterns. Similarly the other major "visible" commodity, stone, could be traded either for its inherent value (e.g. decorative semi-precious stones) or as a bulk material for building or carving (e.g. marble). The list of goods that are, to all intents and purposes, archaeologically "invisible" is a long and depressing one. It includes: all food products (e.g. oil, wine and cereals), all cloth (e.g. wool, silk and linen), wood, leather, furs, wax, honey, and resin, to name but a few. When such commodities are found intact, due to exceptional preservation conditions that lead to an absence of air, water or warmth, the insight that this provides is invaluable. Such occurrences are so rare and only ever happen as a result of an accident of preservation, so they cannot be used to create reliable distribution patterns to provide an evidential basis to discuss trade networks.

One class of materials that should logically be classed as archaeologically "visible" but which in practice is "invisible" is metals. As a fact of their nature and their great value, metals are subject to the three R's: rust, re-use and robbery. Metals are so rare in the archaeological record that although they might occasionally be used to show that one particular metal was being extracted in one region and exchanged to another (as above), it will never be possible to quantify the scale of that exchange. The bones of slaves and animals might also be expected to survive archaeologically, but there is nothing on the bones of the deceased individual to denote their status as a slave, or to prove that an animal had been imported (although the advent of isotope and DNA analysis may yet provide new clues to their provenance).

To summarise, the only "visible" commodity to have been found and studied in any quantity is pottery. It would be tempting to extrapolate out from what we understand about the distribution of this one commodity similar trade patterns for other commodities that are archaeologically "invisible". However, before we do this we must appreciate that each type of pottery may have had its own trade pattern, which was a product of that particular form of pottery's perceived value, function, weight, contents, etc. and the overall pattern of its distribution is complex and unique unto itself.

It has been argued that the distribution of pottery can be taken as an indicator of the distribution of bulk commodities, because pots were carried in the hold of ships as a component of mixed cargoes, the majority of which were archaeologically “invisible”.¹⁰ This approach is very useful to help us think about the nature of ancient trade in general (i.e. that pots were just one of a basket of commodities carried in each ship and may only have formed a small part of each transaction), but the analogies between the known distribution patterns of pottery and those of “invisible” commodities should not be taken too far. For example, does the fact that no identifiably Pontic pottery has yet been published from Miletos mean that all trade with the Black Sea was entirely one way and that Milesian trade ships went out full and came back empty?

Another approach to proving the trade in “invisible” commodities is the observation of geographical phenomena in the vicinity of the Black Sea colonies. For example, the fact that early Greek colonies are located close to metaliferous mineral reserves (e.g. at Apollonia Pontike, above) or are positioned to take advantage of environmental phenomena such as tunny runs may give us an insight into what trade activities that colony was engaged in.¹¹ Such observations appear simplistic, but for all its seeming sophistication, the ancient economy was essentially agrarian and low-tech in character and so geographical and environmental factors were of paramount importance. It is to be hoped that the new-found freedom of scholars to travel in the Black Sea basin and advances in satellite imaging and Geographical Information Systems (GIS) technology, will result in a new and systematic study of these geographical phenomena and their relationship to the Greek colonies.

Population

Greek historical sources often cite *stenochoria* (“lack of land”) as the prime motivator for colonisation. This does not just mean an excess of population, it can also be caused by there being insufficient land to provide a viable food supply for a pre-existing population. A shortfall in the food supply might be caused by environmental factors, such as a drought (e.g. at Thera, Hdt. 4.150-159), or by gavelkind inheritance, by which land is divided into smaller and smaller parcels between brothers. Consequently, it was thought that colonies were established to relieve pressure on land in the *metropolis* and scholars such as John Graham asserted population over trade as the main motivation for the Greek colonial process.¹² This position was refined and developed by Snodgrass who proposed that changing demography (i.e. a population explosion) was the main cause of the movement,¹³ a position that was subsequently criticised by George Cawkwell and others.¹⁴

The following discussion is a development of the ideas previously expressed in my case study of population in *Miletos: A History*.¹⁵ The various models of calculating population and carrying capacity for the city of Mile-

tos and its territory that were mentioned in that book are examined here in more detail. The figures presented here, though, are by no means meant to be definitive. They are merely guidelines to possibilities of population and carrying capacity and are intended only to illustrate points of consideration within a larger argument. The reader is reminded to approach them with this in mind.

Jeffery Zorn proposed that the best method for estimating the populations of ancient communities was to use two different methodologies to achieve estimates, and then compare them in light of the natural resources available to that community.¹⁶ Following this approach, I will first of all present and discuss models and calculations that provide estimates of the population of Miletos based on literary evidence. I will then present and discuss models that calculate population based on the carrying capacity of the land. I will then balance the results of these two approaches with reference to the specific environmental conditions and resources within the *chora* of Miletos itself.

The first type of population modelling that I will discuss is based on literary evidence. It has been suggested that one way of calculating the population of Miletos was by using Herodotos' description of the ships attending the Battle of Lade in 494 BC (Hdt. 6.8), which is effectively a role-call of the able-bodied men able to fight and defend the city against the attacking Persians. Miletos fielded 80 ships at this battle. In his book *Ionian Trade and Colonization*, Carl Roebuck used the number of ships at Lade as a basis on which to calculate the populations of the cities of Ionia at the time, including Miletos.¹⁷ Assuming a crew of 200 per *trireme* (although this figure is not certain), a fleet of 80 ships would require 16,000 adult males as crew. Roebuck estimated that these men would represent 25 % of the total population of the city and used this in order to calculate its overall population (see Fig. 1).

$$\begin{aligned} (\text{no. of ships}) \times (200 \text{ crew per ship}) \times (4) &= (\text{total population}) \\ 80 \times 200 \times 4 &= 64,000 \end{aligned}$$

Fig. 1: Method for estimating the population of Miletos based on Herodotos.¹⁸

Mogens H. Hansen suggested a different way of calculating the population when studying the Athenian citizen body.¹⁹ He suggested that the high infant mortality rate would result in a large proportion of the population being below fighting age. In the case of Miletos, this would mean that the men at Lade (16,000) were the adult male proportion of a total population that must have numbered about 54,000 to 56,000. Taking the inventory of ships from Lade and using it as a basis on which to calculate the population of the city by estimating what proportion of the total population these adult males represented, has given us a figure of approximately 54,000 to 64,000. Using this passage in this way is problematic for various reasons: the Milesians had already lost

men in battle in Karia (Hdt. 5.120); the city itself would have needed to be defended (Hdt. 6.6); and crew of the ships at the battle may have originated from other Ionian cities.²⁰ Nevertheless, if we take a figure of 54,000 to 64,000 as being the possible population of the city at the time, would the *chora* of Miletos have been able to support such a population?

The second, method of calculating population that I would like to use is based on carrying capacity models. Existing models that calculate the carrying capacity of ancient territories, such as that developed by Franco de Angelis,²¹ depend largely upon the ability of the land to produce cereals. In order to apply this methodology correctly to Miletos it is necessary to understand the nature and extent of the Milesian *chora*. There were four main elements to the territory of Miletos: the limestone peninsula of Milesia itself; Mount Grion to the east; the lower Maeander Valley; and the Milesian Islands. Of these, the Maeander Valley was the most important for the production of cereals (see Fig. 2).

Region	Sub-Regions	Area (km ²)	Landuse ²²
Milesia	Northern Plain	52	Arable
	Stephania Hills	220	Grazing
Mount Grion		340	Grazing
Maeander Valley ²³		321.5	Arable
Milesian Islands	Ikaros	340	Grazing
	Leros	64	Grazing
	Patmos	40	Grazing
	Lade	2.5	Grazing
Total		1380	

Fig. 2: Approximate area of the Milesian territory, by region.

Following de Angelis' model: taking the total area of Miletos' territory in hectares; minus the areas which are unsuitable for arable; minus 50 % for the area left fallow in any one year; multiplied by 0.624 for the metric tonnes of cereal produced per hectare; minus 20 % set aside for seed for the following year; minus 15 % waste; divided by 230 kg per person per year for biological subsistence; gives the total population that could be supported by the territory of Miletos based on production of cereals alone (see Fig. 3). The resultant figure of 34,453 is the population carrying capacity of the territory of Miletos, based on this model.

$$138,000 \text{ (total area)} - 100,650 \text{ (non-arable land)} - 18,675 \text{ (fallow)} \times 0.624 \text{ (mt per ha)} - 20\% \text{ (seed)} - 15\% \text{ (waste)} \div 230 \text{ kg (biological requirement per person p.a.)} = 34,453 \text{ (total supportable population).}$$

Total: 34,453

Fig. 3: *de Angelis' model for calculating population, as applied to Miletos.*²⁴

Another method of calculating population based on natural resources and territory is that proposed by Robin Osborne.²⁵ This is a less complex model and observes simply that an average household required three to four hectares each and housed an average family of five. Taking the total area that was available to Miletos for agriculture, i.e. without the non-arable land and minus 50 % fallow, in hectares, divided by three or four and then multiplied by five gives an approximation of the total carrying capacity of the land (see Fig. 4).

$$\text{(available area)} \div \text{(3 to 4 ha per house)} \times \text{(5)} = \text{(total population)}$$

$$18,675 \div 3 \times 5 = 31,125$$

$$18,675 \div 4 \times 5 = 23,344$$

Total: 23,344 to 31,125

Fig. 4: *Osborne's model for estimating population, applied to Miletos.*

Let us now discuss these models.

Was Miletos over-populated?

Both of the carrying capacity models presented above result in a much lower figure than the population figures suggested by the literary evidence, in fact about half as much. An estimated population of 54,000 and 64,000 would appear to have lived in a region where the available natural resources could supposedly only support 23,000 to 35,000 people. Miletos' population therefore appears to be over-extended. This might lead one to conclude that this was the cause of its extensive colonies. However, when the nature of the Maeander Valley, which inundated annually and could be harvested every year, is taken into consideration it becomes clear that there was no agricultural shortfall within Miletos' own territory.²⁶

Access to supplies of grain from the Black Sea, Egypt and southern Italy may have helped cushion Miletos from extremes of climate or crises in food supply, but would never have formed a significant component of the city's food supply in the Archaic period. For example, when Alyattes besieged Miletos, the city was able to withstand the blockade because it had control over the sea – and could therefore import food. However, in the same passage Herodotos also tells us that when the Persian herald entered the city Thra-syboulos had food brought from every corner to give the impression there

was enough food to go round (Hdt. 1.21). The implication of this is clear – that there was *not* enough food to go round and the city was on the edge of starvation because it did not have access to its own fields.

Why did Miletos colonise? The interaction of trade and population

In his 1994 article in *The Archaeology of Greek Colonisation*, Gocha Tsetskhladze surveyed the available literary and archaeological evidence for the foundation of the Greek colonies in the Black Sea and concluded that there were two waves of colonisation during the Archaic period. These waves coincided with the Lydian and then Persian incursions into the west coast of Asia Minor and Tsetskhladze suggested a political motivation for that movement. To these two movements could be added a third in the Hellenistic period, when the alluviation of the Gulf of Latmos by the Maeander River, directly or indirectly, prompted many Milesians to migrate to Athens where their grave stele have been found in large numbers.²⁷

The precise details of the mechanism of the World Systems Theory that Tsetskhladze is in effect applying to the Greek colonial process need to be examined closely. In my view, what made the population mobile was not their unwillingness to live under foreign rule but the fact that the invaders took land from Miletos and it was this land that had been its greatest asset.²⁸ Miletos may have a reputation as a great trading state but this reputation originates from later, post-Archaic sources. Herodotos, our most detailed source, makes little or no mention of Miletos as a trading centre. Instead he mentions on three separate occasions the fields that surrounded Miletos (Hdt. 1.17, 1.19, 5.92). He also says that when the Persians sacked Miletos, “the pearl of Ionia” (Hdt. 6.18), and its great temple at Didyma, with riches comparable to those of Delphi, they confiscated the city’s land and kept the lowlands for themselves, giving the uplands for the Karians. It is this loss of fertile land to the Persians, and before them the Lydians, that prompted Milesians to become mobile and colonise, because without that land the *polis* could no longer sustain its own population.

Miletos undoubtedly already had trading interests in the Black Sea area and, as we have said, traders were present in the Black Sea from the time of the very earliest Greek contacts with the region. Such trading posts presumably became the foci to which the newly mobile Milesian population moved to following the loss of their lands at home. In this way, a large proportion of the Milesian population was made to become mobile due to *stenochoria* (“lack of land”), the main reason for colonisation cited in the Greek texts themselves, and came to settle in locations originally chosen for their potential as ports of trade, identified through archaeology. The reason why Miletos settled in the Black Sea on the scale it did, even though it has a reputation as a great trading power, was therefore primarily population pressure and *not* trade.

Satellite imagery shows how the *chora* of the relatively late foundation of Chersonesos is dividing into equal sized *kleroi*. This might be cited as evidence of the need for land at the time of the foundation of this colony, which had not been apparent when earlier colonies such as Berezan were founded. It has been more usual to explain the different locations of earlier and later colonies, or the translocation of island or peninsula communities, such as Berezan, to mainland locations, such as Olbia, as a result of the local population now being safely subdued and the colony being able to expand onto the land, rather than as a result of changed priorities in the mother-city. However, I would suggest that we have assumed and projected onto this process an aggressive character because the term “colony” is so loaded with colonialist meaning in the English language.

Religion and colonisation

I would just briefly like to mention the role of religion in Miletos’ activities as a coloniser in the Black Sea. Religion played an important part in the creation of identity in Greek colonies. Norbert Ehrhardt’s detailed survey of cults of the *metropolis* and colonies of Miletos shows the many and various ways in which the cults of mother-city and colony were connected.²⁹ The mode of transmission of cult was through the movement of people from the mother-city to the colonies and the medium that facilitated this transference of cults was the oracle.

It is interesting to note that, if the historical and mythic traditions surrounding the establishment of Greek colonies are to be believed, then really it is the oracle (and therefore religion) that is cited as the starting point of all Greek colonies, and rarely an explicit desire for trade or land. However, the rational explanation, which is inferred from the sources, is that traders first established links to colonial sites, which were then legitimised as settlements by the oracle.

Miletos is famous for its colonies in the Black Sea, Propontis and North Aegean, but it should also be noted that Miletos also had some trading interests in the western Mediterranean (at Sybaris) and the Near East (at Naukratis). Why were its western interests, in particular, not developed into full colonies? It is now widely thought that the oracles acted as “clearing houses” for information on settlement activity in different regions for the Greek colonisation process.³⁰ This being so, could it be that what we actually see reflected in the distribution of the colonies of different *metropoleis* are the regional responsibilities (the “turf”, so to speak) of the different oracles, rather than the trading interests of the mother-city?

The Berezan bone tablet, whether a genuine oracular response or not, would appear to confirm the very important role that Didyma played in the colonies of Miletos in the Black Sea.³¹ Given that, unlike Delphi, Didyma was situated within the *chora* of a powerful *polis* (i.e. Miletos) and was, at best,

only semi-independent of that *polis*, it would seem likely that Milesian colonists would consult Didyma in an era when Delphi's credentials as the pan-Hellenic oracle had yet to be established. It is possible that all the so-called "Milesian" colonies of the Black Sea were in fact Didyma-sanctioned foundations, which claimed Miletos as their mother-city through Didyma. We often flatly assume that no other state would want to associate the foundation of one of its own colonies with Didyma and yet Miletos had founded several joint colonies with other Ionian states,³² and Didyma was widely consulted from across western Anatolia in the Archaic period. It seems reasonable to me that minor pro-Milesian states within Ionia would choose to consult Didyma about founding their colonies at this time, when Miletos was at its peak and Delphi was not yet the dominant Greek oracle.³³

We also know that the oracle at Didyma had played a role in the reinvention of Apollonia-on-the-Rhyndakos as a Milesian colony in the 2nd century BC. In this often over-looked inscription, ambassadors from Apollonia-on-the-Rhyndakos in Mysia approached Didyma and asked the oracle to confirm that they were indeed founded as a colony of Miletos, which the oracle duly did.³⁴ However, this Apollonia was probably a later foundation of the Attalid kings and could never have been a foundation of Miletos.³⁵ There was clearly some *kudos* attached to being a Milesian colony in the Pontic region at this time and it must, in some way, have been politically expedient for the people of Apollonia to claim Miletos as their historical *metropolis*. This raises the question of whether or not there were other colonies in the region that claimed to have been founded by Miletos, but in truth were not. Given the lack of early stratified deposits at most sites (as noted above) which could prove, if not the founding *metropolis* then at least the date of foundation, the true origins of many colonies in the Black Sea will have to remain unknown until firm archaeological evidence can be found, because the episode of Apollonia-on-the-Rhyndakos has shown that historical records can be positively misleading on this point.

Conclusions

Trade as a motivation for colonisation needs to be understood within the broader context of the socio-economic history of the founding *metropolis* and its *chora*. Trade cannot be understood in isolation from agriculture in an agrarian society like that of ancient Greece. In the case of Miletos, I hope to have shown that it was *stenochoria* ("lack of land"), prompted by the loss of land to the Lydians and then the Persians, which motivated large-scale colonisation. These colonies were established on the site of, or developed out from, pre-existing trading posts and their locations relative to local geographical phenomena often still reflect their original function.

When discussing trade in the Black Sea, we must be cautious of making assumptions about precisely which commodities were being traded and in

what quantities. Only pottery survives in sufficient quantity for studies to be made of its distribution pattern, and even this picture is incomplete. We must recognise that pottery was traded as both a low-order and high-order good and then seek to differentiate the two. We must also be cautious not to project out from the distribution pattern of one “visible” commodity (i.e. pottery) the distribution patterns of “invisible” commodities (i.e. everything else), which may have been traded very differently.

Finally, when we are trying to make a socio-economic rationalisation of colonisation, let us not forget the two most important agents in the colonisation movement – the individual colonist and the oracle. In most cases, it would appear that migration was the result of decisions made by individuals within a community as a result of land hunger (or just hunger), even if these decisions were made within the context of some broader environmental or political crisis. Oracles promoted colonisation as an acceptable choice and validated the decision of states and individuals to move their cults and themselves to a new location. Their fundamental importance to the Greek colonial movement should not be forgotten.

Notes

- 1 Morgan 1989, 26; Parke 1985, 10, respectively.
- 2 Hind 1995-1996.
- 3 Snodgrass 2002.
- 4 Wilson 1997.
- 5 Hind 1995-1996 *passim*.
- 6 Figueira 2002, 25.
- 7 Greaves 2002, 14-15.
- 8 Yalçın 1993.
- 9 Adiego 1997, 157.
- 10 Gill 1991.
- 11 Greaves 2002, 106-107.
- 12 Graham 1964, 5.
- 13 Snodgrass 1980, 10.
- 14 Cawkwell 1992.
- 15 Greaves 2002, 99-109.
- 16 Zorn 1994.
- 17 Roebuck 1959, 21-23; Greaves 2002, 99-103.
- 18 After Roebuck 1959.
- 19 Hansen 1988.
- 20 Roebuck 1959, 22.
- 21 de Angelis 1994.
- 22 Presumed predominant landuse based on suitability of soils, topography and hydrology.
- 23 The size of the area of the Maeander Valley is based on an estimate of the extent of progradation of the Büyük Menderes Graben at ca. 500 BC (Aksu, Piper & Konuk 1987, 230, fig. 3). For the purposes of this discussion, Miletos is presumed to have controlled the valley floor from the coastline to Magnesia-on-the-Maeander (Hdt. 1.18).

- 24 After de Angelis 1994.
- 25 Osborne 1987.
- 26 Greaves 2002, 101-102.
- 27 Vestergaard 2000; Greaves 2000.
- 28 Greaves 2002, 107-108.
- 29 Ehrhardt 1988; see also Greaves 2004.
- 30 Parke 1967, 45-46.
- 31 Burkert 1994.
- 32 At Kardia (with Klazomenai), Parion (with Erythrai and Paros) and possibly Amisos (with Phokaia?): Gorman 2001, 244, 245, and 249, respectively.
- 33 Greaves forthcoming.
- 34 Kawerau & Rehm 1914, no. 155; Greaves 2002, 127-128.
- 35 Magie 1950. I have visited the site of Apollonia-on-the-Rhyndakos (modern Gölyazı in Turkey) and the ruins at the site that I could see were all Hellenistic, or later, in date. This would appear to confirm Magie's 3rd century BC foundation date.

Greek Archaic Orientalising Pottery from the Barbarian Sites of the Forest-steppe Zone of the Northern Black Sea Coastal Region

Marina Ju. Vachtina

Introduction

Greek pottery found during the excavation of sites belonging to the local population of European Scythia is a source of great value. In particular, it serves as important evidence for all aspects of the problem of contacts between the Greeks and non-Greeks.

Greek pottery from the second half of the 7th to the early 6th century BC found in the barbarian sites and barrows of the forest-steppe zone is of special interest in the study of commercial relations between the Greeks and the population of the more distant regions. At the time of the Greek colonization, this population already had its own established culture, which had founded large, fortified settlements and was actively engaged in agriculture and cattle-breeding. Each group had their own complex system of contacts with Hallstatt-like cultures to the west.

The main aim of this article is to discuss briefly the finds of Greek Archaic pottery painted in the Orientalising style from the excavations of barbarian sites of the forest-steppe zone of the Black Sea coastal region. This is the earliest category of Greek pottery to be found in the sites of the barbarian world and it reflects the main lines of Greek-barbarian contacts during the first hundred years after the foundation of the Greek colonies in the region. According to the evidence of Eusebios (*Chron.* 95b), the earliest Greek settlement Borysthenes (Berezan') was founded in the lower South Bug region in 645/644 BC.¹ It was, thus, only after this date that the local people of the northern Black Sea coastal region entered into an economical relationship with the well-developed civilisation of Ionian Greece. From this time on, though, we can consider the whole territory as one vast contact zone, as East-Greek pottery clearly penetrated the whole area at the time of this first wave of colonization.

In this article, I shall concentrate on the principal objects and sites and focus primarily on the light they throw on the peculiarities of early Greek-barbarian connections. Most examples of the Greek pottery under consider-

ation were found during the excavations of the great, fortified settlements of the forest-steppe zone, settlements such as Bel'skoe, Trachtemirovskoe and Nemirovskoe, although several examples stem from barbarian villages and burial complexes. The earliest finds belong to the last third of the 7th century BC.

Review of the find

Among the Scythian burials that contained Greek imports barrow 1 in the burial ground near the village of Kolomak on the Vorskla river, near the Bel'skoe city-site should be mentioned. It contained two Chian trade amphorae, which S. Monachov has dated to the late 7th-early 6th century BC.² Moreover, two barrows in the Dnieper region, Boltyška, barrow 1, and Šandrovka contained fine ware pottery. At Boltyška, the neck of a round-mouthed North Ionian *oinochoe* has been found among the burial goods.³ It was decorated with the scene of a hunt. On one side can be seen the image of a goat, on the other a dog (Fig. 1). The fragment can be dated to c. 630-610 BC.⁴ At Šandrovka, an amphora of a type known from Tocra,⁵ dated to the second quarter of the 6th



Fig. 1. *Oinochoe neck from the Boltyška 1 barrow.*

century BC and decorated with a single frieze with a representation of a wild goat has been discovered.⁶

Several Scythian forest-steppe unfortified settlements have yielded finds of East-Greek Archaic pottery. The westernmost of these is Zales'e, where fragments of five Chian amphorae with white slip and bands of dark paint, single fragments of grey Lesbian and Ionian amphorae and several Ionian plates and cups from the early 6th century have been found (unpublished).⁷ Finally, during the excavations of the Scythian settlement Žabotin on the left bank of Dnieper, the fragment of an *oinochoe* frieze, probably from the late 7th–early 6th centuries BC was brought to light.⁸

A series of finds also came from excavations of major forest-steppe sites, each with a large territory and a defensive system. The best known places are Bel'skoe (the largest of all, amounting to about 45 hectares in area), Trachtemirov on the middle Dnieper, and Nemirovo on the middle Bug.

Bel'skoe. This great city-site is situated along Vorskla, the left tributary of the Dnieper. During the excavations of the eastern part of this site, several fragments of Attic or East-Greek pottery were found.⁹ The earliest fragment has a guilloche in the style of the Wild Goat *oinochoe*.¹⁰ Among the Greek imports discovered at Bel'skoe are also a Samian band vessel,¹¹ amphorae fragments,¹² and part of a North-Ionian dish from about the middle of the 6th century BC.¹³

Trachtemirov. This city-site on the right bank of the middle Dnieper has been excavated almost completely.¹⁴ In one of the buildings, a fragmented North Ionian bird-bowl was found.¹⁵ It was discovered in the context of the so-called ritual complex of Trachtemirov. This was the largest building uncovered at the site, with an ornamented clay altar in its right hand side, close to which the unique bird-shaped, hand-made vessel was found.¹⁶ Perhaps the Greek vessel, decorated with the representations of ducks, was used here in various ritual ceremonies. From other sources, we know that waterfowl played a role in the religious life of the local population.¹⁷ This bird-bowl is one of the earliest Greek imports found in the forest-steppe zone and has been dated to ca. 700–630 BC by M. Kerschner.¹⁸ A small piece of a Wild Goat *oinochoe* with a griffin head was also found at the site.¹⁹ This has a very detailed representation of high quality (Fig. 2), which allows us to date the vessel to c. 630–600 BC.



Fig. 2. *Oinochoe* fragment from the Trachtemirov city-site (after Kovpanenko 1968) (scale 1:1).



Fig. 3. Oinochoe from the Trachtemirov city-site (after Fialko & Boltrik 2003).

The defensive system of Trachtemirov was excavated recently, and during the investigations of the rampart a fragmented North Ionian *oinochoe* from the early 6th century BC was found.²⁰ Its belly was decorated with two friezes of wild goats and floral ornaments (Fig. 3).²¹

Pastyrskoe. During the excavations of this site the rims of two Ionian plates from the first quarter of the 6th century BC with floral ornaments were found – one of them with a representation of a duck dated to the first quarter of the 6th century BC²² – and several fragments of Klazomenian amphorae.²³

Chotovskoe. This, the most remote North Scythian settlement, situated near Kiev, yielded examples of East-Greek Archaic pottery. In one of the house complexes, several fragments of an Ionian banded cup were found; one of the trenches contained fragments of Klazomenian (?) amphorae.²⁴

Nemirovo. In the forest-steppe zone of eastern Europe, the most important site that has yielded a collection of Greek Archaic pottery is Nemirovo – a



Fig. 4. Fragments of the bird-bowl from Nemirovo.

large barbarian settlement, situated on the left bank of the middle southern Bug. The Greek materials gathered here date to between the third and the fourth quarters of the 7th century BC. The finds are very representative for a remote barbarian site and seem to reflect a high level of contacts with the Greeks. They give the impression of being a batch of goods that had come on the market as a single whole and somehow reached the barbarians. In comparison with the finds from Nemirovo, the remaining Archaic Greek pottery finds from barbarian sites in the forest-steppe zone are less numerous.

These materials, gathered during only three years of investigations (1933, 1946, and 1948), are kept in the State Hermitage Museum in Saint Petersburg.²⁵ They have only been partially published, first by B.V. Farmakovskij at the beginning of the 20th century,²⁶ and then by N.A. Onajko in 1966.²⁷ The collection as a whole, however, remains unpublished. The finds in question are quite numerous as well as important in other aspects: they have a stylistic and chronological significance, and can shed significant light on issues connected with the early period of contacts between the Greeks and the barbarians of the northern Black Sea coastal region.

The collection of Archaic East-Greek pottery from Nemirovo is, as noted above, representative and consists of about 100 pieces. Most of them are painted pottery, but there are also several fragments of East-Greek Archaic



Fig. 5. Milesian (?) cup from Nemirovo (reconstruction).

amphorae – Lesbian, Klazomenian and Chian.²⁸ The most remarkable fragments are described below.

Of special interest are two fragments of a bird-bowl, painted in the sub-geometric style (Fig. 4). One fragment, a piece of the belly, is on the outside decorated with bands of dark triangles and hatched squares. Its interior is covered with dark paint. The clay itself is brown, the paint black and dark brown, and the slip brownish. Similar chains of triangles can be seen on a fragment found at Al-Mina in the level containing mixed late Geometric and early Orientalising pottery.²⁹ The second fragment seems to be the lower part of the same vessel. It is decorated with three narrow brown bands; the surface below these is covered with dark brown paint. The bowl may be dated to the third quarter of the 7th century BC. It has no parallels among the materials from the sites of the northern Black Sea coastal region.

The fragments of another cup (Fig. 5) also seem to belong to the second half of the 7th century BC. It is made of brown clay, and the interior is covered with dark brown paint. There is a zigzag ornament on the rim; below this are bands of red, brown and black paint. The cup was modelled in a rather delicate manner – the thickness of the pieces does not exceed 3 mm. This example, like the previous one, is also unique for the northern Black sea coastal region.³⁰ Several cups, analogous in shape and ornament, were discovered during excavations at Miletos.³¹ Perhaps the Nemirovo example is also Milesian in origin.

Part of the belly of a closed North Ionian vessel with a large ornamental emblem is also one of the earliest examples in the Nemirovo collection (Fig. 6). It may even be possible to date this example to a period not later than the third quarter of the 7th century BC.

Another rather early fragment comes from the foot of a crater, decorated with bands of dark colour on the white overlay.³² It is the earliest example of such a vessel to be found in this part of the world, and is very typical for the Greeks, but not for the barbarians living in the remote parts of Scythia. It may be dated to the 7th century BC.³³

To the rather uncommon type also belong the fragments of a big shoulder amphora:³⁴ three parts from the rim with a simple *guilloche*,³⁵ several small



Fig. 6. Fragment of a North Ionian vessel from Nemirovo.

fragments with lotus ornament from the neck, and a big fragment with the upper frieze with the image of a lion which can be dated to the last quarter of the 7th century BC.

However, by far the largest part of the fragments of Greek pottery from Nemirovo belongs to *oinochoai* decorated in the Wild Goat style. These had one of two shapes, both typical for the Archaic period: round-mouthed and trefoil. The clay of most examples is of various nuances of brown and yellow, while the slip is cream-coloured. The repertoire of painting on the fragments from Nemirovo is usual for East-Greek pottery of the Orientalising Style: wild goats, deer, lions and dogs. On many examples we can see bands of friezes divided by *guilloches*. Neither purple and white subsidiary colours, nor engraving are seen. From the manner of painting we may conclude that the majority of the vessels were produced in South Ionia.

The fragments of *oinochoai* from Nemirovo are often decorated with ornaments of lotus flowers and buds, typical for the Middle I and II Wild Goat style (ca. 630-600 BC),³⁶ and located on the shoulders or near the bottom of the vessels.

It is sometimes possible to distinguish fragments that originally came from the same vessel. Among them three fragments of a big *oinochoe* decorated with friezes of spotted deer and dogs (Fig. 7). The deer are represented running



Fig. 7. Oinochoe fragments from Nemirovo.

with their heads up; they have long ears and tiny horns, along their bellies are stripes containing two rows of dots. On one of the fragments a depiction of a dog chasing a deer was preserved. The friezes of the vessel were divided by bands of loop pattern, and there were filling ornaments consisting of large roundels, rosettes and half-rosettes of different types as well as swastikas and triangles. The manner of painting is typical for the third and the beginning of the fourth quarters of the 7th century BC.³⁷ Similar depictions of deer can be seen on *oinochoe* from Rhodos³⁸ and the sherd of a figure vessel from Emporio in Chios.³⁹

To the same period may belong some other fragments of an *oinochoe* found at Nemirovo, for example part of a shoulder panel with two swallows perched on the rosettes (Fig. 8). Above these may be seen a row of tongues, and to the left part of a large floral emblem. Similar depictions of swallows perching on palmettos, rosettes, goat's horns and the tails of animals can be seen on other vessels of the early Orientalising period.⁴⁰ The closest parallels to the painting on Nemirovo fragment may be seen on *oinochoai* from Rhodos⁴¹ and a vessel now in the USA.⁴²

A large fragment of a frieze with running goats is one of the finest examples of this style, demonstrating a very clear and delicate manner of painting (Fig. 9). The closest parallel we can find to this is the style of decoration on an



Fig. 8. Oinochoe fragments from Nemirovo.

oinochoe from the Temir-Gora barrow in the eastern Crimea, dated to about 640-630 BC.⁴³ L.V. Kopejkina has even suggested that the Nemirovo vessel and the Temir-Gora *oinochoe* were produced at the same workshop. The Nemirovo fragment also seems to belong to the third quarter of the 7th century BC.

The majority of the examples of East-Greek painted pottery, however, belong to the end of the third and fourth quarters of the 7th century BC.⁴⁴ Among these materials are two different fragments of *oinochoai* decorated with the depictions of goats (chased by dogs?), fragments with the depictions of dogs, a small fragment with part of a body of a strange, small animal – perhaps a young one, passed over by the grown-ups – a fragment of the neck and shoulder frieze of a trefoil *oinochoe* with the image of a lion with two swallows perching on its tail and many others.⁴⁵

Three fragments of two small closed vessels with globular bellies covered in dark grey (almost black) slip and narrow bands of orange paint belong to the late 7th-early 6th century BC.⁴⁶ The clay of the fragments is light brown. Such ware was produced in the second half of the 7th and first half of the 6th centuries BC in South Ionia and on Rhodos.⁴⁷

Pottery finds from the 6th century BC occur less frequently in the Nemirovo collection. Of note, though, is a fragment from a small amphora, decorated with only one frieze.⁴⁸ The clay of this fragment is bright orange, its paint dark



Fig. 9. *Oinochoe* fragment from Nemirovo.

red. Painted on the fragment, one can see parts of a goat's front leg and a big rosette. A series of such amphorae is known from the excavations at Tocra, from the levels belonging to c. 580-560 BC; one of the latest examples shows a stylistic similarity to the Nemirovo fragment.⁴⁹ The Nemirovo example can be dated to the second quarter of the century. Finds of such amphorae decorated with a single frieze are common on the sites of the Greek colonies of the Black Sea coastal region, most so in the settlement of Berezan'.⁵⁰

There is also a single example of classical Ionian banded ware in the Nemirovo collection – fragments of a trefoil *oinochoe* decorated with both wide and narrow bands of bright-red paint.⁵¹ The clay is rose in colour, the design painted on a light-rose overlay. A series of such banded *oinochoai* was found during the excavations at Istros. This allows us to reconstruct the shape of the Nemirovo *oinochoe* (Fig. 10). These same pottery finds from Istros also allow us to illustrate the development of this type. One of the examples from grave XVII/11 can be dated to the middle of the 6th century BC;⁵² others belong to the second half of the same century, and the most recent to the late 5th-early 4th centuries BC.⁵³ A similar vessel was found at the Anapa city-site (Taman Peninsula) in the northern Black Sea coastal region at a level with materials from the second half of 6th-5th centuries BC.⁵⁴ The shape of the Nemirovo example allows us to date it approximately to the second half of the 6th century BC.

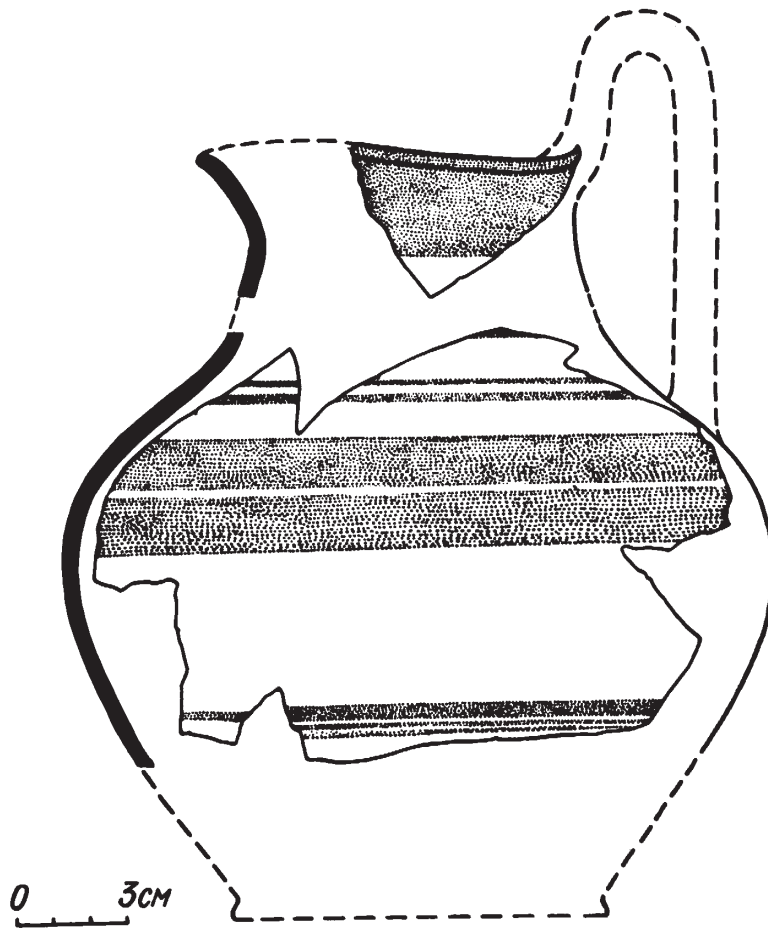


Fig. 10. Banded oinochoe from Nemirovo (reconstruction).

In general, the collection of East-Greek Archaic pottery from Nemirovo is widely representative and consists of surprisingly many examples of different types of Greek pottery for a remote barbarian site situated far from the Greek colonies. It should be noted that the collection of Greek pottery from this site remains the most plentiful of those gathered during the excavations of Archaic barbarian settlements and burial mounds of the region and seems to reflect a high level of contacts with the Greeks.

Several fragments from the Nemirovo collection show a stylistic similarity and evidently belonged to works produced at the same centre, perhaps even in the same workshop. Kopejkina has noted the stylistic similarity between the painting on some fragments from Nemirovo and the famous *oinochoe* from the Temir-Gora complex in eastern Crimea. She arrived at the conclusion that the *oinochoe* from Temir-Gora and some of the Nemirovo vessels had been made at the same workshop.⁵⁵

Therefore, in this case we are dealing with a rich collection of East-Greek Archaic pottery, dated to an early period, and mostly consisting of examples of the highest quality. The greatest part of the *oinochoe* fragments shows chronological and stylistic unity. This gives the impression of a single batch of goods, which had been on the market as a single whole, and which in one way or another was received by the barbarians of the Black Sea region in approximately the second half of the 7th century BC during the early period of Ionian colonisation. This raises the intriguing question – how and from which centre did this pottery penetrate the barbarian hinterland and reach Nemirovo? Perhaps the source of those imports was the settlement of Berezan' in the Lower Bug, which existed in the second half of the 7th century BC.⁵⁶ Berezan' pottery remains, however do not offer any close parallels in style.⁵⁷

After the middle of the 6th century BC, the situation changed in some way. The Greek pottery finds from this era at Nemirovo are rare, and their quality is not as high as those from the 7th century. Probably, the contacts between the Greek world and the local settlers of Nemirovo became less intensive or changed in nature.

Perhaps the peculiarity of the Nemirovo East-Greek pottery collection was due to this site's inhabitants' intensive contacts with the West. The culture of the local inhabitants had many western, Hallstatt features, and on the whole, in the Archaic epoch we can see a very strong Hallstatt influence on its development.⁵⁸ It is possible that the Greek Archaic pottery produced somewhere in southern Ionia penetrated this area at the same time as a wave of other western impulses.

A series of fragments of East Greek Orientalising pottery from the period 640-630 BC found quite recently during the excavations of Orgame in Romania and published by M. Mănuțu-Adameșteanu⁵⁹ seems to strengthen this assumption. Though these fragments do not have close stylistic parallels with the Nemirovo finds, they are similar in date and of South Ionian production. Perhaps both Orgame and Nemirovo had a common "source" for Greek imports.

By the mid 6th century BC, a wave of Attic pottery begin to penetrate the region and as a result at the end of Archaic period, in the late 6th–early 5th century BC, Greek pottery was widely distributed, reaching the boundary between the forest-steppe and forest zones.

Conclusion

Based on the distribution of Archaic Greek pottery finds in the forest-steppe zone we can conclude that this type of pottery was fairly widespread in the barbarian world in the period connected with the Ionian colonization of the region and the first period of the Greek settlements. Quite possibly, the penetration of Greek Archaic pottery into the barbarian world reflects rather in-

tensive contacts established between the Greeks and different groups of the region's local population.

We have dealt here with only one category of Greek import – East-Greek Archaic pottery. If we include all the Archaic Greek objects discovered – even if only from the graves of a rather vast burial ground comprised of numerous Scythian barrows on the River Tjas'min⁶⁰ – we discover that every fourth burial contained Greek amphorae, plain pottery, beads, jewellery etc. This fact is further evidence of intensive contacts between the Greeks and the barbarians.

Of course, one of the main “sources” of those contacts was the settlement on Berezan'; but it is also quite possible, that it was not the only place, from which the barbarians could acquire Greek products. There may also have been numerous trade routes, including traditional waterways using the great rivers and their tributaries, land routes and both combined.⁶¹ As a result of the contacts between Greek settlers and different groups of the local population, Greek pottery was widely distributed throughout the vast territory by the end of the Archaic period.

The contacts between the Greeks and the barbarians of the forest-steppe zone are also reflected in the appearance in this region of simple grey wheel-thrown pottery (jars and bowls). The pottery in question co-existed with traditional hand-made wares; after the end of the Archaic period and the changes that took place in the early 5th century in the barbarian areas of the region, however, “local” wheel-made pottery disappeared. The finds of such ware correspond with the sites, where the examples of East-Greek Archaic painted pottery were found. The most western of these is Zales'e.⁶² G.I. Smirnova, who carried out a comparative analysis of this category of simple grey wheel-made table pottery and determined its date, concluded that under Greek influence the inhabitants of the barbarian sites learned the new technology of pottery making. But this phenomenon may also be explained by the possible presence and activity of Greek craftsmen at local settlements. It seems that during the Archaic period, the situation in the region was favourable for such kind of activity. This assumption perfectly explains the total disappearance from the region of the earlier type of pottery making, which was never revived in Scythia during the Classical era.

Archive material:

Kovpanenko, G.T. 1967. Otčet o rabote Trachtemirovskogo otrjada Sredne-Dneprovskoj ekspedicii, Institut Archeologii Akademii Nauk Ukrainskoj Sovetskoj Socialisticheskoj Respubliki za 1967 god, Naučnij archiv Institut archeologii Nacional'noj Akademii nauk Ukrainy, n. 1967/12, Kyiv.

Notes

- 1 We also have some archaeological evidence that strengthens the data of our written sources: Kopejkina 1973.
- 2 Monachov 1999, 34, fig. 1.
- 3 Farmakovskij 1914b, pl. 6-7; Onajko 1966, kat. 1.
- 4 Schiering 1957, 24-25.
- 5 Boardman & Hayes 1966, pl. 28.
- 6 Muchopad 1988, 111.
- 7 Ganina 1972. The Greek materials are unpublished. I am most grateful to O.D. Ganina for the opportunity to examine the Greek pottery from Zales'e.
- 8 Onajko 1966, kat. 3, pl. 3.9.
- 9 Šramko 1973; 1975, 123-124, fig. 12-13.
- 10 Šramko 1975, fig. 13.8.
- 11 Šramko 1973, fig. 3.1; 1975, fig. 12.3.
- 12 Šramko 1975, 123, fig. 12.1, 4, 5.
- 13 Šramko 1987, 124, fig. 60.2.
- 14 The excavations were carried out by the expedition of G.T. Kovpanenko.
- 15 Onajko 1966, pl. III.12.
- 16 Unpublished excavation report (Kovpanenko 1967, pl. 2). I am very grateful to G.T. Kovpanenko for permission to read the Trachtemirov excavation reports in the archive of the Institute of Archaeology in Kiev (Ukraine).
- 17 Ljapuškin 1961, 99-100.
- 18 Kerschner 2006, 237-238, Abb. 14; see also Cook & Dupont 1998, 27, fig. 6.1.
- 19 Kovpanenko 1968, 109, fig. 9.
- 20 Fialko & Boltrik 2003, 127-132, fig. 19-24.
- 21 See the parallel: Walter-Karydi 1973, pl. 105.879.
- 22 Farmakovskij 1914a, pl. 2.1,2.
- 23 Farmakovskij 1914b, pl. 2.1; Onajko 1966, kat. no. 42 & 49.
- 24 Petrovskaja 1970, 137, fig. 12; Onajko 1966, pl. 11.17; 5.10.
- 25 I am most grateful to the keeper, Dr. Galina Smirnova, for the opportunity to observe all these materials.
- 26 Farmakovskij 1914a, 30, pl. II.3.
- 27 Onajko 1966, 56, pl. 3.1-8, 10-11.
- 28 Vachtina 1998, 123, fig. 1; 130, figs. 4-8.
- 29 Robertson 1941, pl. 1.o.
- 30 Vachtina 2004, fig. 1.
- 31 Schlotzhauer 2000.
- 32 Vachtina 2000, 214, pl. II.4.
- 33 Walter 1968, pl. 74.409; pl. 75.414-415; pl. 77.423.
- 34 For an analogy to the shape, cf. Cook & Dupont 1998, 59, fig. 8.22.
- 35 These rim fragments were formerly interpreted as fragments of *dinoi*: Onajko 1966, pl. V.1; Vachtina 2000, 210, pl. I.7; pl. II.1,2. I am most grateful to M. Kerschner pointed me at the type of the vessel.
- 36 Cook & Dupont 1998, 46, fig. 8.13a.
- 37 Schiering 1957, 51-52.
- 38 Jacopi 1932-1933, 59, fig. 59 and 96, fig. 108.
- 39 Boardman 1967, pl. 54.634.
- 40 CVA, fasc. 1, Louvre II, pl. 6.2; pl. 7; Kopejkina 1973, 240.
- 41 Kinch 1914, 211, fig. 98.

- 42 CVA USA, fasc. 8, pl. 33.3.
- 43 Kopejkina 1972, 156; Cook & Dupont 1998, 36, fig. 8.5.
- 44 Some fragments from the recent excavations of Miletos showing a close similarity in style to the Nemirovo collection examples perhaps belong to an earlier period – the third quarter of the 7th century BC: Käufler 1999, fig. 1-2. But because of the fragmentary character of the Nemirovo finds, it is difficult to prove their date in terms of this period.
- 45 Vachtina 2000.
- 46 Vachtina 2000, 214, pl. III.1-3.
- 47 Vallet & Villard 1964, 90.
- 48 Vachtina 2000, 213, pl. I.6.
- 49 Boardman & Hayes 1966, pl. 28.580.
- 50 Kopejkina 1968, 29.
- 51 Vachtina 2000, 214, pl. II.3.
- 52 Alexandrescu 1966, 32, fig. 1.
- 53 Alexandrescu 1978, 98-101, pl. 68.
- 54 Alekseeva 1991, pl. 70.7.
- 55 Kopejkina 1972, 157, figs. 5a, 5b.
- 56 Solovyov 1999, 48.
- 57 Kopejkina 1982, 6-35.
- 58 Smirnova 1996, 80-81; 1998, 115-116; 2001, 42-43.
- 59 Mănucu Adameșteanu 2000, 195-201, fig. 1.
- 60 Il'inskaja 1975.
- 61 E.g. Domansky 1970; Šramko 1987, 18-24, fig. 1; Boltrik 1981, 59-60; 1990; Gavriljuk 1999, 264; Bandurovsky 2001, 16; 2004, 15.
- 62 Smirnova 1999, see map on p. 45.

Black Sea Grain for Athens? From Herodotus to Demosthenes*

David Braund

Introduction

How are we to estimate the extent of grain-imports to Athens from the Black Sea region? Relevant statistics are few and so contentious as to be of marginal relevance at best, as we shall see. Accordingly, the question must be approached in a more discursive manner. The broad scholarly view is roughly as follows. Very few would now argue that grain came to Athens from the region before the 5th century. Some insist that much did come there from the Black Sea in the 5th century. The great majority believe that a lot came in the fourth, though with very different emphases. Beyond that broad characterisation, the debate on this question has become rather confused and even a little over-heated, despite Garnsey's careful and lucid analysis, to which the debt of the present discussion will be very obvious.¹ A series of observations may help to maintain our focus sharply on the question itself.

First, the issue is not whether grain came from the region to Athens *at all*. It is, rather, whether such grain as did come was brought in significant quantities and on a more-or-less regular basis. Accordingly, there is in fact no reason to deny that even in the 6th century (if not rather earlier) grain may well have reached Athens and the Aegean world more generally from the Black Sea. There were already Greek settlements in the region with mother-cities in Miletus or Megara, for example, which may well have encouraged traders to venture there in search of grain.² The point, however, is that this was not – as far as we can tell – any kind of regular or substantial export of Pontic grain. *A fortiori* there is no reason to suppose a complete absence of grain brought to Athens from the region in the 5th century either, nor of course in the 4th.

Secondly, the demand for imported foodstuffs in Athens and Attica has a clear bearing on this entire issue, but its bearing is only tangential. For the present discussion it is unnecessary (and probably unwise anyway) to plump for a particular projection of the extent or chronology of that demand, beyond the very simple point that the development of the city of Athens presumably increased the demand for food-imports to supplement the produce of Attica itself. For, whatever level of demand we may suppose, the demand itself

tells us nothing specific about the sources from which that demand was met. Meanwhile, we must also recognise that the shipping of grain from the Black Sea – or any of the many other sources from which it might be brought – need not be a response to food-shortage within Athens or any particular need, beyond the existence of a market there for exchange: price, quality and possibly even fashion could make imported grain attractive, while even at times of surplus it is hard to imagine that grain would not find a buyer.³ It is not always acknowledged sufficiently in modern studies that demand encompasses not only our notion of need or even the participants' (especially the Athenians') notions of their needs: we must reckon also with desires, with the effect of heavy supply in lowering price and with the advantages possibly to be gained by re-export back out of Athens. However, even with all that taken into account, the fact remains that broad studies of demand for food in Athens address a set of questions which are distinct from the matter in hand, namely whether much imported grain came from the Black Sea.

Thirdly, the central issue of evidence. What kind of evidence could establish the existence of a regular and substantial importation of grain from the Black Sea region? An explicit statement of its existence or some description in a historical narrative might well suffice, but that is not available. An inscribed public record might also be dreamt of, that of the *sitophylakes* perhaps.⁴ The nearest we have to such *desiderata* is the always-slippery rhetoric of Demosthenes and linkable public honours involving Bosporan kings in the 4th century, which will be discussed in some detail below. That is significant, of course, but also fraught with problems of interpretation, which will be addressed more closely in what follows. Most desirable of all would be a range of different kinds of evidence which simply assume, applaud, mock or complain about the importation of Black Sea grain. Unfortunately, even in the 4th century, we do not really have that.

Fourthly, we must bear very much in mind the extent of the Black Sea region and the busy exchange there between its various micro-economies. It is all too easy to suppose that the whole region was orientated upon exchange with the Aegean world, or even with the city of Athens. But that was certainly not the case, as can be seen in the extensive exchange-patterns within the region, revealed by archaeology, epigraphy and a range of literary evidence. At the same time, the sheer size of the region demands to be considered. The Bosporan Kingdom, which has often been at the centre of modern debates on the grain-trade, was of course very important in the Black Sea, but there were extensive areas with grain-producing capacity elsewhere there, whether, for example, in the western Crimea around Chersonesus, on the large west coast of the Pontus (modern Bulgaria and Romania) or indeed on the rather-neglected south-coast. The Black Sea was far more than the Bosporan Kingdom, one of its farther places from an Aegean perspective. In addition, it can often be difficult to disentangle the Hellespont from the Black Sea: grain could be grown in quantity there too, including (neighbours

permitting) the hinterland of Byzantium, which was more than a market for exchange and transshipment.⁵

Fifthly, the notion of a “bread-basket”. Much of the modern debate is driven by a notion that the region always enjoyed a grain-surplus, whether the lands around the Black Sea are taken as a whole or imagined separately. This is demonstrably false. Unfortunately, by virtue of the Cold War, the nature of modern food-shortages has been transposed into a debate on economic and political systems. Be that as it may, with regard to antiquity we have significant direct and indirect evidence of grain-shortage there. Garnsey has drawn attention to the realities of precipitation in the north-west Black Sea, where grain-production is historically unreliable.⁶ Strabon, although he waxes lyrical about the fertility of the soil of the eastern Crimea, does nothing to suggest that there too food-shortage was alien. On the contrary, it is only for a small sector of the south coast of Black Sea that he observes the absence of food-shortage. That he attributes to the well-watered Thermodon plain there: the eastern Crimea has no such rivers and was therefore vulnerable to drought. We may readily understand why the Bosporan Kingdom suffered grain-shortage around 400. And further why Polybius explicitly identifies grain as a commodity which is sometimes exported and sometimes imported into the region past Byzantium (Pol. 4.38). Meanwhile, recurrent political and military problems with Scythians and the like no doubt also led to occasional shortage in agricultural production. There was much potential for the production of grain in the Black Sea region, but the actual production was far from secure and any surplus irregular.

Sixthly, the “burden of proof”. The notion of regular and substantial grain-imports from the Black Sea through the 5th and 4th centuries has become so embedded, at least in some academic traditions, that some may take the view that the burden lies upon those who deny it.⁷ However, that is an inversion of normal practice. The burden must lie instead upon those who claim that these regular and substantial imports did in fact occur. And here lies much of the problem, for that case has often been asserted but proves very difficult to argue.

Finally, there are corollaries, principal among which is the so-called “grain-route” across the Aegean leading from the Hellespont to Athens, taking in notably Lemnos, Imbros and Scyros. That “grain-route” is taken by some to be a key factor in Athenian imperial strategy. Be that as it may, we have no real knowledge that much grain moved that way, or that any of it originated in the Black Sea. Only on the basis of such knowledge might we proceed to examine the nature of any “route”, whether for grain or some larger purpose. The recent publication of the so-called Grain-Tax Law of Agyrrhius, passed in 374/3 BC, is a particularly salutary warning. It says nothing of grain from the Black Sea to Athens, but it does draw sharp attention to the fact that Lemnos, Imbros and Scyros were not only settled by Athenians, but also well able to produce substantial amounts of grain in their own right for Athens.

The modern notion of a “grain-route” has obscured the productive capacities not only of these islands but also of Byzantium and the Hellespont, on which more below.⁸

With those seven, interrelated points in mind, we may proceed to a close examination of the evidence and “evidence” which has been brought to bear on our central question, the extent of grain-imports from the Black Sea to Athens. In addition, I shall also offer some further ancient testimony of relevance which has been neglected or omitted from the debate. Diachronic distinctions are of major importance throughout: conventionally, a line is drawn between the 5th and 4th centuries. For reasons which will become apparent, I shall not make so much of changes around 400 as of changes through the Peloponnesian War, among which particular significance will be accorded to the events of 413, including the establishment of the permanent Spartan presence at Decelea. In consequence, my 5th century is foreshortened and my 4th extended.

The 5th century to 413

The silence on Pontic grain at Athens in the 5th century is so heavy as to crush any hypothesis of significant or regular importation of grain from that source until at least the closing decades of that century. The broad historical context tends to explain the absence of such imports well enough. After all, Athens spent much of the 5th century as the dominant head of an extensive empire. Thucydides’ analysis of the massive resources of Athens in 431 is sufficient to show the material benefits of the city’s imperialism. Athens was too rich and also too powerful to fear grain-shortages: if and when needed, grain could be obtained from very many different sources. Meanwhile and in consequence, we may be sure enough that the Piraeus held major attractions for traders in all goods, from all areas and of whatever state or ethnicity. Athens and its port were the great focus of power, wealth and exchange.

This broad situation has prompted the ingenious argument that in the 5th century Athens’ regular and substantial imports of Pontic grain are “masked”:⁹ they came in so effortlessly, it is claimed, that our sources simply do not have reason to mention them. But that will hardly suffice. The fact remains that we have a large amount and a great variety of information about the society and economy of 5th century Athens, not only from the historians, but also, for example, from playwrights and a range of documents which happen to have survived. If Pontic grain imports were regular and substantial, we might reasonably expect to hear at least a little about them here and there. As we shall see, there is nothing for almost all the century, whereas we do indeed hear about the significance of Euboea, for example, which clearly was a major source of Athens’ food-supply, both in historical narrative and in drama. By the same token, the very reasonable observation that we have little oratory for the 5th century (while much of our 4th century evidence comes from orators) is less compelling an explanation than it might seem to be at first glance. The

4th century grain-supply is attested by other kinds of evidence too, whether historical narrative (e.g. Xenophon and Philochorus) or honorific documents, on which more below. And, of course, for most of the 4th century we lack the politically-engaged plays of Aristophanes and his rivals, which might be expected to make up for the lack of oratory in the 5th century. Accordingly, while those who insist on a regular and substantial 5th century grain supply from the Black Sea to Athens are naturally driven to seek to explain the lack of any evidence for their position, they have yet to find an explanation or set of explanations to relieve our sources' silence.

Meanwhile, from a perspective in Athens, the Black Sea was distant, famously dangerous and in many ways of little attraction, though we may wonder about the availability of under-priced goods there. Through the first half of the 5th century it was a Persian possession, as was acknowledged in the terms of the Peace of Callias in 450. While that Peace banned from the Pontus Athenian warships only, there was hardly much encouragement in that for Athenian merchantmen or indeed for others seeking to bring goods to Athens. Moreover, while it is important to acknowledge the existence of Greek cities in the region, we must also be aware that the Bosporan Kingdom was at a fledgling stage of its development, while Olbia seems also to have experienced substantial difficulties in the course of these years. The story that Aristides met his death in the Black Sea on public business (whether or not strictly historical) seems to encapsulate the gulf between Athens and the region through the first half of the 5th century.

The story of Aristides is preserved by Plutarch (*Arist.* 26.1), who has some interesting passages on the Black Sea. In particular, it is Plutarch who provides our main narrative of the expedition of Pericles to the region in the 430s.¹⁰ However, Plutarch says nothing of Pontic grain, either with regard to Aristides or in connection with the expedition of Pericles, whose rationale is presented in a completely different fashion. The silence is all the louder because Plutarch does, by contrast, mention a large gift of grain brought to Athens from Egypt, whence it had been sent by a certain Psammetichus. Indeed, Plutarch mentions the Egyptian gift in the very *Life* (of Pericles), where he might have mentioned grain in the context of the Pontic expedition. While ancient authors often show a disappointing lack of concern with economic matters, to be sure, the contrast here is striking even so.¹¹

Silences abound. However, to fill the vacuum, a selection of passages is usually deployed as if to support a case for regular and substantial grain-imports from the Black Sea: of course, different scholars stress or omit particular passages. Each instance (familiar or neglected) demands close attention, but neither individually or collectively do they amount to very much.

1. The first is Herodotus' vignette of Xerxes, watching ships carrying grain from the Black Sea through the Hellespont towards Greece (Hdt. 7.147). However, the passage is hardly crucial, for this is grain for the Peloponnese and

Aegina, not Athens. Immediately there must be a doubt about its historicity, although there is no reason to doubt that Peloponnesians and Aeginetans were active in the Black Sea (let alone others engaged in trade in their direction). Aegina needed imports, it is judged.¹² And, as for the Peloponnesians, an epitaph from Gorgippia in the eastern Bosporan Kingdom, shows that a certain Philoxenus was buried there at around the time of Xerxes' invasion, described as "from the Peloponnesians, from Helice".¹³ Rather, doubt may be sparked by the fact that Xerxes' sighting allows Herodotus to develop ideas about the king's mix of wisdom and over-confidence: conceivably, Athens has been suppressed from the story for the very reason that Xerxes did indeed seize Athens, whereas Aegina medized and the Peloponnesians remained broadly free. If the ships had been Athens-bound, Xerxes would have been proved right, which meant a very different role for the story. Meanwhile we may wonder how the ships' destinations were known to Xerxes' army: while that remains unexplained doubts about the historicity of the story abide. We may also observe that the completion of Herodotus' work was roughly contemporary with so much of our other evidence on grain-supply, indeed it is often placed in 426, the date of Athens' decree of grain-privileges for Methone (discussed below). We may suspect that the vignette, which is outside the main narrative and in that sense superfluous to the story of Xerxes' invasion, may owe something to the concerns of Herodotus' time of writing. In any event, as we must recall, this is not grain for Athens but for Aegina and the Peloponnesians, an excellent reminder that other states too might want (or be thought to want) grain from the north-east. And finally, this is only a single instance: on its own, it can tell us nothing about regular movements of grain from the Black Sea into the Aegean.

2. Hardly more cogent is the passage often adduced from the Old Oligarch, who of course may well be young and who is rather broad-minded in his complex oligarchy. In this passage and elsewhere, despite a clear interest in economic matters, the Old Oligarch says nothing about grain from the Black Sea to Athens or anywhere else. Nor should he be taken to imply it either. For he mentions the Black Sea at all as part of a swift tour of the points of the compass which spirals into mainland Greece:

If smaller matters are also to be considered, through rule of the sea first of all the Athenians have mixed with various peoples in different areas and devised a range of festive practices, so that whatever is sweet in Sicily or in Italy or in Cyprus or in Egypt or in Lydia or in the Pontus or in the Peloponnesians or anywhere else has all been collected together in one place through the rule of the sea. ([Xen.], *Ath. Pol.* 2.7).

Where is Pontic grain in this passage? Grain is not excluded explicitly, but neither is it included and it hardly fits the context very well. For our author introduces his list as a series of items serving the relatively trivial end of inventive celebrations: grain would be rather peculiar in those terms, whereas high-quality preserved fish, for example, would suit rather better. For the notion of “whatever is sweet” tends to suggest some form of delicacy, not a bulk staple like grain. Very possibly our author had in mind the nuts brought to Athens from Paphlagonia, “the ornaments of a feast”, as we shall see. Finally, of course the list is designed to illustrate the sheer range of places from which different things can be brought together and mixed up: it has been well observed that oligarchs in particular did not tend to approve that kind of mixture of the different for the creation of the new, whether in such matters as these or in language on which the author proceeds to dilate.¹⁴ Accordingly, we may be sure enough that our author disapproves of the use of imperial sea-power to develop a multi-sourced smorgasbord, but it is extremely difficult to suppose that he has in mind imported grain from the Black Sea.

As our author indicates, all this is relatively trivial. The really important feature of the Old Oligarch’s analysis is his silence about grain imports not merely in this passage but altogether, and despite his urgent concern to explain the importance of control of the sea to the Athenian democracy. If it were not for the quirkiness (but by no means the stupidity) of the author, it would be tempting to infer from this silence alone that the residents of imperial Athens were, at least, far from concerned about their grain-supply in general or Pontic grain in particular at the time of writing, around 424 BC.

3. At much the same time, Pericles’ funeral speech of 430 BC (in the version offered by Thucydides) shows a champion of the imperial democracy making a related point:

on account of the greatness of the city everything comes in from all the world and for us it is as natural to enjoy the goods of others as it is to enjoy our own local produce. (Thuc. 2.38).

Here too no explicit mention of grain-supply, but no implied exclusion of it either. For Pericles expresses a confidence in imports in all goods because of Athenian imperial power, especially at sea. For him here, the flourishing of imports made Athenian ports and markets all the more attractive to those who wished to trade, since a fine choice of goods and deals were available.¹⁵ However, for the very reason that it embraces all imported goods, the passage tells us nothing specifically about grain from the Black Sea, about which the historical Pericles will have known as much as any Athenian after his expedition there a few years before.

4. A contemporary fragment of the comic poet Hermippus' *Basket-bearers* is sometimes brought to bear on these matters, for (comically) it sets out a range of items which are brought into the city by sea-going Dionysus:

Now tell me, Muses, dwellers on Olympus,
 which goods Dionysus brought here for men on his black ship,
 from the time when he traded over the wine-dark sea.
 From Cyrene, the silphium-stalk and ox-hide,
 from Hellespont mackerel and every salted fish,
 from Thessaly¹⁶ fine flour and ribs of beef,
 and from Sitalces the itch for the Spartans,
 and from Perdiccas lies by the ship-load.
 And the Syracusans furnish pigs and cheese,
 and the Corcyraeans – may Poseidon destroy
 in their hollow ships, for they are eager for both sides.
 Then these things. From Egypt rigged
 sails and books. And from Syria, further, frankincense.
 And fine Crete provides cypress for the gods,
 and Libya ivory in plenty for sale;
 Rhodes raisins and sweet-dream figs.
 Moreover, from Euboea, pears and apples.
 Slaves from Phrygia and from Arcadia mercenaries.
 Pagasae provides slaves and slave-marks.
 Paphlagonians provide the acorns of Zeus and shining
 almonds. For they are the ornaments of a feast.
 Phoenicia, further, palm-fruit and fine grain-flour.
 Carthage, carpets and cushions of many colours.
 (Hermippus, *apud* Athenaeus, 1.27e-28a = Kassel – Austin,
PCG fr. 63).

This is not the place to explore the very many questions raised by this passage.¹⁷ The orthodox view that it is a parody of some other text (speech? play?) seems very plausible, for the very reason that the list chimes with the notion that we have already seen in the Old Oligarch and Thucydides' version of Pericles' funeral speech (a speech itself parodied in Plato's *Menexenus* and conceivably at issue here too). It seems clear enough that the democratic ideology of "luxury for the many" was repeatedly asserted in the opening years of the war.¹⁸ It was a powerful strategy in that it foregrounded the material benefits (including food) that might be ascribed to naval empire at the very time when the Peloponnesian War, the consequence of that empire, was bringing material devastation to the land of Attica itself. Imperialism had brought great material benefits too, it is suggested, and shows the way to resist invasion and destruction on land through naval strategy and seaborne goods.

For the present discussion, however, the key observation to be made about Hermippus' list is the minimal presence of the Pontus: we hear only of splendid Paphlagonian nuts. There is no mention of Black Sea grain. True, the Hellespont finds a place, but only for fish, not grain. By contrast, where grain occurs at all it is in the form of special fine flour, imported not from Pontus nor from Egypt, but from Thessaly/Italy¹⁹ (*chondros*) and Phoenicia (*semidalis*).²⁰ The detail reinforces the general fact, which cannot be stressed too much, that grain might be exported (and indeed imported) anywhere and everywhere in the ancient world where surplus or shortage happened to occur, and/or where special grains were required. The fact that certain places (Egypt stands out, thanks to the Nile floods) tended to enjoy surplus rather than shortage does not affect that key observation. All the more so in view of the fifth point set out above: the Black Sea region could not be relied on for surplus. Meanwhile, in Hermippus' designedly ramshackle journey around the sources of goods brought to Athens, much of the point must surely be the extent of the region covered: the absence of most of the Pontus is therefore all the more striking perhaps, especially within a decade or so of Pericles' expedition there and while the cities of the region were assessed for tribute in 425.²¹ Nevertheless, the comic text (and lack of context) is such that we can hardly build much on its contents (or upon absences from it), except to note that here again we have the idea of Athens being the single place to which a rich variety of goods (and mock-goods) are brought together from different places at all points of the compass.

5. Also from the 420s, Aristophanes' *Merchant-ships* looks like a very promising source of information about imports from the Black Sea region. Curiously, however, it does not usually find a place in discussions of the matter, perhaps in part because we have only fragments. The play was most probably staged first in 423 at the Lenaea: the ships of the title (*holkades*) formed the Chorus. We do not know much about the plot, but it seems that the Chorus of ships recounted (indeed, listed) the goods which they were carrying to Athens. Various grains and legumes are listed in one fragment (fr. 428 in Kassel – Austin, *PCG*), while another lists fish (fr. 430), not to mention birds (fr. 434 for a partridge-aviary) and wine (fr. 435). The Black Sea is not mentioned until we reach a fragment mentioning “Mossynoecian barley-cake boards” (fr. 431). The Mossynoeci lived in the south-east corner of the Black Sea, where, for example, Xenophon later encountered them. The play seems to have included mention of a voyage in the Black Sea, though it is completely unclear how important that may have been to the drama as a whole. For another fragment seems to mention a person from Colchian Phasis (fr. 443), on the east coast along from the Mossynoeci, and there was also mention of Euathlus, with an allusion to his supposed Scythianness, such as is found elsewhere in Aristophanes also (fr. 424). Taken together, Mossynoecian boards, a Phasian and Euathlus look like a Pontic trio. But there is not much sign of Pontic grain.

In principle, the Mossynoecian barley-cake boards could suggest grain, but there is no other indication of barley (raw or processed) brought to Athens from there. Conceivably, imported wood might be meant. Rather more likely is an explanation in terms of the particular feature of the Mossynoeci, their towers (their name literally means “tower-dwellers”), so that the point might be especially that the boards are piled high with cake. However, the easiest explanation would seem to be that the action (reported?) simply involved the Mossynoeci. Of course, the fragmentary nature of the play foils analysis, but we may at least note a certain Pontic theme in the extant fragments and the lack of anything clearly about Pontic grain for Athens. Accordingly, the play deserves inclusion in this debate, but does not really take us any further. For the extant fragments tell us quite a lot about cargoes, but hardly anything about their sources. Moreover, these are imagined cargoes which may very well echo the utopianism which pervades both Old Comedy and the ideology of “luxury for the many”.

However, it is to be noted that the food supply turns up as a theme of the *Clouds* too, performed later in the same year: Bdelycleon complains about the grain which politicians promise to bestow from Euboea. The scholiast explains that, according to Philochorus, the Athenians had launched a campaign in Euboea in 424/3. Jacoby suggests that Athenian failure at Delium had sparked unrest on Euboea which needed to be quelled. Given the importance of the island for Athens’ food supply, the concern with that issue in plays of 423 seems quite understandable. Whatever we make of Pontic grain-imports, there is no doubt at all that grain and other foodstuffs brought from Euboea really were of prime importance for the Athenian food supply.²² There is every indication that Athenian control of the sea encouraged a certain insouciance about the grain supply and even a self-congratulation about the attraction of traders and goods to Athenian markets. But Euboea was clearly special to Athens: any threat to the supply of food from there was a matter of enormous concern. Accordingly, the loss of Euboea in 411 was to place Athens’ food supply under significant further pressure. There must be a strong *a priori* case that from 411 the loss of Euboea, in disrupting Athens’ food supply, gave a new significance to grain from elsewhere, including the Black Sea.

6. Also in the 420s, or a fraction earlier, the Athenians passed a set of decrees which conferred privileges on the small city of Methone in the north-west corner of the Aegean. Of prime importance to the issue in hand is a decree passed in 426 in which the Athenians granted the Methonians the right annually to import up to a fixed maximum of grain from Byzantium, a shipload, as it seems (probably 3,000 measures), without loss, e.g. from piratical depredations.²³ The city of Aphytis, in nearby Chalcidice, seems to have enjoyed a similar privilege.²⁴ However, it is the larger implication of Athenian control of grain-supply that requires particular consideration. All the more so, because the Athenians call upon a group named the *Hellespontophylakes* to ensure the

free passage of the Methonian vessel. The identity of this group is admirably discussed elsewhere in this volume (Gabrielsen). Here it suffices to note that they are evidently Athenian, accountable to review of their period in public office. There is nothing in the decree strictly to suggest that they controlled the grain-market in Byzantium or any other accumulation of grain there, though they may have done so. Certainly, they controlled the passage of shipping, whether that may be regarded as a benign protection against pirates and the like (cf. Hdt. 6.26), a more sinister control of free movement or some element of both. At the same time, we cannot infer much from the requirement that the Methonian ship should advise the *Hellespontophylakes* of their activities: on a benign view of the implied control, these guards could not guarantee to protect the Methonian ship if they did not know it was coming.²⁵ Accordingly, with all that in view, it is easy enough to see why the privileges decreed for Methone have been taken to show Athenian control of the grain supply from the Black Sea. Insofar as the *Hellespontophylakes* exerted control over all traffic, that was evidently part of their function, though it is most unclear whether they ranged north from the Hellespont. After all, the Old Oligarch wrote at much this time of the advantages of the control of the sea. Athens could give or deny safe conduct through the straits: the privilege was of itself a major weapon in its imperial armoury.

But how much does the decree for Methone tell us about a regular and substantial supply of Pontic grain for Athens? Athenian control of the sea-way off Byzantium was important, clearly, but the decree does not mention grain going to Athens. Nor does it mention grain from the Black Sea. While it is reasonable enough to suppose that Pontic grain was on the market at Byzantium, what of that city's own grain? and Hellespontine grain more generally? Of course, the point of the decree was to award privileges to Methone, especially so as to ensure its support and viability against the mistrusted Perdiccas of Macedon. Tempting as it may be to make further inferences (e.g. about Athens' use of the *Hellespontophylakes* to orchestrate a regular and substantial supply of grain for itself, and from the Black Sea not the Hellespont), those inferences go far beyond the evidence of the decree itself. The most we can say is that the existence of this corps would have made passage safer for shipping (including vessels carrying grain) which was deemed friendly to Athenian interests. Presumably the crew of any vessel taking Pontic grain to Athens will have been pleased to see them. And (for the point deserves repeating) there is no real dispute that some vessels did that in the 5th century.²⁶

Yet there is a puzzle inherent in the privileges for Methone: why Byzantium? In principle there is nothing particularly surprising about an economic linkage between the north-west Aegean and the Hellespont, or even the Black Sea itself. The passage of the wine of Mende, for example, into the Pontus illustrates the scope for exchange between the two regions, while Acanthus' and (further east) Maronea's occasional importations of Pontic grain confirm that grain might well form part of that exchange.²⁷ Yet that does not really

explain the role of Byzantium: there were many other places, even in the Hellespontine region where the Methonians might have obtained their grain in the 420s, especially with Athenian support. Conceivably, Byzantium was an especially reliable source of grain, but that would hardly solve the problem. It remains to understand why Athens' privilege required of the Methonians a voyage as far as Byzantium, at the very end of the Hellespont. While access to grain was immensely important, the demands of the journey might seem to take something away from the privilege.²⁸ Accordingly, it is tempting to accept the suggestion²⁹ that the privilege was not so much an innovation as an Athenian statement of support and assistance in the maintenance of a relationship between Methone and Byzantium which had been established already, under circumstances beyond our knowledge. That in turn would account for the emphasis in the inscription upon the role of the *Hellespontophylakes* in ensuring the unobstructed passage of the Methonian carrier, apparently a single vessel able to carry up to the specified limit: the Athenians take no responsibility for any further shipping. The real possibility that this is confirmation, not innovation, serves further to illustrate just how bare is our understanding of these arrangements: they can hardly be used as evidence for regular and substantial Athenian imports from the Pontus at this time.

7. The city of Mytilene's preparations for revolt in 428/7 BC add further to our cluster of evidence in the 420s. The city had set about strengthening its defences and building ships, but it was also waiting for the arrival "of the things it needed from the Pontus, both archers and grain, and the goods it had sent for" (Thuc. 3.2). Not, it seems, from Byzantium. Nor are we told that the *Hellespontophylakes* might have obstructed the imports of this privileged Athenian ally.³⁰ The island of Lesbos had long-established trading links with the Black Sea region.³¹ And in the 4th century it had goods from the Bosporean Kingdom, courtesy of "Leucon and his sons".³² Preparing for revolt, the Mytilenians evidently expected that their purchases would not raise suspicion. In fact, Thucydides (in Athens for some of this time, at least) makes it very plain that Athens was very slow to accept and respond to the notion that Mytilene was set on revolt, even when it received word from its friends in and around the city: Athens did not want a new enemy on the back of the plague.³³ More difficult to explain is why Mytilene's archers, grain and other supplies from the Pontus were so slow to come: there is no indication that the *Hellespontophylakes* delayed them and no reason to suspect as much, as we have seen. We should perhaps reflect on our assumption that finding goods to bring out of the region and then shipping them was straightforward enough. At the same time, we must also remember that we do not know where in the Pontus Mytilene's mission had gone. And how committed to the cause were these (presumably) private merchants, perhaps not even Mytilenians themselves? Be that as it may, while this case shows the import of Pontic grain into the Aegean (at least under these special circumstances and without the

desired despatch). It tells us nothing about any regular and substantial imports from the Black Sea to Athens. Meanwhile, the case also serves to show that even Mytilene did not rely on grain imported from the Black Sea. For the city might hope to stage a successful revolt, but it could not expect soon to dislodge Athens' *Hellespontophylakes*. Evidently, under normal circumstances, especially without its obligations to Athens perhaps, Mytilene could manage without Pontic grain.

That is the sum of the evidence for Pontic grain to Athens in the 5th century BC, down to the final stage of the Peloponnesian War from about 413, when much changed. While grain sometimes went through or from the Hellespont to Greeks of the Mediterranean, there is scant sign of it going to the city about which we know the most and the city at issue here, *viz.* Athens. It went, we are told, to Aegina, the Peloponnese, the north-west Aegean (Methone, Aphytis) and Lesbos. Meanwhile, many other goods are found going to Athens, including some Paphlagonian nuts, but the grain comes, we are told, from Egypt and Euboea. Of course, full allowance must be made for the adventitiousness of the evidence we have, so that it would be rash indeed to suppose that no Pontic grain found its way to Athens: some surely did, perhaps even a lot. But the fact remains that there is no sign of it in the substantial spread of evidence, while we have a considerable amount of kindred evidence pointing in other directions, like Herodotus' grain-ships heading to Aegina and the Peloponnese.

It follows that if we know nothing of Pontic grain to Athens, we cannot make much of a case for a grain-route in the 5th century, along which that grain was supposedly conveyed: in those terms the notion is at best an unsupported hypothesis, however embedded it may have become in classic studies and in some minds still. However, the notion can be re-contextualised so that it is much more persuasive. First, rather than imagine a "grain-route" we should do better to think in terms of a route by which goods and people in general might travel to and fro between mainland Greece, in particular, and the Hellespont and often no doubt also the Pontus beyond. Not a grain-route then, but simply a route. Secondly, rather than imagine "the route" between these areas, we should surely envisage a far more varied set of journeys and routes. We may compare the 4th century trader who left Piraeus for Chalcidice, where he picked up wine and then took it to the Bosphorus, as well as the carriage of Pontic grain to the very coast of Attica and thence off to Chios.³⁴ After all, the great advantage of the Aegean was its numerous islands and ports: all kinds of routes offered themselves and merchants, we are told, were very responsive to the latest word about where best profits could be made.³⁵

From Decelea to the Bosphorans: the long 4th century

The establishment of a permanent Spartan presence at Decelea in 413, following Athens' catastrophic losses on Sicily, brought the Athenian grain-supply

under considerable pressure. Thucydides (7.28.1) notes in particular that the importation of grain and other goods from Euboea was obstructed and had to take a long marine route around the coast of Attica. The Athenian ports of the north coast of Attica acquired a new significance, whether as crossing-points from Euboea or simply staging-points for the coastal voyage, allowing potential transshipment by land, south and east of Decelea.

8. It seems more than coincidence that Euripides in ca. 412 BC staged his *Iphigenia among the Taurians*, which culminates in the foundation of the cult of Artemis Tauropolos at Halae Araphenides and takes Iphigenia also to Brauron. The central conceit of the play makes a connection between the Tauri of the Crimea and the north coast of Attica, especially coastal Halae and its crossing from southern Euboea. The idea that Euripides invented the tradition in this play, apparently inspired by the writings of Herodotus, does not bear even casual examination. For the details of the Taurian cult in the play are very different from those mentioned by Herodotus, as is much else, while the links we have observed between Athens and the Black Sea region (not least the expedition of Pericles) make the notion of Euripides' reliance on Herodotus' (different) description even more unlikely. Meanwhile, it is less clear whether Euripides invented the story, for the cult title Tauropolos could be explained as well (indeed, better) in other ways. And yet since the cult seems to have been active and important to Athens since about the beginning of the 5th century and since there is no good reason to think the Athenians ignorant of the Taurians (rather the contrary) from that date, it seems unwise to assert that Euripides invented the link. Indeed, it remains unclear also how such an invention could have been made without some kind of roots in the established myth behind the ritual at Halae.³⁶

However, the issue of invention is less important here than the fact of use. It is tempting to associate the myth of the play not only with the new prominence of Halae, but also with a new concern with the north coast of the Black Sea. In that context it is worth observing the implicit optimism of the play's conclusion. The Taurians show themselves well-ordered under a king with strong (albeit rather misguided) moral and religious scruples. Moreover, Euripides' Taurians seem to have no ill-will towards Greeks as such. Rather they have sacrificed Greeks through a misunderstanding of the desires of their goddess. Here is no sign that the practice remains once the goddess' image (with her priestess) has left.

Are we to take the play as speaking to the new concern at Athens with imports from the Black Sea (as well as universalizing issues, such as friendship and forms of redemption)? One of the terrors of the region (the Taurians) are shown to be manageable at least, and indeed things of the mythical past. It is true that the Taurians did not export grain, but their immediate neighbour, the city of Chersonesus, presided over lands whose extent at this period is unclear but which could certainly produce a good crop of grain when pre-

cipitation was favourable. For Herodotus at least, this was the land of the Taurians (4.99-100). Moreover, although we hear nothing of Athenian grain imports from Chersonesus, it is worth observing the prominence of men of Heraclea Pontica among the wealthy foreigners active in Athens in the late 5th century: the city of Chersonesus was the northern settlement of Heraclea, with which it seems to have maintained close ties. While we depend on inference alone, there is some reason to suspect that the grain of Chersonesus may have found its way to Athens after 413, if not before.³⁷

After all, various cities of the Black Sea coast were members of the Athenian Empire as a result of Pericles' Pontic expedition. Furthermore, the Athenians had sent settlers to Sinope and possibly further afield to Amisus also: the links between Sinope and the northern coast of the Black Sea were already well established in the 5th century BC, for inscriptions indicate Sinopian traders at Olbia and in the Bosporan Kingdom in particular.³⁸ Moreover, it is probable enough that Athens played some part in the emergence of the Spartocid dynasty in the Bosporan Kingdom in the 430s. Indeed, the Taurians were not only closely relevant to Chersonesus: they were also deeply engaged with the Bosporan Kingdom, centred immediately to the east of their lands.³⁹

9. Certainly a 5th century Spartocid king, Satyrus, was said (albeit some decades later) to have a history of generosity towards Athens, specifically by permitting the loading of cargoes of grain for export when other merchants were sent away with their ships empty because the Bosporus itself was suffering a shortage.⁴⁰ Satyrus clearly had subjects based in Athens at least by the late 390s BC, when Isocrates' *Trapeziticus* was delivered there. An indication of Satyrus' contacts is provided by the case of Mantitheus, a young cavalry-commander, who based his defence against charges of involvement with the Thirty on his claim to have been absent from Athens at the time in the Bosporus. The claim must have been plausible enough, encouraging the belief that Satyrus' favours for Athens occurred before the end of the Peloponnesian War.⁴¹ However, there is an unfortunate ambiguity in the statement of the *Trapeziticus*: we might have expected the argument to be that Satyrus showed favour to those bringing grain to Athens, but that is not the claim. Instead we are told that he showed favour to Athenian merchants, who of course should have brought grain to their city but may not have done so, while other merchants were denied the opportunity to ship grain to Athens or elsewhere, it is said. In other words, Satyrus' favour was bestowed on certain Athenians and only through them upon Athens as a city. However, be that as it may, the claims of Mantitheus and those in the so-called *Trapeziticus* are more than enough to show that the modern notion that Satyrus fell out with Athens is without foundation.⁴² Nor is there any reason to suppose that a significant development in that relationship occurred at the very end of his reign, as has also been suggested.⁴³ It was very much in the interests of Athens and the Bosporans alike to find a way of cooperating in the Black Sea region in the

aftermath of Pericles' expedition when, in addition to Athenian settlers on the south coast, states of the north coast (Olbia and Nymphaeum happen to be best-attested) are known to have belonged to the Athenian Empire.⁴⁴

10. It is striking that much of the war after 413 BC was fought out around the Hellespont. Of course, there were various reasons for that, but it can hardly have been irrelevant that control of these waters meant control of Pontic exchange with the Aegean, including Athens and (as we saw with Herodotus) also the Peloponnese amongst other states and regions. It was the final Spartan victory there, at Aegospotami opposite Lampsacus, which ensured Athenian defeat by destroying Athens' navy.

However, while Pontic grain seems to have become more important to Athens after 413 BC, it is very easy to overstate its significance: the loss of Pontic grain has been claimed as decisive in Athens' surrender in 404 and again in her capitulation to the Peace of Antalcidas in 387,⁴⁵ but that is rather more than may be said with any confidence. For the defeat at Aegospotami did not of itself deprive Athens of imported food. Neither did the Spartans' subsequent intervention at Chalcedon and Byzantium, where the Athenians had a garrison (*Hellespontophylakes?*), though it is easy to think as much.⁴⁶ In fact, Xenophon, who provides our narrative is explicit that the Spartans then came and blocked off access to Piraeus to exclude shipping.⁴⁷ The point is more than a quibble, for Xenophon's account serves to illustrate the fact that Athens could receive supplies from a range of sources. Of course, Spartan control of the Hellespont was a major blow because it forestalled Pontic supplies and of course Hellespontine supplies to boot, but it was the blockade of Piraeus in addition that was deadly to Athens' supply-lines.

11. It is in that context that we must understand the Spartan plan to seize the neck of the Hellespont at Byzantium and Chalcedon, said by Xenophon to have been hatched by King Agis at Decelea in 410 BC.⁴⁸ Even if we accept the historicity of Agis' reported rumination, the attempt was rather half-hearted. For the resourceful Clearchus was sent to do the job with minimal forces: he had only fifteen slow troop-ships, of which three were soon sunk and the rest put to flight by the nine Athenian vessels which guarded the passage of shipping through the straits (again, *Hellespontophylakes?*). The whole affair looks very much less than a determined effort to seize victory by closing off Pontic supply-lines to Athens. The point rather in Xenophon's account is to draw the contrast between the blockade by land, managed by Agis at Decelea, and the remaining access to Athens for supplies coming by sea. That allows Xenophon to link Clearchus' adventure to his narrative. The fact remained that even if the Hellespont had been closed off, supplies could still have come in from the rest of the Mediterranean world. In the event, the aftermath of Aegospotami showed that: only a blockade of Athens' ports could prevent imports.⁴⁹

12. So too in 387 BC, when the Spartan control of imports from Pontus (which were brought in for Sparta's allies) was certainly an important factor in putting pressure upon the Athenians, but the greater pressure came closer at hand, from depredations off Aegina.⁵⁰ Of course, both developments were aspects of the same fundamental difficulty for Athens: the city needed grain (and no doubt other goods), but did not have the control of the sea (even close to Attica) which was needed to satisfy that need. The arrangements which had worked so well through the 5th century had become much more difficult to sustain after 413 and again after 404 BC: that provides some context for the evident fractures also in the taxation-procedures by which the wealthy were made to finance and lead the fleet, which are observable from 411 onwards. It was not unattractive perhaps to support a fleet which ruled the waves, and doubtless gave all kinds of dubious financial benefits as well as prestige, but to be asked to support a fleet that was at risk and at times impotent was a much less appealing prospect.⁵¹ Meanwhile, both Spartan blockades (in 405/4 and 387/6) serve to illustrate not only the import of grain into the Aegean and on to Athens, amongst other places, but also – and the point is easily overlooked – the fact that Athens could look elsewhere also for grain, so that Athenian imports (and the revenues of the Piraeus more generally) could only be stopped by pressure applied close to Attica itself. It seems to follow that, while Athens would welcome Pontic grain, the city could manage (at least when it had to) without it. When Xenophon relates the causes of Athenian capitulation in 387 BC, he certainly mentions Antalcidas' control of Pontic grain, but only as part (albeit certainly a noteworthy part, together with depredations from Aegina) of a larger problem for Athens, which is the centre of his explanation, namely the fact that Antalcidas had amassed an enormous fleet which gave him control of the sea in general (Xen. *Hell.* 5.1.28-29).

13. Some fifty years later, after Chaeronea, the problem of ensuring grain supply was again grave for Athens: not only was the naval power of the city emasculated, but there followed years which seem to have entailed more widespread severe crisis than yet known.⁵² The Athenian response, however, is helpful for the modern student of the grain supply, for the Athenians adopted the habit of inscribing honours awarded to foreign traders who brought grain to them, thereby providing also some information on the sources of that grain. Arguably the earliest inscription of this sort records honours for a man of Salamis on Cyprus who had shipped grain to Athens from Egypt.⁵³

But where is Pontic grain in these records? In the Hellespont a man of Cyzicus (probably) helped with the shipment of grain, possibly from Asia.⁵⁴ In the Black Sea itself, we find Heracleote traders being honoured, perhaps having brought Pontic grain (from Chersonesus?).⁵⁵ Certainly traders from Sinope brought grain.⁵⁶ And from the Bosphorus itself we have one fragmentary text bestowing honours for services by leading Bosphorans (officials of the regime, perhaps, but hardly ruling Spartocids) rendered to those arriving in

the Bosphorus, that is, men presumably engaged usually in the export of grain from there to Athens.⁵⁷ The extant inscriptions are hardly a full record, nor a completely clear one on the provenance of goods, but they seem to show Pontic grain (possibly from various parts of the region) as one resource among others. It is salutary to recall Xenophon's sketch of grain-merchants, the nearest we have to a general account of the activities of such men:

You are saying, Ischomachus, that your father is really by nature a lover of farming no less than merchants are lovers of grain. For merchants on account of their excessive love for grain set sail for it to wherever they hear that most is available, crossing the Aegean, the Euxine and the Sicilian sea. Then, having taken as much as they can, they carry it across the sea, even placing it in the ship in which they themselves are sailing. And when they need money, they tend not to unload the grain where they happen to be, but take it and exchange it wherever they hear that it is especially valued and people think the most of it. Your father seems to be a lover of farming in that kind of way. (Xen. *Oec.* 20.27-28).

The completion of the work resists close dating, but may reasonably be placed a decade or so before the middle of the 4th century, if not a little earlier still, that is roughly at the supposed height of Athenian grain imports from the Black Sea.⁵⁸ The setting is Athenian and the dramatic date of the dialogue must be before the death of Socrates in 399 BC, though that is hardly significant. The remarks which Xenophon puts in Socrates' mouth on the behaviour of grain-merchants seem to be cast in such a way as to embrace their type in the Greek world in general, even if we suppose that Athens is to the forefront, and across a broad expanse of time. Be that as it may, the passage seems entirely to bear out the main lines of the discussion here. The Black Sea occurs as one area from which grain may be brought, but only one among several (plus Egypt and Cyrene, unless these are included with the Aegean here). Much of the point of the passage, in fact, seems to be that grain-merchants search about all over the Greek world, wherever the greatest supply (and therefore lowest buying-price) and greatest demand (and therefore highest selling-price) may take them. That is a strong reason to distrust any notion of fixed sources and outlets (whether the Pontus and Athens or any others), even though we may accept that certain places tended to function as one or the other. Xenophon's Socrates is quite explicit that the grain-merchant responds to what he happens to hear about supply and demand: his remarks only make sense in a world where grain-merchants were understood to vary their destinations for purchase and sale in response to reported market-conditions. And why should they not?

Further, it is worth noting that Xenophon is quite explicit that these are merchants engaged in trading *grain*. The specific identification of the cargo

demands attention: he could have made much the same observation in the more general terms of merchants and cargoes, or he could have chosen another cargo (slaves perhaps, or wine). Conceivably, one might suppose that he chose grain-merchants because grain was so important an item of trade, but that will hardly suffice. The reason for his choice is rather more coherent. All scholars seem now to accept that the supply of grain (and therefore also the demand for grain) was particularly variable from year to year and place to place as crops flourished or failed from city to city and region to region. Xenophon has chosen the grain-merchants specifically because they had to be especially aware of and responsive to reported glut and shortage: they followed the former to buy and the latter to sell. It was unwise for the grain-merchant always or even usually to expect to buy at the best price by going to the same source, or to sell at the best price by choosing the same regular market. In that sense, Xenophon's Socrates here illustrates very nicely the variability of grain-production in the Greek world, including in the Black Sea, a place to be sought out in some years but not in others, very much as Polybius later says.

Demosthenes and the Bosphorans

There is no need here to review all the evidence for Pontic grain reaching Athens in the 4th century. From the end of the Peloponnesian War or so, it is generally agreed that substantial amounts of grain came from the Black Sea region into the port of Piraeus.⁵⁹ Not that we can or should suppose that this was a steady flow: political and economic circumstances certainly disrupted the import of grain from the region from time to time. Accordingly, the issue for the 4th century is the quantity of supply, especially with regard to Bosphoran grain imported to Athens.

Central to that issue is the rhetoric of Demosthenes. His evidence bears on the despatch of grain to Athens by the Bosphoran kings, for whom we also have important epigraphic evidence. However, he is by no means a disinterested observer or reporter. First, it is to be stressed that he maintained a close personal link with the Bosphoran rulers. The jibes of his detractors indicate that he had inherited a significant family link with the Spartocid dynasty, established by his grandfather Gylon, who seems (after the manner of Mantitheus, perhaps) to have found a place of refuge in the Bosphoran Kingdom around the end of the Peloponnesian War. He had held a position of major responsibility, possibly by virtue of his military skills, and had taken a wife who may even have belonged to the Spartocid dynasty herself. Demosthenes' detractor Aeschines tried absurdly to characterise him as a Scythian, but he might reasonably have argued that Demosthenes was part Bosphoran. Furthermore, Demosthenes evidently deployed his Bosphoran links to the benefit of his political power and influence at Athens. Another detractor claimed that Demosthenes received payments from the Bosphorans in the form of shipped

grain: there may be some substance to the charge. In any event, Demosthenes' alignment with Bosporan interests was very strong and very clear. That provides an important context against which Demosthenes' statements with regard to the Bosporans must be understood.⁶⁰

Meanwhile, we must be clear that we have in this cluster of evidence not so much a Black Sea phenomenon as a Bosporan one. Demosthenes and the epigraphic evidence show the extended relationship between Athens and the Bosporans, not Athens and the Black Sea as a whole. The distinction may be of some importance in the interpretation of Demosthenes' rhetoric. At the same time, it is clear enough that the Bosporans sought to use their ability to export grain to further their own ends. For it is easy to forget that the Bosporans had an agenda of their own, which included not only diplomatic friendship and honours for their own sake, but also the material benefits to be gained by connections with other states. Athens, in particular, had naval experts and expertise which could be of immense use to the Bosporans, whose realm was located around sea and waterways. Rather as Gelon's Syracuse in the earlier 5th century, so the Bosporans too tried to use their grain to further imperial ends (Hdt. 7.158). When the Bosphorus itself suffered its own problems of supply, whether from drought or marauding neighbours, there remained even so the possibility of grain-export, for the rulers might well decide that the needs of their subjects might be subordinated to the larger imperial game in which grain-export was a major strategy. We have already noted the claim in Isocrates' *Trapeziticus* that the Bosporans allowed Athenians to export grain when it was short and other carriers were turned away.

15. It is clear from Athens' public honours for the Bosporans that they did supply Athens with grain and that they provided privileges for Athens' merchants.⁶¹ However, the notion of a regular and substantial supply of Pontic grain to Athens rests not on these honours, but on a section of Demosthenes' speech *Against Leptines*. That is a speech designed to stop a measure to increase the pool of men who could be required to provide liturgies, notably by revoking most exemptions bestowed in the past. Demosthenes seeks to make his case against the measure by bringing (one might say, dragging) in the Bosporans. His claim is that the new measure would sour relations with the Bosporans by making them liable for liturgies. That in turn, he argues, would violate the reciprocity demanded by Bosporan beneficence. Understandably, Demosthenes lost and the measure was enacted, with no discernible impact on the Bosporans. For of course there was never any intention or significant prospect that they would have been expected to provide liturgies in Athens in the first place. Nor did they, as far as we know, despite being honoured with citizenship.⁶² In short, Demosthenes' use of the Bosporans is outrageously misleading even by the slippery standards of Athenian rhetoric. Perhaps he was too eager to show himself (both to Athenians and to the Bosporans themselves) as the champion of Bosporan interests.

It is in the course of that argument that Demosthenes expands upon Athenian grain-imports from the Bosphorus. Of course, the fact that his whole case is fundamentally deceptive (and duly failed) does not in itself mean that his statements on the import of grain are similarly inaccurate. However, those statements are at least to be approached with caution. Clearly, Demosthenes imagined that his claims would be plausible and convincing for his Athenian audience, but the failure of his case must place that judgment in some doubt. The key portion of *Against Leptines* must be quoted:

For by birth Leucon is a foreigner, while by your enactment he is a citizen. But under this law he cannot have tax-exemption on either ground. And yet while other benefactors have proved useful at a particular time, he – if you examine the matter – will be shown to have done well by you continually, and in a matter where this city has an especial need. For you must realise that of all peoples we make the most use of imported grain. However, the grain coming in from the Pontus corresponds to all that reaches us from other markets. Understandably: for this occurs not only because that place has a very great deal of grain, but because Leucon, its master, has given tax-exemption to those bringing grain to Athens, and proclaims that those sailing to you load their ships first. For Leucon, having tax-exemption for himself and his sons, has given it to all of you. Consider how much this is. He takes one-thirtieth in tax from those exporting grain from him. However, about 400,000 measures from him are brought here. And one can see that from the record of the grain-wardens (*sitophylakes*).⁶³ So from the first 300,000 measures he gives you 10,000 free, and from the residual 100,000 about 30,000. Moreover, so far is he from depriving our city of this gift that, having established a market at Theodosia, which sailors say is as good as the market of the Bosphorus, he has given you tax-exemption there too. I shall not mention the many other benefactions I could list which this man – himself and his offspring – has conferred upon you. Only that the year before last, when all mankind was suffering from grain-shortage, he sent you not merely sufficient grain but so much that you had a surplus worth fifteen silver talents, which Callisthenes administered. (Dem. 20.30-33).

Demosthenes combines morality and utility. His purpose here is to show how Leucon deserves better treatment from Athens than would follow (as he claims) from the legislation of Leptines, and also to warn of the loss of Athenian privileges in the Bosphorus which would result from the loss of Bosporan privileges in Athens, a point which he proceeds to develop explicitly. However, if we overlook the specious claim that the Bosporans would certainly

be affected by Leptines' legislation, Demosthenes' figures look very impressive. Particularly so, because he suggests that the record of the *sitophylakes* bears them out.⁶⁴ Accordingly, they continue often to be taken as the basis for discussion not only of imports from the Bosphorus but of Athens' imports *in toto*.⁶⁵ However, closer consideration raises some serious questions.

Having made the most of Athens' use of imported grain,⁶⁶ Demosthenes seeks to give the impression that the figure of 400,000 measures is a recurrent annual amount supplied from the Bosporan Kingdom. However, he does not actually say so: his decision not to do so is an immediate concern.⁶⁷ Moreover, it is hard to accept that there was a recurrent amount. We have seen that the Bosphorus too could suffer grain-shortage: the very fact that loading first was a significant privilege indicates that the supply might well not meet the demand for export.⁶⁸ He wisely omits any mention of other Greek states which may have had similar favours from the Bosporans too.⁶⁹ At the same time, Demosthenes himself proceeds to suggest that a particularly large amount was brought to Athens two years earlier, and at a time of general shortage. How much was that? Is this large amount in fact the source of the figure of 400,000 measures which Demosthenes gives and claims to be recorded by the *sitophylakes*? Does that explain why he avoids the simple statement that this was a recurrent annual amount, as he prefers only to imply? Meanwhile, what is meant by the term "Pontus" here? It contains an inherent ambiguity which Demosthenes may be trying to exploit, since it can denote the Bosporan Kingdom alone or the Black Sea region as a whole. Clearly he indicates that the 400,000 comes from Leucon, who is claimed to be master of Pontus. And it seems to be Pontus that occurs in the record of the *sitophylakes*. But it is entirely possible that the Pontus of the official record is the Black Sea as a whole, not the Bosporan Kingdom. And while Leucon could indeed claim to be the dominant individual in the Black Sea as a whole, he was ruler only of a portion (albeit a significant portion) of the region. Of course, that would make Demosthenes' calculations of remitted tax entirely bogus, but that too is not impossible. In short, there is nothing in Demosthenes' specific statements inconsistent with a reality wherein two years earlier the Bosporan Kingdom (or perhaps the Black Sea region as a whole) had sent 400,000 measures of grain to Athens at a time when there was a general shortage. In that year, at least, the amount from the Bosphorus (or the region as a whole) amounted to as much as the other sources put together. That was likely enough in a time of general shortage in the Mediterranean. We may compare Cyrene, for which we have an inscription specifying the amounts of grain distributed to various Greek cities (including 100,000 measures to Athens) at a time of shortage in the 4th century, apparently ca. 330 BC.⁷⁰ As we saw with the events related in the *Trapeziticus*, the ability to bestow grain in time of shortage was still more effective than the provision of large quantities under more normal circumstances.

At the same time, there is quite a different sort of reason to have doubts about the suggestions of Demosthenes. The most plausible assessment of

potential Bosphoran grain-production gives every reason to doubt whether the region had the productive capacity regularly to export so much grain.⁷¹ It is worth observing that Strabo states that the Bosphoran Kingdom (together with the rest of the Crimea it seems) paid a regular tribute of 180,000 measures of grain (plus 200 silver talents) to Mithridates VI, that is less than half the amount which the Bosphorans are imagined to have supplied to Athens alone (Strab. 7.4.6). As ever, Strabo is affected by two very different kinds of knowledge. On the one hand, there is the knowledge of broadly contemporary informants, among which may be included his family, highly-placed in Mithridates' regime. On the other, a motley literary tradition (dominated by his beloved Homer), which offered information of very variable quality. Strabo can be expected to know about the goods and sums paid to Mithridates. However, his wider remarks about grain-production and the like are to be treated with substantial caution. That is important if we are to consider his report that "they say that Leucon sent from Theodosia to the Athenians 2,100,000 measures of grain" (Strab. 7.4.6). We do not know who "they" may be, but, although the figure is beguilingly precise, the key observation here must be that Strabo maintains a distance from the information: he does not claim to know that this was a fact. At the same time, the figure is not very helpful even if taken at face value, for (although translators and interpreters tend to imagine a one-off and even free despatch) Strabo does not explain the period or circumstances in which this grain was sent, if sent it was.

Meanwhile, it remains to explain why the Bosphoran rulers might have shown such remarkable generosity towards the Athenians. For if we were to accept Demosthenes' suggestions as he would wish, we should have to suppose that the Bosphorans in effect gave some 13,000 measures of grain to Athens each year for much of the 4th century. How might we account for such generosity? What did the Bosphorans get in return? Honours, certainly, whether in status and privileges or in statues, crowns and inscriptions visible at Athens and Piraeus, as well as in the Bosphorus itself and at Hieron on the threshold of the Black Sea (e.g. Dem. 20.35-36). Very possibly the distant Bosphorans valued their links with the historical heartland of Greek culture.⁷² In addition, there were more solid benefits too. The *Trapeziticus* shows the Bosphoran king able to exert significant political influence at Athens even towards the beginning of the 4th century, with evident control over a resident community of Bosphorans there (Isocr. 17.5). There was also a financial benefit, for Bosphoran grain was exported at a price. The Athenian connection gave the Bosphorans an important market, useful too in times of glut. In that context it may be that the Athenian grant of *ateleia* was especially valuable for the Bosphorans. Further, a decree of 346 BC honouring Leucon's sons,⁷³ almost a decade after the *Against Leptines*, enjoins the *proedroi* to see to it that monies owed to the Bosphorans are paid, presumably by the Athenian state. It would be good to know how those debts were incurred and whether grain was involved.⁷⁴ The same inscription also makes arrangements for the despatch of naval officers

to the Bosphorus, evidently skilled Athenians.⁷⁵ Leucon's sons had asked for them, we are told, presumably to strengthen and develop the Bosporean navy.⁷⁶ Taken together these were significant reciprocation for Bosporean favours, but, even so, we may still wonder whether the Bosporean rulers would have needed or desired to give a recurrent gift of 13,000 measures of grain, in addition (as Demosthenes would have us believe) to sporadic large bestowals of grain. After all, the one-off supply of grain (at a price or free?) to feed Athens and enable the Athenians to realise fifteen talents profit in addition to its needs, was surely enough in itself to win privileges (including *ateleia*) and bring influence and reciprocal benefits from Athens. And from time to time one-off benefactions might be repeated, even into the 3rd century.⁷⁷

Inscribed honours for the Spartocids show the Bosporean favours in a rather different light than do the suggestions of Demosthenes, although they do not flatly contradict what Demosthenes says. In 346 BC the sons of Leucon are praised "because they are good men and declare to the demos of the Athenians that they will take care of the despatch of grain as their father used to do and will supply with enthusiasm whatever the demos may require". The inscription proceeds to announce for Leucon's sons the privileges which the Athenians had previously bestowed upon their father Leucon and grandfather Satyrus,⁷⁸ since they had announced that the Athenians would retain the privileges awarded by Satyrus and Leucon. Tax-exemption was certainly among those privileges: the reciprocity is also explicit, as observed by Demosthenes. However, there is a significant difference. Of course, the language of honorary inscriptions has its own kind of rhetoric. Yet these honours lay a strong emphasis not on matters of taxation, but on market-access and Bosporean favour in the obtaining of goods and services for Athens. That is a useful corrective to Demosthenes, for it shows that his focus on tax-exemption may have suited the direction of his argument against Leptines' legislation on the matter, but is very misleading for our understanding of Athens' dealings with the Bosporeans over grain. In fact, we find that the *Trapeziticus* is nearer to the mark: the key benefit bestowed on Athens by the Bosporeans was not so much tax-benefits (reciprocal anyway) as the facilitation of the acquisition of goods (among which grain is singled out) and the promise of unspecified services. Meanwhile, although the absence may be explicable, it is to be noted that there is no indication in the inscribed honours of any specific or usual amount of grain. There is, however, some implication that the despatch of grain was regular enough.

Conclusions

Through the 5th century and probably earlier grain and other goods (slaves, hides and so on) reached Athens from the Black Sea region. Grain-merchants had a reputation for particular enterprise and flexibility, so that we need have no doubts on the matter, even without the occasional mention of Pontic grain

coming into the Aegean. From the 430s BC Pericles' Pontic expedition and the Peloponnesian War may have given Black Sea grain a larger significance, but there is no sign of Athens' regular and substantial use of it, let alone concern about it, until some slight indications late in the war. The Sicilian disaster (doubtless with its own consequences for grain from that region), the hostile garrisoning of Decelea and the loss of Euboea in 411 were a series of blows which presumably made Pontic grain more important to Athens than it had been earlier. However, even that is a large inference. For our sources do not say as much. And the Spartan failure to launch a significant attempt at control of the Hellespont in these years encourages the thought that grain from the north-east was not considered crucial to Athens even then.

Meanwhile, we should not suppose that all initiatives came from Athens. There is every sign that the Bosporan Kingdom played a substantial role in making its grain available in the Aegean, whether to Athens or to others: we may reasonably wonder how far the very initiative came from the Bosporans. At the same time, we can only guess at the level of Bosporan (or other Pontic) harvests in the closing decades of the 5th century: were these regions awash with grain or in shortage? Did production fluctuate violently, moderately or not at all? To know that would be of some help in assessing the development of grain-exports from the region to Athens, but we do not have such knowledge. It is clear enough, at least, that through the later 5th and 4th centuries, the Bosporan rulers exploited their ability to supply grain within the larger context of a well-founded and long-term relationship with Athens, besides their relationships with other states too (notably with Mytilene, with whom a treaty was renewed on the very same day as honours were decreed for the Bosporans in 346 BC).⁷⁹ The Bosporans had not only the fertile-but-dry lands of the eastern Crimea, but also the control of a range of other sub-regions, among which the Taman peninsula and lower reaches of the Kuban (Hypanis) were of particular importance to grain-production.⁸⁰ In principle, crop-failure in the Aegean was quite compatible with over-production in the Bosporan Kingdom (and vice versa, it should be noted), so that the Bosporans could have a special angle on Aegean markets. Accordingly, the 4th century supply of Pontic grain was driven not only by Athenian demand and desire, but also by the power-politics and economic advantages of the Bosporan rulers, who would continue to use their grain in foreign relations well into the Roman period, both within the Black Sea region and elsewhere.⁸¹

However, while all that is clear enough, there is reason to doubt the figures presented by Demosthenes. It would be rash to suppose that, from *Against Leptines* or from Strabon, we have much idea about any annual amount of grain usually shipped from the Bosporan Kingdom to Athens in the 4th century. Of course, that is not to doubt that a substantial amount of grain did in fact come to Athens from the Bosphorus at that time, or that (at least for more years than not in the middle of the 4th century) there was a regularity about this source of supply. But we must conclude that while there is no reason at

all to imagine regular and substantial Athenian grain-imports from the Black Sea in the 5th century, even in the 4th century the variation in grain-supply (and probably also in the direction of supply) between the Black Sea and Athens may well have been considerable. The main forces entailed in that supply were much more than Athens' need to feed its population: they were also issues of grain-price (for Athens, Bosphorans and merchants alike) and market-demand in the broadest sense (far beyond the needs of basic sustenance) as well as the political strategies of Athenians (not least Demosthenes himself) and the rulers of the Bosphorus, whose beneficence – as we have seen – was very far from disinterested.

Notes

- * This paper has benefited greatly from discussion with colleagues at the colloquium from which this volume arose. I am especially grateful to Alfonso Moreno for constructive and courteous disagreements and to Vincent Gabrielsen for enlightening me on nautical matters. I have also gained much from epigraphical conversations in Athens with David Blackman and Stephen Lambert. All responsibility is, as usual, my own.
- 1 Garnsey 1988; cf. 1985; Scheidel, 1998. For recent critique of Garnsey's case, see especially Keen 2000 and the literature he cites. Inferred statistics (or "statistics") are central to many discussions (including those of Garnsey; cf. Scheidel 1998 and the counter-case of Whitby 1998). The divergences are such that they allow scant confidence, in whole or in part. Meanwhile, claims about the importance of grain in the economy of the North Black Sea are becoming much more restricted and cautious in the specialist literature: Shcheglov 1987 and 1990; Gavriljuk 1999 and 2003.
- 2 Note Hdt. 6.26, where grain-cargoes are presumably included; Keen 2000, 66, though the notion of significant imported grain to Colchis (where the staple was millet, but wheat was also grown) is fantasy, while grain-trade on the west coast of the Black Sea was a complex affair, entailing exports as well as imports. Lead letters show us trade in action in the north-west Black Sea around the late sixth century BC, though it is quite unclear where the traders came from: they might be very local. See, conveniently, Wilson 1997-1998 and the literature he cites. On Archaic grain-trade, see Bravo 1983, who properly includes the Black Sea, especially the region of Olbia.
- 3 See, for example, Harris 2002, 75-76 for the recurrent impacts of changes in supply upon the fluctuating grain-price in fourth century Athens.
- 4 Bresson 2000, 133-134 (and the literature he cites) makes a good case that they and their associates may well have recorded the provenance of imported grain (or at least the provenance stated by the merchant), but his comparisons also show that in some states they seem not to have recorded provenance.
- 5 The idea of Sestos as the "meal-table" of the Piraeus need not be interpreted only in terms of Pontic grain, as de Ste. Croix 1972, 48 seems to suggest.
- 6 Garnsey 1988.
- 7 de Ste. Croix 1972, especially 46-49 has been especially influential. However, while insisting that the "sea-route" along which Black Sea grain travelled was "Athens' principal lifeline, and throughout most of the 5th and 4th centuries she made certain that the passage across the Aegean would be secure, by holding

- Imbros, Lemnos and Scyros" (p. 48), he properly notes the lack of fifth century evidence.
- 8 Stroud 1998 brings to bear further evidence on grain-production on these islands; cf. Rosivach 2000, 39, and Keen 2000, 67-68 (albeit supposing a grain-route). See further Moreno 2003, who stresses their production and suggests that the arrangement now known for these islands should be supposed also elsewhere, notably on Euboea. The attempt to bring in the "grain-route", even so, is untenable: see Moreno 2003, 97, n. 7 *contra* Harris 1999, who over-states the geographical dominance of these islands for shipping in the Aegean. On Lemnos, see also Scheidel 1998, 196. On the general underestimate of island economies, see Brun 1993.
 - 9 de Ste. Croix 1972, 49, ignoring conflicts in and around the Hellespont before 405. He must explain why the revolt of Byzantium in 440 does not appear in our sources as a matter of the utmost importance, as it should be on his view. And what of Athenian loss of control in the region between the Sicilian disaster and the Battle of Cyzicus in 410? On orators, see Keen 2000, ignoring comedy.
 - 10 Garnsey 1988, 129 rightly doubts that grain caused Pericles' expedition though this was not the last Athenian fleet in the Pontus: see Braund 2005b.
 - 11 Plut. *Per.* 37.4 (*FGrH* 328: Philochoros F119). Of course, the grain of Egypt was a large issue in Plutarch's day, but Black Sea grain too was topical enough. On the Psammetichus gift, see Garnsey 1988, 124-127 for excellent discussion.
 - 12 Figueira 1981, 43-46.
 - 13 *SEG* 36.718: this is Helice in the bay of Corinth. Cf. Kuznecov 2000, 108-109 on Corinthian pottery in the region. Note also *CIRB* 37, recording fourth-century Arcadian honours for Leucon.
 - 14 Kalinka 1913, especially 198 on various Pontic products.
 - 15 Therein of course lies much of the pain in Athenian measures against Megara. The Athenians' interest in stopping Sicilian grain export to the Peloponnese in 427 seems not to have entailed its diversion to Athens, confirming Athenian confidence in supply even at the time when much of Attica was being ravaged (Thuc. 3.115, though see Keen 2000, 65, arguing that any supply-source was worth controlling).
 - 16 Or perhaps Italy: Gilula 2000, 85, n. 14.
 - 17 See Gilula 2000, with good bibliography.
 - 18 On that ideology, Braund 1994.
 - 19 See n. 16.
 - 20 On *semidalis* in particular, see Aristophanes, fr. 428 in Kassel & Austin 2001 with commentary.
 - 21 Braund 2005b.
 - 22 *FGrH* 328: Philochoros F130; cf. *Ar. Vesp.* 715-718.
 - 23 *IG* I³, 61. For average cargo-capacity as 3,000 measures per ship and the various calculations that may follow, see Bresson 2000, 278, n. 66 and the debate he cites. The Methone decree (taken literally, at least) envisages a single vessel: the specified number of measures has only survived in part and could easily be 3,000. Methone was not a large community: such a quantity would be significant for it. On depredations of passing shipping by cities, see de Ste. Croix 1972, especially 47; cf. 314.
 - 24 *IG* I³, 58. There is no explicit statement of tax-exemption, as assumed by Pébarthe 2000, 62-63.
 - 25 *Pace* Pébarthe 2000, 63.

- 26 IG I³, 61-62, with Garnsey 1988, 120-123 on the range of issues entailed, including these cities' special situations in the early 420s.
- 27 [Dem.] 50.20-21 (Maronea); Dem. 36.36 (Acanthus, allegedly). For Mende's wine, see Isager and Hansen 1975, 35 on [Dem.] 35.10-13.
- 28 On the use of more local supply-sources, compare Bresson 2000, 279-281.
- 29 Gallant 1991, 181-182, who seems to envisage a pre-existing arrangement.
- 30 Garnsey 1988, 121 seems to imagine the Mytilenians being anxious about the intervention of the *Hellespontophylakes*; Thucydides gives no hint of that specific concern, though they were doubtless anxious to have the goods.
- 31 The Lesbian pottery that is found in the archaic Black Sea region is at least consonant with that assumption, if it does not quite demonstrate its truth. However, we should refrain from the notion of a "Mytilenian monopoly" in passage through the Hellespont at any date, *pace* Keen 2000, 64 and the works he cites. Also Bresson 2000, 106.
- 32 Tod, *GHI* II, 163 (not in Rhodes & Osborne (eds.) 2003): the fragmentary text is very problematic.
- 33 Thuc. 3.2: no word about the *Hellespontophylakes*, apparently: their absence from this whole account (and from the literary tradition in general) strongly encourages the view that their activities were of minimal importance from a viewpoint in Athens, though appointments and taxes must have been recorded.
- 34 [Dem.] 35.10-13 and 51-52 with Isager and Hansen 1975, 172.
- 35 See below on the grain-merchants of Xenophon's *Oeconomicus*.
- 36 On all these issues, see Wright 2004.
- 37 On Heraclea and Chersonesus, see Saprykin 1986.
- 38 Plut. *Per.* 20 with Braund 2005b.
- 39 Braund 2005b.
- 40 Isocr. 17.57. See below on his honours from Athens.
- 41 Lys. 16.4. Note that Lysias seems at least to have written a speech regarding the dispute of the *Trapeziticus*: Trevett 1990. Of course, despite the protestations in the *Trapeziticus*, Satyrus may well have found it wise to show generosity to others too. Meanwhile, we may wonder where the pro-Athenian Byzantines went, who fled from Lysander to the Pontus: conceivably they made the long journey to the Bosporan kingdom (Xen. *Hell.* 2.2.1).
- 42 See Braund 2003, for a fuller discussion of this and a later supposed breach with the Bosporan rulers.
- 43 Tuplin 1982, on which see n. 79 below.
- 44 From Olbia a fragment of the Standards (or Coinage) Decree found its way into Odessa Museum; it seems since to have been lost, IG I³, 1453 = Dubois no. 6 (I am very grateful to David Blackman for showing me his yet-to-be-published paper on the inscription). As for Nymphaeum, see Braund 2003. Note also the tradition that Delians settled at Chersonesus, perhaps after Athens cleared the island in 422. In general, Braund 2005b.
- 45 de Ste. Croix 1972, 48.
- 46 Xen. *Hell.* 2.1.21-22, 24 for the narrative.
- 47 Xen. *Hell.* 2.2.9.
- 48 Xen. *Hell.* 1.1.35-36, the strongest part of the revisionist case offered by Keen 2000, especially 66-67.
- 49 Cf. MacDowell 2004 on Epikerdes, as well as the Dem. 20 (*In Leptinem*), with note 62 below.

- 50 Xen. *Hell.* 5.1.28-29 is very clear on this, though modern scholars may take the Hellespont to have been the key issue despite that: e.g. Keen 2000, 67; cf. Garnsey 1988, 143, more circumspect.
- 51 On changes from 411 and especially in the fourth century, see Gabrielsen 1994, especially 173-183.
- 52 See Tracy 1995, 30-35 for the inscriptions.
- 53 Lambert 2002, especially 79 and the literature he cites. I am most grateful to the author for discussion of the matter.
- 54 *IG II²*, 401 (321/0 BC), but note that only the first two letters of his ethnic survive, while Asia is entirely restored. *IG II²*, 398a would also suit a Hellespontine: cf. Tracy 1995, 33, especially n. 16.
- 55 *IG II²*, 408 with Tracy 1995, 34, approving the unimpeachable restoration needed and listing another Heracleote.
- 56 *IG II²*, 409 with Tracy 1995, 34.
- 57 Lambert 2001; cf. Tracy 1995, 32. The date is consequently uncertain among 335, ca. 330-326, 323-320.
- 58 Pomeroy 1994, 1-8.
- 59 See, for example, de Ste. Croix 1972, 48-49 for a selection of passages.
- 60 Braund 2003.
- 61 *IG II²*, 212 (Rhodes & Osborne (eds.) 2003, no. 64, with much valuable discussion of the gold crowns involved); cf. 653 with Heinen 1996.
- 62 See further MacDowell 2004, alive to Demosthenes' slippery rhetoric.
- 63 On their role, see Rosivach 2000, 46. Disturbingly, this passage is the key evidence for their records.
- 64 Whether the records would have shown much has been disputed: see above, note 4.
- 65 Notably e.g. Rosivach 2000, 39-40 (for "southern Russia", read "southern Russia and Ukraine").
- 66 Rosivach (2000, 37-38) stresses also the continued importance of Attica's own grain-production for Athens' supply.
- 67 Garnsey 1988, 97. Cf. Kuznecov 2000, 111, collecting views.
- 68 Kuznecov (2000) makes the observation as part of a larger case for seeing the limits of Bosporan production even in the 4th century.
- 69 Mytilene had grain-privileges, perhaps late in Leucon's reign and around the time of Demosthenes' speech: Tod, *GHI* II, 163, problematically fragmentary. Note also the much-debated Arcadian honours for Leucon, attested on a stele from Panticapaeum: Tod, *GHI* II, 115 (*CIRB* 37), with substantial commentary: these may be explained in terms of Peloponnesian desire for grain (cf. Hdt. 7.147), but may also result from a shared concern between the Arcadians and the ruler of Panticapaeum for the cult of Pan.
- 70 On the various problems of date and content, see Rhodes & Osborne (eds.) 2003, no. 96 and the literature cited, including Brun 1993b, who stresses that, for all the language of beneficence here, this was the sale of grain, possibly at below the current market-price.
- 71 Kuznecov 2000, especially 114-116.
- 72 Rosivach 2000, 41-42 suspects that the Bosporans were led to favour Athens principally by non-economic considerations. Note the attitude to Athens claimed (albeit self-servingly) by the speaker of *Trapeziticus* in its opening sections.

- 73 Two of the three sons involved are given prior and greater honours, indicating their seniority: Heinen 1996, 362.
- 74 Vélissaropoulos (1980, 179-183) thinks so, while revealing Demosthenes' sleight-of-tongue with talk of *sunthekai* between Athens and the Bosporans.
- 75 Rhodes & Osborne (eds.) 2003, 324.
- 76 I am grateful to Vincent Gabrielsen for advice on this matter.
- 77 See Heinen 1996 on *IG II²*, 653.
- 78 His omission earlier cannot be pressed, especially in the light of the reciprocal relationship which he is here said to have enjoyed and also of the evidence of the *Trapeziticus*. The great influence he is said to have had upon the Athenian state in Isocrates' speech undermines the arguments of Tuplin 1982, whose case rests on the uncertain ground of the speech's silence about a stele of Satyrus.
- 79 Tod, *GHI II*, 168 (not in Rhodes & Osborne (eds.) 2003) observes that the two measures were passed on the same day: whether the two were taken to be connected in any way remains obscure, but the fact of Leucon's privileges for both does nothing to discourage the thought.
- 80 See especially Vinogradov 1996.
- 81 Braund 2005a.

Athenian Wheat-Tsars: Black Sea Grain and Elite Culture

Alfonso Moreno

We may begin a study of the Athenian grain supply from the Black Sea (and the Bosporan Kingdom in particular) from the well-known passage in Demosthenes' speech *Against Leptines* (Dem. 20.29-35), where the orator speaks of approximately 400,000 *medimnoi* (equivalent to more than 13,000 metric tons) of grain (*sitos*) coming to Athens from Bosporos.¹ At stake in the case is the *ateleia*, or exemption, of Leukon, the king of Bosporos and (simultaneously) honorary citizen of democratic Athens, from the performance of public services for his adoptive city. Demosthenes invites his audience to reflect:

While of our other benefactors each has made himself useful to us on one occasion, Leukon will be found on reflection to be a perpetual benefactor, and that in a matter especially vital to our city. For you are aware that we consume more imported corn than any other nation. Now the corn that comes to our ports from the Black Sea is equal to the whole amount from all other places of export. And this is not surprising; for not only is that district most productive of corn, but also Leukon, who controls the trade, has granted exemption from dues to merchants conveying corn to Athens, and he proclaims that those bound for your port shall have priority of lading. For Leukon, enjoying exemption for himself and his children, has granted exemption to every one of you. See what this amounts to. He exacts a toll of one-thirtieth from exporters of corn from his country. Now from the Bosporos there come to Athens about four hundred thousand *medimnoi*. (Dem. 20.30-32, Loeb translation).

The context of the passage (not to mention its verbal syntax) make absolutely clear that constant, *per annum* quantities are indicated. Moreover, according to Demosthenes, the amounts of imported grain were verifiable from public accounts (20.32); and in a previous year of shortage, Leukon had sent an amount of grain in addition to the usual amount (20.33). Demosthenes' annual figure therefore cannot reasonably be dismissed on *a priori* grounds, as some scholarship has done.²

In addition, Strabo supplies evidence for the amounts exported from a single Bosporan port, stating that Leukon sent 2,100,000 *medimnoi* from Theodosia to Athens (Strab. 7.4.6). This equals about 260,000 *medimnoi per annum* in the eight years between the opening of the port shortly before 355 BC and the death of Leukon in 349/8 BC.³

These figures find independent corroboration in two other sources: 1) We find that in 340 BC the Macedonian king Philip II captured at Hieron either 180 or 230 ships bound for Athens with grain (the figures come respectively from Theopompos and Philochoros (*FGrH* 115 F292 and 328 F162, respectively). Calculating from the average capacity of a merchant ship, approximately 3,000 *medimnoi*, we find that this convoy may well have consisted of at least 540,000 *medimnoi*.⁴ 2) If Mytilene was importing more than 100,000 *medimnoi* yearly from the Bosporan Kingdom c. 350 BC,⁵ it is perfectly credible that Athens imported as much as Demosthenes claims.

But it is my aim in this paper to avoid crude exercises in quantification, and instead look at a broader set of evidence that will *qualify* the economic context of these mutually-corroborating and independent figures. We should ideally seek to describe the cultural parameters within which this grain trade operated. This requires us to pay special attention to the period from the last third of the 5th century to the end of the 4th century BC, for which the surviving evidence is relatively abundant. For this period, Athenian relations with the ruling house of the Spartokidai are not only especially amenable to a cultural analysis based on archaeological and textual evidence, but also especially relevant to a study of the Athenian grain supply. For example, the decree of the politician Androtion honoring Spartokos and Pairisades in 346 BC (*IG* II², 212), and including a relief of the kings (Fig. 1), establishes the grain supply from Bosporos as a reciprocal relationship between Athens on the one hand, and the Spartokid dynasty on the other.⁶ The *ateleia* and loading priority received by merchants who took grain to Athens was granted not by Bosporan law, but through Spartokid edicts (*kerugmata*).⁷ Of course, a powerful oligarchy shared some power at Bosporos with the Spartokidai, but it is unmistakable that the latter held an absolute control of foreign affairs, particularly pertaining to the grain trade.⁸ Demosthenes was strictly accurate when referring to Leukon in 355 BC as *kurios* of Bosporan grain (Dem. 20.31). The dozen or so rural settlements which have been excavated during the last fifteen years on the European Bosporos, near or on the coast of the Sea of Azov, and which appear to be large farmsteads dating from the fourth to the mid-third centuries, have been convincingly suggested as the bases for the intensive exploitation of Bosporan royal domains.⁹

Any analysis of Spartokid power must start from Bosporan epigraphy, which portrays each Spartokid from Leukon onwards as embodying the dual powers of an *archon* (towards his Greek subjects) and a *basileus* (towards his barbarian subjects).¹⁰ Michael I. Rostovtzeff long ago recognized this *Doppelnatur*, or *Zweiseitigkeit*, as a unique Bosporan feature that encapsulates the

Fig. 1. The decree of Androtion (IG II², 212) (photo by A. Moreno).



complex influences and compromises at the core of Spartokid identity and politics.¹¹ But how and why was this dual system instituted? Until recently, we could only speculate that, although Leukon (who ruled from 389/8 to 349/8 BC) is the first Bosphoran *archon* / *basileus* attested, the titles might have originated with his predecessors. However, the massive architrave of the Ionic *propylaia* recently discovered at Nymphaion bears identical dedicatory inscriptions, in which Leukon appears as “*archon* of Bosphoros and Theodosia and of all Sindike, and of the Toretoi and Dandarioi and Psestoi”.¹² In representing Spartokid power as an archonship over both Greeks *and* non-Greeks, this text suggests that it was later, during Leukon’s forty-year reign, that the title *basileus* was introduced, and thus (at least at this formal level) that the Bosphoran state began its transformation into a kingdom.¹³ However, we must remember that titles are only manifestations of deeper realities: Spartokid kingship had to develop conceptually before it could be expressed as a name. The Nymphaion inscription only shows that it was not the initial (nor, for that matter, an automatic) choice. As a *terminus post quem* it presents us with the problem of explaining how the institution of kingship began at Bosphoros, probably during (and certainly not long before) the first quarter of the 4th century BC.



Fig. 2. The dromos of the Tsar's Kurgan near Kerch (photo by A. Moreno).

Michael I. Rostovtzeff reflects common opinion in thinking that the Spartokidai simply took over the types of government customary for each part of their subjects, civic magistracy for Greeks, kingship for barbarians.¹⁴ This at first seems highly plausible, especially in the context of political maneuvers like the marriage alliance between Satyros (who ruled from 433/2 to 389/8 BC) and Hekataios, the king of the Sindoi.¹⁵ In this hypothesis, kingship was transferred to the Spartokidai from their various non-Greek subjects, in a process that, in light of the new inscription, would have gradually culminated with Leukon's transformation from *archon* to *basileus*.

However, archaeological evidence from aristocratic burials in the northern Black Sea region casts doubt on this idea. After the first quarter of the 4th century BC, we find that distinctive and well-studied typologies of local burial, like the Sindo-Maiotian brick and wood graves, come to an abrupt end, to be replaced by the stone-chambered kurgans typical of 4th century Pantikapaion.¹⁶ The custom and technique of burial in stone-chambered kurgans not only around Gorgippia, but also across the Sea of Azov in the region of the Lower Don, almost certainly emanated from Pantikapaion, and can be traced to the architects who worked there and created a hybrid form of burial, a Scythian mound re-designed according to the possibilities of Greek

monumental architecture (Fig. 2).¹⁷ This observation alone forces us to look more closely at the possibility that Spartokid kingship was itself an inspired hybrid of Scythian and Greek ideas of royalty.

The origin of these ideas is to be viewed in the context of direct Atheno-Bosporan interaction. Our sources allow us to trace this back no further than the end of the Peloponnesian War, when Satyros successfully seized Nymphaion from Athenian control (Aeschin. 3.171-172).¹⁸ Instead of treachery by Gylon, the Athenian in control of the place (and grandfather of the politician Demosthenes), the likeliest cause of Nymphaion's loss is simply that Athens at this time could no longer hold the place. Nor would it have wished to, for there would have been little sense in fighting a faraway strongman who, if appeased, could instead promise reliable friendship and supplies, including grain, to a city whose Aegean Empire was in clear and present danger of collapsing.¹⁹ From his fort at Dekeleia, the Spartan king Agis could observe the results of this policy of appeasement: "ships carrying grain that were constantly sailing into Peiraeus", but which could be cut off at Kalchedon and Byzantium (Xen. *Hell.* 1.1.35, Penguin translation, is the earliest direct reference to Athenian imports of grain from the Black Sea). In taking Nymphaion, Satyros had only to observe the contemporary needs and capabilities of Athens. The praise later publicly lavished on him by the grateful Athenians (Isoc. 17; *IG* II², 212) shows the true nature of Gylon's so-called betrayal: it was more like a personal exchange of gifts marking the creation of elite *xeniai*. We hear that Gylon himself received from Satyros a Scythian princess as his bride, and was given Kepoi, on the Taman peninsula, as a place to retire. When the Athenian defeat at Aigospotamoi interrupted supplies, Satyros continued his personal generosity by providing refuge for dislocated Athenian aristocrats, like the Mantitheos who in the late 390's BC cites Satyros as his alibi during the rule of the Thirty (Lys. 16.4), as well as for high-ranking pro-Athenian partisans, like the Byzantine associates of Alkibiades (Xen. *Hell.* 2.2.1).

Athenian elite movements to Bosporan safe harbors were paralleled by Bosporan movements to Athens: in the 390's BC, the Bosporan noble Sopaïos gave his son money and two grain ships and sent him off on a *voyage de formation*. The trip was both educational and commercial in nature, as the young man says: "my father loaded two ships with grain, gave me money, and sent me off on a trading expedition and at the same time to see the world" (Isoc. 17.4, Loeb translation). Significantly, the son went directly to the school of Isokrates and began to move rapidly in Athenian elite circles. The influential politician Agyrrhios of Kollytos (now much better known as the proponent of the Athenian Grain-Tax Law of 374/3 BC) appears as a witness in the lawsuit against the Bosporan's former friend, the powerful banker Pasion (Isoc. 17.31-32).²⁰

Voyages like that of the son of Sopaïos seem to have become frequent during the rule of Leukon, and by the 350's BC Isokrates could refer to a series of his other, no doubt similarly aristocratic, students from Pontos (Isoc.

15.224), who were educated in his school side by side with men like the politician Androtion, the general Timotheos, and the historian Ephoros. Many of these leading Athenians established intensely personal, hereditary connections with the Spartokidai. Just as it was Gylon's grandson Demosthenes who defended Leukon's *ateleia* in 355 BC, and, according to Dinarchos (Din. 1.43), set up public statutes of the Spartokidai in exchange for personal, yearly gifts of grain; it was Isokrates' pupil Androtion who moved honors for Leukon's sons in 346 BC (*IG II²*, 212); and it was Agyrrhios' great-grandson, also named Agyrrhios, who did the same for Spartokos III in 285/4 (*IG II²*, 653).²¹ Among Isokrates' students, Timotheos pursued an active policy of Athenian expansion and control in the Hellespont (as Isokrates boasted: *Isoc.* 15.112), and Ephoros started, as we shall see, an entire tradition of historiography on Scythia. This important Atheno-Bosporan elite network was forged during the rule of Satyros and Leukon.

If we now inquire about the intellectual pursuits and aesthetic tastes of this group, we find 4th century Athenian *paideia* as the principal source for the ideology of Bosporan kingship. Here the visual medium serves an evidentiary role parallel to that of public rhetoric, letting us see how its propagators and consumers wished to represent themselves. The objects relevant to this analysis consist of luxury manufactures of gold, electrum, and silver from the 4th century kurgans of Bosporos and Scythia, mostly made by Greek craftsmen who themselves lived, or worked, in the Black Sea *poleis*, especially Pantikapaion.²² These masterpieces reveal a first-hand understanding not only of Scythian objects and shapes, but also of the aesthetic principles of Scytho-Siberian art and their translational potential into Greek terms.²³ Crucially, they were created under the immediate demand and according to the tastes of their consumers, and at Pantikapaion the nearest and most influential of these clients were obviously not Scythians from the steppe, but members of a traveled and urbanized Bosporan aristocracy.

It is therefore remarkable that so many scholars, including Rostovtzeff, have described samples of this art as ethnologically realistic "illustrations to Herodotos", or as "precious documents for reconstructing the life and religion of the Scythians".²⁴ Indeed it would be highly surprising if the Bosporan aristocrats who commissioned this art had much desire for scientific accuracy, or if the craftsmen of Pantikapaion went to any lengths to understand and realistically depict things like the lore of the Great Goddess, the ceremonies of holy communion, or other intricacies so appealing to modern scholarship. Instead, we must place these objects in their appropriate cultural context, remembering that they were made for the same class of Bosporans present in Athens in the circle of Isokrates. Taste matches education, as we see when we juxtapose the iconography of these objects with the views expressed by a member of this circle, Ephoros of Kyme (as preserved by Strabon):²⁵

Ephoros, in the fourth book of his *History*, the book entitled *Europe* (for he made the circuit of Europe as far as the Scythians), says towards the end that the modes of life both of the Sauromatai and of the other Scythians are unlike, for, whereas some are so cruel that they even eat human beings, others abstain from eating any living creature whatever. Now the other writers, he says, tell only about their savagery, because they know that the terrible and the marvelous are startling, but one should tell the opposite facts too and make them patterns of conduct (*paradeigmata*), and he himself, therefore, will tell only about those who follow "most just" habits, for there are some of the Scythian nomads who feed only on mare's milk, and excel all men in justice; and they are mentioned by the poets: by Homer, when he says that Zeus espies the land "of the Galaktophagoi and Abioi, men most just", and by Hesiod, in what is called his *Circuit of the Earth*, when he says that Phineos is carried by the Storm Winds "to the land of the Galaktophagoi, who have their dwellings in wagons". Then Ephoros reasons out the cause as follows: since they are frugal in their ways of living and not money-getters, they not only are orderly towards one another, because they have all things in common, their wives, children, the whole of their kin and everything, but also remain invincible and unconquered by outsiders, because they have nothing to be enslaved for. And he cites Choerilos also, who, in his *The Crossing of the Pontoon-Bridge* which was constructed by Darios, says, "the sheep-tending Sakai, of Scythian stock; but they used to live in wheat-producing Asia; however, they were colonists from the Nomads, law-abiding people". And when he calls Anakharsis "wise", Ephoros says that he belongs to this race, and that he was considered also one of Seven Wise Men because of his perfect self-control and good sense. And he goes on to tell the inventions of Anacharsis: the bellows, the two-fluked anchor and the potter's wheel. These things I tell knowing full well that Ephoros himself does not tell the whole truth about everything; and particularly in his account of Anacharsis (for how could the wheel be his invention, if Homer, who lived in earlier times, knew of it? "As when a potter has wheel that fits in his hands", [Hom. *Il.* 18.600] and so on); but as for those other things, I tell them because I wish to make my point clear that there actually was a common report, which was believed by the men of both early and of later times, that a part of the nomads, I mean those who had settled the farthest away from the rest of mankind, were "Galaktophagoi", "Abioi", and "most just", and that they were not an invention of Homer. (Ephoros, *ap.* Strab. 7.3.9 = *FGrH* 70 F42, Loeb translation).

If we look at the 4th century luxury metalwork surviving from Bosphoros to the Dnieper, it is plain to see in them the Scythians of Homer and Ephoros: the justest and wisest, drinkers of mare's milk, frugal, nomadic, wagon-dwelling, strangers to money-making, communists, invincible warriors, lords of wheat and livestock, the people of Anacharsis. But this is Homer rather than Herodotos, poetry and art instead of ethnography, the fantasies of 4th century Athenian rhetoricians instead of a *historia* of the steppe. Here, therefore, we have the palpable evidence of the enormous intellectual influence that aristocratic Athens – and in particular a closed circle of men with conspicuous connections to the city's grain supply – had on the identity and self-representation of the Bosphoran elite.

Rostovtzeff, carefully reading this passage of Ephoros, recognized it as a fantasy typical of the Isokratean school: "Ganz augenscheinlich ist auch, abgesehen von dem Inhalt, daß eine von diesem Gesichtspunkte aus verfaßte Beschreibung keine wirkliche, sondern nur eine künstliche sein muß... Die Skythen des Ephoros sind dementsprechend nichts Reales. Sie sind ein rhetorisches, moralisierendes *paradeigma* im Sinne des Isokrates, dessen treuer Schüler Ephoros war".²⁶

But, in studying the iconography, Rostovtzeff indulged in an unfortunate inconsistency:

The scenes of social life are slightly idealized, the types also. Here we can trace the Stoic tendency of Ephoros, who desired to substitute, for the real Scythians, Scythians idealized according to Stoic theory. But the idealization does not go very far. One can see that the Scythians themselves, under Greek influence, wished the Greek artists to provide them with objects reproducing Scythian scenes: scenes from their religious, from their economic and social life. Precious documents for reconstructing the life and religion of the Scythians...²⁷

However, Rostovtzeff must be credited for the enormously valuable task of tracing the commanding influence of the Ephoran Scythian on the literary traditions of antiquity, from the 4th century BC to the age of Strabo and Lucian. These works provide enough quotations to set almost as captions for the surviving 4th century metalwork. The Stoics, for example, liked to see their wise Anacharsis as the antithesis not only of sea travel and trade (ironically, since it was probably his fabled voyage (Hdt. 4.76-77) that inspired the 4th century *voyages de formation* of the son of Sopaïos and others), but also of the gymnasium, music, wine, and pleasure (see Lucian, *Anach.*; Hercher, *Epistolog. Graec.* 102-105). In the same way, the depictions on Black Sea metalwork strikingly lack any trace of pleasurable engagements: we are a world away from the Herodotean Scythians inhaling cannabis and "delighted, shouting for joy" (Hdt. 4.75).²⁸



Fig. 3. Silver gilt vessel from Solocha. Courtesy of the State Hermitage, St Petersburg.

On the other hand, the iconography of the silver gilt vessel from Solocha (Fig. 3) and on the pectoral from Tolstaja Mogila (Fig. 4) strikingly match the boast of the Ephoran, communist Anacharsis: “We hold all our land in common. We take whatever it gives us willingly, and let go whatever it hides. We save our cattle from savage beasts, and receive milk and cheese in return” (Hercher, *Epistolog. Graec.* 104-105).²⁹

The contention of Lucian’s *Toxaris* that “Scythians think that there is nothing greater than friendship” (Lucian, *Tox.* 7), backed by his five different adventure vignettes of Scythian friendship, closely matches the iconography on the electrum vase from Kul’-Oba (Fig. 5).³⁰ The same exercise of comparison can be continued indefinitely.

Strabo gives us only hints of the well-deserved thrashing that these moralizing *paradeigmata* of Scythia later received at the hands of Eratosthenes of Kyrene and Apollodoros of Athens.³¹ He himself thought that Homer, and after him Aischylos, had been right to praise people who abstained “from living a life of contracts and money-making” and, *Platonikôs* (an illuminating adverbial choice!), possessed everything in common, except sword and drinking-cup. In doing this, Strabo reveals both the gamut of elite prejudices carried by the students of Isokrates as they manufactured their ideal Scythians, as well as how sharply these ideas contrasted with reality:



Fig. 4. Pectoral from Tolstaja Mogila. Courtesy of the Museum of Historical Treasures of Ukraine, Kiev.

And yet our mode of life has spread its change for the worse to almost all peoples, introducing amongst them luxury and sensual pleasures and, to satisfy these vices, base artifices that lead to innumerable acts of greed. So then, much wickedness of this sort has fallen on the barbarian peoples also, on the nomads as well as the rest; for as the result of taking up a seafaring life they not only have become morally worse, indulging in the practice of piracy and of slaying strangers, but also, because of their intercourse with many peoples, have partaken of the luxury and the peddling habits of those peoples. But though these things seem to conduce strongly to gentleness of manner, they corrupt morals and introduce cunning instead of the straightforwardness which I just now mentioned. (Strab. 7.3.7, Loeb translation).

One wonders how much the Scythian elite itself, avid consumer of Bosporan art that its kurgan inventories show it to have been, did not wish to re-invent itself according to the Ephoran model, and in doing so became an example of life imitating art. This is, in fact, what the Bosporan aristocracy seems to have done increasingly. We know of Satyros II leading his troops in “the Scythian custom” in 310 BC (Diod. 20.22.3). A similar detail is attached to his brother Eumelos (except that here it is *death* that imitates art):

As he was returning home from Sindike and was hurrying for a sacrifice, riding to his palace in a four-horse carriage which had four wheels and a canopy, it happened that the horses were frightened and ran away with him. Since the driver was unable to manage the reins, the king, fearing lest he be carried to the ravines, tried to jump out; but his sword caught in the wheel, and

he was dragged along by the motion of the carriage and died on the spot. (Diod. 20.25.4, Loeb translation).

And, of course, the ultimate example of art in death: the reinvention of the Scythian kurgan, and its combination, as Ephoros would have done for his “justest and wisest” Scythians, with the *heroa* and corbelled tombs of Homeric princes (Fig. 2).³²



Fig. 5. Electrum vessel from Kul' Oba. Courtesy of the State Hermitage, St Petersburg.



Fig. 6. Comb from Solocha. Courtesy of the State Hermitage, St Petersburg.

Transforming a state by educating its leaders, the *paideia* of Isokrates triumphed in Bosphoros. This monarchic rule of the Spartokidai would, in Isokrates' view, have assimilated them to the gods themselves:

The Carthaginians and the Lakedaimonians, who are the best governed peoples of the world, are ruled by oligarchies at home, yet, when they take the field, they are ruled by kings... And, if there is need to speak also of things old in story, it is said that

even the gods are ruled by Zeus as king. (Isoc. 3.24-26, Loeb translation).

Even better, every Bosporan aristocrat had access to the ennobling “history” of a Homeric Scythia and its *paradeigmata*, and could in turn become, like Isokrates’ ideal monarch, a *paradeigma* for common people.³³ In the words of Isokrates, writing as the Cyprian king Nikokles:

I was not, of course, unaware that those kings also are highly thought of by the multitude who are just in their dealings with their citizens, even though they provide themselves with pleasures from outside their households; but I desired both to put myself as far above such suspicions as possible and at the same time to set up my conduct as a pattern (*paradeigma*) to my people, knowing that the multitude are likely to spend their lives in practices in which they see their rulers occupied. (Isoc. 3.37, Loeb translation).

The same yearning to recover the moral *paradeigmata* of history drove the student of Isokrates, whether he was a Bosporan commissioning work from a Pantikapaian artist, or an Androtion writing his *Atthis*, to look back to the traditions of his ancestors, whether more or less imagined or studied: “for if you are mindful of the past you will plan better for the future” (Isoc. 3.35, Loeb translation).³⁴ And on Androtion’s decree displayed in Peiraieus, the sons of Leukon, each looking the part of a wise Anacharsis, “the justest of men”, kings of Bosporos, were *paradeigmata* themselves, great benefactors, Isokratean “models for others to copy” (Fig. 1).³⁵

One of the great ironies of the ideology of Bosporan kingship is that it developed in Athens, alongside and within an ideology that was democratic, or at least professed to be so; another is that it developed a moralizing, philosophic myth of aristocratic detachment from money-making and applied it to the very class of men who organized and controlled an overseas trading empire. Equally ironic is how those who idealized Scythia were, on the one hand, living contradictions of democratic ideals, yet could present themselves in Athens as democratic benefactors (with their official title as *basileis* punctiliously excluded, though clearly implied, as in *IG II²*, 212). It did not matter either that Plato could use the same Scythian *paradeigma* that appears on the Solocha comb (Fig. 6) to disprove the democratic tenet (a *topos* of the Athenian funeral oration)³⁶ that courage was the monopoly of hoplites (Pl. *Lach.* 191a-191c). Nor was there inconsistency (or sincere populism) involved when the “democratic” sons of Leukon were praised by the son of one of the four hundred men who had overthrown the Athenian democracy in 411 BC. Athenian rhetoric produced the brilliant sleights of hand that made these little contradictions disappear, replacing them with pleasing fictions: the transfor-

mation of kings and oligarchs into democrats, and of economic profit into the antithesis of the aristocratic ethos.

Conclusion

I would like to end with the provocative suggestion that the most important factor enabling Athenian grain imports from the Black Sea was the transformation, in the early 4th century BC, of a local tyranny at Pantikapaion into a powerful Graeco-Scythian monarchy. That transformation took place in the context of a specific intellectual and social nexus comprising a Bosporan and Athenian elite. These men were instrumental in the process of ideologizing, and thus of perpetuating, a royal economy that could generate large and stable surpluses of grain, and thus supply large quantities annually to Athens. Two things only were needed to ensure the permanence of this system: the good-will of the Bosporan kings, and Athenian control of the route between Pantikapaion and Peiraeus. As long as Athenian political leadership could provide this, Athens would be fed and a few of its politicians gain enormous power. If correct, we may have here a very different way of understanding this trade: an oligarchic grain supply sustaining a professedly democratic state.

Notes

- 1 The key to converting a *medimnos* of wheat or barley into its approximate modern weight equivalent appears in lines 21-25 of Agora I 7557 (see Rhodes & Osborne (eds.) 2003 26): "The buyer will weigh out the wheat at a weight of a talent for five *hekteis*, and the barley at a weight of a talent per *medimnos*". Thus: 1 *medimnos* of wheat = 32.96 kg; 1 *medimnos* of barley = 27.47 kg. Before this discovery, the weight of ancient grains was normally simply taken as roughly equivalent to modern varieties, which now turn out to be considerably (c. 30 %) heavier (e.g. 1 *medimnos* of modern wheat and barley at 40.54 kg and 33.77 kg, respectively). The nutritional value of the *medimnos* is thus significantly less than previously thought.
- 2 I refer in particular to Garnsey 1988, 97, in his influential and minimalist attempt to downplay the scale of Athenian grain imports. Garnsey approvingly quotes Gomme's reckless supposition that "Demosthenes was a politician, and so was probably not speaking the truth" (in Gomme 1933a, 32). Cf. Braund in this volume.
- 3 Demosthenes speaks in 355 BC as if the facilities at Theodosia have only recently been opened (Dem. 20.33). Kocevalov 1932, 321-323, first made this division of Strabon's figure, but he gets 420,000-350,000 *medimnoi* per year, taking 355/4-349/8 as the end-points.
- 4 See Casson 1971, 183-199 on ship capacities.
- 5 Tod, *GHI* II, 163.
- 6 Rostovtzeff 1993, 73.
- 7 Rostovtzeff 1993, 73. On these *kerugmata*, see Braund 2003, 204-205.
- 8 Burstein 1993, 83, contrasts the evidence from Isokrates with that from Demosthenes and the decree of Androtion to argue that "a major reorganization of the Bosporan grain trade... must have occurred sometime between the late 390's and 355 BC...",

its principal feature being the centralization of control into Spartokid hands at the expense of other Bosporan aristocrats. He points specifically to the conclusion of Isokrates' speech (17.57), where Sopaïos appears to have a capacity equal to that of Satyros to grant favors to Athens, including export rights. This would follow the general trend outlined in this paper, but the relative importance of Bosporan aristocrats in relations with Athens throughout the fourth century is unmistakable (e.g. in the notable position of Sosis and Theodosios in *IG II²*, 212), and probably more stable than Burstein assumes.

- 9 See Maslennikov 1998, 42-72.
- 10 See W. Dittenberger's note in *Syll.³* 211: "*Graecorum archontes, barbarorum reges passim vocabantur Spartocidae saeculo quarto*". The earliest instances are: *CIRB* 6 (= *Syll.³*, 211), 7 (much restored), 8, 1037, and 1038.
- 11 Rostovtzeff 1993, 70-71.
- 12 Sokolova 2001, 369 (the preliminary announcement of the find). The *editio princeps* of this text has not yet appeared, nor have I been able to see the actual stone, but the published photograph allows the reading. I am deeply thankful to Dr. Sokolova for showing me other photographs of the text and discussing it with me on various occasions in Crimea and in St. Petersburg.
- 13 A similar (albeit much restored) text on a long-known altar might illustrate the introduction of kingship at a stage following that of the Nymphaion inscription, since it shows Leukon as archon of the Sindoi and basileus over Toretoi, Dandarioi and Pessoi: *CIRB* 6a (Škorpil's restoration, see Sokolova 2001, 371).
- 14 Rostovtzeff 1993, 79.
- 15 See Polyainos, *Strat.* 8.55. On the identification of this Satyros as Satyros I (as opposed to his four later Spartocid namesakes), and the overall historicity of this story, see Rostovtzeff 1993, 118-120.
- 16 Alekseeva 1999, 330; Vinogradov 2001, 85-87.
- 17 Rostovtzeff 1922, 76-79; Minns 1913, 194. There has never been serious doubt that Greek architects created the full typology of stone-chambered kurgans of Bosporos, which also appears simultaneously and abundantly in Thrace. A comparison of the typically Greek rusticated masonry from the Tsarskii Kurgan, with that from contemporary Bosporan monumental buildings makes this fact quite obvious, and the stones of a kurgan in Sveshtari, Thrace, still bear the Greek numeral signs that aided workmen in the assembly of the building: see Tsetskhladze 1998b, 53.
- 18 This does not overlook the most discussed literary source for Athenian presence in the Black Sea in the fifth century, namely the famous expedition of Perikles to Sinope (*Plut. Per.* 20.1-2), usually dated to the early 430's. The passage from Plutarch has received countless interpretations, from scholars who have Perikles continue to the north coast and secure a source of grain for Athens, to others who go as far as to deny the historicity of whole account (see Tsetskhladze, who is among the more skeptical scholars, for a full reference to the debate: 1997a, 461-466). I simply accept the account as it stands, not only because Plutarch and his source obviously had reasons to avoid linking the expedition with the north coast (a temptation they, too, would surely have felt), but also because the reported results of the mission match the well-attested Athenian policies of establishing cleruchies and controlling maritime routes. See Hind 1994a, 492, setting the date of Nymphaion's seizure as ca. 405 BC.

- 19 Braund 2003, 198-202, is helpful in presenting other arguments against straightforward readings of Gylon's "treachery".
- 20 On Agyrrhios and the Grain-Tax Law, see Stroud 1998 with Moreno 2003.
- 21 See Davies 1971, 279-281 and Traill 1994, 125-126.
- 22 Boardman 1994, 196-210; Rostovtzeff 1993, 86; Vinogradov, in Rostovtzeff 1993, 142; Treister 1999a, 79 (see also 1999b, 117-121, for sculptors); Gajdukevič 1971, 132.
- 23 Boardman 1994, 196-210.
- 24 Rostovtzeff 1922, 104-112. See also Rostovtzeff 1993, 38-39, 86; Jacobson 1995, 52-64; Rolle 1989, 54-131; Raevskii, in Rostovtzeff 1993, 61, n. 31 has references to the wide range of recent studies on this art as representing actual Scythian customs, cult, etc.
- 25 Barber 1935, 12, dates the composition of the fourth book of Ephoros' *History* to ca. 356.
- 26 Rostovtzeff 1931, 81-82.
- 27 Rostovtzeff 1922, 104.
- 28 Rostovtzeff 1993, 87.
- 29 See Rostovtzeff 1993, 87.
- 30 See Jaeger 1945, 96: "Like Theognis in his plan for rearing the young nobleman, Isokrates attaches the greatest importance to the right kind of friendships".
- 31 Rostovtzeff 1993, 87.
- 32 On the study and re-use of Mycenaean tombs for heroic cult in the Classical period, see Boardman 2002, 52-67. Compare Minns 1913, 194, with Rostovtzeff 1922, 78.
- 33 Jaeger 1945, 100: "He makes the ideal monarch the representative of his people's culture, the visible embodiment of the character of his state".
- 34 See Jaeger 1945, 118.
- 35 See Jaeger 1945, 100.
- 36 See Loraux 1986, 212.

Timber as a Trade Resource of the Black Sea

Lise Hannestad

Introduction

In his book *Trees and Timber in the Ancient Mediterranean World*, Russel Meiggs¹ calls the timber industry the most silent and least recorded of the major ancient industries, and its sources are indeed few when compared for instance to the trade in grain, wine or oil. Despite the relative dearth of sources, I shall attempt in this paper to give an overview of the timber resources of the southern and northern Black Sea coasts² and the trade in this commodity. I shall concentrate on trade in timber for the two perhaps most important purposes, shipbuilding and house building, giving only a few references to other purposes, such as trade in luxury goods involving the use of special and often rare types of wood.³ After all, in the introduction to his book on trees (*HN* 12.2.4-5), Pliny, after enumerating some of the most important fruits that man obtains from trees, such as olive and wine, states that “there are a thousand other uses for those trees which are indispensable for carrying on life. We use a tree to furrow the seas and to bring the lands nearer together, we use a tree for building houses”.⁴

In his famous account of how the Rhodians managed to acquire large-scale international aid in the wake of the disastrous earthquake in 227/226 BC, Polybios (5.88.1-2) enumerates in detail the splendid gifts of the major Hellenistic kings Ptolemaios III Euergetes, Antigonos III Doson and Seleukos II Kallinikos, along with those of the Sicilian tyrants Hieron II and his son Gelon. There are three types of goods, which seem to be of the utmost importance: money, grain and timber. Thus, among his many other donations, Ptolemaios contributed timber for the construction of 10 quinqueremes, 10 triremes, and 40,000 cubits of squared deal planking; Antigonos contributed 10,000 pieces of timber ranging from eight to 16 cubits in length to be used as rafters, 5,000 beams seven cubits long, 1,000 talents of pitch, and 1,000 amphorae of raw pitch; and Seleukos contributed 10 quinqueremes fully equipped, 10,000 cubits of timber, and “1,000 talents of hair and resin”.⁵

Polybios goes on to mention that similar gifts were given by Prusias of Bithynia and Mithridates II of Pontos as well as by other Asiatic dynasts of the time – Lysanias, Olympichos and Limnaios – but without the specifications that are attached to the gifts of the major kings. However, it must be a fair assumption that timber and other forest products such as pitch and resin

also formed a major part of the gifts, especially those of Prusias and Mithridates, who both ruled over extensive territories along the southern Black Sea coast, famous for its forests not only in Antiquity but also much later.⁶ The large forests along the coast of northern Asia Minor are in fact among the few forest regions of the Greco-Roman world which have “survived” (or possibly recovered) relatively intact into modern times. Thus, according to the French travellers Perrot and Guillaume in their *Exploration Archéologique de la Galatie et de la Bithynie* from 1862, the area went under the Turkish name of Ağaçdeniz – “Sea of Trees”.⁷

The forests on the southern shores of the Black Sea

Quite many literary sources convey that the potential and the value of the forests on the southern shores of the Black Sea were well known in Greek and Roman times.⁸ The predominant trees were – and are – oak, plane, beech, fir and mountain pine, of which especially the last two were important commodities in the ancient world. One of the earliest accounts – spiced with all the freshness of personal experience – is Xenophon’s passage on the fine harbour at Kalpe Limen (*An.* 6.4.4), situated on a bit of land jutting out into the sea halfway between Byzantion and Herakleia. Xenophon calculates that the site was large enough to settle 10,000 people. “At the very foot of the rock”, he continues, “there is a harbour whose beach faces towards the west, and an abundantly flowing spring of fresh water close to the shore of the sea and commanded by the headland. There is a great deal of timber of various sorts, but an especially large amount of fine ship timber, on the very shore of the sea”.⁹

In his description of the wood resources of the site, Xenophon concentrates on the fact that there was fine timber for shipbuilding – an important resource, indeed, in the situation in which Xenophon and his men found themselves, but also something that was always of importance to most Greeks. The wealth of the forests and the extensive use of wood and timber by the local population are also evident from Xenophon’s account of how timber was used not only for houses, but also for defensive purposes such as palisades and wooden towers around villages (e.g., *An.* 5.2.5 and 5.2.24). Evidence of a related use of timber by a Greek city in the area can be deduced from Polybios (4.56) when he describes the help which Rhodes provided to Sinope during the latter’s war with Mithridates II of Pontos:

[...] apart from large quantities of wine and three thousand pieces of gold, the Rhodians sent already prepared equipment including four catapults with their artillery men, prepared hair, prepared bow string, and one thousand complete suits of armour, whereas the Sinopeans themselves prepared for the war by blocking up the approaches from the sea by means of stakes and stockades [...]

This clearly indicates the easy access to suitable timber. It is often assumed, also by Meiggs, that the difficult terrain and the lack of roads prevented the overexploitation of the Ağaçdeniz ("Sea of Trees") in Antiquity, in medieval times, and also in more recent times. However, in his description of the area of the Halys River, Strabo (12.3.12) notes that "both Sinopitis and all the mountainous country extending as far as Bithynia and lying above the aforesaid seaboard have shipbuilding timber that is excellent and easy to transport". Strabo also informs us (12.2.10) that "In Kappadokia is produced the *miltos* called "Sinopean", the best in the world, although the Iberian rivals it. It was named "Sinopean" because the merchants were wont to bring it down to Sinope before the traffic of the Ephesians had penetrated as far as the people of Kappadokia".¹⁰ Thus navigable rivers, or rivers suitable for timber rafting, could certainly provide easy means of transport down to the Black Sea coast. In his passionate speech to his fellow citizens of Prusa upon their reconciliation with their neighbours in Apameia, Dion Chrysostomos (40.30) uses the following argument: "For not only do the Apameians need our timber and many other things as well, but we ourselves have no other harbour through which to import goods or to export our own domestic products".¹¹ Timber brought from the inland to the sea is also the topic of Pliny's well-known letter to Trajan (*Ep.* 10.41), in which he tells of a sizeable lake (present-day Lake Sapanca), not far from Nikomedeia, across which marble, agricultural products, wood, and timber for building were easily and cheaply brought by boat as far as the main road; from here everything had to be taken on to the sea by cart, with great difficulty and at great expense.¹² He suggests that a canal should be dug to connect the lake with the sea. The project came to nothing.¹³

The forests of the northern coast

Our written sources on forests and timber resources along the northern coast of the Black Sea are much fewer. From Theophrastos (*HP* 4.5.3) we learn about the resources around Pantikapaion:

There are many well grown fig-trees and pomegranates, which are given shelter; pears and apples are abundant in a great variety of forms and are excellent. These are spring-fruited trees, except that they may fruit later here than elsewhere. Of the wild trees there are oak, elm, manna-ash and the like (while there is no fir, or pine, or indeed any resinous tree). But the wood of such trees in this country is damp and much inferior to that of Sinope, so that they do not use it much except for outdoor purposes.¹⁴

Regarding forests east of the Tanais River, Strabo (11.2.12) tells of the wealth of timber on the coast of the Achaei, the Zygi and the Heniochi, peoples who are reported to have earned their living mainly from piracy, using slender,

light and narrow boats, each holding only about twenty-five people – the boats called *kamarai* by the Greeks. Since there were no good anchorages, they carried the boats up on the shores into the forests where they lived and tilled the poor soil (see Gabrielsen in this volume).

According to Strabo (11.2.15) the whole of Caucasus was rich in forests and timber of all kinds, particularly those used in shipbuilding, and the rivers made it possible to transport the timber to the coast (11.2.17). So when Mithridates VI Eupator conquered the territory it was from here that he received “most aid in the equipment of his naval forces” (Strab. 11.2.18).

Palaeobotanical analyses from the Crimea

Palaeobotanical studies involving pollen analysis or analyses of preserved wood have brought a wealth of new information on the topic of this paper. Therefore, we now have a large amount of data on the vegetation of, for instance, the Crimea in Antiquity. Relevant for this paper is of course in particular the issue of woods and forests and their extent, as well as whether they could provide the timber needed for shipbuilding and house building (besides for the many purposes of daily life, including firewood).

From 1970 onwards, studies of pollen from the cultural layers at Čajka (see Fig. 1) have been carried out. The picture that emerges is the following: in the earlier period, i.e. the 3rd and 2nd centuries BC, a combination of steppe (grasses) and forest (pine, oak, maple, elm, hazel, hornbeam, juniper, and sumach) is characteristic, whereas from the 2nd century onwards pollen from grass and shrub vegetation, which is characteristic of the steppe zone, is predominant, although pollen from trees, including new species (elm, willow, birch, spruce), continues to appear (Levkovskaja 1970; Maslov & Filin 1976, 176; Ščeglov 1978, 25). Pollen from maple, oak, elm, walnut, alder, willow, poplar, juniper, arbutus and chestnut is prevalent, and since pollen from these species is not easily transported over long distances by the wind, they must have grown in the immediate surroundings of the site. Pine is also common, but since its pollen is easily carried over long distances by the wind it could actually come from areas several hundred kilometres away, particularly when the wind is strong, which is indeed very common in the Crimea. However, at Čajka, manufactured wood made of pine has been found, suggesting that pine actually grew in the vicinity of the site. Levkovskaja concludes that what is now steppe zone and the nearby foothills of the Crimean Mountains presented a different picture in Antiquity, when much of it was presumably covered with trees and woods. According to Levkovskaja, the fossil pine pollen differs morphologically from that of Crimean pine (*Pinus Pallasiana* Lamb.) and pine of Stankewicz (*Pinus Stankewiczi* Tom.), which grow in Crimea nowadays. In terms of size it resembles most closely the pollen of common pine (*Pinus silvestris* L.) and that of the Crimean mountainous pine (*Pinus hamata* D. Sosn.).¹⁵

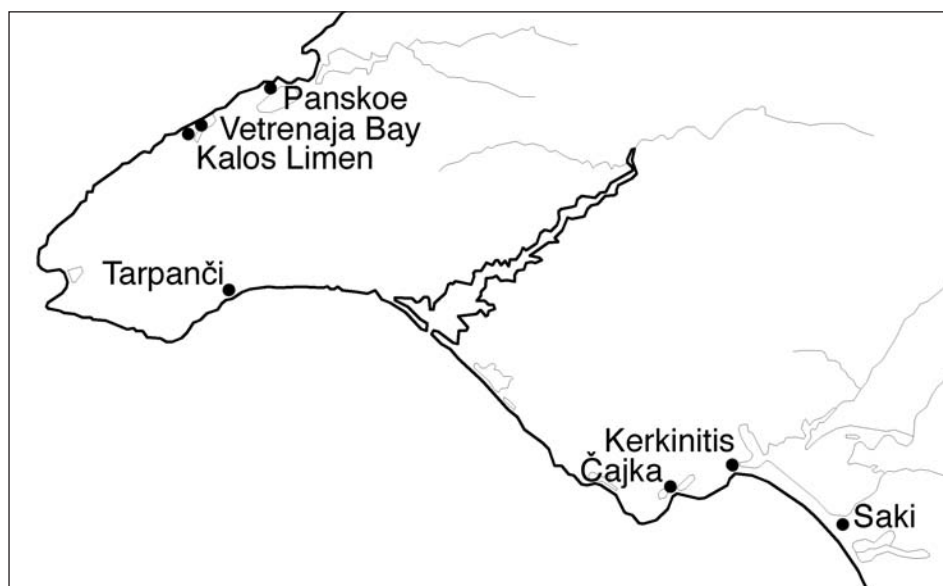


Fig. 1. Western Crimea.

According to Maslov and Filin (1976, 177), oak with thick tree rings dominated in the 3rd and 2nd centuries BC, comprising up to 70 % of the total number of fragments identified. Later the number of oaks decreased, and they had smaller tree rings, whereas there is an increase in the number of elm, alder and willow.¹⁶ Maslov has more recently¹⁷ published two accumulations from Čajka, both dating from the 3rd century BC and containing (1) oak and chestnut, and (2) willow, oak and hazel. It should be noted that oak and hazel are good for coppicing and thus for a lot of daily purposes including firewood.

From U6 at Panskoe I (Fig. 1) charred fragments of beech and oak are preserved in the filling of the well in the middle of the courtyard below the water level. These are probably the remains of a wooden well curb, since they are preserved well enough to show that they derive from beams or boards. On the site charred remains of juniper have also been found. From Saki Lake cores of silt sediment have revealed pollen of oak, beech, pine, hornbeam, chestnut, hazel and alder.¹⁸ The excavations at Vetrenaja Bay in the *chora* of Kalos Limen (see Fig. 1), dating from the period from the late fourth to the early 3rd century BC, revealed remains of ceiling constructions of juniper (55 %), oak (30 %), and elm (15 %). And from the settlement at Tarpanči (Fig. 1) the samples of wood from a layer dating from the 2nd century BC indicate that all the specimens are from branches, apart from a single specimen deriving from an artefact made of pine, clearly proving that the following trees were growing in the immediate vicinity of the settlement: elm (47.17 %), poplar (18.87 %), oak (16.98 %), ash (11.32 %), and maple (5.66 %).¹⁹



Fig. 2. The region around Olbia.

Sokol'skij mentions that in the late 18th century extensive forests are recorded in southwestern Crimea from near Balaklava Bay, Inkerman, the Northern Bay (north of Chersonesos), and along the lower stream of the Kača and Alma Rivers.²⁰ Karl Hablitz (a scientist and traveller of the late 18th and early 19th century) mentions oak, beech, hornbeam, maple, linden, pine, alder, yew, juniper, ash and walnut as growing in the vicinity of Chersonesos. The same species, and many others, are also mentioned as common in southwestern Crimea by P.S. Pallas (a German scientist in Russian service in the early 19th century). Recently Cordova's and Lehman's studies (2003) of the palaeobotany of the *chora* of Chersonesos have revealed that the first Greek settlers on the Herakleian Peninsula encountered a relatively dense wooded landscape including clusters of oak and hornbeam and in the wetter areas elm, hazel and alder.

Today the border between the steppe and the forest steppe is the Bulganak River as well as the species of the forest steppe are oak, hornbeam and maple. The disappearance of the forest steppe further north than the Bulganak River may be due to human activity or to climatic changes. Red juniper – which is very hardy, drought resistant and able to withstand cold – and Crimean pine grow today north and east of Bachčisaraj.²¹ Fir grows willingly in the high mountains of the Crimea – being a typical mountain tree, as Pliny puts it: “fir, which is in great demand for building ships, grows high up in the mountains, as though it had run away from the sea” (HN 16.42).

In his book on woodcraft in the Greek colonies of the northern Black Sea area, Sokol'skij²² lists a number of analyses of wooden remains found at sites in the vicinity of Olbia in the years 1962-1965: elm and poplar at Košarskoe Gorodišče (Fig. 2), from layers of the 4th and 3rd centuries BC; oak, linden, wych elm, poplar, and ash at Koblevo (Fig. 2) from the same period; pine at

Viktorovka II (2nd-4th century AD) (Fig. 2); ash, linden, oak, alder and pine at Tiligulo-Berezanka from the same period; and elm and ash at Ranževoe (3rd-4th centuries AD). From Olbia itself Sokolskij's material mainly derives from wooden sarcophagi and includes juniper (dating from the 6th century BC), oak and pine, cypress (from the Hellenistic period), a piece of willow from a wooden artefact dating from the Hellenistic period, and a box comb dating from the 2nd-3rd century AD. The box and cypress specimens are most probably imported pieces not found in the local surroundings (see below).

Pollen analyses from the peat bog at Kardašinskij in the Lower Dnieper region (i.e. the northern part of the ancient Hylaia) show that in the middle and late Holocene period, oak, elm, alder, birch, hornbeam, beech, maple, hazel nut, linden and pine grew here. The presence of pine is also suggested by finds of cones in a bog.²³

Wooden remains from sites in the territory of Pantikapaion derive from the following sites, according to Sokol'skij.²⁴ Michajlovka (rural site on the Kerch Peninsula (see Fig. 3); 1st-3rd centuries AD): pine 30 samples; poplar 23; elm 10; ash 10; oak 8; willow 4; apple 1; plane (?) 2. Semenovka (rural site on the Kerch Peninsula (see Fig. 3); 5th century BC - 3rd century AD): oak 21 samples; pine 15; elm 26; juniper 21; poplar 4; birch 1; cypress 1; others 2. Batarejka II (rural site on the Taman Peninsula (see Fig. 3); destroyed in the early 2nd century AD): oak 14 samples; pine 23; elm 22; poplar 7; birch 1; spruce 3; ash 3; maple 10. Batarejka I (rural site on the Taman Peninsula (see Fig. 3); 2nd-4th centuries AD): oak 14 samples; pine 1; elm 1; spruce 3; ash 7; maple 3. Il'ičevka (site on the Taman Peninsula; 4th-5th centuries AD): oak 31 samples; pine 18; elm 3; poplar 4; ash 3; beech 3; maple 1.

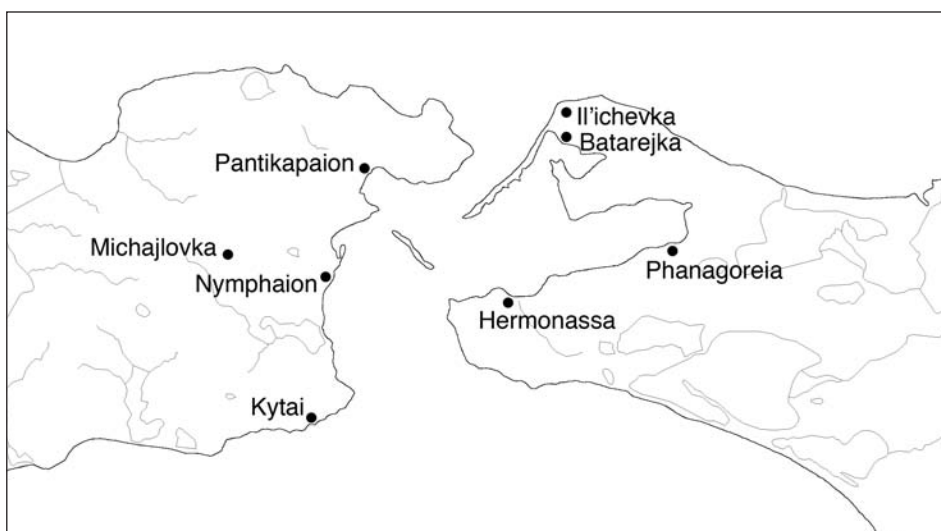


Fig. 3. The Kimmerian Bosphoros.

Sokol'skij concludes that the Bosporan demand for timber from leaf-bearing trees can have been covered from local sources, the Kerch and Taman Peninsulae, whereas the most important source of fir and pine was probably the coastal zone of Caucasus, from Anapa down to Suchumi, as well as the southern coast of Crimea.²⁵

Ship building

Timber is the very basis of sea trade, and it is too tempting to quote Plato's famous passage from *Laws* 705c: in his ideal city, there should be "no good fir or mountain pine, not much cypress, and little coastal pine which shipwrights have to use for the interior parts of merchant vessels, because this would encourage trade, the great corrupter".²⁶

Fir and pine are also central to Theophrastos's comments on trees suitable for shipbuilding. Thus in *HP* 5.7.1-3, he writes:

Fir, pine and cedar are, generally speaking, useful for shipbuilding; for triremes and long ships are made of fir, because of its lightness, and merchant ships of pine, because its does not decay: while some make triremes of it also because they are ill provided with fir. The people of Syria and Phoenicia use Syrian cedar, since they cannot obtain much pine either; while the people of Cyprus use coastal pine, since their island provides it and it seems superior to their pine. Most parts are made of these woods; but the keel for the trireme is made of oak, that may stand the hauling; and for merchantmen it is made of pine. However, they put an oaken keel under this when they are hauling, or for smaller vessels a keel of beech; and the sheathing is made entirely of this wood.²⁷

And in another passage (*HP*. 4.5.5), Theophrastos states:

Again it is only a narrow extent of the country which produces wood fit for shipbuilding at all, namely in Europe the Macedonian region and certain parts of Thrace and Italy; in Asia, Cilicia, Sinope and Amisos and also the Mysian Olympos, and Mount Ida; but in these parts it is not abundant. For Syria has Syrian cedar, and they use this for the galleys.

This suggests that, at the time of Theophrastos, Sinope and Amisos were the two main cities and harbours on the southern Black Sea coast from which timber for shipbuilding could be acquired. Timber could certainly also be provided by the Bithynian kings and Herakleia. But Theophrastos's statement may indicate that timber from the two cities further east was considered the best for shipbuilding. In a third passage, Theophrastos (*HP* 5.1.5) states that

“fir and pine are the most useful trees and in the greatest varieties of ways, and their timber is the fairest and largest”. He also mentions (*HP* 5.2) that “some make a distinction between regions and say that the best of timber which comes into Hellas for the carpenter’s purposes is the Macedonian, for it is smooth and of straight grain, and it contains resin: second is that from Pontus, third that from the Rhyndakos”; Pliny (*HN* 16.76.197) informs us that “the most highly spoken of [among fir and larch] grow on the Alps and the Apennines, on the Jura and Vosges mountains of Gaul, in Corsica, Bithynia, Pontos and Macedonia”.²⁸ According to Theophrastos (*HP* 5.1.7), fir “also gives timber of the greatest lengths and of the straightest growth; wherefore yard-arms and masts are made from them”.

Regarding matters such as acquisition, felling, transport, and marketing, little evidence survives from the ancient Greek and Roman world.²⁹ Buying from private estates would normally have presented few difficulties since the owner was free to sell. Transactions involving the huge forests with the best timber were probably more complicated. It is well known that felling the forests of Macedonia – in particular trees of the size necessary for shipbuilding – was a royal prerogative.³⁰ We need not hesitate to assume that this was also the case in both the Ptolemaic and the Seleukid Kingdoms, and probably also by this time at least in the minor kingdoms including Bithynia and Pontos. For the Seleukid Kingdom this is strongly suggested by an inscription from Sardis, dating from March 203 BC,³¹ which preserves the last part of a letter from Antiochos III to the inhabitants of Sardis:

... (we have given orders) also to cut down wood for the rebuilding of the city and to bring it out from the forests in Taranza, in accordance with whatever Zeuxis may decide.³²

The Romans maintained a large reserve of state forests;³³ also Roman colonies and municipalities had their own public woodlands to provide timber. This must also have been the case in Greek *poleis*, but our evidence for this is fairly meagre. Meiggs discusses the possible sources for the building of a much larger Athenian fleet in the early 5th century, suggesting that the mountain ranges of Attica and Euboea are the most probable ones. Later on the city relied on a friendly relationship with the kings of Macedonia and on their colonies in northern Greece.³⁴

Timber export from the Black Sea

An issue central to the theme of this conference is, of course, whether timber from the Black Sea was traded to the Mediterranean. The written sources give us the impression that Athens relied on Macedonia and her colony at Amphipolis on the Chalkidike (*Thyc.* 4.108.1) to provide timber for her fleet,

and we know of imports from Samos, Knidos and Crete, but there is no hint of timber trade with Black Sea ports.³⁵

Sokolskij³⁶ interpreted a passage from Philochoros on the Macedonian king Philip II's occupation of Hieron, on the Asiatic side of the Bosphoros Straits, and his capture of 230 ships, in the year 340 BC, as indicating that Philip used the timber, which together with grain and hides was the main cargo of the ships, for building siege engines.³⁷ Sokolskij also supposed that this cargo must have contained Bosporan timber, since this corresponds with the information in Theophrastos.³⁸ Brašinskij also understood the passage as signifying that the merchant ships sailing from Pontos had timber, grain and hides as their cargo.³⁹ Unfortunately (for our purposes), there can be no doubt that Brašinskij's and Sokolskij's conclusion is based on a misinterpretation of the Greek text, which clearly states that the timber used by Philip for building catapults derived not from the cargo carried by the ships, but from the ships themselves, which after their capture by Philip were demolished.⁴⁰

Indirect evidence for trade in timber from the Black Sea to the Mediterranean may possibly be provided by the close connections between Rhodos and Sinope in the 2nd century BC, as can be concluded from two passages in Polybios: 4.56 (on which see p. 86) and 23.9. In the second of these, in particular, Polybios reports the sending, in 183/2 BC, of a Rhodian embassy to Rome with the aim to defend the interests of Sinope (which at that time was seriously threatened Mithridates II of Pontos) and also the Senate's positive response, i.e. that they would send legates to investigate the matter. The archaeological evidence (mainly, amphora stamps) certainly confirms a strong Rhodian presence in the Black Sea in this period.⁴¹ Evidence from later periods suggests that the Rhodian interest in Sinope might have to do with the possibility to acquire timber for their fleet.⁴² The hostile relationship between Macedonia and Rhodos in this period certainly suggests that Rhodos could not acquire timber for shipbuilding in Macedonia.⁴³ However, the situation quickly changed. Only a few years later, king Perseus had re-established friendly relations with the Rhodians, providing them with timber for shipbuilding (Polyb. 25.4).

It is well known that timber was commonly transported long-distance by sea on a massive scale.⁴⁴ This is indicated, for instance, by the circumstance that Macedonia was a major supplier of particularly timber for masts, and also by Thukydides' report (4.108.1, mentioned p. 93) that the capture of Amphipolis by the Spartans greatly alarmed the Athenians among other things because that city provided them with timber for shipbuilding.⁴⁵ Also the forests of southern Italy could provide timber to be used in Greece.

That the timber export could take a different form, i.e., as ready-built ships, can be deduced from Alkibiades' speech in Thukydides (6.90.3), where he states that part of the aim of the expedition to Sicily had been to add to the Athenian fleet by building many triremes "as Italy has timber in abun-

dance".⁴⁶ This suggests that timber from the Black Sea might not always have been exported as raw material but also as ships.

House building: public and sacred buildings

Timber for ordinary house building was normally available in the vicinity; otherwise most of the building was done with other materials. It could, however, be necessary to transport timber long distances, especially for large-scale buildings for public use or in difficult circumstances, as suggested by the letter from Antiochos III to Sardis (see p. 93). Theophrastos (*HP*. 5.3.3) states that "of the wild trees which are used for roof-timbers, the wood of the fir is the least compact, and among others that of the elder fig, apple and bay. The hardest woods are those of the oak and holm-oak".

Especially rich evidence of an extensive Aegean or Mediterranean trade in timber for the construction of buildings can be followed in detail in the building inscriptions from some of the most important sanctuaries in Greece, particularly from the 4th century BC and the Hellenistic period. For the temple of Asklepios in Epidauros the following timber is recorded in the accounts: fir (the best general building timber according to Theophrastos (*HP*. 5.7.4-5)): 4,390 drachmas; cypress (price not preserved); elm, nettlewood and boxwood for the doors (and for the workshop): 840 drachms.⁴⁷ The fir was undoubtedly mainly for roof construction. The contractor of the fir was a Korinthian, something that tells us little about its origin, since Korinthian merchants are known to have traded in many parts of the Mediterranean. The contractor of the cypress, on the other hand, was from Crete, an island famous for its cypresses.

Inscriptions from Delphi provide us with records,⁴⁸ which show that the sanctuary bought a quantity of very costly, and therefore probably very large, cypress timbers in 335 BC, in connection with the rebuilding of the temple of Apollon that had burnt down in 373 BC. These timbers were provided by a number of different contractors, mostly originating from Sikyon, across the Gulf of Korinth. The temple also bought fir, while another account specifically mentions Macedonian timber, most probably fir.

The accounts from the sanctuary of Eleusis dating from the year 329/8 BC specify the purchase of elm, ash, cedar, and cypress.⁴⁹ Particularly interesting are the contracts with many different suppliers providing the timber. There does not seem to have been any merchant with a large and diversified stock.⁵⁰

Delos had to depend exclusively on outside timber resources.⁵¹ The most commonly listed species during the island's period of independence (314-166 BC) are oak, fir, elm, and cedar. There is also evidence of ash, beech, box, cornel, cypress, lime, mulberry, olive, palm and probably chestnut. Pine is mentioned only as pine torches, associated with firewood for the altars. There is also mention of "Macedonian timbers" without any further specification.

The longest lengths recorded (probably fir) are of 30 cubits, to be used for the theatre stage.

In none of the accounts preserved from the Greek sanctuaries do we find any mention of timber from a locality in the Black Sea, nor do we have evidence for contractors coming from this region. Apparently the Aegean and possibly the Levant (cedar wood) were able to satisfy the demand of the sanctuaries.

Among the other building types for which high-quality timber was required were fortresses and, in the Hellenistic period, catapults and other types of siege engines. Polybios's account (4.52) of the conflict between Byzantion on the one hand and Rhodos and Prusias of Bithynia on the other is very detailed, when it comes to the peace treaty concluded by the conflicting parties. One of the conditions is that Prusias must surrender to the Byzantians the lands, fortresses, people and slaves taken from the enemy free from ransom, as well as the ships taken at the outset of the war, the missiles captured in the forts, and the timbers, building stones and tiles taken from Hieron within the Straits.

Luxury trade

Wood for making luxury goods was clearly traded over long distances, as were also objects manufactured either from a particularly attractive type of wood or a combination of different types of wood. Maple and the mountain nut from the region of Sinope were used for tables (Strab. 12.3.12; see also Theophr. *HP.* 5.7.6). Moreover, according to Pliny (*HN.* 16.66), maple is second only to citrus in elegance for cabinet making, because of the finish it allows. The written sources thus clearly indicate a luxury industry and trade in elegant furniture from Sinope, at least from the early Hellenistic period onwards.

Perhaps the best-known wooden luxury objects from the Greek cities of the Black Sea are the sarcophagi from Pantikapaion and Taman.⁵² They were produced over a long period from the 5th century BC to the 2nd century AD, the finest coming from the first 100 years. According to Sokol'skij,⁵³ in general cypress, cedar and yew were employed for the basic construction of the sarcophagi of the fourth to the 3rd century BC. Some of the decorations are in inlaid wood, of which boxwood is the most common, its pale colour contrasting well with the dark cypress or yew. Maple or pear tree may also have been used for inlays. Some of them seem to be made by local craftsmen following Greek patterns or by resident Greek craftsmen, but the best of them were probably produced in Greece, most likely in Athens.⁵⁴ Thus we see trade in readymade wooden objects from the Mediterranean to the Black Sea. When wood was imported for manufacturing the sarcophagi in the cities of the northern Black Sea, the Mediterranean need not have been the only supplier, as assumed by Sokol'skij;⁵⁵ the inlay of boxwood may derive from, for instance, Amastris, since according to Strabo (12.3.10-11) "the most and the best box-

wood grow in the territory of Amastris, and particularly round Kytoron". A few wooden fragments from Chersonesos have been identified. Among them are pine, oak, juniper and yew. In a vault dated to the period from the second to the 4th century AD there were fifteen coffins made of yew.⁵⁶

Turning to luxury trade in trees rather than wood, we may consider the statement by Theophrastos (*HP* 4.5.3): "of the cultivated plants they say that those least able to thrive in cold regions are bay and myrtle, and for proof they state that on Mount Olympos bay is abundant, but myrtle does not occur at all. In Pontos about Pantikapaion neither grows, though they are anxious to grow them and take special pains to do so for religious purposes". Pliny (*HN* 16.137) tells us that it was Mithridates (VI) and the rest of the natives who had toiled in every way to cultivate these two plants for ritual purposes, but that they did not succeed. Both plants were very common in, for instance, the Propontis and there may have been a luxury export in these specific trees or their branches for use in Pantikapaion and other northern Black Sea colonies.

Conclusion

Trade in timber to the Mediterranean from the Black Sea was presumably common, although our sources do not explicitly mention such trade. In particular, this is not only suggested by the information given by Polybios on the gifts given to Rhodos after the earthquake, which include timber from this region, but also by the detailed knowledge which was possessed by Theophrastos and other ancient writers about Pontic timber resources and their value for shipbuilding. It is also worth noting in this connection that in the Hellenistic period, Rhodos, whose fleet was one of the most important in the Mediterranean,⁵⁷ maintained very close ties of friendship with Sinope, perhaps the Black Sea city best known for its timber resources in the Greek world. Wood exported from the Mediterranean to the Black Sea was probably an exception and mainly consisted of luxury wood or ready-made, wooden luxury goods such as some of the sarcophagi from the Bosporan Kingdom.

Notes

- 1 Meiggs 1982, 325.
- 2 The northern and southern Black Sea coasts are the focal point of the Danish Research Foundation's Centre for Black Sea Studies. The paper therefore concentrates on these regions, taking only a quick look at the eastern and western Black Sea coasts.
- 3 Beal (1995) presents a very informative model on the use of timber in war and agriculture, using the forests of Bruttium in southern Italy as a case study.
- 4 Translation H. Rackham, Loeb Classical Library.
- 5 Polybios's full list of donations from the three kings is as follows: Ptolemaios III Euergetes: 300 talents of silver, 1 million *artabae* of corn, timber for the construction of 10 quinqueremes and 10 triremes, 40,000 cubits of squared deal planking, a 1000 talents of bronze coins, 3000 talents of tow, 3000 pieces of sail-cloth, 3000

- talents (of bronze?) for the restoration of the Kolossos, a 100 master builders and 350 masons, and 14 talents *per annum* for their pay, and besides all this, 12,000 *artabae* of corn for the games and sacrifices and 20,000 *artabae* to feed the crews of 10 triremes. Antigonos III Doson: 10,000 pieces of timber ranging from eight to 16 cubits in length to be used as rafters, 5000 beams of seven cubits long, 3000 talents of silver, 1000 talents of pitch, 1000 amphorae of raw pitch and a hundred talents of silver, while his wife Chryseis gave them 100,000 *medimnoi* of corn and 3000 talents of lead. Seleukos II Kallinikos: exemption from custom duties for Rhodians trading in his dominions. 10 quinqueremes fully equipped, 200,000 *medimnoi* of corn, 10,000 cubits of timber and 1000 talents of hair and resin. (Translation. W.R. Paton, Loeb Classical Library). See Gabrielsen 1997, 76-77.
- 6 See Gabrielsen 1997, 77: "Had Polybios catalogued the gifts of the remaining donors, his list would certainly have been even more impressive but hardly less repetitive".
 - 7 For these forests see Perrot & Guillaume 1862, 20, 26 and 58-59. See also Robert 1980, chapter 2.
 - 8 In the following I shall concentrate on only a few of the ancient written sources.
 - 9 Translation C.L. Brownson, Loeb Classical Library.
 - 10 The translation of the passages from Strabo is that by H.L. Jones, Loeb Classical Library.
 - 11 Translation H. Lamar Crosby, Loeb Classical Library.
 - 12 Translation B. Radice, Loeb Classical Library.
 - 13 For the transport aspect, see in particular Mulliez 1982.
 - 14 Translation A. Hort, Loeb Classical Library.
 - 15 Levkovskaja 1970, 104.
 - 16 Today oak makes up for more than 50 % of the Crimean forests.
 - 17 Maslov 1991, 76-81.
 - 18 The dating is uncertain; according to Borisov 1956, 535, the core taken in 1954 was 1.5 m long and covered a period of 1500-2000 years. All samples revealed the species mentioned above. The same information is given by Ščeglov 1978, 25.
 - 19 Ščeglov 1978, 24. See also Levkovskaja 1970, 105.
 - 20 Sokol'skij 1971, 19.
 - 21 Levkovskaja 1970, 106.
 - 22 Sokol'skij 1971, 17.
 - 23 Sokol'skij 1971, 18.
 - 24 Sokol'skij 1971, 24-29.
 - 25 Sokol'skij 1971, 28.
 - 26 Translation Meiggs 1982, 118.
 - 27 See also Morrison & Coates 1994; Casson 1971.
 - 28 The order in which the three regions in the eastern Mediterranean are mentioned may perhaps indicate that by the time of Pliny, Bithynia had become Rome's most important supplier of timber from this region.
 - 29 See Meiggs 1982, chapter 12, for a broader discussion of timber trade in the Greco-Roman world.
 - 30 The sources relating to the supply of Macedonian timber for the Classical Athenian fleet are discussed in Gabrielsen 1994, 140-142.
 - 31 Gauthier 1989, n. 1; Ma 1999, 284, n. 1.

- 32 Translation Ma 1999, 285.
- 33 Meiggs 1982, 329 for discussion.
- 34 See also Gabrielsen 1994, 31-39, 140-142.
- 35 Meiggs 1982, 393.
- 36 Sokol'skij 1971, 38, possibly relying on a translation by Brašinskij 1963, 114-115.
- 37 *FGrH* 328: Philochoros F162 (Didymos' commentary on Dem. 11.1, col. 10-11), cf. also *FGrH* 115: Theopompos F292.
- 38 I am indebted to Vladimir Stolba for information on Sokol'skij's idea and for his translation into English of Sokol'skij's Russian text.
- 39 Brašinskij 1963, 114-115.
- 40 This is the standard interpretation of the passage in question: see, for instance, Hammond & Griffith 1979b, 576, n. 3. I am indebted to George Hinge, who discussed the text with me.
- 41 Conovici & Garlan 2004; Gabrielsen 1997, 65.
- 42 Agnoletti 2004. See also Meiggs 1982, 116.
- 43 For the conflicts see Hammond & Walbank 1988, chapter 20.
- 44 See Meiggs 1982, chapter 12.
- 45 For a recent treatment, offering also a comparative perspective, of long-distance transport of timber for shipbuilding, see Agnoletti 2004, who examines the way in which the Dutch and the British acquired timber from Scandinavia and the Baltic in the 16th and 17th centuries AD. Meiggs (1982, 333) also mentions that in the 17th century the English fleet relied on the American white pine for supplies of tall masts.
- 46 Translation Ch. Forster Smith, Loeb Classical Library. For comments on this, see also Meiggs 1982, 117.
- 47 See Burford 1966 and 1969.
- 48 *FD* III, 5; Bousquet 1977; Meiggs 1982, 430-433, for comments.
- 49 *IG* II², 1672, with Meiggs 1982, 433-440.
- 50 Meiggs 1982, 437.
- 51 See *IG* II², 135-289 and *ID* 290-510, with Meiggs 1982, 441-457.
- 52 Meiggs 1982, 294.
- 53 Sokol'skij 1971. See also Kremenetski 1995.
- 54 According to Thukydides (2.34.3), the ashes of the Athenians who died in the first year of the Peloponnesian War were placed in cypress coffins. Sokol'skij 1971. Sokol'skij 1971, 19. Gabrielsen 1997, chapter 4.
- 55 Sokol'skij 1971.
- 56 Sokol'skij 1971, 19.
- 57 Gabrielsen 1997, chapter 4.

A Weighty Matter: Pontic Fish Amphorae

Andrei Opaiț

Introduction

The salted fish products of the Pontos Euxeinos were among the most well known goods of this region during Hellenistic and Roman times. Our ancient literary sources together with archaeological finds provide us with a variety of information regarding the fish industry of the Black Sea. Little is known, however, about how this important constituent of the ancients' diet was transported and traded.¹ The aim of this paper is to have a close look at some Hellenistic and Roman amphorae in the hope that these may provide some clues about the containers used for transporting this product.

A link between the amphora shape and its contents

Although not easily perceptible to the untrained eye, there is a close relationship between the shape, proportions and function of transport amphorae. The ancients were well aware of these connections, as a short passage from Macrobius' *Saturnalia* (7.12.13-16) demonstrates: "...the best wine is found in the middle of the flask. But it has been proved by experience that, in the case of olive oil, the best floats on top, while for honey the best is at the bottom".

Technical needs seem to have been taken into account when an amphora was designed. Different substances required different forms and sizes. Products to be shipped varied in density and in weight; these differences together with the different physical/chemical properties of the various goods dictated the shape of an amphora. This is without a doubt the reason why some ceramic containers have a cup-shaped mouth able to receive less fluid contents without problems: a vessel with a shorter neck and ovoid or globular body was probably used for olive oil, while containers with a wider base and a large mouth with a simple, plain rim might have been used for liquids with a high viscosity like honey. An amphora intended specifically for a fish product would either have no neck or a larger truncated conical neck that would not impede the filling and emptying of the vessel with fish sauce or salted fish. Wine amphorae on the contrary seem to have had a narrow and rather longer neck, probably designed specially according to the kind of wine transported. Two amphorae of a strikingly different morphology, discovered at Olynthos,

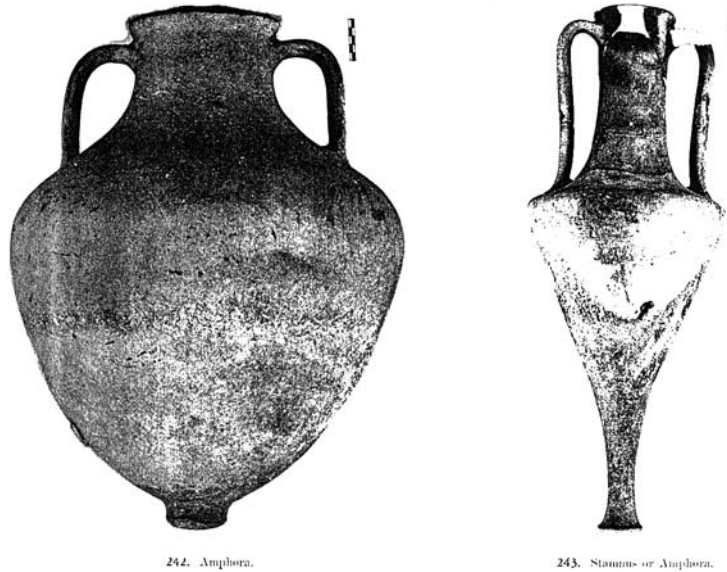


Fig. 1. Two amphorae found at Olynthos, after Robinson 1950, figs. 242-243.

and placed by Robinson on the same plate in his work, clearly illustrate these conceptual differences (Fig. 1).²

Fish amphorae of the Mediterranean

If we look at the shape of amphora types created for the containment of fish products, it is noticeable that ancient potters from the Straits of Gibraltar to the Straits of Kerch followed similar criteria in creating their products. Well-known discoveries of such amphorae made in the western Mediterranean help us to define even more clearly the main characteristics of a container designed to hold a fish product (Fig. 2a-b).

Given the characteristic designs of the amphorae under discussion, these amphorae can also provide us with some clues about the kind of fish products for which they were intended. An amphora with a large mouth, tronconical neck and a body whose maximum diameter is at its lowest end and completed by a hollow spike could be for a fish sauce product such as *garum*, with small pieces of fish collecting in the lower part of the body and the spike. But the hollow spike seems to have been replaced by a solid one in the case of amphorae intended for salted fish. Good examples of this second type of container are the Dressel 7-11 types, together with the Beltrán II A and II B.³ Finally, an amphora which had a large mouth and tronconical neck but an ovoid body and a solid toe could suggest that it was designed for the transportation of more solid merchandise such as salted pieces of fish. A type

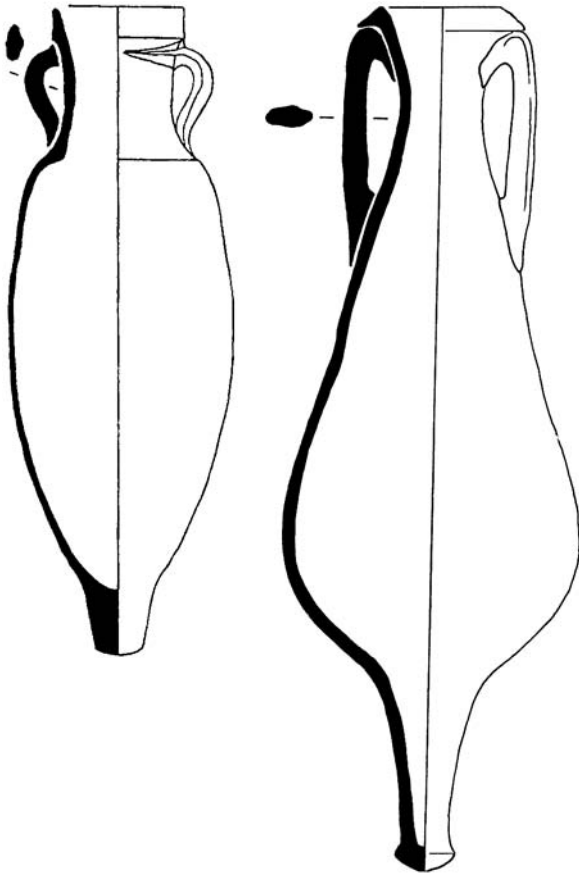


Fig. 2. a: “Amphore à saumure d’Espagne”, after Sciallano & Sibella 1994; b: Beltrán II A, after Etienne & Mayet 2002, fig. 35.1.

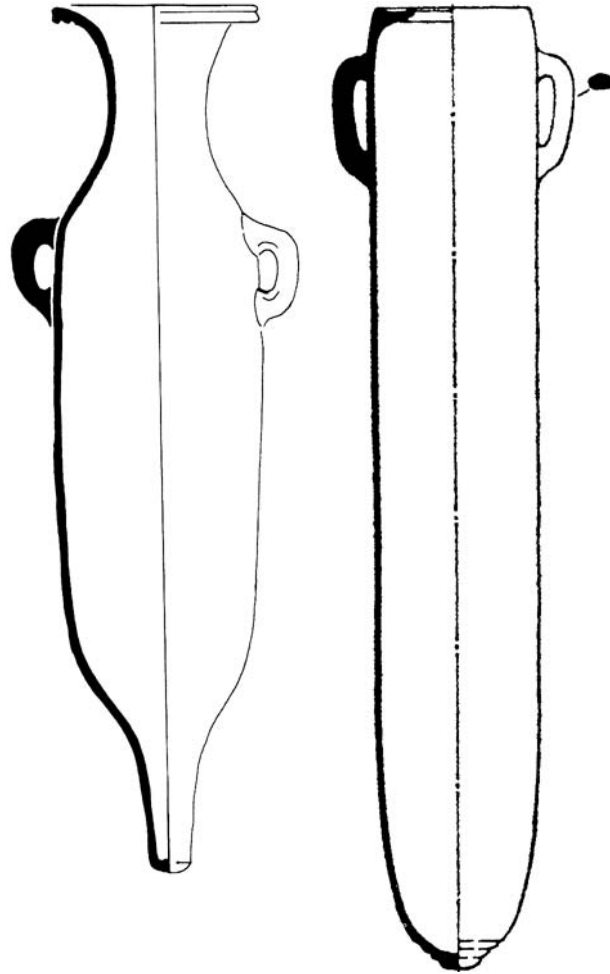
named “Amphore à saumure d’Espagne” provides us with a good example of this sort of ware.⁴

North Africa was also a famous producer of fish products, and its fish amphorae served as models for many Iberian amphorae, after many Punic colonies were established on the Iberian shores and began to manufacture fish products there. Typical North African fish amphorae, such as Dr 18/Mañá C2b or Mañá D followed this local Punic tradition; the first, with a hollow spike, perhaps used for fish sauce and the second, with a cylindrical body, for salted fish (Fig. 3a-b).⁵

During Roman times, the southern part of the Iberian Peninsula and North Africa together created a new *koine*, such as is reflected in the amphora shape Dr. 14 among others.⁶ North African amphorae, however, such as Mañá C2c or Leptiminus II continued to follow the earlier Punic tradition (Fig. 4a-b).⁷

Italy was also a manufacturer of fish products, although on a lesser scale than the regions named previously. The best-known amphorae types, which have a shape suitable for a fish product, seem to be Dressel types 21 & 22 (Fig. 5).⁸

Fig. 3. a: Mañá C2b amphora, after Etienne & Mayet 2002, fig. 26.2; b: Mañá D amphora, after Sciallano & Sibella 1994.



The eastern Mediterranean, the Aegean, and the Sea of Marmara were also famous for their fish products, and some amphorae from these areas as well suggest by their shape that fish products were their main contents. One of these amphorae is a large, ovoid amphora with heavy bifid handles whose peaks were higher than its rim (Fig. 6).⁹

Another candidate for an amphora, designed specifically for fish products, from this region is an amphora discovered at Knossos.¹⁰ Its large neck and its ovoid body, which ends in a conical spike, are features more suitable for an amphora designed for fish than for one intended for wine (Fig. 7).

Another conical amphora, the so-called Carrot amphora (also known as Schöne-Mau XV), which lacks a neck, also seems to be suitable for the containment of fish products (Fig. 8). As P. Vipard has pointed out, the traces of pitch found on the inner side of its walls are not only characteristic of a vessel that contained wine but also of one that held a fish product. I believe

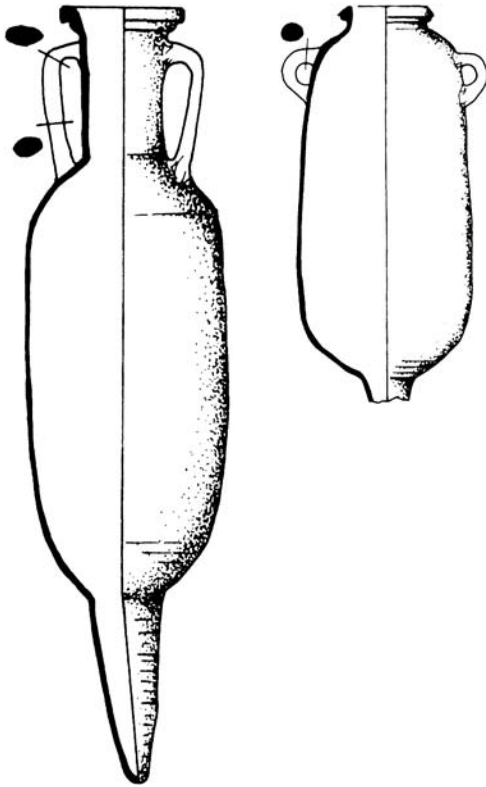


Fig. 4. a: *Leptiminus I*, after *Opaiç 2000*, fig. 1.6; b: *Leptiminus II*, after *Opaiç 2000*, fig. 2.24.

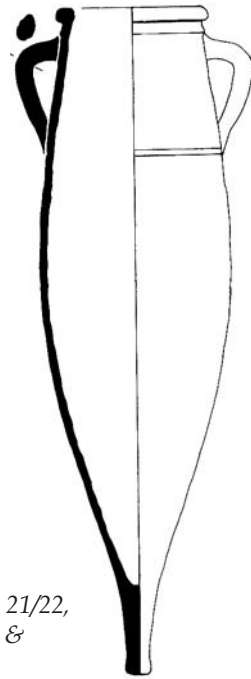


Fig. 5. *Dressel 21/22*, after *Sciallano & Sibella 1994*.



Fig. 6. *Robinson 1959*, M 54, photo A. *Opaiç*.

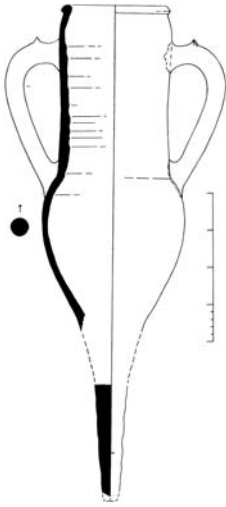


Fig. 7. Aegean amphora, after Hayes 1983, fig. 24. A66.

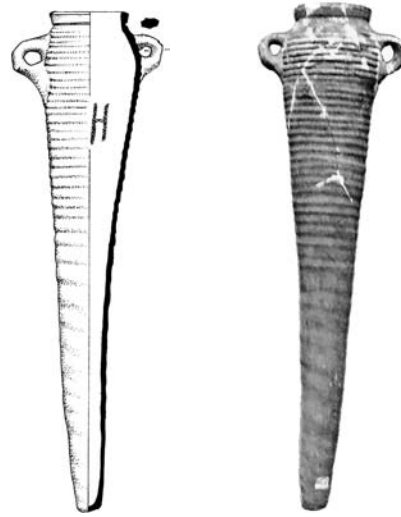


Fig. 8. Amphora of the type Schöne-Mau XV from Carsium, drawing and photo A. Opaïț.

that the shape of this amphora argues convincingly for a fish product as the vessel's main content and thus supports Vipard's conclusions.¹¹ Its origin seems to be the Levant.

Fish amphorae of the Black Sea

Fish was one of the main resources of the Black Sea in ancient times. Confined between the Strait of Bosphorus and the Strait of Kerch – a confinement that created a huge corridor for the all-season passage of huge schools of fish – the Pontos Euxeinus was richer in fish products than the Mediterranean. Large rivers such as the Danube, the Dnister, the Dnieper, the Bug, the Don, and the Kuban flowed into it, creating large deltas, which were also abundant with fish. Important studies of the ichthyofauna in the Black Sea have been undertaken by Russian scholars, such as N.V. Ivanova,¹² V. Ju. Marti,¹³ and Ju.E. Lapin and V.D. Lebedev.¹⁴ They have demonstrated the supremacy of large species such as sturgeon, pike and catfish at sites situated nearby these large rivers, while at Tyrityake and Chersonesos migratory saltwater fish predominated (Fig. 9).¹⁵

The richness of this area in fish is also suggested by some red figure “fish-plates” decorated with fish, most likely representing species typical of those found in the Black Sea and its tributaries (Fig. 10).¹⁶

The fish amphorae of the Pontos Euxeinus have not been categorized as such before and the identification presented here is a hypothesis based primarily on their morphological characteristics, which fit however well with their

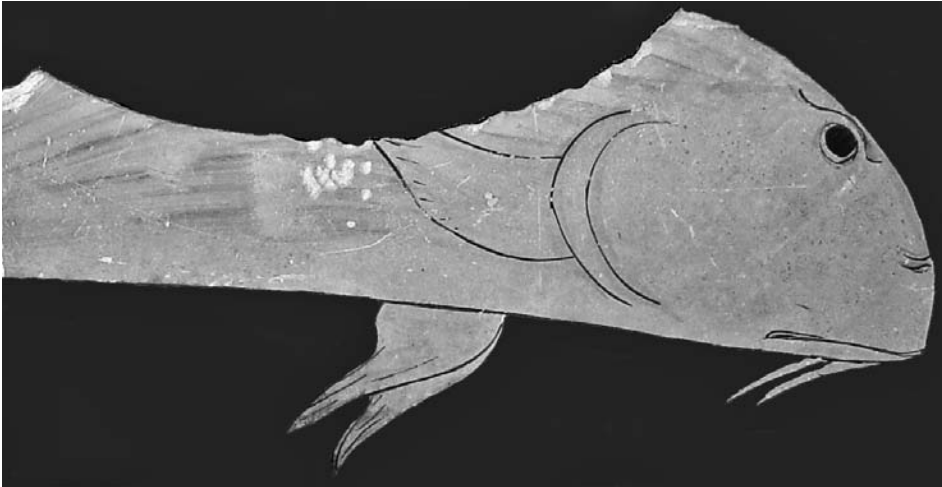


Fig. 9. Chersonesos Museum, Inv. no. 2489.36 (not to scale).

Fig. 10. Chersonesos Museum, Inv. no. 206 (not to scale).



use as containers for a fish product. Moreover, these amphorae are present at almost every North Pontic site. In addition, and perhaps most tellingly, it should also be borne in mind that the only foodstuffs produced on the northern and western coasts of the Black Sea and available for export, were grain, wine, and fish products, and the amphorae under discussion are not suited to use with either of the first two products.¹⁷

The Pontic fish amphorae differ in dimensions and weight from the Mediterranean ones but they seem to make use of the same structure and shape.

They have a wide mouth, a large trunco-conical neck and an ovoid body ending in a massive spike. These amphorae seem to have been larger and heavier than their western Mediterranean counterparts; they were also made in different sizes¹⁸. Although the workshops for these types of amphorae have not yet been discovered, the pattern of their distribution can provide us with some clues to their provenance. While more work has to be done before we will have a clear mapping of the production places for fish amphorae, it is important to have a clear definition of these Pontic fish amphora types.

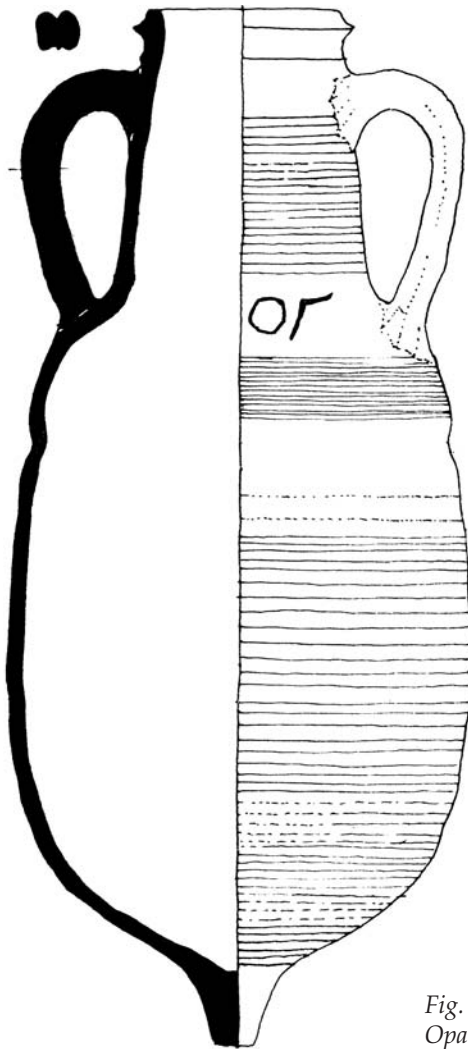


Fig. 11. Amphora type Zeest 75 from Greci, after Opaïț 1980, pl. IX. 1-3.

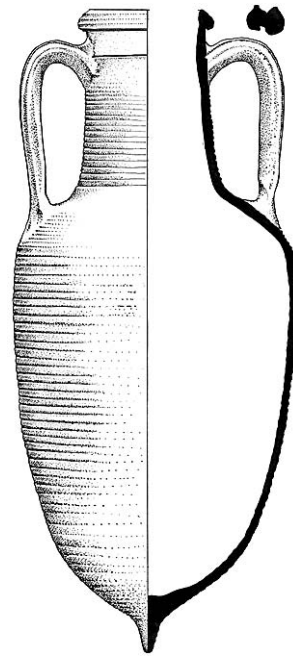


Fig. 12. Tomis, Constanta Museum.

Zeest 75

This is a very impressive container, characterized by hefty dimensions and weight. An example, discovered in Dobrudja at Greci, is to date the largest of this type; it has a large mouth that probably had an exterior diameter of 30 cm and an interior diameter of 22 cm, while the vessel itself had a maximum diameter of 62 cm and a height of 138 cm (Fig. 11).¹⁹ Other examples are of lesser dimensions: one found at Olbia is only 125 cm high,²⁰ another at Istros is only 110 cm,²¹ while at Čornoričes'kyj necropolis one of only 95 cm height has been found.²² The smallest amphorae of this type were found at Sovhoz 10, with a height of 76 cm and a maximum diameter of 32.6 cm, and at Tanais with a height of 75 cm, and a maximum diameter of 39 cm.²³ The variation in size range suggests that this type was deliberately made with varying capacities.

Some differences in the rim modeling also seem to indicate different workshops. At least four rim variants can be determined: triangular, rolled with facets, trapezoidal with a rounded base, and rectangular. Unfortunately, the present writer did not have the chance to view all of these variants personally, and it is therefore difficult to describe their fabrics.

A. The first variant has a thick rim, triangular in its upper section, pointed towards the exterior and separated by an off-set at its lower part. Examples were discovered at Greci,²⁴ Bezymjannaja, in the Chersonesean *chora* (unpublished), Balaklava,²⁵ Bliznecy,²⁶ Olbia,²⁷ and its territory at Kozyrskoe,²⁸ at Tanais,²⁹ and Gorgippia.³⁰ It seems to be one of the most frequently found variants.

B. The second variant has a massive rolled rim with small facets; examples of this variant were found at Tomis (personal communication C. Chera), Balaklava,³¹ Olbia,³² Bliznecy,³³ Tanais,³⁴ and Gorgippia.³⁵ The Tomitan example has a height of 85 cm, a maximum diameter of 37.5 cm and a rim diameter of 18 cm (Fig. 12).

C. The third variant has a trapezoidal rim with a rounded top and a marked external offset on its underside. A large example was discovered in the Black Sea close to Kalos Limen and is on display in the Černomorskoe Museum (personal communication V. Stolba). Its height is 11 cm, the diameter of its rim is 24 cm and its maximum diameter is 57 cm (Fig. 13). A smaller amphora has been discovered in the necropolis of Sovhoz No. 10. It has a height of 75 cm, a rim diameter of 14.6 cm and a maximum diameter of 32.5 cm (Fig. 14a-b).

D. The fourth variant has an almost rectangular massive rim, with its top bevelled towards the exterior; it occurs at Istros,³⁶ Olbia,³⁷ in the Chersonesos area at Čornoričes'kyj necropolis,³⁸ and at Gorgippia (Fig. 15).³⁹

Of particular note is the occurrence of stamps either on the neck or on the handles of these amphorae, employing the name of the ΚΑΛΛΙΚΤ/ΠΑΤΟΥ (in genitive) at Olbia (Fig. 16).⁴⁰ Another stamp, which supposedly occurs on this amphora type, is ΦΑΥΚΤ/ΕΙΝΟΥ, discovered at Tanais.⁴¹ The presence of these stamps, and the different capacities of these amphorae, suggest the existence of an organized and controlled production of this type of vessel. Also, sometimes dipinti occur on this type, such as ΟΓ at Greci,⁴² and ΙΘ on a fragment discovered at Balaklava (Chersonesos Museum, inv. no. 3.37394 – personal communication Oleg Savelja) (Fig. 17).

The origin of the Zeest 75 type seems to be indicated by a Hellenistic amphora discovered and dated in the first quarter of the 2nd century BC. Monachov has determined a Sinopean origin for this amphora (Fig. 18).⁴³

The material is suggestive of a North Pontic production, especially that of the variant with a triangular rim, which was made in the Balaklava area and also probably at Myrmekion (Fig. 19).⁴⁴ It is worth mentioning that the quiet Balaklava Bay was one of the main fish suppliers for Chersonesos.⁴⁵

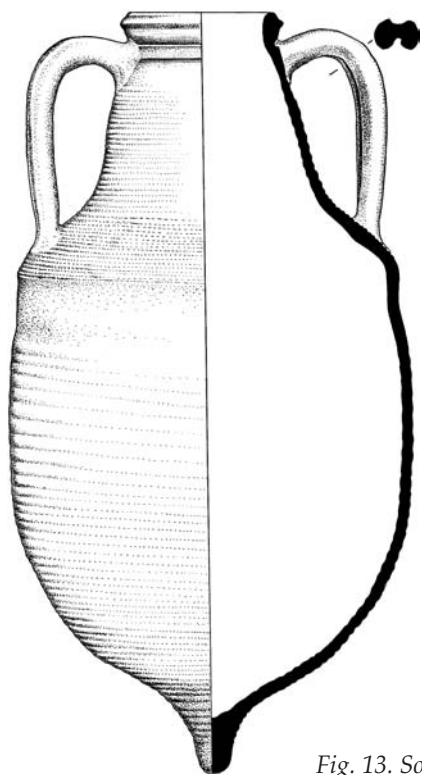


Fig. 13. Sovchoz No. 10, urn 195.

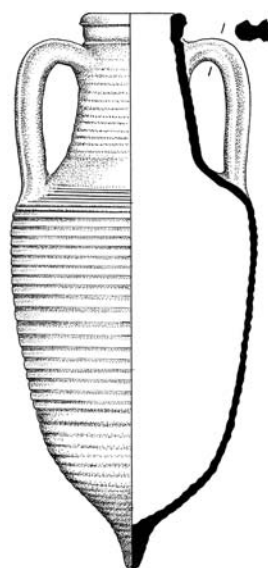


Fig. 14 Černomorskoe Museum.

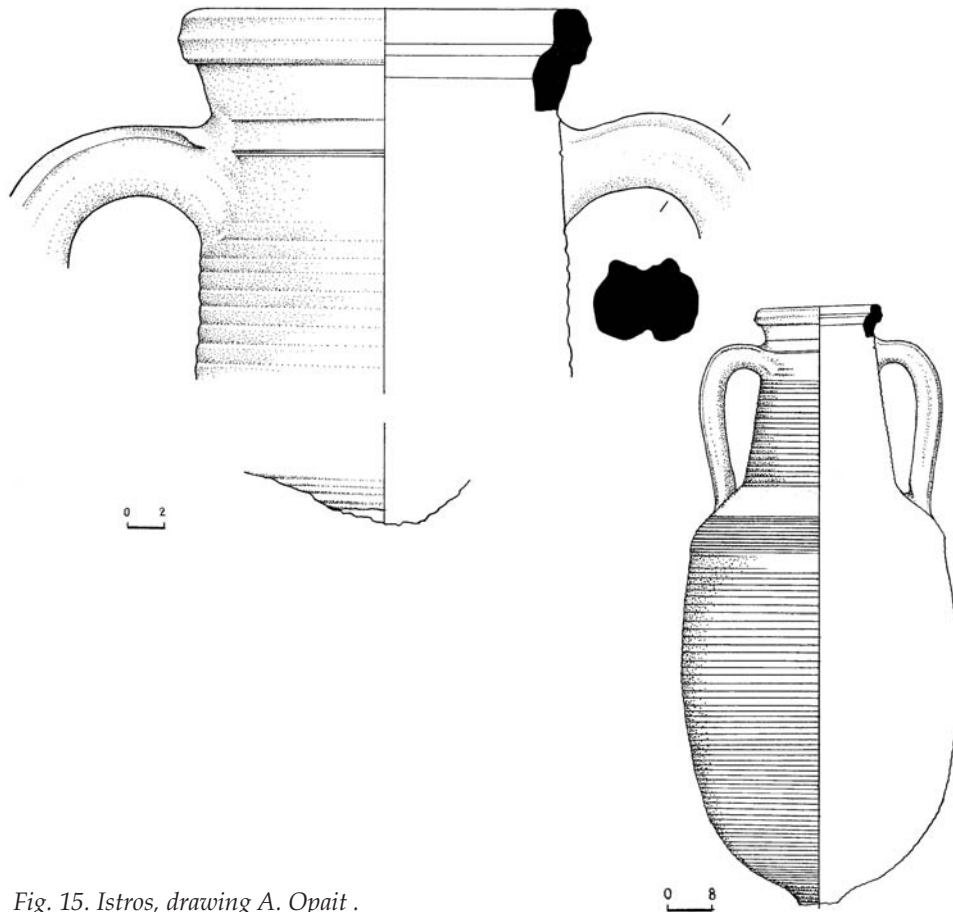


Fig. 15. Istros, drawing A. Opait .

Zeest 75-Similis

The neck, rim and handle of this amphora type are quite similar to those of the previous type. However, there are also some minor differences between the two types. Zeest 75-Similis has smaller dimensions than Zeest 75; its rim has a simple, triangular form; its neck is well delimited from the shoulder, and its body is conical. Some examples of this type have been discovered at the Sovchoz and Čatyrdag necropoleis (Fig. 20a-b).⁴⁶

The diameter of their rims varies from 15 cm to 20 cm, the maximum diameter of the amphorae lies between 42 cm and 45 cm, and their height between 83 cm and 101 cm. This container has been treated as a separate type, but future studies will decide whether this and Zeest 75 truly are separate types or whether Zeest 75-Similis is simply a smaller variant of the previous type.

Its fabric is hard, has a hackly fracture and a red color which varies between Munsell 7.5R 5/8 and 10R 5/8; it is dominated by quartz and iron minerals.

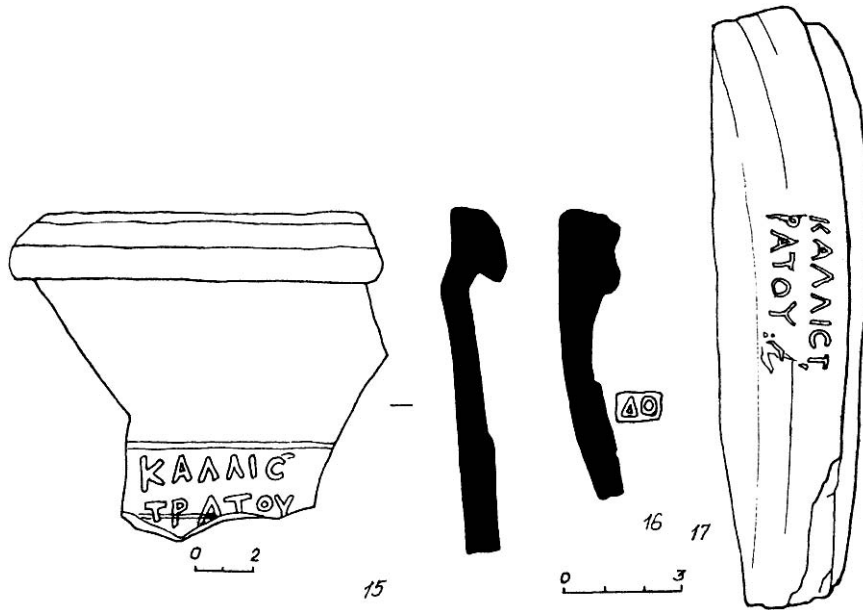


Fig. 16. Zeest 75, stamped fragments from Olbia, after Krapivina 1993, 99, fig. 72.



Fig. 17. Zeest 75, Chersonesos Museum, Inv. no. 3.37394.

Zeest 85-Similis

This is one of the most massive and heaviest amphora types. The diameter of its rim varies between 13 cm, a find at Ostia, and 20 cm, a vessel from Sovchoz 10, while their height varies between 77 cm and 113 cm (Fig. 21a-b). The rim is massive; the North Pontic – possibly Chersonesean – subtype has its rim slightly ridged on the outside, while other Pontic amphora subtypes have rolled rims.⁴⁷ The handles are also massive, ovoid in section, but with a deep cut on the internal side, a feature that is characteristic for many of the North Pontic amphorae. The amphora profile has a gentle and almost continuous line from its top to its lower portion, where it ends in a massive spike. It occurs frequently in the eastern part of Romania (Moldavia and Dobrudja), in the Chersonesan territory, and Myrmekion; examples have also been discovered at Ostia,⁴⁸ and Knossos.⁴⁹

The material of the North Pontic (Chersonesean area?) subtype has a light red (Munsell 2.5YR 6/8) to red (2.5YR 5/8) color, with abundant inclusions of

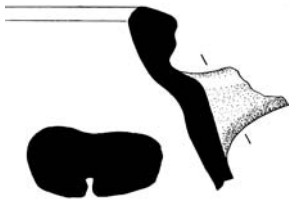


Fig. 18 Myrmekion: profile.

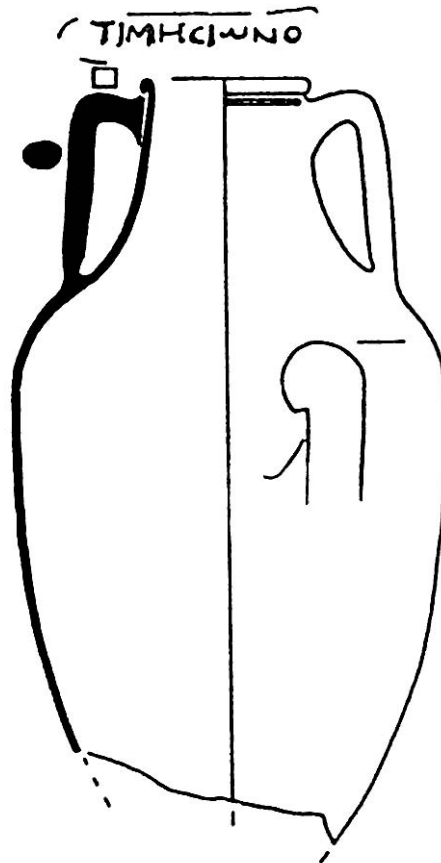


Fig. 19. Bolšoj Kastel', after Monachov 1999, pl. 236.6.

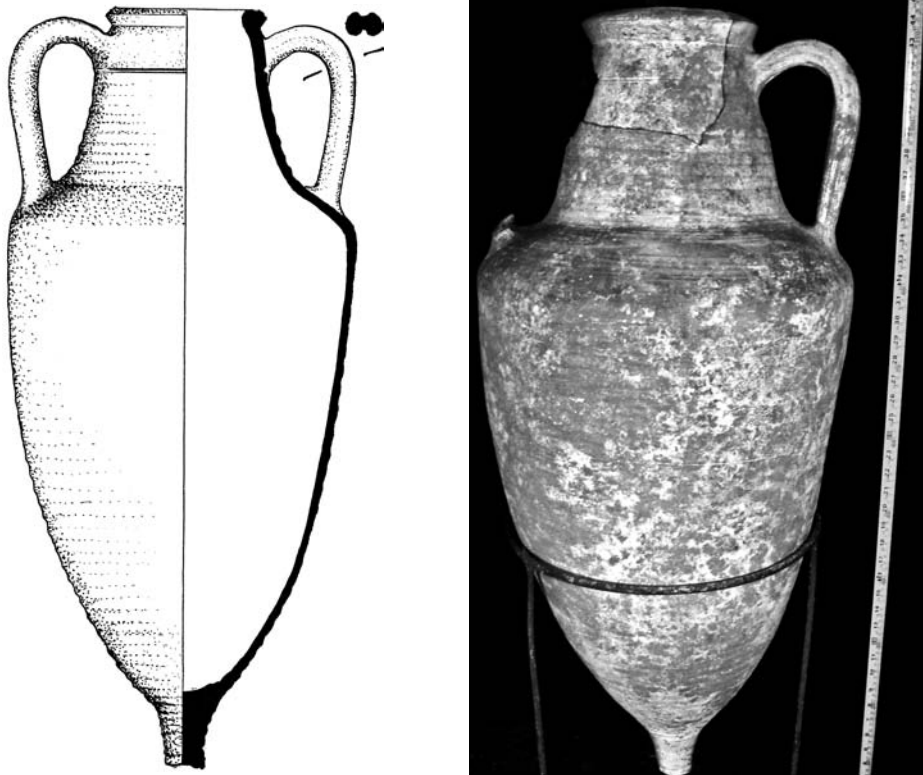


Fig. 20. Sovchoz No. 10, urn 185.

iron oxide, occasionally some inclusions are larger, quartz rock fragments and calcite inclusions. The shape seems to imitate a container made at Sinope.⁵⁰

Zeest 83 & 89

This amphora type is characteristic of the Bosphoran Kingdom, being well represented at Tyritake, Ilouraton, Myrmekion⁵¹, Gorgippia and other settlements of the Taman Peninsula, and Pantikapaion.⁵² It is very rare in the western part of the Crimea. It has an ovoid body and large neck; sometimes the difference between the neck and the body is indistinct. Its maximum height varies between 70 and 100 cm; the diameter of its rim lies between 20 and 30 cm, and the maximum diameter of its body between 40 and 50 cm (Fig. 22a-b). Its local production is indicated by the similarity of its rim to jugs which we know were produced in the area. The amphora's prototype may be a Hellenistic Sinopean amphora, such as that discovered at Kalos Limen,⁵³ and a second one of which is on display in the Kerch Museum.

The color of this type's material indicates its production at a variety of workshops which sometimes used different techniques of firing, one sample

indicating the initial use of a reduced atmosphere and a later switch to an oxidizing atmosphere in the final stage of firing. Its color varies from red (Munsell 10R 5/8) to light red (Munsell 10R 6/6-6/8). It is very hard, sometimes with fine calcite iron minerals inclusions, at other times large clay pellets (?) are visible creating a mixture that looks like a “halva” (Fig. 23a-d).

Fish table amphora 54

This type of amphora is characterized by a slipshod, sagging, thin rim, and large mouth (16-18 cm), a long, wide neck, a handle ovoid in cross section, with a sharp central groove, short, sloppy shoulders, an ovoid body with a maximum diameter varying between 24 cm and 28 cm, and a large and tubular base of c. 8-10 cm diameter (Fig. 24). The height of amphorae of this style fluctuates between 49 and 54 cm.⁵⁵ V.V. Krapivina, however, has published an example discovered at Olbia that has smaller dimensions, i.e. a height of 31 cm and a maximum body diameter of 18 cm.⁵⁶ A whitish wash covers the exterior of these amphorae. It is difficult to determine if this kind of amphora was made in a single workshop or in many different workshops as we only

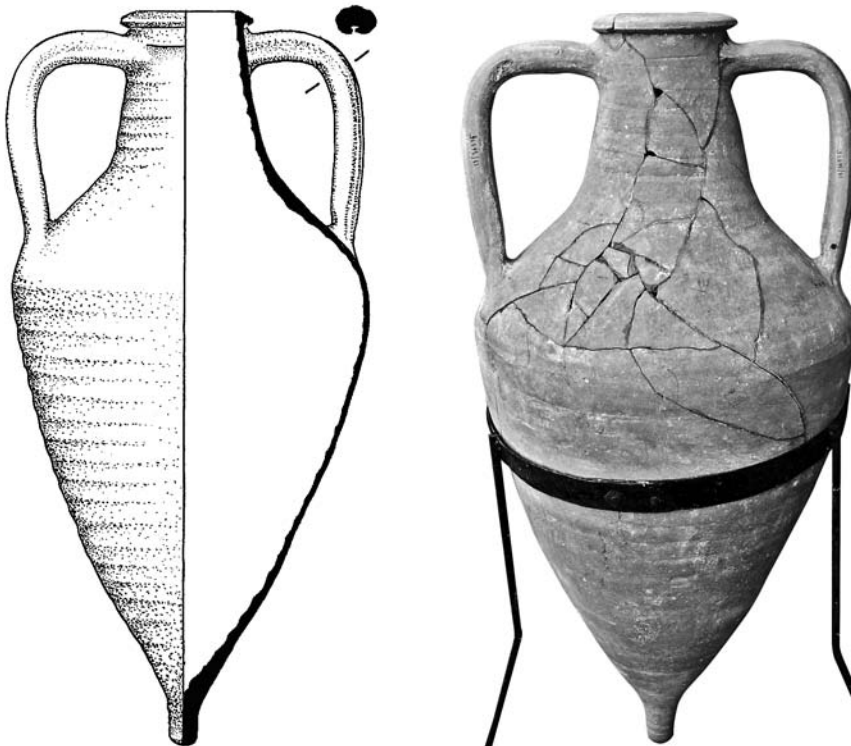


Fig. 21. Sovchoz No. 10, urn 237.

have the material of which fish amphorae discovered at Sovhoz No.10 and Bezymyannaya are made.

This type of table amphora is dated in the first half of the 3rd century to Tanais.⁵⁷ It also appears at Gorgippia⁵⁸ and Myrmekion.⁵⁹ The illustrated specimen comes from a necropolis discovered at Inkerman.⁶⁰ At Bezymjannaja a half amphora of this type was found in a context dated to the second half of the 3rd century AD. The material of these last amphorae indicates a local production for the Inkerman and Bezymjannaja examples, probably around Balaklava (?). Their material is very similar to the fabric of Zeest 75, variant A (Balaklava?). A whitish slip covers the exterior of this amphora.



Fig. 22 a: Gorgippia, after Alekseeva 1997, pl. 149.; b: Zeest 83 & 89 from Myrmekion, photo A. Butjagin (not to scale).

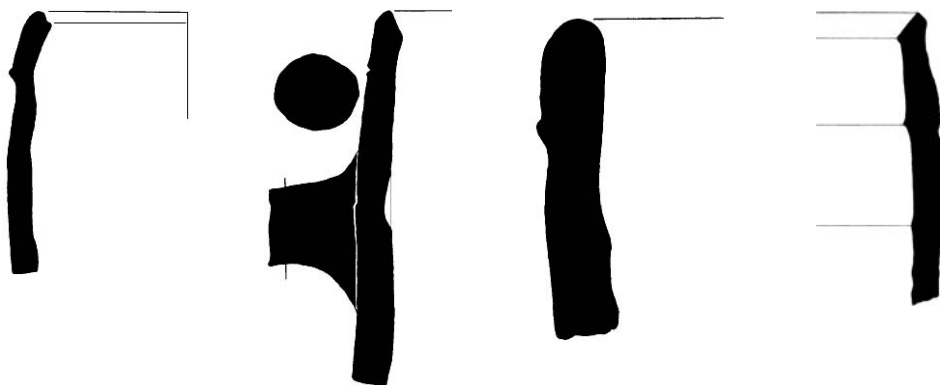


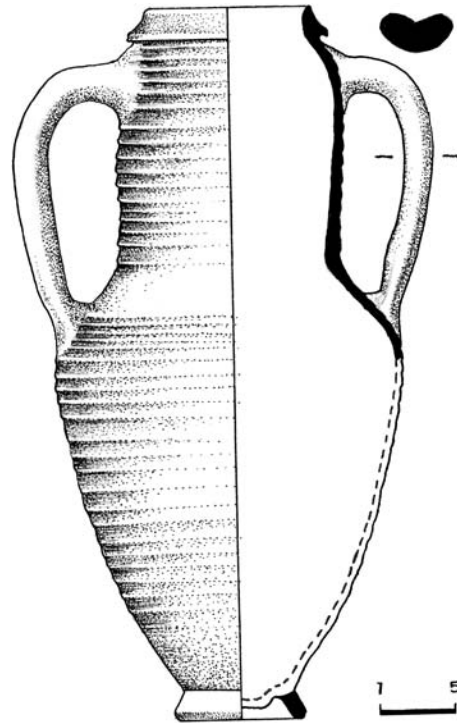
Fig. 23. Zeest 83 & 89 rim fragments (Scale 1:4).

Conclusion

After completing this overview of these large containers, some preliminary conclusions can be drawn.

The archaeological discoveries confirm the reports in ancient literary sources of the existence of a Pontic fish production and trade since Classical and Hellenistic times. It is our contention that amphorae with large necks and conical bodies were the typical containers used to transport the Pontic fish products. Archaeological documentation of fish processing activities is particularly strong for the Roman period. Numerous fish salting installations have been discovered in some North Pontic cities such as Chersonesos, Myrmekion, and Tyritake. A possible explanation for the abundance of these discoveries can be the solidity of the salting vats (*cetaria*), which were sunk into the ground or cut into the rocks and constructed of mortar. Sometimes these vats were in use together with *pithoi*, as is the case at Tyritake.⁶¹ The use of *pithoi* suggests the existence of a fish sauce production since the mixture of fish, salt and spices used in the making of fish sauce must be placed in the sun for a while and required stirring two or three times daily. This process of stirring required rounded containers, such as *pithoi* and large amphorae. The same procedure can also be used if layers of salt, fish, herbs and spices were alternately placed in amphorae. This method seems to match that described by Pseudo Gargilius Martialis in which layers of salt, fish and herbs were put into a “solid well-pitched container”.⁶² It is possible too that all these solid amphorae, which were used as processing containers, were originally used as transport containers, filled with fish products. Therefore we cannot exclude the existence of a boom in this industry during the Roman period of peace and prosperity.

An important question which arises is what kind of fish product was manufactured in these installations, as it is known that fish can be processed in different ways, for example as salt fish, fish paste, and fish sauce.⁶³ If we

Fig. 24. *Sovchoz urn 10. Fish table amphora.*

take into account the fact that the vats found at these installations are rectangular and of sizeable dimensions, while the small rounded basins generally used in the mixing of fish mass are missing, we can assume that the main product was salted fish (*salsamentum*). This kind of product is suggested also by the shape of the amphorae: they were made without an empty conical or cylindrical spike able to receive the residue left by a fish sauce, as is the case with many Mediterranean fish amphorae. All the Pontic amphoras are large, heavy, and robust, as amply demonstrated by the already famous amphora discovered in the shipwreck off Varna. We are informed that this amphora is “unusually large and measures nearly three feet (one meter) tall by 1.5 feet (0.5 meter) wide”; “...it contained bones of a large freshwater catfish species, several olive pits, and resin. ... Cut marks visible on the fish bones, together with other physical clues and references from classical literature, lead researchers to believe the amphora carried fish steaks-catfish that was butchered into six to eight centimeter (two to three inch) chunks and perhaps salted and dried for preservation during shipping”.⁶⁴ The New York Times also informs us that this amphora “held the bones of a six- to seven-foot-long freshwater catfish that has been dried and cut into steaks, a popular food in ancient Greece”.⁶⁵ If we disregard the radiocarbon dating (between 2,490 and 2,280, i.e. between ca. 487 and 277 BC), and Hiebert’s identification of this amphora with a Sinopean one, we have the picture of a North Pontic amphora of

Roman times. The resin is typical material used in coating the internal walls of fish amphorae. Sometimes different wine amphora types were reused for salt fish. A typical case of such reuse was found in the shipwreck of Grado. Here, the salted fish was put in a large variety of amphora types, including some classic wine amphorae, such as Cretan, Knidian and Forlimpopoli, while *l(iquamini) flos*, a much valued product, was transported in amphorae of local North Adriatic production specially designed for a fish sauce.⁶⁶ It is obvious that the element of chance played a role in this case. When local fishermen were lucky enough to catch a spectacular shoal of sardines, they managed to process and export them rapidly using whatever amphorae were available on the spot, as reused containers that were good enough to transport salted fish. This, however, seems rather to have been the exception than the rule and large fisheries were fully equipped with the proper containers for their various products. This rule is supported by the coexistence of salting installations with amphora kilns as at Leptiminius, which is an excellent example of this practice.

The morphological differences that exist between the Mediterranean and Pontic fish amphorae can provide us with some clues that can help to clarify the controversial problem of the origins of fish processing. If we consider that most Mediterranean fish amphora types have a design which favoured a content of fish sauce while most Pontic amphora types are more suited to a content of salted fish, we can assume that fish size and fish processing played a distinctive role in the modeling of the amphora shapes used in those two geographic areas. The difference seems also to be dictated by the different natural resources present in those regions. The Black Sea has tributaries and deltas rich in large fresh water fish species, while the Mediterranean has mainly fish species of smaller dimensions, more suited for processing into fish sauce. As well, we should not forget that the Phoenician purple dye industry used many methods that may be applied to the production of fish sauce.⁶⁷ Therefore, it is possible that these two methods of fish processing coexisted independently from prehistoric times, both being determined by the fish species, the climate and the local tradition. In addition to these factors, I should also point out that "the chance element" was less present in a region rich in fish such as the tributaries of the Black Sea than in the Mediterranean. This factor allowed the development of a steady Pontic fish industry, which was able to supply constant food to regional communities. Although western Mediterranean fish amphorae have been found spread over large geographic areas, this was due to the fact that they were part of a redistribution system much better organized in the Mediterranean basin than in the Black Sea. This is probably the main reason that the Pontic and the Aegean fish amphorae remain confined to a restricted geographic area.

In conclusion, I think that it is necessary to pay considerable attention to these economic aspects, interpreting these humble remains of amphorae in an adequate way. Although much more work remains to be done before we

can discover, excavate and map all the Pontic amphora workshops, we need to have a good definition of these containers, the only physical witness of the intensive fish trade in antiquity.

Notes

- 1 Cf. Bekker-Nielsen 2005.
- 2 Robinson 1950, figs. 242-243.
- 3 Sciallano & Sibella 1991, 57 and 59-60.
- 4 Sciallano & Sibella 1991, 61.
- 5 Sciallano & Sibella 1991, 73 and 75.
- 6 Opaïț 2000, 439-441, Leptiminius I, fig. 1.
- 7 Sciallano & Sibella 1991, 74 and Opaïț 2000, 441- 442, Leptiminius II, fig. 2.
- 8 Peacock & Williams 1986, 96-97: Class 7.
- 9 Robinson 1959, 89, no. M54, pl. 19; Sciallano & Sibella 1991, 96.
- 10 Hayes 1983, 151 (Type 25), fig. 24.66.
- 11 Vipard 1995, 51-77.
- 12 Ivanova 1994.
- 13 Marti 1941.
- 14 Lebedev & Lapin 1954.
- 15 For a recent and pertinent discussion, see Højte 2005.
- 16 Zedgenidze 1978; another similarly decorated fishplate is on display in the Kerch Museum.
- 17 To these products we must add olive oil which seems to have been produced on the southern shore of the Black Sea, especially around Sinope.
- 18 The large dimensions of these amphoras did not impede their transport on land, as they have been discovered far inland of Dobrudja or Crimea. I therefore partially disagree with Böttger and Šelov (1998, 33), who consider large amphoras such as Zeest 75 as having been used "hauptsächlich für die stationäre Aufbewahrung vor allem von Schüttgut - Getreide, Mehl u.a., nich aber für Transport und Lagerung von Flüssigkeiten ...".
- 19 Opaïț 1980, 308 (type XI), pl. IX.1-3; XV.2.
- 20 Zeest 1960, 113 (type 75), pl. 31.75a.
- 21 Zeest 1960, 113 (type 75), pl. 31.75b.
- 22 Babenčikov 1963, pl. XVI.1.
- 23 Arsen'eva & Naumenko 1992, 140-141, fig. 18.
- 24 Opaïț 1980, 308 (type XI), pl. IX.1-3; XV.2.
- 25 Klenina 2000, 123-134, fig. 25.3.
- 26 Klenina 2004, 24, (type 4), fig. 7.70.
- 27 Zeest 1960, 113 (type 75), pl. 31.75a; Krapivina 1993, 99 (type 31), fig. 30.26.
- 28 Burakov 1976, 71, pl. II.16
- 29 Arsen'eva & Naumenko 1992, 140-141, fig. 18.
- 30 Alekseeva 1997, pl. 90.6; 127.2.
- 31 Klenina 2000, 123-134, fig. 25.2,5.
- 32 Krapivina 1993, 99, fig. 72.15.
- 33 Klenina 2004, 24, (type 4), figs. 7.68-69.
- 34 Arsen'eva & Naumenko 1992, 144-145, fig. 24.2.
- 35 Alekseeva 1997, pl. 90.6.
- 36 Zeest 1960, 113 (type 75), pl. 31.75b.
- 37 Krapivina 1993, fig. 72.16.

- 38 Babenčikov 1963, pl. XVI.1.
- 39 Alekseeva 1997, pl. 106.11; 124.12.
- 40 Krapivina 1993, 99, fig. 72, 15-17.
- 41 Kruglikova 1966, 208-209; Šelov 1972, 124; Krapivina 1993, 99.
- 42 Opaït 1980, 308 (type XI), pl. IX.1-3; XV.2.
- 43 Monachov 1999, pl. 236.6; Monachov 2003, pl. 106.1.
- 44 The Myrmekion material seems to be closer to "light red", Munsell 10R 6/6, with sparse iron minerals and yellowish-grey inclusions (the fabric contains ill sorted red-brown rock fragments, frequent red-brown iron ore nodules, fine translucent crystals of quartz, fine calcite inclusions (?). The Balaklava (?) material is closer to orange, "yellowish red" and "reddish yellow", Munsell 5YR 5/8-6/8. Its fabric contains well-sorted inclusions, mainly crushed shells (calcites), rounded, opaque crystals of quartz, and iron minerals.
- 45 Semenov-Zuser 1947, 241.
- 46 Myc, Lysenko, Semin, Teslenko & Ščukin 1997, 211-221, fig. 121.
- 47 We should keep in mind that while many amphora shapes have been imitated in different workshops, their makers continued to fashion some parts of the amphora according to their own cultural traditions. Only by paying attention to this minor variable can we separate one variant (workshop) from another (workshops).
- 48 Panella 1986, fig. 26.
- 49 Hayes 1983, 155 (Type 39), fig. 25.91.
- 50 Vnukov 2003, 133, fig. 52.222.
- 51 For the illustrated amphora, all the fragments and the material close ups I am deeply grateful to A. Butjagin who allowed me to take pictures during my visit at Myrmekion in the summer of 2003.
- 52 Zeest 1960, 115-116 (type 83), pl. 34 and 117 (type 89), pl. 36; Abramov 1993, pl. 57; Alekseeva 1997, pl. 90.1,2; 95.9; 110.22; 112.7; 119.1,2; 120.9,10; 124.20; 133.13, 14; 149.2; 171.12; 172.13, 18; Turovskij, Nikolaenko, Goriachuk & Ladiukov 2001, 66 (type II.11).
- 53 Kutajsov & Užencev 1994, 58, fig. 10.2.
- 54 Krapivina 1993, 99 (type 27), fig. 30.25; Turovskij, Nikolaenko, Goriachuk & Ladiukov 2001 (type II.17).
- 55 Arsen'eva & Naumenko 1992, 157.
- 56 Krapivina 1993, 99 (type 27), fig. 30.25.
- 57 Arsen'eva & Naumenko 1992, 157, fig. 38.1.
- 58 Alekseeva 1997, pl. 131.2.
- 59 Gajdukevič 1987, 171, fig. 191.
- 60 Strželeckij 1959, 142.
- 61 Gajdukevič 1952, 57, figs. 62-64.
- 62 Curtis 2001, 405; Curtis 1991, 192-193, Appendix 1-5.
- 63 Curtis 2001, 405-408.
- 64 http://news.nationalgeographic.com/news/2003/01/0110_030113_blacksea.html.
- 65 Broad 2003.
- 66 Auriemma 2000, 36-37.
- 67 Curtis 2001, 320.

The One That Got Away: A Reassessment of the Agoranomos Inscription from Chersonesos (*VDI* 1947.2, 245; *NEPKh* II, 129)

Tønnes Bekker-Nielsen

The fragmentary *agoranomos* inscription from Chersonesos in the Char'kov University Museum (Fig. 1) is generally considered to be among our most important sources for the fish trade in ancient Chersonesos. The fragment in question had been in the possession of the museum for some time before it caught the attention of a junior curator, D.L. Grinman, in early 1941. He was unable to ascertain precisely where, when or in what circumstances the stone was originally discovered, or how it came to be in the collections of the Char'kov University Museum, but according to the legend on the rear of the slab, it had been found in Chersonesos (modern Sevastopol). When the German army seized Char'kov later in 1941, the museum was burnt down and



Fig. 1. The inscription in its present state (after Soročan, Zubar' and Marčenko 2001).

many of its records and exhibits were destroyed. Grinman, too, was killed. The inscribed slab was damaged by fire and broken in two. A pre-destruction photograph accompanies the first publication of the inscription by S. Semenov-Zuser in the *Vestnik Drevnej Istorii* (VDI) for 1947.2.

The height of the fragment is about 12.5 cm. The original size of the inscribed slab can be estimated as ca. 0.4 by 0.19 metres.¹ The text is a fairly conventional building inscription:

[Ἀγ]αθη̄ι τύχηι
 [Θεαγέ]νης Διογένους
 [ἀγορα]νομήσας ἐκ τῶν
 [ἰδίων τ]ῆν ὀψόπολιιν
 [ἱερα]τεύοντος Διο
 [--- Φι]λαδέλφου

“Good fortune. Theagenes son of Diogenes, *agoranomos*, from his own resources built an *opsopolis* while Dio... son of Philadelphos was priest”.

An ὀψόπολις or, more correctly, ὀψόπολις is obviously a place where ὄψον is sold. *Opson* has a wide range of meanings, all connected with food: it can mean “victuals”, “rations”, “cooked food”, “relish”, “delicacies” or “fish”. Semenov-Zuser concluded that the choice of the unusual word *opsopolis* was meant to indicate “a place where delicacies such as fish are sold along with delicate fish sauces, or ... where fish sauces are sold”.²

The hypothesis that Chersonesos had a market edifice entirely devoted to the trade in fish sauce was no doubt suggested by the large number of ancient fish-salting cisterns in the city. Our inscription seemingly confirms the existence of a Crimean fish processing industry operating on a massive scale, and has been cited in numerous later works. In Vladimir Ivanovič Kadeev’s influential monograph *Očerkii istorii ekonomiki Chersonesa Tavričeskogo v I-IV vekach n.e.* (*Studies in the Economic History of the Tauric Chersonesos in the First to Fourth Centuries of Our Era*), we read that “Evidence for the nature of the fishing industry is provided by the inscription honouring Theagenes son of Diogenes (2nd century AD), in which a specialized market for the sales of fish sauce is mentioned”.³ It reappears in the book *Ekonomičeskie svjazi antičnych gorodov Severnogo Pričernomor’ja v I v. do n.e. – V v. n.e.* (*Economic Relations in the Ancient Cities of the Northern Black Sea*), co-authored by Kadeev and Sergej B. Soročan, as “a specialized market for fish and fish sauces”,⁴ and most recently in the popularizing 800-page volume by Soročan, Zubar’ and Marčenko, *Žizn’ i gibel’ Chersonesa* (*Life and Decline of Chersonesos*).⁵ The market in question is tentatively, but convincingly, identified with a structural complex, the remains of which were found just south of the late antique basilica excavated by G.D. Belov in 1935. In the centre of the complex was a round structure of about 13 square metres.

Considering the key importance of our inscription, there is good reason to examine it closely within its geographical and chronological context. I will not question its Chersonesan provenance, but focus on the person and career of Theagenes, the office of *agoranomos*, and the structure described as an *opsopolis*.

Theagenes son of Diogenes

Theagenes, son of Diogenes, served as archon in the *polis* of Chersonesos in the year 129/130 AD, when his name was included among the city officials dedicating an honorary decree in favour of Dia[...], a citizen of Herakleia Pontike (*IOSPE I*², 359). Semenov-Zuser takes Theagenes to be the same person as the [...]enes, son of Diogenes, mentioned in our inscription, which on paleographical grounds may be dated to the early 2nd century AD.⁶ If this identification is correct, then Theagenes served as *agoranomos* at an early stage in his municipal career, later moving up to become archon.

Agoranomoi

In Classical Athens, the task of the *agoranomoi* was to supervise the market. We meet them in several of Aristophanes' comedies; in the *Acharnians*, Dikaiopolis appoints *agoranomoi* to maintain order in the marketplace and keep undesirable persons away; in the *Wasps*, Myrtia threatens Philokleon with the *agoranomoi*.⁷ In the *Politics*, Aristotle writes that "first among the offices of the *polis* is that dealing with the *agora*",⁸ and in the *Athenaiōn Politeia*, he lists the number of such magistrates in Athens: ten *agoranomoi* (five each for the markets of Athens and Peiraieus), ten *metronomoi* or inspectors of weights and measures, thirty-five *sitophylakes* or overseers of the corn trade, ten market superintendents – a staggering total of 65 persons, all chosen by lot to oversee trading in the two main markets of the city.⁹ Like the markets of Athens and Peiraieus, that of Olbia had five *agoranomoi*, who are recorded in several dedications to Hermes Agoraios.¹⁰

In later Greek literature, *agoranomos* is used as a gloss for the Roman term *aedilis*, and vice versa. When Dion Cassius, refers to Caesar's term as aedile in 64 BC, he uses the term *agoranomia*.¹¹ In Republican Rome, the aedile was charged with the upkeep of temples and public buildings as well as keeping order in the marketplace. In the Roman *cursus honorum*, the aedileship followed the quaestorship and provided an opportunity to improve one's chances in the competition for a later praetorship or consulate. Success and popularity, however, were not gained for nothing: a Roman aedile was expected to provide benefactions, building projects and games out of his own resources.¹²

Similarly, small towns had their ambitious aediles and *agoranomoi*. Lucius, the protagonist of Apuleius' *Metamorphoses*, describes his encounter with one

of these in Hypata, the main city of Thessaly.¹³ The persons are fictional, but the gently ironic portrait drawn by Apuleius no doubt resembles many real-life *agoranomoi*.

Lucius has arrived in Hypata and goes to the food market, *macellum*, where he finds many different fish on sale. He haggles for a while with an old fishmonger over a fish priced at one hundred sesterces and succeeds in getting it for eighty. Leaving the market, he runs into Pithias, a former schoolfellow from Athens. Pithias has done well for himself and is now an important local magistrate: "I am a *curator annonae* and an *aedilis*. If you come to buy food for your supper, let me show you where to get it at the right price". But Lucius has already done his shopping and shows his fish to Pithias. "What did you pay for that?" – "Twenty denarii" – "What!" cries Pithias, "you have been shamefully cheated. Show me where you bought this fish". They go back into the *macellum*, where Pithias rebukes the fishmonger at length: "Is that how you behave to strangers, and especially to our friends? How dare you sell this worthless fish at such an inflated price?"

Fortunately, there are magistrates like himself to protect the consumers: *sub meo magisterio mali debeant coerceri*, "under my authority, evildoers shall be restrained". So to set an example, Pithias takes the basket from Lucius, turns its contents out on the pavement and orders his *lictor* to trample the fish to a pulp. "There", says Pithias with satisfaction, "I certainly showed the old fool who is in charge here". And then he departs, leaving Lucius standing in the *macellum* with neither fish nor money.

Apuleius writes in Latin and identifies Lucius' friend as *aedilis*, but since the story takes place in Thessaly, his title would have been *agoranomos*, and it is in his capacity as overseer of the market that Pithias proceeds to assist Lucius, to the latter's cost.

Another example of the small-town *agoranomos* is Sosikles, whose career is known to us thanks to an inscription of 108/109 AD, when he held an ephebarchate in the Bithynian city of Kios,¹⁴ having previously served as *agoranomos*, gymnasiarch, priest of Herakles, politarch and first archon – presumably in that order.¹⁵ The Chersonesan career of Theagenes, son of Diogenes, followed a similar pattern: when we first meet him he is *agoranomos*, later he attains the archontate. He presumably held several intermediary magistracies that are unknown to us. In Classical Athens, being an *agoranomos* did not mark out a man for a political career, but in the Greek cities of the early imperial period, the post of *agoranomos* was an important first step on the way to higher offices. The *cursus* of Sosikles is typical of his times; in Bithynia nearly all recorded archons of the 1st and 2nd centuries AD held the office of *agoranomos* at a previous stage of their career.

What made the office attractive to would-be local politicians was that, while its function – i.e. supervision of the market – on the face of it might seem quite ordinary, it invested the holder with quasi-judicial powers: an *agoranomos* could impose penalties on the spot for infringement of the market regulations,

and might be called upon to act as arbitrator in disputes over prices. Judge and arbitrator were characteristic elite roles, the domain of the city's political class.¹⁶ In addition, the decisions of the *agoranomos* were taken in the market, in the full public view. The office of *agoranomos* thus provided an ideal venue for a local politician to demonstrate his capacity for decision-making and arbitration, and his implicit qualifications for higher and more demanding offices. Pithias' pronouncement – *sub meo magisterio* ... – might sound pompous to our ears (and to Lucius'), but this is precisely the sort of message that an aspiring local politician wished to convey to his fellow-citizens.

An *agoranomos* who was unusually ambitious, or unusually rich, could go one step further by making a financial contribution. The post of *agoranomos* was usually an *archê* rather than a *leitourgia*, and its holders were not expected to contribute from their own resources. Some might, however, do so, donating money to alleviate a food crisis in times of grain shortage, or for embellishing and extending the market buildings. Such benefactions would earn an *agoranomos* the gratitude of his fellow-citizens and put him well ahead of his competitors for higher office. The nature of Theagenes' contribution is underlined by the phrase ἐκ τῶν ἰδίων, "from his own resources". But what exactly was it that Theagenes built, or gave, ἐκ τῶν ἰδίων?

Opsopolis

The text reads ὀψόπολις, which could be a misspelling of either ὀψοπόλιον or ὀψόπωλις. Assuming that -ην preceding the word are the last two letters of an article, the neuter ὀψοπόλιον is ruled out and we are left with ὀψόπωλις, the accusative singular of ὀψόπωλις, that is to say, a market for ὄψον. The word is rare. In the *Life of Timoleon* by Plutarch, composed in the early 2nd century AD, we read how the deposed tyrant Dionysios II of Syrakousai leads a dissolute life, "loitering about in the *opsopôlis* or sitting in a perfumer's shop".¹⁷ This appears to be the only example of the word in the extant literary record.

In Classical Greek, *opson* had a range of meanings: "food" in general, "relish", "luxury food" or "delicacy" – and thus "fish", since fish was both a delicacy and expensive. In Plutarch's context, it might mean either "fish" or "luxury food", since both carry negative moral connotations that would be appropriate to the occasion.¹⁸ In a Crimean context, "fish market" is a translation that easily comes to mind, but Semenov-Zuser points out that if Theagenes wanted to identify himself as the donor of a fish-market, he could have used the more straightforward term *ichthyopôlion* – the word used in the Protogenes decree from Olbia of the 3rd century BC.¹⁹ There are two possible explanations for the occurrence of this otherwise unknown term, *opsopôlis*, in Chersonesos. The first is that it denotes an institution that was unique to Chersonesos and not found in other communities; the second that it refers to an institution that is known from other places, but by a different name.

The first line of thought is followed by Semenov-Zuser. He takes *opson* as referring not to fish in general – in which case we would expect *ichtys* – but to processed fish and fish sauce or relish, which also fall within the wider definition of *opson*. “In our inscription, this form of the word can be read *opsop(ô)lis*, a place where delicacies, i.e. fish, are sold, but at the same time together with delicate fish sauces. Together they reveal to us the correct translation of *opsopôlis*: “fish market” or, even better, “market stalls for the sale of sauces”.²⁰ The interpretation of Semenov-Zuser was followed by Kadeev, and the hypothesis of a specialized market for fish sauces in Chersonesos gained authority. It seemed reasonable enough that a city with a large fish processing industry also had a large trading area for the finished product. On closer reflection, the logical connection between fish processing, *opsopôlis* and *agoranomoi* is less convincing. The existence of a retail market for fish sauce reflects not the productive capacity of the processing industry but the extent of consumer demand for their products and thus, in the last analysis, the size of the urban population. If there was a retail market for fish sauce in Chersonesos, then why is no such market known from much larger urban centres such as Alexandria or Rome?

Of course, the presence of a local fish processing industry might give rise to a wholesale market where local producers met foreign merchants. Two 2nd century inscriptions from Tanaïs on the Don²¹ may refer to such an institution,²² but both use the standard term for a wholesale market, ἐμπόριον. It is not clear whether wholesale trade came within the jurisdiction of the *agoranomos* and even less clear why a politician embarking on a municipal career should sponsor an institution that would benefit a small circle of traders, most of which (i.e. the buyers) were not citizens of the Chersonesan *polis*.

So much for the first possible explanation. The second is that *opsopôlis*, “a place where food is sold”, is used here for the type of urban food market familiar throughout the Roman world and known in Latin as a *macellum*.²³ This building type is first attested in Rome in the 3rd century BC and eventually spread to all parts of the Empire. For our purpose, it is significant that most of the *macella* in Asia Minor were constructed during the 2nd century AD. The authoritative study of the *macellum* is the monograph of the same title by Claire de Ruyt,²⁴ who identified some eighty Roman *macella*. They range in size from 400 square metres upward, but are built over the same basic plan: a square surrounded by shops, sometimes also by a colonnade. The defining characteristic of the *macellum*, setting it apart from the *forum* or *agora*, is the provision of a water supply and washing area, generally located in the centre of the square but sometimes in an adjacent building.²⁵ A water supply and the possibility of cleaning not only the produce itself but the shops and trading area are indispensable to a food market. De Ruyt notes that in *macella* which have a porticus in front of the shops, the pavement is invariably raised in relation to the central square, in order that dirty water and waste from the washing area will not spill out into the porticus. The

pavement can easily be washed down and the water swept into the central court.²⁶

From the earliest time, fish was among the commodities sold in the *macellum* at Rome; in the *Rudens* of Plautus (mid-3rd century BC) the fisherman Gripus ("net") talks of fish being brought into the *macellum* for sale²⁷ and the first Roman *macellum* occupied the former site of the fish market.²⁸ When Lucius came to Hypata and wanted to buy fish for his supper, he went into the *macellum*. Transferring the trade in perishable products foods as fish and meat from the *forum* or *agora* to a purpose-built food market had obvious advantages, not only for the fishmongers and butchers, but also for the vendors and citizens in the marketplace who would no longer have to put up with the flies and smells associated with the fish and meat trade.²⁹

There was no Greek gloss for *macellum*. Greek writers were generally content to use a Hellenized form of the Latin word, *makellon*. In the first letter to the Corinthians, for instance, Paul lays down that Christians may eat all the foods that are offered for sale in the *makellon*.³⁰ In several Greek inscriptions, *agoranomoi* are directly associated with the *makellon*. An inscription from Magnesia mentions an *agoranomos* exercising his functions ἐν τῷ μακέλλῳ,³¹ and from Tegea, another inscription commemorates how the *agoranomoi* have restored the porticus of the *makellon*.³²

The opsopôlis of Chersonesos

Grinman, Semenov-Zuser and Kadeev interpreted the *agoranomos* inscription from Chersonesos in a wide perspective, drawing on parallels from the whole of the ancient world. What is proposed here is an interpretation of the text in its specific context: geographically limited to Asia Minor and the northern Black Sea region; chronologically to the 2nd century AD. The institution of the *macellum* or specialized food market was a familiar one in the cities of the Roman Empire, and during the 2nd century AD, it spread to northern Greece and Asia Minor. It would not surprise us to find a *macellum* in an important city such as Chersonesos, and if we follow Soročan, Zubar' and Marčenko in identifying the building complex next to the basilica as the *opsopôlis* of Theagenes, we find that their description – a market area surrounding a central, circular pavilion – strikingly resembles the standard form of the *macellum*.

It is easy to understand that an ambitious municipal politician, Theagenes, son of Diogenes, would want to endow his native *polis* with a purpose-built food market, in other words, a *macellum*; and equally obvious that he wished to advertise his euergetism by means of an inscription on the building. The 2nd century was, however, also the time of the Greek literary revival known as the second sophistic. We are told by Dio Chrysostomos that the Greeks of Olbia – and presumably of other North Pontic cities – took pride in their Hellenism and had preserved a somewhat archaic language. In the cultural environment of the northern Black Sea and the early 2nd century, Theagenes

wished to emphasize his Hellenism. By rejecting the Latin derivative *makellon* in favour of the genuinely Greek *opsopôlis*, he demonstrated his cultural and ethnic orientation. By using a word that was unfamiliar to the average reader, he demonstrated his erudition and social standing.

Using fancy language for everyday phenomena carries a risk that the reader will not understand the message, but Theagenes was on safe ground in this respect: for one thing, *opson* was a familiar word and the composite *opsopôlis* easily understood; for another, if we are correct in assuming that the inscription was placed on the building itself, even the semi-literate would know what kind of building Theagenes had donated.

Conclusion

The interpretation of the *opsopôlis* mentioned in the inscription as a *macellum* supports the identification of the *opsopôlis* with the building complex south of the basilica, and thus in this respect confirms our current conception of the economic history of Chersonesos. On the other hand, numerous other foodstuffs beside fish, for instance meat and poultry, might also be sold in a *macellum*. *Macella* are found across the Roman world in cities that no doubt had a large retail trade in fish, but also in other cities far distant from the sea, such as Tegea. A *macellum* is not a “specialized market for fish sauces” and the presence of a *macellum* in Chersonesos provides no evidence for or against the role of fish salting and fish processing in the economy of the city.

Notes

- 1 Semenov-Zuser 1947, 244.
- 2 Semenov-Zuser 1947, 246.
- 3 Kadeev 1970, 5.
- 4 Kadeev & Soročan 1989, 91-92.
- 5 Soročan, Zubar' & Marčenko 2001, 620-621.
- 6 Semenov-Zuser 1947, 244. Semenov-Zuser notes that Theagenes may also be mentioned in *IOSPE I*, 361 and 386, but these texts are too fragmentary to cast any further light on the career of Theagenes, if indeed it is he who is mentioned in these inscriptions.
- 7 *Ar. Ach.* 723, 824, 968; *Vesp.* 1407.
- 8 *Arist. Pol.* 1321b12-14 (6.8.3).
- 9 *Arist. Ath. Pol.* 51.1.
- 10 *IOSPE I*, 128, 129, 685.
- 11 Dion Cass. 37.8. Cf. Plautus, *Capt.* 823-824, where the *aedilis* is equated with an *agoranomos*.
- 12 For the games and building projects sponsored by Caesar during his term as aedile, see Suetonius, *Caesar* 9.
- 13 *Apul. Met.* 1.25-26.
- 14 Also known as Prusias ad Mare, modern-day Gemlik on the southern shore of the Sea of Marmara.

- 15 *IK* 29, 16. Cf. Apollonios, who was gymnasiarch at Kallatis in the mid-1st century AD, having previously been *agoranomos* (*I.Callatis*, 31)
- 16 Cf. Pliny, *Ep.* 7.30, complaining about the numerous persons who want him to act as their *iudex* or *arbiter*.
- 17 Plut. *Tim.* 14. For the date, see C.B.R. Pelling, *DnP* 9.1161, s.v. Plutarch.
- 18 Luxuries, cf. Aischines, *In Tim.* 1.63; fish: Theophrastos, *Char.* 6. For the semantic evolution of *opson*, see Davidson 1997, 27-30.
- 19 Semenov-Zuser 1947, 245; *IOSPE I²*, 32.
- 20 Semenov-Zuser 1947, 245.
- 21 *CIRB* 1242 (spelled ἐνπό-), 1243.
- 22 It is probably significant that in two closely similar inscriptions, *CIRB* 1245 and 1247, the building work is stated to be for the benefit “of the city and the merchants” (τῇ πόλει καὶ τοῖς ἐμπόροις).
- 23 *Macellum* is often rendered as “abattoir” or “slaughterhouse” (by analogy with modern Italian *macelleria*) and *macellarius* as “butcher”, but a better translation would be “food market” and “food trader”, see Frayn 1995, 108.
- 24 De Ruyt 1983.
- 25 De Ruyt 1983, 312-313.
- 26 De Ruyt 1983, 314.
- 27 Plaut. *Rud.* 979: *in macellum pisces prolati*.
- 28 Frayn 1993, 65.
- 29 De Ruyt 1983, 160.
- 30 *1 Cor.* 10.25.
- 31 De Ruyt 1983, 107; *I.Magnesia*, 179.
- 32 De Ruyt 1983, 193.

Amphora Finds of the 4th Century BC from the Settlements of the Lower Dnieper Region

Alexander V. Karjaka

Introduction

The 4th to early 3rd centuries BC was a time of definite prosperity for the ancient Greek colonies and temporary settlements of nomadic tribes, which existed in and around the northern Black Sea Littoral. The Dnieper Valley occupies a central part of this wide territory and played, because of this, an important role in the economics and trade of the different tribes that dwelt there in this period.

The territory under consideration in this paper stretches along the valley of the Dnieper River for a distance of more than 320 kilometers from the modern city of Zaporozh'e in the north to modern Cherson and the estuary of the Dnieper in the south (Fig. 1). The northern edge of this territory is bounded by the Dnieper Rapids, which in Antiquity were impassable to any type of ship and remain so today. Unfortunately, the waters of the Kachovskoe artificial lake now cover much of this rich and fruitful area, and a great number of potentially important and intriguing archaeological remains are now inaccessible because of this. A number of ancient sites and settlements, however, do remain in the upper reaches of the riverside terraces of the Dnieper River valley. Moreover, the steppe zone of the northern Black Sea, spreading to the east and to the west of the Dnieper Valley, has been populated by Nomadic tribes from the Prehistoric period until the late Middle Ages, and remains of these cultures can still be found in this region.

History of research

The first descriptions of archaeological objects from the territory of the Lower Dnieper were published in the 16th–19th centuries in connection with travelers' accounts of their activities. Goškevič published a summary and detailed report of these descriptions at the beginning of the 20th century. At this time also, Skadovskij, Goškevič and Ebert organized the first modern excavations of the ancient settlements of this area.¹

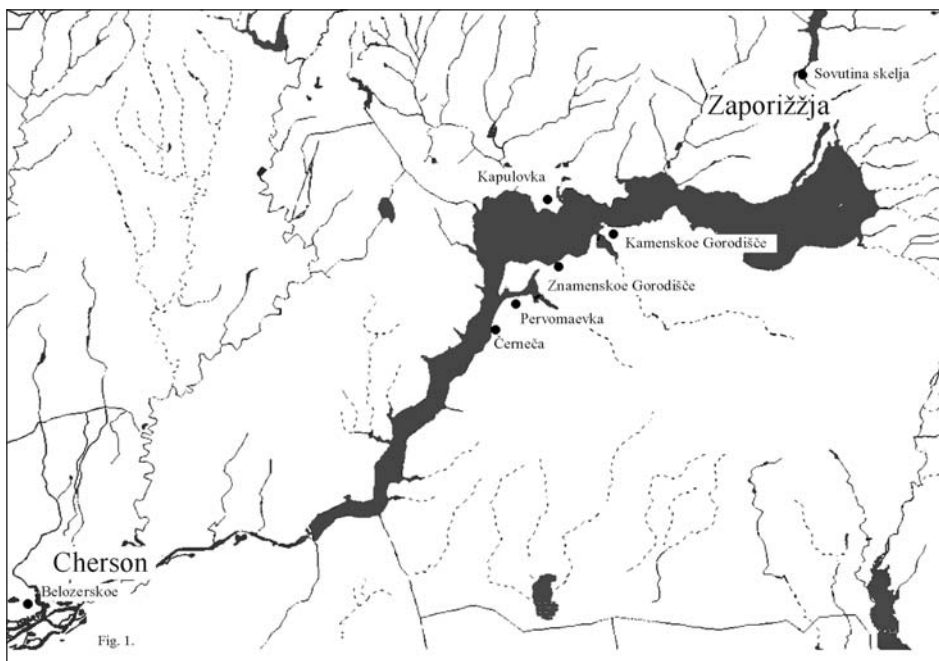


Fig. 1. Location of the biggest settlements of the 4th century BC in the Lower Dnieper.

After the Russian Revolution, in the 1920s, regular investigations of a sizeable part of the territory of the Lower Dnieper began. They were concentrated especially on the area between Kachovka and the Dnieper Estuary. The archaeologists A.V. Dobrovol'skij, I.V. Fabricius, G. Krysin and M.M. Dmitrenko played a major role in carrying out this work.²

In 1938, B.N. Grakov conducted long-term excavations of the territory belonging to the Kamenskoe fortified settlement.³ Shortly thereafter, two significant events took place, first, the construction of the Kachovskaja hydro-system and second, the preparation of almost all of the territory of the Lower Dnieper for the resulting flooding. In this connection, a number of separate expeditions were carried out in order to explore as fully as possible the considerable quantity of archaeological sites and objects to be found in this area, before they were lost to the waters of the new hydro-system. The excavations of Zolotaja Balka (by Dobrovol'skij and M.I. Vjaz'mitina), Kamenskoe (by Grakov and P.D. Liberov),⁴ Znamenskoe (by Grakov, N.N. Pogrebova & Elagina) and other settlements all took place during the course of a few years, and materials from these excavations formed the basis for the first serious publication, by N.A. Onajko, of ancient Greek imports found in the territory of the Dnieper and Bug basins.⁵

In the 1970s, excavations were extended within a framework of research planned by the Institute of Archaeology at the National Academy of Sciences of the Ukraine, but the major excavations were carried out in the 1980s and

1990s. Long-term excavations of various settlements at this time led to the exploration of considerable areas and brought to light much new material. The largest expeditions, organized by N.A. Gavriljuk, V.P. Bylkova, and S.N. Kravčenko, focused on the Kamenskoe fortified settlement, and the settlements of Lysaja Gora, Pervomaevka, Černeča, and Belozerskoe, all from the 4th century BC.⁶

Finally, during the last 10 years, regular excavations of the northernmost fortified settlement – Sovutina Skelja in the territory of the modern town of Zaporož'e – have taken place.

Review of the amphora finds

The collection of materials from these sites includes finds from over one hundred settlements of the 4th century BC, both large and small. The sites examined vary from different types of fortified settlements with considerably thick archaeological strata to settlements and sites where cultural layers are almost entirely absent. Among these, the best known and best explored are Kamenskoe Gorodišče, Lysaja Gora, Kapulovskoe, Sovutina Skelja, Pervomaevka, Černeča and, the most southern of them all, the Belozerskoe settlement. The region of the Kamenskoe and Kapulovskoe fortified settlements is especially notable, located as it is at the crossroads of important land routes and the riverbed of Dnieper, which was the most important means of transport in the region.

The inhabitants of the territory of the Lower Dnieper basin first became acquainted with Greek culture and Greek imports in the 6th and 5th centuries BC. Archaeological remains from this period consist mainly of the occasional finds of amphora fragments in the territory of several settlements, such as the Kamenskoe fortified settlement and the settlement of Lysaja Gora. Very rarely, such fragments are also found in burial mounds. There are, however, no archaeological remains or cultural layers from the settlements, which can be dated to the earlier centuries of Scythian history.⁷ Thus, these finds can only serve as evidence of the first penetration of Greek goods into the barbarian territory, and tell us little or nothing about earlier periods of the area's history.

It seems likely that it was only after the start of the 4th century BC that a substantial import of different goods to the nomadic tribes of the steppes of the northern Pontic area began. This supposition is based on the finds from over 100 different fortified and unfortified settlements of the 4th century BC.⁸

The emergence of these settlements was associated with the use of the Dnieper as a significant river trade route. Traditionally, the majority of the settlements on the Lower Dnieper have been associated with the Scythian culture, as exemplified by the archaeological remains of the material culture of these settlements.

Amphorae fragments are the most widespread finds among the remains of

imported pottery from the settlements of the Lower Dnieper basin. The number of these fragments found in the materials of separate sites and settlements varies greatly, ranging from 13.64 % (the Kapulovka fortified settlement and the Sulicke settlement) to 87.88 % (Pervomaevka I). The most striking feature of the ceramic evidence from the different Scythian settlements is the almost entire absence of fragments of thin-walled black-glazed vessels.⁹ The ceramic material from the settlements of the Lower Dnieper consisted of amphora fragments and fragments of hand made vessels.

The amphora material in question is represented mainly by numerous fragments deriving from all parts of the jar. Only two intact vessels have been found, which is too few to provide us with a general picture of the material from particular sites. The first of these was found off the Chortica Island in the most northern part of the Lower Dnieper region, whereas the second comes from one of the cisterns at the site of Belozerskoe.

The most numerous group of amphora fragments was produced in the workshops of the northern Aegean. They occur in great quantities not only throughout the territory of the Lower Dnieper basin but also throughout the whole territory of the north-western coast of the Black Sea. This has been shown by N.A. Lejpunskaja, writing on the materials of the Greek *poleis* of the latter region.¹⁰ We must note too that the provenance of a considerable number of these fragments has been determined through the general features of their exterior shape and the characteristic composition of the clay used in amphorae made in workshops of the northern Aegean. The amphora fragments from the northern Aegean are clearly distinct from the materials of the Kamenskoe fortified settlement and the settlements in its neighbourhood. Grakov was the first to notice their prevalence in the materials from the excavations of the 1940s and 1950s.¹¹

Fragments of Thasian amphorae and from vessels produced in Mende and Peparethos (so-called Solocha-2 type) are the most numerous, but amphorae from Akanthos also seem to have been present – judging by various amphora stamps. Of the fragments from northern Aegean amphorae, those from Thasian vessels occur most frequently (Fig. 2.1-2). Their characteristic feature is a considerable variety in the exterior shape of their toes and rims but they are nonetheless easily separated from the general mass of amphora fragments. To their general number may be added the fragments of amphorae from the Thasian circle, which are easily determined by the colour and structure of their clay. They average about 30-35 % of all types of amphorae found. Most of the Thasian amphorae are of the bi-conical type with a tall foot and expansive bottom and stem from the 4th century BC.¹² Almost all of them seem to have had a little conical hollow in the centre of their bottoms. A few specimens have a deep hollow of up to 5-6 cm in depth.

Although Thasian amphora rims are normally easy to determine because they are flat on top and their smooth surface, but many of them have atypical shapes. Their handles all have a typical oval section as well.

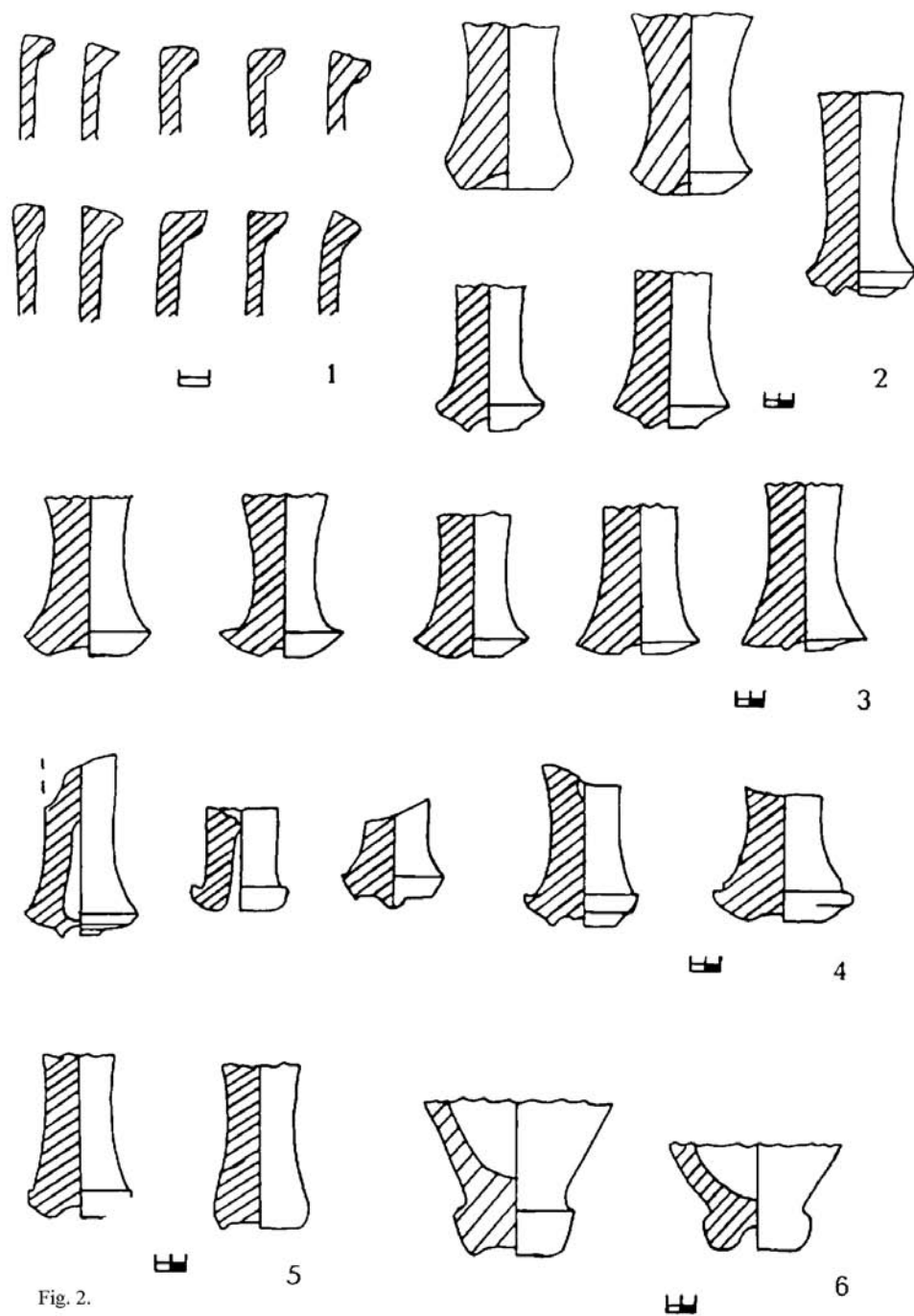


Fig. 2.1) Rims of Thasian amphorae (scale 1:2); 2) Bases of Thasian amphorae; 3) Bases of Mendean amphorae; 4) Unusual shapes of amphorae bases; 5) Bases of Solocha-II amphorae; 6) Bases of Solocha-I amphorae (scale 1:4).

It is hard to explain the cause of a few unusual specimens of Thasian amphora toes, which we can determine by the structure of the clay and the general proportions of their shape.

The Thasian amphora fragments stand out clearly from the materials of the Kamenskoe fortified settlement. Grakov was the first to notice their prevalence among the materials from the excavations of the 1940s and 1950s.¹³ Stamped Thasian amphora fragments were also found in strata of the same period in the settlements of Velikaja Znamenka,¹⁴ Majačka and Vyšetarasovka.¹⁵ Thasian amphorae also occur frequently among the materials from burials and barrows near Kapulovka,¹⁶ Tovsta Mogyla,¹⁷ and Nosaki.¹⁸

The second most prolific group of fragments is made up of amphorae from Mende (Fig. 2.3) in the northern Aegean.¹⁹ The specimens that have been excavated are typical of the amphorae from this centre and at the same time have a few features in common with amphorae of the Thasian circle. In Russian and Ukrainian literature, they are often described as amphorae from the Melitopol' Barrow. They constitute about 15-20 % of all amphora fragments. Their bottoms are wider and flatter than other amphorae, while their toes are tall, vary in shape and have more distinctive profile of their bodies. Their rims are less precise than the Thasian.

Onajko was the first to note the widespread occurrence of this type of amphorae.²⁰ It must be emphasized that they are less frequent than Thasian amphorae, but finds of Mendean amphorae are well known from the excavations of burial sites of both the Scythian aristocracy and probably also Scythian kings. For example, as S.V. Polin has determined, they account for the majority of amphorae in the barrows of kings at Certomlyk,²¹ while 7 examples were found in the burials of the well-known Tovsta Mogyla²² and 11 in the barrow at Melitopol'.²³ By contrast, remains of Mendean amphorae are rare in ordinary Scythian barrows and occur in these locations mainly as part of the remains from the funeral feast.

The third most frequent category consists of amphorae of the Solocha-II type (Fig. 2.5) from the first half of the 4th century BC.²⁴ They amount to about 15 % of all amphora fragments from the settlements of the Lower Dnieper. Probably they originated in the area of the northern Aegean just as the Thasian and Mendean amphorae did; they were at any rate produced on the island of Peparethos.²⁵

Admittedly, some few fragments of the 4th century BC Solocha-I amphorae can be attributed to the same centre.²⁶ They amount to about 2-5 % of the total. The type is clearly distinguished by the characteristic shape of its sharply out-turned rim (Fig. 3.10). The bodies of these amphorae are oviform in shape with vertical handles; their surfaces are smooth and made of a high quality clay (Fig. 2.6). Many of them were found at Velyka Znam'janska Pristan.²⁷ The best collection of this type of amphora originates from the Solocha Barrow²⁸ and the Pervyj Mordvinovskij Kurgan.

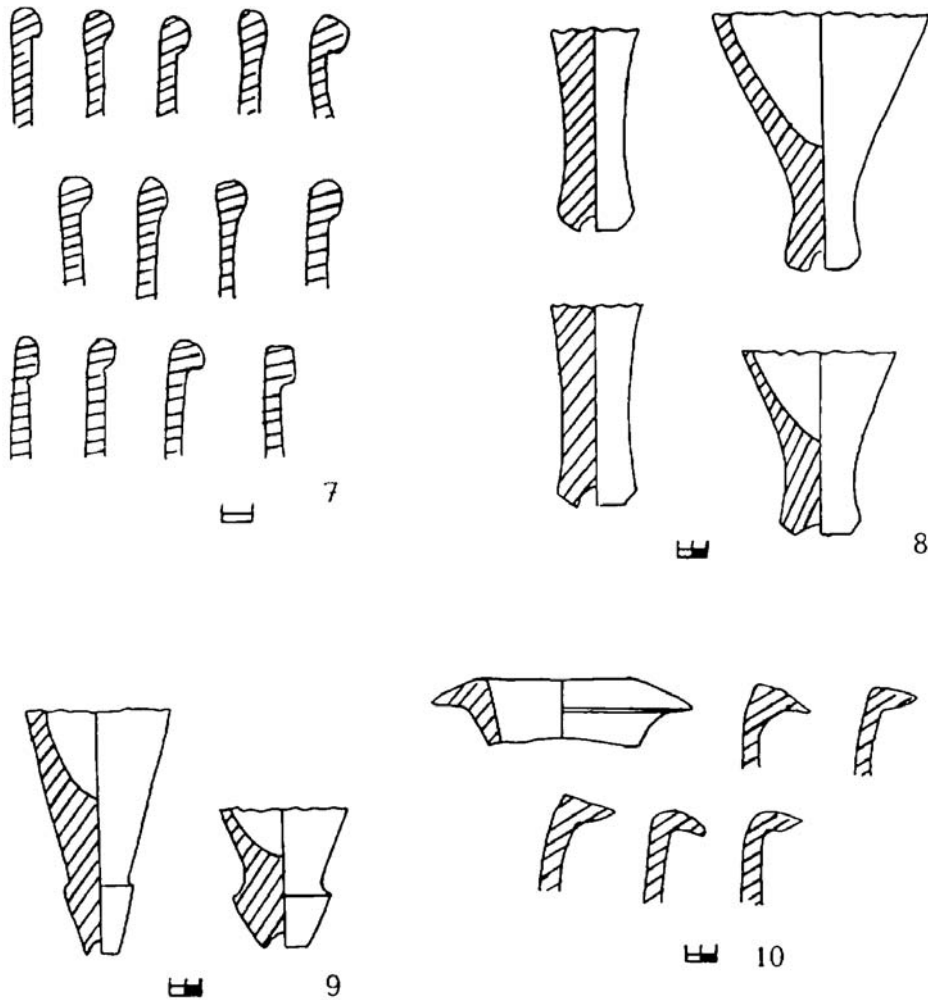


Fig. 3.

Fig. 3.7) Rims of Herakleian amphorae (scale 1:2); 8) Bases of Herakleian amphorae; 9) Bases of amphorae from Chios; 10) Rims of Solocha-I amphorae (scale 1:4).

Fragments from amphorae produced in Herakleia call for separate treatment (Fig. 3.7, 8). They amount to about 10-15 % of all amphora fragments. The exterior shape of these vessels shares a number of common features with the Thasian amphorae. They too generally have a conical body with vertical handles and a tall but not massive cylindrical toe. The most characteristic feature of these amphorae is the presence of noticeable stone inclusions in the structure of their clay. The majority of them belong to types 1 and 2 of Zeest's classification.²⁹

Fragments of Herakleian amphorae can often be found among the materials from the settlements of the Lower Dnieper, but a considerable number of them were also found during the excavations of Lysaja Gora and a few of its neighboring settlements. Moreover, many Herakleian amphorae were found in ordinary Scythian burial grounds, such as Širokoe (barrow 5), Širokoe 2 (barrow 26), Ševčenko 3 (barrow 2) and Kutjanskij Mogil'nik (barrows 18 and 25).

Vessels from Herakleia are well known from the excavations of numerous Greek colonies and burial mounds.³⁰ A considerable number of them were imported to the territory of the northeastern Black Sea and the Bosporan Kingdom. This probably occurred as the result of the existence of a direct route from the southern coast of the Black Sea to the southern coast of the Crimea in the 4th century BC.

We have observed a relatively few amphora fragments from Sinope or Chersonesos, the presence of which is known from the use of amphora stamps.³¹

Surprising as well is the infrequent appearance of fragments from amphorae produced in Chios (Fig. 3.9), which are otherwise known as one of the most common types of amphorae found in the Greek colonies of the northern Black Sea in the 4th century BC.

A certain irregularity in the territorial distribution of amphora fragments by their number and centres of manufacturing can also be noted. The greatest number was found in the territory of the Kamenka and Kapulovka fortified settlement and this sample seems typical for a great number of other settlements in the Dnieper Valley.

The majority of the amphorae fragments found there were manufactured in the production centres of the northern part of the Aegean, of which the most important were Thasos, Mende and Peparethos. The quantity of fragments of amphorae from these centres varies, but together they make up the majority of the finds. One exception to this is the materials found at the Lysaja Gora settlement, located to the north of the Kamenka region. Materials from this settlement provide evidence of closer trade relations with centres in the southern Black Sea region and especially with Herakleia.³²

Conclusion

In conclusion, we can affirm that the majority of settlements of the Lower Dnieper mainly imported productions of lower quality amphorae made in the northern Aegean.³³ The prevalence of finds of fragments from Herakleian wares can be observed only among the materials from the settlement of Lysaja Gora and its neighbours. More expensive wine was imported in amphorae from Mende and Peparetos, which are more often found in the burials of the wealthy Scythian aristocracy. More widespread was the import of ordinary amphorae from Thasos and Herakleia. Finally, for the Scythian settlements of

the 4th century BC in the Lower Dnieper region it is characteristic that there is a lack of imports from Chios, although such wares can often be found among the materials from the Greek colonies of the northern Black Sea.

Notes

- 1 Skadovskij 1897, 81-85; Goškevič 1913, 118-133.
- 2 Fabrycius 1929, 17; 1930, 113-119; Krysin 1929, 10-21; Dmytrenko 1946, 1-7; Dobrovol'skij 1954, 25
- 3 Grakov 1954.
- 4 Grakov 1954.
- 5 Onajko 1966; Onajko 1970.
- 6 Gavriljuk, Bylkova & Kravčenko 1992; Karjaka 1997.
- 7 Onajko 1966, 17.
- 8 Gavriljuk & Olenkovskij 1992, 5, 35.
- 9 Gavriljuk 1999, 250, tab. 5.11.
- 10 Lejpunskaja 1973, 29, tab. 2.3; 1981, 60.
- 11 Grakov 1954.
- 12 Zeest 1960, 82-85.
- 13 Grakov 1954, 56.
- 14 Pogrebova 1958, 142-146.
- 15 Gavriljuk & Olenkovskij 1992, 10, figs. 3.16.15; 6.7.
- 16 Terenožkin, Il'inskaja, Černenko & Mozolevskij 1973, 122.
- 17 Mozolevs'kyj 1979, 25, figs. 7.1.2; 8.4-6.
- 18 Bidzilja, Boltrik, Mozolevskij & Savovskij 1977, 117, 107.
- 19 Brašinskij 1976; Brašinskij 1984, 38.
- 20 Onajko 1970, 11.
- 21 Polin 1991, 365.
- 22 Mozolevs'kyj 1979, 23-25.
- 23 Terenožkin & Mozolevskij 1988, 69-76.
- 24 Brašinskij 1984, 240.
- 25 Garlan 1992; Empereur & Garlan 1992b.
- 26 Lejpunskaja 1981, 32.
- 27 Gavriljuk & Olenkovskij 1992, 15-16, fig. 6.5.
- 28 Mancevič 1987, 51.
- 29 Zeest 1960, 100-101.
- 30 Lejpunskaja 1975, 126-138.
- 31 Grakov 1954, 90-92; Plešivenko 1992, 162.
- 32 Karjaka 1999, 29-33.
- 33 Karjaka 1996, 126-129.

Échanges d'amphores timbrées entre Sinope et la Méditerranée aux époques classique et hellénistique

Yvon Garlan

Depuis un siècle et demi, on a écrit jusqu'à plus soif sur les importations d'amphores méditerranéennes en mer Noire, de l'époque archaïque à l'époque byzantine: et non sans raison, tant elles ont été abondantes. Mais on n'a dit mot, ou presque,¹ sur le mouvement inverse d'exportations d'amphores pontiques en Méditerranée: et non sans raison là encore, tant elles paraissent avoir été relativement rares et sont restées généralement inédites.²

Si on se limite aux amphores timbrées d'époques classique et hellénistique, la question ne peut guère d'ailleurs se poser qu'à propos de trois villes pontiques, qui en furent à la fois importatrices et exportatrices.

L'une d'entre elles, Héraclée du Pont, mérite même à peine d'être citée: parce qu'il n'est toujours pas assuré que la dizaine de milliers de timbres englyphiques qui sont attestés entre le début du IV^e siècle et le milieu du III^e sont bien originaires de cette cité plutôt que de telle autre fondée par les Mégariens au nord des Dardanelles; parce que cette cité n'a guère jusqu'ici été touchée par les recherches archéologiques; et parce que ses timbres sont quasi inexistantes en Méditerranée (3 exemplaires)³ — avec cette réserve qu'ils ont toute chance d'y être plus ou moins passés inaperçus au cours des fouilles à cause de leur impression, inhabituelle dans le monde grec, sur la paroi du col.

La deuxième cité concernée est Chersonèse Taurique, où l'on a trouvé plusieurs centaines, sinon milliers de timbres amphoriques méditerranéens de provenances variées, et qui a produit ses propres amphores timbrées du troisième quart du IV^e s. au premier quart du II^e siècle.⁴ De cette ville 22 timbres⁵ sont connus en Méditerranée: dont 14 à Athènes, 3 à Rhodes et 2 à Délos.

Je m'arrêterai donc plutôt sur le cas de Sinope d'où sont originaires une vingtaine de milliers de timbres amphoriques imprimés sur l'anse entre les années 350 et la fin des années 180, et où une mission française vient de fouiller, de 1994 à 1997, quelques dépotoirs d'ateliers de production,⁶ portant le nombre des trouvailles locales (tout à fait exceptionnelles sur le reste de la côte nord de la Turquie) à 1377 exemplaires (dont 42 tuiles, toutes sinopéennes). Car la «balance» du commerce amphorique avec le monde méditerranéen m'y paraît significative.

Sur un total de 1335 anses timbrées, 105 sont d'origine étrangère:⁷ ce qui représente 8 % du matériel, et sans doute plus en réalité, si l'on tient compte du fait que nos collectes proviennent généralement de dépotoirs de produc-

teurs et non pas de consommateurs. Cette donnée chiffrée, que nous ignorons tant à Héraclée qu'à Chersonèse, est précieuse, même s'il est difficile d'en tirer grand profit en histoire économique: car rien ne nous permet de dire si ces amphores importées étaient remplies de vin ou d'huile, dont Sinope était elle-même exportatrice, plutôt que de telles autres denrées...

Une seule d'entre elles, trouvée en mer, était d'origine héracléote (et donc pontique): elle est en effet timbrée au nom du fabricant Molossos et de l'éponyme Lykôn (sans doute aux environs de 360). Toutes les autres peuvent être d'origine méditerranéenne, et 85 au moins le sont certainement.

Rhodes en a fourni 58 (nombre qu'il faut diviser environ par deux si on veut en faire un usage comparatif, puisque les éléments du timbrage y sont répartis entre deux cachets complémentaires). Sans compter 10 exemplaires non restitués, ils se répartissent dans le temps entre la Période Ib-c (3 ex.), la Période II (11 ex.), la Période III (13 ex.), la Période IV (13 ex.), la Période V (6 ex.) et la Période VI (2 ex.) — c'est-à-dire que l'essentiel se situe entre les environs de 235 et de 110 av. J.-C.

Au second rang par le nombre, mais au premier en date, vient Thasos avec 12 exemplaires, dont 5 appartiennent à la période «ancienne»⁸ (aux noms des éponymes Téléas, Ktésis, Labros et Charôn, des environs de 390, et Damastès II, des années 350-345) et 7 à la période «récente» (aux noms des éponymes Léodikos, Hèrodotos, Krinomènès, Mégakleidès, Pythiôn II et Pythiôn III, c'est-à-dire jusque vers 285).

À la fin de l'époque classique et surtout à l'époque hellénistique appartient le reste des importations méditerranéennes que l'on peut reconnaître et dater (au moins de façon approximative): 5 ex. de Chios du III^e s. au nom d'Hikésios, 4 ex. de Cos sur anse bifide, 2 ex. de Cnide, 1 ex. circulaire anépigraphe représentant une grappe sur tige (qui pourrait bien être de Mendè), un monogramme HP dans une feuille cordée et un monogramme d'A,Φ,Y(?) fréquent en mer Noire et dans le nord de l'Égée, 1 ex. de Dioskouridès à la cithare qui est peut-être originaire d'Aïnos.

Au total, et compte tenu de notre incapacité à identifier une certaine partie du matériel amphorique, il semble donc bien que les importations méditerranéennes à Sinope sont analogues à celles qui ont été signalées dans le reste de la mer Noire:⁹ prédominance au IV^e s. et au début du III^e des timbres thasiens et du nord de l'Égée, ainsi sans doute que des timbres «héracléotes» qui, nous l'avons vu, ont dû échapper, ici comme en beaucoup d'endroits, à l'œil des collecteurs; puis, à partir du dernier tiers du III^e s. et jusqu'à la fin du II^e, montée en puissance des importations de Rhodes et, à un moindre degré, du sud-est de l'Égée (Chios, puis Cos et Cnide).

Le nombre des anses timbrées de Sinope trouvées en Méditerranée (à l'exclusion de toute tuile) s'élève à 177 (dont 165 ont été identifiés et moins du tiers publié): grâce aux recherches cumulées des spécialistes, qui sont aujourd'hui parvenus à un certain consensus, elles se laissent répartir en groupes dans le tableau suivant (Table 1).

Lieux de trouvaille	T.	Pér. I 350-334	Pér. II 333-318	Pér. III 317-292	Pér. IV 291-276	Pér. V 275-254	Pér. VI 253-185	?
Eléonte	2	1					1	
Thasos	5	2	2				1	
Pergame	1					1		
Érétrie	2					1	1	
Athènes	91	5	2	5	2	13	55	9
Le Pirée	5	1	2	1			1	
Corinthe	5				2	1	1	1
Samos	3	2					1	
Milet	1			1				
Délos	7					1	6	
Antiparos	1						1	
Iasos	2						2	
Cos	2					1	1	
Cnide	1	1						
Rhodes	26				1	5	19	1
Crète (Zacro)	1						1	
Samarie	7					1	6	
Marissa	5						5	
St Jean d'Acre	2						2	
Pella (Macédoine)	1					1		
Alexandrie	4					2	2	
Apollônia (Cyr.)	1						1	
Tarente	1					1		
Baléares (El Sec)	1	1						
TOTAUX	177	13	6	7	5	28	107	11

Table 1.

- Thasos:** Lenger & Grace 1958, 417, n° 154 et fig. 17; Alabe 1986, 385 et fig. 2 et 3.
- Pella** (Macédoine): Makaronas 1963, 200, n. 5.
- Pergame:** Burow 1998, 127, n° 656 et pl. 38.
- Érétrie:** Palaczyk & Schönenberger 2003, 225, n° 201 et pl. 14.
- Athènes:** Thiersch 1838, 796, pl. 2.19 (cf. Jefremov 1989, 550-551); Dumont 1872, 141, n° 2; Pridik 1896, 162, n° 177 (cf. Jefremov 1989, 551-552) et p. 178, n° 14; Grace 1934, 276, n° 221; *eadem* 1949, 188, n° 13 et pl. 20; *eadem* 1956, 165-166, n° 189-196 et pl. 72; *eadem* 1985, 20-21 et 47, n° 10-12, pl. 2; McCredie 1966, 24, n° 17 (association de l'astynome Epielpès et du fabricant Teuthras dans l'île de Patrocle).
- Samos:** Technau 1929, 61.
- Délos:** Grace 1952, 540, n° 40-45 et pl. XXVI.
- Antiparos:** Gardner 1885, 193, n° 1.
- Iasos:** Levi & Pugliese Carratelli 1961-1962, 623, n° 86-87 et fig. 50.
- Cnide:** Schumacher 1886, 240, n° 6.
- Rhodes:** CIG IV, 260, n° 24 (cf. CIG III, 20, n° 17; IG XII 1, 1268; *corr.* Jefremov 1989, 553; *corr.* Empereur & Garlan 1992a, n° 64); Paris 1914, 318, n° 123.
- Zacro (Crète):** ADelt 21 B'2 1966, 417 et pl. 449.
- Marissa de Palestine — Tel Sandahannah:** Macalister 1901, 130-131, n° 201, pl. 2, fig. 36; 132-133, n° 230; 134-135, n° 244; communications de G. Finkielsztejn.
- Samarie de Palestine:** Reisner, Fisher & Lyon 1924, 316, D, 2 (*corr.* Grace 1985, 47, n° 12; N. Jefremov 1989, 552-553; Crowfoot, Kenyon & Crowfoot 1957, 385; Finkielsztejn 1990, 121, n° 444-446; communications de G. Finkielsztejn.
- St Jean d'Acre:** communications de G. Finkielsztejn.
- Apollonia de Cyrénaïque:** Alabe 1986, 384-385 et fig. 1.
- Tarente:** Porro 1916, 111, n° 267.
- Baléares (El Sec):** Cerdá 1987, 473.

Le nombre des trouvailles de timbres amphoriques de Sinope en Méditerranée frappe, selon les points de vue, soit par sa minceur soit par son ampleur relatives: il est en effet bien inférieur à celui qui se rencontre en mer Noire, mais bien supérieur à celui des timbres de Chersonèse en Méditerranée, dont la période de production fut, il est vrai, inférieure d'un bon quart de siècle et dont on ignore le coefficient d'impression sur les amphores.

Il serait certes dangereux de vouloir faire trop parler des données aussi dispersées et d'origine aussi aléatoire. Leur présence en elle-même n'a en effet rien d'étonnant, pas plus que celle, également sporadique, de citoyens sinopéens en Méditerranée.¹⁰ Mais un certain nombre d'observations plus précises ne me semblent pas pour autant interdites. La majorité des timbres sinopéens en Méditerranée (96 ex., soit 56 % d'entre elles) se rencontrent à Athènes (et dans son port du Pirée): leur coefficient annuel (rapport du nom-

bre de timbres et du nombre d'années) s'accroît avec le temps, surtout à partir de 275 environ (0,23 en Période I; 0,26 en Période II; 0,24 en Période III; 0,13 en Période IV; 0,61 en Période V; 0,80 en Période VI). Dans le prolongement d'Athènes se situe sans doute Corinthe et aussi Délos (surtout dans la période VI). Une autre grande voie commerciale, ponctuée de nombreuses escales (Milet, Samos, Iasos, Cos, Cnide) débouche à Rhodes, où les timbres sinopéens sont de plus en plus nombreux, ou plutôt de moins en moins rares au III^e siècle, au point d'atteindre un coefficient annuel de 0,30: elle se prolonge aussi à cette époque vers la Palestine et vers Alexandrie. Un autre itinéraire commercial devait longer la côte nord de la mer Égée: mais il s'efface presque totalement après la fin du IV^e siècle. Les autres lieux d'importation sont plus disséminés et plus occasionnels: ils s'expliquent, me semble-t-il, par les aléas des fouilles modernes autant que du commerce antique.

Comment rendre compte d'une telle répartition géographique des amphores sinopéennes en Méditerranée? La supposer dictée par la commercialisation régulière de l'une des deux denrées traditionnelles de remplissage, le vin et l'huile, me semble invraisemblable: car ces produits sinopéens, même s'ils furent largement répandus en mer Noire, ne paraissent pas avoir connu assez de notoriété pour circuler ainsi aux quatre coins de la Méditerranée en faible quantité. Je penserais donc plutôt à des «spécialités» sinopéennes plus recherchées, exportées par des commerçants sinopéens ou ramenées au pays (Athènes, Rhodes) par des commerçants méditerranéens, et redistribuées ensuite de façon plus ou moins aléatoire: conserves de poissons surtout (de thons, maquereaux et autres pélamydes, ainsi que d'esturgeons, mulets ou dauphins) sous forme de garum ou de morceaux salés, dont les Méditerranéens étaient très friands et la mer Noire si prodigue;¹¹ ou bien «terre de Sinope», c'est-à-dire *miltos* ou minium nécessaire à l'entretien des bois et métaux, en particulier à celui des bateaux.¹² La trouvaille d'une amphore sinopéenne dans l'épave d'El Sec, sur la côte de Majorque, serait, dans l'un et l'autre cas, très significative.

Voilà sans doute une occasion exceptionnelle de voir confirmée par l'archéologie l'une des exportations pontiques en Méditerranée, qui ne nous sont par ailleurs connues que par des textes: céréales, esclaves, bétail, fourrures, bois, métaux, etc. Et ce, grâce encore aux amphores, décidément très difficiles à ignorer.

Notes

- 1 Voir cependant Kassab Tezgör & Touma 2001, qui signalent (avec photographies et profils) des amphores à pâte claire de Demirci-Sinop (II^e-VI^e s. après J.-C.) trouvées à Dibsi Faraj lors de la construction du barrage Al-Thaoura sur le Moyen-Euphrate et à Ras Ibn Hani (et aussi à Séleucie de Piérie, Ras el-Bassit et Pella), ainsi que des amphores à pâte brune colchidiennes et des amphores à pâte brune «pseudo-colchidiennes» ou d'origine locale (IV^e-VII^e s.) à Ras Ibn Hani.

- 2 Même si j'y ai prêté une attention particulière, il va de soi que je ne prétends pas dresser ici un tableau exhaustif des timbres pontiques trouvés en Méditerranée. La regrettée Virginia Grace m'en avait confié le soin: mais je n'ai pu, depuis sa disparition, avoir de nouveau accès à ses fichiers de l'Agora d'Athènes.
- 3 Thasos: Garlan 1989, 478, fig. 1 A et p. 480; Smyrne (fichier V. Grace); Rhodes A 330 (avec l'aimable permission d'I. Papachristodoulou).
- 4 Monachov 1989; Kac 1994; *idem* 1999.
- 5 Un à Thasos (Th 2271), un à Maronée (M. Maronée, n° 238), 14 à Athènes (7 dans le fichier V. Grace et 7 au Musée National: ME 1-2, 4-5, 6-7 et Pridik 1896, 177, n° 13), 2 à Délos (TD 4603 bis et 6234), 3 à Rhodes (MS 617 et 619, ainsi que Et. 581) et un à Pella de Jordanie (RN 82028).
- 6 Voir en dernier lieu Garlan 1999a et 2004.
- 7 Conovici & Garlan 2004.
- 8 Garlan 1999b.
- 9 Il est impossible d'en présenter ici une bibliographie, tant elle serait abondante: voir les «Bulletins amphoriques» de Empereur & Garlan 1987, 1992, 1997 et Garlan 2002.
- 10 Debord 1990.
- 11 Robinson 1906, 140; Leaf 1916; Dumont 1976-1977; Mehl 1987, 115-117; Curtis 1991; Braund 1995. Voir en particulier Xénophon, *An.*, V, 4, 28: chez les Mossynèques, les Grecs «trouvèrent aussi dans des amphores des tranches de dauphin, couvertes de sel».
- 12 Leaf 1916, 11-15; Mehl 1987, 119-123.

Local Patterns of Trade in Wine and the Chronological Implications of Amphora Stamps

Vladimir F. Stolba

Besides fish and fish products, both of which have been the subject of a previous conference organized by the Danish Centre for Black Sea Studies,¹ wine and olive oil are obviously the most distinctive commodities characterizing the Mediterranean civilization. These products are closely associated with amphorae, for exactly this type of pottery was commonly used for their storage and transportation. The significant progress in the recent amphora research has made it a key source for studying ancient trade, in particular the trade in wine. There is no need to argue that the informative potential of amphorae reaches far beyond the geographical and chronological definition of imports and exports. The amphora evidence becomes even more revealing when supplemented by the marks scratched or painted on the jar's body. Unfortunately, unlike graffiti, painted inscriptions, or dipinti, are often neglected in publications mostly due to their extremely abbreviated form. Hundreds of such marks were left out of Mabel Lang's outstanding publication of the evidence from the Athenian Agora excavations. As she states in the introduction, "the brevity of these texts allows so great a variety of interpretations that publication would serve no useful purpose".² This is also the case with Mark Lawall's recent account of the Agora finds.³ As to the northern Black Sea material, we can refer to a number of works on the painted inscriptions (mostly from late Antiquity),⁴ while the number of published graffiti amounts roughly to over three thousand.⁵

This disregard for the Hellenistic dipinti is astonishing, for they have proved to be informative about the local patterns of wine trade, especially when coming from closed deposits and seen in conjunction with incised marks. This paper aims at studying a case involving these sources of information, namely, pottery inscriptions from the early Hellenistic site of Panskoe I in western Crimea on the outskirts of the distant *chora* of Chersonesos.⁶

The epigraphic collection from this site consists of more than 200 inscriptions, of various kinds, that are either scratched or painted, eighty of which come from the closed context of the monumental building U6, excavated between 1969 and 1974.⁷ The high degree of preservation and quite narrow chronological range of the latter, which does not exceed the span of two gen-

erations, offers a unique possibility to compare the material inside individual living units.

Besides dedications and ownership marks, the majority of notations, which are executed in two different techniques, graffiti or dipinti, could reliably be identified as numerical and commercial ones. An examination of the latter kind, i.e. commercial marks, leads to the conclusion that they belong to one of the following three groups: (a) *Indications of Capacity*, (b) *Price Marks* and (c) *Customers' Names*. While all the other categories are fairly traditional, that of *customers' names*, amounting to thirty specimens, does not match any of the existing classifications of the Greek pottery inscriptions. However, a number of data, which emerge from a comparison of various items in our collection, substantiates the proposed interpretation of this particular group of material.

All marks in this group are dipinti on amphorae, most of which (Figs. 1.1-7, 9-11, 13-14) are Chersonesean jars. Two of the inscriptions, however, were found on amphorae from Sinope, one on each of the amphora from Thasos and that of the Solocho-I type, and three on vessels of unidentified origin (Figs. 1.8, 12). The texts are mostly extremely abbreviated, presumably because they were intended for persons who were perfectly familiar with their purpose. As in owners' marks, the letters often form ligatures. The heights of the letters as well as the width of the brush strokes also vary from inscription to inscription. These objective criteria combined with the style of writing make it possible to distinguish the work of at least three or four different scribes.

The fragmentary state or simple brevity of the texts, often shortened just to one letter, is the factor that makes their interpretation difficult and requires a certain degree of caution. The challenging task of developing a broader classification of these inscriptions was attempted recently by Böttger and Šelov.⁸ Working from a large body of late antique material from Tanais, they suggest a long list of items of information, which these inscriptions could possibly have provided. In fact, the scheme proposed by Böttger and Šelov distinguishes between two main classes: (a) notations related to transportation and sale and (b) notations related to the storage of goods.⁹

Regarding *transportation and sale*, the items of information proposed are as follows: (1) the nature of the amphora contents; (2) the quality and/or origin of the contents; (3) the volume and/or weight of the contents; (4) capacity and/or weight of the empty amphora; (5) name of the owner or seller of the goods. The items regarding *storage* are said to be: (1) the owner's name; (2) the volume and/or weight of the contents; (3) enumeration of the stored goods; (4) designation of contents substituted for original contents of the amphora.

The Panskoe material, however, implies a much narrower range of possible readings than the one proposed by Böttger and Šelov. Given the fact that an overwhelming majority of the marked pottery originates from Chersonesos, the possibility of any connection between the marks and contents of the amphorae is to be eliminated. It seems highly unlikely that the range of goods

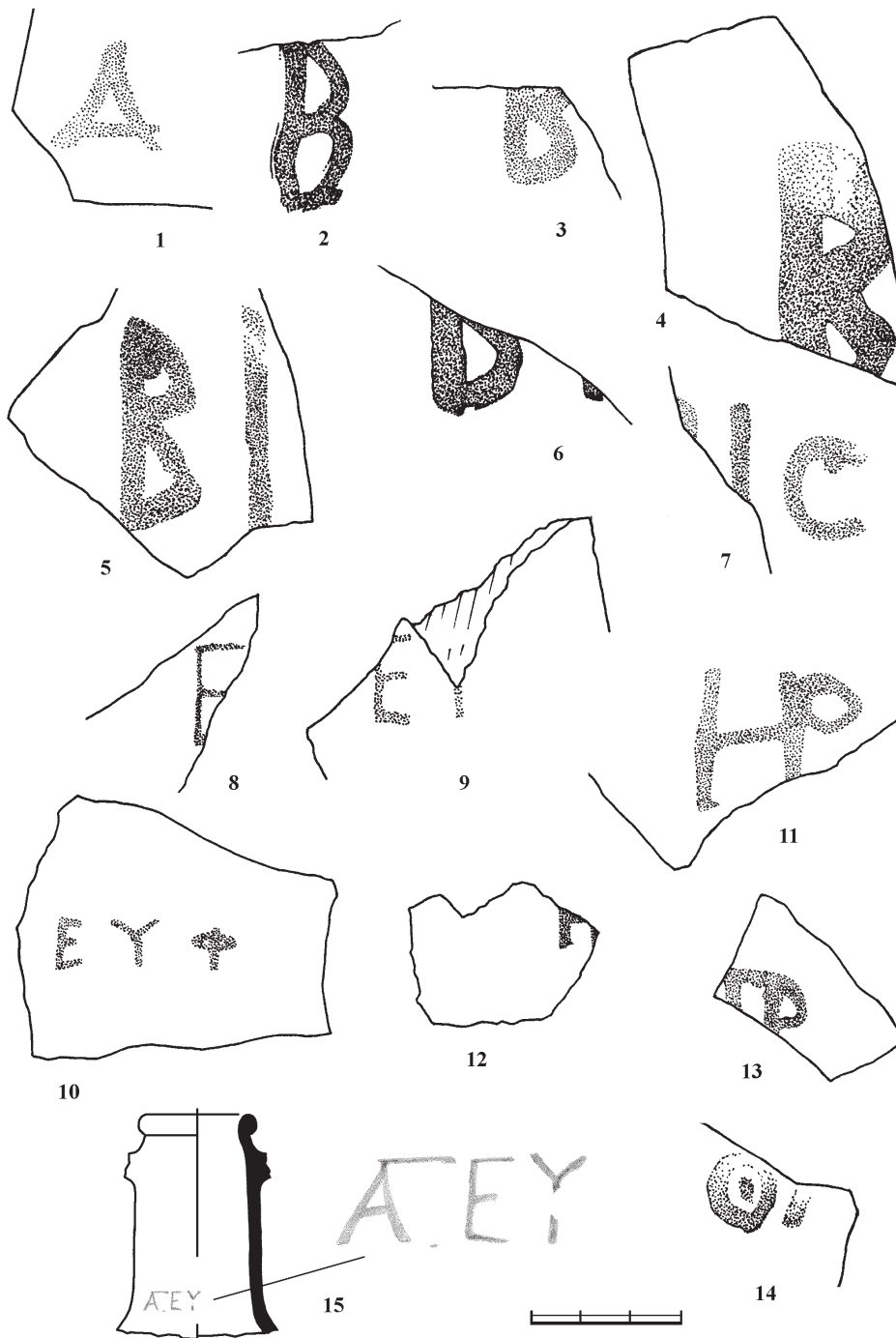


Fig. 1. Dipinti from the settlement of Panskoe I: 1-14) the monumental building U6 (Stolba 2002, H 43, H 45, H 48, H 47, H 54-55, H 52, H 62-65, H 67, H 71, H 68); 15) the central area U7, room 1 (tower), find list 19/25, 1979.

imported in this ware could have been so great as to explain the diversity of the inscriptions preserved. The easily recognizable shapes and rather strict standardisation of transport amphorae, which often bear the stamps of annually serving officials, would also make superfluous any additional record of the provenance, volume, or age of the goods. This claim is substantiated by the presence of identical marks on vessels of different capacity and contents, and by the absence of exact parallels to our dipinti at other settlements in the *chora* or in Chersonesos itself. Still less plausible would be to assume that the painted marks constitute some kind of numerical record.

A more likely explanation that can be suggested for this group is that they are abbreviations of the personal names of residents of house U6. A comparison of the painted marks with owners' names recorded in the graffiti (see Table 1) seems to support this assumption.

As can be seen from Table 1, the painted inscriptions refer to the same circle of individuals known from the owners' marks: Ἀρ() , Β() (Fig. 1.2-7), Εὐφ() (Fig. 1.8-10), Ἡρ() (Fig. 1.11-12), Θα() (Fig. 1.14), Πρ() (Fig. 1.13), etc. Identical marks made by different means are found sometimes in the same room or household unit (such as Εὐ() – Εὐφ() in room 13; and Θα() – Θ() in room 3). Furthermore, as in the case of the incised marks, it can hardly be fortuitous that Β() , Εὐφ() , and Ἡρ() are represented in the majority of the inscriptions. Given the number of recorded names they are likely to belong to at least two different generations of the residents of the house. The BAP and BIC marks, especially when opposed to those with AP and IC, entail the same interpretation. Further proof of this is the dipinto ΑΠΕΥ (Fig. 1.15) written in one line on the Sinopean wine jar found just outside building U6 and referring to the already known individual Ἀπ() / Ἀπι(), who was perhaps the son of Εὐφ() .

It seems tenable to assume that similar marks applied in a different technique must have had a different functional meaning. Unlike graffiti, painted inscriptions, which were easily removed, would not have been sufficiently effective and durable as owners' marks; and it is probably for this reason that dipinti were not being used in this or any other way on the table and household ware from U6. Moreover, as stressed above, the same painted marks are represented sometimes by two or three different hands. This fact implies their execution at some point before the jars reached the house.

The question arises therefore of what can explain the same repertory of names in inscriptions of both groups. The only interpretation consistent with the facts seems to be to consider the dipinti as commercial records, and the abbreviations appearing on wine jars as a means of labelling the goods according to the customers' names. A preliminary impression gained from as yet unpublished late 4th-early 3rd century BC dipinti from the site of Grotty¹⁰ encourages the assumption that we are dealing with a pattern characteristic of a large part of the Chersonesean territory rather than an individual case. Apparently, a comparable type of labelling was employed in the late 4th century AD on the amphorae from the Don-delta sites and some other locali-

Owners' marks (graffiti)			Customers' names (dipinti)		
Name	Number of inscriptions	Inscribed object	Name	Number of inscriptions	Inscribed object
A()	4	Fish-plate, Cup, Amphorae	A()	2	Amphorae
Ἄπ()/Ἄπη()	3	Amphorae			
Ἄρ()	1	Kantharos	Ἄρ()	1	Amphora
B() Ἄρ()	1	Amphora	B()	2	Amphorae
B()	1	Amphora			
E()/Εὐ()	8	Fish-plate, Plate, Kantharos, Louterion, Amphorae	B() Ἴσ()	13	Amphorae
			E()/Εὐ()/Εὐφ()	4	Amphorae
Ἡρ()	1	Bowl	Ἡρ()	3	Amphorae
Ἡρα()/Ἡρακ()	2	Amphorae			
Ἡρο()	1	Kantharos			
Θα()	1	Amphora	Θα()	1	Amphora
Θεοκ()	1	Kantharos			
Θευ()	1	Salt-cellar			
			Ἴσ()	1	Amphora
Κρα()	1	Amphora			
Λ()	1	Astragalus			
			M()	1	Amphora
Νε()	1	Amphora			
			Ὀν() Σι()	1	Amphora
Π()	1	Astragalus	Πρω()	1	Amphora
Πρ()	1	Bowl			
Πρω()	1	Fish-plate			
			Φ()	1	Amphora

Table 1. Correlation between the incised and painted inscriptions from House U6 at Panskoe I.

ties.¹¹ Their formula, however, is more elaborate, containing both the name of a sender and that of a recipient.¹²

Even though we may infer that the farmer or merchant sending the wine to Panskoe or Grotzy knew in advance the amount and the exact person to whom it should be delivered, it is difficult to determine the type of transaction involved. It is very alluring, however, to see here so-called sales on future delivery, the type known to the Greek law of sale from the early Hellenistic period and best illustrated by the contracts surviving from Ptolemaic, Roman and especially Byzantine Egypt.¹³ Some scholars regard them as loans in money to be repaid in kind,¹⁴ but in our case this is not important. What matters is that the money was paid in advance while the goods were delivered later. If the farmer or merchant supplied a large consignment of wine intended for a number of persons from the same site, they certainly must have labelled the jars according to the names of customers.

This kind of transaction has indeed an economic motivation, as it enables both sides to profit from it. Advance payment, which might well have taken place when the wine was still fermenting or even before that, secured cash at the very time the farmer needed it most, whereas the buyer was able to achieve lower prices. For the same reason, advance ordering of wine with payment at the moment of delivery seems less likely. Advance ordering of wine jars seems a very likely form of transaction between potters and farmers as soon as the latter were able to estimate the harvest. That sizable sums in cash essential for such transactions were available at the wine producing sites of the Chersonesean *chora* is clearly evidenced by several large coin hoards found on the Herakleian Peninsula.¹⁵

Regardless of the sort of transaction involved between potter and farmer (or merchant) the question remains whether all wine jars stamped with the name of annually serving officials had to be vended the year they were produced or some of them could eventually be put on the market at some later point. How long could the entire procedure of manufacturing an amphora, bottling, shipping and at last consuming its content take? These general questions inevitably bring us to yet another issue which is worthy of closer attention, namely, that of employing the amphora stamps for establishing chronologies of sites, deposits or closed contexts. Again, the amphora assemblage of Panskoe I/U6 can serve as a point of departure in this discussion.

Among 142 amphora stamps recorded from building U6, those from Chersonesos, amounting to 100 specimens (70.4 %), occupy a dominant place.¹⁶ The earliest of them with the names of Bathyllos, Eua(), Eukleidas, Kraton and Sopolis belong to Group 1A, according to Kac's ordering of the magistrates, and date to the period of 325-315 BC.¹⁷ Yet, as I have tried to show elsewhere, there are good reasons to place this group about five years earlier.¹⁸ As evidenced by a number of the stamps, Eua() and Bathyllos represent large consignments rather than retail items.¹⁹ Given the monogram type of the former stamps as well as the absence of a title, Kac places Eua() at the

very beginning of the Chersonesean stamping.²⁰ Regardless of whether one accepts this or not, the five Group-1A magistrates recorded at U6 will make the earliest of them date to not later than 320 or 325, depending on which chronology is employed.

This fact clashes, however, with the chronology of the three Chersonesean coins (I 5, I 7-8) found below the floor of rooms 22 and 24,²¹ which ended up there during the construction of building U6 and thus antedate it.²² All three specimens belong to the same issue of bronze with the deer-killing Parthenos on the obverse,²³ which Anokhin dates to 300-290.²⁴ In 1989, I suggested moving this type to the late 4th century for various reasons,²⁵ and now would even attempt to place it somewhere between 320-310 BC. However, this adjustment will not be sufficient to make them antedate the earliest Chersonesean stamps from the storerooms of building U6. It is evident, therefore, that in this particular case making one chronology fit the other will not settle the issue.

The same problem emerges, for instance, in connection with the finds of Thasian stamps in Alexandria. Along with the numerous amphora handles of the later Thasian groups occur the stamps of Aristophon I and Herakleitos, which are among the earliest new-style eponyms, and which, according to M. Debidour, date to 345-335 BC, i.e. to the period preceding the foundation of the city in 331.²⁶ Similarly, the assemblage from Demetrias in Thessaly, a city founded in 294, reveals the stamps of the Group-4 magistrate Skymnos I, whom Debidour assigns to 310-300 BC.²⁷

At first glance, it might seem that the most obvious way to resolve this contradiction is to admit that Debidour's chronology is a bit too high and needs further adjustments. In 1990, his system was challenged by Y. Garlan, who proposed lowering it by about ten or fifteen years.²⁸ This has entailed the alterations in the start of Thasian stamping, and in the date of transition from the old to the new-style stamps established by Virginia Grace to be ca. 400 and 340 BC, respectively.²⁹ This standpoint is shared by Alexandru Avram,³⁰ who also argues for the lower chronology.

A reconsideration of the dating of the fill of Pnyx III and some other contexts pertinent to the Thasian amphora stamp chronology attempted by S. Rotroff, J. Camp,³¹ and most recently by M. Lawall³² and myself,³³ proves that, even if Grace's chronology was a bit too high, it is highly unlikely that her dates should differ from new ones by ten years or more; more probably, they differ just four to five years. However, lowering the Debidour's chronology by even 10-15 years will not resolve the problem. The stamps of the old-style eponyms Mes() and Kleophon found in Alexandria³⁴ would at any rate date earlier than the foundation of the city.

Obviously, there should be some other reason for the appearance of the early amphora material at all these sites. In my view, to understand this phenomenon one has to abandon the conventional notion that the goods stored and transported in amphorae reached their final destination almost immediately after being produced. Thus, according to Brašinskij's estimate,

the entire procedure of manufacturing an amphora, bottling and shipping wine and finally consuming the wine took a very short time, most likely just one or two years.³⁵ More recently, this view on the lifetime of amphorae is represented in works of Garlan, who, opposing them to coins, highlights the extreme precision they can provide as a means of dating.³⁶

This standpoint implies that all stamped jars must have been sold in the year they were potted, and that Greek amphorae contained mostly new wines which were bottled shortly after the fermentation and had to be drunk within a year or two. Taking into account high sanitary requirements for the fermentation and storage and thus a risk of oxidation and spoilage this is indeed not unlikely. Still, ancient references give a definitive hint that some wines were capable of ageing. Starting with Homer (*Od.* 2.340, 3.391; cf. Athen. 1.26a-b), Greek poetry extols old wine. Praise “old wine, but the flowers of new songs”, says Pindar (*Ol.* 9.48). The 4th century comic poets Euboulos and Alexis note that gay ladies favoured old wine but young men (*CAF* 2.209, 400; Athen. 1.25f). The latter, opposing a man to wine, says that “man is not at all like wine in his nature, for when he has grown old he loses his flavour, while the oldest wine is what we strive to get” (*CAF* 2.399; Athen. 2.36f). Old, costly wines with a fine bouquet are also mentioned by Xenophon among supplies of the Ten Thousand (*An.* 4.4.9). Finally, many prescriptions of Hippokrates (*Reg.* 2.52; *Morb.* 3.12) reveal a clear distinction between new (*νέος*) and old (*παλαιός*) wines. His mention of *Θάσιον οἶνος παλαιός* (*Hippoc. Morb.* 3.17) suggests that Thasian wine – like that of Chios, Lesbos and Mende – was capable of ageing.³⁷ Athenaios (1.26a), who tells us a lot about wine, adduces five different reasons why old wine is better not only in taste but also for the health.

Although the discussion of particular vintages is nearly absent from the written sources, one should think that Greek wines matured faster than Roman ones.³⁸ In the 3rd century BC, Theokritos refers to four-year-old wine (7.147: *τετράετες δὲ πίθων ἀπελύετο κρατὸς ἄλειφαρ*), while Plutarch in his life story of Sulla speaks of drinking wines aged forty years and more (*Plut. Sull.* 35.1: *πίνεσθαι δὲ οἶνον ἑτῶν τεσσαράκοντα καὶ παλαιότερον*). Martial (8.45) and Pliny (*HN.* 14.6.55) mention wines which lasted one and two hundred years, respectively, though their records are exceptional.

Some helpful information pertinent to the ageing of wine can also be drawn from the Greek papyri of Hellenistic Egypt. So, alongside *οἶνος ἐτοιμότερος*, newer wine, the texts record *οἶνος καιριμώτερος*, older wine, as well as *οἶνος πρεσβύτερος*, *οἶνος παλαιός*, and in the Byzantine period even *οἶνος προπαλαιός*. In those cases where particular vintages are concerned they are specified by the term *ῥύσις*, such as, for instance, in *P. Oxy.* XIV 1735, 1: *ῥύσεως ιε ἔτους*.³⁹ To this list may also be added the 4th century AD dipinto on the shoulder of an amphora from the Athenian Agora, which reads: *Αἰλιανός | Δρύμου | παλαιός*.⁴⁰

It seems more likely that the final maturation of such choice wines took place in the amphorae rather than in *pithoi* intended usually for fermenta-

tion.⁴¹ To the arguments adduced already by Gow and Koehler one may add a further one. Taking into account that each new vintage requires empty containers for fermentation, it would certainly be more practical to move wine from the larger containers to amphorae for further ageing rather than to purchase new *pithoi*.

Unfortunately, there is very little evidence as to how long Greek wines could keep. As suggested by R. Brock, only few Greek wines may have lasted more than ten years.⁴² The question of whether the archaeological data may serve any useful purpose here is still a matter of discussion. Yet some recent observations indicate that it would be unwise to discard it completely. A recent reconsideration by Lawall of the El Sec wreck of the 4th century BC showed that the isolated Mendeian amphora constituting part of the cargo was approximately 20-40 years old when the ship sank.⁴³ A number of similar examples are to be found in a recent work by Sergey Monachov, who makes reference to the various Black Sea deposits, in which the dated jars from the one and the same burial differ by twenty to thirty years – the reason for which Monachov has left unexplained.⁴⁴

The question remains whether these inconsistent amphorae contained old wines. In my opinion, at least some of them did. Even though the well-known practice of re-using wine jars⁴⁵ or putting older or damaged containers into graves⁴⁶ leaves room for uncertainty, one should not automatically exclude the possible existence of archaeological parallels to the instances from the literary sources cited above. All points of this discussion should, to my mind, be taken into consideration when employing amphorae and amphora stamps to establish the site chronologies and *vice versa*.

Notes

- 1 Bekker-Nielsen (ed.) 2005.
- 2 Lang 1976, 1.
- 3 Lawall 2000, 3-90. But see Oikonomides 1988, 39-53.
- 4 Beljaev 1967, 127-143; Maslennikov 1987, 45-53; Emec & Peters 1993, 77-83; Emec & Zubarev 2000; Solomonik 1993, 102-116; Il'jašenko 1996, 54-67; Böttger & Šelov 1998; Gudimenko & Il'jašenko 2001, 481-504. For the earlier publications of the Tanais material, see Šelov 1978, 47-55; Šelov 1989, 97-125.
- 5 See, e.g., Stern 1897, 163-199; Tolstoj 1953; Solomonik 1978; Solomonik 1984; Jajlenko 1980, 72-99; Golencov 1983, 56-62; Latyševa 1983, 101-110; Emec & Peters 1994, 164-178; Vinogradov & Tochtas'ev 1998, 22-47; Nawotka 1998, 85-98; Stolba 2002, 228-244; Saprykin 2002, 284-291; Molev 2003, 217-238.
- 6 For further details on this settlement, see Ščeglov 1978, 80-82; 1985, 3-7; 1987, 239-273; Chtcheglov 1992, 167-181, 238-244; Stolba 1991, 78-84.
- 7 For the complete publication of this particular complex, see Hannestad, Stolba & Ščeglov (eds.) 2002.
- 8 Böttger & Šelov 1998. Even though the dipinti were evaluated according to archaeological contexts, their relation to the local graffiti was not considered; this, to my mind, reduces the possibility of a full and accurate interpretation.
- 9 Böttger and Šelov 1998, 52-53.

- 10 Excavations by V.A. Latyševa, the Kharkov State University. For useful information on this Chersonesean site, see Latyševa 1985, 306.
- 11 See Ebert 1913, 92, Abb. 102 (Nikolaevka, Cherson region); Vejrnar 1963, 23, fig. 16.2 (Inkerman necropolis); Solomonik 1993, 105-106, fig. 2.15 (Krasnyj Mak necropolis, Crimea); Kuziščĭn & Ivančĭk 1998, 212-213, figs. 4-6 (Chersonesos); Emec & Čevelev 1995, 12-13, no. 9 (Pantikapaion); Gudimenko & Il'jašenko 2001, 481-504 (Rogožkino XIII), only the last of which provides a plausible interpretation of the markings.
- 12 Gudimenko & Il'jašenko 2001, 486-487.
- 13 See Montevecchi 1944, 131-158; Pringsheim 1950, 268-286; Bagnall 1977, 85-96; Kruit 1992a, 265-276; 1992b, 167-184.
- 14 Bagnall 1977, 85.
- 15 *IGCH* 1088, 1119, 1130-1135; Gilevič 1999, 365-369, II.3-4, III.1-4, IV.1-3; Šonov 2003, 342-354; 2005, 430-436.
- 16 Kac, Monachov, Stolba & Ščeglov 2002, 113.
- 17 Kac 1994, 76; Kac, Monachov, Stolba & Ščeglov 2002, 114.
- 18 Stolba 2005, 153-177.
- 19 Kac, Monachov, Stolba & Ščeglov 2002, 114.
- 20 Kac 1994, 37.
- 21 Ščeglov 2002, 59-61; Gilevič 2002, 246-247.
- 22 On the erection date of building U6, see Hannestad, Stolba & Ščeglov 2002, 280-281, and most recently Hannestad 2005, 179-192.
- 23 Zograph 1977, XXXV 23-25.
- 24 Anokhin 1980, 20, 134.
- 25 Stolba 1989, 67. This dating was accepted recently by A.M. Gilevič (2002, 248).
- 26 Debidour 1986, 313, n. 15, 330.
- 27 Milojčić & Theocharis 1976, 129, no. 170; Debidour 1986, 331. It is worth noting that among the finds that antedate the foundation of Demetrias are also three bronze coins of Larissa (datable to ca. 400-340/325 BC) and one specimen of the Macedonian origin (ca. 336-306?). See Milojčić & Theocharis 1976, 73, nos. 50-52, 140, no. 225.
- 28 Garlan 1990, 481.
- 29 Grace 1956, 123.
- 30 Avram 1996, 24-32.
- 31 Rotroff & Camp 1996, 263-294; Camp II 1996, 45. Cf., however, Rotroff 1996, 35-40.
- 32 Lawall 2005b, 37-53.
- 33 Stolba 2005, 157-161.
- 34 Garlan 1990, 481.
- 35 Brašinskij 1984, 128.
- 36 Garlan 1993, 149: "leur destruction ou leur mise au rebut devaient suivre de peu, de quelques années seulement, le moment de leur fabrication". Some scholars, however, remain more cautious: e.g. Vinogradov 1972, 8; Debidour 1986, 313.
- 37 Cf. Athen. 1.28f, 1.29b-c; Hermipp. *Fr. Phot.* 2.1-5. For the epigraphic evidence, see Derow & Forrest 1982, 79-92. These sources are consistent with accounts from the Zenon archive, which show that Thasian and Chian wines were valuable gifts. See Kruit & Worp 2000, 76. Cf. also Grace 1961, 24; Salviat 1986, 178-179.
- 38 Brock 1994, 467.

- 39 Schnebel 1925, 291-292. Thus the fermented wine was generally moved from the large fermentation containers into smaller jars within one year. See White 1975, 115; Rossiter 1981, 347, n. 8.
- 40 Lang 1976, 50, F 316. Even though it was catalogued among the owner's marks, it seems that, as in the case of Panskoe, Grotty and late Roman amphorae from the Don-delta (see note 12), this is once again a commercial mark specifying the name of a recipient. Cf. also Lang 1976, 51, F 332.
- 41 Gow (ed.) 1952, 176, comm. on 7.147; Koehler 1996, 330.
- 42 Brock 1994, 467.
- 43 Lawall 2005b, 53-54. This wreck has also troubled Monachov (1999, 372-379), who viewed the cargo as more or less chronologically consistent. However, in an earlier work (Monachov 1997, 203), Monachov, relying on the presence of "many finds datable to the late 5th-early 4th century BC", viewed it as remains from several wrecks.
- 44 E.g., tumulus 26/1911 and tumulus 5 of the "Five brothers' group" in the Elizavetovskoe necropolis; Grave 2 in kurgan 1 near the village of Pribugskoe; kurgan 3X near the village of Petuchovka and many others. See Monachov 1999, 251, 271-272, 338-340. Many other examples of this sort are discussed in Monachov 1997, 202-212. Cf. also Grandjean 1992, 580-581 with n. 45.
- 45 The practise is, for instance, documented by Herodotos (3.5-7) and by papyri from the Zenon archive (*P. Cair. Zen.* IV 59741; *PSI* VII 859). See Grace 1961, 6-7; Kruit & Worp 2000, 71. In late 5th century BC Athens, 21 empty, apparently second-hand - cf. Amyx 1958, 174-175 - amphorae were sold at a total price of 3 obols. For evidence of the re-use of amphorae in the Black Sea, see Stolba 2002, 235.
- 46 Rogov & Stolba (forthcoming).

Changes in Late Classical and Hellenistic Fine Pottery Production in the Eastern Mediterranean as Reflected by Imports in the Pontic Area

Krzysztof Domżałski

In the late Classical and Hellenistic periods, the best quality table pottery used in towns and settlements in the Black Sea littoral and its hinterland came, as it had in the preceding centuries, from workshops located in the Mediterranean, primarily around the Aegean Sea. The aim of this paper is to present the connection between the chronological sequence of such imports to the Black Sea basin from their main production centres and changes in the political and economical situation of the Mediterranean region. Its conclusions are based on the data yielded by the observation of archaeological material resulting from the current excavations in the region of the Kimmerian Bosphoros (Kerch Straits) as well as published materials from other sites.¹

The starting point for this study was an analysis of pottery from the late Classical and Hellenistic layers at Nymphaion in the eastern Crimea (Fig. 1b). A monumental structure has been recently uncovered at that site: an Ionic *propylaion*, dated on the basis of an architrave inscription to the reign of Leukon I (389/388-349/348 BC).² The whole area was destroyed – most probably by an earthquake – about the mid 3rd century BC and never rebuilt. On the contrary, it was levelled out and served as an open rubbish dump until the 2nd century AD. Sites of this type usually yield a wealth of material, which may be processed statistically. It is, however, difficult to establish the precise chronology of the materials found here both because of later disturbances such as storage pits dug into the sedimented layers, and because of the large size of the excavated site. It should be noted, though, that a certain continuity could be observed in the depositing – century after century – of waste at this site.

In a second, nearby, trench at Nymphaion, which has been recently investigated, two complexes of pits of unclear function were revealed.³ The pits contained large amounts of pottery dated to the late 5th–late 4th centuries and at least one of the two complexes (no. 7) was filled at approximately the same time as the construction of the *propylaion* mentioned above. The most common artefacts discovered at these sites were sherds of trade amphorae, but table pottery, strongly dominated by Attic black gloss ware, was also represented (Figs. 2-3).



Fig. 1. The findspots mentioned in the text: a – Black Sea region; b – Kimmerian Bosphoros.

The examination of pottery finds from Nymphaion and other sites in the Pontic region allows us to observe that the Attic black gloss ware occurs everywhere in abundance, even reaching some remote places far away from the littoral.⁴ Vessels dated to the late 5th and, especially, to the 4th centuries BC are far more numerous than any other Aegean imports in earlier times. As often happens, however, quantity is the enemy of quality. In this case, the deterioration was restricted to the painted decoration of red-figured vessels. The painted motifs on these vessels became more and more carelessly



Fig. 2. Attic black gloss kylix (cup-kantharos) from Nymphaion, Sector N, 1997 (no. N.97.183), at present in the Kerch Archaeological Museum (photo by K. Domzalski).

executed and simplified, as time went on (Fig. 3).⁵ However, the production technology used by Attic craftsmen was still at a very high level: the slip covers the whole surface of the vessels, including the bottom, and is of excellent quality. The vessels are often rouletted, stamped, and sometimes bear white or cream-coloured over-painted motifs.

A glance at the history of the Aegean in the late 5th and 4th centuries BC provides an explanation for these increased exports. While the economy of Athens, unquestionable the leader in tableware production, suffered greatly from the long-lasting Peloponnesian War (431-404 BC), the *polis* still played a major role in 4th century politics, retaining some level of military power and maintaining a merchant fleet. The war did the greatest damage in the *polis'* agricultural areas, which were regularly plundered for many years. Pottery workshops, however, survived together with skilled craftsmen, and tableware continued to be produced. Perhaps the most obvious way for inhabitants of these areas to avoid hunger was to intensify their manufacturing



Fig. 3. Wall fragment of Attic red-figured kylix (cup-kantharos) from *Nymphaion*, Sector N, 1997 (no. N.97.181), at present in the Kerch Archaeological Museum (photo by K. Domzalski, scale 1:1).

and exchange the resulting products for food. Black gloss pottery may be an excellent example of this practice, as is shown by the abundant presence of these vessels – presumably exchanged for copper during the Peloponnesian War – in Cyprus in the late 5th century BC, and by their intensive export to many other Mediterranean regions in the 4th century BC.⁶ Such cases seem somehow to contradict the general opinion that “[fine] pottery may not have been an important part of the economy”, and they can indeed “help us to trace the extent and volume of ancient trade”.⁷

The exceptionally wide distribution of the pottery under discussion in the Black Sea basin suggests another phenomenon connected with its occurrence. The vessels and fragments discovered often bear graffiti, mainly single letters, or, less frequently, names. The high quality of these inscriptions and their unprecedented abundance on the vessels makes one wonder whether they were made by the Pontic users.⁸ On table pottery dated to the following centuries graffiti are much less frequent and are usually limited to simple signs. This observation allows us to pose the hypothesis that graffiti on certain Attic vessels were made by the inhabitants of Athens, who were their first owners. The Pontic buyers might have obtained them as “second-hand” commodities.⁹ This interpretation seems to be acceptable for crisis situations when the exchange of valuable wares for basic goods such as food becomes a necessity. In the post-war decades, the economic situation of Athens gradually improved, but the political changes, which took place after the Macedonians had conquered Greece, resulted in the loss of the *polis*’ privileged position in the late 4th century BC. Pottery manufacture was, of course, continued but, without any direct links to trade opportunities, it gradually lost its importance

on the broad overseas markets. Fewer and fewer black gloss vessels arrived at the Pontic area in the 3rd and early 2nd centuries BC,¹⁰ and those that did were almost exclusively *kantharoi* and table amphorae with massive cable handles, both forms decorated in the West Slope style characterised by floral and geometric white or yellowish over-painted motifs¹¹ and replacing earlier red-figured scenes of “vase-painting” tradition.

The changes that took place both after Alexander’s conquests and after his death created a completely different political and economic situation. New, vast kingdoms with an unheard of potential for the development of crafts and long-distance trade were formed around the eastern basin of the Mediterranean Sea. In this area, the kind of fine pottery now referred to as *terra sigillata* first appeared around the mid 2nd century BC. Its specific feature was that its mass-produced vessels were completely covered with slip, similar to that found on Attic black gloss vessels, but of a red colour. This pottery, widely disseminated later by the Romans through the establishment of new workshops across the empire, was produced until late Antiquity, something, which reflects a special attachment to the aesthetic preferences of an earlier age.

The reason for the emergence of *terra sigillata*, however, remains unclear, as observed a few years ago by one of the most eminent specialists dealing with this pottery: “Why the red-gloss ware so rapidly drove the black off the market is however still an unsolved problem in the history of taste”.¹² He noted that in Italy black and red wares continued to be produced side by side for a time until red ware took over the market completely, and furthermore cited a critical opinion of an older theory which suggested that “... the red was meant to imitate gold, as the black imitated silver”, and that “... the riches won in the oriental campaigns of Lucullus and Pompeius led to a change from silver to gold in wealthy Roman households, reflected in a change from black to orange-red pottery in Italy”. Joining the critics of the view quoted above,¹³ while at the same time remaining securely within the sphere of ceramological studies, it is worthwhile to consider at this point whether this change was in fact so rapid and to note both that it took place many decades before the campaigns of Lucullus and Pompeius during the Mithridatic Wars, and that it happened in the East, not in Italy. Moreover, the transition from the production of black gloss table ceramics to that of red ware, which took place in Italy around the mid 1st century BC, i.e., after the afore-mentioned campaigns, was caused rather by the fact that in the Hellenistic East, the Romans became acquainted with the already well-developed production of red gloss (*terra sigillata*) vessels.

Describing two late Hellenistic *terra sigillata* wares found around the eastern basin of the Mediterranean Sea, J. Lund, remarked that “Eastern Sigillata A was certainly the ceramic fine ware par excellence of the Seleucid Kingdom, whereas Cypriot Sigillata was mostly distributed in an area that used to be part of what may be called the Ptolemaic Commonwealth”.¹⁴ This situation occurred at a time when the Romans practically controlled

that region, i.e. in the 1st century BC. If, however, we look at the political developments leading up to this situation, we will see that besides the largest Hellenistic kingdoms there were also lesser allies of Rome: Rhodos and Pergamon. The latter of these, Pergamon, developed its own production of terra sigillata (called Pergamene Sigillata) slightly later than the Eastern Sigillata A with its first red vessels dated to around the middle of the 2nd century BC. The distribution of both wares in the Black Sea area will be discussed later, as these imports were preceded by another group of fine vessels that have so far escaped archaeological notice in this region. This pottery group described below was named by the archaeologists working in the Mediterranean as Hellenistic Colour-Coated Ware A¹⁵ and its production, or at least its distribution, might have been connected with the trade activity of Rhodos.

At the time when a new order was emerging after the death of Alexander the Great, Rhodos maintained its independence and – skilfully manoeuvring between the large powers – built its wealth on trade. The island together with its *peraia* profited from its location at the crossroads of trade routes. Having enlarged its merchant fleet, Rhodos developed a trade-oriented mass production of transport amphorae, which peaked in the late 3rd and early 2nd centuries BC.¹⁶ At that time, Rhodos was in the best political position of her history. As the ally of Rome in two Macedonian Wars and in the Syrian campaign, the protectors of Rhodos rewarded her with territorial concessions in the south-west corner of Asia Minor. Rhodos' good times ended with Rome's victory in the 3rd Macedonian War (171-167 BC). Then, after Rome's most important enemies had been defeated, the growing prosperity of a small ally state, which guarded her independence carefully, became unwanted. A free port declared by the Romans at Delos in 166 BC, as well as the loss of the territories in Asia Minor, thus, weakened the economic foundations of Rhodos' prosperity.

Returning from political history to archaeological excavations in the region of the Kimmerian Bosphoros, it is important to note that some lower layers of the rubbish dump covering the destroyed *propylaion* in Nymphaion, mentioned at the beginning of this paper, contained fragments of the most popular Rhodian trade amphorae from the late 3rd and early 2nd centuries, including many stamped handles, as well as sherds of the Hellenistic Colour-Coated Ware A vessels (Fig. 4).¹⁷ The most characteristic vessel belonging to this group is a conical-bodied *skyphos* with two handles attached to the widest point of its body and pressed in the middle to form two small loops (Fig. 4a-c, 5-7). As well, there are also simple bowls with incurved rims, the smaller ones resembling late Classical salt-cellars, other bowls with out-turned walls and rims, as well as plates with flattened rims (Fig. 4d-h). The common feature for all of these vessels, especially the *skyphoi* and bowls, are rather massive, sharply cut feet of a small diameter. The feet of the plates are even more massive and of slightly bigger diameter.

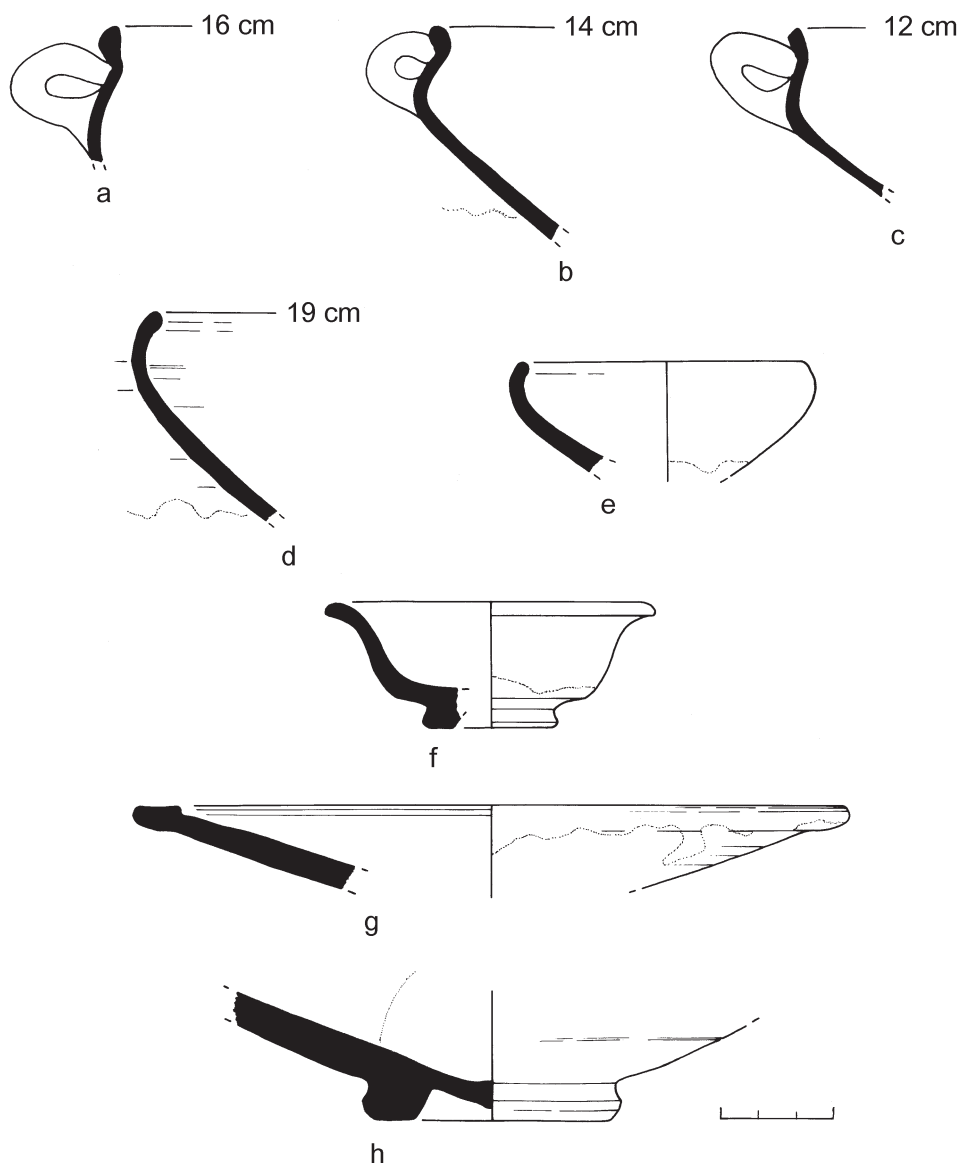


Fig. 4. Hellenistic Colour-Coated Ware A vessels from Nymphaion, 1997 campaign; for a-c, cf. Fig. 7a (drawing by K. Domzalski).

The fabric of the Hellenistic Colour-Coated Ware A vessels from Nymphaion is quite uniform. The clay is medium to hard-fired, buff, cream-yellow or pale-orange in colour (7.5YR 7/4-7/6 and 8/4-8/6)¹⁸, sometimes with a slightly pinkish hue (5YR 7/4-7/6). There are no visible inclusions except for many small, cream-coloured lime particles and sometimes very small, single flakes of silvery mica. The break is usually quite clean.¹⁹



Fig. 5. Hellenistic Colour-Coated Ware A skyphos from Pantikapaion. State Museum of Fine Arts in Moscow, inv. no. M 1168 [M 64, cist. no. 1336] (photo by V.P. Tolstikov).

The inner surface of the vessels is entirely covered with slip, whereas on the outside only the upper part is covered. On the lower part of the exterior, an uneven coverage of slip and sometimes runs of slip are clearly visible. This is the result of the potter's immersing a vessel in the slip while holding its foot. The slip is usually bi-coloured: brownish-red or reddish-brown inside (10R 4/4-4/8 or 2.5YR 4/4-4/8), black, dark grey or greyish-brown on the upper part of the exterior (2.5YR N2.5-N3 or 2.5/2-3/2) and red or brown again on the lower part, ending with the uneven extent of the slip. The bottom part of the body and the ring foot remain un-slipped. In the case of plates, the red zone inside is sometimes restricted to a circle (of a diameter approximately equal to the ring foot) in the central part of the floor. The slip is generally slightly lustrous, although in some cases it is dull – and in other instances has a metallic lustre. The bi-coloured treatment is the most popular, but some vessels, usually (or exclusively?) later in the series, have a uniform red or brownish slip. The described vessels were undecorated, but they had a high utility value. Their forms look elegant; they were carefully made and are

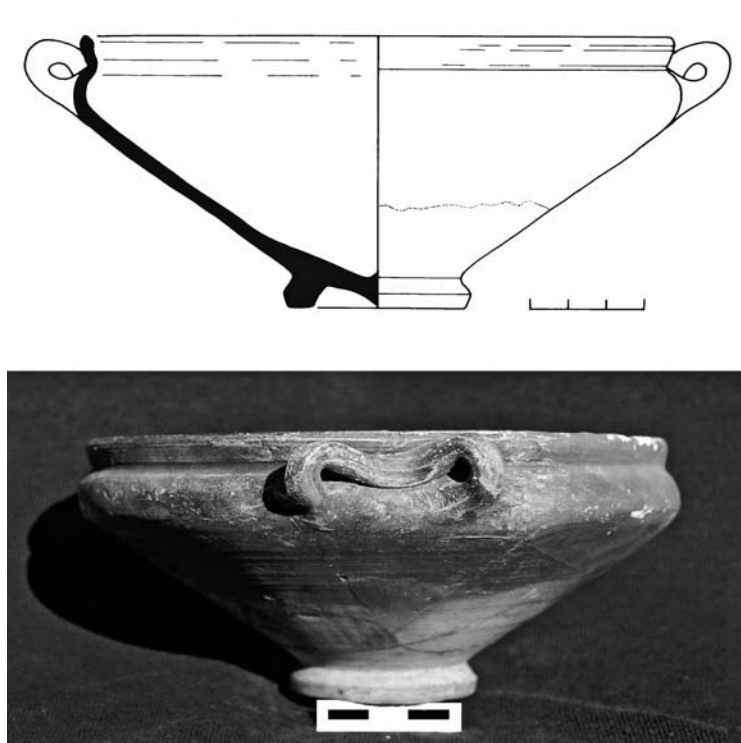


Fig. 6. Hellenistic Colour-Coated Ware A skyphos from Kepoi. State Historical Museum in Moscow, inv. no. Ke-70, r.A (219) no. 590 (drawing and photo by K. Domzalski).

rather thin-walled. The slip can sometimes be compared to that of the Eastern Sigillata in the next centuries, although the average quality is slightly lower, and the external partial slip cover with occasional runs looks rather messy.

The Hellenistic Colour-Coated Ware A has another specific feature which places this group in a special position in the history of the development of fine ware production: it was manufactured in very large quantities and had a broad, pan-regional distribution embracing the remotest parts of the *oikumene*. Originally, the bi-coloured effect may have been obtained unintentionally as the vessels were fired in compact stacks.²⁰ The shapes of the vessels were designed in such a way as to allow them to be stacked directly on top of each other in order to make stable piles in the kiln. The traditional reduction firing produced the black colour on the outside of the vessels only, while the tightly closed interiors of the vessels and their lower external portions remained in a remnant oxidizing atmosphere, which produced the red colour. The phenomenon may also be explained by an insufficient control of the firing process in the completely oxidised atmosphere as a result of which the grey and black areas simply resulted from exposure to the streams of hot air. All in all, the technology of mass production caused the potters to give up using separators between the vessels, which in turn enable the reduced atmosphere to

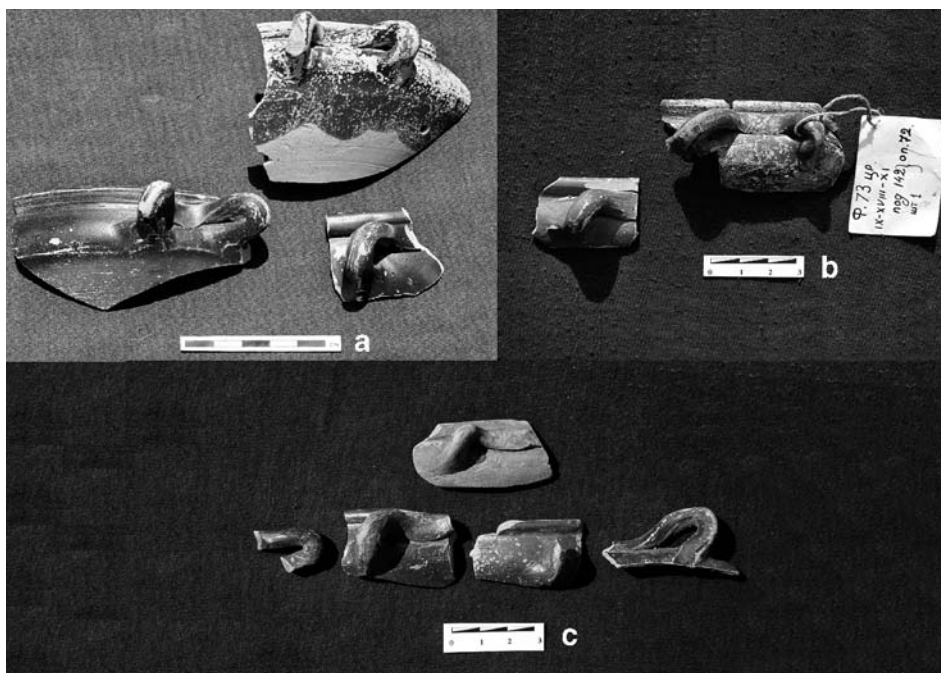


Fig. 7. Fragments of Hellenistic Colour-Coated Ware A skyphoi from: a – Nymphaion (finds from 1997, cf. Fig. 4a-c); b – Phanagoria (finds from 1973); c – Tanais (inv. nos. T-57-VI-N86; T-57-VI-N37; T59-kv.27, ja.24-N415; T-59-kv.31, št.11-N458; T-73-XIV-N289), (photo by K. Domzalski, not to scale).

penetrate their interiors, and the result of this then convinced the potters to put into practice the one-stage firing.

The broad distribution of the Hellenistic Colour-Coated Ware A pottery gradually promoted among the producers across the Greek-speaking world a new tendency of making vessels whose interior was covered with red slip. In time, it resulted in the complete discontinuation of reduction firing. This might have been the outcome of an awareness that firing in a reduced atmosphere was not really necessary any more, as many decades had passed since the time when highly valued Attic red-figured vessels, in which the black background was an inseparable composition element, were produced. As the other, smaller, Attic vessels with no painted decoration were fired in the same kilns together with the painted ones, in order to fill up the chamber, they obtained a uniform black slip. In the early 3rd century BC, when the method of over-painting light motifs on a dark background (West Slope style) became standard, it was probably the inability to depart from tradition which prevented the Attic craftsmen from making any serious changes in the firing process.²¹ The first serious step towards the regular production of ceramics covered with red slip was thus made by the potters making the Hellenistic Colour-Coated Ware A vessels. These craftsmen did not have any

artistic aspirations but instead wanted to create several standardised vessel forms that could be mass-produced, retaining their high quality. The bicolour effect to be found on the majority of these vessels implies that the change in the preferences of the customers who first bought black gloss vessels but later became accustomed to the red ones, did not take place rapidly but instead came about gradually.

Archaeologists working in the eastern Mediterranean have clearly underestimated the discussed group of pottery, while in the Black Sea basin it is still almost entirely ignored. A survey of published reports, however, has revealed that the distribution of these vessels embraces Syro-Palestine, lower Egypt, Cyprus and Kyrenaika.²² Surprisingly, the finds are not so common in the Aegean²³ in contrast to the Pontic littorals where the Hellenistic Colour-Coated Ware A vessels appear at most sites dated to the 3rd and, especially, 2nd century BC, as far as Olbia and Tanais. Although there are very few published finds from that region, the regular distribution of this pottery is confirmed by museum and field observations. The published photographs and drawings of the *skyphoi* with pinched double-loop handles – the most distinctive form of this sort of pottery – quite reliably indicate its presence in the Pontic region. It is not possible to identify definitely the other Hellenistic Colour-Coated Ware A forms without precise descriptions of the fabric and slip, a description, which is lacking in many publications, as their profiles can be easily confused with other pottery groups from less known centres, including the local ones. The collected information on the distribution of the Hellenistic Colour-Coated Ware A vessels around the Black Sea basin is as follows (Fig. 1):

The Kimmerian Bosphoros:

Pantikapaion: Zabelina 1984, 140, pl. 2.1 (the author reported more than 50 fragmented *skyphoi* found in the vicinity of the *prythaneion*); Tolstikov & Zhuravlev 2004, 269-275, pls. 94.6, 99.2-4 (fillings dated to the 3rd-2nd centuries BC); moreover, see Fig. 5, vessel mentioned in Korovina 1987, 83, n. 37.

Nymphaion: Domžalski 1996, 108, nos. 91-92, fig. 5.91-92, (incorrectly classified together with terra sigillata); moreover, numerous unpublished fragments in the State Hermitage Museum in St Petersburg; see also Figs. 4, 7a.

Myrmekion: unpublished fragments in the National Museum in Warsaw.

Phanagoria: Korovina 1987, 83, fig. 12 left; moreover, unpublished fragments in the Taman Museum Complex, Fig. 7b.

Kepoi: unpublished *skyphos* stored in the State Historical Museum in Moscow, Fig. 6.

Gorgippia: Zujkov 1987, 73, fig. 1.9.

Lobanovaja Ščel': Malyšev 1992, 55, pl. 1.2; Dmitriev & Malyšev 1999, 33, fig. 15.13.

Other sites:

Tanais: Boltunova, Kameneckij & Deopik 1969, 14, fig. 4; moreover, unpublished fragments in the Archaeological Museum at Nedvigovka; see Fig. 7c.

Bizone: Mirčev, Tončeva & Dimitrov 1962, 35, no. 4, fig. 21.1.

Tomis: Bucovaľa 1967, 55, no. 35.d, fig. 35.d.

Tyras: Samojlova 1988, pl. 22.2; moreover, numerous unpublished fragments from recent excavations in the Regional Museum in Belgorod Dnestrovskij.

Olbia: Levi 1964, 252-256, figs. 15.1, 17.2, 18.2-3, (filling dated to the late 3rd-late 2nd centuries BC); moreover, numerous unpublished fragments from recent excavations in the Archaeological Reserve "Ol'vija" at Parutino.

Kamenskoe gorodišče: Grakov 1954, 100, fig. 12.4.

Scythian Neapolis: Zaytsev 2004a, pl. 83.4 (= Zaytsev 2004b, 754, no. 8, pl. 349.4; Zajcev 2005, fig. 4.17), layers dated to the mid- and late 2nd century BC.

Outskirts of Vani: Ličeli 1977, 185, pl. 23.3.

Such a broad north-south distribution with equally numerous finds embracing the whole Pontic basin and the eastern Mediterranean indicates that the production centre (or centres?) must have been located somewhere in the middle. Rhodos or south-western Asia Minor fits this picture perfectly, as has been suggested by J.W. Hayes²⁴ and confirmed by recently published results of the first physico-chemical analyses.²⁵

The dating evidence presented in the above-mentioned reports²⁶ shows that production of the Hellenistic Colour-Coated Ware A pottery developed at the beginning of the 3rd century BC,²⁷ and that exports intensified particularly in the late 3rd and early 2nd centuries. A decline took place in the late 2nd century BC. All this also fits well with the outline of economic activity of Rhodos presented above, as is proved by the broad distribution of its trade amphorae.²⁸ Thus, the described pottery group makes up a bridge between the pan-regionally distributed Attic black gloss ware of the late Classical period and the later terra sigillata produced from around the mid- and late 2nd century BC: Eastern Sigillata A presumably from the Antioch region,²⁹ Pergamene Sigillata from the eponymic town,³⁰ and the so-called Cypriot Sigillata from a yet unknown area in the eastern Mediterranean (Cyprus or the southern coast of Asia Minor are most probable).³¹ It should not be forgotten that the origins of terra sigillata in all of the centres named above were connected with the production of black gloss pottery, with the ultimate switch to the red colour taking place in the late 2nd century BC in the case of Eastern Sigillata A, and in the mid 1st century BC in the case of Pergamene Sigillata.

When discussing the distribution of the Hellenistic Colour-Coated Ware A vessels, it should also be noted that at the peak of their popularity they were

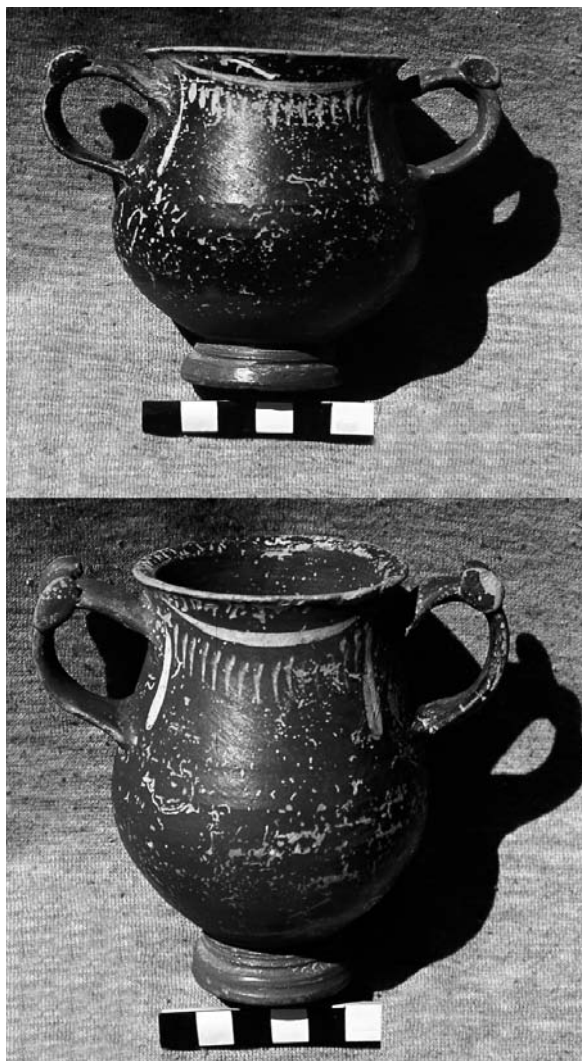
sufficiently widespread to inspire producers from many workshops to copy their forms, as is most evident in the case of the *skyphoi*. This is particularly true of the eastern Mediterranean,³² but similar cases also occurred, if one is to believe the publications, in Chersonesos and in the Bosporan (Kerch Strait) region.³³ The majority of the vessels found in the Black Sea littoral, and seen by the author at many excavation sites and in museums, seem, however, to have come from one main centre, as is indicated by the homogeneity of the macroscopic features of the clay and slip. The traits of the Hellenistic Colour-Coated Ware A pottery from Nymphaion, mentioned above, match with those of the vessels found at other sites in the discussed region. These observations have been confirmed by the results of the introductory physico-chemical analyses of the few samples taken from sherds found at Nymphaion, Pantikapaion, and – as a distant reference – from Tell Atrib (Athribis) in lower Egypt.³⁴

Although Hellenistic Colour-Coated Ware A pottery has a very broad and regular distribution in the Black Sea region, the quantity of this ceramics was always smaller than that of the vessels coming from the main supplier in tableware, which from the 2nd century BC was Pergamon. The Attalid Kingdom had increased its power, by strengthening friendly relations with Rome, and the end of its sovereignty in 133 BC, thanks to a peaceful take over on the part of the Roman state, did not result in a decline of economic importance. Already in the 3rd century BC, the production of black gloss pottery of excellent quality, decorated with over-painted West Slope motifs, was developed in Pergamon, and later on, in the early 2nd century BC, the city became the main producer of vessels decorated in this style in the Hellenistic world (Fig. 8).³⁵ In the late 2nd century BC, terra sigillata vessels also began to be manufactured there (Fig. 9).³⁶ Some of them were decorated with residual West Slope style motifs, painted and scratched, but characteristic for these workshops was the newly introduced decoration with the use of relief appliqués, i.e., small plaques impressed in moulds and fixed on the outside walls (Fig. 10a-b).³⁷

The production of Pergamene wares (black gloss vessels and terra sigillata) was of a different character than that of the Hellenistic Colour-Coated Ware A pottery connected with Rhodos. To a great extent, it was aimed at customers from the town itself, and export was of lesser importance. That is why great weight was attached to the meticulous execution: the vessels were entirely covered with slip and they were often decorated using the above-mentioned techniques. In the late 2nd and 1st centuries BC, as these vessels began to be produced in larger quantities, they are frequently discovered in distant places. However, their influx into the eastern Mediterranean was lessened by the domination there of Eastern Sigillata A, but in the Black Sea basin this pottery had no serious competitor.

The Pergamene wares are easy to recognise for archaeologists working in the Pontic area, even though only their decorated version has attracted any great interest.³⁸ It should not, however, be forgotten that the undecorated ves-

Fig. 8. Pergamene West Slope Ware kantharos from the region of Kimmerian Bosporos, Kerch Archaeological Museum, inv. no. KMAK 484 (photo by K. Domzalski).



sels, which are distinguished by their very characteristic shapes (Fig. 9), made up a considerable share of the production. The fabric and slip of Pergamene Sigillata³⁹ are less homogenous and uniform as those of the Hellenistic Colour-Coated Ware A or Eastern Sigillata A, but the ware under discussion may be reliably identified thanks to the regular presence of a few, single, rather large flakes of golden mica.⁴⁰ Fortunately, the discovery of a large potters' quarter producing this ware on the Ketios River more than twenty years ago removed all doubt as to its provenance.⁴¹

The change from vessels covered with black slip through bi-coloured vessels to red ones, as witnessed by the Attic and Hellenistic Colour-Coated Ware A ceramics can also be observed in the case of the Pergamene pottery. Initially these vessels decorated in the West Slope style were classically black, but the



Fig. 9. Pergamene Sigillata skyphos from the region of Kimmerian Bosphoros, Kerch Archaeological Museum, inv. no. KMAK 2787 (photo by K. Domzalski).

poorly controlled conditions of firing, connected with intensified production in the 2nd century BC resulted in the appearance of the first bi-coloured versions (Fig. 8). In the case of Pergamene Sigillata, the bi-colour treatment was quite widespread, but it resulted from the arrangement of the vessels in compact stacks, which gave the aforementioned effect of red interior and black exterior (Fig. 9). Ultimately, the red vessels came to dominate the production about the mid 1st century BC.⁴²

Of the two other earliest sigillata wares manufactured in the eastern Mediterranean, mentioned above,⁴³ only Eastern Sigillata A⁴⁴ can be found at the archaeological sites around the Black Sea basin and beyond the littorals. The Eastern Sigillata A production is more similar to the presumably Rhodian

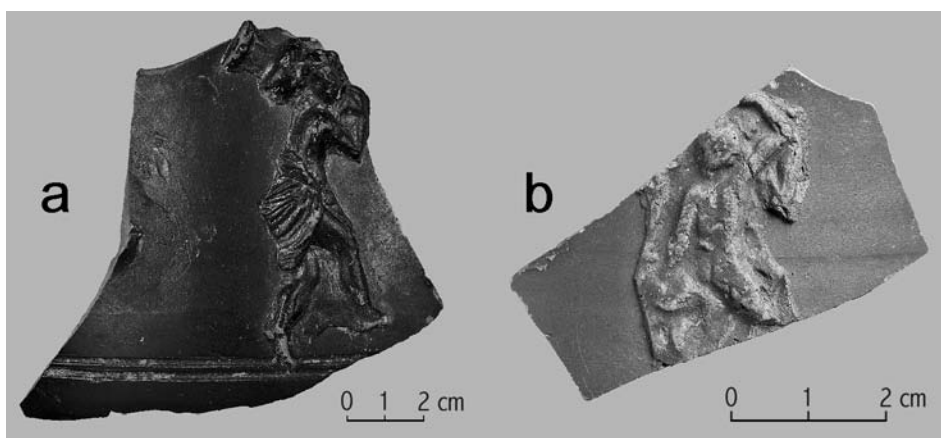


Fig. 10a-b. Pergamene Ware: appliqués of black-gloss and terra sigillata vessels from Myrmekion, National Museum in Warsaw, inv. nos. 225169 and 225170, cf. Michałowski 1958, fig. 87.b, 88, (photo by Z. Doliński).

Hellenistic Colour-Coated Ware A: it clearly contains a higher proportion of plain vessels with only stamped decoration or none at all. Even the colour of the clay, yellowish-cream or pale-pinkish, was similar to that of the Colour-Coated vessels. It seems that the potters from the Antioch region were the first to begin mass production of terra sigillata vessels covered with uniform red slip, a production which may more or less have coincided with the decrease in the production, or at least the broad distribution, of the most recent, also uniformly red, Hellenistic Colour-Coated Ware A vessels in the late 2nd century BC. The Eastern Sigillata A does not have a bi-coloured version and the examples of vessels of this kind with black slip are exceptionally rare.

It is interesting to follow the routes this pottery took, in coming from the north-eastern corner of the Mediterranean to the Black Sea (Fig. 11), where its distribution is surprisingly widespread. Although these vessels, representing the so-called second generation of Eastern Sigillata A shapes,⁴⁵ are not very numerous, single finds have been made at many Pontic sites occupied in the 1st century BC, yet the list of published examples is quite short, embracing those from Pantikapaion, Nymphaion, Phanagoria, Chersonesos, Olbia, Beljaus and Vani.⁴⁶ Moreover, some unpublished fragments found in Myrmekion and Tanais were noted by the author in museum collections.⁴⁷ It is possible that the Eastern Sigillata A vessels were imported using the traditional sea routes, which seem, however, to have been extremely lengthy. Therefore, an overland route should also be taken into consideration, although the lack of evidence within eastern Asia Minor makes it impossible to prove this hypothesis at present. The only hint of this route is the quite frequent appearance of the Eastern Sigillata A in Vani, where it was almost as numerous as Pergamene Sigillata and some Pontic (Bosporan?) wares in an early 1st century BC context.⁴⁸

With our discussion of the two terra sigillata groups found in the Black Sea littorals, we have almost entered the Roman period. The imports of these wares continued after the 1st century BC. This is particularly true of the pottery from the Pergamene region, where production was moved from the Ketios Valley to the seaside Pitane (modern Çandarlı) between the two eras; the vessels made there are called Eastern Sigillata C.⁴⁹ On the contrary, early Roman forms of the Eastern Sigillata A, produced in the area of Antioch in the 1st and 2nd centuries AD are exceptionally rare in the Pontic region.

To conclude, it should be stressed that this overview is limited to the main trends in the circulation of highest quality table ceramics from the main workshops of mass-scale production, whose wares were imported to the Black Sea region. The imports of Attic black gloss pottery in the late Classical and early Hellenistic periods as well as similar Pergamene vessels, replaced by the Pergamene Sigillata in the late Hellenistic times, were unparalleled in scale. The Hellenistic Colour-Coated Ware A vessels of possibly Rhodian origin, dated to the late 3rd and 2nd centuries BC, were less numerous, but the true volume of their import still remains to be established, together with a more detailed chronology of their production.

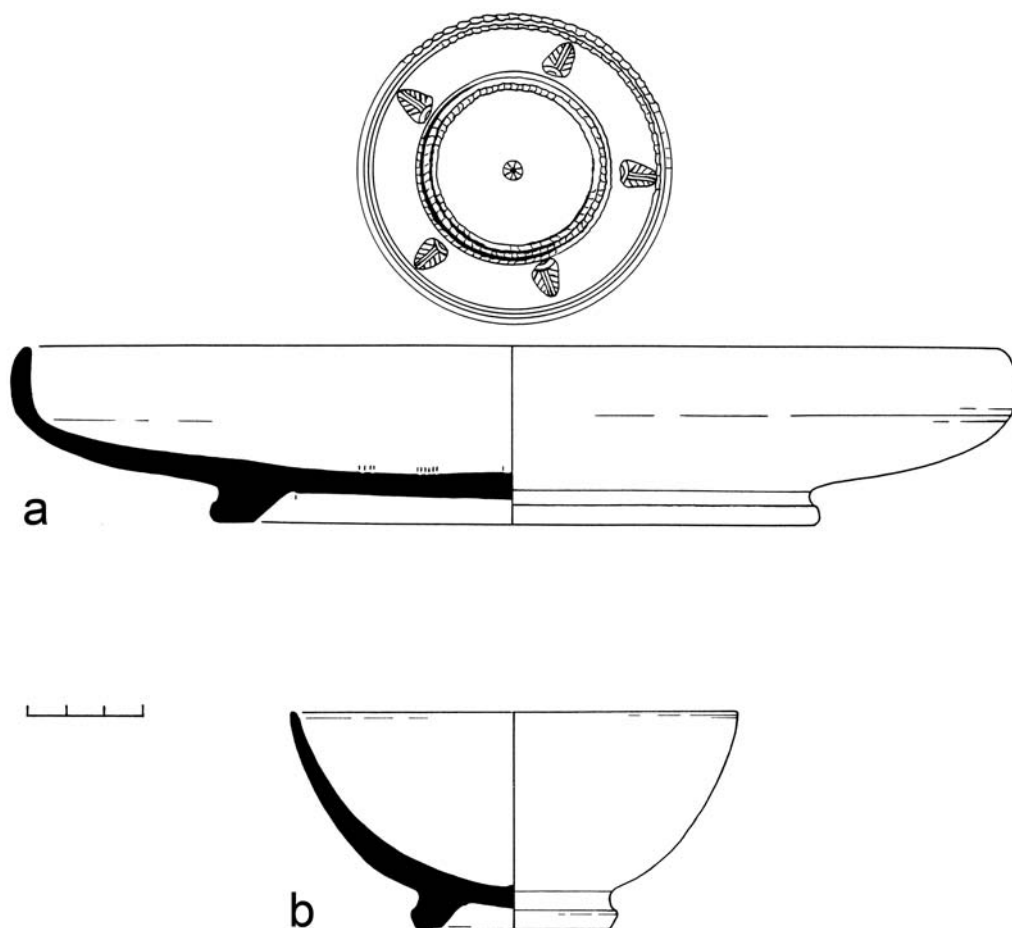


Fig. 11. Eastern Sigillata A: a – plate, form 4A from Phanagoria, State Museum of Fine Arts in Moscow, inv. no. F-1082 [F-64, uč. III, m. 59, no. 261] (cf. Korovina 1987, 84, fig. 13); b – bowl, form 22B from Olbia, Archaeological Reserve “Ol’vija” at Parutino, inv. no. O-2001, R-25/10, (drawing by K. Domzalski).

The imports to the Pontic areas also include wares not discussed here: black gloss vessels from some unidentified workshops, the so-called Megarian bowls from many Aegean – especially Ionian – centres, which were very popular in the Pontic region in the 2nd century BC and later, vessels with the dark-on-white painted decoration, such as *lagynoi*, and, the recently identified production of the Knidian Peninsula workshops, hemispherical bowls of “Megarian” form bearing rouletted bands on the outside of the walls.⁵⁰

To present the trends in the production of these vessels, their distribution in the Black Sea region, and their impact on the local manufacturing of pottery requires a more comprehensive approach, exceeding the scope of this article. The present contribution marks the beginning of the author’s new

project, the aim of which is to collect all the data on the Hellenistic Colour-Coated Ware A, connected with the activity of the Rhodian trade centre. The goal will be to define the ware precisely and to produce a typological classification of the vessel forms, embracing not only the most popular but also all the existing shapes, a task that might hopefully be facilitated by additional chemical analyses. It is also important to gain a more detailed knowledge of the chronology of production of these vessels. For that purpose it will be necessary to search for meaningful contexts outside the Aegean, because the pottery under discussion is not very common there. It is expected that such a study will broaden our knowledge about this hitherto underestimated pottery group, which occupies a key position in the development of the mass production and distribution of table ceramics in the Hellenistic period and is a direct predecessor of terra sigillata.

Notes

- 1 The author would like to express his gratitude to a number of archaeologists from many expeditions in the Black Sea region and to museums in Ukraine and Russia for granting access to previously discovered and stored pottery materials. Special thanks are due in this respect to Mrs. O.Ju. Sokolova, the head of the expedition working at Nymphaion, for her assistance during the campaigns in the late 1990s. Warm thanks are also owed to S. Twardo and J. Lund for improving the English of this paper, and to A. Nowak for computer processing of the photographs and drawings illustrating the article.
- 2 Sokolova 2004, 91-94.
- 3 Čistov & Domzalski 2001, 100-109, figs. 5-11.
- 4 Presenting a list of all the finds of Attic black gloss pottery from the Pontic region exceeds the framework of this paper, as it would embrace an extremely large number of published excavation reports and many notes on unpublished pieces.
- 5 E.g. Marčenko, Žitnikov & Kopylov 2000, pls. 35-36.
- 6 Gill 1988, 180-181.
- 7 Gill 1988, 181.
- 8 E.g. Solomonik 1978, pls. 1-4; 7-8; Nawotka 1998, pls. 16.1-3, 9-10, 14; 17.3-4, 8-9, 11-15.
- 9 A similar hypothesis was put forward by V.M. Zubar' (2002, 276-277), in his explanation of the presence of graffiti on terra sigillata vessels from the Late Scythian necropoleis around Chersonesos in Crimea and dated to the late 1st-early 2nd centuries AD. Zubar' came to the conclusion that these vessels were earlier used by the inhabitants of the town, who made the inscriptions in Greek, and then later sold to the barbarians. The present author is grateful to Professor T. Sarnowski for drawing his attention to the idea presented by V.M. Zubar'.
- 10 Rotroff 2002, 106, fig. 6.; cf. also notes in Rotroff 2005, 27. The situation was similar in the eastern Mediterranean, where the significant exports of Attic West Slope vessels were almost exclusively limited to mainland Greece and the Aegean islands; cf. Rotroff 2002, 105-107, fig. 6.
- 11 Rotroff 1991.
- 12 Ettliger, Hedinger & Hoffmann 1990, 24.

- 13 Cf. also later remarks in favour of the connection between gold vessels and red gloss pottery, in Vickers 1994, 239-240, 245-248.
- 14 Lund 1997, 209-210.
- 15 Hayes 1991, 23-24, fig. 12, 1-3; other remarks on that pottery, see below n. 22.
- 16 Lund 1999, with exhaustive literature on the subject; Gibbins 2001, 290-293; cf. also Šelov 1958, 334-336, with remarks confirmed by later discoveries in the Black Sea region.
- 17 Unpublished materials; excavations conducted in the late 1990s by the expedition of the State Hermitage Museum in St Petersburg. The observations presented here are of general character because the excavated site was not a closed deposit and the methods of exploration and documenting were far from exact.
- 18 Munsell Soil Color Charts, 1990 edition.
- 19 Describing the fabric of the Hellenistic Colour-Coated ware A finds from Nea Paphos, J.W. Hayes noted, that "the (...) ware is fairly close to that of Eastern Sigillata A, which may betray similar manufacturing processes (e.g. selection of clay-body), however, this is a distinct ware" (Hayes 1991, 23). The finds from Nymphaion confirm this observation.
- 20 A similar effect was noted on many Attic black gloss vessels dated to the late 4th and early 3rd centuries BC, but the majority of the later ones (until the mid-2nd century BC) were again fired completely black; cf. Rotroff 1997, 11.
- 21 With the exception of an episodic manufacturing of bi-coloured vessels in the late 4th and early 3rd centuries BC, mentioned above, in note 20.
- 22 The finds from several sites in the eastern Mediterranean inspired a certain interest in the discussed pottery. For some basic information, see: Kenrick 1985, 119-121, no. B186, fig. 24.186:1-3; Hayes 1991, 23-24, fig. 12.1-3; Salles 1993, 198, no. 322, fig. 209.322; Papuci-Władyka 1995, 44-46, cat. nos. 65, 149, 154, 281, 315, pls. 9.65; 24.149; 42.315; Slane 1997, 280-281 (TA type 9), pl. 4: FW38-39; Rotroff 1997, 117-118, cat. nos. 391-394, fig. 22.391-394, pl. 38.391-394; Młynarczyk 2000, 231, pl. 118.3-5.9; Młynarczyk 2002, 122-123, fig. 5; Élaigne 2000; Élaigne 2002, 161-163, 165, figs. 5; 10 (top vessels). Some of the publications mentioned above present lists (incomplete) of finds from other sites in the region.
- 23 E.g. Rotroff 1997, 117-118, n. 159.
- 24 Hayes 1984, 96 no. 167, fig. 14.167; Hayes 1991, 23-24, fig. 12.1-3. It should be noted that in describing isolated finds of the pottery under discussion, some of the Soviet archaeologists also suggested a Rhodian origin; cf. Levi 1964, 252-255, figs. 15.1; 17.2; Korovina 1987, 83, fig. 12 (left).
- 25 The analyses showed similarities in the chemical composition of the clay between Rhodian trade amphorae and the named table pottery; Élaigne 2002, 161-163, 165, fig. 5.
- 26 See also above, note 22.
- 27 One of the earliest examples of the described vessels was found in the Serçe Limani wreck in the South-east Aegean (Pulak & Townsend 1987, 45-46, figs. 16-17), dated to c. 280-275 BC; cf. Rotroff 1997, 118 n. 162.
- 28 See above, note 16.
- 29 Hayes 1985, 9-48, pls. 1-11; Lund 2005.
- 30 Meyer-Schlichtmann 1988.
- 31 Hayes 1985, 79-91, pls. 18-22; Lund 1997.
- 32 Cf. Riley 1979, 281-282, fig. 109.602-605; Hayes 1984, 96, no. 167, fig. 14.167; Kenrick 1985, 101-102, no. B135, fig. 20.135:1-2; Młynarczyk 2000, 229-230, pl. 117;

- Élaigne 2000; Élaigne 2002, 160, 163, figs. 3, 9 (top vessels); Ballet 2002, 90-91, figs. 2-5; Harlaut 2002, 271-272, fig. 11.
- 33 Chersonesos: Belov 1962, 156, figs. 25.e; 27.e; Novo-Otradnoe: Arsen'eva 1970, 104-105, 134, pl. 15.12; Zolotoe: Korpusova 1983, 43, 104, no. 30, grave 50, figs. 7.2 (left); 11.11; pl. 28.6.
- 34 The analyses were conducted by G. Schneider from the Arbeitsgruppe Archäometrie in Berlin. 18 samples from different Hellenistic Colour-Coated Ware A forms were examined by means of wavelength dispersive X-ray fluorescence method (WD XRF), showing a sufficient homogeneity of chemical composition of the clay to suggest that they all originate from one centre. It is planned to compare these results with the analyses conducted by the Laboratoire de Céramologie de la Maison de l'Orient in Lyon (cf. Élaigne 2002, 161-163, 165, fig. 5).
- 35 Schäfer 1968, 45-63, pls. 9-21; Behr 1988.
- 36 Meyer-Schlichtmann 1988.
- 37 Schäfer 1968, 64-100, pls. 22-40; Hübner 1993; 1997.
- 38 For the lists of Pergamene West Slope style vessels found in the Black Sea region, see Behr 1988, 110-111; Rotroff 2002, 104, fig. 5. For pottery with relief appliqués, see, e.g., Michałowski 1958, 72-74, figs. 87-88; Gajdukevič 1959, 76-77, figs. 82-84; Šurgaja 1963 and 1965; Zabelina 1968 (except for fragments in fig. 3.12-13, which seem to be Italian); Kačarava, Kipiani, Lordkipanidze & Puturidze 1979, 143, pl. 67.432-433; Lordkipanidze *et al.* 1983, 146, nos. 216-224, pl. 23:216-224; Gorončarovskij 1983, 121-122, figs. 3, 4.1; Zhuravlev 2000a; Tolstikov & Zhuravlev 2004, 274-275, pl. 99.5-6, 9.
- 39 Cf. Meyer-Schlichtmann 1988, 14-17, colour plate.
- 40 This feature seems to be typical for the whole Pergamene region, embracing also the early Roman Eastern Sigillata C from Çandarlı; cf. Hayes 1985, 71.
- 41 So far, most information about Pergamene pottery comes from excavations conducted in the town itself (cf. above, notes 35-37, and Hepding 1952). The materials from Turkish rescue excavations in the potters' quarter conducted in 1977-1988 have not been published, except for some introductory information, see, e.g., Bounegru & Erdemgil 1998; Bounegru 1999-2000; Bounegru 2003.
- 42 Meyer-Schlichtmann 1988, 15-17, 194-195, colour plate.
- 43 See above, note 14.
- 44 See above, note 29.
- 45 Lund 2005, 234, fig. 10.2.
- 46 Pantikapaion: Zabelina 1984, 144-145, pl. 2.11, 15, 17-20, (described improperly as Rhodian); Nymphaion: Domzalski 1996, 99, fig. 1.17; Phanagoria: Korovina 1987, 84, fig. 13 (centre), (cf. Fig. 11a); Chersonesos: Kadeev 1996, 49, fig. 9; Olbia: Krapivina 1993, 111 (type 8), fig. 50.15 (=Kryžickij, Lejpunskaja, Rusjaeva, Skržinskaja, Krapivina & Anochin 1999, 517, fig. 160.3), moreover, see Fig. 11b; Beljaus: Daševskaja 1976, 56, fig. 4.8; for finds from Vani, see below, note 48.
- 47 A few fragments from Myrmekion are stored in the National Museum in Warsaw, and equally scarce finds from Tanais are kept in the Archaeological Museum at Nedvigovka.
- 48 Matiašvili 1976, pls. 125-126; Kačarava, Kipiani, Lordkipanidze & Puturidze 1979, 143, pls. 65.416,420; 66.416; Matiashvili 2004, 121-123, figs. 1-4, 7-10. In the latter paper, only the Eastern Sigillata A vessels were identified properly. The author's impression concerning the finds of *terra sigillata* in Vani obtained from

the fragmentary publications was confirmed by observations of the materials held in the storage-rooms of the local museum made in autumn 2005.

49 Hayes 1985, 71-78, pls. 16-18.

50 Kassab Tezgör 2003, 41-42, pl. 35.1-2; the scope of these imports in the Pontic region is illustrated by the recently published finds from Istros, Domăneanțu 2000, 112-116, nos. 565-579, pls. 37.565-39.579.

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

John Lund

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 Kilikia⁸ – 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 Bosphoros.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 Paphos²⁰; for Chersonesos: Demetrias;²¹ and for Herakleia: Magnesia²²), 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 Athens⁴⁰, Knossos;⁴¹ Turkey: Miletos;⁴² Cyprus: Nea Paphos;⁴³ Libya: Berenike;⁴⁴ Malta⁴⁵ 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 Athens⁵³ and Rome.⁵⁴ The contemporary type Zeest 85 similis, which Andrei Opaït 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 Domžalski 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 Ravenna⁷⁷ and Sardinia⁷⁸). 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 Domżałski 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 Athens⁸⁹ 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 north-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. Bezczky 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 Hellenistikis 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; Opaıt 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. Opaıt 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. Opaıt 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 Domzalski 1996, 99-104; Domzalski & Zin'ko 1999, 75-79; Čistov & Domzalski 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 & Mercado 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 Opaït'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.

The Unification of Pontos: The Bronze Coins of Mithridates VI Eupator as Evidence for Commerce in the Euxine

Sergej Ju. Saprykin

Introduction

It is well known that the main aim of Mithridates VI Eupator, king of Pontos, was the creation of a strong Pan-Pontic state on the Euxine in order to counteract the Romans' growing power as well as the power of the neighbouring Hellenistic kingdoms. It is also well known that he wished to bring the greater part of Asia Minor under his rule as the traditional domain of his predecessors. For these reasons, if no other, he began in the last decades of the 2nd century BC to enlarge his kingdom at the expense of the communities of the northern and eastern Black Sea littoral.

The main tasks that faced the king in this endeavour were the proclamation of these regions as his ancestral domains and their inclusion as administrative units into his state. He began with Tauric Chersonesos and Olbia, which came under his power around the second to last decade of the 2nd century BC. The Kingdom of Bosphoros next recognized Mithridates as king between approximately 111/110 and 108/107 BC, and Kolchis fell under his power around the last decade of the 2nd century BC. Once all of these regions were in the hands of the Pontic dynasty, the king proceeded to link them as closely as possible with each other and with Pontos.

These cities had been longstanding commercial partners with the Greeks in northern Anatolia and in the Aegean, but the establishment of Mithridates' Kingdom of Pontos transformed this relationship. A good indication of the existence of this new economic and political relationship in the Euxine in this period is the continually widespread use of Pontic coins throughout that region. The purpose of this paper is thus to study the coins that were in use in the Euxine under the rule of Mithridates VI of Pontos in the hope that such a study will shed light on the trade and other commercial activity that took place during the creation of this new economic landscape.

A new economic landscape

It has long ago been well established, following the evidence of various literary sources, that the Hellenic cities of the southern Black Sea coast – Herakleia Pontike, Sinope, Amisos, Amastris and Trapezous – were active commercial partners of the Greeks on the northern shore. In the 5th and 4th centuries BC, Herakleia Pontike, followed by Sinope as a close second, was the greatest wine and oil trader in the area, as is confirmed by the amphorae connected with these two cities. These two cities also served as middlemen in the trade with the Aegean, particularly with Athens. The main items of this trade, which were of great importance to the Greeks, were natural resources such as grain, fish, leather and timber. In the Hellenistic period, the role of these cities (and those just mentioned above) in the Black Sea commerce had diminished dramatically, although some of them, in particular Sinope, went on playing a facilitating role in the trading between the northern and eastern Black Sea coasts and Rhodos, Kos, Byzantion, and some other Aegean communities.

Because the Kingdom of Pontos initially lacked access to the Black Sea, the main task facing its earliest rulers was to gain control of the Greek *poleis* in the Black Sea coastal zone. By the beginning of the 2nd century BC, these rulers had succeeded in capturing practically all the main trading cities: Amisos, Amastris, Trapezous and its colonies, and finally Sinope and her colonies. King Pharnakes I had even created a new coastal city, called Pharnakeia after himself – an event that reveals how important he deemed the Black Sea area to be for the Kingdom of Pontos. The only thing he failed to do was to retain Tieion on the Bithynian coast, which he first conquered, but then had to release according to the conditions of a peace-treaty in 179 BC (Diod. 29.23; Polyb. 25.2). Pharnakes was also the first among the Mithridatids to establish political relations with the Greek cities outside northern Anatolia – Tauric Chersonesos (Polyb. 25.2; *IOSPE I*², 402) and Odessos (*IGBulg I*², 40). In his treaty with Chersonesos, he even vowed to defend its agricultural possessions in the North-west Crimea, a rich grain-producing area, from the Scythians (*IOSPE I*², 401). All of this serves to demonstrate that already in the early 2nd century BC the rulers of Pontos were keen to acquire access to the fertile lands of the northern Black Sea regions.

Some scholars believe that Pharnakes I was trying to create a Pan-Pontic state similar to that later established by Mithridates Eupator. To my mind this belief is incorrect; instead Pharnakes was searching for new allies after the unsuccessful war of 183-179 BC and his severe defeat, which left the economic position of his kingdom seriously weakened.¹ Pharnakes' attempt to find new allies on the Euxine was no doubt due to his desire to restore the shaken economy of his realm. It is for this reason in particular that he was interested in defending the grain-producing area of Chersonesos, from which, at that time, traders, presumably from Amisos and Sinope, the new capital of his kingdom, traditionally bought wheat.

Yet Pharnakes I could hardly have achieved any success in creating a Pan-Pontic state. The Scythians and the Sarmatians had completely destroyed the rural lands of the Greek cities to the north, while the Thracians and the Celts had done the same with the *poleis* of the West Pontic region. Bosporos, the main grain-producing centre of the area for hundreds of years, was practically under the control of the Scythians: an inscription from Pantikapaion describes the close dynastic links between the Scythians and the Spartokids.² Olbia was also deeply entrenched under the Scythian power of Skilouros, as we can see from the coins of this king, struck in this city.³ The Olbians had also almost entirely lost their *chora*.

Thus, in order to achieve economic profits within the Euxine state, Pharnakes needed either to establish good relations with the barbarian world, or to conquer the Scythians along with the Sarmatians. The latter was impossible, as his military and economic power had been seriously weakened after the war.⁴ As well, it was only after the war in eastern Anatolia that Pharnakes I began to pose as a “philhellene” and “a friend of the Romans”, while before it he was aggressive towards the Greeks, conquering Sinope and other cities. This led to a certain suspicion towards him on the part of the Greeks in both the Aegean and on the Euxine, and it took some time before this negative attitude became a positive one. Polybios’ opinion of Pharnakes I is particularly noteworthy: “Pharnakes surpassed all previous kings in his contempt for laws” (Polyb. 27.17).

His son, Mithridates V Euergetes, was luckier in his Black Sea policy. Although we know most about the Aegean affairs of this ruler (OGIS 366 = ID 1558, 1559), there is some evidence for his links with the Greeks of the Black Sea. He gave gifts to the Sinopeans, probably in connection with their temple of Apollon, conjoining the cult of this god with that of Perseus and making it official throughout his kingdom.⁵ Through his governor, Mithridates V Euergetes also supported the town of Abonouteichos in Paphlagonia.⁶ Emigrants from Sinope and Amisos, as well as from Paphlagonia, came to live in the Bosporan Kingdom as early as the second half of the 2nd century BC, as is shown by various grave-stones (CIRB, 124, 129, 131, 530). They may have been either regular traders or traders functioning as intermediaries. It is noteworthy as well that the greatest number of emigrants from Amisos and Sinope to Athens and Delos seem to have arrived at the time of Euergetes, and this could be a result of his efforts to establish commercial relations between the northern Black Sea and the Mediterranean.⁷

Certainly, Mithridates Euergetes considered the establishment of these commercial relations to be an important contribution to Pontos’ economy, which greatly depended on the trading activity of its cities. Unlike Pharnakes I, who was only able to establish and continue trading links with Tauric Chersonesos and Odessos (for the Bosporan Kingdom, we know only of private advertising stamps belonging to Rhodian *emporoi*, and connected with the selling of wine there in the name of Pharnakes I),⁸ Mithridates made the

Bosporan Kingdom a cornerstone of his Euxine commercial policy. It seems possible to suppose that Mithridates did not renew the anti-Scythian conditions of the Pontic-Chersonesian treaty of 179 BC (I have earlier put forward my arguments against speculations dating the treaty to around 155 BC)⁹ and so managed to gain the respect of the Scythians in order to continue trading with Bosporos for the mutual profit of both sides.

Mithridates Euergetes used traditional trading links with Sinope and Amisos. In the 2nd century BC, Amisos played a major role in commerce throughout the Euxine. One of the main exports from this city was terracotta figurines, which chiefly reflected different aspects of the cult of Dionysos.¹⁰ A great number of them have been found throughout the whole Black Sea region and are dated to the late 3rd-1st centuries BC.¹¹ The economic importance of this *polis* is also confirmed by a large quantity of silver drachms, mostly of the type "Hera/owl with wings up"¹² discovered in numerous places including Nikonion, Chersonesos, Tyritake, Phanagoria, western Georgia and others. Early issues of silver coins from Pantikapaion, drachms of Gorgippia and Phanagoria were overstruck at the time of Euergetes' rule from Amisean silver coins, a procedure which testifies to the spread of Amisean coins throughout the Bosporan Kingdom during the second half of the 2nd century BC, that is to say, within the years of Euergetes' reign. These coins were popular in the Bosporan cities until the early 1st century BC.¹³

Some particularly interesting conclusions have been drawn after a careful spectral analysis of the metal used in the minting of Amisean and Bosporan coins. The alloy of silver used in the minting of Pantikapaion drachms of the type "Apollon/bow in quiver" is nearly identical to the metal of Amisean drachms of the late 2nd century BC. At the same time, the metallic components of Pantikapaion coins of the same type, but of an earlier period, resemble the metallic composition of earlier Amisean coins. The late bronze coins of Spartokid Bosporos, issued on the eve of the Mithridatic invasion, were struck from pieces of yellow Pontic copper. All this allows us to draw the certain conclusion that the Kingdom of Pontos not only supplied the Bosporan Kingdom with Amisean coins, but also provided metals for the minting of local coins.¹⁴

The consequences of this policy were very important for Bosporos. Not only were the city's links with Amisos and Sinope strengthened and through them its links with the Kingdom of Pontos, but also its economy seemingly began to improve. This last is demonstrated by the fact that abundant minting took place in Pantikapaion in the 2nd century BC. This minting included silver drachms of the "Apollon/*gorytos*" and "Apollon/tripod" types, as well as coins of lesser denominations in silver along with bronze coins with an Apollon type as well. The types of these coins reflect the impact of Pontic symbols and coin-types, particularly in the early years of Mithridates Eupator.¹⁵ This has led some scholars to suppose that Mithridates VI may even have given financial donations to the Bosporan Kingdom during the late 2nd century BC.¹⁶

To my mind, this is one of the main reasons why Mithridates Eupator allowed Amisos to continue to mint its own silver coinage until the beginning of the 1st century BC, an act which seems very unusual in light of ordinary Pontic monetary practice. The king of Pontos was perhaps trying to take advantage of Amisos' status in order to attract the interest of the Greek trading aristocracy in the cities of Bosphoros and the neighbouring lands of Pontos and his own kingdom. At the same time, Mithridates Eupator, and his successors, were deeply concerned with the economic situation on the northern shore of the Black Sea, an area which was important to them because of their political and military aims. We know that Bosphoros in the late Hellenistic period was in a deep economic crisis, which was intensified by the Sarmatians' constant demand of tribute (Strab. 7.4.4). In the same period, a certain development of the economy did take place, reflected in the minting of coins with the help of Amisos and the Pontic kings. Thus, presumably, the money brought in from Pontos to Bosphoros was aimed mainly at covering the expenses of the Spartokids in paying off the large tribute due to the barbarians.

This payment allowed the Greek *emporoi* in the cities to continue their commercial operations with the barbarians and the Greeks within the Euxine and abroad, thus increasing the profits of the Hellenic cities of northern Anatolia and the Kingdom of Pontos as well. This was the first step in the economic unification of Pontos, but it remained purely an economic issue and not one of policy. At this time, i.e. in the second half of the 2nd century BC (until the submission of the Scythians and an alliance with the Sarmatians was formed under Mithridates Eupator in the late 2nd-early 1st century BC), it was impossible to create a political and economic union between Pontos and Bosphoros, particularly since Kolchis had not yet become subject to the Mithridatids. Only when the eastern Black Sea coast together with Armenia Minor became a part of the Kingdom of Pontos in the very beginning of the 1st century BC,¹⁷ did it become possible to begin the unification of the Euxine in an attempt to restore the ancestral domain of the Mithridatids.

Amisos and, to a lesser extent, Sinope played a major role in the Mithridatids' policy of reunification. By the 2nd century BC, Herakleia Pontike, Amastris and Sinope had temporarily lost their positions in Pontic trade, while Amisos with the assistance of the royal dynasty, on the contrary, had begun to organize and control both internal Euxine and foreign trade. The city, along with Amaseia, was the first among the Greek *poleis* to be incorporated into the Pontic Kingdom; it was historically connected with inland eastern Anatolia, had stable links with Athens and cities in Asia Minor, as well as with Kolchis. Two coins from Amisos of the types "Ares/sword" and "Dionysos/*cista mystica*" were found in the Athenian agora, while an Amisos coin of the type "Gorgon's head/Nike with palm" comes from the town of Satala in eastern Pontos, and a similar coin has been discovered in Alexandria Troas - all finds belong to the time of Mithridates VI (105-65 BC).¹⁸ Amisos'

silver coins from an earlier period reached even Central Asia, some of them having been found in the Parthian city of Nysa in Margiana. This suggests that the city was widely involved in the trade of metals, natural resources, oil, wine etc., all of which its representatives acquired and sent to the Bosporos, Chersonesos and other places.

Amisos had a vast rural area and could freely use its agricultural resources for export trade. When Mithridates VI came to power he immediately surrounded himself with the noble citizens of Amisos, who occupied important positions in the kingdom (Strab. 12.3.32-34; App. *Mithr.* 17; Plut. *Luc.*, 17; Plut. *Pomp.* 42; OGIS 372, ID 1572; OGIS 374, ID 1573, 1569, 1570), and were surely able to encourage the city's trading activity.¹⁹ The city received from the king the privilege of minting a great number of coins in different series, unlike the other cities of Pontos who minted fewer coins and were restricted to a much smaller number of series.²⁰

Coins from Amisos were the main currency of the Pontic Kingdom: among the Mithridatic bronze coins in the Amasya Museum (most of which come from ancient Amaseia), coins from the Amisos mint are predominant and are dated to ca. 100-65 BC.²¹ In the coin-hoards from Pontos, Amisean bronze coins exceed those from such centres as Sinope, Amastris, Gazioura, Komana, Chabakta and others more than seven times (72,12 % against 12 % for coins from Sinope, which are the second most frequent class of coins) (IGCH 1382, 1385-1389).²² The most popular Amisean coins in the internal market of Pontos seem to have been the series "Ares/sword", "Athena/Perseus", "Gorgon's head on Aegis/Nike with palm branch". They belong to the period of 111-90 BC, according to F. Imhoof-Blumer's chronological scheme, or to 95-85 BC, according to the newly suggested and preliminary chronology of F. de Callataÿ.²³ To compare: among the coins of Pantikapaion in Pontos there are only two from Amisos in the Amasya Museum collection, dated to the 2nd-1st centuries BC²⁴ and only one in the hoards – from Merzifon (IGCH 1386). Coins thus confirm that Amisos was most active in commerce inland around the late 2nd–early 1st century BC.

If we then turn to the Euxine markets, the picture is as follows. In Olbia the most widespread Pontic coins were those dated to 111-105 BC (group III of Imhoof-Blumer 1912), which is about 60 % of the total (single coins from 120-111 BC: Imhoof-Blumer 1912 groups I-II have also been found) and from 105-90 BC (Imhoof-Blumer 1912 group IV) – about 30 %. Single coins dated to 90-80 BC have also been found. Thus, the high point of Olbian – Pontic relations occurred in 111-90 BC.²⁵ In Chersonesos we are aware of only nine coins dated to 120-111 BC, while coins from 111-105 BC compose 55 % of all Pontic coins in the city, and from 105-90 BC – ca. 25 % (40 coins in all; there are only six coins, dated to 90-80 BC, Imhoof-Blumer 1912 group V).²⁶ In Olbia and Chersonesos Amisean coins are dominant; coins from Sinope are the second most frequent type of coins, while we also have some few coins from other cities such as Amastris, Pharnakeia, Laodikeia, and Gazioura.

In Chersonesos the most active period of trade with Pontos occurred between 111 and 90 BC, and its *chora's* commercial relations with the Kingdom of Pontos blossomed at the same time.²⁷ In Tyras we only know of *tetrachalkoi* of Amisos from between 111 and 105 BC (Imhoof-Blumer 1912 group III).²⁸ From Bosporos we have coins, distributed among the Imhoof-Blumer 1912 groups in the following way: groups I and II – single coins, group III – 18.75 % of all Pontic coins, group IV – ca. 19 %, group V – 9 %.²⁹ The picture here is again familiar: the peak of Pontic (Amisos, Sinope) – Bosporan commerce corresponds to that of Olbia, Tyras, Chersonesos and inland Pontos, that is to say, the period between 111 and 90 BC.

In Kolchis, using the data from the finds at Vani, the Amisean coins seem to be the most common as well: the earliest among them is dated to 111-105 BC (*tetrachalk* “Ares/sword”), but the coins of 105-90 BC (group IV of Imhoof-Blumer 1912) compose more than 70 % of the Pontic coins found (30 coins against 1 from 90-80 BC, and 5 from 80-70 BC). In Escheri, 9 coins from 105-90 BC and 3 coins, part of a late quasi-autonomous series of Pontic bronze coins, have been found. The most popular among Mithridatic bronze coins here, as is the case with other places in the Euxine, were those with the types “Gorgon/Nike” and “Ares/sword”, issued by Amisos and Sinope; coins from Amastris only occur sporadically.³⁰ This corresponds to what we know of the monetary circulation in the Pontic Kingdom at the same time where the same coin-types and the same centres also were prevalent.³¹ The remaining *poleis* of Pontos are represented on the northern and eastern Black Sea coast by single finds of coins minted between 111 and 85 BC and this seems significant.

Probably all the commerce between Pontos and the Euxine countries passed through the coastal cities of Pontic Kappadokia and Paphlagonia: export goods from eastern Anatolia, southern Kolchis and Armenia Minor were presumably transferred through Amisos, or from Trapezous to Amisos (although some of them could have been sent directly from Trapezous, it is still likely that the traders would have used Amisean coins anyway). It should be remembered that at the time of Xenophon the dealers and traders from Herakleia Pontike, the largest export and intermediary trading centre in the 5th and 4th centuries BC, travelled along the coast of northern Anatolia in order to obtain goods required by their mother-city (Xen. *An.* 5.6.19). If traders from Herakleia did this, why should it not also be possible for those from Amisos? As for goods from Central Anatolia and Paphlagonia, they could have passed through Sinope and Amastris. These centres were also traditional intermediary trading points with the Aegean. The more so, that emigrants from these *poleis* were living in Athens, Delos and the other cities of Greece. This means that the circulation of commodities from the Euxine to southern Pontos and to the eastern Mediterranean also passed through the above mentioned cities.

The overwhelming majority of Pontic bronze coins found in different places in the Black Sea region have the same types and fit the same chrono-

logical groups of Imhoof-Blumer (1912). The greatest number of them seems to have come from the monetary workshops of Amisos, and to a lesser extent from those of Sinope. This should be taken as the result of an attempt on the part of Mithridates VI Eupator to unify the monetary system of the Euxine in order to link his ancestral domains in Pontos and Paphlagonia with the Black Sea's northern and eastern shores through stable economic relations. A central place in this policy was clearly reserved for Amisos, the leading centre for commerce with the Greeks on the coast of the Black Sea.

This process of economic unification, carried out by Mithridates Eupator, was a continuation of the earlier economic policy of Mithridates V Euergetes. Euergetes chose this method in an attempt to restore the potential of Pontos after the disastrous war waged by Pharnakes I, because the losses resulting from the war and the tribute placed upon his kingdom were so heavy that it was impossible regularly to strike large silver coins. We know, in fact, of only a few, rare, Pontic royal tetradrachms minted after the war.³² Mithridates Euergetes' attempt was made at the expense of Bosporos and other northern Black Sea cities, promoting the development of their economy and trade.

Mithridates VI Eupator was much more successful than his father. The peak of commercial activity between Amisos and Sinope and Bosporos and the other parts of the northern and eastern Black Sea fell during the period 111-90 BC, just after Olbia, Tyras, the whole of Taurica and Taman became a part of the Pontic Kingdom. Even if we use the new chronological scheme of Pontic minting, suggested by F. de Callataÿ (which needs some correction), we still find that the most extensive period of monetary exchange between northern and southern Pontos took place in 100-90 BC.³³

All these facts imply that Mithradates Eupator's policy of unification of Pontos began in 111-90 BC. This policy was regarded as an economic measure meant to unite his true ancestral domains in Asia Minor with recently added territories, which he also proclaimed as ancestral. The new currency from the Kingdom of Pontos, chiefly in the form of coins from Amisos and Sinope, was meant to encourage the exchange of trade goods within the new kingdom of Mithridates Eupator. The date of the economic and financial unification of Pontos is confirmed by hoards of Pantikapaion and Phanagoria coins which were used during the 2nd century BC. Their accumulation in hoards is a witness of their withdrawal from circulation shortly before the new Mithridatic Pontic and Bosporan coin-series were introduced in the last decade of the 2nd century BC.³⁴

The rise of trade and commercial exchange in the Euxine in 111-90 BC coincided with a number of important political and military steps on the part of the Pontic king. In between 108-103 BC, he invaded Paphlagonia and Galatia (Justin 37.4.3, 38.5.4; Strab. 12.3.1, 3.9); in 102 BC, he sent an army to Kappadokia, for which he was contending with the ruler of Bithynia (Justin 38.1.1-5). In 101/100 BC, Mithridates VI added Kolchis and Armenia Minor to his possessions, and in 95 BC, together with the Armenian king Tigranes

II, he clashed for the first time with the Roman troops of Sulla in Kappadokia (Justin 38.3.2-3; Plut. *Sulla* 5.6; App. *Mithr.* 10, 57; Frontin. 1.5.18; Liv. *Ep.* 70). At the same time, his troops were in battle against the Sarmatians, Bastarnes and other barbarians of the northern Black Sea littoral (Strab. 7.3.16; 18; [Plut.] *Mor.* 2.324). By 89 BC, most of the barbarians around the Black Sea recognized the power of Mithridates (Poseidonios apud Athen. 5. C 50.213L).³⁵

The beginning of political and military unification in Pontos coincided with the appearance of a vast royal mintage of gold and silver staters and tetradrachms, which began to circulate in Asia Minor at the end of the 2nd century BC but most actively after 96 BC.³⁶ The common opinion on these coins is that they were minted especially because of the war with Rome, and de Callataÿ has convincingly shown that the most intensive minting of royal tetradrachms took place during the years of military conflict in which the Pontic Kingdom participated.³⁷

At the same time, they, without a doubt, indicate a certain development of the Pontic economy, a development which was in the first place the result of commercial relations having been established throughout the Euxine. This conclusion is confirmed by the fact that royal coins of Mithridates VI seem never to have been used as payment on the northern coast of the Black Sea. We know of only single finds of such coins, given exclusively as gifts to the sanctuaries (on the Gurzuf Saddle and in Pantikapaion in the temple from the late 2nd–early 1st century BC).³⁸ All payments were made in Pontic bronze coins or in the local currency.

It is worth noting that during the period of Mithridatic rule, Olbia, Bosphoros and Chersonesos continued to mint their own coins. Bosphoros struck obols of the types “Poseidon/*prora*” (Pantikapaion) and *tetrachalks* “Artemis/resting stag” (Pantikapaion, Phanagoria) dated to 109-100,³⁹ or 100-90 BC.⁴⁰ At the end of the 2nd and the beginning of the 1st century BC, particularly in the first quarter of the 1st century, Pantikapaion struck silver hemidrachms and bronze *dichalks* of the type “star/tripod”.⁴¹ Pantikapaion and Gorgippia also issued drachms of the type “Dionysos/running stag, *thyrsos*”, which can be dated to 100-90 BC (Anochin), or 109-100 BC (Šelov), or 90-80 BC (Golenko), or, finally, 100-75 BC (Zograph).⁴² These are coins that were mainly overstruck on the drachms of Amisos from the late 2nd century BC. The most intensive minting, however, took place in 90-80 BC: Pantikapaion, Phanagoria, Gorgippia put into circulation silver didrachms of the type “Dionysos/wreath”, Pantikapaion and Phanagoria struck the hemidrachms “Dionysos/*thyrsos*” and Pantikapaion alone – the drachms “Artemis/grazing stag”. Bronze issues were also abundant: Pantikapaion, Phanagoria, Gorgippia minted *obols* of the type “Men/standing Dionysos” and the *tetrachalks* “Dionysos/tripod, *thyrsus*”.⁴³

N.A. Frolova and S. Ireland have revised the dating of the Mithridatic coinage of Bosphoros and concluded that it first began in 96/95 BC and continued until 65 BC. Along with *polis* mints there were governors’ issues, i.e. the so-called anonymous *obols* of the type “Dionysos/*gorytos*”.⁴⁴ Chersonesos

struck its own coins in 90-80 BC,⁴⁵ Olbia struck a series of *chalkoi* of the type "Athena/shield and spear" in the last decade of the 2nd century BC, and in 90-80 BC two series of *chalkoi* with local types of Apollon.⁴⁶ All these coins circulated together with Pontic bronze coins.

Local series of coins, however, were used exclusively on the northern shore of the Black Sea. Yet, we can discover few of them among coin-finds in Pontos itself (see above). I am aware of only one coin of Phanagorian mintage from the early 1st century BC (of the type "Artemis/resting stag") from the Athenian Agora⁴⁷ and one coin of the analogous type from the A.G. van der Dussen Collection: the location at which it was found, however, is unknown.⁴⁸ This fact leads to the conclusion that along with the appearance of a Mithridatic royal minting of staters, drachms and tetradrachms, used only outside the Black Sea region, the local minting of the Greek cities of the northern coast was valid for payments inside Bosporos and the neighbouring lands, except perhaps for Pontos, Paphlagonia, Armenia Minor and Kolchis. Presumably local traders, soldiers and ordinary people used local money for buying goods, while Pontic and foreign trade mediators in their turn paid Pontic bronze coins for purchasing goods in the Greek cities, chiefly at Bosporos. They then sent these goods to Pontos and sold them there at a higher price, or paid duties for ships transporting goods through the ports and harbours of Pontos, thus increasing the royal funds and the income of Amisos, Sinope and other Hellenic trading centres of the kingdom.

A similar process could well have taken place at Chersonesos, stimulating economic growth there. In their turn, the Bosporans or Chersonites, who arrived in Pontos on commercial business, spent Pontic coins to buy goods there, but when they returned to Bosporos or to the western Crimea, they sold goods for Bosporan money at Pantikapaion or Phanagoria, and in Chersonesos used local money (or Bosporan, as the city was joined with Bosporos by Mithridates VI).

In any case, Pontic coins served as inter-city currency. Such a practice strengthened the economy of Pontos and Bosporos, aiding the latter in overcoming the economic crisis that had struck the country in the last quarter of the 2nd century BC.⁴⁹ The appearance of plenty of silver coins in the cities of Bosporos from the 90s and 80s BC confirm the end of crisis there (and in Chersonesos, too), as Mithridates Eupator began first of all to support the *polis* economy and encourage commerce with the inland barbarian and semi-barbarian regions, taking advantage of traders from Amisos and Sinope.

Apart from general trade goods, the northern Black Sea littoral and Bosporos supplied the Kingdom of Pontos with grain (Strab. 7.4.6; *FGrH* 434: Memnon F 19, 54). Every year, the Bosporans sent 180,000 *medimnoi* of grain and 200 talents of silver to the king. On the eve of the third war with Rome, Mithridates collected around 2 million *medimnoi* of grain from various places in the Black Sea region (App. *Mithr.* 69). During the war itself, when the Romans besieged Herakleia and Sinope, Bosporos, mainly through Theodosia

and Chersonesos, supplied the two cities with grain (*FGrH* 434: Memnon F 53, 54). At the same time, Kolchis provided resources for the building and organizing of a fleet – timber, hemp, gold, various kinds of food, etc. This was a kind of *phoros* that the subjected territories had to pay to their sovereign. It became possible, however, only when the economy and trade flourished in those countries which were within the circle of inter-Pontic commercial relations, as was the case in the 5th to 3rd centuries BC, when grain from the northern Black Sea region was delivered to Athens and other urban centres of the Aegean. Ensuring this tribute from the subjected lands was a major task for the Pontic king when he created the so-called unification of the Pontos, soon after which he added Taurica, Taman and Kolchis to his kingdom.

K.V. Golenko and other scholars have noticed that a reduction in the spread of Pontic coins on the northern and eastern coasts of the Euxine took place around 85 BC and continued until the 70s BC, stimulating the rise of local minting.⁵⁰ This shows that the economy of the Greek cities and that of the Bosporos became more stable and that these same cities were able to pay tribute to the Pontic king and to a certain extent cover his needs for natural resources and food.

This picture changed radically during the Third Mithridatic War with Rome, when an economic crisis again hit the cities around the Euxine coast. Local coin-minting was seriously reduced; on the contrary, Pontic coins again became the most common form of currency in the local markets: for the period 90-80 BC we are aware of only isolated Pontic coins in Olbia (two examples), in Chersonesos (six examples), in Kolchis (Vani: one example), in Bosporos (nine examples). For the period between 80 and 70 BC we have: Olbia three examples (2.19 %), Chersonesos 33 (23 %), Kolchis six (3 %) and Bosporos 49 (51.4 %). After that period, Amisos lost its leading role in Pontic trade, while traders from Amastris and Sinope appear to have become more active, as is seen by the domination of coins from these centres throughout the Euxine.⁵¹ Of course, to some extent these calculations are provisional, but they still reflect the general proportions of the various types of coins in circulation.

Coinage from Bosporos was most common because after Mithridates' defeats in Asia Minor, the king turned to these lands for aid in organizing a new campaign against the Romans. In order to do this, he attempted to improve the local economy, just as he had done in the early years of his domination on the Euxine. We can, however, hardly speak of any kind of Pan-Pontic unity or unification of the monetary system at this time, as there had been earlier. This is particularly the case, in that the king had already lost practically all of his possessions in Asia Minor, even his ancestral kingdom. Yet he was still trying to use the resources of Bosporos, as before. This shows that the policy of unification of the Euxine was designed with the Kingdom of Bosporos as a main centre of trading activity with the barbarian world, something very necessary for the king in his struggle against Rome.

Thus, the policy of unification of Pontos, as reflected by coins from this era, brought positive results only at the end of the second and the first third of the 1st century BC. The greatest number of Pontic coins from Olbia, Chersonesos and Bosporos stem from Amisos which was at its most important in this period. This same city was also used by the Pontic rulers to connect the northern and eastern Black Sea coasts with the Kingdom of Pontos as part of the ancestral domains of the Mithridatids, particularly in the time of Mithridates Eupator. Unlike the allied western Black Sea littoral, he ruled the northern and eastern parts of the Euxine through his governors.

We can follow two main trends in Mithridatic monetary policy throughout the Euxine: one aimed at imposing the Pontic currency on the subject states as a mean of ensuring the unification necessary for help in obtaining resources to aid in the successful struggle with Rome. The other was concentrated on keeping a local mint in the Greek cities, but one that was linked with the Pontic mint in terms of types and weights. A good example of this twofold policy is the coinage of Dioskourias in Kolchis, which, under royal control, was actively spread throughout the northern coastal area of the Black Sea, in particular Chersonesos and Bosporos. Along with Pontic coins, Dioskourias' coins were widely accepted by most, if not all, inter-Euxine trading partners, a fact which reflects the state of commercial operations between the northern and eastern coasts of the Black Sea. This was a result of the philhellenic policy of Mithridates Eupator who was trying to support the *poleis'* economic life and political rights, in as much as they remained under royal control and suited royal military and economic needs. This is perhaps why the king allowed his governors, in particular his sons Mithridates the Younger and Machares, to control the governor's minting of anonymous obols at Bosporos, struck there alongside the *polis'* coins.

We can also suppose that a desire to improve the economy of the Greek *poleis* was a major reason for the establishment of Amisos as a strong force in commerce throughout the Euxine, as the city traditionally had good connections with the Hellenic cities of the Aegean and Black Sea regions. The king certainly acted from such a desire in the case of Dioskourias, greatly increasing the importance of this city. Royal control through satraps and governors along with royal monetary officials was a real basis for the unification of Pontos on philhellenic principles, which included a certain kind of economic independence for the *poleis* regarding their trade and agriculture.

Another interesting point is that we have a small number of Pontic coins from the barbaric periphery of the area. They were used mostly in the coastal cities and their *chora*. This shows that the king often tried to support the economic potential of the cities, but was not concerned with that of the barbaric kingdoms, such as, for example, the Scythian. The tribes were his allies, not his subjects, unlike the Greeks who were the trading and commercial partners of the barbarian tribes and the subjects of the Pontic king. The economic prosperity of the Greek cities along with Bosporos and Kolchis, where, having taken

over former *poleis* lands, the king's administration organized vast royal land possessions, was a main reason for the economic and military growth of the Pontic Kingdom throughout the whole period of the Mithridatic Wars until the fall and death of the great King of Kings, Mithridates Eupator, in 63 BC.

Notes

- 1 For example, a Delian inscription that notes that Pharnakes was unable to give financial support to the annual Athenian religious festival, as he had previously done (*ID* 1497b = *OGIS* 771). See further, Reinach 1906, 46-50; Durrbach 1921, 100-105; Saprykin 1996a, 85.
- 2 Vinogradov 1987, 69; Molev 1994, 117.
- 3 Frolova 1964, 44-55; Zubar' 1996, 44-49.
- 4 Kolobova 1949, 35; Lomouri 1979, 56; Šelov 1986, 39.
- 5 Robert 1978, 151; Saprykin 1996a, 94. Following L. Robert, we had earlier presumed that Mithridates Euergetes could have given some donations to the temple of Apollon at Delos and that the statue of this god, which appeared on his tetradrachms was a reference to Apollon at Delos. Now, however, we would argue in favour of a Sinopean origin for the statue, depicted on coins of the king.
- 6 Leper 1902, 153-155; Reinach 1905, 113; Maximova 1956, 197-199; Saprykin 1996a, 207-210.
- 7 Rostovtzeff 1941, 593, 1455-1457: Amisenians and Sinopeans at Athens; Ferguson 1969, 437, 438: Amisenian and Sinopean citizens who had relatives and business contacts in Athens; Maximova 1956, 239-245; Couillond 1974, 208, 313, 323: Amisenians and Sinopean on Delos (necropolis of Rheinea). See also Pope 1947, 10; Mehl 1987.
- 8 Jajlenko 1985, 617-619.
- 9 Saprykin 1990, 207.
- 10 Summerer 1999, 40-53.
- 11 Denisova 1981, 90-96; Finogenova 1990, 192, 193.
- 12 *WBR* I², fasc.1, pl. VI.16-32; pl. VII.1-4; *SNG* Aulock, 49-54.
- 13 Golenko 1960, 28-30; Šelov 1965, 46; Golenko 1968, 39-42; Golenko 1973, 470; Anochin 1986, 72; Nesterenko 1987, 81.
- 14 Karyškovskij 1953, 109; Golenko 1964a, 61; Nesterenko 1987, 80-82; Smekalowa & Djukov 2001, 52-57.
- 15 Šelov 1956, 203; Golenko 1968, 39ff.; Anochin 1986, 72; Nesterenko 1987, 80-82; Smekalowa & Djukov 2001, 57.
- 16 Anochin 1986, 74-76.
- 17 Golenko 1977, 61; Dundua & Lordkipanidze 1983, 603; Todua 1990, 55. Cf., however, Braund (1994, 159, 159), who supports the date of ca. 100 BC for the coins of Dioskourias (a date commonly considered as the main evidence for the time of Mithridates' annexation of Kolchis), but who doubts that the Pontic king could have taken Kolchis into possession at precisely this time. For the reasons supporting the dating of the annexation of Kolchis by Mithridates VI to around 101-95 BC, see Saprykin 1996a, 165.
- 18 Kroll 1993, 254-255, cat. 854- 855; Bellinger 1961, 169, 170, n. 200; Lightfoot 1996, 149, n. 22.
- 19 Maximova 1956, 203-206; Olshausen 1974, 160-168; Saprykin 1996a, 128.
- 20 *WBR* I², 1, 14-44; pl. VII, 5-34; pl. VIII, 1-4; *SNG* Aulock, 55-72.

- 21 Ireland 2000, 19-28.
- 22 Weimert 1984, 28, 38, 42, 49, 52, 104, 120-123, 177; Mehl 1987, 162-176; Amandry, LeGuen-Pollet & Özcan 1991, 61-76.
- 23 Imhoof-Bluemer 1912, 169-192; de Callataÿ 2002, 159.
- 24 Ireland 2000, 11.
- 25 Zograph 1940, 293-297; Karyškovskij 1965, 62-67; Golenko 1973, 467; Karyškovskij 1988, 102-103; Saprykin 1996a, 169.
- 26 Golenko 1964a, 69; Gilevič 1968, 19-23; Saprykin 1996b, 73; Saprykin 1996a, 137.
- 27 Saprykin 1996b, 71-73. On the Pontic coins of Amisos in the North-west Crimea, see Lantzow 2001, 127.
- 28 Golenko 1973, 474, 492, nos. 2, 88; Šelov 1962, 102.
- 29 Golenko 1964a, 67; Golenko 1965a, 308-321; Šelov 1965, 46-48; Golenko 1973, 467-470; Saprykin 1996a, 169.
- 30 Dundua & Lordkipanidze 1977, 197-199; Dundua & Lordkipanidze 1979, 1-5; Shamba 1980, 142-145; Dundua & Lordkipanidze 1983, 16-75; Dundua 1987, 108-130.
- 31 Ireland 2000, 19-28 (Amisos), 35, 36 (Sinope); de Callataÿ 2002, 173, 174.
- 32 Robert 1978, 151: rare tetradrachm of Mithridates V. *WBR I*² 1, pl. 1, 11-14; *SNG Aulock*, 4.
- 33 de Callataÿ 2002, 159.
- 34 Zograph 1951, 181; Nesterenko 1987, 77-80; Lagos 2000, 268-274.
- 35 McGing 1986, 59; Saprykin 1996a, 151.
- 36 de Callataÿ 1997, 5-28.
- 37 de Callataÿ 1997, 283. Cf. Zograph 1951, 30; McGing 1986, 93-100; Smekalova & Djukov 2001, 54.
- 38 Novičenkova 2002, 47: two tetradrachms of Mithridates Eupator from the sanctuary on the Gurzuf Saddle; Zin'ko 2000, 220: a gold stater of Mithridates Eupator, dated to the 229th year of the Pontic era (or, what is more likely, to the 209th year of the same era).
- 39 Šelov 1965, 43; Anochin 1986, 72.
- 40 Golenko 1960, 35.
- 41 Zograph 1951, 187; Golenko 1964a, 63: at first dated them to the early 1st century BC, but later re-dated them to the late 2nd century BC, Golenko 1968, 41; see also Šelov 1965, 44, 45; Anochin 1986, 72-74.
- 42 Zograph 1951, 186; Šelov 1965, 43; Golenko 1960, 28-30; Golenko 1964a, 63; Golenko 1968, 39-41: he later placed them in the period 100-90 BC; Šelov 1983, 45; Anochin 1986, 72-74.
- 43 Zograph 1951, 186, 187; Golenko 1960, 34, 35; Golenko 1964a, 63; Golenko 1965b, 143-151; Šelov 1965, 44, 45; Šelov 1983, 45, 46; Anochin 1986, 72-74.
- 44 Frolova & Ireland 1999, 232-236.
- 45 Zograph 1951, 151; Golenko 1964b, 52-55; Anochin 1977, 57; Gilevič 1985, 614.
- 46 Karyškovskij 1988, 103; Anochin 1989, 53-56.
- 47 Kroll 1993, 254, no. 852.
- 48 *Ancient Coins. The collection of a Scholar and Connoisseur*. Part I. Veiling 23. Auction Sale.
- 49 Blavatskij 1949, 55-70; Gajdukevič 1971, 310-315.
- 50 Golenko 1966, 142-149; Saprykin 1996a, 176.
- 51 Saprykin 1996a, 169.

Lighting Equipment of the Northern Pontic Area in the Roman and Late Roman Periods: Imports and Local Production

Denis V. Žuravlev

Unfortunately, the publication of archaeological material found on the northern Black Sea coast (Fig. 1) is far from complete. Clay lamps, which have been found in great quantities at the excavations of all Greek and Roman sites, are among the materials, which were most frequently overlooked in the past.¹ In this article, therefore, I will analyze briefly the main groups of imported and local lamps and other lighting equipment from the 1st century BC to the 6th century AD found in the territory of the northern Black Sea Littoral.²

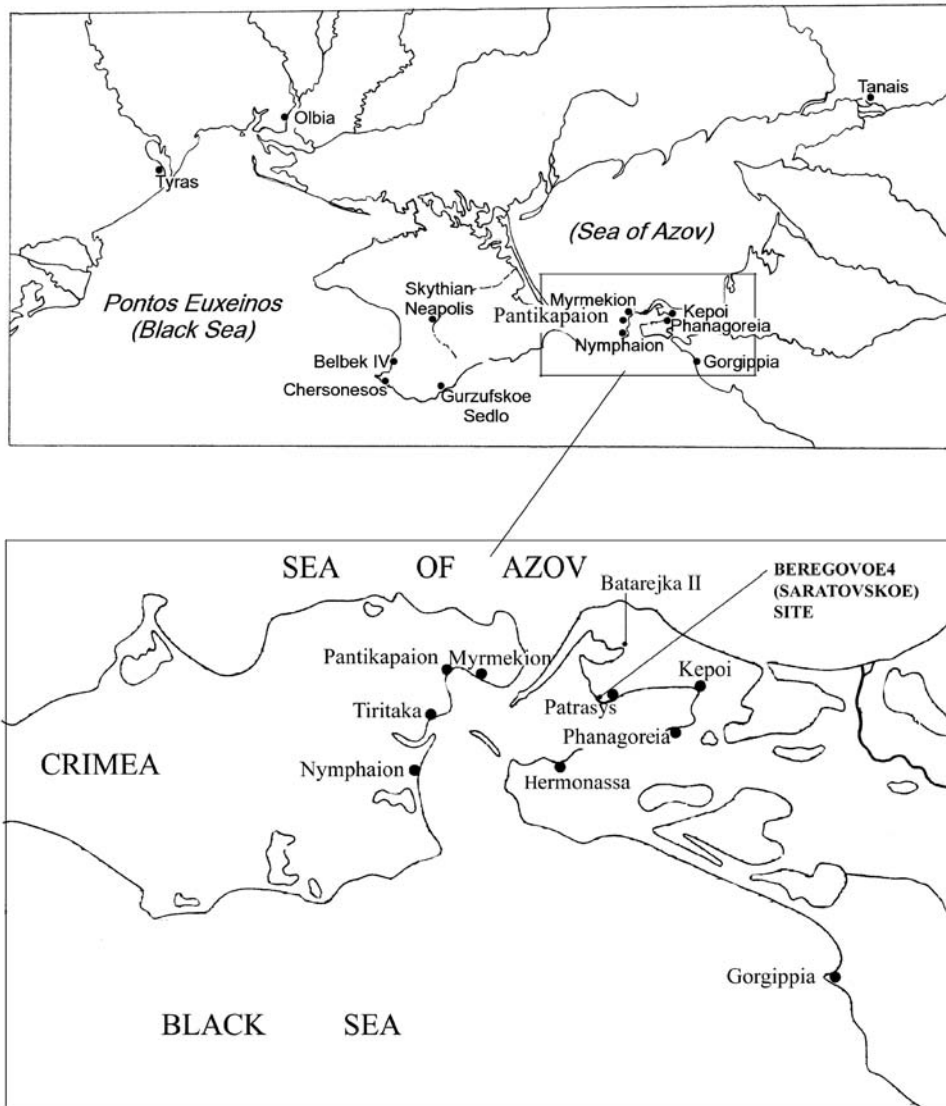
Late Hellenistic imported lamps

The number of mould-made imported lamps in the northern Pontic area increased in the late Hellenistic period, most of them stemming from Ephesian, Rhodian or Knidian workshops.

Ephesian lamps from the 1st century BC–2nd century AD make up one of the most numerous groups of lighting equipment found in this area. Among these lamps are numerous volute lamps and lamps decorated with lugs on their sides. Most of them belong to Howland Type 49A dated between the last quarter of the 2nd and the first quarter of the 1st century BC.³ Many such lamps were found in the necropolis of Olbia.

A number of lamps, which are similar to the Ephesian lamps, but made of a different type of clay, have also been found. These lamps were probably made to imitate the Ephesian lamps. One example in particular is similar to other Ephesian lamps⁴ dated to the 1st century AD and also to a lamp in the British Museum, which belongs to a group of East Greek unattributed lamps.⁵ This lamp may be dated sometime between the end of the 2nd century and the middle of the 1st century BC.

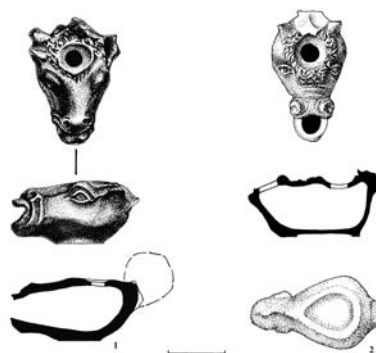
Evidence suggests that a local production of lamps, which in one way or the other imitated late Hellenistic originals from the eastern Mediterranean, took place in Olbia, where a clay model used in preparing a mould for a round lamp with a long nozzle rounded at its end and ornamented with cuts and ovoid pressings was found.⁶



1. The northern Pontic area.

There were many similar lamps throughout the Bosporan Kingdom. It is highly probable that all the trade connections of Bosporos went through Pantikapaion, an important transit centre for all of the Bosporan cities in the 2nd-1st centuries BC. All the Hellenistic layers of Pantikapaion are full of lamps and other imported objects while the finds of imported lamps in small cities and in the *chora* are much rarer. In these places, lamps of local production and, in particular, a great number of jug-shaped ones dominate (see below).

2. Bull-head lamps from Pantikapaion, 1st century BC to 1st century AD. 1): the State Historical Museum, Moscow; 2): Kerch Museum.

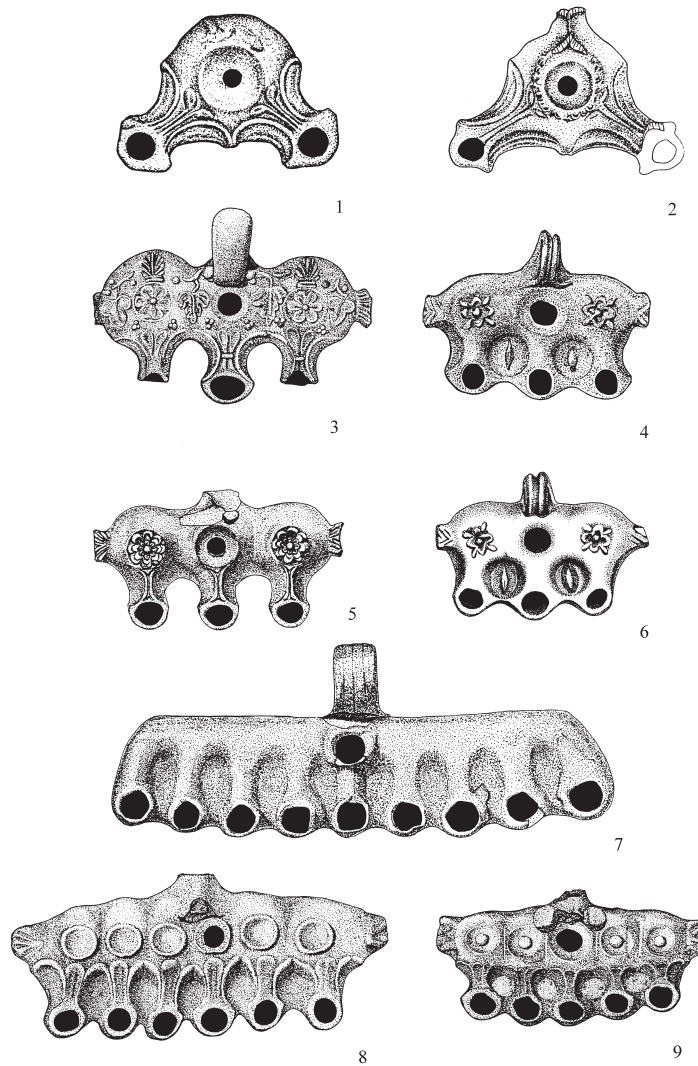


The late Hellenistic lamp industry of the Bosporan Kingdom

Mass production of lamps began in Bosporos by the end of the 2nd century BC and culminated in the 1st century BC. Eighty percent of the lamps from this period are Bosporan, and these lamps take a great variety of shapes. Some of them imitate Ephesian lamps. These were made of grey clay and are of a high quality. There are some grey-clay bull-head lamps among them (Fig. 2).⁷ They must be copies of imported originals and are dated between the 1st century BC and the 1st century AD. Since the middle of the 2nd century BC, the so-called Bosporan Sigillata was produced in Bosporos.⁸ At first, Bosporan relief vessels (Megarian bowls) imitated imported models, but later on, new and original kinds of ornamentation were worked out.⁹

While discussing the causes of this mass production of tableware and lamps, we should not forget the fact that in the second quarter of the 1st century BC direct trade connections between the northern Pontic area and the eastern Mediterranean were impeded because Pompeius Magnus closed the straits and declared a sea blockade in 64 BC (Plut. *Pomp.* 34-36, 38-39; Dio Cass. 36.54-37.4), with the aim of preventing trade ships from reaching Bosporos. Of course, we can be sure that during some part of this period trade connections between Bosporos and Sinope as well as between Bosporos and other southern Pontic *poleis* existed, but we can hardly imagine that clay tableware was delivered from Antiochia to Sinope by land. Besides this, Amisos, Sinope and Herakleia Pontike, all of which had played a main role in Pontic trade, were no longer part of the state of Mitridates VI by the 70s BC. The issuing of coins was terminated in the cities that took the side of Romans, and this may have played a role in the temporary destruction of trade connections between various Pontic *poleis*. We should not exclude the possibility that these events, and as a result, the absence of imported pottery for a short period of time, could have stimulated an increased local production of tableware and lamps.

A large number of late Hellenistic multi-nozzle lamps have been unearthed in Pantikapaion – the capital of the Bosporan Kingdom (Fig. 3). Two-nozzle



3. Different types of Bosporan multi-nozzled lamps. Pantikapaion, 1st century BC. State Historical Museum, Moscow and State Puškin Museum, Moscow (from Zhuravlev & Zhuravleva 2002).

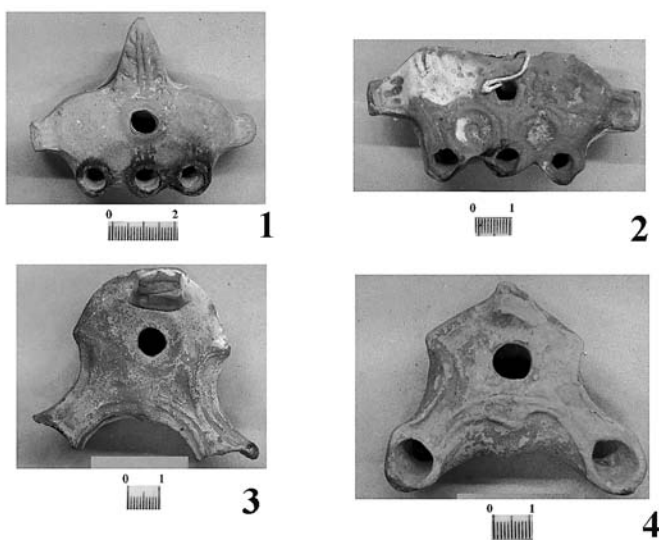
lamps (Fig. 3.1-2) were formed by the joining of two nozzles to the body of a standard Hellenistic Bosporan mould-made lamp. Such lamps as a rule have volutes on each of their nozzles, a small loop-shaped handle and a reservoir for oil, the form of which is the same as that of the one-nozzle lamps. Three-nozzle lamps (Fig. 3.3,5), however, were formed by joining three one-nozzle lamps (type I). The nozzles of these lamps are separate from each other but a single hole for filling them with oil was made in the central part of the lamp. The nozzles are decorated with volutes. Lamps belonging to type II (Fig. 3.4-9)

were moulded and then possibly finished by hand (a vertical handle may have been added or an ornament attached to the handles situated on the lamp's side). The number of nozzles on this type varies from 3 to 9 (see, for example, the variants II.1 to II.5).¹⁰

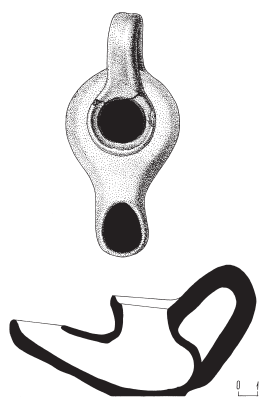
Nine-nozzle mould-made lamps (Fig. 3.7) with a rectangular shaped body (close to trapezoid shape) belong to type III. There is only one hole for filling the lamp with oil and places for other holes are not even marked. The surface of the lamps is flat with three shallow incisions on the sides. Side handles are absent, and a shallow channel marks each nozzle. This type differs morphologically from the lamps of Types I-II described above, although it has the same scheme of joined nozzles.¹¹

Production of multi-nozzle lamps seems to have begun in Pantikapaion at the beginning of the 1st century BC and to have continued for a century or so.¹² It cannot be doubted that this type was produced locally, probably in Pantikapaion. An intriguing deposit consisting of dishes and many local lamps dated to the late 1st century BC was discovered recently inside the defence system (a tower?) of the city's acropolis. They probably belonged to a small sanctuary. Some multi-nozzle lamps have also been found in Phanagoria (now in the collection of the State Historical Museum), but they are made of red clay and should probably be regarded as copies of grey-clay Pantikapaion originals (Fig. 4). In 2003, a similar red slip multi-nozzled lamp was found in Pantikapaion as well.

One of the most widespread groups of lamps is the so-called "jug-shaped" one (Fig. 5). This type appeared about the middle of the 3rd century BC. It is interesting to note that it had a constant popularity during the Hellenistic and early Roman periods. For example, most lamps found in a fortress of the



4. Multi-nozzled red-clay lamps from Phanagoria, 1st century BC. State Historical Museum, Moscow. Photo by Denis Žuravlev.



5. Jug-shaped lamp. House of Chrysaliskos, late 1st century BC. State Historical Museum, Moscow. Drawing by Anna Trifonova.

1st century BC – the so-called residence of Chrysaliskos, a powerful Bosphoran official – are “jug-shaped” ones.¹³

Alongside wheel-made, jug-shaped lamps, handmade imitations were also in use in the Greek *poleis*¹⁴ and among the late Scythians of the Crimea. House-sites of the latter contained several handmade examples that have parallels with lamps found in the course of recent excavations of Scythian Neapolis – the capital of the state of the Scythian King Skilouros.¹⁵ This type of lamps was popular until the 1st century AD.

Italian lamps and their imitations

From the 1st century BC, the northern Pontic area was strongly influenced by the Romans.¹⁶ During this period, the political, social and cultural life of the region underwent many changes, as it became part of a great international market, where the exchange of various types of goods took place. Among these were Italian amphorae, bronze objects, terra sigillata and lamps.

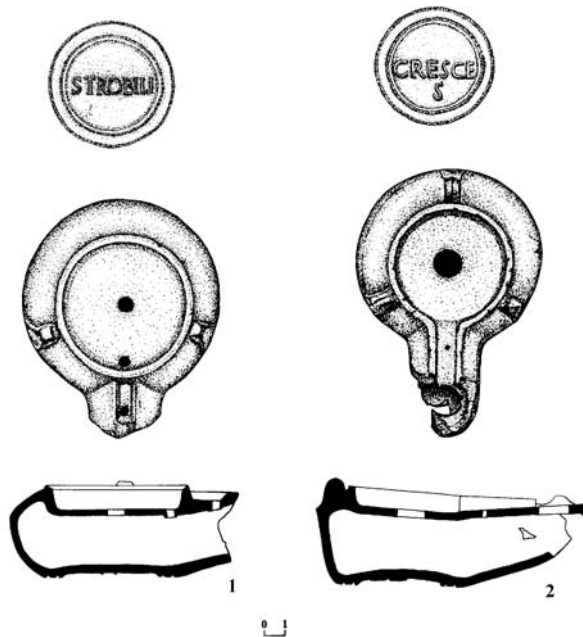
Italian sigillata appeared in the northern Pontic area in the late 1st century BC, but most of the known finds date to the second and third quarter of the 1st century AD.¹⁷ The most numerous finds of Italian pottery come from big cities – Olbia, Chersonesos and Pantikapaion. Obviously there were no direct trade connections between Italy and the Black Sea littoral, despite the fact that more and more Italian products are being identified in the region from year to year. Each year, excavations yield new fragments of Italian pottery, all of which still remain unpublished. Numerous finds of glass, bronze vessels and amphorae of Italian origin also point to wide-scale contacts between the region and Italy. The rare occurrence of Italian fine ware suggests that it most probably arrived through transit centres or occasionally as a small part of a ship’s cargo, but it certainly did not play any significant role in the trade of the region.

It should be noted that there is a similarity in the composition of lots of imported goods found in different cities in the Pontic area, especially those of

the Crimea. Some distinctions do, of course, exist, and certain types of lamps are entirely absent from Chersonesos and Pantikapaion. We find a similar picture, when we examine the distribution of imported terra sigillata. This gives the impression that the main centres of Crimea, Pantikapaion and Chersonesos had the same trade partners who supplied them with the same goods.

There are only a few imported Italian lamps – the most characteristic example of such imports being *Firmalampen* (Fig. 6). According to various scholars' opinions, the earliest production date of these varies from the early 1st century AD to the reign of Vespasian. At first, they were made only in northern Italy; later they were also produced in certain provincial centres and this production continued for many years. *Firmalampen* were not widespread in the northern Pontic area. They are only attested to in the areas most influenced by the Romans, such as for example Chersonesos (where fragments stamped APRIO/F, CRESCES, QGC, CASSI, STROBILI have been found)¹⁸ and Tyras;¹⁹ two such lamps in the Hermitage collection also come from "South Russia".²⁰ Another such lamp with a signature STROBILI came from Olbia,²¹ and still another example, now in the Odessa Museum has no documentation.²² As far as I know, no such lamps have yet been found in the territory of the Bosporan Kingdom.

We cannot be sure that all of these lamps were produced in Italy, even if they are undoubtedly imported to the Pontic area – in many cases they were probably made in Moesia or Pannonia as copies of Italian products.²³ Tak-



6. *Firmalampen* from Chersonesos, 2nd century AD. State Historical Museum, Moscow (from Chrzanovski and Zhuravlev 1998).

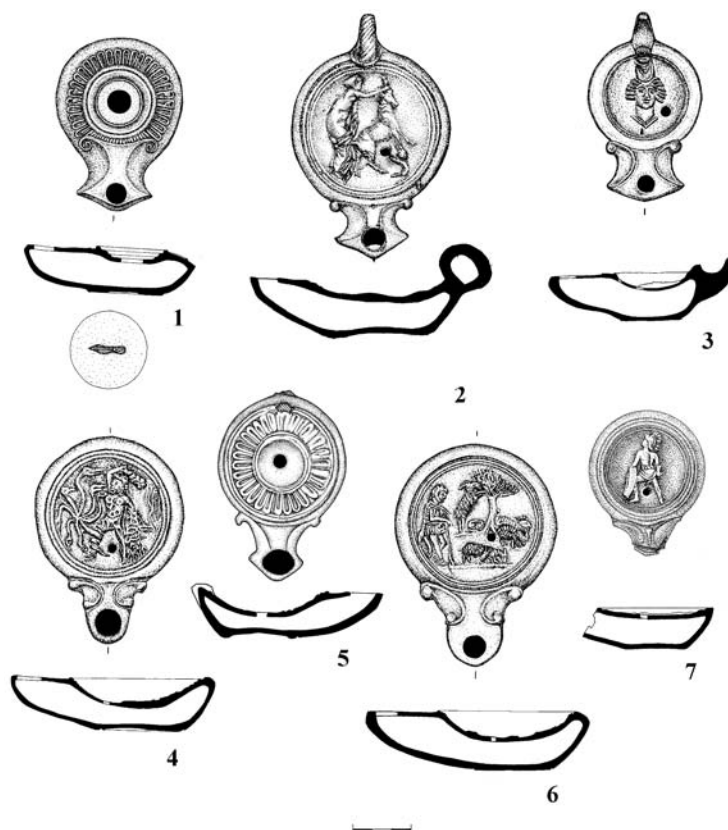
ing a quick glance at the western Pontic area, Dacia or Moesia for example, we notice hundreds finds of *Firmalampen* in Roman military camps, cities and necropoleis. One of the characteristic examples of this is Ulpia Traiana Sarmizegetusa in Dacia where *Firmalampen* are among the most widespread types of lighting equipment.²⁴ This suggests that finds of these lamps are directly connected with the extent of romanisation of an individual territory and also testify to the presence or absence of Roman military camps.

Only a few *Vogelkopflampen* have been found in Chersonesos.²⁵ This type was very popular in the Mediterranean, because it was easy to produce, export and use, and they were no doubt cheaper than many other lamps. However, they were not widespread in the Pontic region. Two examples from Chersonesos date from the mid 1st to the early 2nd century AD.

Some Italian *volute lamps* have also been found in the Black Sea littoral. This type was very popular in Italy and almost all the other Roman provinces during the 1st century AD; it was then progressively replaced by a lamp of a similar shape, also round, but with a short, rounded nozzle without volutes. With regard to the round lamps found in South Russia, it is particularly interesting as D.M. Bailey has already observed, that handles are almost always attached to the examples of this type of lamp found in the northern Pontic area, while similar lamps in other regions of the Roman Empire were sold without handles.²⁶ As one example, can be named a lamp with volutes and stamp HERMAT, which comes from Chersonesos and dates to the 1st century AD. Its discus is decorated with the image of Herakles with the apples of Hesperidai.²⁷ As well, many imitations produced somewhere in the Mediterranean were imported to the northern Pontic area (Fig. 7).

Some *Knidian lamps* have also been found in the region. Among them are lamps known to come from the workshops of Epagatos (Fig. 8.3)²⁸ and Romanesis.²⁹ There is also a lamp stamped AMMΩ/NIOY/O, which resembles a Knidian one.³⁰ It is interesting to note that lamps of this sort are widely distributed in Chersonesos, but not in Pantikapaion. In the 1st and early 2nd century AD, a noticeable import of Ephesian lamps must be acknowledged,³¹ as well as the presence of some Pergamene lamps.³² In the 2nd century AD, the quantity of lamps from Moesia and Thrace increased throughout the northern Pontic area.³³ Thus, for example, some lamps from a workshop in Euktimon (in the region of Constanza) have been discovered in Chersonesos.³⁴ The relations with Tomis and other cities of the western Pontic area were stable and constant during the first centuries AD.

Syro-Palestinian lamps. There are many finds of Roman lamps with close parallels to lamps from Palestine and Syria. There are more than 10 lamps with a stamp ΘΕΟΔΩΡ/O/Y in 3 lines in Chersonesos (Fig. 9)³⁵, which are very similar to ones from Antiochia. They may be dated to the late 2nd-early 3rd century AD. In any case, it is not possible to determine the place of production of a number of similar lamps, which have no stamps and a very simple decoration, without a series of archaeometric studies. Unfortunately, for the

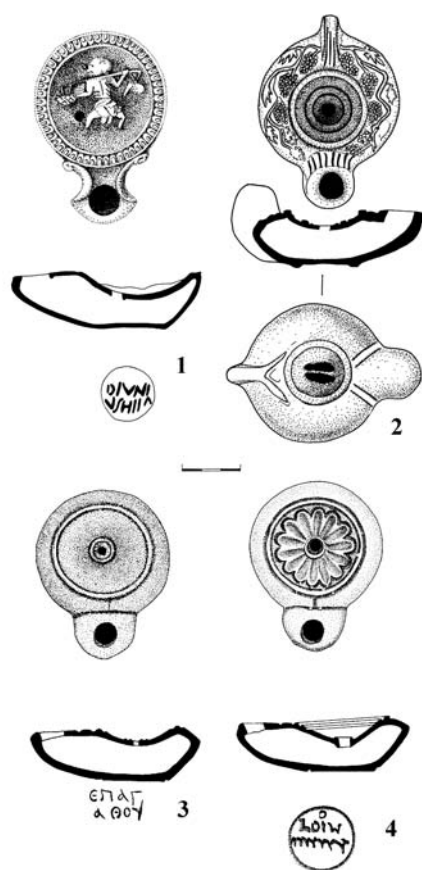


7. Volute lamps. 1) and 6): Kerch (*Pantikapaion*-?); 2): *Kepoi*; 3), 4) and 7): the northern Pontic area (?). State Historical Museum, Moscow; 4): *Chersonesos*. National Preserve "Chersonesos Taurica". Drawings by Anna Trifonova, Irina Rukavišnikova and Irina Gusakova.

Black Sea area such studies would be only the first step. This is why we cannot be sure that some of the lamps were imported from the Near East.

Imported lamps from un-attributed centres. Most of the imported lamps of the northern Pontic area were produced in unknown centres probably situated in Asia Minor, for example a unique two-nozzle lamp, decorated with volutes with bust of Sarapis, topped by a *kalathos* on its handle (Fig. 10), which comes from the necropolis of *Pantikapaion*. It was probably produced in Asia Minor in the mid 1st century AD. There are different stamps on some of these lamps – abbreviations, rosettes or *plantae pedis*. I may note briefly, that the popular stamps on lamps and terra sigillata in the form of *planta pedis* are connected with traces of Sarapis' foot.³⁶ This, however, is a theme for a separate investigation.

Athenian lamps. In the 3rd and 4th century AD the quantity of Athenian lamps increased at all Pontic sites. Athenian lamps make up the most widespread class of imported lamp for the 4th to 5th century (Fig. 11). Most of them



8. Imported lamps. 1) and 4): Northern Pontic area. State Historical Museum, Moscow. Drawings of Anna Trifonova, Irina Rukavišnikova; 2): Chersonesos. National preserve "Chersonesos Taurica", drawing by Irina Gusakova, and 3): Chersonesos. State Historical Museum, Moscow (from Chrzanovski & Zhuravlev 1998).

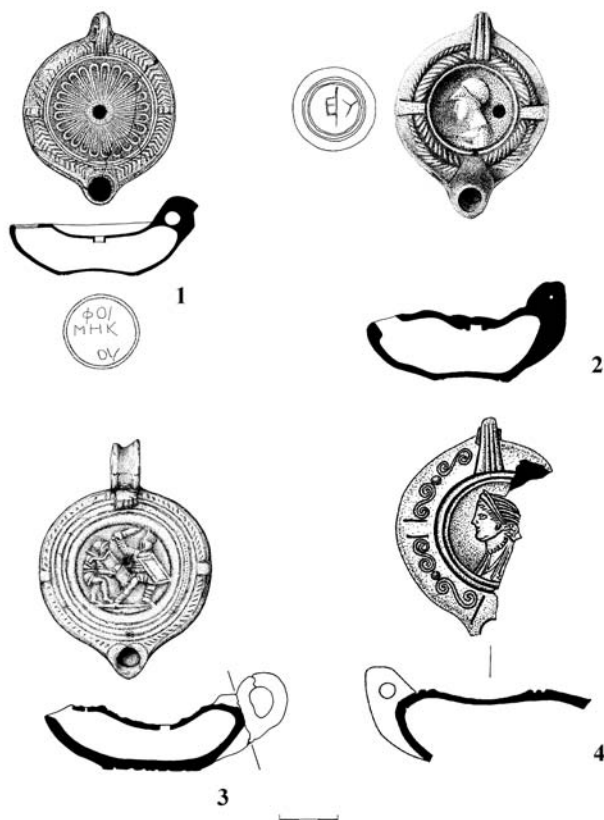
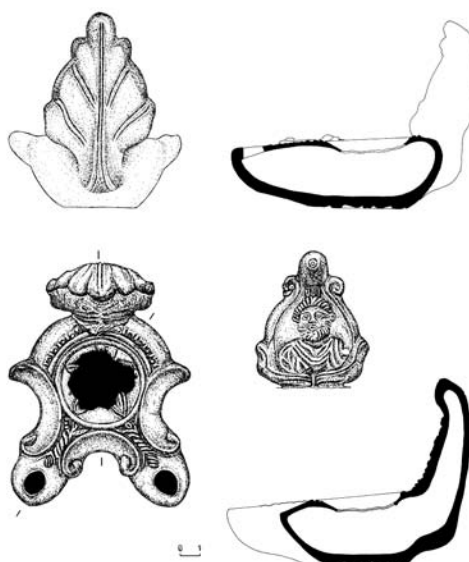
have been found in Chersonesos. Products from the workshops ΕΥΤΥΧ/ΕΣ, ΠΙΠΕΙΜ/ΟΥ and ΠΙΠΕΙΘΟΥ can be distinguished among these Attic lamps.

The signature ΠΙΠΕΙΘΟ was either in relief or incised; all of the incised signatures are dated to the post-Herulian period.³⁷ One such lamp was found in Kerch,³⁸ another, which has the signature misspelled as ΠΙΤΕΙΘΟ, was discovered in Chersonesos.³⁹ V.I Kadeev supposes that the mistake was made while a stamp was being cut.⁴⁰ Some lamps belonging to the workshop ΕΥΤΥΧ/ΗΣ or ΕΥ were found in Chersonesos.⁴¹ Besides these examples, lamps from the workshop of ΒΡΟΜΙΟC (second half of the 3rd–early 4th century AD) are

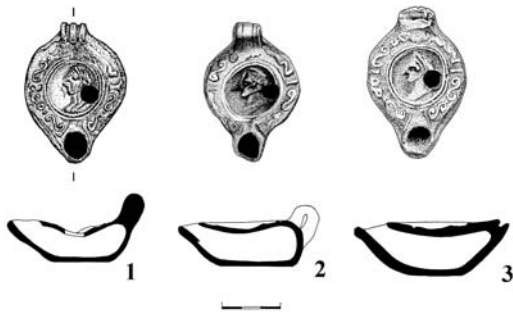


9. Lamp from the Syro-Palestinian region. Chersonesos, late 2nd – early 3rd century. National preserve "Chersonesos Taurica". Photo by Denis Žuravlev.

10. Two-nozzled volute-lamp, decorated with a bust of Sarapis. Pantikapaion. State Historical Museum, Moscow. Drawing by Anna Trifonova.



11. Athenian lamps. 1) and 4): Chersonesos; 2) and 3): from Kerch (probably necropolis of Pantikapaion?); 1) – 3) in the State Historical Museum, Moscow (3 – handle wrongly restored in 19th century); drawings by Anna Trifonova, Irina Rukavišnikova; 4) in the National preserve “Chersonesos Taurica”, drawing by Irina Gusakova.



12. Local Pontic imitation of Athenian lamps. Pantikapaion. 4th century AD. State Historical Museum, Moscow.

known,⁴² as well as from the workshops of ΣΤΡ (ΣΤΡΑΤΑΛΛΑΟΣ),⁴³ ΠΙΡΕΙΜ/ΟΥ,⁴⁴ ΡΟΥΦΟΥ,⁴⁵ ΕΛΠΙΔΗΦΟΡΟΣ,⁴⁶ ΛΕ (ΛΕΟΝΤΕΥΣ)⁴⁷ together with the leaf-relief lamps⁴⁸ and some others.⁴⁹ Other lamps stamped ΑΡΧΕ/ΠΙΟΛΙ/ΔΟC have also been found in Chersonesos,⁵⁰ as well as some lamps undoubtedly stemming from Attic workshops but without any signatures.⁵¹ As noted by A. Karivieri, the Athenian export of lamps to the northern Black Sea coast continued until the second half of the 5th century AD.⁵²

The wide popularity of Attic lamps in the northern Pontic area caused the appearance of local imitations. I would like to give only two examples – first, a lamp from Chersonesos with Eros playing the syrinx, dated from the middle of the 3rd to the middle of the 4th century AD. Judging by the clay it seems like a local imitation of an Elpidephoros lamp.⁵³ A great number of rough lamps with an image of a female bust turned to the left have been found in the territory of Pantikapaion (Fig. 12).⁵⁴ These are imitations of Athenian lamps with Aphrodite wearing a *stephane* and a necklace, dated to between the 3rd and 5th century AD.⁵⁵ In the Bosporan Kingdom the largest part of such imitations came from the deposits of the 5th century AD.⁵⁶

Lanterna

Fragments of wheel-made vessels made of red or grey clay and with holes are often found in the excavations of Pantikapaion.⁵⁷ The diameter of the holes varies between 0.5 and 0.8 cm. The archaeological meaning and reconstruction of such fragments has attracted little scholarly interest. They are usually classified simply as “durchlass” or “incense-burners” and are described in field reports together with examples of kitchen or ritual ware. It is, however, a mistake to neglect a more detailed interpretation of these fragments, and I would like to propose another possible reconstruction for some of them.

In Greek and Roman times, *lanterna* were in widespread use as lighting devices. Several *lanterna* of a closed shape have been found in Egypt, Anatolia, at Cyprus.⁵⁸ Besides these finds, we may note a terracotta figurine of a slave sitting near a similar *lanterna* (*lanternarius*) from Kepoi (Fig. 13),⁵⁹ as well as many other similar images elsewhere in the Greek and Roman world. Thus,



13. Terracotta figurine of a slave sitting near lanterna (*lanternarius*) from Kepoi (from Nikolaeva 1974).

it seems likely that *lanternae* were known and used by people living in the northern Pontic area. They were more useful than the usual lamps and torches in windy weather and while moving. Despite the fact that I do not know of any complete *lanterna* from the territory of the northern Pontic area, it seems likely that some of the pottery fragments with holes could have belonged to such *lanternae*.

Local Pontic lamps

Hundreds of lamps, most of which are of Pontic origin, are found each year. A local lamp production clearly existed in the area from the Archaic period on.⁶⁰ In the 1st century AD and later all the cities of the region used very similar lamps. They were probably made in the same centres where the Pontic Sigillata was produced. Their iconography has many parallels with that of lamps from Italy and Asia Minor, and was probably based on imported originals. Only a few lamps have an original design.

Unfortunately, no traces of the workshops in which these lamps were manufactured have yet been found, so we can only guess at their production in the northern Pontic area. Some moulds for different types of lamp, however, have been found in Pantikapaion, Phanagoria, Chersonesos and other cities. The upper part of a mould with a depiction of a *quadriga* comes from Pantikapaion (Fig. 14.1).⁶¹ Similar lamps are widely distributed throughout the Mediterranean and in the northern Pontic area, in particular in Chersonesos (Fig. 14.2).⁶²

A lamp with a high base was found in Gorgippia in a Hellenistic ceramic workshop,⁶³ where such lamps were probably manufactured. Also a fragment of a mould was discovered in Tyras⁶⁴ and moulds for lamps of different types have been found in Phanagoria (Fig. 15) and Olbia.⁶⁵



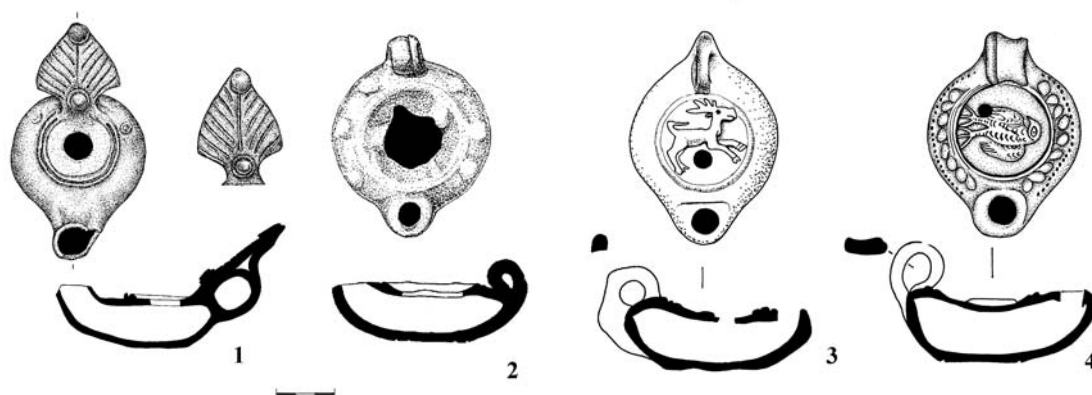
14. Lamp-making in the Bosphoran Kingdom. 1): clay mould and plaster print; 2): lamp with the same iconography from Chersonesos (from: Kunina 1983).

Circular lamps (mainly Loeschcke type VIII) dominated in the area since the mid 1st century AD (Fig. 16.2-4). We may distinguish finds of local lamps, which are always poorly made with indistinct contours and images on their discuses. Pontic craftsmen seem to have used a mould made from imported lamps without worrying too much about local iconography. In Russian scholarly works, such lamps are called “Roman lamps of the northern Pontic type”.

The clay and slip of some Pontic lamps are very similar to those of Pontic Sigillata, which were probably produced in the Pontic region. Pontic Sigillata dominated in the region from the mid 1st century AD,⁶⁶ that is to say at the



15. Clay mould from Phanagoria. State Historical Museum, Moscow. Photo by Denis Žuravlev.



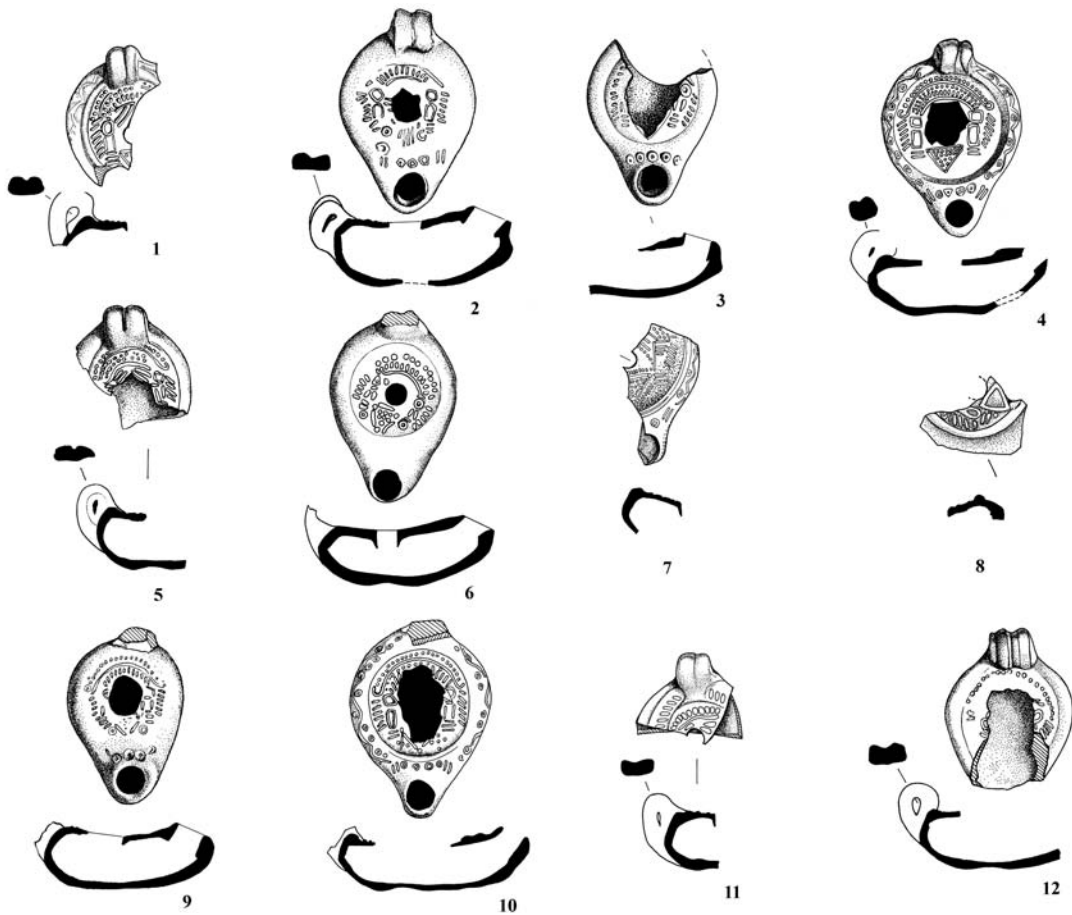
16. Pontic lamps. 1) – 2): Pantikapaion, State Historical Museum, Moscow. Drawings by Anna Trifonova; 3) – 4): Chersonesos, 2nd – 3rd century AD. National preserve “Chersonesos Taurica”. Drawings by Irina Gusakova.

same time as the round lamps of Loeschcke, type VIII were most frequent, a fact which is of great importance in the reconstruction of the trade activity of the Pontic cities.⁶⁷ At the moment, however, we have no idea about where these lamps or the Pontic Sigillata were manufactured. There were also some local Pontic lamps, for example, the lamps with a leaf-shaped handle, which were produced in Pantikapaion in the 2nd and probably 3rd century AD (Fig. 16.1).

The discuses of Pontic lamps are variously decorated – with images of rosettes, different animals, gladiator fights and with mythological or erotic scenes. All of them have very close parallels among the lamps from the Mediterranean region. However the detailed analysis of their iconography is beyond the scope of this article.

I would like to point out just as an example that finds of lamps with Jewish symbols make it possible to localize approximately the buildings of ancient synagogues (even when building remains do not give exact evidence of the fact). Thus, John Lund basing his supposition on the finds of some lamps suggested the possible location of a synagogue from the 3rd–4th century AD in Carthage.⁶⁸

Several years ago, when an ancient synagogue in Chersonesos was being excavated, a great number of lamps of the same type were found (Fig. 17).⁶⁹ According to D. Korobkov, an arch portrayed on these lamps should be seen not as the representation of an altar but of a special niche in the wall where revered relics were traditionally situated.⁷⁰ This supposition was affirmed by the image of a so-called “shelf” (an akroterion, multi-petaled rosette), which may be intended as a flat version of the semi-cupola *konha* situated over the niche aedicula.⁷¹ Netting consisting of crossed lines under the niche (but inside the arch) is portrayed on some lamps of this type – the impression of closed



17. Lamps from synagogue in Chersonesos. National preserve "Chersonesos Taurica". Drawings by Irina Gusakova.

doors is often given in this way. According to Eric C. Lapp, the storage cabinet of the Torah scrolls is shown under the arch,⁷² and the whole image may be interpreted as a symbolic rendering of a synagogue's most sacred location – the tabernacle of the Testament.⁷³ This is obviously just one of the possible interpretations of the iconography of these lamps, but the fact that they were found in the area of a synagogue does suggest that we should expect the use of Jewish symbolism. All these lamps are undoubtedly of Pontic production and can be dated to the 5th–6th centuries AD.

Finally, lamps with primitive images of "a palm branch" on their discus are known in Chersonesos,⁷⁴ and this image might be reminiscent of a menorah motif. It is possible to see them as a copy of some Palestinian lamps, which have a very similar shape and decoration.

Sunburst lamps

An original group of lamps from the northern Pontic area dates to the 3rd-4th centuries AD. These so-called “sunburst lamps” are quite small, with a round or oval body, an extended nozzle, rounded at the end, and generally loop-shaped handles.⁷⁵ A stylized rosette is often imprinted on the base. Their name comes from their peculiar shoulder-decoration, which consists of a row of alternating concentric rims and grooves, starting from the discus. It is important to note both that the sunburst shoulder-decoration is also seen on some Hellenistic lamps and that its significance has been the subject of numerous hypotheses: sunbeams, a laurel or a palm branch or a symbol of the light of the lamp have all been suggested as possibilities. Such lamps were widespread in the territory of the northern Pontic area in the 3rd-4th centuries AD, especially in Chersonesos, where they represent about 30 % of all Roman lamps found. In Pantikapaion, sunburst lamps come from layers dating from the second quarter to the mid 3rd century AD.⁷⁶ There is a specific group of such lamps with a stamp (?) in relief letters divided into two parts. The letters XPY are usually stamped on the discus, and COY on the bottom (Fig. 18).⁷⁷ They have been found so far only in Chersonesos, but their clay is not local. In addition, a highly unusual sunburst lamp with the stamp *planta pedis* on its bottom was found in Tanais.⁷⁸



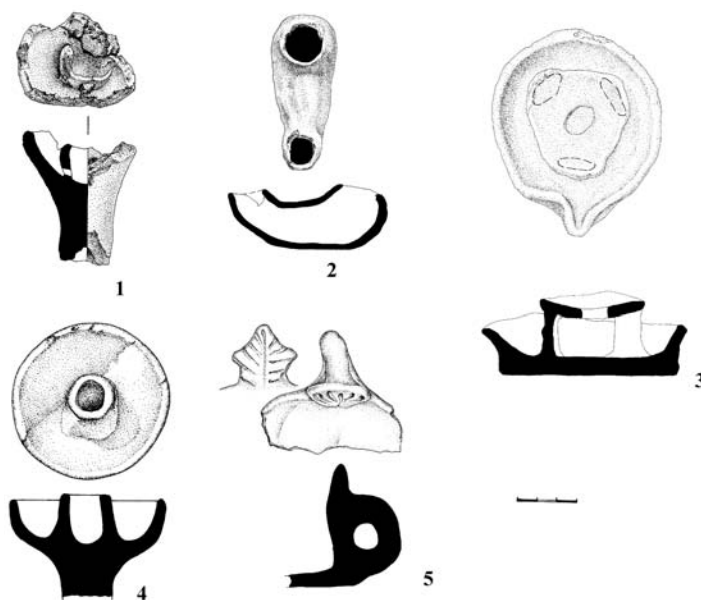
18. Sunburst lamp with a stamp XPYCOY, Chersonesos. State Historical Museum, Moscow. Drawing by Anna Trifonova.

Handmade lamps

Another intriguing group of lamps were handmade. Their presence is a characteristic feature of the region, which may be due to the high proportion of barbarian inhabitants in the northern Black Sea littoral. The quantity of handmade lamps increased in the 1st century AD, when the Sarmatians reached the Black Sea coast bringing with them their own traditions and customs. The great popularity of open handmade lamps among these people rests no doubt on the fact that animal fat or dolphin blubber,⁷⁹ and not imported oil, was used with them.

Most of the handmade lamps were found in different places in the Bosphoran Kingdom (Fig. 19). The presence of handmade lamps, which were probably used by the non-Greek population, from every period of Bosphoran history is a characteristic peculiarity of the region.⁸⁰ Their number seems to have increased greatly after the 1st century BC, and most of those found date to the 4th–6th centuries AD. Some imitate wheel-made lamps (Fig. 19.2).⁸¹ Others have a leaf-shaped or elongated body and are made from local clay. All such lamps are very similar everywhere – in Olbia and Chersonesos as well as in both parts of Bosphoros.⁸²

If we look at the materials from Tanais, a trade centre on the barbarian border, we notice that about 40 % of all lamps were handmade in the 1st centuries AD.⁸³ This probably reflects the ethnic composition of this small city.



19. Hand-made lamps, Asian part of the Bosphoran Kingdom: Batarejka II and Kepoi, late 2nd – 6th century AD. State Historical Museum, Moscow. Drawing by Anna Trifonova.

Recently, lamps from Belinskoe (a site in the European part of Bosporos) were published. Of 46 lamps, 36 were handmade.⁸⁴

As regards Pantikapaion, we may note an increase in the number of handmade lamps in the 3rd century AD and later. At the same time the greatest number of lamps found in the *chora* of the Bosporan cities are handmade. Likewise, many handmade lamps have come to light in sites in the Asiatic part of Bosporos. Many of them have odd shapes (Fig. 19.3)⁸⁵ and lack parallels outside the Bosporan Kingdom.

Metal candelabra

Candelabra of various forms are known in the northern Pontic area from the 5th century BC on.⁸⁶ Most of them were imported. One series of candelabra comes from the necropolis of Pantikapaion. Some examples may be considered to be of Italian production,⁸⁷ while others were produced in the Roman provinces. A unique bronze candelabrum decorated with the figure of Syrene and topped with a lamp was found in the burial mound no. 29 near Stanica Ust'-Labinskaja. It can be dated to the Augustan period and may have been produced in an Italian workshop. Many candelabra from the excavations of Pantikapaion and Chersonesos are dated to the 4th century AD.⁸⁸ One example from Pantikapaion is topped with a lamp, the handle of which is cross-shaped.⁸⁹ Depictions of similar candelabra are preserved in the paintings of the famous so-called burial-vault of Ašik in the necropolis of Pantikapaion. At the moment, however, we do not possess any evidence to suggest the production of such candelabra in the northern Pontic area. There is also a relief image of such a candelabrum, placed between erotic scenes, on a Knidian *lagynos* from the necropolis Belbek IV (Fig. 20). It should be noted too that finds of bronze, iron and lead lamps are very rare in the northern Pontic area.⁹⁰ They



20. Relief image of candelabrum and a lamp on the shoulder of Knidian *lagynos*, Bel'bek IV necropolis, mid 2nd century AD. Photo by Vasilij Močugovskij.



21. Maiotian candelabrum from Krasnodar Museum.
From *Cat. Moscow*, 2002.

have most probably not survived to modern times, because they were melted down in antiquity.

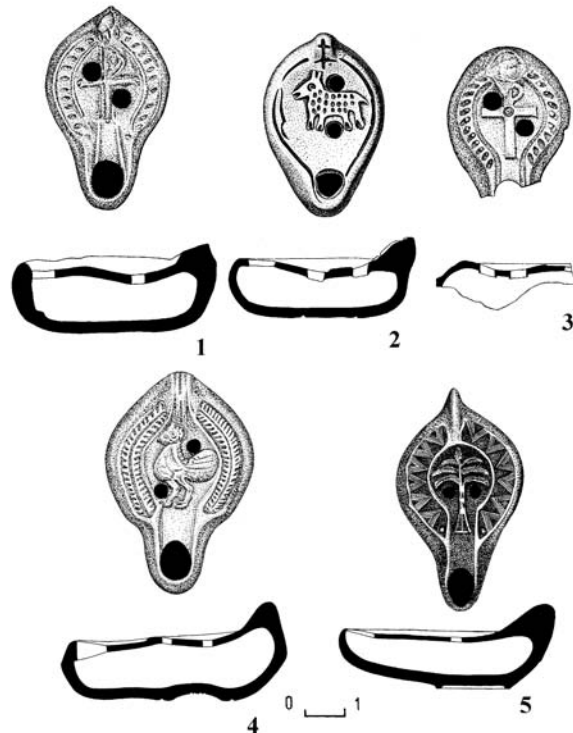
Barbarians also used bronze and iron candelabra, which were poor copies of Greek and Roman lighting equipment. Several examples of these come from the so-called “Golden Cemetery” of the 1st century AD in the Kuban region.⁹¹ Finds have also been made in the Ust’-Al’ma late Scythian necropolis in the south-western Crimea.⁹² It is interesting to note that three of them were found *in situ* with a lamp on the top. A hammered iron candelabrum of a simple shape was found in Tanais on a site destroyed approximately in the middle of the 3rd century AD.⁹³ One of the most interesting examples of candelabra of similar shape was unearthed in a Maiotian necropolis not far from Krasnodar (Fig. 21).⁹⁴ Its top ends in a triangular base for a lamp, while

a bit lower down there is a round plate, which is decorated with bull-heads and meant to hold a lamp.

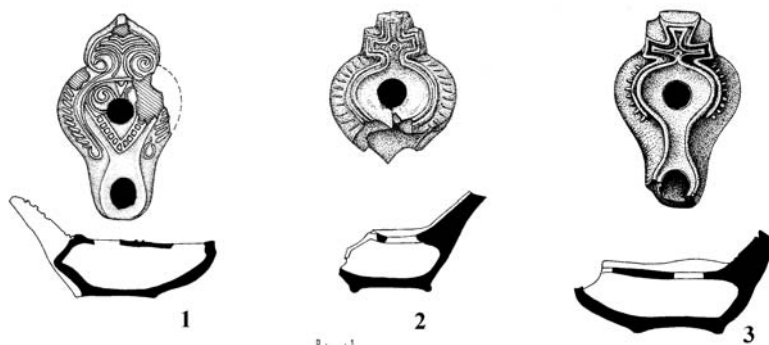
Lamps of the late Roman period

In the late Roman period, handmade lamps and small lamps with decorated shoulders were in widespread use throughout the region. There are also many finds of biconical lamps, which were produced in Asia Minor in the late 2nd–4th century AD. The earliest date for these lamps may be established from the finds near the entrance of house no. 3 in Ilouraton, which belonged to the 2nd and early 3rd century AD. A great number of such lamps were found in Chersonesos as well as in other Pontic cities.⁹⁵

A sizeable series of oval-shaped lamps was found in the cities of the northern Pontic area. Most of these are of local production. They are very carelessly made and are badly fired. In Chersonesos, these lamps were found in great quantities in tombs from the 3rd–early 5th centuries AD.⁹⁶ There are also many so-called *Warzenlampen* (mid 3rd–early 5th century AD).⁹⁷ In the 5th century AD, North African lamps and among them ones with Christian symbols reached Chersonesos (Fig. 22).⁹⁸ Cross-handled lamps from Moesia⁹⁹



22. Late Roman lamps from Chersonesos (from Chrzanowski & Zhuravlev 1998).



23. Moesian lamps. Chersonesos. 1): National preserve "Chersonesos Taurica". Drawing by Irina Gusakova. 2) – 3): State Historical Museum, Moscow (from: Chrzanovski & Zhuravlev 1998).



24. Late Roman imported lamps from Pantikapaion. 1) – 2): African, 5th – 6th century AD; 3): Egyptian, 4th century AD. State Historical Museum, Moscow. Photo by Denis Žuravlev.

were also very popular there (Fig. 23.2-3). Moulds for their production were found in Bulgaria but they may have been produced in other places as well. It is intriguing that a fragment of a mould for a similar lamp was found in Chersonesos.¹⁰⁰ These lamps can all be dated to the 6th century AD. There are also a very few finds of imported lamps in the Bosporan Kingdom (Fig. 24). For example, in 2005 a fragment of a cross-handled lamp was found on the acropolis of Pantikapaion.

In the 6th–7th centuries AD a great change occurred in the development of lighting equipment, because people began to use wax candles instead of oil lamps. Several candlesticks were found in Chersonesos¹⁰¹ together with hanging candlesticks of bronze. Chersonesos' trade connections were highly developed, and the city was known during the Byzantine Empire as a great centre for wax export.¹⁰²

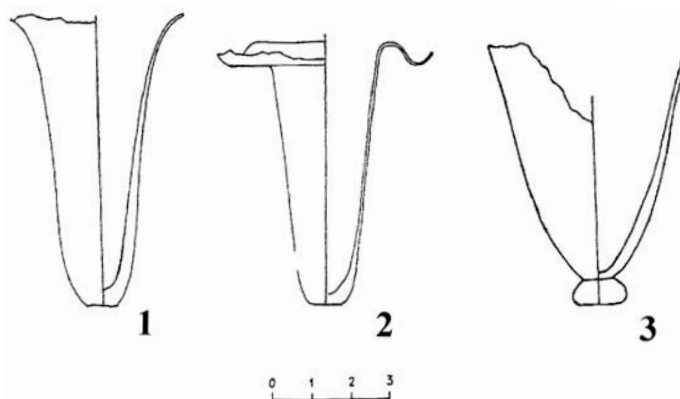
Glass lamps

The use of glass lamps in the northern Pontic area began in the late 4th–5th century AD. L. Golofast has analyzed glass lamps found in Chersonesos, and has classified them into the following types, each of which is subdivided into some variants:¹⁰³

1. Conical lamps (Fig. 25.3). The earliest example comes from the last quarter of the 5th century AD in Chersonesos. The other examples are all of a slightly later date, occurring in contexts from the 6th–7th centuries AD.¹⁰⁴ Similar lamps are known from Kerch, among them a lamp from the burial-vault 154/1904,¹⁰⁵ and also from the necropolis Sovchoz 10.¹⁰⁶ Some have a conical shape and are decorated with relief drops of dark blue glass. According to some specialists, they date to the 4th–5th centuries AD and were imported from Syria or Egypt.¹⁰⁷

2. Lamps with a broad cylindrical or semi-spherical body with a narrow base that is designed to be placed into a hole of a *lampadophoros* (Fig. 25.1–2). This type has been found in all regions of the Byzantine Empire. They appeared in Chersonesos at the end of the 5th century AD but are most often found in layers from the 6th–7th centuries.¹⁰⁸ We cannot exclude the possibility that some lamps were not imported, but produced in Chersonesos, where a glass workshop, which produced glass for windows and small glasses, has been found in the course of excavations.¹⁰⁹ Production of similar lamps is also known in the Bosporan Kingdom, where, for example, a glass workshop has been found at the Il'ičevskoe site.¹¹⁰

3. Lamps with a semi-spherical or cylindrical body, with three small loop-shaped handles for hanging on a cross. Some vessels were found in Chersonesos¹¹¹ and other, complete, ones were found in the Bosporan Kingdom in the burial-vaults of Pantikapaion and in Tyritake. According to the contexts in which they were found, they were used in the late 4th–6th centuries AD.¹¹² One of the centres for the production of these lamps may have been Constantinople,¹¹³ where they are found in great numbers in layers from the 6th–7th centuries AD.



25. Glass lamps from Chersonesos (from Golofast 2001).

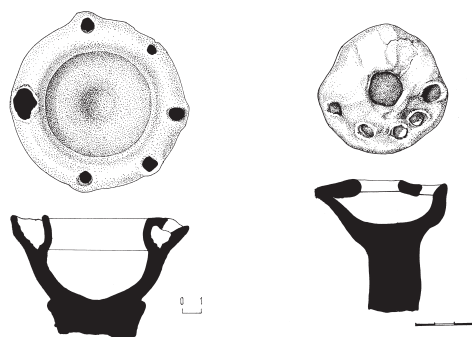
Lamps and the sacred

The most interesting lamp deposit of all was recently discovered in the sanctuary of Beregovoj, not far from ancient Patrasys in the Asian part of the Bosporan Kingdom.¹¹⁴ Most lamps found here have several tiers (between 2 to 6) and several nozzles. They were never used (the nozzles often do not even have holes connecting them to the oil reservoir). Small pieces are most frequent among the several hundred fragments of such lamps found at the sanctuary. The condition of their preservation suggests that they were broken on purpose during the ritual (most probably at the end of it). Almost complete lamps (broken into large pieces) were found in the upper part of the layer. Only two complete one-nozzle lamps were found at the sanctuary, and they both have traces from burning on their nozzles.

There are dozens of remarkable parallels from Sicily, Italy and Greece where broken multi-nozzle lamps often without any traces from burning, have been unearthed in the sanctuaries of Demeter and Persephone.¹¹⁵ Such lamps might well have had some sacral function besides their use in everyday life. The rather small cubic capacity of their oil receptacle and the great number of nozzles would have required the frequent pouring of oil into lamps, but rooms would have been much better lighted with the help of several one-nozzle lamps.¹¹⁶

Various multi-nozzle lamps from different periods are known from the Asian part of Bosporos (Fig. 26), for example, the lamps from Phanagoria, which were published in the catalogue of Oskar Waldhauer.¹¹⁷ They also come from the Batarejka II settlement and Kepoi.¹¹⁸ Very probably, some of them were used in domestic sanctuaries. Multi-nozzle lamps were very popular in Chersonesos as well.¹¹⁹

A limestone altar was discovered in 1989 at the acropolis of Pantikapaion. 16 lamps were found around it and 14 of them were covered with red slip. It should be noted that all of these lamps were complete and not in fragments. The whole deposit dates to the second–third quarter of the 1st century AD.¹²⁰ I have already noted above that some Bosporan multi-nozzle lamps were re-



26. Multi-nozzled lamps from Kepoi. 5th – 6th century AD. State Historical Museum, Moscow. Drawings by Anna Trifonova.

cently discovered in the tower (?) of the acropolis, dated to the late 1st century BC; they were probably also a part of the equipment of a sanctuary.

An interesting collection from the settlement Belinskoe in the European part of the Bosporan Kingdom was published recently by V.G. Zubarev. Here, hand-made lamps without traces of fire were found with their discuses placed facedown *in situ* on altars in domestic sanctuaries probably connected with chthonic cults. These lamps are dated to the 5th century AD.¹²¹ Both hand-made and moulded lamps were found at other rural Bosporan sanctuaries, and some of them were dedicated to Persephone and Demeter.¹²²

Lamps and burial customs

In the 1st–2nd centuries AD, lamps were very seldomly used in burials and most of those found come from settlements. Thus, while K. Škorpil in 1902 was excavating the necropolis of Pantikapaion at Gliniše he studied 545 graves but found lamps in only ten of them. Ten lamps have been found in 111 graves in the Olbian necropolis and 18 ones in the more than 300 graves of the necropolis of Chersonesos.¹²³ Bronze candelabra, however, were found in several burials and candelabra with burning lamps are painted on some Bosporan burial vaults.¹²⁴ The number of lamps, candelabra and torches found in 3rd and 4th centuries AD burials in Greek necropoleis increases sharply as compared with those found in graves from the 1st-2nd centuries AD. Lamps were found in 60 % burials of the necropolis of Chersonesos of the later period!¹²⁵

The Greek custom of placing lamps in a tomb hardly influenced the barbarian population. The barbarians of the region traditionally used open lamps that burned animal fat. Because of this, the Greek tradition of lighting burial chambers was not, for example, widespread among the late Scythians or Sarmatians. Only a few graves that have lamps or candelabra among their grave goods have been found.¹²⁶

Lighting equipment from the Pontic area in the Roman period has remained largely unknown to the public. Recently, however, we initiated a special international program, devoted to the study of lighting equipment from the northern Pontic area. Now several groups of curators from museums in Russia and the Ukraine are working in collaboration with myself to produce general catalogues of their collections. I hope these books will be published in the nearest future, so that we will soon have a better understanding of the distribution of lamps in the Pontic area.

Notes

- 1 Opař 1998, 47 argues that the Marxist method of studying history is responsible for this lack, as specialists from eastern Europe preferred to study amphorae, kitchen utensils and other everyday handmade and coarse ware. I do not agree with him on this issue.

- 2 The paper is based on the collections of three major Russian museums – the State Historical Museum (Moscow), the State Puškin Museum of Fine Arts (Moscow) and the State Hermitage (St. Petersburg), as well as on the collections of the Archaeological museums of Kerch and Chersonesos (Ukraine).
- 3 Howland 1958, 166.
- 4 Bailey 1975, 106, no. Q183.
- 5 Bailey 1975, 202-203, no. Q474, see also his list of parallels.
- 6 Vetšejn 1975, 185, fig. 4.
- 7 Chrzanovski 2002, 23-24, nos. 49-54, 57 (type VII).
- 8 Domžalski & Zhuravlev 2003, 89-92; Zhuravlev 2005, 235-254.
- 9 Kovalenko 1996, 51-57.
- 10 Zhuravlev & Zhuravleva 2002, 2.
- 11 Zhuravlev & Zhuravleva 2002, 1-2.
- 12 Zhuravlev & Zhuravleva 2002, 3-4.
- 13 Sokol'skij 1976, fig. 54.2-4.
- 14 Arsen'eva 1988, pl. 28-29.
- 15 Zaytsev 2002, fig. 3.
- 16 Zubar' 1998.
- 17 See Zhuravlev 2003, 219-220.
- 18 Waldhauer 1914, 60, nos. 461-463; Chrzanovski & Zhuravlev 1998, 71-77.
- 19 Son & Soročan 1988, 123-124, fig. 3.3.
- 20 Waldhauer 1914, 69, nos. 555-556.
- 21 Levina 1992, 57, no. 108.
- 22 Levina 1992, 57, no. 109.
- 23 Chrzanovski & Zhuravlev 1998, 72.
- 24 Alicu 1994, fig. 13-19.
- 25 Kadeev & Soročan, 1989, 19, fig. 2; Chrzanovski & Zhuravlev 1998, 70, no. 27.
- 26 Chrzanovski & Zhuravlev 1998, 57.
- 27 Waldhauer 1914, 43, no. 252; Kadeev 1969, 162-163.
- 28 Chrzanovski & Zhuravlev 1998, 91-92, no. 42.
- 29 Kadeev 1969, 159.
- 30 Soročan 1978, 4.
- 31 Soročan 1978, 44; Chrzanovski & Zhuravlev 1998, 87-98, nos. 39-49 (these lamps were published as Pontic copies of Ephesian originals).
- 32 Chrzanovski & Zhuravlev 1998, 49-50, no. 14.
- 33 Soročan & Ševčenko 1983, 94-100.
- 34 Soročan & Ševčenko 1983, 95-96; Kadeev & Soročan 1989, 44; Chrzanovski & Zhuravlev 1998, 93. See Iconomu 1967, 20.
- 35 Kadeev & Soročan 1985, 95-100.
- 36 Žuravlev 2001, 90-99.
- 37 Perlzweig 1961, 47; Karivieri 1996, 123.
- 38 Waldhauer 1914, 61, no. 474.
- 39 Kadeev 1969, 165, fig. 2.6.
- 40 Kadeev 1969, 165.
- 41 Waldhauer 1914, 61 no. 472 and 62, nos. 477 and 486; Kadeev 1969, 166, fig. 2.7-8; Karivieri 1996, 271; Zubar' & Soročan 1986, 117, fig. 6.8.
- 42 Waldhauer 1914, 62, no. 484; Kadeev 1969, 166; Perlzweig 1961, 30; Karivieri 1996, 87.

- 43 Waldhauer 1914, 63, no. 490; Perlzweig 1961, 51; Karivieri 1996, 132-134. Usually these lamps are dated from the early 4th to mid 5th century.
- 44 Koscuško-Valjužinič & Skubetov 1911, 10, fig. 13; see Karivieri 1996, 125-126 for a discussion of the problem associated with the relationship between Corinthian and Athenian lamps with this signature; Perlzweig 1961, 48-49.
- 45 Levina 1992, 68, no. 159. See Perlzweig 1961, 50-51; Karivieri 1996, 129-130.
- 46 Levina 1992, 68-69, no. 160, fig. 8.66; Karivieri 1996, 90.
- 47 Kadeev 1969, 164, fig. 5.1. This workshop was in existence from the second half of the 3rd to at least early 4th century AD (there are some unglazed lamps dated to the second half of the 4th century AD). Perlzweig 1961, 43-45; Karivieri 1996, 115.
- 48 Waldhauer 1914, 63, no. 491. See also Kadeev 1969, 167, fig. 2.11; Levina 1992, 68.
- 49 On imported Athenian lamps in Chersonesos see Kadeev 1969, 163-168. See in general Karivieri 1996, 271.
- 50 Waldhauer 1914, 62, no. 482; Zubar' & Soročan 1986, 116.
- 51 See for example: Chrzanovski & Zhuravlev 1998, 121-123, no. 67.
- 52 Karivieri 1996, 271.
- 53 Chrzanovski & Zhuravlev 1998, 125-126, no. 68. See also Zhuravlev 2002a, 76 fig. 2.
- 54 Zabelina 1992, pl. 8.7; Zubarev & Krajneva 2004, fig. 6.2.
- 55 Karivieri 1996, 153-154, pl. 48. These lamps developed from earlier Attic archetypes of the late 3rd century AD, cf. Karivieri 1996, pl. 1.1. Such finds are also known from the northern Pontic area.
- 56 Zaseckaja 1993, 256, fig. 51.
- 57 See for example, Tolstikov, Žuravlev & Lomtdadze 2005, fig. 15.2.
- 58 Bailey 1988, 244 and 291, nos. Q2000 and Q2357; 1975, 225-227, nos. Q495-496.
- 59 Nikolaeva 1974, 14, pl. 8.
- 60 Zhuravlev & Zhuravleva 2005, 313-314.
- 61 Kunina 1983, 36, fig. 4.
- 62 Waldhauer 1914, 60-61, no. 464.
- 63 Kruglikova 1962, fig. 5.
- 64 Son & Soročan 1988, 126, fig. 5.4.
- 65 Vetšejn 1975, 184, fig. 3.
- 66 Hayes 1985; Kenrick 1985, 271-282; Zhuravlev 2000b, 151-160; 2002b.
- 67 Pontic Sigillata were spread only in the region. They were taken to the eastern Mediterranean only from time to time and did not have any serious economic importance. It is possible that merchants while returning with cargo from Pontos (grain, wood etc.) carried them as tableware or used them as ballast on their ships.
- 68 Lund 1995, 258-259.
- 69 See Bailey 1988, 415, nos. Q3309-3310 for a list of parallels.
- 70 Korobkov 2001, 149-157.
- 71 See also Scorpan 1978, 159, pl. III.12; for another opinion, cf. Hayes 1992, 82.
- 72 Lapp 1991, 156-157.
- 73 Korobkov 2001, 152-153.
- 74 Chrzanovski & Zhuravlev 1998, 151, no. 91.
- 75 Soročan 1982, 43-49; Chrzanovski & Zhuravlev 1998, 133-135.
- 76 Tolstikov, Žuravlev & Lomtdadze 2005, fig. 16.1-3.

- 77 Ščeglov 1961, 45-51; Zaleskaja 1988, 233-237; Chrzanovski & Zhuravlev 1998, 135-136, no. 75-76.
- 78 Arsen'eva 1988, pl. 25.2.
- 79 Fossey 2003.
- 80 See for example Maljukevič & Prisyazhnyk 2000, 154-162.
- 81 Vlasov 2005, fig. 3.10-14 and 16-20.
- 82 Olbia: Krapivina 1993, fig. 73-74; Pantikapaion: Zabelina 1992, fig. 8.11-12; Myrmekion: Kastanajan 1981, fig. 11.1-2; Tyritake: Kastanajan 1981, fig. 17.1-4 and 7-10; Ilouraton: Kastanajan 1981, fig. 23.1-2 and 4-5; Tanais: Arsen'eva 1988, pl. 41-44.
- 83 Arsen'eva 1988, 82.
- 84 Zubarev & Krajneva 2004, 199-216.
- 85 Chrzanovski 2003, fig. 32-33.
- 86 Gertsiger 1984; Zhuravlev & Zhuravleva 2005, fig. 3.
- 87 Kropotkin 1970, no. 1159, fig. 52.4; Gertsiger 1984, 96-97, no. 20, pl. V.18; 97-99, no. 22, pl. V.20-20a.
- 88 Gertsiger 1984, 99, no. 24, pl. V.22.
- 89 Gertsiger 1984, 99, no. 23, pl. V.21.
- 90 Son & Soročan 1988, fig. 2.5-6; Arsen'eva 1988, pl. 49-51; Kostromičev 2004, fig. 4.6; see the article of Michail Treister 2005 for an overview.
- 91 Guščina & Zaseckaja 1994, pl. 2, 24; 4, 34; 29, 274; Zhuravlev 2002c, no. 522.
- 92 Zajtsev 2002, fig. 11, nos. 2.1-4.
- 93 Arsen'eva 1988, 133-134 fig. 7.
- 94 Zhuravlev 2002c, no. 639.
- 95 Chrzanovski & Zhuravlev 1998, 141-142 with a complete list of parallels.
- 96 Chrzanovski & Zhuravlev 1998, 149-151.
- 97 Chrzanovski & Zhuravlev 1998, 153-154.
- 98 Chrzanovski & Zhuravlev 1998, no. 93-98.
- 99 Soročan & Ševčenko 1983, 99, fig. 5-6; Visantijskij Kherson 1991, no. 36; Chrzanovski & Zhuravlev 1998, 171-174, nos. 108-110.
- 100 Pjatyševa 1974, fig. VI.5.
- 101 Soročan 2002, fig. 1.
- 102 Soročan 2002, 115.
- 103 Golofast 2001.
- 104 Golofast 2001, 136-137.
- 105 Zaseckaja 1993, 78 pl. 51.254.
- 106 Golofast 2001, 137.
- 107 Sorokina 1971, 90-91; Kunina 1997, 337, nos. 424-425.
- 108 Golofast 2001, 138-139.
- 109 Golofast 1998.
- 110 Nikolaeva 1991, 53.
- 111 Golofast 2001, 140-141.
- 112 Sazanov 1989, 56.
- 113 Hayes 1992, 400, figs. 150.15 and 27.
- 114 Zavoikin & Zhuravlev 2005, 309-312.
- 115 See Parisinou 2000, 136-150.
- 116 Most probably lamps from the Beregovoj sanctuary were used as votives. They must have been brought to the territory of the sanctuary and broken into small pieces on purpose. The people, who brought them, did not need to use these

lamps as is proved by the fact that traces of burning were absent on most of them. Some lamps as well as torches could have been used for lighting sanctuaries during mystery rites – it is well known that most such events took place during the night. In this case, the lamps could have been left at the territory of the sanctuary as gifts for goddesses after the ceremony had finished.

- 117 Waldhauer 1914, 66, nos. 526-527.
- 118 Dolgorukov 1967, fig. 47.5. It is highly important that multi-nozzle lamps of similar shapes are known from the sanctuary on the Majskaja mountain, cf. Marčenko 1962, pl. VI, 3, situated not far from Phanagoria – the largest *polis* of Asian Bosphoros – as well as in the sanctuary of Demeter in Nymphaion in the European part of the Bosporan Kingdom (Chudjak 1945, 162, pl. XX.1-2). I must note, anyway, that these parallels are earlier than the lamps from Beregovoj.
- 119 A large collection of multi-nozzle lamps from Chersonesos (the south-eastern part of the city) will be published soon.
- 120 Treister 1993, 61-66, fig. 4 (altar), 5-6 (lamps).
- 121 Zubarev 2003, 140-141.
- 122 Maslennikov 1997, 164-165; Zavoikin & Zhuravlev 2005, 309-312.
- 123 Zubar' & Soročan 1984, 149-150.
- 124 Rostovcev 1914, 350-351, 355, pl. LXXXVIII.1 and XC.1.
- 125 Zubar' & Soročan 1984, 150.
- 126 See Zaytsev 2002, 44; Zhuravlev 2002a, 75-80.

Some Thoughts about the Black Sea and the Slave Trade before the Roman Domination (6th-1st Centuries BC)

Alexandru Avram

Heinz Heinen wrote in a recent paper: “Wer sich mit der Sklaverei im nördlichen Schwarzmeerraum beschäftigt, wird an die Peripherie der alten Welt geführt und bleibt dennoch in enger Verbindung mit den klassischen Zentren der Antike, denn die Sklavenmärkte des nördlichen Pontos bedienten Griechenland und hier vor allem Athen”.¹ I think that the same can be said about the entire area of the Pontos Euxeinos and that this would be a good matter for the “regional and interregional exchanges” proposed as the subject of our conference. I will make an attempt to investigate some aspects of the slave trade, but not the institution of slavery in the Pontic cities.

More than forty years ago, M.I. Finley was the first to identify the problem in his paper “The Black Sea and Danubian Regions and the Slave Trade in Antiquity”.² Still complaining about the poor evidence available in this respect, he indicated some attractive ways for further studies. However, since Finley wrote his paper, new epigraphic evidence has enriched the matter considerably; this is especially true of some private late Archaic lead letters, which refer to slaves in the North Pontic area. First of all, there are two important Olbian letters: that of Achillodoros from the end of the 6th century BC, which in the inventory of Anaxagoras’ property lists “male and female slaves and houses” (δόλος καὶ δόλας κοίκίας);³ and that of Apatourios, dating from the same period, which addresses *inter alia* a question “about the slaves of Thymoleos” (περὶ τῶν οἰκητέων Θυμώλεω).⁴ A third letter is more fragmentary but also of an earlier date (“around the middle of the third quarter of the 6th century”, according to Ju.G. Vinogradov), and it refers to a “slave-girl whom he will bring to you from Melas” (παῖδα τὴν το[ι] ἄγει παρὰ Μέλανο[ς]).⁵ Another letter (dated to “the 30s-10s of the 6th century”) from Phanagoria also concerns a slave: “This slave was exported for sale from Borysthenes, his name is Phaylles” ὁ παῖς: οὗτος ἐ Βορυσθένεος ἐπρήθη: ὄνομα: αὐτῶι: Φαύλλης).⁶ Two letters incised on clay sherds may be added: one found in Olbia (from ca. 400 BC) referring *inter alia* to slaves attempting to escape after a shipwreck (line 9: [--μ]ετὰ τὸ ναύγιον οἱ δοῦλοι καταδρα[μόντες---] (or καταδραμ[εν], Vinogradov, καταδρῆ[ναι], Bravo,⁷ and another from Gorgippia (“first half to middle of the 4th century”), which mentions a πα(ι)δί[ον].⁸

Excluding the *ostraka*, the North Pontic area has furnished 11 lead letters, four of which refer to slaves. This new evidence for slavery in the region enabled Ju.G. Vinogradov to claim: "This is undisputed and clear evidence of the development of slave ownership on the northern shores of the Pontos already in the Archaic period, and also of the use of slaves in a variety of economic spheres. The abundance of relevant sources on slavery and slave-trading once more refutes the opposite view taken by D. M. Pippidi".⁹ In fact, in his pioneering paper "Le problème de la main d'œuvre agricole dans les colonies grecques de la mer Noire",¹⁰ Pippidi made an attempt to demonstrate that the Pontic colonies were not based on slave labour, but on what more recent French historians, more or less appropriately, have called "servitudes communautaires". In the *prolegomena* to his essay, Pippidi made a clear distinction between the slave export from the Pontic regions and the supposed role played by slaves in the economy of the Pontic *poleis*: "Dans cet ordre d'idées, on me permettra d'attirer l'attention sur une erreur toujours possible et qui en fait a souvent été commise, à savoir la confusion entre le fait qu'indubitablement les régions pontiques ont été pendant des siècles l'un des principaux réservoirs d'esclaves du monde grec d'abord, ensuite du monde romain, et la possibilité objective qu'une population servile tant soit peu nombreuse se soit mêlée à la population libre des diverses ἀποικίαι, en tenant dans l'activité économique de celles-ci la place importante qu'aujourd'hui encore [i.e. ca. 1969, when Pippidi first gave this paper] on s'accorde à lui attribuer". Consequently, to "refute" Pippidi's views, one needs first of all to document the place of slaves in the urban and especially the rural economy of these *poleis*. Did the slaves of the epigraphic records work for their owners, or were they only bought in these places in order to be shipped out elsewhere?¹¹

As far as I can see, with the exception of only the lead letter of Phanagoria, which shows the πα(ι)δί[ov] involved in agricultural activities, the new documents do not produce new evidence for slavery in the Pontic cities. The private letters discuss trade affairs and the slaves are listed among other kinds of property in different contexts which are too complex (not to say too obscure) to be discussed here. Nevertheless, the general question addressed by the senders of such letters (who are all traders) to their correspondents can apparently be reduced to: "what to do with the slave(s)?" One of the Olbian letters mentions a slave-girl who must be brought from elsewhere, while another one explicitly mentions that the slave Phaylles was sold at Borysthènes and was shipped out to Phanagoria, where the document was discovered, and possibly from there he was moved on to another slave-market. Therefore, I take it that the owners of those slaves were just going to sell them. Thus the next question is: where? Vinogradov is undoubtedly right in remarking that Phaylles' movement from Borysthènes to Phanagoria is our first piece of evidence for economic links between these two Pontic cities, but I cannot agree with him when he speculates that this παῖς was "a qualified, socially dependent worker, a master of rare crafts, or even the arts, which one could

never hope to find in the barbarian surroundings of Phanagoria, or hope to acquire at the slave-markets of the Bosporan *poleis*".¹²

The fascinating letters on lead-plaques or sherds rather confirm the traditional view, which sees the Pontic area as a remarkable reservoir of slaves for the Aegean world.¹³ This is convincingly supported by Polybios, as regards the Hellenistic period. When he explains the causes of the "Straits War" in 220 BC between Byzantion and Rhodos (cf. Gabrielsen this volume), Polybios (4.38.4) says the following: "For as regards necessities it is an undisputed fact that the most plentiful supplies and best qualities of cattle and slaves reach us from the countries lying round the Pontos". He also explains (4.50.3) that the Byzantians acquired the place called Hieron "owing to its favourable situation, as they did not wish to leave anyone any base from which to attack traders with the Pontos or interfere with the slave-trade or the fishing".¹⁴

I think that one fruitful way in which to address this matter thoroughly is to exploit the "servile" prosopography of regions outside the Pontos. Many records, especially from Athens, concern Thracian slaves,¹⁵ but it is generally impossible to distinguish the slaves shipped out to the Aegean *via* the Pontic cities from those acquired directly by Greek traders from the Aegean or Propontic Thrace.¹⁶ However, the possibility of a "Pontic connection" still remains. I offer a few examples.

The very important regulations from Vetren¹⁷ clearly describe, for the 4th century BC, direct ways used by traders from Maroneia to Pistiros and the *emporía*.¹⁸ On the other hand, the oath given by the same inscription mentions not only the citizens from Maroneia but also those from Thasos and Apollonia. If the Pontic Apollonia is meant, which is far more likely than the less significant Aegean Apollonia, we are invited to define a similar way from Pistiros to this city of the Black Sea. Consequently, all kinds of goods, including slaves acquired in the innermost Thrace, could basically be sold in Apollonia and transited from there by sea to the Aegean.

Strabo (7.3.12) explained the names *Geta* and *Daos* occurring in the Attic "New Comedy" through the ethnics of the Getians and Dacians. This is obviously wrong, and modern scholarship has demonstrated that such names are rather of Phrygian origin. Nevertheless, it is significant to note that Strabon's explanation could convince his readers only if Getians were commonly perceived as slaves in Athens and, more in general, in the Aegean world. This seems to have been an undisputed fact; consequently, for these slaves coming from a North Thracian area a transit *via* the West Pontic cities is more likely to be supposed.

This might also be the case of the Triballians mentioned in two Attic inscriptions. One of the slaves exceptionally enlisted as a soldier in the Athenian army after the disaster at Aigospotamoi is a Τρίβαλλος (IG I³, 1032 VI.115). The second record is less certain. A funerary inscription from the end of the 4th century (IG II², 12822) is without doubt for a slave (χρηστός) but it is less evident if ΤΡΙΒΑΛΛΟΣ was his name (Τριβαλλός) or if he *was* a Τρίβαλλος.

In the 2nd century AD, Pollux (7.14; cf. Suda, A 1384) explains that slaves of low quality were called ἀλώνητοι ("salt-bought") because the Thracians from the inland changed slaves for salt (τῶν Θρακῶν οἱ μεσόγειοι ἄλων ἀντικατηλλάττοντο τοὺς οἰκέτας). This is not only a beautiful piece of evidence for Thrace as huge reservoir of slaves but also a suggestion that some of the slaves supplied by this region were bought by the (local?) traders in the Thracian hinterland.¹⁹ How they later came to the Aegean is an entirely different matter.

The figures discussed above enable me to suggest that many Thracian slaves were first sold on the markets of the west Pontic cities. We have, as I see, only one direct testimony, a list from Rheneia which includes Thracian slaves.²⁰ This is a very interesting document in many respects and I will comment on it below.

More important to our discussion are the records of slaves bearing such ethnics as Scythians, Sarmatians, Maiotians, Kolchians, Paphlagonians or Καρπαδοκῶνες, because they surely must have come to Athens or to the Aegean after having been sold in one of the cities of the Black Sea. The evidence is rather surprising. First of all, I remark that the poor Attic records of Scythian slaves contrast sharply with the *communis opinio* that the North Pontic area supplied a considerable number of slaves to Athens.²¹ Of course, there is good evidence for potters or painters called *Skythes*, but it is difficult to decide if they were slaves or metics, a rather *vexata quaestio*. There is also the well known police made up of Scythian archers,²² but once again their servile status is not a compulsory inference; indeed, it is rather an improbable one.²³ Finally, I found only five Scythian slaves who are all attested in the 5th century BC: Δ[10] νύσιος, a χαλ[κ]εὺς who was the slave of Axiochos Skambonides,²⁴ Σῆμος,²⁵ both dated to 414/3 BC, and also an *ignotus* belonging to the metic Kephisodoros (*IG I³*, 421.42) from the end of the 5th century, another one who enlisted as a soldier about the same time (*IG I³*, 1032 VI.128) and a Σκύθαινα mentioned by Aristophanes (*Lys.* 184).²⁶ Outside Attica, I have come across only five very late possible records. There are supposed slaves in Rhodian funerary tombstones: Ἀφροδείσιος²⁷, Καλλιόπη Σκύθαινα (*IG XII*, 1, 527 = *SGDI* 4062), both from the 1st century BC, and perhaps also Φίλων (χρηστός)²⁸ and Κιθαιρών (*SEG* 51, 1015) who also seem to be late Hellenistic. Another slave could be Δρίμακος at Chalkis (Euboeia), possibly about the same period (*IG XII*, 9, 1132). So, the direct evidence is surprisingly poor and this needs an explanation.

On the other hand, the evidence concerning Sarmatian slaves is rather satisfactory. The Attic records are not sure: Σωτηρὶς Σαρματὶς χρηστή in the 2nd century BC,²⁹ Ὑγ<ια>ίνων Σαρμάτης who could be late Hellenistic,³⁰ and perhaps [Μ]ελισσὶς Σαρματὶς (?) χρηστή (?) attested at Rhamnous in the first half of the 3rd century BC (?).³¹ Moreover, the Delphic *manumissiones* from the 2nd century BC produce very explicit evidence:

Φίλα Ι (*SGDI* 1724: 168 BC).

Αφ[--] (*FD III* 2, 228: ca. 153-144 BC).

- Ἀφροδισία I (SGDI 2274: ca. 153-144 BC).
 Ῥόδα (BCH 66-67, 1942-1943, 73-75, no. 4: ca. 153-144 BC).
 Ἀφροδισία II (FD III 3/1, 24: ca. 153-144 BC).
 Φίλα II (BCH 66-67, 1942-1943, 71-72, no. 2: ca. 153-144 BC).
 Εἰρήνα and Φιλοκράτεια (SGDI 2142: 142 BC).
 Σώπολις (SGDI 2110 [cf. FD III 3, p. 104]: ca. 113-100 BC).
Ignota (SGDI 2108: ca. 150-140 BC).

Two other *manumissiones*, one from Naupaktos (Φρυνέα: IG IX, I², 3, 638.3, shortly after 137/6 BC), and one from the Lokrian Physkeis ([Σ]ωσώ, τὸ γένος Σαρματίας?): IG IX, I², 3, 679, middle of the 2nd century BC) may be added to the list. Finally, we may mention three late Hellenistic Rhodian tombstones, even if neither the date nor the slave status of the persons are sure: Ἀθανὸς Σαρματίας,³² Ἡσύχιον [Σα]ραματίσση (sic)³³ and an *ignota* Σαρματίας.³⁴

We see that all the attested Sarmatians are from the 2nd or 1st century BC, with the not so convincing exception of [Μ]ελισσίς from Rhamnous, whose ethnic was largely restored. This chronology corresponds to the emergence of the Sarmatians in the countries of the north shore of the Black Sea. Fewer Scythian slaves are, consequently, to be expected in this late period, so the two figures revealed (Scythian slaves especially in the 5th century and Sarmatian slaves in the late Hellenistic period) may be complementary.

I suspect that the key issue is addressed by the remarkable evidence concerning Maiotian slaves.³⁵ In Athens, we find in the 4th century BC on a tombstone the name Ἰὰς Μαιώτις χρηστή,³⁶ and in the Hellenistic period, also in funerary inscriptions, six further possible Maiotian slaves: Μόνιμος (3rd/2nd centuries BC),³⁷ Δόλων³⁸ and Κέρδων³⁹ both from the 2nd century BC, Σωτηρ[-] χρηστ[-] (2nd/1st centuries BC),⁴⁰ Πίστος Μαιώτης (Hellenistic),⁴¹ and [-]ικας Μαιώτις χρηστή (late Hellenistic).⁴² In the same area, Ἀρτεμίσιος on a tombstone from Rhamnous (2nd century BC),⁴³ must be added, while at Troizen we find a poorly dated *ignotus* (IG IV, 866). In the 2nd century BC, the Delphic *manumissiones* attest Ἀγάθων (SGDI 1992: 182 BC) and Εὐταξία with her son Παρνάσιος (SGDI 2163: ca. 153-144 BC). As usually, the Rhodian funerary monuments contribute to the same prosopography: Διονυσόδω[ρο]ς χρηστός (Hellenistic),⁴⁴ Λυσίμαχος καὶ Σαπίς Μαιώται (2nd/1st centuries BC),⁴⁵ Τίμων (1st century BC),⁴⁶ perhaps also [Ε]ἰ<ρ>ήνα χρηστά, rather slave than wife of an *ignotus* Ἐρμ[ο]πολίτ[ας] (Hellenistic),⁴⁷ and, at Lindos, Ἀκακία χρηστά, rather slave than wife of [Χ]ρῦς<ι>ππος Βαργυλιήτας.⁴⁸

A previously mentioned funerary inscription from Rheneia offers a list of the slaves of one Protarchos (end of the 2nd or beginning of the 1st century BC).⁴⁹ They apparently died in the same time, possibly in an accident. All the names are accompanied by the corresponding ethnics, most of them of Pontic origin. Here we find four Μαιώταις: Δαμᾶς (line 1), Ἰσίδωρος (line 1), Ἡρακλεῖδ<η>ς (line 11) and Νικίας (line 12). But there are also two Ἰστρία<ν>οί (Βίθυς, l. 2; Δαμᾶς, l. 19)⁵⁰ and one Καλλιόπη Ὀδησσίτις (l. 3). One of the “Is-

trianoï" has a good Thracian name (Βίθυς), and it is clear that these "false" ethnics indicate, as demonstrated by D. M. Pippidi,⁵¹ not the real origin of the slaves but "the location of the slave market in which the slave in question was sold".⁵² Other leading scholars (especially L. Robert and O. Masson) gave good arguments against the attempt to infer origin from the names of slaves, even from regional ethnics used as personal names. But prudence is required also when we find any city-ethnic like in this case. If we accept this interpretation, we have at least the decisive proof for west Pontic cities like Istros and Odessos as active markets in the slave-trade between the Pontos Euxeinos and the Aegean.⁵³ But we are also invited to ask: if the "Istrianoi" and the "Odessitis" are, in fact, Thracians sold respectively in Istros and Odessos, why must the "Maiotai" be really Maiotians? The records of Maiotians at Athens, Delphi and Rhodos are more remarkable than those of Scythians, although there is no *cliché* in the ancient literature relating to the "Maiotian" slave. On the other hand, we have positive evidence for the existence of flourishing slave-markets in the area of the Maiotis (Sea of Azov) from Herodotos to Strabon, and the archaeological evidence revealed by a settlement like Elizavetovskoe on the Don offers a brilliant confirmation.⁵⁴ If the "Maiotai" of the inscription from Rheneia are to be taken as any kind of Scythians, Sarmatians, Kolchians, etc. who only had in common that they had been sold in the area of the Maiotis, it would be easier to understand why in the later periods we have so few Scythians.

And few Kolchians too, one may add. In a very accurate study devoted to the export of slaves from Kolchis, D.C. Braund and G.R. Tsetschladze⁵⁵ were only able to find a few slaves of Kolchian origin outside the Black Sea: an unnamed slave of the metic Kephisodoros in Athens (*IG I³*, 421.44, end of the 5th century BC), Καλλώ in a Delphic *manumissio* (*SGDI* 2218: 139/8 BC), perhaps also Εὐφροσύνη (*IG II²*, 9049), whom they consider a "wife, daughter, freedwomen or, possibly, slave of Chairemon", Χόλχος, the potter who made at Athens an *oinochoe* discovered at Vulci,⁵⁶ and Κολιανός, a slave from Laurion, whose name possibly indicates a Kolchian origin.⁵⁷ I can add to this collection Εὔνοια Κολχίς, Ἀφροδίσιος Κόλχος and Ἐρωτὶς Κολχίς on Hellenistic tombstones on Rhodos,⁵⁸ but the impression of scanty evidence still remains.

However, Kolchis was well known as a region which supplied the Aegean world with slaves.⁵⁹ Therefore, the contrast between this *communis opinio* and the scarcity of our records can be explained in the same way as for the Scythians. "We know", Braund and Tsetschladze write, "that the Sea of Azov (Maiotis), the mouth of the Don and the neighbouring Crimean Bosphorus were together a centre of trade in slaves: were the four slaves of Protarchos on Delos who are listed as Maeotians not in fact Maeotians at all, but men from other areas – from Kolchis even, for Kolchian pirates traded their captives there?"⁶⁰ For the Roman period (2nd century AD), there is Aelianos' testimony (fr. 71 Hercher) about Dionysios, "a trader by profession, who had spent his life in frequent voyaging, spurred on by gain. Weighing

anchor beyond the Maiotis, he bought a Kolchian girl whom the Machlyes, a local tribe, had carried off".

The area of the Maiotis was doubtless the most important slave market on the north coast of the Black Sea during the Hellenistic period. As for the west coast, we have just seen that at least Istros and Odessos were also active. Using the same arguments, I suspect that people like Ἀ[θ]η[ν]αῖς Ἰστριανή (1st century BC),⁶¹ Ἑρασίνος Καλλατιανός (Hellenistic),⁶² Μήνις Βυζάντιος χρηστός (perhaps late Hellenistic),⁶³ [-]ρυς [Βυ]ζάντιος χρηστός (perhaps late Hellenistic),⁶⁴ all of them mentioned by funerary monuments on Rhodos, or even Ἀφροδισία Ἰστριανά, attested by a tombstone on Kos (possibly late Hellenistic),⁶⁵ came in fact not from Istros, Byzantion or Kallatis (*Athenais* and *Aphrodisia* are, by the way, very common slave names), but from the Getian and Thracian hinterland, and that they were sold in these cities and shipped out to Rhodos or Kos.

For the south coast of the Black Sea,⁶⁶ there is little evidence for Paphlagonian slaves:⁶⁷ Ἀτώτας, a μεταλλεύς at Laurion mentioned in a funerary epigram (Πόντου ἀπ' Εὐξείνου Παφλαγών) of the second half of the 4th century,⁶⁸ an *ignotus* also at Laurion (Παφλα[γών]?) of the 2nd century⁶⁹, Μάνης, manumitted in Delphi (SGDI 1696, ca. 150-140 BC), and Μηνᾶς, γραμ<μ>ατεὺς δαμόσιος on Rhodos, who participated to a subscription in the 1st century BC.⁷⁰ This is by no means satisfactory and does not correspond to the real situation; however, we may add to this rough list a number of further Paphlagonians, whose servile status is less evident.

It is very likely that all the Kappadokians attested by Attic tombstones were slaves: Δαδάτης (2nd century BC),⁷¹ Μόσχος (first half of the 1st century BC),⁷² Φαρνάκης (1st century BC or 1st century AD),⁷³ and the not well dated Κέρδων⁷⁴ and Μᾶ [Κ]απαδό[κ]ισσα.⁷⁵ More other Kappadokian slaves occur in the Delphic *manumissiones*, all of them in the 2nd century BC: Πρόθυμος (SGDI 1796: 174 BC), Μιθραδάτης (SGDI 1799: 173 BC), Μηνόφιλος (SGDI 1851: ca. 170-157/6 BC), Ἀγαθῶ (FD III 3/1, 2: ca. 160 BC), Σώφρον (FD III 3/1, 15: ca. 157 BC), Εὐφροσύνα (FD III 3/1, 21: ca. 146 BC), Μηνόδωρος (FD III 3/2, 265: ca. 150-140 BC), Σῶσος (SGDI 2143: ca. 150-140 BC) and a second Σῶσος (*Fouilles de Delphes* III 3/1, 32: ca. 148 BC). Furthermore, the loosely dated late Hellenistic Rhodian funerary monuments provide good evidence, although servile status is not always sure: Ἀμύντας,⁷⁶ Ἀνδρικός,⁷⁷ Ἑρμαῖος I (c. 150 BC),⁷⁸ Ἑρμαῖος II χρηστός,⁷⁹ Εὐνους,⁸⁰ Κτήσων χρηστός,⁸¹ Σελευκίς χρηστά,⁸² Φιλωνίδας,⁸³ and perhaps also Ζώπυρος and Καπίνδας.⁸⁴

I found only two Bithynian slaves, i.e. Μηνᾶς (SGDI 1906) and Ἑρμαῖ[ος], τεχνεῖτης χαλκεύς (FD III 1, 565) who were freed in the Delphic sanctuary in the middle of the 2nd century BC. We may add some Attic records: Σπόκης (?)⁸⁵ and Χρήστη,⁸⁶ on 4th century tomb stones, perhaps also Φιλάργυρος (1st century BC).⁸⁷ However, even if we accept these entries, the evidence is very poor: many Bithynians might in fact have been assimilated in the epigraphical records to the Thracians.

It is interesting to see that the evidence for Kappadokian slaves contrasts with the poor records concerning Bithynian and Paphlagonian slaves. However, one must remember that Sinope and Amisos (in Paphlagonia) or Herakleia Pontike and T(e)ion (in Bithynia) were important slave markets. Consequently – as for other Pontic cities quoted above – it is possible that the Paphlagonian or Bithynian origin of many slaves was masked by “false” city ethnics. I was surprised to note that Sinope, Amisos, Teion and Herakleia Pontike furnished valuable evidence for slaves. For “Sinopean” slaves the best example could be the 3rd century philosopher Μένιππος, a slave of the Sinopean historian Baton (Strab. 12.3.1), who, according to Diogenes Laërtius (6.99), was freed and later received the Theban citizenship.⁸⁸ Five other possible Sinopean slaves are attested by Hellenistic tombstones on Rhodos: Ἀθηναίς,⁸⁹ Διονύσιος,⁹⁰ Ῥοδίνα,⁹¹ Σοφοκλής⁹² and Χαρμοσύνα.⁹³

The same Rhodian monuments refer to, in the late Hellenistic period, three possible slaves with the ethnic Ἀμισηνός / -ά: Ἀθηνα<ί>ς,⁹⁴ Ἀυδρικὸς [χρ]ηστός⁹⁵ and Κάλλων χρηστός.⁹⁶ Μᾶ Τιανή, possibly a slave-girl, is attested in Athens.⁹⁷ Concerning the slaves bearing the ethnic Ἡρακλεώτης / -ῶτις, it is, of course, hard to isolate the Pontic Herakleia from the many other cities with the same name in the Greek world. Attention should, however, be drawn to a Delphic *manumissio* dated to 184 BC (SGDI 1959), which uses a precise formula when it records Παρά[μ]ονος τὸ γένος ἐξ Ἡρακλείας τᾶς ἐκ τοῦ Πόντου, i.e. not *Herakleiotēs* but, in my view, a Bithynian, or, perhaps more exactly, a Mariandynian sold on the market of Pontic Herakleia.

To sum up. Just like the Scythians, Sarmatians or Kolchians, who were often called “Maiotians”, and just like the “Istrianoi” or the “Odessitai”, who in fact were Thracians (or Getians), so, too, the “Sinopeis”, “Amisenoi”, “T(e)ianoi” or “Herakleiotai” of some records could have been barbarian Paphlagonians or Bithynians. This might be an indirect but remarkable proof of the activity of the slave-markets of the South Pontic cities. It is in my opinion significant that we have by far more evidence for “Kappadokian” slaves. They might have been transferred from this less urbanized area to the Aegean markets *via* overland routes, rather than *via* the harbours of Sinope, Amisos, Teion or Herakleia Pontike, which could explain why their so-called ethnic is better preserved.

Another question is to try to identify the sources of enslaved persons sold abroad. Piracy, for which the evidence (for different reasons) seems to be more generous, has been properly questioned by modern scholarship, but M.I. Finley suggested that the army “was always a more significant factor in the picture than piracy”.⁹⁸ I suspect that he was quite right.

Ancient authors generally approve of those local kings or dynasts who fought efficiently against piracy, from Eumelos of Bosphoros (Diod. 20.25.2) to Cavarus, the dynast of Tylis (Polyb. 8.22 [24].2: πολλήν μὲν ἀσφάλειαν παρεσκεύαζε τοῖς προσπλέουσι τῶν ἐμπόρων εἰς τὸν Πόντον), and to the North Pontic barbarian chiefs (Strab. 11.2.2: ἐν τοῖς δυναστευομένοις τόποις). In the Au-

gustan period, Strabo (11.2.2) criticizes the negligence of the Roman commanders sent to the north coast of the Black Sea (διὰ τὴν ὀλιγορίαν τῶν πεμπομένων). In fact, still being a very productive source of slaves, piracy was first of all an impediment for the Aegean traders sailing in the Black Sea.

The topic of the relation between wars and slave-supply has not yet been fully addressed. However, are the different figures concerning war prisoners or people captured by pirates really useful? Most of captured people might be freed through payment of ransom,⁹⁹ and one needs to question once again the reliability of our evidence. I would suggest that this happened rather often with captured citizen but very rarely with “barbarians” like those taken by Philip II of Macedon during his Scythian campaign from 339 BC (Justin 9.1-2). One should add, especially for the Thracians, the wars between the barbarians themselves. In order to pay the Greek mercenaries, Seuthes II dispatched Herakleides to Perinthos to sell 1,000 people he had just captured from an other Thracian dynast (Xen. *Anab.* 7.4.2), and this might have been a rule rather than an exception. “Peaceful conditions were not conducive to the production of large numbers of potential slaves internally and many of the Thracian slaves documented in the sources were probably acquired from peripheral regions in times of conflict, not from any organized traffic.”¹⁰⁰

Beside piracy, kidnapping and war, another source of slave trade claims more attention: the selling of their own children for export by the Thracians (according to Herodotos 5.6.1) or by the Phrygians (if we believe Philostratos, *Apollonius* 8.7.12).

But this would be a subject for another paper. The general conclusion is that the ancient (Polybios) and modern *cliché* of the Black Sea region as an important source of slaves for the Aegean market can be supported by the evidence.

Notes

- 1 Heinen 2001, 487.
- 2 Finley 1962 (= 1981, 167-175).
- 3 Dubois 1996, no. 23 (with bibliography); cf. Heinen 2001, 490-492; Nielsen 1997-1998, 35-40.
- 4 See now the complete edition by Dana 2004.
- 5 Vinogradov 1998, 154-157, no. 1 (= *SEG* 48, 988); cf. Dana 2007, 70-72.
- 6 Vinogradov 1998, 160-163, no. 3 (= *SEG* 48, 1024); cf. Dana 2007, 87-88.
- 7 Dubois 1996, no. 24; cf. Vinogradov & Rusjaeva 1991 (= *SEG* 42, 710); Vinogradov 1998, 156; Bravo 2001, 254-263, with new readings, restorations and interpretations (= *SEG* 51, 970). For line 9, Bravo gives the translation: “dopo il naufragio gli schiavi abbiano raggiunto la riva e siano scappati (*oppure*: raggiunsero la riva e scapparono)”.
- 8 Vinogradov 1997a (= *SEG* 47, 1175); cf. Vinogradov 1998, 157 and Dana 2007, 89-90.
- 9 Vinogradov 1998, 157. But see the completely opposite view of Gavriljuk 2003, 80: “nothing indicates large-scale slave-holding in the Greek cities on the northern

Black Sea littoral during the Archaic period. This is especially true for the period from the 6th to the first quarter of the 5th century BC, when the use of slaves was limited to house-hold production, while in agriculture and animal husbandry slaves were seldom employed”.

- 10 Pippidi 1973 (= 1975, 65-80).
- 11 This is “quite possible”, according to Gavriljuk 2003, 80-81, but I do not believe that pottery from Chios found in Olbia can be adduced as evidence for a direct link between Olbia and the slave-market on Chios. Chios was itself a transit point. Nor am I convinced that the increasing Greek imports found in Scythian burials of the 5th century “may be interpreted as revenue from the slave trade”.
- 12 Vinogradov 1998, 163. For a research project concerning “slavery in the North Pontic area”, see Heinen 2006, 66-76.
- 13 For a different view see Tsetschladze 2000-2001, 14: “The number of slaves from the Black Sea was small. Thus Pontos was not a major source of slaves in the ancient world”. He cites among others Finley (1962), but, as I understand it, Finley never supported such an extreme opinion; he rather issued a warning to the effect that: “The absence of evidence about the slave trade may prove something about the attitudes and interests of ancient writers, but it proves nothing about the existence of a slave trade or its character or scale. The argument from silence is worthless” (Finley 1962, 52).
- 14 Translation: *Polybius. The Histories*, vol. 2, translated by W.R. Paton, London-Cambridge, Mass. 1922, repr. 1960, 395 and 421.
- 15 Velkov 1964; Zlatkovskaja 1971; Velkov 1986.
- 16 An early piece of evidence might be Hipponax, fr. 15 West, referring to Thracian slaves at Salmydessos. To our evidence of a later date, one should add Xen. *An.* 7.3.48-7.4.2 (“captives to the number of a thousand” (ἀνδράποδα), whom Herakleides sold with all the booty in Perinthos), and Antiph. *Or.* 5.20 (the Athenian Herodes shipped his slaves (ἀνδράποδα) from Mytilene to Ainos in order to get the ransom paid by the Thracians).
- 17 *IGBulg* 5, 5557 ter; cf. *SEG* 48, 486; 47, 1101; 49, 911.
- 18 See especially (with sometimes divergent views) Bouzek, Domaradzki & Archibald 1996 and the papers presented in the conference *Pistiros et Thasos. Structures commerciales dans la Péninsule balkanique aux VII^e-II^e siècles av. J.-C.*, published in *BCH* 123, 1999, and summarized in *SEG* 49, 911, to which add Avram 1997-1998; Tsetschladze 2000; Archibald 2000-2001.
- 19 Cf. Bäbler 1998, 16: “an den nahe gelegenen Handelsplätzen”; but cf. 14: “Die Händler begaben sich für den Einkauf zu den entsprechenden Küstenstädten; ob sie auch selbst Reisen in das Landesinnere unternahmen und direkt mit den Barbaren verhandelten, scheint eher zweifelhaft”.
- 20 Klaffenbach 1964, 16-17, no. 28 (*SEG* 23, 381) = Couilloud 1974, no. 418 = *IG IX*, I, 4, 1778; cf. Robert 1959, 187 (= 1989, 217) with n. 1.
- 21 Gavriljuk 2003, 77, writes: “in the 5th century BC, after the Persian Wars, Scythian slaves were imported into Attica in somewhat greater numbers”; however, she only cites the Scythian slave of Kephisodoros!
- 22 Vos 1963; Welwei 1974, 8-22; Frolov 1998; Bäbler 1998, 165-168; Bäbler 2005; cf. Heinen 2001, 498-499. Scythian archers have been considered as slaves by Vogt (1983). Anyway, the evidence produced by “Scythian” archers in Attic vase painting is useless for our discussion; cf. Ivanchik 2005.

- 23 Nothing can be gained on Scythian slaves from the sculptural evidence. For the representations of Scythians in Athens in the second half of the 4th century BC, see Bäßler 1998, 174-181 and 260-264, cat. 85a-91 (but no. 88, Δᾶος Δάου Ἡρακλεώτης, IG II², 8615, is surely a citizen of Herakleia Pontike: cf. Robert 1973, 440; Ameling 1994, 132).
- 24 IG I³, 422 II.198-199 (Fragiadakis 1988, 345, no. 177; FRA 6909).
- 25 IG I³, 427 I.7-8 (Fragiadakis 1988, 369, no. 693).
- 26 For Scythians in Athens see especially Kljačko 1966; Frolov 1998; cf. Lissarague 1990, chapters 5 and 6. A graffito from the mid 5th century should be added: Σκύθ(ινα) (Lang 1976, 35, F 79 and pl. 13), but nothing can be said about the status of this woman.
- 27 IG XII, 1, 526 = SGDI 4061 (Ἀφροδίσιος) = Maiuri 1925, no. 233 (same inscription, as demonstrated by Morelli 1955, 183) = Berges 1996, 147-148, no. 247.
- 28 Maiuri 1925, no. 421 (Morelli 1955, 183) = Berges 1996, 133, no. 146.
- 29 IG II², 10243 (FRA 6599).
- 30 IG II², 10244 (Ἰγυλίων?), corr. FRA 6600.
- 31 IG II², 12064 (FRA 6598). [M]ελισσίς | ΕΛΩΜΑΤΙΣ | ΠΗΣΤ- (ed.); emended by Wilhelm 1978, 80 (SEG 28,338): Σαρματίς | χρηστή.
- 32 IG XII, 1, 525 = SGDI 4060 (Morelli 1955, 183).
- 33 Jacopi 1932, no. 95 (Morelli 1955, 183).
- 34 Papachristodoulou 1979, 433 (SEG 38.789).
- 35 General survey in Blavatskij 1969.
- 36 IG II², 9253 (FRA 3451).
- 37 Vanderpool 1966, 283, no. 10 (SEG 23, 144; FRA 3454).
- 38 IG II², 9252 (FRA 3450).
- 39 IG II², 9254 (FRA 3452).
- 40 Bradeen 1974, no. 536 (FRA 3457): Σωτήρ[ιος] | Μαιώτη[ς] | χρηστ[ός], but cf. the editor's note: "for reasons of symmetry, restoration of the deceased as masculine is preferable, but, of course, not certain".
- 41 IG II², 9257 (FRA 3456).
- 42 Alexandris 1973-1974, 120 (SEG 29.229; FRA 3458).
- 43 Petrakos 1999, no. 234.
- 44 Maiuri 1925, no. 229 (Morelli 1955, 182).
- 45 Jacopi 1932, 232, no. 122 (Morelli 1955, 182); cf. Fraser 1977, 138, n. 252.
- 46 IG XII, 1, 514 = SGDI 4055 (Morelli 1955, 182).
- 47 Hiller von Gaertringen 1898, 394, no. 64 = SGDI 4351 (Morelli 1955, 182).
- 48 Blinkenberg 1941, no. 683.
- 49 See note 20 above.
- 50 Cf. Pippidi 1966 (= 1988, 32-34).
- 51 Pippidi rightly adduces Varro, *Ling. Lat.* 8.21: *sic tres cum emerunt Ephesi singulos seruos, nonnunquam alius declinat nomen ab eo qui vendit, Artemidorus, atque Artemam appellat, alius a regione quod ibi emit, ab Ionia Iona, alius quod Ephesi, Ephesium: sic alius ab alia aliqua re ut uisum est.*
- 52 Hansen 1996, 184, who collected more evidence for this use of ethnics.
- 53 Hind 1994b suggests that the two young heads *tête-bêche* on the obverse of the earliest Istrian silver drachms could be interpreted as a mark of the slave trade.
- 54 Brašinskij 1980; Martschenko 1986; Hind 1995-1996; 1997.
- 55 Braund & Tsetskhladze 1989; see also Tsetskhladze 1990.
- 56 Beazley 1956, 110, no. 37.

- 57 *IG II²*, 2938; cf. Lauffer 1979, 129.
- 58 Hatzfeld 1910, 243, no. 8 (Eunoia). For Aphrodisios and Erotis see *SEG* 51, 1015.
- 59 Braund & Tsatskhladze 1989, 124, appropriately quote the anecdote in Athenaeus (6.266e-f) about a decision of Mithridates Eupator in 86 BC: “Chians were punished for being the first Greeks to import slaves by the reversal of the positions of master and slaves: the Chians became the slaves and were shipped out to Kolchis”.
- 60 Braund & Tsatskhladze 1989, 120. See now also Heinen 2001, 492, n. 14: “[es] scheint mir nicht sicher, dass die Sklaven wirklich aus den Randgebieten der Maiotis stammten. Möglich ist auch, dass sie über den bekannten Slavenmarkt von Tanais am unteren Don (dazu Strab. 11.2.3), in unmittelbarer Nähe der Küste des Asowschen Meeres, in den Handel gelangten und ihr Ethnikon nicht von ihrem ursprünglichen Herkunftsgebiet, sondern vom Gebiet ihres Verkaufes erhielten, was ja auch sonst bezeugt ist (Varro, *Ling. Lat.* 8.21)”.
- 61 Kontorini 1989, 113, no. 42 (*SEG* 39, 830).
- 62 Konstantinopoulos 1963, 20, no. 33.
- 63 Maiuri 1916, 164, no. 106 (Morelli 1955, 150).
- 64 Maiuri 1925, no. 167 (Morelli 1955, 150).
- 65 Paton & Hicks 1891, 232, no. 364.
- 66 All the evidence is Hellenistic. It is generally admitted that after the Classical period slaves originating from Asia Minor are everywhere more representative than people of servile status in the North and West Pontic regions. See Garlan 1984, 61: “Par la suite, la proportion d’esclaves originaires de toute l’Asie Mineure (Lydiens, Kappadociens, Mysiens, etc.) tendit encore à se renforcer au détriment des peuples septentrionaux. A l’époque hellénistique, sur les stèles funéraires de Rhodes, il n’y a plus que le tiers des esclaves à provenir des pays de la mer Noire, et ce n’est le cas à Delphes que du cinquième des affranchis dont l’origine est mentionnée”. See also Masson 1973 and for a list of slaves in Athens in the 5th century BC (with a comfortable Thracian predominance): Miller 1997, 82-83.
- 67 It is not sure that Kleon (*Ar. Eq.* 919), which would be the first slave of this origin to be attested in Athens, was really a Paphlagonian. His “ethnic” seems rather to suggest a pun (cf. *παφλάζει*): Ehrenberg 1968, 177; Long 1986, 114; Bäßler 1998, 94.
- 68 *IG II²*, 10051 (*GVII*, 836; *CEG* II, 572; Fragiadakis 1988, 341, no. 97; *FRA* 5973); cf. Lauffer 1979, 17, 124, 132, 198 sqq.; Bäßler 1998, 94-97 and cat. 35.
- 69 Peek 1942, 69, no. 120; cf. Lauffer 1979, 127 and 130. “Statt Παφλαγών kommt auch Παφλαγωνίδης in Betracht” (Peek).
- 70 Pugliese Carratelli 1939-1940, 168 sqq., no. 21.A.III.3 (Morelli 1955, 183).
- 71 *IG II²*, 8954 (*FRA* 2662).
- 72 *IG II²*, 8957 (dated to the 2nd century), but cf. *FRA* 2667.
- 73 *IG II²*, 8958 (*FRA* 2668).
- 74 *IG II²*, 8956 (*FRA* 2665).
- 75 Meritt 1954, 271, no. 108 (*SEG* 14, 204) = Bradeen 1974, no. 511 (*FRA* 2666).
- 76 *IG XII*, 1, 496 (Morelli 1955, 180).
- 77 *IG XII*, 1, 497 (Morelli 1955, 180).
- 78 Maiuri 1925, no. 219; cf. Fraser 1977, 95, n. 55 (Morelli 1955, 180).
- 79 Hatzfeld 1910, 244, no. 16. It does not seem to be the same inscription (here l. 3 gives: *χρηστὸς χαίρει*, while Maiuri 1925, no. 219, ll. 3-4, has *χρηστὸς ἢ χαίρει*).

- 80 Pugliese Carratelli 1955-1956, 162, no. 6 (Morelli 1955, 180).
- 81 *IG XII*, 1, 498 (Morelli 1955, 180).
- 82 Kontorini 1975, 38, no. 9.
- 83 Maiuri 1925, no. 220 (Morelli 1955, 180).
- 84 Just mentioned by *SEG* 51, 1015, without further details.
- 85 *IG II²*, 8410 (Σπόκης) (*FRA* 1332: Σεύκης); cf. Bähler 1998, 214-215, cat. 12 (Σεύθης).
- 86 *IG II²*, 8412 (*FRA* 1335); cf. Bähler 1998, 215-216, cat. 13 (χρηστή [sic] as "Rufname").
- 87 *IG II²*, 8411 (*FRA* 1333). The restoration of the ethnic in *IG II²*, 8409 (= Bähler 1998, 214, cat. 11) is too adventurous.
- 88 Robinson 1906, 275 sqq.; Debord 1990, 518. Menippos is called Φοίνιξ by Diogenes (6.99) because he really came ἐκ τῶν Γαδάρων (Strab. 16.2.29). But he also bears the ethnic Σινωπεύς (Diog. Laërt. 6.95) because he was sold in Sinope.
- 89 Konstantinopoulos 1969, 470; cf. Debord 1990, 522, n. 32.
- 90 *IG XII*, 1, 465 (Morelli 1955, 170).
- 91 Zervoudaki 1978, 404 (*SEG* 35, 893).
- 92 *IG XII*, 1, 466a (Morelli 1955, 171).
- 93 *IG XII*, 1, 467 = *SGDI* 4038 (Morelli 1955, 171) = Berges 1996, 141, no. 199.
- 94 Maiuri 1916, 178, no. 181 (Morelli 1955, 144); cf. Fraser 1977, 93, n. 46.
- 95 Maiuri 1925, 147 (Morelli 1955, 144).
- 96 *IG XII*, 1, 400 (Morelli 1955, 145).
- 97 *IG II²*, 10448 (*FRA* 7131).
- 98 Finley 1962, 58. See, in general, Ormerod 1924; Ziebarth 1929; Garlan 1978; Garlan 1987; de Souza 1999; Gabrielsen 2001; Wiemer 2002; for the Black Sea, Brašinskij 1973; Tsetskhladze 2000-2001.
- 99 See Bielman 1994.
- 100 Archibald 1997, 228. Just when I was reading the proofs of the present paper G.R. Tsetskhladze kindly informed me that he prepared an article on "Pontic slaves in Athens: orthodoxy and reality", to be published in 2008 in the *Festschrift I. Weiler*.

Contacts between the Ptolemaic Kingdom and the Black Sea in the Early Hellenistic Age

Zofia Halina Archibald

New evidence of Pontic–Egyptian connections in the 3rd century BC

Were it not for a papyrus fragment recording the visit of Bosporan ambassadors to Egypt in September 254 BC, we might never have suspected that there were close ties between the Ptolemaic court and the northernmost reaches of the Black Sea. It reads as follows:

Apollonios to Zenon greeting. As soon as you read this letter, send off to Ptolemais the chariots and the other carriage-animals (?) and the baggage-mules for the ambassadors from Pairisades and the delegates from Argos whom the King has sent to see the sights of the Arsinoite nome. And make sure that they do not arrive too late for the purpose: for at the time of writing this letter they have just this moment sailed up. Farewell. Year 32, Panemos 26, Mesore 1.¹

The Pairisades in question is generally agreed to have been Pairisades II, ruler of Bosporos (284/3-c. 245 BC).² The background and purpose of the mission has perplexed historians for more than seventy years, without any convincing explanations having been offered. In a recent paper I have eschewed direct answers, exploring instead the types of epigraphic and material evidence available for ambassadorial candidates from Bosporos in Egypt, and of Egyptian artefacts in Bosporos.³ Historians interested in resolving the diplomatic niceties have cited, but not been greatly concerned with, artefacts of Egyptian provenance, whose connection with the wider world of international relations has not seemed particularly convincing. Yet artefacts frequently incorporate more information than the simple witness of goods exchanged. The accumulating symptoms of knowledge about, and interest in, things Egyptian, by various communities in the Black Sea area, suggests that the relationship between the northern and southern “poles” of Hellenistic abstract geography deserve to be examined more systematically. In this paper I can only outline some of

the more readily accessible aspects of this relationship and draw preliminary conclusions about what such activities imply.⁴

Two recent discoveries, both in the Crimean peninsula, have revived scholarly interest in the character of relations between the Black Sea region and the Ptolemaic Kingdom of Egypt during the Hellenistic period. One is the wall painting from Nymphaion, discovered in 1984, which shows a magnificent oared ship clearly inscribed "Isis" on its bow.⁵ The other is an altar slab from Chersonesos, inscribed with a dedication by a man named Charmippos, son of Prytanis, to Sarapis, Isis, and Anoubis.⁶ The white marble slab, which was reused in a rock-cut water cistern, was found near the sacred area in the far north-eastern part of Chersonesos, during excavations there in 1993.

Preliminary studies of the Nymphaion fresco and of the Chersonesean dedication have highlighted the enormous gap that exists between such discrete types of new data, and scholarly perceptions of relations between the rulers of Bosphoros and the Ptolemies, indeed between all the communities neighbouring on the Black Sea and Egypt. The dedication from Chersonesos, which Vinogradov and Zolotarev have dated, on prosopographical and palaeographic grounds, to the middle of the 3rd century BC,⁷ is the earliest demonstrable evidence of the worship of Egyptian deities in the northern Pontic region. Whether we accept a date as early as c. 250 BC, or prefer a more conservative estimate, early in the 2nd century, the inscribed altar creates a much bolder perspective within which to view other epigraphic documents recording dedications to Ptolemaic Egyptian gods. These include the Istrian inscription that refers to the introduction of the cult of Sarapis in Istros, following advice from the oracle of Apollon at Kalchedon;⁸ and a series of four inscriptions recording dedications to Sarapis, Isis, and other gods from Mesembria.⁹ But we are still woefully ignorant about the social and cultural, much less political, climate in which these developments took place. The emergence of new patterns of behaviour in one area of the Pontic coast begs a whole raft of questions about other sites in the region, questions that we are simply not in a position to answer, at least not yet.

Both new discoveries challenge our assumptions of the low level of interaction between Pontic communities and their more distant neighbours in the southern Mediterranean. The excavator at Nymphaion, Nonna Grač, proposed that the ship labelled "Isis" was on a diplomatic mission from Ptolemaios II Philadelphos. Among the many graffiti distributed around the plastered walls of the sanctuary is the name Pairisades, which could correspond with the ruler of the Bosphoran state from 284/3-245 BC (*SEG* 38, 752; 39, 701). Ju.G. Vinogradov¹⁰ has argued that the "Isis" was a warship,¹¹ on a mission in winter or spring 254 BC, to prove the benevolent intentions of Ptolemaios II Philadelphos in the aftermath of two major naval defeats for Ptolemaic fleets, near Ephesos, at the hands of the Rhodians¹² and off the island of Kos, this time worsted by the Macedonian fleet of Antigonos Gonatas.¹³ Moreover, in his collaborative article with M.I. Zolotarev in the same publication, an ingenious

argument is developed to link this diplomatic tour with the establishment of the cult of Sarapis at Chersonesos.¹⁴ Such specific arguments are difficult to prove, particularly when the context of the relevant images and inscriptions has been presented to a scholarly audience only in selected form.¹⁵

Apart from the “Idris-Bell” papyrus fragment cited above, a magnificent black basalt portrait head from Pantikapaion, perhaps representing the deified Arsinoe II as Isis, is the most important single artefact that resembles a high-level gift or dedication.¹⁶ Ptolemaic portrait sculpture is notoriously hard to identify in the absence of inscriptions or cartouches. Leaving aside for a moment an important series of finger rings with Ptolemaic images,¹⁷ it is hard to point out any other material symptoms of *diplomatic* exchanges. The Black Sea rarely features in surviving Greek narrative accounts of the 3rd to 1st centuries BC. But the absence of other direct indicators of communication lines between Egypt and the Pontic Kingdoms should not be taken as evidence against recognised connections, even if these were formally recognised on a periodic rather than on a regular basis. The idea of “regular” diplomatic contacts is anachronistic, since it presupposes a bureaucratic infrastructure and modes of transportation that had not yet come into existence.

Notwithstanding this apparent absence of evidence, a closer look at the data available for different types of contacts between the Black Sea and Egypt reveals a wealth of information, only some of which can be included in a study of this length. Any one of the aspects touched on in the discussion that follows could have been developed independently. I therefore propose to outline some preliminary conclusions and suggest some new ways in which the evidence might be viewed.

Relations between the Ptolemies and northern Aegean communities in the 3rd century BC

We may not be in a position to evaluate Bosporan foreign relations, but a good deal of information is available concerning Ptolemaic international strategies directed towards the Aegean and beyond it, into the Black Sea region, during the 3rd and 2nd centuries BC. Much of the recent evidence has been collated by Hölbl in his *History of the Ptolemaic Empire*.¹⁸ Ptolemaic activities can be analysed at two levels that can be seen to have left different echoes in the material record. One is the inter-state level, which brought together rulers, their representatives, and leading members of key communities in the eastern Mediterranean. The Ptolemies avoided personal involvement in military affairs and preferred to delegate executive power to key functionaries. So, at the inter-state level, communications were largely indirect and rather diffuse, except when ambassadors travelled to Alexandria or Memphis.¹⁹ The manifest success enjoyed by the first three Ptolemies in bringing together and maintaining many different networks of contacts, and in fostering loyalty from so numerous a range of communities, suggests that, however we envis-

age contacts at inter-state level, there was a great deal more to them than the granting of symbolic favours.

The second order of communications is the local level, where both junior and senior Ptolemaic officials operated on a regular, permanent basis in a restricted locality, as in the case of garrison troops. These kinds of contacts are more likely to have generated communication between ordinary natives and resident soldiers or other officials. The Hellenistic monarchies established by Alexander's successors were unlike nation states in their origins, since royal power was predicated on the model set by Alexander himself. Ptolemaios Soter pursued a set of strategies outside Egypt whose objective was to enhance the wealth, resources, and capacities of his territorial assets, and to compete aggressively with his peers to attain a preponderant role among the Successors.²⁰ Personal connections, friendships, and gestures of support to particular communities played a very considerable part in cementing his success and that of his offspring.

Although Kyrenaika, on the one hand, and the Levantine coast (Coele Syria) with Cyprus on the other, constituted the fulcrum of Ptolemaios's energies, he consistently sought to establish a network of contacts in the Aegean. These began with a series of military campaigns, starting in 311 BC, aimed at "liberating" communities in Rough Kilikia, Lykia, and Karia, followed, in 295/4, with the acquisition of Cyprus, Sidon and Tyre, all of Lykia and Pamphylia. In 288-287 BC, a Ptolemaic garrison set up on Andros provided a base for the Athenian rebellion led by Kallias of Sphettos. By this time Ptolemaios had taken over leadership of the "Island League", founded by Antigonos Monophthalmos, and this became the mechanism through which Ptolemaios II Philadelphos conducted his political affairs with Aegean states and ensured co-operation between them and Ptolemaic garrison commanders.²¹ The Ptolemaic military network across the Aegean was strengthened yet more during the Chremonidean War (267-261 BC), when further garrisons were put in place by the Ptolemaic *strategos* Patroklos on Thera, at Itanos on Crete, on the Methana Peninsula, and at Koresia on Keos. The base on Keos was abandoned towards the end of the 3rd century, but the others persisted until 145 BC, and Ptolemaic-backed activities in south-western Asia Minor continued to drive local affairs until the early years of the 2nd century BC.²²

It is rather more difficult to discern Philadelphos' ambitions in the northern Aegean. The existence of a distinct strategy further north is best reflected in two major royal dedications on the island of Samothrake. Whereas most of the epigraphic data in the Aegean reflects the careers of Ptolemaic military personnel, the monumental dedications on the island of Samothrake illustrate a flamboyant style of personal patronage that has rarely survived outside Egypt and Cyprus. The Propylon of Ptolemaios II, which seems to have been modelled in part on the North Propylaia at Epidauros,²³ and the unique Rotunda of Queen Arsinoe, the tallest, if not the largest circular monument of its kind,²⁴ together provide a manifestation of Ptolemaic munificence, whose

precise purpose is hard to gauge. Neither construction can be dated with much precision. Frazer was reluctant to declare a more specific date span than the early years of Philadelphos' reign, c. 285-280 BC for the former,²⁵ while Roux has proposed the years immediately after 280 BC for the latter. The inscriptions on the two buildings are similar in style and likely to be near-contemporary.

Roux has provided a convincing explanation for the dedication of the Rotunda, although this requires us to reject Lysimachos in the missing space where the name of her spouse should be, and to substitute that of Ptolemaios.²⁶ Arsinoe sought sanctuary on the island after her new husband and half-brother, Ptolemaios Keraunos, had her two younger sons murdered. But Keraunos was unexpectedly killed, late in 280 or early 279 BC, when his army was defeated by an invading Celtic force, leaving Arsinoe free to return to Egypt (Just. 17. 2.6-7; 24.2-3). Once Arsinoe became Philadelphos' wife, she could express her gratitude for surviving her ordeals, and seek approval for the new marriage, by dedicating a significant religious structure at the shrine. Whatever the precise circumstances, both Ptolemaios II and his wife Arsinoe used the services of first class architects for the unusual designs of the two constructions; moreover, they employed local masons, probably from Thasos, since Thasian marble was used, as on other major Samothrakian monuments. But many of the structural details are thought to derive from Macedonia.²⁷

Lysimachos was an enthusiastic donor to the sanctuary of the Great Gods (*Syll.*³ 372). The formidable Arsinoe could have begun an enterprise in her own right whilst still married to Lysimachos. But Roux's interpretation makes much better sense. But whether we locate the siblings' dedications in the 280s or in the early 270s, they nevertheless bespeak a strong desire to compete among the benefactors of this particular sanctuary, at a time when the most prominent patrons were Argead princes.

When the Ptolemaic fleet was defeated by the Rhodians, and the Ptolemies lost their base on Andros, as well as their patronage of the "Island League" after 246 BC (developments that brought an end to the monuments generated by Ptolemaic patronage at Apollon's sanctuary on Delos),²⁸ Ptolemaios III Euergetes successfully sought to strengthen his naval position along the Thracian coast. Ptolemaic garrisons already existed at Ainos, Maroneia, perhaps Kypsela; Lesbos and Samothrake, and in the Hellespont around Lysimacheia and Sestos.²⁹ It is not known when and at what rate these northern bases were acquired. The honorary decrees for Hippomedon, *strategos* in the Hellespont and in Thrace under Euergetes (*Syll.*³ 502), and his near contemporary at the garrison in Maroneia, Epinikos (in a motion tabled by "king" Polychares, son of Leochares),³⁰ provide a clear reflection of the military and socio-economic duties performed by such individuals.³¹ Local interventions by successive Ptolemies during the 3rd century BC suggest that, although military successes during the Third Syrian War (246-241 BC) have highlighted the prominence of Ptolemaic military and diplomatic activities in the north-

ern Aegean during the latter half of the 3rd century, the concern shown by Egypt's rulers for a network of contacts in the north was not a new initiative. So the change of emphasis from a Cycladic focus to a North Aegean one, reflected in monuments honouring Ptolemaic officials, was one of degree and not kind.³² It is in this context that we may consider the kinds of initiatives at inter-state level that generated formal links between the Ptolemaic crown and Black Sea communities.

Two specific instances of Ptolemaic intervention in the Black Sea that can be followed, at least in outline, refer to Byzantion and Herakleia Pontike. Herakleia's historian, Memnon, described several examples of generosity on the part of Ptolemaios (usually assumed to mean Ptolemaios II),³³ enacted when he was at the height of his success. In one instance, the relevant fragment preserved by Photios refers to gifts of corn and marble, quarried at Prokonnesos, and intended for a temple dedicated to Herakles in the city.³⁴ Vinogradov has connected this gesture with the so-called "Monopoly War" between Byzantion, on the one hand, and Istros and Kallatis, on the other, for control of the *emporion* at Tomis.³⁵ In the resulting conflict, which is usually dated in the second half of the 250s, Byzantion waged war against Istros and Kallatis. Herakleia did not take sides, but offered to provide ambassadors to resolve the dispute.³⁶ The alignments make no coherent sense in trading terms, nor is Byzantion known to have intervened previously in the commercial affairs of a Pontic city.³⁷ So other factors must have been at work.

Alexandru Avram has recently re-examined this incident from two complementary perspectives. In a detailed review of the excerpts from Memnon's narrative relating to regional affairs in the 250s, he has reconstructed the wider ramifications of the "Monopoly War".³⁸ The commercial dispute between the two cities on the western coast of the Black Sea was, in his view, but one local symptom of a much larger power struggle between Ptolemaios II Philadelphos and the Seleukid king Antiochos II. The immediate context for tensions between the two rulers was the arrangement made by the Bithynian king Nikomedes I for his own succession. Ptolemaios Philadelphos, Antigonos II Gonatas of Macedonia, together with the cities of Byzantion, Herakleia, and Kios, were named to oversee the handover of power to his younger sons from a second marriage (*FGrH* 434: Memnon F14 [22] 1).

References to Ptolemaios's aid to individual cities can thus be interpreted as partial reflections of a naval initiative by the Ptolemaic fleet, primarily in support of Byzantion, which had come under siege from Antiochos II, probably in 255 BC.³⁹ Herakleia, which became a close ally in the coalition that has been dubbed the "Northern League" by modern scholars (*FGrH* 434: Memnon F13 [21] 1) also benefited from Philadelphos' support. A series of epigraphic documents provides some confirmation of the wider dimensions. An inscription that explicitly names [king] Antiochos, and which is found at Apollonia Pontike (perhaps it is honouring an Apollonian citizen), is more likely to be a decree of Mesembria.⁴⁰ Avram has drawn attention to documents of the same

period from Apollonia, Kallatis, and Istros that indicate close and friendly relations between these cities.⁴¹ He posits a broad alliance of western Pontic communities, whose support was courted by Antiochos II. According to this view, the latter aimed at driving a territorial wedge between the Ptolemaic sympathisers of the “Northern League” and their neighbours on the European side of the Straits, either to neutralise or to dilute the economic and military advantages that Philadelphos could derive from his alliance with the city that effectively controlled access to the Black Sea. One of the clearest indicators of Seleukid activity in south-eastern Thrace is a number of coin series that use Seleukid types, and were most likely intended as troop payments.⁴²

Byzantine local tradition credited Philadelphos with gifts of corn, military supplies (projectiles), money and land. The honours heaped on Ptolemaios seem out of all proportion to the benefactions, however generous. A cult was instituted in his name and an associated temple was erected (Dion.Byz. *Anaplous Bospori* 41 [ed. Güngerich]; *GGM* II, 34).⁴³ In another recent paper, Avram has shown that Memnon’s narrative conflates a series of gifts, which were bestowed at different times. Whereas those in kind fit well into the scenario of a siege, the reference to land grants points to an altogether different origin.⁴⁴ The most plausible occasion for significant land re-allocations was at the beginning of the 270s BC, in the immediate aftermath of the Celtic invasions and Seleukos I’s death.

The massed Celtic/Galatian irruptions that precipitated military assaults on Delphi and across southern Thrace between 280 and 278 BC constituted the most crucial juncture near the Straits during Philadelphos’ reign.⁴⁵ Not only was this an international crisis. The events coincided with one of the most important show-downs among the Successors themselves, when three of the key players, Lysimachos, Seleukos, and Ptolemaios Keraunos, were all eliminated within two years.⁴⁶ Bringmann and von Steuben, following Habicht,⁴⁷ situate the gifts for Herakleia in the same context, but, as Avram has shown, Philadelphos’ interventions were multiple. If the Ptolemaic fleet did sail up into the region more often than has been supposed, then stories about the capture of Ptolemaic warships by Celtic mercenaries of Mithridates of Pontos become easier to understand.⁴⁸

Notwithstanding the uncertainties about such fragmentary evidence, there are sufficient grounds for accepting the idea that the Ptolemaic fleet played an active role not only in the North Aegean, but also in the Hellespontine region, and along the Black Sea coasts, on several occasions during Philadelphos’ reign, certainly in the 270s and mid 250s (independently echoed in the Nymphaion fresco). Epigraphic evidence of royal officials, analogous to those in Aegean garrisons, is lacking in the Pontos, but they may be traceable in other ways.

Interpreting the arrival of new cults

Vinogradov argued that the decision of the Istrians to adopt the cult of Sarapis was a gesture of gratitude to Philadelphos, analogous, in some sense, to the temple dedicated in his memory by the Byzantines.⁴⁹ Such a theory can now be seen as untenable. Avram's redating and re-interpretation of the cult of Philadelphos at Byzantion shows that the introduction of this ritual was intimately connected with the city's sense of its geopolitical setting. Avram's reconstruction of the political divisions created by the siege of Byzantion at the hands of Antiochos II, with Istros in the pro-Seleukid grouping, make a political motive for the adoption of an Egyptian cult at Istros less likely. There are good reasons for believing that the appearance of the cults of Isis and Sarapis within specific communities was motivated by different factors and followed different trajectories from those that obtained for the Ptolemaic ruler cults. Hölbl notes some instances where the ruler cult coincided directly with the new Egyptian divinities. On Thera, for instance, the "priests of the king" were responsible for endowing the treasury of the island's sanctuary.⁵⁰ But the geographical distribution of cult activities associated with Ptolemaic rulers is closely associated with strong Ptolemaic political influence: Cyprus, Lesbos, Thera, Lykia, and Ainos, were all selected as locations for Ptolemaic garrisons.⁵¹ In Egypt the divine office of pharaoh created a ready foundation on which to build the image of a supra-human ruler, and one, moreover, who was the direct successor of the semi-divine Alexander. By this mechanism the Ptolemies subordinated the Egyptian priesthoods to their personal authority. But since it was the office that was divine, rulers did not supersede other gods.⁵² The relationship between instances of the ruler cult outside Egypt, and places where other Ptolemaic cults were established, deserves more detailed consideration than I can offer here.

Surveying the distribution of dedications to Egyptian gods of the Ptolemaic period in the Black Sea area, one of the most patent conclusions is that they do not represent the consequences of piecemeal, gradual cultural diffusion. This is as true of the Roman Imperial period in the region as it was of the previous three centuries. Direct evidence, in the form of inscriptions and artefacts, is limited.⁵³ Tacheva-Hitova's catalogue for the Roman provinces of Moesia Inferior and Thrace lists 51 items. 25 are Hellenistic inscriptions, nine Imperial ones. If we leave aside the items disseminated along the Danube *limes*, what is revealed is a concentration of finds at a small number of sites along the western coast, including: Dionysiopolis (3), Istros (2), Tomis (minimum 12), and Mesambria Pontike (5), with a distinct network of inland urban centres, in Imperial times, if not before (Nicomolis ad Istrum, Philippopolis, Augusta Traiana). This pattern echoes in outline the punctuated coastal distribution found on the south-western shores of Asia Minor,⁵⁴ and the evidence from the northern coast of the Black Sea seems to follow a similar scheme, although it becomes harder to discern.⁵⁵ What is worth emphasising is that the distribu-

tion reflected does not coincide with any given cultural configuration based on earlier civic traditions, such as affiliation with a metropolis, while the intervals between locations are more consistent with maritime routes, and many of the sites are major harbours.

Our surviving documents reflect various stages of consolidation of these cults and thus conceal much of what we would like to know about their origins. The Istrian document already referred to (*I.Histriae* 5) records a decision of the city council (and probably the people of Istros), to consult the oracle of Apollon at Kalchedon regarding the official adoption of the cult of Sarapis by the Istrians. More commonly, inscriptions are simply dedications made by named individuals to Sarapis, or to the triad of Sarapis, Isis and Anoubis, a combination that is found exclusively in the eastern Mediterranean and is, moreover, almost unknown in Alexandria.⁵⁶ Sarapis played a more significant role in the 3rd and 2nd centuries BC than Isis in the Aegean and adjacent areas.

Tacheva-Hitova surmised that the cults of Isis, Sarapis and Anoubis were introduced by “persons of Egyptian, Greek, or Anatolian origin”,⁵⁷ and that the cults were avoided by natives, particularly in rural areas. Such a conclusion presupposes that interest in these cults, and in things Egyptian, remained confined to small groups of outsiders. The institutionalisation of the cults by means of publicly sanctioned precincts (Hellenistic Tomis, Istros, and Mesembria; cf. Polyb. 4.39.5-6: Sarapeion on the Thracian side of the Bosphoros, near Byzantion, 219 BC), and the diffusion of Egyptian-style artefacts, discussed below, indicates that we need to think much more broadly and imaginatively about the ways in which these cults were perceived. The strong correlation between surviving traces of cult and major urban centres continued to be apparent in Roman Imperial times, not just in the Black Sea, but in the Empire as a whole.⁵⁸ The connection with centres of manufacture and exchange is probably more relevant than the issue of cultural preference, although such a factor must also have come into the equation.

One inscription from Tomis, dated to 160 AD, refers to the *oikos tōn Alexandreōn* (the “house of the Alexandreiana”) which has been interpreted as an association of Alexandrian merchants.⁵⁹ A trading network linking the Black Sea, especially its northern and western shores, with Alexandria via Rhodes is widely accepted on the basis of identified Rhodian amphora stamps.⁶⁰ Plausible connections have been made between the transportation of grain from the northern regions, financed by Rhodian bankers, and the traffic of wine in the opposite direction.⁶¹ Notwithstanding the clarity of this chain, reinforced as it was by a degree of direct Rhodian brinkmanship in 220 BC (when the Byzantines attempted to impose greater control over the shipping traffic), there are subsidiary patterns within the Black Sea zone, which suggest discrete distributions from given centres, rather than a general diffusion of bulk trade along the coastline. In other words, there are local patterns of distribution, or re-distribution, for bulk transports within the Black Sea region

that indicate dynamics additional to the ones we can readily identify from written evidence and artefact distributions. Odessos, Tomis and Istros seem to follow a common rhythm of bulk imports, whereas the nearby Kallatis shows a different pattern. Similarly, Olbia and Chersonesos seem to have shared in the same traffic, but the Bosporan centres a different set of variables.⁶² These second-order patterns show how supply issues were managed. But we have yet to explain how and why exotic objects (Hadra vases, watercolour painted urns, faience beads and ornaments, alabaster and glass vessels),⁶³ and exotic ideas, such as the cults of Sarapis, Isis and Anoubis, took root in these areas, where discreet, unmediated contacts with Egypt were comparatively rare.

As we have seen, the Ptolemies did not travel around their dominions. Their representatives were based principally in Aegean military bases. Although Ptolemaic officials are much harder to document in this region than they are in the Aegean, the appearance of artefacts associated elsewhere with high ranking individuals – notably the series of finger rings studied by Treister⁶⁴ – shows that there is no reason to doubt that the diplomatic network extended as far as the Bosporan Kingdom; and this regardless of whether the Ptolemaic agents further north were Alexandrian Greeks, or, more likely, distinguished local men, who acted as *proxenoi* of the Egyptian crown.⁶⁵ Given the pro-Seleukid alignment of many western Pontic communities in the middle decades of the 3rd century BC, the Bosporan élite represented a potentially valuable source of allies for Philadelphos, and the ambassadors to Egypt in 254 BC demonstrate the success of this strategy. The finger rings can then be seen as demonstrable symbols of the functions conferred to them, not prospective gifts.⁶⁶

What is less easily explained is the curiosity about Egyptian cults and culture, and the taste for Egyptianizing artefacts, in regions as distant as the North Aegean coast and the Black Sea. Not only do we find minor items, such as finger rings and personal ornaments made of faience, which reproduce exotic designs, but Egyptian-looking ceramics and glass. Why Egyptian, and not, for example, Persian, or Mesopotamian, or Anatolian cults, artefacts, and imagery? Perhaps the modern obsession with things Egyptian has made the growth of ancient interest in these topics and items, from the early Hellenistic age onwards, seem less strange than they might otherwise appear. A metropolitan vogue for Alexandrian themes is easier to comprehend in social circles where the new poetic trends emanating from the Ptolemaic capital are known to have been popular – in the older cities of mainland Greece and Magna Graecia.⁶⁷ But it is harder to demonstrate a similar propensity in Olbia, or Pantikapaion, Istros, or Chersonesos, where cult inscriptions, Egyptian glass, faience, and Alexandrian ceramics have been found. The adoption of Egyptian cults makes little sense unless a cultural context already existed in which such ideas would find fertile ground. In the Aegean, the presence of Egyptian or Egyptianizing artefacts and cultural phenomena causes less surprise, because their existence can be mapped onto the Ptolemaic politico-

military network. But this can only be part of the story. In recent years, the distinction between *Ptolemaica*, items manifestly connected with activity of the said period, and *Aegyptiaca*, native objects, such as *ushabti*, which circulated alongside the former, has been re-emphasised.⁶⁸ This underscores the fact that the wide range of artefacts previously seen as exemplifying a single phenomenon probably represents a complex of inter-related ideas. In antiquity knowledge about other cultures was disseminated through travellers, be they merchants, mercenaries, or ambassadors, and, in an indirect way, through artefacts. Knowledge about other cultures was also desirable to those who made knowledge itself a speciality, namely teachers, philosophers, and craftsmen. This latter group of people is less often discussed in connection with cultural transmission than are the former. Yet, in ancient times, knowledge was not subdivided. Knowledge about religion was not separated from knowledge about the universe, and especially technology. Wisdom about all manner of things was seen by Greek thinkers as emanating from Egypt, but the traffic in knowledge was a two-way process.⁶⁹ The need, in early Ptolemaic times, to fuse different streams of knowledge came to be embodied in new divine concepts, personified in Sarapis and the hellenised form of Isis. Michel Malaise has expressed the challenge that this posed for Greek officials and Egyptian priests:

Pour comprendre l'effort théologique fait en direction des Grecs, il faut prendre en compte deux réalités psychologiques. En premier lieu, du moins dans certains domaines, comme en matière de religion, de divination ou de médecine, les Égyptiens étaient investis aux yeux des Grecs d'une supériorité, ou à tout le moins, d'une antériorité, qui les faisaient considérer par l'occupant comme estimables en ces matières. Ensuite, les Égyptiens étaient désireux de ne se pas s'en laisser remontrer par les colons; et leur clergé avait tout avantage à intéresser les Grecs à leur cultes pour obtenir d'eux les concessions économiques nécessaire à leurs sanctuaires.⁷⁰

Greek merchants and craftsmen on the one hand, and Egyptian priests on the other, had a vested interest in making common ground, in order to carry on their respective affairs. This mutual interest has increasingly been recognised as a principal factor in the emergence of new cults that made Egyptian wisdom available to other Mediterranean peoples.⁷¹ But even here there is a mysterious connection with the Black Sea. Tacitus (*Hist.* 4.83.2) and Clement of Alexandria (*Protr.* 4.48.2) refer to a colossal statue of Sarapis that was brought from Sinope to a sanctuary in Rhakotis, Alexandria, in response to Philadelphos' gift of grain during a scarcity.⁷²

Glass technology in the North Aegean and Pontic areas

It would obviously be desirable to find some body of material data that could provide a more systematic, or at least wider-ranging perspective than is provided by inscriptions and artefacts explicitly identifiable with the new cults. Most standard archaeological evidence is of no particular use in this sort of enquiry, because of its very ubiquity. What is needed in this context are regular, easily identifiable items. One of the most feasible candidates is the dissemination of glass technology. Of the many commodities that link Egypt and the Levant with the Black Sea for most of antiquity two in particular stand out. Moreover, they are interconnected. One is glass, and its close relative, faience. The other is the spice trade. The wealthiest tombs of the Bosporan Kingdom, Thrace, Kolchis, and Anatolia frequently contain alabaster jars that would have contained myrrh and perhaps other preserving spices (Hdt. 3. 20.1; Plin. *HN* 9.13).⁷³ Glass alabastra are among the earliest examples of core-formed glass vessels found in the cemeteries of Pantikapaion, Olbia, and many coastal and inland sites around the Black Sea.⁷⁴ The miniature form of these vessels suggests that they probably contained perfumed oils rather than spices. But there is a striking coincidence of alabaster vessels and glass ones, miniature or otherwise, in the tombs of the better-off in many different parts of the Black Sea's hinterland and elsewhere.⁷⁵ This strongly suggests that the contents of the alabaster and glass vases – at least of the ones in burials – were connected. Arabian spices were certainly being shipped from the Levantine coasts to the Aegean from the 6th century BC onwards, and we would expect demand for such spices, or variations on them, to have been used as economic resources allowed.⁷⁶

The arrival of alabaster and glass vessels in the Pontic region set up an expectation.⁷⁷ The demand for such containers, and their contents, was unlikely to diminish. Indeed, what we find, in some cases at least, is a dramatic increase in the number of items buried with some deceased individuals. At Aineia, south of Thessaloniki, three tombs dated by the excavator to the third quarter of the 4th century BC are exceptional. Tomb III contained a total of 26 vessels: 18 plain stone, five gilt, two glass, and one grey faience.⁷⁸ Tomb II contained eight plain alabaster forms;⁷⁹ five glass alabastra of "Phoenician type", and two gilt stone vessels. Admittedly, this example is from Macedonia. Glass products became very prominent in Macedonia at this time.

Despoina Ignatiadou has recently argued that a very fine, colourless type of glass was produced in Macedonia during a comparatively short period, between the second half of the 4th and first half of the 3rd centuries BC.⁸⁰ There are some cogent reasons for her thesis. A range of specialised products using glass inlays, notably the ornamental fittings of wooden funerary couches, has been found at a number of major Macedonian centres. These items were intrinsically delicate, and unsuitable for long distance transportation. They are the kinds of products best made as close as possible to their place of use. They

include fragments from Tomb I in the multiple mound already referred to at Aineia.⁸¹ Similar elements were found in the near contemporary Tomb II⁸² and Tomb III (pls. 42-43), as well as from the pyre in Mound B.⁸³ The committal of such expensive items to the fire is a stark reminder of the scale of conspicuous consumption practised in the highest circles of Macedonian society.

The best parallels for these glass inlaid couches come from Scythia, namely the bier from the Kul' Oba tumulus, dating from the first half of the 4th century BC, two from the second half of the century (Bol'shaja Bliznica and Ak-Burun),⁸⁴ and one couch from Tarentum belonging with this later pair.

Knowledge networks

Glassmaking is a complex process, which involves specialist knowledge of a wide range of mineral and or organic ingredients.⁸⁵ The ingredients themselves, including the right kind of sand, are not easy to obtain. The finest, most translucent, and colourless glass was made using natron (hydrated sodium carbonate), the best-known source of which was the Wadi Natron in Egypt.⁸⁶ Natron had a variety of uses other than a primary constituent of glass production. It was used in medicine, as a detergent, as an embalming ingredient, and as a dye component. This explains why knowledge about glass-making was connected to other branches of learning with which the Egyptians were explicitly associated. The Ahiquar customs account published by Briant and Descat highlights the importance of natron exports to the Aegean, since it is the only commodity explicitly named, perhaps the only one taxed, and transhipped by Ionian merchantmen.⁸⁷

At present, there is still much controversy about where glass was actually made from Egyptian natron and other forms of soda, usually plant ash, with varying levels of magnesium oxide, soda, potash and silicates as trace elements.⁸⁸ The comparative lack of systematic exploration of possible production sites, the ephemeral nature of re-cyclable production debris, and the complexity of the analytical evidence has made it difficult to demonstrate the processes of production in a transparent way. Many mass-produced core-formed items, the commonest type of early vessel, may well have been made on the Levantine coast, though workshops somewhere in the eastern Aegean are still postulated.⁸⁹ Ingots of raw glass were exported from Egypt and the Syro-Palestinian coast for re-use in local workshops. In the 3rd century BC, beads made from such ingots have been documented as far afield as Provence and Britain, as well as Delos.⁹⁰ More ambitious items, including vessels and inlays, could either have been made from re-melted and coloured ingot glass, or composed independently from different constituents as was probably the case on Rhodos.⁹¹ Either process requires extensive skills and knowledge that can only have been acquired directly from master craftsmen or through a combination of mentoring and experimentation. A series of physico-chemical analyses is currently in progress to try and determine the scope and modali-

ties of glass production.⁹² One of the outstanding issues concerns the volume of glass production. The huge quantities of surviving production debris from Roman Imperial times at sites such as the Wadi Natrun make it difficult to detect the rate at which large-scale production evolved. Colourless glass and mould-made vessels, sometimes in complex forms, constitute radical technical developments that emerged during the first half of the first millennium BC.⁹³ Ingots from shipwrecks indicate that between the 3rd and 1st centuries BC the scale of production was considerable, if an individual shipload might contain several hundred kilograms of raw glass.⁹⁴

There was also at least one other source of natron in the ancient East Mediterranean, in Lake Chalastra in eastern Macedonia. This may well be the marshy area of modern Pikrolimni, identified with ancient Moryllos.⁹⁵ If this were the case, then we may well have an independent tradition of glass-making in the region, using local soda in recipes evolved from Aegean, and ultimately Near Eastern sources. Véronique Arveiller-Dulong and Marie-Dominique Nenna believe that eastern craftsmen may have been employed by Macedonian kings to create the ambitious and highly specialised items found in royal and elite burials.⁹⁶ Certainly, the taste for Achaemenid-style products before Alexander the Great's reign is connected with the commissioning of work from outside specialists. What we do not know is whether, and how soon, the techniques and recipes were adopted by local craftsmen.

We do know that glass beads, using a recipe similar to Egyptian ones, that is using a similar soda glass, were being manufactured on the northern shores of the Black Sea from the middle of the 6th century BC if not earlier. The best evidence comes from Jagorlyk, a settlement on the shores of a *liman* south-east of Olbia and the Bug Estuary.⁹⁷ Leaving aside the sources of core-formed vessels, which may have been produced in several Aegean or Levantine centres, moulded vessels from Black Sea sites include Achaemenid shapes,⁹⁸ as well as the gold "sandwich" glass known to have been made on Rhodos as well, it seems, as Alexandria.⁹⁹ Platz-Horster has recently re-stated the case for the local production of several other highly specialised glass vessels, including the amphora (0.596 m high) from the vicinity of Olbia, now in Berlin,¹⁰⁰ as well as the "sandwich" glass bowls, on the grounds that these have no obvious parallel in Alexandria. Kunina has presented a summary of the ancient evidence for glass manufacture in the northern Black Sea area. Much of this dates from the 3rd and 4th centuries AD. But there seems to be growing evidence for the manufacture of complex glass artefacts, whether from imported ingots,¹⁰¹ or from composite materials, in the previous three centuries. Touriaeff noted the very large numbers of Egyptian and Egyptianizing artefacts discovered in and around the Crimean Peninsula, and extending widely over the steppe regions, even as far as Finland, but found particularly in the 4th and 3rd century BC Bosphoran tombs on Mount Mithridates in Kerch (ancient Pantikapaion): "... la partie est de la Crimée et les régions limitrophes sont une véritable mine d'antiquités orientales ...".¹⁰² Of particular interest for this

enquiry is the appearance of faience items that adapt Egyptian designs to native Bosphoran templates, such as the kneeling figures resembling sculpted Scythians.¹⁰³ Local products can be distinguished on technical grounds, as well as design and workmanship, since the colour of the faience is identifiably different from imported Egyptian ones.¹⁰⁴

What are we to conclude from this evidence about contacts between the Black Sea and the Ptolemaic Kingdom? The Pontic regions were linked to the Levant and Egypt by a series of economic networks, based on the demand for commodities and minerals that were not available in the north. The links were maintained by the knowledge of what was available overseas and the perceived benefits that these commodities conferred. Various candidates qualify as potential carriers. The products themselves, the glass vessels, the distinctive blue faience ornaments, and the pungent spices, created the reasons for wanting to know more about the distant regions with which they were connected. For some, the knowledge sought was of a technical kind, directly associated with the manufacture of glass and faience artefacts. For others Egyptian wisdom had wider ramifications, since knowledge about cult and knowledge about technical secrets were indissolubly interconnected. What we would still like to know is where and how the “mentoring” process took place, through which the knowledge and techniques were passed on.

We know little about the articulation of these networks in the 6th and 5th centuries BC, when the manufactured products were technologically restricted. But thereafter the picture began to change, so that by the second half the 4th century the finest products were extremely ambitious, and the number of manufacturing centres is now known to have included Macedonian workshops, as well as active Bosphoran ones, particularly in and around Pantikapaion. Published evidence from the 3rd and 2nd centuries suggests that specialisation continued to develop at key regional centres, including Olbia and Pantikapaion. Glassmaking has traditionally been a technique with closely guarded secrets, passed on within family networks. It is likely that glassmakers were immigrant specialists and even more likely that they were among the votaries of Sarapis and Isis. The co-incidence of glassmaking and of Egyptian cults is especially striking in the Bosphoran Kingdom.¹⁰⁵ The distribution of foreign craftsmen in relation to the pattern of Egyptian cults does seem to offer fruitful possibilities for future research.

Notes

- 1 Skeat 1974, 62-66 = *P.London* 7, 1973, 21st September 254 BC.
- 2 Archibald 2004, 1-2 with references.
- 3 Archibald 2004, 5-12.
- 4 Alexandru Avram sent offprints of two of his recent papers (2003, 2004) in time for me to be able to digest their contents whilst editing my contribution. These latter provide detailed discussion of some of the documents referred to briefly in my own paper. I would like to express my warmest thanks to Alexandru Avram,

whose epigraphic research has added a robust foundation for interpreting the historical context of activities described here. I also want to thank my colleague in Liverpool, John Kenyon Davies, for his comments on an earlier draft. Any errors that persist are entirely my own.

- 5 Grač 1984, 1987 and 1989 (*non vidi*); Vinogradov 1999; Höckmann 1999; Sokolova 2000; Murray 2001.
- 6 Vinogradov & Zolotarev 1999a, 360-365.
- 7 Vinogradov & Zolotarev 1999a, 360.
- 8 Pippidi 1964, 111; *SEG* 24, 1091; *I.Histriae* 5; Dunand 1973, 99-115; Tacheva-Hitova 1983, 15, cat. no. 22; 37-41; Parke 1985, 179; Vinogradov 1999, 373-376, with detailed prosopographical arguments to support Pippidi's dating in the mid 3rd century BC. See, however, the comments of the editors, *SEG* 50, 691, who cite Avram's date for the Histrian dedication in the 2nd century BC (*I.Histriae* 5) and seem inclined to follow this later dating, cf. *ibid.* paragraph 682, 661. See also now Bricault 2001, 48-53, and map p. 49 (XII), who expresses surprise that 3rd century BC graffiti on amphorae from Chersonesos and Kerkinitis, which have been connected with the cult of Isis, antedate by a considerable margin the formal epigraphic confirmation of the established cult, from the 2nd century onwards.
- 9 Tacheva-Hitova 1983, cat. nos. 42-45 with earlier bibliography and pls. XIII-XIV.
- 10 Vinogradov 1999, 284-298.
- 11 Cf. Höckmann 1999, 303-323; Murray 2001.
- 12 Will 2003, I, 234-238.
- 13 This engagement has proved hard to date accurately. It could have occurred near the end of the Chremonidean War, that is, in 261 BC (Heinen 1972, 193-197), or in 255 BC (Hammond & Walbank 1988, 595-599; cf. Hölbl 2001, 44 and n. 60).
- 14 Vinogradov & Zolotarev 1999a, 372-373.
- 15 Sokolova 2000 for a general description of the excavated sanctuary complex; Höckmann 1999 on the graffiti. These are preliminary studies only and full evaluation will have to await systematic publication of the data.
- 16 Pantikapaion basalt portrait head: Hermitage Inv. 3099; Lapis & Matie 1969, 127, cat. no. 143, fig. 90 with bibliography; Touriaeff 1911, 27, fig. 14; Treister 1985, 132 and n. 64; Vinogradov & Zolotarev 1999a, 366, fig. 2. This portrait head, as Treister noted, has been missed out of major catalogues of Ptolemaic sculpture, and is not therefore as well known as the full length statue, also traditionally identified with Arsinoe II, which has recently been re-attributed by Sally-Ann Ashton to Kleopatra VII (Ashton 2001, 114, no. 63 with extensive bibliography, St. Petersburg Inv. 3936; reproduced in Walker & Higgs 2001, 160, no. 160).
- 17 Treister 1985, 126-131.
- 18 Hölbl 2001.
- 19 As illustrated in the "Idris-Bell" papyrus; for mercenaries see Avram 2004, 833, n. 37.
- 20 Will 2003, I, 155-200.
- 21 Bagnall 1976, 80-88, 137-58; Hölbl 2001, 19, 23-24, 28-29, 38, with further references.
- 22 Hölbl 2001, 40-45.
- 23 Frazer 1990, 143, 147-148.
- 24 Roux 1992, 92-230.
- 25 Frazer 1990, 143-144, 224-225, 232-235.

- 26 Roux 1992, 231-235; contra Fraser 1960, 48-50, no. 10.
- 27 Frazer 1990, 179-189; 230-231; Roux 1992, 100, 109; cf. also Thompson 1982.
- 28 Will 2003, I, 234-241.
- 29 Polyb. 5.34.7-8; Bagnall 1976, 159-75; *OGIS* 54, the Adoulis inscription.
- 30 Gauthier 1979, 80, n. 10; 88-89.
- 31 Gauthier 1979.
- 32 Bagnall 1976, 159-162 for inscriptions; Gauthier 1979, 83; Vinogradov 1999, 377; Hölbl 2001, 49-50.
- 33 According to the Suda, Nymphis, whose history of Herakleia formed Memnon's main source, took his story down as far as 247/6, the year of Euergetes' accession (*FGrH* 434: Memnon T1). Avram 2003, 1185-1187; Avram 2004, 829, n. 6.
- 34 *FGrH* 434: Memnon F17; Bringmann & von Steuben 1995, cat. no. 243 [L].
- 35 Vinogradov 1999, 283-301; Vinogradov & Zolotarev 1999a, 377-378; Avram 2003, 1188-1203, 1205-1207; on the "Monopoly War"; Avram 2004, 828-830.
- 36 *FGrH* 434: Memnon F13; Ager 1996, 108, no. 34; Pippidi 1962; Avram 2001, 607-632.
- 37 Avram 2003, 1181-1184; 1200-1201.
- 38 Avram 2003.
- 39 *FGrH* 434: Memnon F15; Polyae. *Strat.* 4.16; Avram 2003, 1184-1189, 1201-1202, 1208-1213.
- 40 *IGBulg* 1², 388; Avram 2003, 1190-1193.
- 41 Avram 2003, 1193-1200.
- 42 Avram 2003, 1201-1203 and nn. 53-59; Will 2003, I, 247-248.
- 43 For the temple at Byzantion to the deified Philadelphos: Bringmann & von Steuben 1995, no. 239 [L] (dated 280/79, following Habicht 1970, 116); Vinogradov 1999, 283-290; Vinogradov & Zolotarev 1999a, 376-379 (250s); Will (2003, 147) and Hölbl (2001, 40-41), date the gifts and the cult to 271/70 BC. But see now Avram 2004, 830, 833 (c. 254 BC). Hölbl 2001, 92-98, for the development of the Ptolemaic ruler cult, with 272/71 as the date when the living rulers, the *Theoi Adelphoi*, were joined to Alexander and to the deceased ruling couple, the *Theoi Soteres*.
- 44 Avram 2004, 829-831.
- 45 Mitchell 1993, 13-20; Chaniotis 2005, 220-221, 228, 230, 235-240.
- 46 Will 2003, I, 139-144; cf. Treister 1985, 137-138.
- 47 1970, 116-21.
- 48 Steph.Byz. s.v. Ἀγκυρα, *FGrH* 740: Apollonios of Aphrodisias F14; Mitchell 1993, 20.
- 49 Vinogradov 1999, 290; Vinogradov & Zolotarev 1999a, 377-378; Will 2003, I, 200-206, on the background of ruler cults.
- 50 Hölbl 2001, 96, 101 and n. 139.
- 51 Hölbl 2001, 50 and n. 81, 96; cf. *SEG* 49, 1068 [Maroneia] and 1207 [Crete].
- 52 Hölbl 2001, 92-98.
- 53 Bricault 2000a, 190-191, 198-209; see now Bricault 2001, 28-35, and map p. 29 (VIII) on the Black Sea evidence, with extensive bibliography, p. 35 and map XIII for the distribution in western Anatolia.
- 54 Bricault 2001, 209 and map p. 208.
- 55 Kobylina 1976, 34-52, 53-65; Šurgaya 1979, 453-455.
- 56 Bricault 2000a, 201.
- 57 Tacheva-Hitova 1983, 67.
- 58 Malaise 2004, 480.

- 59 Tacheva-Hitova 1983, 13, no. 17.
 60 Badal'janc 1999; Lund 1999.
 61 Lund 1999, 201 and n. 49 with further references.
 62 Lawall 2005a, 222.
 63 Touriaeff 1911; Toncheva 1972; Šurgaya 1979, 454-455; Treister 1985, 130-137; Lungu 1999-2000; Lungu & Trohani 2000; Archibald 2004, 11 with further references.
 64 1985, 126-31; cf. Kunina 1997, cat. no. 69.
 65 Archibald 2004, 5-12.
 66 Treister 1985, 131, referring to the royal images enjoined by the Canopus Decree (OGIS 56): Hölbl 2001, 105-11; cf. Walker & Higgs 2001, cat. nos. 59-66, 156-158, 174-176, seal impressions; nos. 32, 33, 35, 38-45, 153, 195, rings.
 67 See the contributions to Van t'Dack, van Dessel & van Gucht 1983.
 68 Touriaeff 1911, 21-22; Malaise 2004, 484, 5-6.
 69 Mertens 1995, xi-clxix; Wilson 2002, especially 319, referring to Macedonian/Thracian metallurgical knowledge transferred to Egypt.
 70 Malaise 2000, 14.
 71 Yoyotte 1998, especially 218.
 72 Bringmann & von Steuben 1995, 278-9, cat. no. 244 [L]; G. Clerc & J. Leclant, *LIMC* VII.I (1994) 666-667 with bibl.; Fraser 1972, I, 246; II, 83 and n. 190; in general Stambaugh 1972; Dunand 1973; Takács 1995.
 73 Amyx 1958, 213.
 74 E.g. Kunina 1997, cat. nos. 2-5, 7, 9-16; Minchev 1980.
 75 Toncheva 1972; Tacheva-Hitova 1983, 57 and n. 133; Archibald 1998, 165, 173 for examples from central Thrace; Tsetskhladze 1999, 53, 64-65; Pichvnari: Hayes 1975, 5, 15; Vickers & Kakhidze 2004, 211-212, 222.
 76 Van Alfen 2002, 33-67 with refs.; 257-259 on alabaster; Reger 2005a on perfumes.
 77 Cf. Foxhall 1998, 303.
 78 Vokotopoulou 1990, 62-64, nos. 16-41; nos. 37-41 gilded.
 79 Vokotopoulou 1990, 26-27: all of very white stone; cf. also Vergina TII, Andronikos 1984, 77 figs. 37-38.
 80 Ignatiadou 2002a.
 81 Fragments of glass and ivory: Vokotopoulou 1990, pl. 9a, especially the sheet and fragments of eye and leaf pattern, pl. 9γ, δ.
 82 Vokotopoulou 1990, pls. 18-20.
 83 Vokotopoulou 1990, pls. 51-53, especially pls. 51στ and 52γ; ill. fig. 43, p. 83.
 84 Ignatiadou 2002a, 20 and n. 34.
 85 Henderson 2000, chapter 3: 24-42; 52-60.
 86 Nenna, Picon, Thilion-Merle & Vichy 2005.
 87 Briant & Descat 1998, 80.
 88 Henderson 2000, 57-60.
 89 Stern 1999, 37; Van Alfen 2002, 243-252 with bibliography.
 90 Nenna 1998, 695-696.
 91 Weinberg 1969 and 1983; Rehren, Spencer & Triantaphyllidis 2005.
 92 Various contributions in Cool 2005.
 93 Schiering 1991, 14, 35, 138.
 94 Nenna 1998, 700.
 95 Ignatiadou 2002b; Ignatiadou, Dotsika, Kouras & Maniatis 2005.

- 96 Arveiller-Dulong & Nenna 2000, 17; cf. Nenna 1998, 696.
- 97 Ostroverchov 1974; 1981.
- 98 Kunina 1997, cat. no. 47; Simonenko 2003.
- 99 Kunina 1997, cat. nos. 48 and 49; Weinberg 1969; 1983.
- 100 Platz-Horster 2002, 95, 102-103.
- 101 Platz-Horster 2002, 103.
- 102 Touriaeff 1911, 24.
- 103 Touriaeff 1911, 30, figs. 22 and 23.
- 104 Touriaeff 1911, 30-31.
- 105 Kobylina 1976, 34-52; 53; and maps.

Traders and Travelers in the Black and Aegean Seas

Gary Reger

Introduction

Sometime in the first half of the 3rd century BC a certain Theon son of Potamon died at Kallatis on the west coast of the Black Sea. On his funerary inscription, which appears on a simple *stèle* with a niche cut in the front but without relief, he is identified as a citizen of Alexandria. On the basis of this ethnic Theon has been seen frequently as an Alexandrian trader who had accompanied his cargo to its – and his – final destination in the Black Sea.¹

Trade between Ptolemaic Egypt and the Black Sea region – and especially Olbia and the Kingdom of Bosphoros – has been invoked frequently as an explanation for the presence of persons from Egypt in the Pontic region and persons from Pontic cities in Egypt. It has also been used to account for the popularity and spread of worship of the “Egyptian” deities Isis and Sarapis in the Pontos. There can be no doubt of the presence of goods originating from Egypt in Pontic cities. Glass and faience work from Egypt found in excavations spread into inland Scythian burials along important watercourses (see also Archibald in this volume). Finger rings of Ptolemaic manufacture with portrait heads have been found in Pantikapaion and other cities, and Hadra vases of the type used in Egypt for the interment of ashes of the dead were also used in the cemeteries of Olbia, although it has been suggested that these are local imitations, not imports.² Still other evidence, mostly of a documentary nature – some of which I review below – has been added to the mix to produce the common view of close, long-standing trade relations between the two kingdoms – mediated, it must immediately be added, in many cases by intermediaries, most notably Rhodos and, in some views, Delos.

Recently, Zofia H. Archibald has questioned the value of such finds as evidence for direct trade between Pontic cities and Egypt. “Diplomatic relations are often cemented by the exchange of gifts”, she writes, and “exotic products may easily have traveled with ships carrying goods from many sources and cannot be used in isolation as evidence of direct contacts with Egypt”.³ These cautionary remarks are well-taken. The complexities of patterns of trade in the Hellenistic world – the frequency of cabotage, the adventitious nature of the acquisition and sale of goods, the problems of transmittal of reliable

information about market conditions, the interventions of states and *poleis* into economic activity, and many other factors – have been emphasized in recent years. New ways of thinking about trade and the economy in general have been the subject of vibrant discussion.⁴ I would suggest that connected with this set of problems is a larger body of questions about the meaning of travel – the motivations and implications of the movement of individuals appearing so prominently in many kinds of evidence, from humble tombstones like Theon's to the foundation of whole cities and the movement of whole populations by Hellenistic kings. Many years ago, in what remains a stimulating essay on the Hellenistic world, William Woodthorpe Tarn argued precisely that increased freedom of movement was a hallmark of the Hellenistic world. I would like to explore in this (much less ambitious) essay some of the implications of travel in the context of our understanding of the relationship between travel and trade.

Pontic nuts

Two Egyptian papyri dated to 259 BC record import duties paid at Pelousion in Egypt (one of many entry points for goods brought into the kingdom from outside) on a wide variety of goods transported on two ships. Among them is listed one Chian amphora (holding slightly more than 10 *choinikes*) of "Pontic nuts", *karya pontika*. This entry has been cited often as evidence not only for Pontic-Egyptian trade in general, but also for the structure of that trade. For the ships themselves, and most of the goods they carried, had originated in Syria. P.M. Fraser concluded that "these items from the Black Sea [he refers here to the nuts and to dried fish] were, like the Syrian [goods], reshipped at Rhodes for Alexandria".⁵ Thus the pivotal role of Rhodos and its harbors in interchange between Egypt and the Black Sea.

"Pontic" nuts have generally been identified as hazelnuts.⁶ They appear in our sources under different names. The medical writer Dioskorides reports that they are called by some *leptokarya*, "light nuts".⁷ This identification resonates with a most important discussion of these nuts preserved in the *Geoponika*, a Byzantine compilation of agricultural writers whose sources and history have been subject to considerable discussion.⁸ In a wry comment attributed to Demokritos, the *Geoponika* observes that because agricultural writers are the wisest of men they do not necessarily call nuts by the names to which lay persons are accustomed. He gives as examples three types of nut: the *karyon basilikon*, which ordinary people call the simple "nut" (i.e. a walnut); the *Dios balanos* or *kastanon*, the chestnut; and the *karyon pontikon*, identical to the *leptokaryon*.⁹ Theophrastos also gives us another, more geographically specific name for these nuts – he calls them *karya herakleotike*, the nut from Herakleia. That is to say, hazelnuts were not just a "Pontic" product but originated in, or at least were associated with, Herakleia Pontike.

Theophrastos says nothing about their origin, but he does have a lot to say about their characteristics. He notes that the plant is not a tree but more like a bush, lacking major thick branches; that it can easily be domesticated; that it tolerates winter well, growing in the mountains and yielding a crop there. The yield is best, he advises, in places with abundant water. Other sources indicate that hazelnuts were popular in and adapted to other parts of the Mediterranean world; indeed, an alternate name in Latin, *nuces abellanae*, reflects a view that they originated in Campania. An Athenian inscription establishing regulations in the Agora respecting weights and measures for the sale of various goods specifically mentions *herakleotika karya* among fruits and nuts to which a provision of the law applies.¹⁰

In other words, at least by the date at which Theophrastos was writing his *Historia plantarum*, hazelnuts were already well-known enough and widespread enough that he felt no need to discuss further the origin and significance of their name; the less specific designation as “Pontic nuts” may perhaps reflect a further corruption of memory of origin – somewhere up there around the Black Sea. But this need not mean at all that the Pontic nuts in the shipment from Syria originated in the Pontic region, no more than that all “dried Persian fruits” (i.e. peaches) must have been grown in Persia, or that all *damaskena* (plums) in Damascus. It is perfectly possible for the “Pontic nuts” of the papyri to have been grown very far away from the Black Sea, perhaps even in Syria, or on the Kilikian coast which was famous for its almonds. It is not even necessary, on the basis of the presence of these nuts in the consignment, to presuppose transshipment at Rhodos.¹¹

Perhaps we may push speculation a bit further on this point. The person for whom the consignment of goods had been shipped to Egypt was Apollonios, the enormously powerful *dioiketes* in the service of King Ptolemaios II. His agent in this business was Zenon of Kaunos, who worked for him for many years as his most trusted aide. Ptolemaios had given Apollonios an estate of 10,000 *arourai* (slightly more than 2,500 ha) in the Fayum not long before, and a papyrus dated to December 259 – a few months after the shipment in question – records plans for the development of the estate. It is clear that the intention was to experiment with the introduction of new varieties of plants, a project which had occupied Ptolemaios II himself in other contexts, and for which we have further papyrological evidence. Some of the plants were poorly adapted to arid conditions and required a good deal of irrigation, and indeed the plan for the estate shows the attention devoted to putting in place a massive irrigation system (of course such irrigation projects were a *sine qua non* of any agricultural enterprise in Egypt). One may wonder then whether the “Pontic nuts” which Zenon imported into Egypt may have been intended not for consumption but as part of an experiment in raising this water-loving, cold-tolerant shrub in the desert conditions of the Fayum.¹²

Contact between the Bosporan Kingdom and Ptolemaic Egypt

Nuts aside, other evidence for contact between Egypt and the Pontic region remains. Given that trade in nuts may be regarded now as a bit problematic, perhaps we can also ask whether any other, non-trade motivations may help explain the interests at work. The Bosporan Kingdom famously dispatched an embassy from King Pairisades II to Ptolemaios II in late summer 254 BC.¹³ The Spartokids who ruled the Bosporan Kingdom could trace their ancestry back well into the Classical period. They had had relations with Athens, one of the great powers of Greece in the 5th and 4th centuries. But the configuration of political power had changed dramatically with the conquests of Alexander the Great, his sudden death at a young age, and the scramble to seize the corpse of his empire that dominated the Aegean basin for a good half-century after his death. I would suggest that, in part, some of the evidence of contact between the Bosporan Kingdom and the Ptolemies may fit in this context.

In inscriptions erected in the Bosporan Kingdom itself, the earlier heads of the family – Leukon I (389/8-349/8) and Pairisades I (349/8-311/10)¹⁴ – styled themselves (with variations) typically as *archon* of the Bosporos and Theodosia and *basileus* of the Sindoi and various other groups which changed from inscription to inscription (see also Moreno in this volume).¹⁵ Inscriptions made under Spartokos III (304/3-284/3) deployed analogous formulae except in one fragmentary text where he was called simply “Spartokos son of Eumelos, king” (CIRB 19). This new formula recurred in inscriptions erected under Pairisades II (284/3-c. 245) with one notable exception that reverted to the old formula using *archon*; this text, however, recorded a dedication by one of Pairisades’ sons (CIRB 20-24, 25). Moreover, it is not just the formula that changes but also its placement in the text. In the earlier inscriptions the formula came at the end, whereas the new formula appeared first. Both these features – that is, the new formula itself and its placement – bear a striking resemblance to the ways in which dating formulae are deployed on inscriptions made under Hellenistic kings, especially the Seleukids and Ptolemies. As is well known, the successors of Alexander did not assume the royal title until 306 BC. Spartokos III began his reign but two years later, and he is the first – though inconsistently – under whom the new style appears. I wonder whether perhaps the change may be attributed to his attempting to situate himself in the structure of kingdoms emerging from the wreckage of Alexander’s empire. The Bosporan Kingdom had existed long before Alexander was born, and its rulers had a good claim to considerably more legitimacy than the upstart generals now styling themselves as “kings”. The Spartokids had already been called kings of neighboring peoples and were even recognized as such outside the Black Sea; it seems perfectly reasonable that they should now seek to place themselves on an even footing with the new kings of the Seleukid, Ptolemaic, and other kingdoms.

There is another way in which the Spartokids showed themselves as “real kings” in the Hellenistic sense, and that was by the patronage of major Greek sanctuaries. An account of offerings from the sanctuary of Apollon on Delos records the dedication by – or surely better, on behalf of – Pairisades II of a *phiale*, one of the commonest types of such dedications. It appears first in 250 BC, unfortunately without further details (such as the date at which the dedication was originally offered).¹⁶ It is possible that the dedication was offered by the ambassadors he had sent to Egypt four years earlier. There is however another possibility, which should also be considered. Later entries recording Pairisades’ *phiale* also mention three other *phialai* dedicated by the Chersonesitai in 276 BC.¹⁷ Chersonesos was of course part of the Bosporan realm and had ties to Delos as one of its mother cities.¹⁸ It is possible that a delegation from that town had sojourned in Delos in 277 or 276 and dedicated *phialai* both on their own and their king’s behalf. Similar attention to great pan-Hellenic sanctuaries recurs under Pairisades III and his wife queen Kamasarye. The Delphians honored them because of their piety toward the god and their *philanthropeia* toward Delphians who came to them.¹⁹ In 178/7 BC, at Didyma near Miletos, Kamasarye dedicated a gold object (the name is not well read) weighing 187.5 *chrysoi*. The following year her husband topped her with a 200-*chrysoi phiale*.²⁰ These dedications are in line with those offered by Hellenistic kings from all over the Hellenistic world to these major sanctuaries. They are part and parcel of the representation of piety and claim to close association with and protection by major figures in the Greek pantheon, especially Apollon (who was, as Apollon Iatros, a major cult figure in the Bosporan Kingdom, too).

Pairisades III and Kamasarye draw attention for another reason. The dedication at Delphi makes it clear that they were brother and sister, children of the previous king Spartokos V (ca. 200-ca. 180 BC). Such brother-sister marriages had been standard among the Ptolemies (but not other Hellenistic kings) for a long time, and it is difficult not to suspect that the practice in the Bosporan Kingdom resulted from intentional imitation of Ptolemaic practice. When Pairisades III died about 150 BC, his son Pairisades IV succeeded in joint rulership with his mother, who retained the title of queen.²¹ Mother and son adopted in addition the titles *Philoteknos* and *Philometer*. These titles cannot but recall Ptolemaios VI, whose normal epithet was *Philometer*, and who ruled 181-145 BC – precisely the period of Pairisades III and the beginning of the reign of Pairisades IV.

These Ptolemaic echoes in the far Black Sea are, perhaps, not accidental. There are a number of ways in which the two kingdoms might be seen as parallel. Both were major producers and exporters of wheat. Both were ruled by kings whose legitimacy, unlike that of most of their contemporaries, could be traced back to before 306, indeed before Alexander – the Spartokids back into the early 5th century, the Ptolemies, as legitimate heirs of the pharaohs, into misty antiquity. Both kingdoms lay “on the edge” of the Hellenistic world, indeed at opposite ends of that world. Both faced “barbarian” threats from

beyond their borders. It is therefore perhaps no coincidence that Spartokids seeking to legitimate their authority as kings might choose models from the Ptolemaic realm as well as following patterns of behavior expected generally of all Hellenistic monarchs.

Into such an analysis would fit nicely, it seems to me, Archibald's recent treatment of Ptolemaic goods found in the northern Black Sea region. That is to say, such goods – faience, glass, and so on – while surely arriving as “trade goods” (however that may have happened structurally) may also have borne strong and important symbolic meaning as carriers of a Ptolemaic aura and markers of Ptolemaic ties. In such an ideological environment it is easy to imagine how the arrival of the trireme *Isis* at Nymphaion provoked excitement enough to enshrine the visit in a vivid graffito in the shrine there of Aphrodite and Apollon. It is also easy to see the interest in a statue of Arsinoe II, the powerful Ptolemaic queen who was worshipped all over the Aegean basin.²²

In none of this do I mean to disparage or downplay the importance of trade to the Pontos. Polybios' testimony alone is enough to assure us that trade was a very important reason for people to travel, showing up in places far from home. But, as with Theon, trade alone is not necessarily the only, or even the primary, reason why people (or goods) traveled, as I hope my discussion of alternative explanations for links between the Bosporan and Ptolemaic Kingdoms suggests. To pursue this question further from a different angle I would like to turn attention to some people from the Black Sea, whom we find active in the Aegean basin, and in particular at two places long seen as centers of trade and commerce: Delos and Rhodos.

Pontic citizens at Delos and Rhodos

There are a number of proxeny decrees from Delos for Pontic citizens. Probably the earliest was awarded after the mid 3rd century to Koiranos of Pantikapaion.²³ He was declared *proxenos* and *euergetes* for his services to the Delians who came to him, and was granted freedom from taxes, the right to own property, *prohedria*, access to the *boule* and *demos* first after sacred matters, and all the privileges granted to other *proxenoi*. Koiranos' name bears some interest because in an inscription from Pantikapaion itself, a son of Koiranos (whose name is lost) makes a dedication to Artemis Ephesia on his daughter's behalf. That inscription belongs under Pairisades I, and so well before the Delian proxeny decree, but the name is very unusual at Pantikapaion – no others appear in *CIRB* and it may be that we are seeing members of the same, prominent family.

Two decrees honor citizens from Olbia.²⁴ The first, which is dated to about the start of the 2nd century BC, honors Posideos son of Dionysios with honors like those enjoyed by Koiranos. The name Posideos recurs in a series of inscriptions from Olbia and Pantikapaion, in which Posideos son of Posideos makes dedications to Zeus Atabyrios, Athena Lindia, Rhodos, Aphrodite Eu-

ploia, and Achilleus “of the island”.²⁵ The Tenedians passed a proxeny decree in his favor (assuming we accept the restoration of the name in *IOSPE I*², 78) and the Koans one for a *Posideos[- -]ou*, usually taken to be the same person, but possibly the man honored by Delos.²⁶ The prominence of Posideos son of Posideos in Olbia and Pantikapaion affairs is easy to see from his achievements – among other things he defeated pirates – so that clearly he enjoyed high standing. It would be very interesting to know whether he was the son of the man honored by the Delians.

The second decree from Delos for a citizen of Olbia honored one Diodoros. The honors are standard. For us the most interesting question is the name of Diodoros’ father, which was read originally on the stone as Arotou but has been corrected to Agrotou. This is of course the name of the second husband queen Kamasayre married after the death of her first husband the king around 150 BC. The Delian decree was put to a vote by the same person who put another decree to the vote in 180 or 176 BC, so it is possible that we are looking here at members of the same family.²⁷

These connections are speculative and require further research to see whether they are borne out. At the very least, however, they raise the possibility that the Delians were honoring these people from Pontic cities not as traders or merchants, but for reasons linked to high politics, piety, and display flowing from intimate contacts with the ruling family; in this they would fit perfectly with what we know about many awards of proxenies throughout the Hellenistic world.²⁸

At the same time there is evidence for Pontic persons of humbler origins on Delos. The comic actor Diodoros of Sinope performed twice that we know of for Apollon, in 284 and 280 BC. Another citizen of Sinope, whose name has been lost, contracted in 179 BC to repair the “house belonging to Isis”. He was paid a total of slightly more than 141 drachmas for the work, which was completed in less than a year. A citizen of Apollonia served as a guarantor for a Naxian’s rental of a house belonging to one of the Delian tribes in 157/6 BC.²⁹

Aside from the dedications of Pairisades II and the Chersonesitai to Apollon on Delos there is also a very interesting cluster of dedications from Pontic persons to Isis and Sarapis. Around the start of the 2nd century one Glaukos of Kallatis with his wife Angellis and their son Paramonos made a dedication to Sarapis, Isis, and Anoubis. The son shows up almost certainly in another text, apparently now the father of one Demetrios, dedicating to Sarapis and Isis “by order of the god”. The absence in this latter inscription of an ethnic may mean that Paramonos, or rather Demetrios, now enjoyed Delian citizenship. Angellis’ activities can be traced further. Inventories from the Isideion, the treasury of Isis, beginning in 157/6 BC, show that she gave the goddess a “relief plaque on a board”, *typion epi sanidiou*. A citizen of Apollonia dedicated a *phiale* with a base with 14 “fingers” stored also in the Isideion in or sometime before 140/39.³⁰

The popularity of the cult of Isis and Sarapis in the Black Sea is well known.³¹ It has often been tied to the links with the Ptolemaic Kingdom. For example, the cult of Sarapis at Sinope began in thanksgiving for the god's help in securing grain from Egypt during a famine in 280-279 BC.³² However, we must be careful here. The cult of Isis began spreading into the Aegean world well before the Ptolemies; she had a sanctuary at the Peiraieus in Athens by 333 BC.³³ And while it is true that places in the Aegean world where the Ptolemies exercised political authority or influence typically show evidence of this worship, these gods were enormously popular all over the eastern Mediterranean, and indeed in Italy and at Rome. Something of the appeal of the goddess comes out clearly enough in Apuleius' account of his salvation as her devotee, and I cannot but suppose that at least to some degree personal religious feeling contributed to her popularity and the spread of her cult.

At Delos, where we know a fair amount about the origins of the cult of Sarapis thanks to an inscription, worship of the god began as a private cult. Apollonios, priest from Memphis, moved to Delos around 280 BC, bringing along a small statue of the god. He kept the deity in a rented room. Eventually Apollonios' grandson (who was also called Apollonios), moved by the god's admonitions in a dream, bought some land and built a small temple. A lawsuit was brought because Apollonios had failed to secure necessary permission for the construction, but in the end he and Sarapis prevailed. Only subsequently did the Delian state become involved by granting the cult official recognition, which issued ultimately in the establishment of a major sanctuary with temples, storerooms, and a bureaucracy.³⁴ Such was not always the case. When worship of Sarapis was introduced at Istros, the *polis* itself sent an embassy to Kalchedon on the Straits to fetch an oracle.³⁵

Sometime in the late 2nd or early 1st century BC a disaster led to the deaths on Delos of twenty slaves owned by a single man, Protarchos. Several of these slaves originated in the Black Sea. Two were named Isidoros, "gift of Isis", and one, a woman from Odessos, Kalliope. A statue of this muse figured prominently in the Sarapeion at Memphis. While we do not know for certain the identity of the owner of the slaves, it is a striking coincidence that a certain Protarchos of Alexandria is recorded as a donor to Sarapis on Delos in 146/5 BC.³⁶

The mix of activities on Delos shows a bewildering complex of reasons bringing people there from the Pontos. Visitors range from high-ranking men almost certainly associated with the court of the Bosporan king on official business of piety to actors, slaves, and contractors. Obviously some of this movement was inspired by hope of economic gain, including trade; but what strikes me most about it all is the variety of motivations that seem intimated and the possibility that a mixture of motives might lie behind the presence of any given individual.

Likewise at Rhodos we see citizens of Pontic cities present for a variety of reasons. It is hard to know what brought there persons known only through

their deaths, like Ploutida of Odessos (?), the Sinopean woman Athenais, or Erasinos of Kallatis. The situation is different with Klerias of Sinope, a sculptor responsible for a dedication to Athena Lindia and Zeus Polieus in about 260 BC, and with Euandros son of Dionysios, also from Sinope, whose name appears as sculptor on two dedications.³⁷ People from the Black Sea on lists of public contributors include a certain Eubios from Amastris who apparently received *epidamia* from the Rhodians.³⁸ Of particular interest is Sindes of Sinope, whose name is recorded in the crew manifest of a Rhodian ship. The crew included other foreigners, two each from nearby Karian Bargyilia and Knidos and one from Astypalaia (surely the island, not the synonymous town on Kos).³⁹ Among the epitaphs from Pantikapaion back in the Black Sea is one belonging to Drosanis the Paphlagonian, who “fought the Maiotai”. That he was by no means the only outsider to find employment as a mercenary is proven by another inscription published some years ago. This text, from Phanagoreia dating to 88/7 BC and inscribed under Mithridates VI, bestows citizenship and other privileges, including exemption from taxes and liturgies, on foreign soldiers who had served sufficient years and had given good service.⁴⁰

In this context, it is perhaps worth mentioning an inscription from Kolophon honoring Pyrrhias son of Metrodoros from Sinope. Pyrrhias had settled at Kolophon as a *metoikos* and was eventually awarded citizenship. He had provided many services to the *demos*, paid his taxes (*eisphorai*) with enthusiasm, performed liturgies, and served in the military on both land and sea, earning the praise of his commanding officers. The award of citizenship included explicitly the right to own property, which clearly he had not enjoyed as a metic. Pyrrhias had obviously lived many years in Kolophon and felt genuine devotion to the city. It is too bad – but absolutely typical – that the decree in his honor tells us nothing about how he made his living, thanks to which he could sustain the costs of his liturgies and pay enthusiastically his taxes. Pyrrhias had been successful, whatever he did; perhaps indeed it was economic motives that had brought him originally to Kolophon.⁴¹

But let me come back to trade by way of one final inscription, this one from Histiaia on Euboa. During a time of great danger to the city – the circumstances are not detailed – the city of Sinope came to its aid with a gift of one talent (6,000 drachmas). The Sinopeans were moved to help by the pre-existing friendship, *philia*, and brotherhood between the two cities. In gratitude the Histiaians, “because the *polis* is well disposed not only to its neighbors but also to the Sinopeans, friends and brothers from old times”, granted *asphaleia* and *asylia* to any Sinopeans who came to Histiaia, whether into the *polis* or the *emporion*.⁴² That last word brings us immediately back into the world of trade and commerce. The Sinopeans’ generosity was rewarded by privileges whose value, while not confined by any means to the commercial sphere, was certainly recognized as facilitating in quite specific ways the commercial interests of its citizens.

This text reminds us again, if we need reminding, of the complexity of the world we are looking at. The Sinopeans helped the Histiaians with money owing to the appeal of their relationship. Such terms of intercity relationship were not empty rhetoric but rested on real convictions about blood ties, whether grounded in myths or more recent historical events. An analogous appeal is known to the Xanthians in Lykia from Kytenion in Doris in Greece. These appeals could also involve states we tend typically to think about in terms of commercial interests, such as the enormous loan of 100 talents by the Rhodians to Argos, exactly again in response to a claim to blood relationship.⁴³ The decree of the Histiaians, with its sly mention of the *emporion*, reminds us that the lure of profit need never be entirely absent; but neither need it be the sole and single motivation for the activities of the people who have left their traces in the Pontic and Aegean Seas.

I do not mean by any of this discussion to minimize the role of trade and commerce for the Pontic cities and their Aegean partners. The evidence to support such a view is abundant, ranging from the 4th century speeches of Demosthenes about the export of Pontic grain to Athens to the Olbian proxeny decrees of the 4th and 3rd centuries that, read next to the famous Olbian coinage law, certainly sound intended to facilitate commercial activity for certain privileged persons.⁴⁴ And, of course, there are thousands and thousands of amphora handles that attest to the regular interchange of certain goods between the Aegean and Pontic Seas.⁴⁵ My aim here has been only to broaden our sense of what travel may have meant and to show that our evidence for human movement need not always call forth a commercial explanation. Motivations of ideology, self-representation, politics, religion, "career" (for men serving as mercenaries), may all have played their part in determining where people went, when, why, and what kind of traces they left of their passage.

Perhaps I may be permitted to end with a few observations on another traveler, of later date and with different motivations. Arrian, best known to us for his history of the campaigns of Alexander, served as governor of the Roman province of Kappadokia. During his first year in office, 131/2 AD, he undertook a tour of inspection of the Black Sea. His account in Greek (as opposed to his lost official report in Latin) for the emperor Hadrian offers some insights into the multiplicity of motives and interests that drove him.⁴⁶ His fundamental interest was, of course, military – he undertook inspections of garrisons he visited, drilling troops, examining their gear, checking on stocks of grain and weaponry. But he also kept his ears open to political intelligence, relaying to the emperor his impression of the loyalty of local kings. He described travel routes, weather, sea conditions, and harbor facilities – interests which earned his report the title *Periplous*. And he recorded his observations about interesting sights and marvels, including a lengthy description of White Island and its temple of Achilleus.⁴⁷ All in all, Arrian's observations fall into a variety of categories and correspond to a variety of

reasons to travel. Some overlap with motivations explored above. In any case, his report offers a refreshingly immediate insight into the impact of travel on one particular person, and the complexity of the ways those impacts may play out.

Notes

- 1 *I. Callatis*, 155 with Avram's commentary; Rostovtzeff 1941, 1641-1645; Fraser 1972, 1.171-172, 2.291, n. 312. For an excellent overview of the entire Black Sea region as a political, economic, and cultural unity, see the first chapter of Vinogradov 1997b, 1-74 (originally published in 1987).
- 2 Parlasca 1955, 148-149. For a faience vase at Istros, see Alexandrescu 1988. On Istros, see Avram 2003; Hansen & Nielsen 2004, 932-933, no. 685.
- 3 Archibald 2004, 11. See also Archibald in this volume.
- 4 Horden & Purcell 2000, *passim*. I have reviewed some of these factors in recent publications: Reger 2005b, 2007.
- 5 *P. Cair. Zen.* 59012.46 and 59013.24. Fraser 1972, 172, but see p. 150, where he argues that the Pontic nuts "were normally acquired in Syria and re-exported thence to Egypt".
- 6 There are several species of *Corylus*; for a discussion, see Whitcher 1999, *non vidi*.
- 7 Dioskour. *De mat. med.* 1.25.3. I have used the edition of Max Wellmann.
- 8 For a recent brief overview, Christmann 1998; the starting point remains Oder 1890, 1893.
- 9 *Geopon.* 10.73.1-2. Oribasios (*Syn.* 2.58.4) calls them *leukokarya*, "white nuts". This name may derive from Theophrastos' observation (*HP* 3.15.2) that domesticated hazelnuts are whiter, *ekleukoteron*, than the wild variety. See Grant 1997, 185.
- 10 Theophr. *HP* 3.15.1-2, see also 3.3.8, 3.7.3, and *Caus. plan.* 4.2.1; Plin. *HN* 15.88; Isid. *Etym.* 17.7.24, and other sources cited by Grant 1997, 185-186; *IG* II², 1013.21.
- 11 By which I mean supposing that the ships had begun their journey somewhere in Syria like Laodikeia, coasted along the south coast of Asia Minor, stopped at Rhodos to pick up additional goods including the Pontic nuts (shipped, on this reconstruction, south from the Black Sea along the west coast of Asia Minor to Rhodos), before undertaking the last leg of the journey from Rhodos to Alexandria – this last was a very common route; see Zimmermann 1992.
- 12 On Ptolemaic agricultural expansion in the Fayum, see Manning 2003, 99-125.
- 13 *P. Lond* 1988 (*SB* 7263); see Fraser 1972, 2.290-291 n. 311: "The Bosporan kings had no direct political interests in Egypt, and Paerisades' envoys, who were sent by Philadelphus on a sight-seeing tour, were probably on a commercial mission", and Skeat 1974, 63: "The reasons for the mission of Paerisades are unknown, although it has been conjectured that some form of economic cooperation between the two greatest grain-producing areas of the Near East may have been involved".
- 14 For the dates see Hind 1994a, 495-506.
- 15 *CIRB* 6, 8, 37, 1037-1038, 1111; 9, 113, 972, 1014.
- 16 *IG* XI 2, 287B126.
- 17 *ID* 298A95-96.
- 18 Vinogradov & Zolotarev 1999b; Zolotarev 2003; Hansen & Nielsen 2004, 941-944, no. 695.
- 19 *Syll.*³ 439.

- 20 *I. Didyma* 463.29-31 and 464.
- 21 She remarried a certain Agrotos, whose title was evidently “husband of the queen”: *CIRB* 75.7-8.
- 22 For the *Isis*, see Grač 1984, esp. fig. 2 and English abstract at p. 88. On *Nymphaion*, see Sokolova in Grammenos & Petropoulos 2003, II, 759-802; Hansen & Nielsen 2004, 948, no. 704.
- 23 *IG XI* 4, 609. On *Pantikapaion*, see Tolstikov 2003; Hansen & Nielsen 2004, 949-950 no. 705.
- 24 On *Olbia* generally see Vinogradov & Kryzickij 1995; Kryzhytskyy *et al.* 2003; Hansen & Nielsen 2004, 936-940, no. 690.
- 25 *IOSPE I*², 670, 671, *BE* 1965, 272, *IOSPE I*², 168, 672. There is disagreement about the date of the last inscription. Jeanne and Louis Robert (*BE* 1965, 252, followed by Kontorini 1981) placed it in the 2nd century BC with the balance of the dedications while Dubois 1996, 100, n. 23, places it in the 1st century AD, but without giving reasons. See also briefly Pirenne-Delforge 1994, 433-434.
- 26 It would be no problem to restore *Poside[os Dionysi]ou* in *IOSPE I*², 77.4-5.
- 27 The name does not appear in *CIRB* but is in *IOSPE I*², 189 and 201.
- 28 The idea that proxeny decrees typically mark trade relations remains a prominent view; see, for example, Vinogradov 1997b, 29.
- 29 *IG XI*, 105.21 and 107.20; *ID* 442 B229-231; *ID* 1416 B I 79.
- 30 *IG XI*, 4, 1238 and 1256; *ID* 1416 A I 48; *ID* 1439 Cb 6-10. See Hamilton 1999, 228. On these words ending in *-ion*, see Prêtre 1997, 673-677.
- 31 For a recent discussion of a dedication to these deities at Sinope, see Avram 1998-2000 on French 1994, 105-106, 107 (*SEG* 44, 1021).
- 32 Bringmann & von Steuben 1995, 278-279 no. 244.
- 33 *IG II*², 337; see Dow 1937 generally on the Egyptian cults; Bricault 2001, 2. The bibliography on this matter is enormous.
- 34 *IG XI*, 4, 1299.
- 35 *I. Histriae*, 5; *I. Kalchedon*, p. 116b.
- 36 Couilloud 1974, 418; on the statue of *Kalliope*, see Lauer & Picard 1955, *non vidi*, but see Merkelbach 2001, 72; *ID* 1442A59.
- 37 Epitaphs: *IG XII*, 1, 147, Konstantinopoulos 1969, 470, no. 2b, Konstantinopoulos 1963, 20, no. 33; dedications: Morricone 1949-1951, 371-372; *Tit. Cam.* 16.19. It is perhaps worth mentioning the *Dionysios* of Sinope honored by the *Koans* in *I. Cos* ED 20.
- 38 *IG XII*, 1, 11.3 and 12-13.
- 39 Pugliese Carratelli 1955-1956, 159, no. 4 II 20.
- 40 *CIRB* 180; Vinogradov & Wörrle 1992.
- 41 Meritt 1935, 377-379, no. III, line 10.
- 42 *IG XII*, 9, 1186. For recent discussion of the world of the *emporion*, see Bresson 1993; 2000, 74-84, and Hansen 1997.
- 43 See Curty 1995, 10-12, no. 4. For a parallel case, i.e. non-trade related gift of 10,000 jars of wine from *Rhodos* to *Sinope*, see Gabrielsen 1997, 65.
- 44 *Dem.* 20 and 35; Dubois 1996, 28-39, no. 14 (coinage law) and 39-47, nos. 15-21 (proxeny decrees). For an example of wheat from *Egypt* shipped to *Pontic* destinations, see Bringmann & von Steuben 1995, 278, no. 243 (*Memnon*, *FGrH* 434 F 17) and 278-279, no. 244.
- 45 For the suggestion that *Thasian* policies may have been set to facilitate trade with the *Black Sea*, see my overview with references at Reger 2005b, 350-351.

- 46 I have used the text in Baschmakoff 1948, 80-107. On this episode in Arrian's career, see Stadter 1980, 32-41, and Tonnet 1988, 1.44-48.
- 47 Dubois 1996, 100, n. 23 associates *IOSPE I*², 672 – which he dates to the 1st century AD (see above, n. 25) – not with this cult of Achilleus but with the cult at Berezan, which more recent excavations have now identified as a cult of Aphrodite; Kryzhytskyy *et al.* 2003, 1.469. See also Hind 1996.

Trade and Tribute: Byzantium and the Black Sea Straits

Vincent Gabrielsen

Introduction

One of the striking sights at the Bosphoros today is the sheer number of merchant vessels lying at anchor at its entrance, waiting to pass through – a reminder of and a testimony to the passage's ages-old importance to commercial traffic. In Antiquity, a similar sight would have been seen from the *polis* of Byzantium. Situated as it was at the southern entrance of the Straits, on their European side (in the Golden Horn promontory), it afforded a spectacular view of the ships making their way in and out of the Black Sea. Outside the Black Sea proper, Byzantium played a crucial role in the economic life of that region and also in that of the Mediterranean. Control over the Straits (or the Thracian Bosphoros), which connected the two major seas, was of course what gave Byzantium its importance, from its foundation by (mainly) Megarian colonists in ca. 660 BC, to Roman times and well beyond.¹ A clear illustration of this is provided by Polybios' well-known account of events in the second half of the 3rd century BC (Polyb. 4.38.1-10, 45-52). The main points of this account are as follows:

In 220 BC, Byzantium became enmeshed in a war with a powerful Aegean city, Rhodes, and with a powerful Black Sea monarch, Prusias I of Bithynia. As Polybios makes clear, this political crisis had chiefly been caused by an economic crisis. For some time, Byzantium had been paying heavy tribute – 80 talents a year – to the neighbouring Gauls, who under the ruler Comontorius had established the Tylian Kingdom in the area of the former Odrysian Kingdom in Thrace. Pressured by the tribute (*piezomenoi ton phoron*), Polybios explains, the Byzantians were compelled to impose a toll on all ships passing through the Thracian Bosphoros. It was the great financial loss which this measure inflicted on the merchants that prompted Rhodes, the leading sea-power of the times, to react. On behalf of traders and their communities the Rhodians asked the Byzantians to abolish the toll, and, when the latter refused to do so, the Rhodians declared war against them. The participation of Prusias I of Bithynia in that war, on the other hand, is said to have been due to several grudges he had against Byzantium (Polyb. 4.49.1-4).

The broader background of the conflict with Rhodos is detailed by Polybios (4.38.1-10). Owing to its favourable geographical position, Byzantion had complete command over the supply of, and derived the greatest financial benefit from, all the goods that were being traded between the Pontos and the Mediterranean. No one could sail in and out of the Pontos without the Byzantians' consent. Therefore, as long as the Byzantians kept the passage open to commercial traffic and unencumbered from monetary exactions, or as long as they did not allow it to fall into non-Greek hands, they were regarded as deserving the gratitude of the Greeks for being the "common benefactors of all" (*koinoi euergetai panton*: 4.38.10) – a title ordinarily reserved for Hellenistic kings and, from the later 3rd century on, the Romans, too. Their decision, shortly before 220 BC, to impose a toll, however, made the Pontic trade unprofitable for merchants, as a result of which the Byzantians, honouring no longer their ancient obligations towards the Greeks (cf. Polyb. 4.45.9-10), fell into disfavour. The conflict did not last long. But its end was marked by the Byzantians' acceptance, declared in their peace treaty with the Rhodians, to abolish the toll (Polyb. 4.52.5; SV III: no. 516).

It is in connection with the key economic position of Byzantion and the conflict of 220 BC that Polybios, in a brief but famous passage, describes the main commodities traded between the Mediterranean and the Pontos:

For as regards necessities of life, it is an undisputed fact that the most plentiful supplies and best qualities of cattle and the multitude of humans who are trafficked as slave labour (*to ton eis tas douleias hagomenon somaton plethos*) reach us from the places lying around the Pontos, while out of their surplus these same places supply us plentifully with honey, wax and salt fish. From the surplus products of our own places they receive olive-oil and every kind of wine. As for grain there is a give-and-take; sometimes they opportunely [or: comfortably] ship supplies to us, at other times they receive supplies from us (Polyb. 4.38.4-5; translation adapted from W.R. Paton, Loeb edn.).

Several important themes underlie Polybios' report of events in 220 BC. One is the ability of a strategically located place to exert a considerable influence on the flow of marketable commodities between, and so link economically, two large and commercially vibrant regions. Another is the interaction between a Greek *polis* and its vastly more numerous (and powerful) non-Greek neighbours as well as the implications of that interaction: Byzantion features here as a Greek bulwark towards aggressive, tribute-hungry and trade-disrupting non-Greek peoples, protecting as it did the economic interests of its cultural brethren from external threats. Inseparable from this, furthermore, is the sharp opposition between two modes of economic behaviour, which indeed go some way toward circumscribing two *qualitative* different kinds of economy:

a Greek “trade-based” economy versus a “barbarian” predatory economy, the one sustained by the pursuit of economic gain through peaceful and unconstrained buying and selling, the other fuelled by forced tributary exactions that themselves triggered off further taxes (i.e. the toll); in short, a dichotomy between the “free-trade” economy and the “coercive” political economy. A fourth theme, finally, and one standing above all the others, consists of the very tendency of cumulative pressures – just like ominous clouds – to concentrate at the Thracian Bosphoros and especially at Byzantion, with the result of turning the area into a charged field of tension. These pressures came from different directions and from different kinds of sources, some political others purely economic. The resulting tension mostly (but not only) appeared in the form of a strong claim by the political authority to have a share in the profits of trade: either by demanding tribute, or by taxing those using the passage, or by doing both of these things simultaneously.

An historical analysis of these pressures is therefore highly required if we want to gain a better understanding of the economic processes linking the Pontos and the Mediterranean together.² Also, save for isolated comments in works on the political history of Byzantion and Kalchedon, some of which are urgently in need of an update,³ proper scholarly treatment of the economic importance of Byzantion still waits to be undertaken. The same goes for the Straits, one of most important passages in the Mediterranean world *and* the sole seaward outlet of the entire Black Sea region: closing the passage for an extended period of time was likely to cause economic *asphyxia* in either of the worlds it connected – leaving as the only alternatives the far less accessible and more costly land routes.

However, my aim in this paper is a modest one. The taxes-trade relationship and particularly the tension characterizing that relationship are too vast issues to be adequately treated in such a short space. Here, they will be addressed by way of treating two specific questions. They both arise from a simple observation. The toll (re-)imposed in about 220 BC was not something new; monetary charges on those using the Straits had been the normal situation previously as it was to be again in later times,⁴ to which should be added that tribute and other kinds of taxes were constant factors in the area. Why, then, did the merchants raise so strong a complaint against the re-introduction of the toll that it led to a war? And was it only out of altruism, and the concomitant wish to feature as “the common benefactors of all (the Greeks)”, that the Byzantians, in some year before 220 BC, waved their acknowledged right to a substantial source of income by abolishing the toll? In combination, the specific answers that will be suggested to these questions are also going to show that the “trade-based economy” of the Greeks and the “predatory economy” of the “barbarians”, rather than battling each other (as Polybios claims), largely enjoyed a symbiotic relationship. This seems at least to be one of the points emerging from a comparison of the situation in the 3rd century with that prevailing earlier, especially in the 5th century BC.

Trade and Empire: the 5th century BC

Polybios, we have seen, emphasizes the privileged economic position of Byzantion in mid 3rd century BC. This position, it is true, owed much to the city-state's ability to gain a sufficient degree of political power to pursue its own interests, which, until ca. 220 BC, seem to have coincided with those of the other Greeks, especially those of the Mediterranean. But it is crucial to distinguish between the geographical area as such (Byzantion as a city in the Straits) and the political entity wielding authority over it. In terms of topography (and hydrography), Byzantion's position had always been far more advantageous than that of Kalchedon, the *polis* almost facing it on other side of the Straits – whose unfavourable location had earned it the description “the city of the blind”.⁵ Yet as a power capable of exploiting its geographical advantages on its own behalf, Byzantion was a latecomer. The crucial issue is therefore not which city was situated favourably in the Thracian Bosphoros, but *who controlled* the narrow, 20 miles long stretch of water that connected two major areas and their economies. The one who held command over it was able to decide which Pontic producers (and products) could reach which Mediterranean destinations, and also which Mediterranean producers (and products) could approach Pontic ports. In short, he who commanded the Straits was in a position to exert an immense economic influence. All this, however, could only be achieved through investment in military infrastructure and technology on a scale that only a rich and powerful state was able to undertake. Enter the *tributary empire*, one of the sources generating a considerable amount of pressure around the Thracian Bosphoros.

This is not the place to rehearse the long history of conquest in the area. It is enough to note that in the early 5th century BC Byzantion (and Kalchedon) stood amidst three rivalling tributary empires. From 477 BC onwards, and for the remainder of the century, one of these, the Athenian Empire, succeeded in ousting the other two from the region. The Persians withdrew to their Asiatic heartland.⁶ The third imperial power, the Thracians (who habitually applied military pressure on Byzantion from its foundation onwards),⁷ was left no other option than to remain an uneasy neighbour in the northwest. Thus, from early on, Thracian rulers were effectively deprived of relatively wealthy tribute payers along the North Aegean coast and at the Bosphoros. For much of the 5th century, consequently, Byzantion had to deal with the pressures issuing from one tributary empire, that of Athens.

To a certain degree, the magnitude of these pressures can be quantified. Presumably, Byzantion entered the imperial organization (formally, the Delian League) as one of the “ship-contributors” (*ATL* III, 206).⁸ But later on it reverted to annual cash contributions (*phoros*). Our evidence for its yearly tribute covers the period from 454/3 BC to 428/7 BC. Two things should be noted. One is that for a time Byzantion paid tribute together with its dependencies, the *polis* of Kallipolis and the island of Bysbiskos. The other, and more

significant, is that its attested payments start at a relatively high level, only to reach still higher levels in the following decades: from 15 talents (in 450/49, the second largest payment of that year) it goes up to 15 talents and 4,300 drachmas (in 443/2), then to 18 talents and 1,800 drachmas (in 433/2), and again to 21 talents and 3,200 drachmas (in 430/29).⁹ Such increases may have a *political* significance, in as much as they might reflect Athenian pre-emptive or even punitive measures towards a resourceful (or unruly) ally (cf. below). However, they definitely also have a pronounced *economic* significance, since they do reflect Athens' trust in Byzantions' capacity to pay so high amounts in tribute. Though the highest of these payments (i.e. slightly over 21 talents) is merely one-fourth of the 80 talents a year that the city was to pay later on (in the 3rd century) to the Tylian Kingdom, it nonetheless still represents a considerable amount. So, for much of the 5th century BC, the *polis* of Byzantion was subjected to heavy imperial exactions, which it (and its dependencies) proved able to meet.

To a large measure, that economic ability was created and sustained with support from the imperial centre: Athens, in short, was fattening Byzantion by boosting its role in trade, not least in the grain-trade. Mainly, in three interconnected ways.

1. The first was by making the city a central *entrepôt* for the commodities traded between the Pontos and the Aegean. This trade included exports of Pontic grain to *the Aegean* (not just to Athens), a traffic which is attested in the early 5th century, and which seems to have grown even more in importance after the middle of the century (see, e.g., Hdt. 6.5, 26 [Histiaios of Miletos' seizure of merchantmen sailing out of the Pontos]; 7.147 [ships carrying Pontic grain to Aigina and Peloponnesos]; Xen. *Hell.* 1.1.35 [large number of grain-ships sailing into the Peiraieus in 410 BC]).¹⁰

Evidence for Byzantion's status and function as an *entrepôt* under the control of imperial Athens comes from two Athenian inscriptions that are dated to the early 420s (for a different interpretation of these documents, see Braund in this volume). They separately give permit to two members of the empire, Methone and Aphytes, to export annually a certain amount of grain from Byzantion.¹¹ Granted, these permits, each being issued to a named importer-community and specifying the maximum amount they were allowed to take out every year, have an ad hoc character. Not so, however, with the broader activity into which Methone and Aphytes are permitted to partake, i.e. the "export of grain from Byzantion" (ἐἶν[αι ἐχ]σα[γῶ]γῆν ἐγ Βυζαντίου σίτου) as such, which, besides being a well-established and regularly ongoing affair, concerned *Pontic* grain in general, rather than grain grown in Byzantion in particular (cf. note 14 below). For one, these operations were closely supervised by the imperial officials in charge of the traffic passing through the Hellespont, the *Hellespontophylakes* ("Guards of the Hellespont"), rather than by officials especially appointed to control exports of *Byzantine* grain. For an-

other, the specific duties of these officials, as detailed in the Methone decree, were (a) to keep records of *all* outgoing shipments (not only those of Methone) and check that no-one exported more than his officially granted quota; (b) to see to it that no one obstructed the dealings of authorized exporters (i.e. a protective function performed by these “Guards”, about which more will be said below); and (c) to impose fines on ships carrying unauthorized exports, literally: “to let authorization-carrying exporter-ships sail out un-fined (*aze-mios*)” (M&L *GHI*, no. 65.35-41).¹²

That all this supervision routine was, according to the inscription, being carried on in connection with the “export of grain from Byzantion” renders one thing almost certain: that the “Guards of the Hellespont”, the *Hellespontophylakes*, were actually based in the city of Byzantion itself, and they seem to have been equipped with the means that would enable them to enforce their authority over a wider area (see p. 310 below). Thus, by the 420s BC at the latest, Byzantion had become a bulking point where foodstuffs and other commodities originating from the Black Sea were assembled before further – and, as regards grain – imperially authorized reshipment. In the context of the 220s BC, Polybios says that the Byzantians are “the people who derive most financial benefit from the situation of their city, since they can readily export all their surplus products and import what they need without any hardship or danger” (Polyb. 4.38.8-9). Save for the changed power-political relations, the situation was not much different in the second part of the 5th century BC. During this latter period, the directorship over the economic processes lay securely in Athens’ hands, not those of Byzantion. Her overall aim was indeed to enhance Byzantion’s commercial significance, even though the underlying *imperial* interest at core was fiscal,¹³ and to some extent political too, i.e. to starve enemies to submission (e.g. Dem. 20.60).

In a sense, therefore, the second and third ways in which the city’s role in trade was boosted issued almost directly from the first.

2. The second one relates to infrastructural facilities and services that helped create more local wealth, private and public. Byzantion’s status as a central *entrepôt* for shipments of grain could not but have had a beneficial effect on its domestic *emporion*, harbour and *agora* (all three in *FGrH* 115: Theopompos F 62; [Arist.] *Oec.* 1346b18-19; Xen. *An.* 7.1.19), since all other kinds of commodities, besides grain, would have passed through it as well. As the meeting point of traders who brought there the surplus of both Pontic and Mediterranean producers, the city would have given to sections of its residents opportunities to prosper. In particular, trade was likely to impact directly on warehousing facilities, banking and such other specialized services that either required or stimulated the accumulation of commerce-related capital. Together with the volume of in- and outgoing traffic, all this meant an increase in the amount of private wealth liable to local taxes and dues, and consequently a corresponding increase in public revenue. To be sure, Byzantion did command

agricultural resources of its own.¹⁴ But it was primarily the huge commercial traffic using the Straits that made it possible for the city to meet its tributary obligations to Athens, paying, as we saw, such high annual rates of tribute as 15, 18 and 21 talents. Fifth-century Byzantion was a very prosperous *polis* and it owed its prosperity primarily to commerce. Indeed, as noted above, the city possessed dependencies – a clear sign of relative strength, political and economic. Moreover, it proved able to muster sufficient naval resources for attempting to break loose from the Athenian Empire twice, once in 441/0 BC (together with Samos: Thuc. 1.115.5, 117.3), and again in 411 (Thuc. 8.80.3). Yet both attempts largely failed, and Byzantion continued to be economically fed *and* milked by imperial Athens.

3. Discussion of the third way in which Byzantion's commercial significance was boosted can be centred on treatment of an important question. What were the economic demands on those using the Straits, and what exactly justified these demands? Our first secure piece of evidence for payment of a toll is provided by Xenophon, who calls the charge *dekate*, i.e. payment of 10 % of the value of merchandise on each ship.¹⁵ Xenophon reports that in 410/9 BC an Athenian naval force commanded by Alkibiades sailed to the Kalchedonian Chrysopolis (situated almost opposite Byzantion, at modern Üsküdar), fortified the place and established a toll station (*dekateuterion*) there (Xen. *Hell.* 1.1.22; Diod. 13.64.2-3). When Polybios, in the context of 220 BC, calls the charge *telos* (4.47.1), *paragogion* (4.47.3, cf. 3.2.5) and *diagogion* (4.52.5), he probably uses three less specific terms for what actually was a levy of a *dekate*.¹⁶ Two issues are raised by Xenophon's report. First, his wording – i.e. the toll was paid by "the ships sailing out of the Pontos" (cf. 4.8.27) – is in contrast to what Polybios says – the toll was paid by "the ships sailing into the Pontos" (e.g. 4.44.4). This might suggest that different practices applied in 410/9 and in 220 BC *and* that in either instance the merchants were charged only once, i.e. on entering or exiting the Pontos. However, little weight should be placed on the differing expressions, and it is virtually certain that payment of the toll was at all times demanded of both the ingoing and the outgoing traffic.¹⁷

Second, later historians – ancient as well as modern – have taken Xenophon's report to mean the *first introduction ever* of the *dekate* in 410/9 BC.¹⁸ But there are reasons to doubt this interpretation. An Athenian decree from the late 430s (the so-called first Kallias decree) makes reference to items of expenditure from a special fund that was set up at Athens from the revenues of "the *dekate* whenever it has been sold".¹⁹ I agree with those scholars who find it probable that this *dekate* is the one levied in the Straits.²⁰ Indeed, considering the sizeable amounts of money which the 10 % toll can be reckoned to have yielded every year (on which see below), it seems unlikely that Athens would have let that source of revenue remain unexploited or in others' hands during the time she had complete control over Byzantion and the Straits. Very probably, therefore, what Xenophon registers in 410/9 BC is the establishment by the

Athenians of a toll station (*dekateuterion*) at a new place, i.e. at Kalchedonian Chrysopolis, not the first introduction ever of the *dekate* itself. Since Byzantion had been a key stopping point for all commercial traffic and the base of the *Hellespontophylakes* earlier in the 5th century, it is far more reasonable to suppose that, before it was relocated to Chrysopolis, the imperially controlled *dekateuterion* was initially located there.²¹

As is known, a series of quick political changes took place in the area towards the end of the 5th century. In 411 BC, Byzantion revolted from Athens and went over to Sparta, which maintained a garrison in the city until 408, in which year Alkibiades brought Byzantion again under Athenian control (Thuc. 8.80.3; Xen. *Hell.* 1.3.15). Kalchedon, on its part, passed onto Spartan hands in 411, if not a year earlier, and, save for an interval of Athenian occupation in 410/9, remained under Spartan control until it was regained by Athens in 389.²² I suggest that it was their loss of Byzantion to the Spartans in 411 that compelled the Athenians, in the next year (410/9), to move their *dekateuterion* to a new site within the part of the Bosphoros under their control, i.e. to Kalchedonian Chrysopolis. Two major Greek powers had now divided the area between them, the one of which, it seems, still surpassed its rival in military supremacy. For as events in the year 410/9 indicate, despite winning Byzantion to their side (and despite their garrison there), the Spartans were unable to wrest command over the Straits completely from the Athenians (Xen. *Hell.* 1.1.35-36). Though there is no direct evidence to show this, it is therefore quite probable that for a short period of time (in 410/9 at least) the *dekate* was claimed, with varying degrees of success, by two rivalling powers at two separate toll stations, one in Byzantion, the other in Chrysopolis (for a similar situation in early 4th century, see below).²³ However, such a political (and probably also fiscal) fragmentation in the area occurred only shortly before the disintegration of the Athenian Empire. For most of the 5th century, stability prevailed, with a single imperial power enjoying absolute monopoly, political as well as economic.

As to the workings of the *dekateuterion*, two points need to be considered. One relates to its day-to-day management. It is almost certain that, following custom (e.g. Andoc. 1.133-134)²⁴, the collection of the toll was normally auctioned, presumably every year, to individuals, who as purchasers of the right to collect the charge demanded the actual amounts from payers. Since this collection process took place at Byzantion, the toll-farmers would have numbered local people, whose profits therefore ought to be added to the trade-related wealth created at Byzantion. Reporting of the Athenians' recapture of Byzantion from the Spartans in 390/89 BC, Xenophon says that "after sailing to Byzantion, he [Thrasyloulos] sold the *dekate*", meaning that this was done at Byzantion (Xen. *Hell.* 4.8.27, 31). Referring to the same events, Demosthenes (20.60) says that, having again become masters of the Hellespont, the Athenians "sold the *dekate* (at the Straits) and thus being well provided with money forced the Spartans to conclude a peace". Finally, as we saw, also the

dekate mentioned in the Kallias decree was sold (IG I³, 52A.7). As far as one can tell, no person (or group of persons), or any commodity, was ever exempt from the toll. Since individual toll-farmers took care of the financial side of operations, the *Hellespontophylakes* can only have provided ancillary services in this connection (p. 310 below).

The second point concerns the approximate amount of the total yearly yield from the *dekate*. This, of course, is something beyond our reach. However, I shall venture to use two separate figures, both from the 4th century, as general pointers to the level of economic operations. One is the figure of 400,000 *medimnoi* (some 13,000 metric tons) which Demosthenes reports as the amount of Pontic grain annually imported by Athens (see Moreno in this volume).²⁵ At five drachmas per *medimnos* (a not unrealistic valuation price),²⁶ the monetary value of this is two million drachmas, ten percent of which is 200,000 drachmas. And this figure, we should note, relates to only *one* commodity (grain) shipped to only *one* destination (Athens). We are not able to say how much Pontic grain was imported annually by Athens or by any other Aegean consumer-community in the 5th century BC. But even if we follow the sceptics and lower considerably the annual amount of *Athenian* imports during the second part of the fifth to only half the figure reported for the 4th century, the resulting monetary yield from the *dekate* (still *one* commodity, shipped to *one* importer) would still be a nice 100,000 drachmas. For the second part of the 3rd century, we have only an indication about the value of goods passing through, namely, the size of the annual tribute paid by Byzantium (cf. below). As regards grain, however, it needs to be remembered that during this latter period the Pontos and the Mediterranean were already taking turns in supplying each other with this particular kind of commodity (Polyb. 4.38.5), a circumstance whose influence on the annual earnings from the toll would, if anything, have been positive.

The other figure I am going to use is the 700 talents (or 4,200,000 drachmas), which is said to be the profit made by Philip II of Macedon, when he seized less than 230 (perhaps as many as 180) merchantmen that were just ready to sail out of the Black Sea in 340 BC. This huge sum, it is reported, represented the total accruing from (a) the timbers of demolished ships, (b) the grain and hides that made up these ships' cargo and (c) the cash they carried.²⁷ Even if ship timbers and cash together counted for as much as one half of Philip's total profit (a share that I deliberately set unrealistically high), there still remained a respectable 2,100,000 drachmas worth of "taxable" commodities, i.e. hides and grain; ten percent of this is 210,000 drachmas.²⁸ However, the correct procedure must be to make the same kind of calculation for all of the 230 merchantmen that would have passed through the Straits, had it not been for Philip's hostile action. On average, each of these ships would have carried cargo worth 11,666 drachmas, not a particularly high sum (note that a ship carrying 3,000 *medimnoi* of grain is now considered as an average-size ship; valued at five drachmas per *medimnos*, its total cargo would be worth 15,000).²⁹

Thus, the total value of the grain and hides on 320 merchantmen would come up to about 2,683,180 drachmas, 10 % of which is (in round numbers) 268,000 drachmas. In a less conservative estimate of the share of grain and hides in Philip's total profit, the figures would, of course, be still higher. The amounts resulting from each one of my calculations relate to the annual earnings of the toll farmers. What the public authority auctioning the *dekate* earned is another matter; in most years, its annual revenue must have been somewhat below these sums. One objection to all this may be that the toll might not always have been demanded at the rate of 10 %. We have, admittedly, no year-by-year, or decade-by decade, information about the rate of the charge, so that it cannot be excluded that a different percentage may have been used in some years. However, while this is a possibility to be reckoned with, it seems very likely that 10 % was *the rate normally charged* for most of the time: in 355 BC, Demosthenes, despite the fact that he was referring to much earlier events, calls the toll at the Straits quite matter-of-factly "the *dekate*", as if his contemporaries were familiar with it to need any further explanation (Dem. 20.60); and this charge may well be one of the *dekatai* (in the plural) that he mentions in another speech (Dem. 23.177: 357/6 BC) as well as one of the two *dekatai* referred to in the Grain-Tax Law of 374/3 BC.³⁰

In ca. 430 BC, we have seen, the Athenians exacted from Byzantion slightly over 21 talents (or 126,000 drachmas) a year in tribute; this sum was paid from the public treasury of Byzantion, which itself relied mostly on local taxes and dues. In addition, the Athenians received annually an unknown sum from the farming out of the *dekate*; this amount was paid by the toll-farmers from monies they themselves had collected from traders. Though the actual figure cannot be pinpointed, we can now feel quite confident that the yearly turnover from the toll in the 430s and 420s was usually well in excess of the 250,000-300,000 drachmas (41-50 talents) bracket. Thus, as Byzantion's contribution to imperial Athens, tribute and toll revenue together (21 + 41 or 50 talents) amounted to over 62 or 71 talents a year. This puts a certain event in an interesting light. When the Tylian ruler Comontorius, in a year before 220 BC (i.e. at a time when Byzantion itself auctioned the toll), decided to raise the tribute paid to him by Byzantion, he set it at 80 talents (or 480,000 drachmas) a year; he no doubt had a clear idea of what the toll at the Straits was able to fetch.

Let us sum up. The economic operations (i.e. the sum of wealth transferring and wealth creating processes) in the Straits during the 5th century BC were chiefly fuelled by trade, toll and tribute, and involved three principal actors: (a) the *imperial power* (Athens), (b) a fiscally (very) well-situated *subordinate* (Byzantion), and (c) the *merchant*, Pontic or Mediterranean. Heading these operations, Athens was routinely gathering a large share of the trade-generated resource for then, in due time, to spend part of it on the upkeep of the military and administrative machinery that she had to maintain for supervising the area around the Straits, including the extraction of compulsory

payments and their safe shipment to the imperial centre.

As an intermediary, Byzantion benefited from having its *emporion* aggrandized, all the while the city saw to it that trade-based revenue was converted into the tribute demanded by the imperial centre. Since this conversion procedure was primarily assisted by Pontic and Mediterranean traders, the wealth it processed consisted of the surplus production that was being exchanged between the two major seas.

Finally, the sole private, (normally) non-coercion-employing economic actor in the entire ensemble, the merchant, had to use part of his profit on feeding, with unequal shares, his two public collaborators. Thus, the upper parts of this food-chain accommodated the politically organized, *predatory* (i.e. compulsorily taxing) economy, its lower part the privately conducted, *trade-based* (i.e. market-exploiting) economy. But synergy, rather than opposition, is what characterized the mutual relationship of this trio. And no cultural or ethnic distinctions – e.g. Greek versus non-Greek – seem at any time to have invaded this structure in order to define its exploitative nature; quite the contrary. That the Byzantians protested strongly against this whole arrangement twice (i.e. the revolts of 441/0 and 411) is quite understandable, considering their awareness of the benefits to be had from independence, as opposed to such spin-offs as accrued from their function as a “conversion machine”. What matters here, however, is that (as far as we know), no representative of the lowest part of the food-chain, the *merchant*, ever voiced a complaint against Athens, or Byzantion, or the toll. Why?

The merchant

Arguably, no one felt the pressures more heavily than the merchant. To begin with, the profit he proved able to make from a commercial venture was to some extent decided by the purchase/sale price differential, the related factors of supply and demand and the information he managed to obtain beforehand about these matters. But at least just as decisive a factor was how heavily *and/or* frequently he was taxed; much depended on the degree to which his transaction costs (or water transportation costs) became burdened by *extra-commercial* exactions, i.e. outlays which, *prima facie*, had little to do with his main business of buying and selling with a view to making a profit. Habitually, the merchant’s itinerary was dotted by requirements to pay a variety of taxes.

One kind of charge, for instance, was tacked onto the obligatory conversion of his own currency into that valid locally at the point of destination, a fiscal device that, among other places, operated in 4th century Olbia and very probably also in Byzantion itself.³¹ In each port, moreover, the merchant had to pay the *pentekoste*, the standard 2 % charge on the value of goods, on top of which might come local market dues (e.g. the sales tax, *eponion*, and others). Local authorities, furthermore, may devise special fiscal demands: one such

was the 30 % tax which the Bosporan king Leukon demanded from all those exporting grain from his kingdom in the 4th century (Dem. 20.32, cf. *Syll.*³, 212). Another, less transparent kind of expenditure, to be dealt with presently, consisted of fees paid for protection, or (what amounted to the same) for not being exposed to assault and seizure. Finally, there were the charges for passage. Those using land-routes may have to pay a road-tax, an example of which is now offered by an inscription regarding Pistiros, a Thracian *emporion* near modern Vetren.³² Its seaward fiscal equivalent was encountered by those sailing through easily controlled, heavily trafficked narrows, among which the one at the Thracian Bosporos enjoyed pride of place.

In light of this, one might then be inclined to conclude that a good part of the bill was ultimately footed by the individual merchant. In aggregate, such costs were bound to burden his budget so heavily that his profit would either be diminished substantially or be replaced by direct economic loss; this was, after all, exactly the point of the traders who complained against Byzantium's re-introduction of the toll in 220 BC (Polyb. 4.47.1). All in all, the coercion-based economy was claiming a large part of the profits made from free trade, as it made transaction costs rise to very high levels. Hence the modern view that the predatory, political economy kept market economic elements at bay or at an atrophic state.³³ For several reasons, however, caution is advisable towards such a conclusion.

This is in no way to deny that merchants, under certain circumstances, risked forfeiting a good part (or all) of their expected profit in payments of *extra-commercial* exactions. But it *is* to call attention to the fact that they often could – and did – make use of two other options, which have been largely overlooked by modern historians.³⁴ The first option, which I intend to treat more fully elsewhere, was predicated on the ability of merchants to prognosticate the approximate frequency and magnitude of certain transaction costs, above all, the array of taxes and dues (*tele*) to be paid en route, including the toll at the Straits. This being done, the next step was to try to get rid of (preferably all of) these expenses by converting them into *negotiable costs*, meaning costs which, owing to a pre-existing agreement between political authorities, were non-payable by those who fulfilled a specific condition.

Exemption from dues or taxes (*ateleia*) is a widely known phenomenon in the Classical Greek and Hellenistic worlds. Exemption covered either a specific tax or taxes, or, as was frequently the case, all fiscal obligations at a given place (*ateleia panton*). In a number of instances, the privilege was granted to a named individual, in other instances to a state. We now know that in these latter cases, the beneficiaries were all those merchants (citizens as well as foreigners) who actually used the *ateleia*-holder's ports as their operational bases (the specific condition to be fulfilled): the grant of *ateleia* by the Bosporan rulers to Athens, for instance, meant that *all* merchants sailing to and from the Peiraieus were exempt from such exactions when coming to the Bosporan Kingdom.³⁵ The *ateleia* arrangement represented a solution to the traditional conflict existing

between (a) a polity's dependence on customs income, especially from foreigners, on the one hand, and (b) its raising of (sometimes high) tariffs against foreign importers, on the other. For most merchants (i.e. all others than the small group of personal grant-holders), *ateleia* was a privilege they could enjoy because it had been negotiated, on their behalf, by a political authority. Thus, by choosing to make the ports of *ateleia*-holding polities his bases of operations, a merchant could reckon beforehand which of his transactional costs belonged to the category of *negotiable costs* and so write them off his budget. Political mechanisms, in short, intervened to ensure that some traders attained a competitive edge over others (i.e. the non-privileged ones) by being offered "costs-protection" against the fiscal claims of the exporter/producer.³⁶ It was important for those polities which were connected as granters and grantees of *ateleia* to publicize widely their offer, just as it was important for traders to be in possession of such information.

The second option historically puts the ancient sea trader squarely into the larger company of pre-modern traders worldwide.³⁷ It not only protected him against a constantly high personal risk, but also against a potentially great economic loss. Briefly, in addition to all the polities that taxed him along his route, the merchant had also to face an assortment of "armed tax-claimers", who through use of physical force (or the threat of physical force) insisted on taking possession of part or the whole of his cargo and profits. Insurance against the unpleasant consequences of such encounters took the form of an economic transaction, i.e. the purchasing of protection – sometimes even directly from the source of danger itself. Regardless of what they are called – "protection fees", "extortion money", or the more neutral "monies to enemies" (on which see below) – these were outlays which made water transportation costs rise substantially, and which, therefore, the merchant would try to minimize or get rid of completely. Before proceeding to explain how this was done, and in order to get an idea of the force with which these issues made themselves felt within our geographical area, we need to look briefly at the *business rhythm* around the Straits. Its particular pulse beat and intensity were chiefly determined by two factors, the one climatic, the other the result of human action. In combination, these two produced a traffic pattern characterized by its spasmodic bursts, with very busy days followed by slow days.

First, the *climatic* factor. Unstable weather conditions in the region so to speak "set the clock" for the movements of the commercial traffic, creating short- and long-term cycles. Since southwesterlies (the winds helping vessels push upwards against the strong channel currents) and strong northeasterlies (the winds holding up ships from entering the Pontos but easing the exit voyage) alternated, there were normally longish waiting periods, often up to a week or more, at either entrance; the comments of ancient and modern observers fully agree on this.³⁸ A separate determinant of the business rhythm issued from the widely acknowledged seasonal divide marked by

“the rising of Arktouros” (i.e. the time of the autumnal equinox) in September, when the autumn storms set in. To avoid the great risks which these posed, Mediterranean-bound ships as a rule started their homeward voyage *before* that date. Accordingly, those contravening that rule were considered as taking too great a risk.

These differences in the degree of risk within the limited area of the Straits had long-range economic consequences. In fact, their effect can be directly read in the differences between the rates of interest (*tokos*) demanded by financiers advancing loans to maritime traders. In one case, the rate of 22.5 % is demanded (at Athens), if the ship sailed out of the Straits before the rising of Arktouros, but it is raised to 30 %, if the same ship sailed out after that date (Dem. 35.10).³⁹ The expression “those [ships] which sailed out of the Pontos after the rising of Arktouros” seems nearly synonymous to “those [ships] which worked on high interest loans” (see [Dem.] 50.19). Climatic conditions, in sum, were responsible for short-term “bottle-necks” at the Straits’ entrances and also for long-term traffic fluctuations, as most merchant vessels chose to pass through not individually and at random, but in small or large “fleets” setting out at pre-determined times. Hence the accounts of contemporary observers, who, when they describe grain ships either leaving the Straits for the Aegean (e.g. Hdt. 1.147) or arriving at a particular port (e.g. Xen. *Hell.* 1.1.35: Peiraeus), almost always talk of “fleets” of merchantmen. Hence, too, the great convenience or even necessity of having a suitable and well-protected assemblage point at or near the entrances of Straits.

It was the *human* factor, however, that not only helped to sustain the business rhythm described above, but also gave it a noticeably firmer structure. Much-trafficked sea routes – eminent “highways” chiefly expediting the movement of a few, highly-priced commodities – tended also to be the “armed tax-claimer’s” favourite hang-out. Piracy is too big a topic to be even cursorily treated here.⁴⁰ Nonetheless, some of its most signal characteristics must be mentioned, since it represents yet another of the chief pressures that gathered together at the Straits. What is at issue here is less the predator’s political or social identity – from an economic point of view, as for the merchant’s point of view, it was immaterial whether vessel, cargo, crew and passengers were snatched by the commanders of Philip II of Macedon or by one of the notorious archpirates, since they both were aspects of a single variable: risk. Our concern is much more with the constant hazards created by the systematically practised violent seizure (or threat of seizure) of valuables and persons.

For the Mediterranean side of this business, there is evidence to exemplify almost all of the existing types of predation, from the state-sponsored or state-condoned kind, at one end of the spectrum, to the entirely private one, at the other end. Moreover, the same evidence unflinchingly shows how thickly raiding activity was concentrated along the sea lanes leading from the Straits southwards. In the early 5th century BC, Histiaios of Miletos was seizing merchantmen sailing out of the Pontos, using Byzantion as his base (Hdt.

6.5.26) and presaging the upsurge in raiding activity that is reported from ca. 431 BC onwards (Andoc. 1.138; Xen. *Hell.* 5.1.1-13; Isocr. 4.115). In 340 BC, we have seen, Histiaios' conduct was being replicated by Philip II, who sought "to become master over Byzantion and the *sitopompeia* of the Greeks" (see source cited in note 27, with [Dem.] 19.87, 230, 301-302, 341). A little earlier than this, in the 360s, Byzantion itself had gone predator ([Dem.] 50.6). In the 5th century, the Athenians were launching anti-piratical expeditions – Kimon's against Skyros, Perikles' against the Thracian Chersonese (Plut. *Cim.* 8; *Per.* 19) – and they went on taking similar measures in the 4th century (e.g. *IG II²*, 1623.276-285). In the 5th and 4th centuries, organized gangs of independent (i.e. non-state) predators had set up operational bases on such strategically situated islands as Halonnesos (Dem. 7.2; 12.13), Euboia (Dem. 18.241) and Melos (Dem. 58.56). These examples can easily be multiplied. Freedom of sailing the seas was recognized to be so central an issue that it often appeared as a special clause in peace treaties: "hindering [the voyage of] merchant vessels" (*ta ploia koluein*) and "forcing merchantmen into [a] harbour" (*ta ploia katagein*) had become quasi-technical terms emblematic of the dangers at sea (e.g. *SV* 329 [346]; [Dem.] 17.19-21 [337]; *IG II²*, 416 [ca. 330 BC]).⁴¹

In our sources, the Pontic side of this business (coastal wreckers excluded) takes on a distinctly ethnic garb. Predatory activity at sea is said to have been nearly the monopoly of certain peoples inhabiting the eastern (i.e. Caucasian) shores of the Black Sea to the north of Kolchis: namely, the Heniochoi, Zygoi and Achaioi, a threesome which is sometimes joined by the Tauroi of the Crimea.⁴² In the 4th century BC, Aristotle (*Pol.* 1338b20-25) described these peoples as ardent practitioners of piracy (*leisteia*) and fearful man-eaters (*anthropophagoi*). However, it is Diodoros and Strabon, who preserve fuller and more accurate descriptions.⁴³ First, they were highly mobile predators who, being the holders of "sea-power" (*thalassokratia*), operated with their fleets across the entire Black Sea basin. Secondly, this they could do thanks to their invention of a light, agile and fast-sailing craft called *kamara*, which put them on the vanguard of naval technological development.⁴⁴ Thirdly, their operations were actually amphibious, since they raided both ships at sea and coastal/inland settlements or cities – the latter placing them in the same category of pressures as those generated by the Thracians and the Scythians, who took their share in the wealth of Greek cities by exacting from them tribute-like payments masked as "gifts" (*dora*).⁴⁵ Fourthly, rather than being "man-eaters", they were really "man-hunters", since their specialty seems to have been slave-trafficking and extortion (i.e. demanding ransom-money for their captives). Fifthly, their relationship to regional powers was just as ambiguous as the corresponding relationship of their Mediterranean counterparts, being both on the run from the fleets of local rulers *and* co-operating with these same rulers.⁴⁶ Sixthly, and as a consequence, their predatory mode of acquisition, falling squarely within the political economy, appears to have enjoyed a symbiotic relationship with the economy of peaceful trade in and

around the Black Sea; especially so, because they themselves could effortlessly switch from the one kind of economy to the other (i.e. securing supplies by force, disposing these supplies in the free market), as when, for example, the Bosporan rulers provided them with infrastructural facilities and markets, at which they could offer their catch for sale (Strabo 11.2.12 [496]). Finally, the Heniochoi, Zygoi and Achaioi are also said to be part-time agriculturalists, given to tilling poor soils during the cold months, and launching their fleets of *kamarai* when the start of the sailing season signalled the opening of the “raiding season”.

The hazards of predatory activity produced two results. One was the merchant’s response to seek out the one who could provide the best possible protection at the lowest possible price, that is to say, transaction costs were *traded off*; or, failing to find such a supplier, to throw such costs onto somebody else, that is to say, transaction costs were *negotiated* away. Either way, *extra-commercial* costs were converted into *intra-commercial* costs, since it was thanks to them that the trader became able not only to pursue his business at all, but also to increase his personal profit. For reasons that will become apparent below, the former procedure, *trading off costs*, was predominant in the 5th century, the latter, *negotiating costs away*, became predominant from the 4th century onwards. Here, suffice it to note that for most of the 4th century protection-related costs seem on the whole to have risen substantially, compared to the 5th century BC. In the same period, too, state-organized protection was offered less frequently than before, and even an Athens-based merchant may be officially informed that he had to carry his goods over water “at his own risk” (*kindunoi toi heautoi*). This is the very expression used in the so-called Athenian Grain-Tax Law of 374/3 BC.⁴⁷ Here, “at his own risk” is almost synonymous to “at his own expense” – that is, on this occasion, protection was not part of the public services offered, but had to be procured separately. It is in situations like this that the merchant tried to transfer anticipated, risk-related costs to somebody else.

One of Demosthenes’ speeches preserves the sole surviving written agreement from the 4th century BC concerning a trading venture. The agreement is between two Athens-based merchants and the moneylenders who advanced funds with which to finance a voyage to Bosporos and back again. One of the terms of the agreement is that the moneylenders accept responsibility for two kinds of costs: (1) those accruing from losses which the merchants might suffer from compulsory jettison of goods (*ekbole*); and (2) any costs accruing from “monies paid to enemies (*polemioi*)”.⁴⁸ Winds and piracy together set their imprint on sea-trade finance. The transference of either kind of expense from the merchants to the moneylenders, one effectuated at the repayment of the loan after the completion of the voyage, is to take the form of a deduction from the principal owed of (1) the total monetary value of losses through *ekbole* and (2) the total amount of money paid *en route* to “enemies” (Dem. 35.10-13). So, in those instances in which the merchant was left to conduct

his operations *kindunoi toi heautoi* ("at his own risk"), his immediate response was to have the moneylenders cost-protect him, or (what amounts to nearly the same) cost-insure him.

The need for protection comes out just as clearly in those cases in which it was absent. An episode from 376 BC will suffice to show this. An unprotected fleet of Peiraieus-bound grain-ships was suddenly exposed to the threat of seizure (by a Spartan fleet commanded by Pollis) during the final leg of its voyage from the Black Sea, right at Cape Gerastos in south-eastern Euboia: the shippers "did not wish to sail along the coast [to the Peiraieus], since the Spartan fleet had taken up position in Aigina, Keos and Andros". Panic-stricken, the Athenians hastily sent out a naval force, which prevailed in the ensuing sea-battle and thus managed to prevent the seizure of the merchantmen (Xen. *Hell.* 5.4.60-61; Diod. 15.34.3). Evidently, the provision of escort from the start would have made a difference.

The second result of predatory activity, one receiving help from the climatic factor, was related to the organization of trade. Politics and merchants alike had become convinced of the need to synchronize their seaward movements and to incorporate them into a larger organization. That organization included convenient rendezvous points, at which vessels could assemble before sailing in convoy to their north- or southbound destinations. Winds and piracy, that is, broadly decided the business rhythm around the Straits and its institutional setting. Whenever, as was often the case, naval escorts joined these operations to become a crucial part of their organizational setting, the rendezvous points in question attained the character of pick-up and delivery points at either end of arterial sailing routes, each of which routes then came to fit the concept of the "protection route". The infrastructural core of the "protection route" consisted of the "naval base-trade-station" compound (pick-up and delivery points inclusive), where escort-providing trireme fleets (logistically speaking) could "catch their breath",⁴⁹ where cargo-carriers (militarily speaking) could seek safety from assaults, and where merchants (now operationally speaking) could find institutional and business arrangements comparable to those offered by the caravan station on land. Here, I briefly demonstrate the applicability of the concept of the "protection route" to one such route, for which relatively good evidence exists from the 4th century BC.⁵⁰

The Hieron-Aegean route

Hieron is a site within the Straits, on the Asiatic side of the channel, just 7 to 8 km from its northern mouth (at modern Anadolu Kavagi-Yenimahalle) (Fig. 1). From early times it was known for its sanctuary of Zeus Ourios ("of the Fair Winds") and the Twelve Gods.⁵¹ But the site's importance to commercial traffic is first attested from the early 4th century BC,⁵² when it appears under Athenian control.⁵³ I confine my treatment to two particular aspects of Hieron's importance.

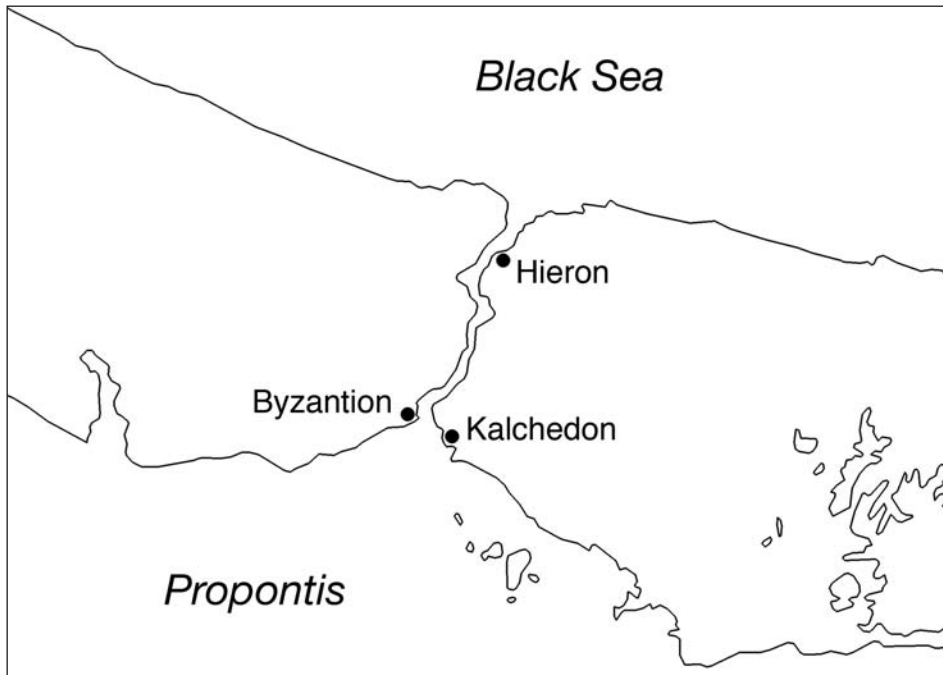


Fig. 1. The Thracian Bosphoros with the location of Hieron.

(i) *An information centre.* *Stelai* carrying copies of the decrees which recorded the exchange of privileges between the Bosphoran rulers (especially Leukon: 389-349 BC) and the Athenians are reported by a contemporary source to have been posted in three different places: in the Kingdom of Bosphoros, in the Peiraieus and at Hieron (Dem. 20.36). One of the privileges in question, it will be remembered, was tax-exemption (*ateleia*), in all the Bosphoran ports (including Theodosia), to those who carried grain to Athens.⁵⁴ Furthermore, Hieron is the find-spot of the inscription carrying the well-known Coinage Decree from Olbia (cf. p. 297 above).⁵⁵ Publication of decisions of this kind precisely at Hieron did not have only a symbolic value. It had a practical purpose as well, in that it was meant to provide merchants with most useful information about currency regulations at various Black Sea destinations and to make known to them which ports and routes offered "cost protection". In addition, if moneylenders (at Athens and elsewhere) were to know the time of a ship's movements from and to Hieron, so that they could fix the rate of interest due to them (Dem. 35.10, on which see p. 300 above), then a smoothly working system of communications must have had a branch there. Together, all these features mark out Hieron as a key point in maritime commerce.

(ii) *An established rendezvous point.* This is most clearly attested by evidence from the year 362/1 BC, when an Athenian naval squadron acted on explicit orders to escort grain ships (*epi ten parapompen tou sitou*). Having picked up

the grain carriers at Hieron, the naval squadron escorted them through the Straits and then further on to the Peiraieus and a few other Aegean destinations.⁵⁶ The surviving description of this voyage puts a good deal of stress on the dangers that were facing the merchants and shippers on this occasion. What mostly caused these dangers was the high mileage/predator ratio prevailing at the time. This seems to have been the reason why ambassadors of a different city-state, Maroneia, had come to Hieron with the specific task of formally requesting the Athenian general in command of the escorting squadron to admit Maroneia-bound grain ships into his convoy – a request that the general did meet, despite the extra labour (and danger) which this is said to have entailed for his naval crews.⁵⁷ The security-services offered to merchant carrying grain to Maroneia had been negotiated by a political authority. It is almost certain that for these services the Athenian commander was recompensed in cash, plausibly paid by the *polis* of Maroneia, rather than by the merchants themselves.

Indeed, in the 4th century, non-Peiraieus-bound (or non-Athens-based) traders who received Athenian naval protection often had to pay separate fees in return for that service. In a speech to the Athenians, Demosthenes described the situation as follows (341 BC):

All the generals who have ever set sail from your naval bases (...) receive sums of money from the Chians, the Erythraians and from whatever people they can – I am speaking of those who live in Asia Minor. Generals commanding one or two ships receive less; those in charge of large fleet receive more. Also those who pay do not pay the relevant sums – being large or small – for nothing; for they are not madmen. No, they purchase for the merchants sailing from their harbours protection against wrongdoing (*me adikeisthai*) and forceful seizure (*me sulasthai*) – providing, as they do, escort for the safe conduct of their own ships (*parapempesthai ta ploia ta hauton*) – or some similar service. They say that they give “benevolences” (*eunoiai*). That is the name which is used of these exactions (Dem. 8.24-25).

These statements are presented in defence of the Athenian general Diopieithes, who in ca. 343/2 BC allegedly had used questionable methods for making monetary exactions in the Hellespont. That the conveyance of grain (*sitopompia*) was a central concern with these protective escorts is unquestionable, not least in light of the well-attested interest of any *polis* to ensure its own food-supply and,⁵⁸ in times of open hostilities, to prevent such supplies from reaching its enemies. Such a strong concern with the transportation of grain, however, should not lead to the conclusion that naval protection only covered grain-transports. First, the tendency of our sources to lay a good deal of stress on the conveyance of this particular commodity (very much so at the

expense of such commodities as fish or slaves) is much more a reflection of ideological priorities and political aims, rather than of the realities of trade. Secondly, there is nothing to indicate that merchant vessels not carrying grain were discriminated in the organization of convoys, and indeed we have direct evidence showing that this was definitely not the case (cf. below). Often the assignment of protective naval squadrons was simply to guard against predators (*epi ten phylaken ton leiston*: IG II², 1623.276-282). In reality, therefore, naval protection covered all kinds of cargoes, for which the appropriate fees were paid.

Furthermore, it may be noted that these fees mostly were paid by political communities, not by the individual merchants. Outspoken *polis* concern with the infrastructure and conduct of trade is more generally indicated by evidence from Olbia, a Pontic polity which in about 320 BC appears in possession of its own fleet of "public merchantmen" (*demosia ploia*), a feature that might have been more common than we are accustomed to think, especially in view of Xenophon's recommendation, in ca. 355 BC, that Athens ought to acquire such a public fleet of merchant vessels in order to enhance her revenue from trade.⁵⁹ The passage from Demosthenes just quoted shows in addition the close correlation existing between the *quality* of the protection offered (small or large escorting fleet) and its *price* (smaller or larger sums of money). In about 406, the general Erasimides was convicted for withholding "money from the Hellespont, which belonged to the Athenian people", plausibly the proceeds of such "benevolences" (Xen. *Hell.* 1.7.2). Again, when rendering accounts after a mission in the early 4th century, the general Diotimos acknowledged his having received an (unspecified) amount of money from the *naukleroi* and *emporoi*, which he then surrendered to the state; allegations were immediately raised against him that he had kept an extra (and undeclared) 40 talents from this business to himself (Lys. 19.50). There can be little doubt that these sums represented the general's proceeds from escort services.⁶⁰

Thus, Hieron functioned as a pick-up point. But it simultaneously functioned also a delivery point. Our clearest evidence for this regards the south-bound traffic, i.e. Hieron's receiving of fleets of merchant vessels before their exit from the Pontos. In September 340 BC, it was the Athenian general Chares who had orders to escort merchantmen sailing from the Black Sea to the Aegean; these were the 230 ships with Pontic grain and hides that were attacked by Philip II of Macedon (see p. 295 above; this is one of the instances showing the provision of protection to also non-grain-carrying ships).⁶¹ After his arrival at Hieron, it is reported, Chares was suddenly called elsewhere, leaving warships at Hieron, "so that they could gather together the merchantmen sailing from the Pontos" (*hopos an ta ploia ek tou Pontou synagagosi*). I take this to evidence the active part played by the Athenian warships in the "gathering" process (*synagoge*). In the first place, the initial attempts by Philip's ships "to force the merchantmen to shore" (*ta ploia katagein*) as they were approaching Hieron proved wholly unsuccessful, since each time they were being fouled up by the

Athenian squadron. In the second place, precisely because of his inability to prevail, Philip had a force landed on the site just opposite Hieron, establishing his own base there; only then did Philip become able to launch a full-strength strike at Hieron and seize the 230 merchantmen that had assembled there.

The implication, therefore, is that before that strike the merchant ships were making it to Hieron safely, primarily thanks to the fact that the final leg of their voyage was being carried out under Athenian protection; "gathering together" (*synagoge*), in short, meant that the Athenian war-craft busied themselves with fetching merchantmen from near-by Pontic ports, anchorages or even at sea, in order to assemble them at Hieron. One limit to their range of action along the south-eastern seaboard of the Pontos was clearly Herakleia: the Byzantion – Herakleia run (129 sea miles) was known as "a long day's voyage for a trireme under oars" (Xen. *An.* 6.4.2).⁶² It should be noted that in 340 BC perhaps as many as 50 of the 230 merchant vessels under Athenian protection carried goods to destinations other than Athens – these ships were ultimately found by Philip to be "not enemy ships" (*polemia [ploia]*). Apparently, as Maroneia had done in 362/1, a number of city-states had asked the general Chares in 340 BC to admit to his convoy also vessels bound for their ports.

Let us sum up by citing a parallel case. In 325 BC, the Athenians resolved to establish a naval station in a completely different area, at some coastal site along the Adriatic. According to the document recording this decision, the station was to perform three basic functions. From that place, the Athenians (a) would carry on their own "homeward trade" (*emporía oikeia*), (b) they would supervise the "transportation of grain" (*sitopompia*) to various destination, while (c) by establishing their "own naval base" (*naustathmo oikeiou*) there they would offer protection (*phylake*) against Tyrrhenian sea-raiders.⁶³ The evidence adduced above suggests that, from the early 4th century onwards, all three of these basic functions were also being performed by Hieron. It and its counterpart in the Adriatic typified the "naval base" "trade-station" compound,⁶⁴ the pick-up and delivery points by means of which seaborne trade was duplicating the caravan-stations of landward trade. As an ideally-located naval and commercial station at the northern mouth of the Bosphoros channel, Hieron was in addition used by traders and their partners as an information centre. All in all, Hieron, was *the* central point in those north-south running trade routes for which the concept of the "protection route" seems applicable.

Who might have provided escort services within the Black Sea from the 4th century onwards is a question that cannot receive full treatment here. We may note only briefly one plausible candidate, the ruling dynasty of the Bosporan Kingdom. In a decree of 347/6 BC, the Athenians justify their award (actually a renewal) of honours to "the sons of Leukon", who ruled at that time, by referring to the promise made by these latter to the Athenian people (a) "to take care of the dispatch of the grain (*epimelesthai tes ekpompes tou sitou*) in the same way as their father Leukon had done", and also (b) "eagerly to render whatever services the Athenians need".⁶⁵ While neither of these need

include escort services, the positive Athenian response to a Bosporan request for skilled naval specialists, a matter recorded in the final part of the same decree, is definitely indicative of the Bosporan rulers' endeavour to expand and perhaps also modernize their naval potential. The specialists in question all belong to the part of a trireme complement called *hyperesia*, i.e. a group of 16 "petty-officers" on each ship (including helmsmen); those about to be sent to the Bosporan Kingdom in 347/6 BC (apparently "on loan" only) are explicitly instructed by their home authorities "to do their utmost in serving the sons of Leukon" – probably both as actual crews and as instructors of local manpower.⁶⁶ By the final decade of the 4th century, Bosporan naval strength appears not only to have been firmly established but also to have a wide circle of beneficiaries. For in 310 BC, Diodoros reports, having won the title of ruler over the kingdom, Eumelos "continued to perform benefactions (*euergesiai*) towards the Byzantians and the Sinopians and most of those Greeks who live in the Pontos".⁶⁷ One of these benefactions is specified as follows:

On behalf of those who sailed in the Pontos, he waged war against the barbarians who were accustomed to engage in piracy (*leistuein*), the Heniochoi, the Tauroi and the Achaioi; and he cleared the sea of sea-raiders (*leistai*), with the result that not only throughout his own kingdom, but even throughout most of the inhabited world (since the merchants were spreading the word about his magnanimity) he received the most beautiful fruit of benefaction (*euergesia*), namely, praise (Diod. 20.25.2)

This "protector-as-benefactor" theme matches almost exactly Diodorus' and Strabon's description of Rhodos, a Mediterranean sea-power that acted as "protector of the seas".⁶⁸ Moreover, Polybios, as we have seen (p. 288 above), says that until 220 BC the Byzantians were being regarded as the "common benefactors (*euergetai*) of all", on account of leaving the passage through the Straits free of charge – a protective function, too, even though one performed through different means. Yet in about 310 BC, Byzantium itself was among the recipients of the Bosporan ruler's protection. King Eumelos' services to cities and to the merchants sailing in the Pontos, rather than being something limited to his own (short) period of rule, may well have had antecedents going back to the early 4th century, or even further back. In fact, the incipient beginnings of the *Bosporan* services may have coincided with the withdrawal of Athenian imperial power from the area in late 5th century BC. A specific event marks that withdrawal.

Between 410 and 405 BC, Nymphaion passed from Athenian hands onto those of the Bosporan ruler Satyros I (433/2-389/8 BC); shortly after, it became a dependency of Pantikapaion.⁶⁹ Nymphaion was a port city on the coast of the Kimmerian Chersonesos (Crimea), just south of another and better-known port city, Pantikapaion (modern Kerch). Like the latter, Nymphaion faced east

towards the narrow strait of Kerch, which connects the Black Sea with Lake Maiotis (Sea of Azov); its geographical position was thus quite similar to that which Byzantium occupied at the mouth of the Straits (Fig. 2). Even though within an arm's length from the main power in the region, i.e. the Bosporan Kingdom, Nymphaion was in the 5th century BC a tribute-paying member of an empire whose political centre was located hundreds of miles away, the Athenian Empire.⁷⁰ Already at that time, Nymphaion probably had city walls, and its acropolis was possibly fortified; the city's harbour was later on praised by Strabo for its qualities (Strab. 7.7.4 [309-310]; cf. Ps.-Skylax 68).⁷¹ So, besides purely strategic concerns, inclusion of Nymphaion into the Athenian Empire must certainly have been motivated also by its proximity to the North-Pontic grain-producing regions and their ports of trade (Gylon, Demosthenes' maternal grandfather, for example, owned a landed estate in the region: Aisch. 3.171). Maintenance of imperial authority in such a distant, but well-situated and well-equipped subject required that Athenian naval squadrons routinely visited the area, if not for any other purpose, then for looking after Athens' own interests and those of its tribute-paying, North Pontic allies.⁷² By 410-405 BC, therefore, the Nymphaion-Byzantium route (not necessarily a direct sailing route) had plausibly become furnished with much of the organizational trappings that characterize the "protection route". However, until clear, 5th century evidence turns up to demonstrate Nymphaion's partaking in the escort services, this must remain largely hypothetical. Differently, though, with the organization of protection in and around Byzantium.

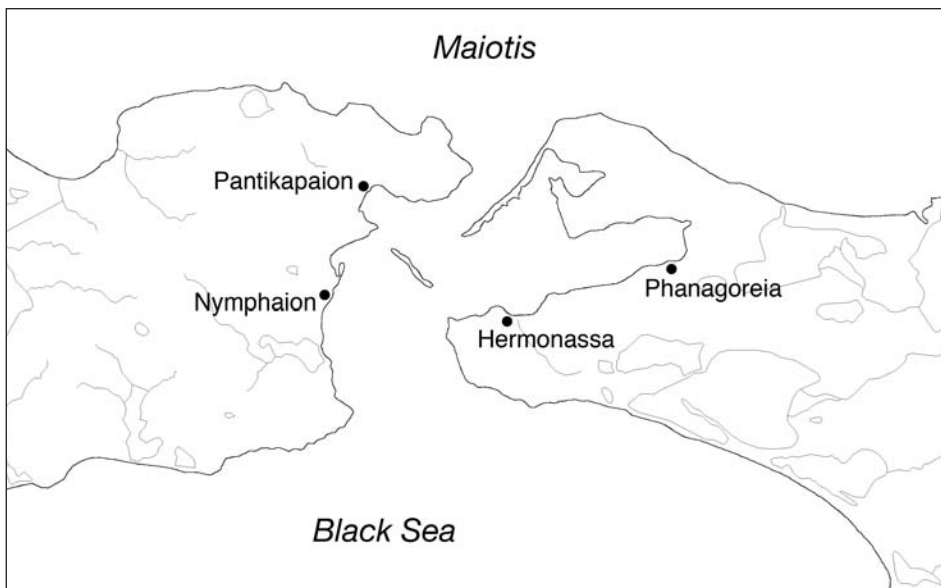


Fig. 2. The Kimmerian Bosphoros.

Fifth century evidence, part of which has already been discussed above, offers secure glimpses of that organization. It included the “Guards of the Hellespont” (*Hellespontophylakes*), an office with a predominantly military character,⁷³ or alternatively with authority to enlist permanently-posted military support, both on land – Byzantion hosted an Athenian garrison (*phroura*: Ar. *Vesp.* 237) – and at sea. Whether the regular squadron of twenty guard ships (*nees phrourides*), mentioned as part of a standing imperial force (Arist. *Ath. Pol.* 24.3), had anything to do with the Straits is not known. We are, however, better informed about another fleet. When they moved the toll-station (*dekateurerion*) from Byzantion to Chrysopolis, the Athenians stationed thirty warships there with the specific purpose of offering protection (*phylake*). Xenophon specifies the tasks of this fleet as follows: they were ordered “to take care of the merchantmen sailing out of the Pontos (*epimeleisthai ton ekpleonton ploion*)” and “to harm the enemy in any way possible” (Xen. *Hell.* 1.1.22; cf. Diod. 13.64.2-3). Owing to the highly unstable situation in the area at that time, probably more warships than normally were required on that occasion. What looks like a more normal fleet-size is given by Xenophon in a later passage, where he reports that nine Athenian warships were permanently on duty in the Hellespont “protecting merchantmen” (*ta ploia diephylatton*: *Hell.* 1.1.36). The provision of protection services during the 5th century BC seems to stand to a direct relationship to the charge paid at the Straits.

Ten percent (*dekate*) is commonly considered to be too high a rate, especially when compared to the usual 2 % paid in harbour dues (*pentekoste* or *ellimenion*). Therefore it is often explained as a temporary measure of the year 410/9 BC, one necessitated by the ongoing (Peloponnesian) war and its effects on Athenian finances.⁷⁴ This view, however, seems not entirely warranted. Not only is a *dekate* in evidence in Athens in the 420s (in my view, the *dekate* charged at the Straits) and also in the early 4th century (Dem. 20.60), but, as far as we can tell, 10 % is also attested as the normal rate of customs charges demanded elsewhere (see n. 32). Perhaps more importantly, to decide whether the 10 % toll at the Straits was “too high” or “too low” we need to take into account what those paying it received in return, i.e. to view the charge as part of their total transaction costs. For most of the 5th century, the Athenians were doing what Xenophon says the Spartans became able to do only in 388 BC: “Antalkidas, who had more than eighty ships, was master of the sea: he could thus stop ships from the Pontos sailing towards Athens and force them to Sparta” (Xen. *Hell.* 5.1.28). And, even if the historicity of Perikles’ so-called Pontic expedition is questioned (Plut. *Per.* 20), there is enough 5th century evidence to support Plutarch’s own point about the Athenians’ “confidence and audacity in sailing wherever they wished and making themselves complete masters of the sea”.

Traditionally, it is believed that through payment of the toll merchants bought permission to enter or exit the Black Sea. In a formal sense, this is correct. However, what has been said above on the organization of trade strongly

supports the view that the charges paid bought the merchants more than that. In fact, they gave them access to the escort services of *the* pre-eminent imperial power of the times.⁷⁵ Until about 410-405 BC, in short, Mediterranean and Pontic traders who were using each others ports (and who were not expediting “the enemies” of Athens) had the advantage of facing relatively low water transportation costs. This was chiefly because they had to share the profits from their trading ventures with only one representative of the command economy, one who by virtue of his power-monopoly and superior military technology was able, for a single payment, to offer high-quality protection. Simply put, it was the navy of the Athenian Empire that for a 10 % *ad valorem* charge shuttled the merchant relatively safely between his Aegean ports and Byzantion, and perhaps even between Byzantion and some North Pontic destinations, too.

Byzantion: a fiscal benefactor (euergetes)

This system is in sharp contrast to the “multi-taxation” system effective in the area after the disintegration of the Athenian Empire. During this period, several representatives of the command economy, all operating at or near the Straits, simultaneously competed in claiming a share in the trader’s profits. Yet no one among these tax-claimers proved able to provide anything resembling the cost-effective services of their monopoly-holding predecessor – cost-effectiveness being in this case measurable by one’s ability to make all others redundant. The change from one system to the other was perhaps initiated in 410/9 BC, when merchants probably were being asked, for some time, to pay the *dekate* at two places, at Spartan-held Byzantion and at Athenian-held Chrysopolis (cf. p. 294 above); bottoms regarded as “enemy ships” (*polemia ploia*) by the one power, were naturally those enjoying the protection of the other. Soon, the pressures in the Thracian Bosphoros were to take on a new intensity and a new character, leaving their imprint on the trader’s budget. A review of the evidence relating to the 4th century is beyond the purposes of this chapter. To exemplify the general situation, however, we may take a closer look at events around the year 362 BC.

The high mileage/predator ratio prevailing in about 362/1 BC owed not least to trouble in the North Aegean; the situation is detailed by the speech [Dem.] 50, held shortly after these events: (a) revolt in the Odrysian Kingdom in Thrace by a vassal hostile to Athens and in occupation of the Thracian Chersonese; (b) pressure from Kyzikos against Prokonnesos (an Athenian ally); (c) seaborne raids against the shipping carried out by Alexander of Pherai, who, having seized Tenos, sold its inhabitants as slaves (*andrapodismos*); last, but not least, (d) naval squadrons from three city-states – Byzantion, Kalchedon and Kyzikos – were separately and repeatedly forcing into their respective harbours merchantmen sailing out of the Pontos (*katagonton ta ploia*).⁷⁶ Thus these were times of very high-risk for merchants, and our list does not include

either the dangers posed by private operators or those likely to be encountered along the routes leading north from the Straits. It was the duty of an Athenian naval squadron, it will be remembered, in this year to escort primarily Peiraeus-bound merchantmen safely from Hieron and out of the channel, past the warships of Byzantion, Kalchedon and Kyzikos. All this brings out quite neatly the point that, in fiscal terms, the right of passage and protection were almost inseparable parts of a single arrangement.

Who demanded payment of the toll at that time? Very probably, each and every one of these violence producers, depending, that is, on the relative naval strength he could muster. At Hieron, we have seen, a variety of services were offered to traders and shippers, including the service of escort. In 362/1 BC, the place was firmly under Athenian control. Even though no *dekateuterion* is so far attested in Hieron, its existence at that time, or at least the imposition of a charge there, can be inferred with considerable likelihood. As to the kind of activity in which Byzantion, Kalchedon and Kyzikos engaged, it can perhaps be elucidated by the case of Byzantion, for which additional evidence is available.

It consists of one of the financial (or fiscal) stratagems listed in Book Two of Pseudo-Aristotle, *Oeconomica* (2.2.3, 1346b30-35). Experiencing famine and a shortage of funds, we are told, the Byzantians took to forcing into their harbour merchant ships sailing out of the Pontos. Then, when some time had passed and the merchants protested of being detained so long,

they became taxed with payment, to the Byzantians, of interest at the rate of 10 % (*eteloun autois tokous epidekatous*), and they [sc. the Byzantians] ordered that all those who purchased something, in addition to the purchase-price, should pay a charge of 10 %.

My understanding of this difficult passage is briefly this.⁷⁷ Having forced the merchant vessels into their harbour,⁷⁸ the Byzantians were detaining the merchants, until these had paid 10 % of the value of their cargo, plainly a tax which, by being called *tokos* ("interest"), was masked as the earnings from a regular loan transaction – part of the financial stratagem. As a favourable gesture towards the merchants, the Byzantians then allowed them to make good their losses by throwing the extra 10 % charge onto the buyers of their merchandise, thus making it almost compulsory for the merchants to unload and sell their goods at Byzantion.

Van Groningen abstained from proposing a definite date for this event, reasoning, in my view correctly, that the Byzantians are known to have resorted to similar practices on more than one occasion.⁷⁹ Indeed, typologically (but not necessarily chronologically), this financial stratagem is closely related to the Byzantians' line of action in 362/1 BC, as reported in [Dem.] 50, a speech which, in contrast to the *Oeconomica*, is a contemporary, nearly eye-witness account. Contrary to what some modern commentators maintain,⁸⁰ that ac-

count does not say that the Byzantians resorted to predatory action against merchantmen because of famine; it only says that “they wanted to use the grain themselves (*heneka tes idias chreias tou sitou*)”, and that “they compel [the shippers and merchants] to discharge the cargoes of grain (*kai anagkazousi ton siton axaireisthai*)” [Dem.] 50.6 and 17, respectively), neither of which necessarily means the occurrence of famine or grain-shortage of any kind. It may very well be, as the author of the *Oeconomica* says, that the Byzantians themselves were justifying their predatory action with reference to famine (*sitodeia*). But as the same author admits when reporting resort to a similar stratagem by the Kalchedonians, the *declared* cause of a particular action need not be the *true* one: “[the Kalchedonians] were seizing the ships sailing into the Pontos, using a well-sounding pretext” (*meta prophaseos eulogou*).⁸¹

All in all, in 362/1 BC (and probably on other occasions, too), the Byzantians were exacting a 10 % *ad valorem* charge from merchants sailing through the Straits by means of applying a milder decree of extortion. Even though Pseudo-Aristotle does not call that imposition a *dekate* (nor does he make its collection the business of a *dekateuterion*), the charge paid by all those merchants who were forced to put into Byzantion was nonetheless a *dekate* in all but the name; and from the state’s point of view, this particular form of a *dekate*, one not requiring the mediation of toll farmers, had the additional advantage of letting the total proceeds go undiminished to the public treasury. If, as seems exceedingly likely, Kalchedon and Kyzikos were applying the same or similar procedures with the ships which they were separately forcing into their harbours, then the dots marking fiscal claims along the trader’s itinerary had in the 4th century increased noticeably.

Granted, the extraordinary situation in 362/1 BC cannot be taken to typify the entire 4th century. Yet, even when the predator/mileage ratio fell to a lower level, as it surely did at various times, it was still a “multi-taxation” system that remained characteristic of this period. Two consequences followed: higher water transportation costs; and greater risk due to the poor-quality protection on offer. Arguably, it was precisely this kind of situation which the Byzantians began to exploit with success in the second part of the 3rd century – to their own advantage, as well as to the advantage of the merchants and the communities they used as their commercial bases. For at that time, Byzantion, perhaps initially with Ptolemaic support,⁸² decided to revive the older, monopolistic system, even if in a toned-down version and by somewhat different means; which chiefly meant, not as a grand naval empire, but as a lesser hegemonic power, which, by acquiring control over sufficient resource, could afford acting as a new type of protector-as-benefactor. Enter the “fiscal” benefactor.

The wider historical background for this, i.e. Byzantion’s territorial expansion (especially eastwards into the Asiatic side of the Straits), shall not detain us here. Suffice it to note that by 220 BC their territory included part of Mysia.⁸³ More important for our purposes is that by 220 BC they had obtained complete

mastery over the Bosphoros channel, and probably also control over a wider area immediately extending outwards from either mouth of the channel. This they were able to do chiefly because, in addition to their city's favourable location at the southern mouth of the channel, they now could also control the channel's northern mouth through their possession of Hieron.

Before it was acquired by Byzantium, Hieron had been in the hands of the Seleukid kings. Polybios reports that "shortly before this" (i.e. the year 220 BC), the Byzantians had bought Hieron for a large sum of money (Polyb. 4.50.3). Dionysios of Byzantium furnishes the additional piece of information that they had purchased it from Kallimedes, the Seleukid official who was in charge of the place.⁸⁴ Neither Polybios' vague time indication ("shortly before this", "an elastic phrase": Walbank 1957, 504), nor the named Seleukid official helps us to establish the date of Byzantium's takeover of Hieron. Why did the Byzantians decide to invest "a large sum of money" in the purchase of Hieron? Polybios gives the following explanation (Polyb. 4.50.2-3):

(...) τὸ καλούμενον (...) Ἱερόν, ὃ Βυζάντιοι μικροῖς ἀνώτερον χρόνους μεγάλων ὀνησάμενοι χρημάτων ἐσφετερίσαντο διὰ τὴν εὐκαιρίαν τοῦ τόπου, βουλόμενοι μηδεμίαν ἀφορμὴν μηδενὶ καταλιπεῖν μήτε κατὰ τῶν εἰς τὸν Πόντον πλεόντων ἐμπόρων μήτε περὶ τοὺς δούλους καὶ τὰς ἐξ αὐτῆς τῆς θαλάττης ἐργασίας.

(...) the place (...) called Hieron, which shortly before this the Byzantians, owing to the advantageous location of the place, had made their own, buying it for a large sum of money, as they wanted to leave to no one any operative base whatsoever that could be used against the merchants [or: in regard to the merchants] sailing in the Pontos, or, again, in regard to the slaves and the business of the sea itself.⁸⁵

I agree with the current translations that *aphorme* means "an operative base from which one can sail out".⁸⁶ However, my rendering of the clauses explaining the use of that base allows for the possibility that the one who possessed Hieron did not necessarily attack merchants (just as he evidently did not attack the slaves and the business of the sea), but quite the contrary he was mindful of all three of these. At any rate, what Polybios probably reports is that from their newly-acquired base, Hieron, which at that time appears to have been a fortified stronghold (*phrourion*),⁸⁷ the Byzantians provided to traders an old kind of service: naval escort. At the same time, they enhanced Hieron's role as a central station in especially the slave-trade. In short, within their area of control (not least within the Straits), the Byzantians aspired to establish three kinds of monopoly: one in the business of protection, in which Hieron performed its traditional function as a seaward "caravan-station", i.e. a pick-up and delivery point along the north-south running routes; another

monopoly in the business of slave-trafficking, in which Hieron served as a key re-distribution point for the movement of humans, from the Pontic sources of supply to their Mediterranean loci of demand; and a third monopoly in the fishing business.

Some scholars question the significance of the Black Sea as a source of supply of slaves to the Mediterranean, but the evidence to the contrary (see Avram in this volume) cannot be easily dismissed.⁸⁸ Indeed, it is precisely in connection with the Byzantians and the whole affair about the toll in the Straits that Polybios offers his well-known list of the main commodities that were traded between the Black Sea and the Mediterranean; one of these is said to be “the multitude of humans who are trafficked as slave-labour” (*to ton eis tas douleias agomenon somaton plethos*: Polyb. 4.38.4). The *emporion* Tanais, according to Strabo (11.2.3), functioned in Hellenistic times as a north-shore port of the re-shipment of human captives (mainly Scythians), who were brought there by inland peoples.⁸⁹ In the western shores, Istros and Odessos were among the main re-distribution points for Thracian captives, while along the southern littoral Sinope, Amisos and Teion stood for Paphlagonian and Bithynian supplies (Avram in this volume). Humans trafficked from these and other Pontic places to the Mediterranean slave-markets had to pass through Hieron. By purchasing the place, the Byzantians could oust all competitors, becoming the sole controllers of the southbound traffic.

Monopoly-holding, it seems, was part of a larger scheme which, in addition to trade in certain commodities, included the provision of protection. A strong concern with the establishment of a monopoly within a wider area is indicated by Polybios’ wording “they [sc. the Byzantians] wanted to leave to no one any operative base whatsoever”. This same concern is made even more explicit by Memnon of Herakleia, when he accounts of a specific event. In 250 BC or slightly later, the Kallatians intended to make the *emporion* Tomis (which bordered Kallatis) a *monopolion*. However, even though they concerned the eastern shore of the Black Sea, these plans alarmed the Byzantians to such a degree that they waged war against the Kallatians (and the Istrians): the attempt to give a port-of-trade the status of a *monopolion* was the cause of that war.⁹⁰ Obviously, building up their own monopoly system around the Straits required the hindrance, or forceful demolition, of rival schemes for *monopolia* round the Black Sea.

It therefore looks as if the investment in, and reorganization of, Hieron were parts of a larger and considered course of action, which the Byzantians were pursuing systematically in the second half of the 3rd century. Allowing free passage through the Straits – another way of saying that part of the traders’ transaction costs had been *negotiated away* – was a means of attracting more users of Byzantium’s services. It certainly meant loss of toll revenue. But an increase in the volume of trade passing through Byzantium and Hieron saw to it that any such losses were in the long run counterbalanced by trade income. Thus, to compensate for their inability to provide top-quality regular

protection of the imperial kind, the Byzantians were instead providing high-quality *cost*-protection of the fiscal kind, as a result of which the merchants' profits rose.

As Polybios (4.38.8-9) notes, in ca. 220 BC, "the Byzantians were the people who derived most benefit from the Pontic trade, because the situation of their city allowed them to export their surplus and import whatever they required on advantageous terms and without any danger or hardship". A fairly reliable index of Byzantium's rise to prosperity from the increasing trade, as well as from its role as a fiscal benefactor, is the very magnitude and timing of the pressure that began to be applied by Comontorius and his Tylian Kingdom. At first, the Byzantians were for a time compelled, through raids of shifting regularity, each time to give "gifts" (*dora*) to the amount of 3,000, or 5,000, or as much as 10,000 gold staters (i.e. 60,000, 100,000 and 200,000 Attic drachmas, respectively).⁹¹ After some time, however, the demands not only did become regularized, but also raised considerably, as Comontorius now replaced this irregular kind of tribute with payment of eighty talents (480,000 drachmas) a year (Polyb. 4.46.3-4).

This, in sum, was the situation prevailing in the Straits for part of the 3rd century, until ca. 220 BC. All the while, Comontorius and the pressures he was generating from the west served continually as a reminder to all of Byzantium's limitations in the field of monopolies – especially their power monopoly. Another reminder of the same circumstance came from the east in the form of hostile action of Prusias I of Bithynia, who succeeded in snatching Hieron from the Byzantians and holding it for a brief spell of time. Finally, a third and perhaps even more disturbing reminder came from none other than the acclaimed *prostates* within the Aegean, Rhodes, a sea-power that was prepared to fight not only for its own commercial interest, but also for the interests of a larger number of polities (Polyb. 4.38).

Conclusion

In the third quarter of the 3rd century BC, after it had armed itself with an assortment of local, "limited-range" monopolies, Byzantium was making a serious effort to *cost*-protect the merchants trading between the Mediterranean and the Pontos. This is the short answer to one of the questions raised in our introductory section (p. 289 above). The long answer has been given in more detail in the preceding four sections. Byzantium, it has been argued, pursued largely the same goal as one of its more distinguished historical precursors in the area, the Athenian Empire. The means of achieving that goal, however, were necessarily different. Lacking the resources and might that were needed to maintain real (i.e. unchallenged) monopoly over the protection routes *and* the key-points connecting them, Byzantium prioritized a parallel role as "fiscal benefactor"; its free-of-charge passage policy was an essential part of this role. As a result, traders obtained a marked reduction of their transaction costs. The

positive, symbiotic relationship that had existed in the days of the Athenian Empire between the political economy and the free market economy was thereby re-established. Pretty much like grants of *ateleia*, toll-free passage was facilitating the conversion of extra-commercial expenses to intra-commercial ones, creating favourable conditions for trade between the Black Sea and the Mediterranean. But unlike commerce-related *ateleia*, toll freedom constituted part of a larger package of protective measures and covered a far broader circle of economic actors than just the privileged few. This seems to have been the criterion which, according to Polybios, qualified the Byzantians to the title of “common benefactors of all” (*koinoi euergetai panton*).

This whole arrangement, however, became upset by the Byzantians’ decision to re-introduce the toll, a decision forced upon them by the tributary demands of the Tylian Kingdom. The reason why merchants reacted against this, it has been suggested above, owed less to the fact that they had again to pay charges for passage *per se*, and more to the fact that these charges both increased their transaction costs *and* bought them lower-quality security services. Once more the political economy – this time in the guise of the Rhodian navy – rushed to the rescue of free trade. In 220 BC, the toll was abolished and with it also the tribute that Byzantion paid to the Tylian Kingdom (Polyb. 4.46.4). At the same time, political re-arrangements in the area transferred managerial responsibility for the protective mechanisms at the Straits into new hands: the Byzantians ceded their place to Kavaros, the new ruler of the Tylian Kingdom, a change that occurred almost seamlessly, and with the full-hearted approval of the Rhodians and Prusias I of Bithynia (Polyb. 4.52.1). No Greek bulwark towards aggressive, tribute-hungry and trade-disrupting Greeks was raised, because none was needed any longer. Polybios’ eulogy of Kavaros, summing up the ruler’s achievement from 220 to the dissolution of his kingdom in ca. 212 BC, unfortunately survives in a fragmentary form. Nevertheless, quoting the extant text seems a fitting way of closing this paper:

Kavaros, the king of the Gauls living in Thrace, being kingly and high-minded (*megalophron*) by nature, took care that the traders sailing to Pontos enjoyed great security (*pollen men asphaleian*), and at the same time he rendered great services to the Byzantians in their wars against the Thracians and the Bithynians (Polyb. 8.22).

A new “fiscal benefactor” had been found. That he ruled over the erstwhile predators and was of non-Greek stock seems to have mattered little to the Greeks as long as he convinced them that he possessed the values they prized most.

Notes

- 1 Foundation date: Hdt. 4.144.2, cf. Euseb. *Chron.* versus Arm. (ed. Schöne II, 86). Loukopoulou & Laitar 2004, 915-916 (no. 674: Byzantion) cite further references.
- 2 The relationship between trade and fiscal exactions (tribute, taxes) has so far chiefly been treated in works which employ a predominantly theoretical line of reasoning, and which focus on the Roman Empire: see, in particular the model proposed by Hopkins 1980, and 1995-1996. A similar approach, discussing the possible impact of domestic fiscal exactions (i.e. liturgies and the *eisphora*-tax) on the level of private production and wealth in Classical Athens, is used by Osborne 1991.
- 3 I only know of two monographs on the history of Byzantion in Antiquity: Merle 1916; Newskaja 1955. See also Oberhummer 1899a, and 1899b; Olshausen 1996; for the inscriptions: *I.Byzantion*.
- 4 See, for instance, the *lex portorii provinciae Asiae* from ca. AD 62: Engelmann & Knibbe 1989; *SEG* 39, 1180, paragraph 2, lines 8-11 (dating from 75 BC) and *passim*.
- 5 Hdt. 4.144.1; Strab. 7.6.2; Dio Cass. 75.10.1. Cf. Malkin & Shmueli 1988. Thorough topographical description: Polyb. 4.38-44, cf. Dion.Byz. *Anaplys Bospori Thracii* (Müller (ed.) 1882).
- 6 Persian domination in early 5th century: Byzantion under Otanes, the Satrap of Lydia (Hdt. 5.26). The city took part in the Ionian Revolt 499-494 BC (Hdt. 5.103.2), but the Persians regained it (Hdt. 6.33.2) and held it until it was re-conquered in 478 by the Spartan Pausanias (Hdt. 9.89; Thuc. 1.94.2, cf. 1.128.5). Probably in the next year, Byzantion became a member of the Athenian Empire (Thuc. 1.131.1; cf. *ATL* III, 206).
- 7 Diod. 14.12.2 (r403); Polyb. 4.45.1. Thukydides (2.97.1-6), writing of king Sitalkes (429/8 BC), offers a description of tribute collection in the Odrysian Kingdom; even though he distinguishes between "tribute" (*phoros*) and "gifts" (*dora*), he stresses that in total value they were equal. On the Odrysian Kingdom, see Archibald 1998. Similar pressures by the Scythians: Vinogradov 1980; Marčenko 1993; Archibald 1994.
- 8 Rhodes 1992, 36.
- 9 *IG* I³, 263.V.16 (450/49); *IG* I³, 269.II.26 (443/2); *IG* I³, 279.II.32 (433/2); *IG* I³, 281.III.18 (430/29). Byzantion's presence in the assessment of 425/4 is restored: *IG* I³, 71.II.175. Cf. also *ATL* I, 250.
- 10 Early and more recent scholarship on 5th and 4th century grain exports from the Black Sea focuses mainly on the importance of a single importer, Athens: e.g. Gernet 1909, 271-391; Jardé 1925; Brašinskij 1963; de Ste. Croix 1972, 45-49; Noonan 1973; Isager & Hansen 1975, 20-23; Montgomery 1986; Figueira 1986. Some scholars, however, remain sceptical about the amount of Pontic grain exports to the Mediterranean world and especially to Athens in the 5th and (to some extent also in the) 4th centuries. They particularly point out that the figures for Athenian grain imports from the Black Sea, as given by our written sources, are exaggerated: see, e.g., Garnsey 1985; Garnsey 1988, 123-149; and Garnsey 1998, 63, 183-200; Vinogradov 1997b, 22-30; Tsetsckhladze 1998a, 63; Braund in this volume. For Athenian grain supplies from her *klerouchies* Lemnos, Imbros and Skyros, see the Grain-Tax Law of 374/3 BC, Stroud 1998; Moreno 2003. Continuing emphasis on the importance of Pontic grain exports: Austin 1994,

- especially 558-564; Whitby 1998; Keen 2000; Pébarthe 2000 and Moreno in this volume.
- 11 Methone: M&L, *GHI*, no. 65 (*IG I³*, 61, second decree), lines 33 ff.) Aphytis: *IG I³*, 62-63. See Pébarthe 2000, 55 with n. 76, 63.
 - 12 The relevant provisions are in lines 36-41: (a) γραφσαμένος δὲ πρὸς τὸς ἑλλησπ[ον-] / [το]φύλακας ἐχσάγε[ν] μέχρι τῷ τετραγμένω, (b) μέτε αὐτοὶ κολυόντων ἐχσάγεν μ[έτ-] / [ε ἄλ]λον ἐόντων κολύεν, (c) ἀζέμιος [δὲ] / [ἔσ]το καὶ ἐ ναῦς ἐ ἐχσάγοσα. See also Pébarthe 2000, 71-72; Rubel 2001. Rubel's rendering of the word *azemios* (in *IG I³*, 61.40-41) as "zahlungsfrei", i.e. "exemption from payment of the toll" (Rubel 2001, 44-45, 50) is not warranted. The word means "not liable to a fine".
 - 13 See also Pébarthe 2000.
 - 14 Even though Byzantium's productive capability was excellent, in practice it was unreliable. Polybios (4.45.7-8) says that the Byzantians are "the owners of a most fertile countryside, when they have carefully cultivated it and superb harvest is the result". But, he goes on to explain, the repeated raids of their non-Greek neighbours, who destroy part of the crops and carry away the rest, made the cultivation of that territory a non-paying proposition. It is more than likely that the Byzantians found themselves in the same plight also in the 5th century BC; its city-walls "were particularly strong on the landward side to the west", and an uninhabited area within the city-walls, called Thrakion, was probably used to accommodate rural fugitives in time of trouble, see Loukopoulou & Łaitar 2004, 918, and the works cited in note 7 above.
 - 15 Vélissaropoulos 1980, 212. Cf. Engelmann & Knibbe 1989, 166.
 - 16 For *diagogai* as a source of public income: [Arist.] *Oec.* 2.1346a8; *Syll.*³, 135 (*diagoge*); Strab. 4.3.2 (*diagogika tele*).
 - 17 Walbank 1957, 497. Note that elsewhere (at 4.47.1) Polybios says that the toll was imposed on those "exporting from the Pontos".
 - 18 Polyb. 4.44.3-4; cf., e.g., Funke 1989, 155-156. Some scholars, especially those who regard the introduction of the toll as a wartime measure (see note 74 below), find the 10 % to be too high: e.g. M&L, *GHI*, 161. Rubel (2001, 49) sees the rate of 10 % as something new in 410 BC, necessitated by the war crisis. He believes that before 411, when the toll was collected at Byzantion and not at Chrysopolis, the rate was only 2 %.
 - 19 *IG I³*, 52A; M&L, *GHI*, 58A.7. For a proposal to move the conventional date of 434/3 to ca. 431 BC, see Kallet-Marx 1993, 105-107.
 - 20 Tod, *GHI*, I, 109-110; Merle 1916, 23, n. 1; Mattingly 1964, especially 45-46 (Harpokration's reference to Antiphon for the word *dekateutas*), Cawkwell 1975, 54, n. 4.
 - 21 So also Rubel 2001. The year(s) in which the toll and the *Hellespontophylakes* were established remain unknown, but, as Rubel convincingly argues, both of them may date from the very early years of the empire. On the other hand, and *pace* e.g., Merle 1916, 22-23, there is nothing in particular to link the establishment of the toll station at Byzantion to Perikles' so-called Black Sea expedition of 436/5 BC: Plut. *Per.* 20, with Lewis 1992, 145-146 with n. 113.
 - 22 Plut. *Alc.* 29.6; Diod. 13.66.2; Xen. *Hell.* 1.3.1-12, 2.2.1, 4.8.27-28.
 - 23 Stroud 1998, 83: "We cannot assume that Athenian control of tolls and shipping at the entrance to the Bosphoros survived the victories of Antalkidas and the Spartans in that region in 387 BC". As Stroud notes, Dem. 23.177 may well refer to Athenian control of the *dekate* at the Straits again by 357/6 BC.

- 24 Cf. Stroud 1998.
- 25 Dem. 20.31-33, cf. Lys. 22.14; Xen. *Oec.* 20.27. According to a tradition known to Strabo (7.4.6) the Bosporan ruler Leukon, in the years between the opening of the port of Theodosia in 355 and ca. 349/8, sent to Athens from that port the amount of 2,100,000 *medimoi* of grain, i.e. an annual average of 260,000 *medimnoi* (see Moreno in this volume). The reliability of Demosthenes' figure of 400,000 *medimnoi* (at Dem. 20.32) continues to be the subject of debate, see, e.g., Braund in this volume, and more generally note 9 above. As Whitby notes (1998, 123), few today will take Demosthenes' figure at face value, and among the sceptics are those who believe it has an upward bias and those who believe it has a downward bias. I share the general scepticism towards this figure, but I also doubt whether Demosthenes' deviation (at whichever direction) from the correct figure was so significant as to mean much for my calculations.
- 26 Which is not to say that it was anything like "a normal price": see Reger 1993, 312-314.
- 27 Didymus' *Commentary on Demosthenes*, 11.1, cols. 10-11 (Pearson & Stephens (eds.) 1983); cf. *FGrH* 115: Theopompos F 292; *FGrH* 328: Philochoros F 162. For the view that Philip seized 180 of the 230 ships, see Hammond & Griffith 1979b, 576, generally followed by Bresson 2000, 132-133.
- 28 Bresson 2000, 132-133, 277-278, who (277, n. 57) concludes that these ships carried a total of 690,000 *medimnoi* of grain. Whitby's estimate (Whitby 1998, 124-125) is either 600,000 or 800,000 *medimnoi*, depending on the tonnage of the ships (120 or 160 tons).
- 29 Ships with a capacity to carry 3,000 *medimnoi* of grain (120 tons) were the commonest: Casson 1971, 183-184; Vélissaropoulos 1980, 62-64; Bresson 2000, 278, with n. 66; Whitby 1998, 124.
- 30 The two unidentified *dekatai* mentioned in the Grain-Tax Law of 374/3 BC: Stroud 1998, 4, lines 59-61, with pp. 81-84.
- 31 Olbia: *IOSPE* I², 24; *Syll.*³ 218; Dubois 1996, 28-39, no. 14. Byzantium: [Arist.] *Oec.* 2. 1346b24. Cf. Rostovtzeff 1941, 1287; Bogaert 1968: 119-120. For accounts kept of the currency conversion expenses, see [Dem.] 50.69.
- 32 Velkov & Domaradzka 1994; *SEG* 43, 486; cf. Archibald 2000-2001. For a similar charge for passage demanded in Egypt (i.e. an *ad valorem* tax of 10 % for transportation of goods through the Canopus), see the so-called *stele* of Nectanebo I (380-362 BC): Gunn 1943, especially sections 9-10. On the customs register from 5th century Elephantine in Egypt: Yardeni 1994; Briant & Descat 1998. See also the 1st century AD fiscal regulations of Kaunos: *SEG* 14, 639. A survey of the different kinds of taxes and dues is given by Vélissaropoulos 1980, 205-231, especially 214-215. A broader perspective is provided by N. Purcell 2005, 200-232. On the *pentakoste*, in particular, see Gofas 1969.
- 33 Finley 1985.
- 34 On prices and price-making, see Bresson 2000, 263-307 (chapter 11: "Les cités grecques, le marché et les prix"); Reger 1993; Reger 1994 (especially 54-55, 134-137, 144-144, 145-146: evidence for short-term price fluctuations on Hellenistic Delos), and the valuable essays collected in Andreau, Briant & Descat 1997.
- 35 On *ateleia* to merchants: Bresson 2000: 125-130, 137-138, 145, 147; cf. Oehler 1896; Schwahn 1934. On the legal problems involved in identifying *ateleia*-holders, see Pébarthe 2000, 61-62 (perceptive comments on *IG* I³, 40.52-57) and Rubinstein

- (forthcoming). On the Bosporan rulers' grant of *ateleia* to Athens, see Burstein 1978; 1993; Tuplin 1982; Braund in this volume.
- 36 Whether the political authority granting *ateleia* made the primary producers pay, via domestic taxes, for the discount given to merchants, or it recouped the loss in some other way is an important question, but one that cannot be treated here.
- 37 For this and what follows I am using the theory about "tribute and trade" developed by Frederic C. Lane (Lane 1966; 1979) and further refined by Niels Steensgaard (Steensgaard 1972; 1981). Cf. also Gabrielsen 2001.
- 38 Hdt. 9.114: "strong winds inhibit the north-bound voyage so that a fleet has to seek shelter at Lekton". Procop. *Aed.* 5.1.6-16 (5th century AD): ships had often to wait at Tenedos until a wind blowing from the south appeared (cf. e.g. [Dem.] 50.53). The importance of Tenedos is also attested by [Dem.] 17-19 (331 BC): the Macedonians had "forced all the ships coming from the Black Sea to put in at Tenedos". Louis Robert calls Tenedos the Gate of the Dardanelles, "où les navires attendaient, parfois longtemps, le bon vent qui permet de lutter contre le courant descendant" (Robert 1977, 10, n. 33). Modern observations about the prevailing wind conditions: Labaree 1957, especially 32-33; Neumann 1991. On all these matters, particularly the strategic position of Tenedos, see now Rutishauser 2001. On the significance of Sestos, see de Ste. Croix 1972, 48.
- 39 Cohen 1992, 54-55.
- 40 Garlan 1978; Adams 1989; de Souza 1999; Gabrielsen 2005.
- 41 On *katagein*, see de Ste. Croix 1972, 314; Garnsey 1988, 142-143, 150-151, 162.
- 42 Asheri 1998; Braund & Tsetschladze 1989; Tsetschladze 2000-2001.
- 43 Diod. 20.25; Strab. 11.2.12, 17.3.24, and 7.4.5-6 (on the Tauroi). Cf. also Xen. *An.* 7.5.12; Plut. *Per.* 50; Plin. *HN* 6.15.16; Tac. *Hist.* 3.47. Compare with the raids for booty and extortion by the Athenians, e.g. Xen. *Hell.* 1.1.20-22, 1.2.4, 1.3.3.
- 44 Davies 1984, 286.
- 45 See, for instance, the application of these pressures on Olbia: *IOSPE I²*, 43, especially A.10-23, 43-45, 83-94; *Syll.*³, 495. Cf. Vinogradov 1980; Marčenko 1993.
- 46 Garlan 1978, 16.
- 47 Stroud 1998, 4, lines 10-12, with commentary pp. 49-50: "merchant", in this inscription, is the "buyer" (*ho priamēnos*) of the *pentekoste*-tax payable in grain by Skyros, Imbros and Lemnos to Athens; *ho priamēnos* was responsible for the shipment of the grain to Peiraieus and its further transportation to Athens. Stroud (*ibid*) prefers the view that in cases such as this one, when no protection was offered by the state, the merchant had to manage without it. In my view, the provision "at his own risk" may well include the loss of cargo in storm, but I find it unlikely that it includes other kinds of risks, see Stroud 1998, 40-50.
- 48 I take "enemies" (*polemioi*) here to refer to just anyone who was being hostile to the merchants, be he the state-sponsored (or state-condoned) kind of predator or the independently operating, private one.
- 49 Gomme 1933b; Gabrielsen 1994, 118-123.
- 50 These routes and the evidence relating to them deserve a more detailed study than can be undertaken here.
- 51 Ps.-Skylax 67, 92; Polyb. 4.39.6, 50.2; Dion. Byz. *Anaplus* (Müller (ed.) 1882), 75 ff. with notes to frs. 58-59. *Syll.*³, 1010 = *I.Kalchedon* 13 is an epigram on a 3rd century altar.
- 52 Lehmann-Hartleben 1921; Lehmann-Haupt 1923. I have profited greatly from discussing this topic with Dr. Moreno, who generously shared with me his first-

- hand knowledge of the site. I have not been able to see O.L. Gabelko's paper, "Aims, Ways and Methods of Control over the Thracian Bosporos", which was presented at the Second International Congress on Black Sea Antiquities, Ankara 2-9 Sept. 2001.
- 53 Territorially, though, Hieron belonged to Kalchedon: Diod. 20.111.3; Strab. 12.4.2.
- 54 Dem. 20.30-35; 34.36; *IG II²*, 653 (of 289/8 BC): honours to king Spartokos. Cf. Burstein 1993. *Syll.³*, 212: Leukon's grant of grain export privileges to the Mytileneans.
- 55 *IOSPE I²*, 24; *Syll.³*, 218; Dubois 1996, no 14; cf. Lehmann-Haupt 1923, 372.
- 56 [Dem.] 50.17-19, 58.
- 57 [Dem.] 50.17-19, with 14, 20-23, 58.
- 58 Garnsey 1988.
- 59 *Syll.³*, 495.146-151; Xen. *Vect.* 3.14. Cf. Gabrielsen 1997, 195, n. 106.
- 60 In 335/4 BC, the general Diotimos (a nephew of Diotimos in Lys. 19.50-51) took charge of a squadron of fast-sailing triremes that were dispatched "to protect [merchantmen] from seaborne predators" (*epi ten phylaken ton leiston*: *IG II²*, 1623.276-282). In 326/5 BC, a naval force under the general Trasyboulos was sent "to convoy the grain transport" (*epi ten parapompen tou sitou*: *IG II²*, 1628.37-42).
- 61 For this event and what follows, see Didymos' *Commentary on Demosthenes* 11.1, col. 10.34-11.5: *FGrH* 328: Philochoros F 162, cf. *FGrH* 115: Theopompos F 292. See also Bresson 2000, 131-149 (chapter 7: "L'attentat d'Hieron et le commerce grec"). The decree inserted in Dem. 18.73-74, which claims that the Athenian protective force numbered 20 ships, is a later fabrication, see Wankel 1976, 444-445.
- 62 Cf. Morrison, Coates & Rankov 2000, 103, with Map 13.
- 63 *IG II²*, 1629.165-277, especially 217-223.
- 64 In Didymos' *Commentary on Demosthenes* 11.1, col. 10.40.42-44, Hieron is classified among the *hormeteria* (operational naval bases) and *kataphygas* (ports of refuge).
- 65 *IG II²*, 212.13-17, with Isokr. 17.57. See Gaidukevich 1971, 96-97.
- 66 *IG II²*, 212.59-65. On *hyperesia*, see Morrison 1984.
- 67 See Gajdukevich 1971, 85-86; Hind 1994a, 502.
- 68 Diod. 20.81.3; Strab. 14.2.5, cf. Polyb. 4.47.1-2. Gabrielsen 1997. See p. 288 above.
- 69 Aisch. 3.171-172 (Nymphaion: a "place (*chorion*) that at that time was a possession" of Athens); cf. Harp. s.v. "Nymphaion". Aischines' characterization of the Bosporan Kingdom as an "enemy", if not something invented to serve his rhetorical purposes, cannot constitute evidence for a long-standing hostility between the Spartocids and Athens, *contra* Burstein 1993. On the incorporation of Nymphaion into the Bosporan Kingdom, see Šelov & Kovedjaev 1985, 90-91; Zavoikin 1995, 92. Dependency of Pantikapaion: *SEG* 45, 996 (389-349 BC), cf. Hind 1994a, 492-493, 8; Tssetskhladze 1997b, 78-80.
- 70 *FGrH* 342: Krateros F 8 (Nymphaion paid one talent a year in tribute); *IG I³*, 100; *ATL* I, 527-529, 557; Aisch. 3.171-172.
- 71 Avram, Hind & Tssetskhladze 2004, 948 (no. 704) with further literature.
- 72 Imperial subjects in the northern Black Sea: Meiggs 1972, 197-198, 328-329; Hind 1994a, 492; Avram 1995, 195-198; Mattingly 1996; Braund 2003. Controversy persists about the extent and purpose of Perikles' so-called Black Sea expedition of 436/5 (Plut. *Per.* 20), which is usually associated to *IG I³*, 1180, a casualty list restored to mention "in Sinope": some scholars believe that the expedition was

- confined to the southern shore, others believe it probably reached the north (Hind 1994a, 492), while still other again doubt whether it took place at all: see Angeluscu 1992; Tsetsckhladze 1998a, 56-57. Neither of these views can be confirmed, and the point I make in the text is not dependent on any of them. In 424 BC, the Athenian general Lamachos with ten warships sailed into the Pontos on a fund-raising expedition (*argyrologia*): Thuc. 4.75.1-2, with Hornblower 1996, 245-247. Only in this case we can be fairly certain that the expedition did not proceed farther than the southern shore.
- 73 MacDonald 1982, 119; Rubel 2001, 46. Too much, I think, is sometimes made of Thukydides' report (Thuc. 3.2.2) that Mytilene, just prior to her revolt in 428/7 BC, imported Pontic foodstuffs and other commodities, e.g. MacDonald (1982, 119-120) and Rubel (2001, 47), who take the incident as an indication of the inability of the *Hellenotamiai* to exercise tight control (or of the fact that their office had not yet been established at that time). In fact, Athens' wish to accommodate a resourceful "ally" may be a sufficient explanation.
- 74 A wartime measure: M&L, *GHI*, 161. Rubel (2001, 49) suggests that before 411 BC the rate probably was only 1 to 2 %. But see MacDonald 1981, 143: "the need to make the toll a wartime measure seems unnecessary".
- 75 Cf. de Ste. Croix 1972, 47-48.
- 76 [Dem.] 50.4-6, 17 (quotes from 6).
- 77 Van Groningen 1933, 62-66.
- 78 Cf. de Ste. Croix 1972, 314.
- 79 Van Groningen 1933, 62-66. Other instances of Byzantian raids on shipping: e.g. Dem. 5.25 (346 BC). Byzantion's bid at micro-imperialism: Dem. 15.26; Polyae. *Strat.* 6.25.
- 80 Austin 1994, 559; de Ste. Croix 1972, 47; Garnsey 1988, 143. A.T. Murray, *Demosthenes*, vol. VI. Loeb Classical Library (London & Cambridge, Mass., 1964), translates [Dem.] 50.6 as follows: "...and the Byzantines and Chalcedonians and Cyzicenes were forcing their ships to put in to their ports because of the scarcity of grain in their own countries".
- 81 Ps.-Arist. *Oec.* 2.2.10, 1347b25-26.
- 82 Close relations between Byzantion and the Ptolemaic Kingdom in this period: Avram 2004; Archibald in this volume.
- 83 Polyb. 4.50.4, 9, with Strab. 12.8.11 (territory of Byzantion in Roman times). See Walbank 1957, 504-505; *FGrH* 81: Phylarchos F 8 reports Byzantian dominion over the Bithynians, cf. *I.Apameia*, p. 48; Avram 2003, 1203-1205. The process of expansion was already on in ca. 353 BC, with incorporation of Kalchedon and Selymbria: Dem. 15.26; Polyae. *Strat.* 6.25. Dion.Byz. 41 mentions Ptolemaios Philadelphos' gift of *chora epi tes Asias* to the Byzantians. Referring to Theopompos (*FGrH* 115: Theopompos F 247), Stephanos of Byzantion (s.v. *Astai* and *Astakos*) says that Astike, a region between Perinthos and Apollonia Pontike, was territory belonging to the Byzantians (*chora Byzantion*).
- 84 Dion.Byz. *Anaplys* fr. 58, who calls Kallimedes *Seleuci exercitus dux*. See also Lehmann-Hartleben 1921; Bengtson 1944, 118 (no. 16). Grainger 1997, 99. Memnon of Herakleia (*FGrH* 434: Memnon F 15) mentions a war between Byzantion and Antiochos; Vinogradov 1999, 288-289 identifies the Seleukid king with Antiochos II.
- 85 The translation of W.R. Paton (*Polybius, The Histories*, vol. 2. Loeb Classical Library [London & Cambridge, Mass. 1962, repr. 1960], p. 421) is as follows: "... the place

called “The Holy Place” on the Bosphorus, which a few years previously they had acquired by purchase for a large sum, owing to its favourable situation, as they did not wish to leave anyone any base from which to attack traders with the Pontus or interfere with the slave-trade or the fishing”. The translation of J. de Foucault (*Polybe, Histoires*, ed. Budé [Paris 1972]) reads as follows: “Hieron ... place que, ... les Byzantins avaient acquise en la payant fort cher à cause de l’heureuse position des lieux, pour ne laisser à personne aucune base de départ contre ceux qui naviguent sur le Pont pour y faire du commerce ou se livrer au trafic des esclaves, ainsi que ceux qui vivent de la pêche sur mer”. My own translation, given in the text, takes into account the possibility that, in view of the “μήτε ... μήτε” construction, the prepositions κατά and περί can carry a similar, if not the same, meaning: LSJ s.v. κατά (with gen. no. 7) is rendered “in respect of”, “concerning” (e.g. Xen. *Cyr.* 1.2.16; Aisch. 3.50), and περί (with acc. nos 5, 3) is rendered “about”, “concerning”, “in respect of”. Finally, Walbank 1957, 504, translates τὰς τῆς θαλάττης ἐργασίας with “gain from the sea itself”, especially “fishing”. While “fishing” seems justified, it may be noted that elsewhere (e.g. *IG* II², 903 = *Syll.*³, 640, line 2: πρὸς τεῖ κατὰ θάλατταν ἐργασίαι) the same expression means “commercial activities at sea”, particularly “trade”.

86 E.g. Polyb. 1.41.6.

87 When Prusias of Bithynia, after the war of 220 BC, surrendered Hieron to the Byzantians, he saw to it that its installations were demolished so that it could not be used as a *phrourion*: Polyb. 4.52.7-8.

88 The negative view: Tsetschladze 1998a, 67-69 (with references to further literature); Braund & Tsetschladze 1989; Tsetschladze 2000-2001. The positive (and older) view: Pippidi 1973; Heinen 2001, especially 487. The question of whether piracy or warfare was the main source of supply was raised by Finley 1962. From an economic point of view, however, the question is of lesser relevance, see Gabrielsen 2005.

89 On the northern shores *emporion*, see Hind 1995-1996; Hind 1997.

90 *FGrH* 434: Memnon of Herakleia F 13 (Photios 228a-b): “Not much later, war was waged by the Byzantians against the Kallatians (who were a colony of Herakleia) and against the Istrians about the *emporion* Tomis, which bordered Kallatis, as the Kallatians intended to make the place a *monopolion*. Each side sent embassies to Herakleia to secure its alliance”, etc. See Avram 2003, 1187-1188, n. 15-18, and 1211-1212, dating the war to about 255-254 BC. See also Ager 1996, 108, no. 34, who dates the event to the period 253-247 BC.

91 For the conversion of “gold pieces” into drachmas, see Walbank 1957, 499.

Abbreviations

ATL	Meritt, B.D., H.T. Wade-Gery & M.F. MacGregor 1939-1953. <i>The Athenian Tribute Lists I-IV</i> . Cambridge & Princeton.
BE	<i>Bulletin épigraphique</i> .
CAF	Kock, T. 1880-1888. <i>Comicorum Atticorum fragmenta I-III</i> . Leipzig.
CAH	<i>Cambridge Ancient History</i> .
CEG II	Hansen, P.A. 1989. <i>Carmina epigraphica Graeca II</i> . Berlin-New York.
CIG	<i>Corpus Inscriptionum Graecarum</i> .
CIRB	Struve, V.V. (ed.) 1965. <i>Corpus Inscriptionum Regni Bosporani</i> . Leningrad.
CVA	<i>Corpus Vasorum Antiquorum</i> .
FD	<i>Fouilles de Delphes</i> .
FGrH	Jacoby, F. 1924-1958. <i>Die Fragmente der griechischen Historiker I-III</i> . Berlin.
FRA	Osborne, M.J. & S.G. Byrne 1996. <i>The Foreign Residents of Athens. An Annex to the "Lexicon of Greek Personal Names"</i> (Studia Hellenistica, 33). Leuven.
GVI I	Peek, W. 1955. <i>Griechische Vers-Inschriften I. Die Grabepigramme</i> . Berlin.
I.Apameia	Corsten, T. 1987. <i>Die Inschriften von Apameia (Bithynien) und Pylai (IK, 32)</i> . Bonn.
I.Byzantion	Łajtar, A. 2000. <i>Die Inschriften von Byzantion I: Die Inschriften (IK, 58)</i> . Bonn.
I.Callatis	Avram, A. 1999. <i>Inscriptiones Daciae et Scythiae Minoris Antiquae, Series Altera. Inscriptiones Scythiae Minoris Graecae et Latinae, III. Callatis et Territorium</i> . Bucarest.
I.Didyma	Rehm, A. 1958. <i>Didyma II. Die Inschriften</i> . Berlin.
I.Histriae	Pippidi, D.M. 1983. <i>Inscriptiones Daciae et Scythiae Minoris Antiquae, Series Altera. Inscriptiones Scythiae Minoris Graecae et Latinae, I. Inscriptiones Histriae et Viciniae</i> . Bucarest.
I.Kalchedon	Merkelbach, R. 1997. <i>Die Inschriften von Kalchedon (IK, 20)</i> . Bonn.
I.Magnesia	Kern, O. 1900. <i>Die Inschriften von Magnesia am Maeander</i> . Berlin.
IAK	<i>Izvestija imperatorskoj Archeologičeskoj Kommissii</i> . St Peterburg.
ID	Durrbach, F. 1926-1937. <i>Inscriptions de Délos</i> . Paris.
IG	<i>Inscriptiones Graecae</i> .
IGBulg	Mihailov, G. 1956-1966. <i>Inscriptiones Graecae in Bulgaria repertae</i> . Sofia.
IGCH	Thompson, M., O. Mørkholm & C.M. Kraay (eds.) 1973. <i>An Inventory of Greek Coin Hoards</i> . New York.
IK	<i>Inschriften griechischer Städte aus Kleinasien</i> .

IOSPE	Latyshev, V. 1885-1901. <i>Inscriptiones antiquae orae septentrionalis Ponti Euxini Graecae et Latinae</i> . Leningrad.
LIMC	<i>Lexicon Iconographicum Mythologiae Classicae</i> .
MAIET	<i>Materialy po archeologii, istorii i etnografii Tavrii</i> .
MatIsslA	<i>Materialy i issledovanija po archeologii SSSR</i> .
M&L, GHI	Meiggs, R. & D. Lewis 1969 (revised edition 1988). <i>A Selection of Greek Historical Inscriptions to the End of the Fifth Century B.C.</i> Oxford.
NEPKh	Solomonik, E.I. 1964-1973. <i>Novye epigrafičeskie pamjatniki Chersonesa I-II</i> . Kiev.
OGIS	Dittenberger, W. 1903-1905. <i>Orientis Graeci Inscriptiones Selectae</i> . Leipzig.
PCG	Kassel, R. & C. Austin 2001. <i>Poetae Comici Graeci I. Comoedia Dorica Mimi Phlyaces (Poetae Comici Graeci)</i> . Berlin.
RE	<i>Pauly's Realencyclopädie der klassischen Altertumswissenschaft. Neue Bearbeitung. Unter Mitwirkung zahlreicher Fachgenossen herausgegeben von Georg Wissowa</i> .
SAI	<i>Archeologija SSSR. Svod archeologičeskich istočnikov</i> .
SEG	<i>Supplementum Epigraphicum Graecum</i> .
SGDI	Collitz, H. 1884-1915. <i>Sammlung der griechischen Dialekt-Inschriften</i> . Göttingen.
SoobGE	<i>Soobščeniya Gosudarstvennogo Ermitaža</i> . Leningrad/St Peterburg.
SoobGMII	<i>Soobščeniya Gosudarstvennogo Muzeja Izobrazitel'nyh Iskusstvo imeni A.S. Puškina</i> . Moskva.
SV	Schmitt, H.H. 1969. <i>Die Staatsverträge des Altertums, vol. 3: Die verträge der griechisch-römischen Welt von 338 bis 200 v.Chr.</i> München.
Syll. ³	Dittenberger, W. 1915-1924. <i>Sylloge Inscriptionum Graecarum</i> , 3rd ed. Leipzig.
Tod, GHI	Tod, M. 1933. <i>A Selection of Greek Historical Inscriptions to the End of the Fifth Century B.C.</i> Oxford.
VMGU	<i>Vestnik MGU. Vestnik Moskovskogo Gosudarstvennogo universiteta</i> . Moskva.

Bibliography

The names of journals are quoted in accordance with Projekt Dyabola, Realkatalog des Deutschen Archäologischen Instituts, Rom.

- Abadie-Reynal, C. 1999. Les amphores romaines en Mer Noire (Ier-IVe s.), in: Garlan (ed.) 1999b, 255-264.
- Abadie-Reynal, C. (ed.) 2003. *Les céramiques en Anatolie aux époques hellénistique et romaine. Actes de la Table Ronde d'Istanbul, 22-24 mai 1996*. Paris.
- Abramov, A.P. 1993, Antičnye amfory. Periodizacija i chronologija, *Bosporskij sbornik* 3, 4-135.
- Adams, S. 1989. Aspects de la sécurité de la navigation dans l'antiquité grecque, in: G. Thür (ed.), *Symposion 1985. Vorträge zur griechischen und hellenistischen Rechtsgeschichte (Ringberg 24.-26. Juli 1985)*. Köln-Wien, 283-291.
- Adiego, I.J. 1997. Fragment d'une inscription lydienne, *IstMitt* 47, 156-157.
- Ager, S.L. 1996. *Interstate Arbitration in the Greek World 337-90 BC*. Berkeley-Los Angeles-London.
- Agnoletti, M. 2004. Legnami, foreste e costruzioni navali, in: Galetti (ed.) 2004, 143-144.
- Aksu, A.E., D.J.W. Piper & T. Konuk 1987. Quaternary growth patterns of Büyük Menderes and Küçük Menderes Deltas, Western Turkey, *Sedimentary Geology* 52, 227-250.
- Alabe, F. 1986. Les timbres amphoriques de Sinope trouvés en dehors du domaine pontique, in: Empereur & Garlan (eds.) 1986, 375-389.
- Alekseev, A.Ju. (ed.) 1997. *Zwei Gesichter der Ermitage: Die Skythen und ihr Gold* 1. Bonn.
- Alekseeva, E.M. 1991. *Grecheskaja kolonizacija Severo-Zapadnogo Kavkaza*. Moskva.
- Alekseeva, E.M. 1997. *Antičnyj gorod Gorgippija*. Moskva.
- Alekseeva, E.M. 1999. La chôra de Gorgippia: nécropoles et peuplement, in: M. Brunet (ed.), *Territoires des cités grecques*. Paris, 323-340.
- Alexandrescu, P. 1966. *Histria II. Necropola tumulară. Săpături 1955-1961*. Bucarest, 133-294.
- Alexandrescu, P. 1978. *Histria IV. La céramique d'époque archaïque et classique, VIIe-IVe s.* Bucarest.
- Alexandrescu, P. 1988. Însemnări arheologice, *StCl* 26, 111-121.
- Alexandris, O. 1973-74. Athenai, *ADelt* 29 B, 110-181.
- Alicu, D. 1994. *Die römischen Lampen. Ulpia Traiana Sarmizegetusa (Bibliotheca Musei Napocensis, VII)*. București.

- Amandry, M., B. LeGuen-Pollet & B. Özcan 1991. Le trésor de Binbaşıoğlu (Tokat, Turquie). Monnaies de bronze des villes du Pont frappées sous Mithridate VI Eupator, in: B. Remy (ed.), *Pontica I: Recherches sur l'histoire du Pont dans l'Antiquité*. Paris, 61-76.
- Ameling, W. 1994. Prosopographia Heracleotica, in: L. Jonnes (ed.), *The inscriptions of Heraclea Pontica. With a prosopographia heracleotica* (IK, 44). Bonn, 115-168.
- Amyx, D.A. 1958. The Attic Stelai: Part III. Vases and other containers, *Hesperia* 27, 163-310.
- Andreau, J., P. Briant & R. Descat (eds.) 1997. *Économie antique. Prix et formation de prix dans les économies antiques* (Entretiens d'Archéologie et d'Histoire, 3). Saint-Bertrand-de Comminges.
- Andronikos, M. 1984. *Vergina. The Royal Tombs and the Ancient City*. Athens.
- Angelescu, M. 1992. Un problème controversé: l'expédition de Péricles dans le Pont Euxin, *Pontica* 25, 45-54.
- Anochin, V.A. 1977. *Monetnoe delo Chersonesa (IV v. do n.e. XII v. n.e.)*. Kiev.
- Anochin, V.A. 1986. *Monetnoe delo Bospora*. Kiev.
- Anochin, V.A. 1989. *Monety antičnykh gorodov Severo-Zapadnogo Pričernomor'ja*. Kiev.
- Anokhin, V.A. 1980. *The Coinage of Chersonesus IV Century BC – XII Century AD* (BAR International Series, 69). Oxford.
- Archibald, Z.H. 1994. Thracians and Scythians, in: *CAH*, 2nd edn., vol. 3. Cambridge, 444-475.
- Archibald, Z.H. 1998. *The Odrysian Kingdom of Thrace, Orpheus Unmasked*. Oxford.
- Archibald, Z.H. 2000-2001. The Odrysian river port near Vetren, Bulgaria, and the Pistiros inscription, *Talanta* 32-33, 253-275.
- Archibald, Z.H. 2004. In-groups and out-groups in the Pontic cities of the Hellenistic age, in: C.J. Tuplin (ed.) *Pontus and the Outside World. Studies in Black Sea History, Historiography, and Archaeology* (Colloquia Pontica, 9). Leiden-Boston, 1-15.
- Archibald, Z.H., J.K. Davies, V. Gabrielsen & G. Oliver (eds.) 2001. *Hellenistic Economies*. London.
- Archibald, Z.H., J.K. Davies & V. Gabrielsen (eds.) 2005. *Making, Moving, and Managing: the New World of Ancient Economies, 323-31 BC*. Oxford.
- Arsen'eva, T.M. 1970. Mogil'nik u derevni Novo-Otradnoe, in: A.I. Meljukova (ed.), *Pol'selenija i mogil'niki Kerčenskogo poluoostrova načala n. e.* (Matl'ssLA, 155). Moskva, 82-149.
- Arsen'eva, T.M. 1988. *Svetil'niki Tanaisa*. Moskva.
- Arsen'eva, T.M. & S.A. Naumenko 1992. *Usad'by Tanaisa*. Moskva.
- Artamonov, M. (ed.) 1974. *The Dawn of Art: Palaeolithic, Neolithic and Bronze Age Remains Found in the Territory of the Soviet Union: the Hermitage Collection*. Leningrad.

- Arveiller-Dulong, V. & M.-D. Nenna 2000. *Les Verres Antiques 1. Contenants à parfum en verre moulé sur noyau et vaisselle moulée VIIe siècle avant J.C. Ier siècle après J.-C. Musée du Louvre, Département des Antiquités Grecques, Étrusques et Romaines*. Paris.
- Asheri, D. 1998. The Achaeans and the Heniochi. Reflections on the origin and history of a Greek rhetorical *topos*, in: Tsetschladze (ed.) 1998c, 268-286.
- Ashton, S.-A. 2001. *Ptolemaic Royal Sculpture from Egypt. The interaction between Greek and Egyptian traditions* (BAR International Series, 923). Oxford.
- Auriemma, R. 2000. Le anfore del relitto di Grado e il loro contenuto, *MEFRA* 112, 27-51.
- Austin, M.M. 1994. Society and Economy, in: *CAH*, 2nd edn., vol. 6. Cambridge, 527-564.
- Avram, A. 1995. *Poleis und Nicht-Poleis im Ersten und Zweiten Attischen Seebund*, in: M.H. Hansen & K. Raaflaub (eds.), *Studies in the Ancient Greek Polis* (Papers of the Copenhagen Polis Centre, 2; *Historia. Einzelschriften*, 95). Stuttgart, 191-200.
- Avram, A. 1996. *Histria. Les résultats des fouilles VIII. Les timbres amphoriques 1. Thasos*. Bucarest-Paris.
- Avram, A. 1997-1998. Notes sur l'inscription de l'*emporion* de Pistiros en Thrace, *MarNero* 3, 37-46.
- Avram, A. 1998-2000. Statóneikos Euaréstou Tianós o kaí Tomeítes, *StCl* 34-36, 137-140.
- Avram, A. 2001. Les territoires d'Istros et de Callatis, in: *Problemi della "chora" coloniale dall'Occidente al Mar Nero* 40. *Atti del Convegno di studi sulla Magna Grecia, Taranto, 29 settembre - 3 ottobre 2000*. Taranto, 593-632.
- Avram, A. 2003. Antiochos II Théos, Ptolémée II Philadelphe et la Mer Noire, *CRAI* 2003, 1181-1213.
- Avram, A. 2004. Sur la date de la divinisation de Ptolémée II Philadelphe à Byzance, in: L. Ruscu, C. Ciongradi, R. Ardevan, C. Roman & C. Găzdac (eds.) *Orbis Antiquus. Studia in honorem Ioannis Pisonis*. Cluj-Napoca, 828-833.
- Avram, A., J. Hind & G. Tsetschladze 2004. The Black Sea Area, in: Hansen & Nielsen (eds.) 2004, 924-973.
- Babeničkov, V.P. 1963. Čornoričes'kyj Mogyl'nik, *Archeologični Pam'jatky URSR* 13, 90-123.
- Bäbler, B. 1998. *Fleissige Thrakerinnen und wehrhafte Skythen. Nichtgriechen im klassischen Athen und ihre archäologische Hinterlassenschaft* (Beiträge zur Altertumskunde, 108). Stuttgart-Leipzig.
- Bäbler, B. 2005. Bobbies or boobies? The Scythian police force in Classical Athens, in: D. Braund (ed.), *Scythians and Greeks. Cultural Interactions in Scythia, Athens and the Early Roman Empire (Sixth Century BC-First Century AD)*. Exeter, 114-122.

- Badal'janc, J.S. 1999. La Rhodes hellénistique et le nord de la mer noire (les relations économiques d'après l'épigraphie céramique), in: Garlan (ed.) 1999b, 247-253.
- Bagnall, R. 1976. *Ptolemaic Administration outside Egypt. The Ptolemaic Possessions in Thrace, the Northern Aegean, and Ionia*. Leiden.
- Bagnall, R. 1977. Price in "Sales on Delivery", *GrRomByzSt* 18, 85-96.
- Bailey, D.M. 1975. *A Catalogue of the Lamps in the British Museum I: Greek, Hellenistic, and Early Roman Pottery Lamps*. London.
- Bailey, D.M. 1988. *A Catalogue of the Lamps in the British Museum III: Roman Provincial Lamps*. London.
- Ballet, P. 2002. Les productions céramiques d'Égypte à la période hellénistique. Les indices de l'hellénisation, in: Blondé, Ballet & Salles (eds.) 2002, 85-96.
- Bandurovskij, A.V. 2001. K voprosu o torgovo-obmennych svjazjach lesostepnyh plemen Dnepro-Donckogo meždureč'ja s antičnymi gorodami Severnogo Pričernomor'ja, in: V.Ju. Zuev et al. (eds.), *Bosporskij fenomen: Kolonizacija regiona, formirovanie polisov, obrazovanie gosudarstva*. Part 2. St Peterburg, 14-16.
- Bandurovskij, O.V. 2004. *Davn'ogreckyj import u prydniprov's'komu Livoberežnomu lisostepu u drugyj polovyni 6-3 st. do n.e.* Kyïv. Abstract of PhD Thesis.
- Barber, G.L. 1935. *The Historian Ephorus*. Cambridge.
- Barker, C. 2004. The use of Rhodian amphorae in Hellenistic graves at Nea Paphos, Cyprus, in: Eiring & Lund (eds.) 2004, 73-84.
- Barr-Sharrar, B. & E.N. Borza (eds.) 1982. *Macedonia and Greece in Late Classical and Early Hellenistic Times* (Studies in the History of Art, 10). Washington.
- Basch, L. 1985. The Isis of Ptolemy II Philadelphus, *The Mariner's Mirror. The International Journal of the Society for nautical Research* 71, 129-151.
- Basch, L. 1987. *Le musée imaginaire de la marine antique*. Athènes.
- Baschmakoff, A. 1948. *La synthèse des periples pontiques. Methode de precision en paleo-ethnologie*. Paris.
- Beal, J.-C. (ed.) 1995. *L'arbre et la forêt, le bois dans l'antiquité* (Publications de la Bibliothèque Salomon Reinach, Université Lumière Lyon, 2). Lyon.
- Beazley, J.D. 1956. *Attic Black-Figure Vase-Painters*. Oxford.
- Behr, D. 1988. Neue Ergebnisse zur pergamenischen Westabhangkeramik, *IstMitt* 38, 97-178.
- Bekker-Nielsen, T. (ed.) 2005. *Ancient Fishing and Fish Processing in the Black Sea Region* (Black Sea Studies, 2). Aarhus.
- Beljaev, S.A. 1967. Pozdneantičnye nadpisi na amphorach iz raskopok Chersonesa 1961 g., *NumEpigr* 7, 127-143.
- Bellinger, A.R. 1961. *Troy: The Coins* (Supplementary Monograph, 2). Princeton.
- Belov, G.D. 1962. Ellinističeskij dom v Chersonese, *TrudyErmit* 7, 143-183.
- Bengtson, B. 1944. *Die Strategie in der hellenistischen Zeit*, vol. 2. Munich.

- Berges, D. 1996. *Rundaltäre aus Kos und Rhodos*. Berlin.
- Berthold, R.M. 1984. *Rhodes in the Hellenistic Age*. Ithaca-London.
- Berti, F., A. Carandini, E. Fabbricotti, C. Gasparri et al. 1970. *Ostia II. Le Terme del Nuotatore, Scavo dell'ambiente I* (Studi Miscellanei, 16). Roma.
- Bes, Ph. & J. Poblome 2006. A new look at old data: the ICRATES platform, in: Malfitana, Poblome & Lund (eds.) 2006, 141-165.
- Bezeczky, T. 2005. Roman Amphorae from Vindobona, in: F. Krinzinger (ed.), *Vindobona. Beiträge zu ausgewählten Keramikgattungen in ihrem topographischen Kontext* (Archäologische Forschungen, 12). Wien, 35-83.
- Bidzilja, V.I., J.V. Boltrik, B.M. Mozolevskij & I.P. Savovskij 1977. Kurgannyj mogil'nik v uročišče Nosaki, in: V.I. Bidzilja (ed.), *Kurgannye mogil'niki Rjasnye Mogily i Nosaki*. Kiev, 61-158.
- Bielman, A. 1994. *Retour à la liberté. Libération et sauvetage des prisonniers en Grèce ancienne. Recueil d'inscriptions honorant des sauveteurs et analyse critique*. Lausanne.
- Bilde, P.G., J.M. Højte & V.F. Stolba (eds.) 2003. *The Cauldron of Ariantas. Studies presented to A.N. Ščeglov on the occasion of his 70th birthday* (Black Sea Studies, 1). Aarhus.
- Blavatskij, V.D. 1949. Severo-pontijskie goroda v konce II-I vv. do n.e., *VMGU*, 7, 55-70.
- Blavatskij, V.D. 1969. O rabach-meotach, *KSIA* 116, 68-69.
- Blinkenberg, Chr. 1941. *Lindos. Fouilles et recherches 1902-1914 II: Inscriptions*. Copenhagen.
- Blondé, F., A. Muller & D. Mulliez 1991. Le comblement d'un puits public à Thasos 5. Le matériel amphorique (les abords nord-est de l'Agora de Thasos, II.5), *BCH* 115, 213-242.
- Blondé, F., P. Ballet & J.-F. Salles (eds.) 2002. *Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale (Chypre, Égypte et côte syro-palestinienne)* (Travaux de la Maison de l'Orient Méditerranéen, 35). Lyon.
- Boardman, J. 1967. *Excavations in Chios 1952-1955. Greek Imporio* (BSA Supplementary, 6). London.
- Boardman, J. 1994. *The Diffusion of Classical Art in Antiquity*. London.
- Boardman, J. 2002. *The Archaeology of Nostalgia*. London.
- Boardman, J. & J.W. Hayes 1966. *Excavations at Tocra 1963-1965. The Archaic Deposits I* (BSA Supplementary, 4). London.
- Bogaert, R. 1968. *Banques et banquiers dans les cités grecques*. Leiden.
- Boltrik, Ju.V. 1981. Ob odnom iz verojatnych torgovych traktov Skifii, in: V.F. Gening, I.F. Kovaleva, E.V. Černenko & V.I. Kostenko (eds.), *Aktual'nye problemy archeologičeskich issledovanij v Ukrainskoj SSR, Tezisy respublikanskoj konferencii molodych učenyh*. Kiev, 59-60.
- Boltrik, Ju.V. 1990. Suchoputnye komunikacii Skifii (po materialam novostroečnyh issledovanij stepnogo Priezov'ja do Dnepra), *SovA* 4, 30-45.

- Boltunova, A.I, I.S. Kameneckij & D.V. Deopik 1969. Raskopki zapadnogo rajona Tanaisa (1957-1960 gg.), in: D.B. Šelov (ed.), *Antičnye drevnosti Podon'ja-Priazov'ja* (MatIssIA, 154). Moskva, 6-97.
- Boriskovskaja, S.P. (ed.) 1982. *Chudožestvennye izdelija antičnych masterov*. Leningrad.
- Borisov, A.A. 1956. O kolebanijach klimata Kryma za istoričeskoe vremja, *Izvestija Vsesojuznogo Geografičeskogo Obščestva* 88.6, 532-541.
- Böttger, B. & D.B. Šelov 1998. *Amphorendipinti aus Tanais*. Moscow.
- Bounegru, O. 1999-2000. Pottery industry in the late Hellenistic period: a structural approach, *MarNero* 4, 117-126.
- Bounegru, O. 2003. La production des ateliers de céramique de Pergame (vallée de Kestel): un aperçu général, in: Abadie-Reynal (ed.) 2003, 137-140.
- Bounegru, O. & S. Erdemgil 1998. Terra-Sigillata-Produktion in den Werkstätten von Pergamon-Ketiostal – Vorläufiger Bericht, *IstMitt* 48, 263-277.
- Bousquet, J. 1977. Inscriptions de Delphes, in: *Études Delphiques* (BCH Supplément, 4). Paris and Athènes, 91-101.
- Bouzek, J., M. Domaradzki & Z.H. Archibald (eds.) 1996. *Pistiros I. Excavations and Studies*. Prague.
- Bradeen, D.W. 1974. *The Athenian Agora 17. The Funerary Monuments*. Princeton.
- Brašinskij, I.B. 1963. *Afiny i Severnoe Pričernomor'e v VI-II vv. do n.e.* Moskva.
- Brašinskij, I.B. 1973. Pontijskoe piratstvo, *VDI* 3, 124-133.
- Brašinskij, I.B. 1976. Amfory Mendy (o lokalizacii gruppy amfor s "rjumkoobraznymi nožkami"), in: N.I. Sokol'skij, I.B. Brašinskij, K.S. Gorbunova & P.N. Schulz (eds.), *Chudožestvennaja kul'tura i archeologija antičnogo mira*. Moskva.
- Brašinskij, I.B. 1980. *Grečeskij keramičeskij import na Nižnem Donu v V-III vv. do n.e.* Leningrad.
- Brašinskij, I.B. 1984. *Metody issledovanija antičnoj trgovli na primere Severnogo Pričernomor'ja*. Leningrad.
- Braund, D. 1994. *Georgia in Antiquity*. Oxford.
- Braund, D. 1995. Fish from the Black Sea. Classical Byzantium and the Greekness of trade, in: J. Wilkins, D. Harvey & M. Dobson (eds.), *Food in Antiquity*. Exeter, 162-170.
- Braund, D. 2003. The Bosporan Kings and Classical Athens: imagined breaches in a cordial relationship (Aisch. 3.171-172; [Dem.] 34.36), in: Bilde, Højte & Stolba (eds.) 2003, 197-208.
- Braund, D. 2005a. Patterns of Pontic exchange, in: C. Katsari & S. Mitchell (eds.), *The economy of Roman Asia Minor*. London, 115-138.
- Braund, D. 2005b, Pericles, Cleon and the Pontus: the Black Sea in Athens c.440-421, in: D. Braund (ed.), *Scythians and Greeks. Cultural Interactions in Scythia, Athens and the Early Roman Empire (Sixth Century BC-First Century AD)*. Exeter, 80-99.

- Braund, D.C. & G.R. Tsetskhladze 1989. The export of slaves from Colchis, *CIQ* 39, 114-125.
- Bravo, B. 1983. Le commerce des céréales chez les Grecs de l'époque archaïque, in: P. Garnsey & C.R. Whittaker (eds.), *Trade and Famine in Classical Antiquity*. Cambridge, 17-29.
- Bravo, B. 2001. Luoghi di culto nella *chora* di Olbia Pontica, in: *Problemi della chora coloniale dall'Occidente al Mar Nero. Atti del Quarantesimo convegno di studi sulla Magna Grecia, Taranto 29 settembre - 3 ottobre 2000*. Taranto, 221-266.
- Bresson, A. 1993. Les cites grecques et leurs *emporía*, in: Bresson & Rouillard (eds.) 1993, 163-226.
- Bresson, A. 2000. *La cité marchande* (Scripta Antiqua, 2). Bordeaux.
- Bresson, A. & P. Rouillard (eds.) 1993. *L'Emporion*. Paris.
- Briant, P. & R. Descat 1998. Un registre douanier de la satrapie d'Égypte à l'époque Achéménide, in: N. Grimal & B. Menu (eds.) *Le commerce en Égypte ancienne* (Institut français d'archéologie Orientale, Bibliothèque d'Étude, 121). Cairo, 59-104.
- Bricault, L. 2000a. Études isiaques: perspectives, in: Bricault (ed.) 2000b, 189-210.
- Bricault, L. (ed.) 2000b. *De Memphis à Rome. Actes du Ier Colloque international sur les études isiaques, Poitiers - Futuroscope, 8-10 avril 1999*. Leiden-Boston-Köln.
- Bricault, L. 2001. *Atlas de la diffusion des cultes isiaques: (IVe s. av. J.-C. - IVe s. apr. J.-C.)* (Mémoires de l'Académie des Inscriptions et Belles-Lettres, 23). Paris.
- Bringmann, K. & H. von Steuben 1995. *Schenkungen hellenistischer Herrscher an griechische Städte und Heiligtümer I: Zeugnisse und Kommentar*. Berlin.
- Broad, W.J. 2003. The Black Sea yields ship from Greece in glory day, *The New York Times*, January 16, 2003.
- Brock, R. 1994. Greece: Ancient Greece, in: J. Robinson (ed.), *The Oxford Companion to Wine*. Oxford, 464-467.
- Brun, P. 1993a. La faiblesse insulaire: histoire d'un topos, *ZPE* 99, 165-183.
- Brun, P. 1993b. La stele des cereals de Cyrène et le commerce du grain en Egée au IVe s.av.J.C., *ZPE* 99, 185-196.
- Bruneau, P. 1970. *Recherches sur les cultes de Délos à l'époque hellénistique et à l'époque impériale*. Paris.
- Bucovală, M. 1967. *Necropole elenistice la Tomis*. Constanța.
- Burakov, A.V. 1976. *Kozyrskoe gorodišče rubeža i pervykh stoletij našej ery*. Kiev.
- Burford, A. 1966. Notes on the Epidaurian Building Inscriptions, *BSA* 61, 254-323.
- Burford, A. 1969. *The Greek Temple Builders at Epidaurus*. Liverpool.
- Burkert, W. 1994. Olbia and Apollo of Didyma: a new oracle text, in: J. Solomon (ed.), *Apollo: Origins and Influences*. Tuscon, 49-60.

- Burow, J. 1998. Die übrigen Stempel aus Pergamon, in: C. Börker & J. Burow (eds.), *Die hellenistischen Amphorenstempel aus Pergamon* (Pergamenische Forschungen, 11). Berlin-New York, 73-138.
- Burstein, S.M. 1978. IG II² 653, Demosthenes and Athenian Relations with Bosphorus in the Fourth Century BC, *Historia* 27, 433-435.
- Burstein, S.M. 1993. The origin of the Athenian privileges at Bosphorus: a reconsideration, *AnchHistB* 7, 81-83.
- Cabrera, P. & P. Rouillard 2003. L'Épave d'el Sec, dans la Baie de Palma de Majorque (Milieu du IV^e Siècle av. J.-C.), in: Rouillard & Verbanck-Piérard (eds.) 2003, 125-131.
- Callataÿ, F. de 1997. *L'histoire des guerres mithridatiques. Vue par les monnaies*. Louvain-la-Neuve.
- Callataÿ, F. de 2002. La chronologie des bronzes de Mithridate Eupator: révision et conséquences sur la datation des monnayages et des sites du Bosphore Cimmérien, in: *Cités grecques, sociétés indigènes et empires mondiaux dans la région nord-pontique: origines et développement d'un koinè politique, économique et culturelle* (VIIe s.a.C. P IIIe s. p.C.). *Préactes et résumés des communications, Bordeaux, 14-16 novembre 2002*. Bordeaux, 145-180.
- Camp II, J.Mck. 1996. The form of Pnyx III, in: Forsén & Stanton (eds.) 1996, 41-46.
- Carandini, A. & C. Panella (eds.) 1973. *Le Terme del Nuotatore, Scavo degli ambiente III, VI, VII, Scavo dell'ambiente V e di un saggio nell'area SO* (Studi Miscellanei, 21). Rome.
- Casson, L. 1971. *Ships and Seamanship in the Ancient World* (rev. edn. 1995). Princeton.
- Cawkwell, G.L. 1975. Thucydides judgement on periclean strategy, *YaleClSt* 24, 53-70.
- Cawkwell, G.L. 1992. Early colonisation, *CIQ* 42, 289-303.
- Cerdá, D. 1987. Las anforas de la nave de El Sec, in: A. Arribas, G. Trias, D. Cerdá & J. de la Hoz (eds.), *El barco de El Sec (Calvià, Mallorca). Estudio de los materiales*. Mallorca, 401-499.
- Chačatryan, Ž.D. 1975. Steklodelie v drevnej Armenii (II-I veka do n.e.), *Historiko-Filologičeskij Žurnal* 1 (68), Erevan, 248-258.
- Chanotis, A. 2005. *War in the Hellenistic World*. Oxford.
- Christmann, E. 1998. Geoponica. Ein landwirtschaftliches Sammelwerk des 10. Jhdts. n. Chr, in: *Der Neue Pauly* 4. Stuttgart-Weimar, 940-941.
- Chrzanowski, L. 2002. Bullhead lamps: an attempt at typological and chronological classification, in: Zhuravlev (ed.) 2002d. Oxford, 13-36.
- Chrzanowski, L. 2003. *Lumière! L'éclairage dans l'antiquité*. Nyon.
- Chrzanowski, L. (ed.) 2005. *Lychnological Acts 1. Actes du 1^{er} Congrès International d'études sur le luminaire antique* (Nyon-Genève, 29.IX P 4.X. 2003) (Monographies Instrumentum, 30). Montagnac.
- Chrzanowski, L. & D. Zhuravlev 1998. *Lamps from Chersonesos in the State Historical Museum, Moscow* (Studia archaeologica, 94). Rome.

- Chtcheglov, A. 1992. *Polis et chora. Cité et territoire dans le Pont-Euxin* (Centre de Recherches d'Histoire Ancienne, 118. Espaces et Paysages, 1). Paris.
- Chudjak, M.M. 1945. Raboty Nimfejskoj ekspedicii 1939 goda, in: *Trudy Otdela antičnogo mira Gosudarstvennogo Ermitaža*. Leningrad, 147-166.
- Čistov, D.E. & K. Domžalski 2001. Nymphaion – Results of excavations in Sector N, 1994-1998, *ArcheologiaWarsz* 52, 97-138.
- Cohen, E.E. 1992. *Athenian Economy and Society. A Banking Perspective*. Princeton.
- Conovici, N. 1998. *Histria. Les resultants des fouilles VIII. Les timbres amphoriques 2. Sinope (tuiles timbrées comprises)*. Bucarest-Paris.
- Conovici, N. 2004. Les problèmes actuels de la chronologie des timbres sino-péens, in: Eiring & Lund (eds.) 2004, 99-102.
- Conovici, N. 2005. The dynamics of trade in transport amphoras from Sinope, Thasos and Rhodos on the Western Black Sea Coast: a comparative approach, in: Stolba & Hannestad (eds.) 2005, 97-117.
- Conovici, N. & Y. Garlan 2004. Les timbres amphoriques étrangers trouvés à Sinope (I), *AnatAnt* 12, 105-122.
- Cook, J.M. 1965. Old Smyrna: Ionic black figure and other sixth-century figured wares, *BSA* 60, 114-142.
- Cook, R.M. & P. Dupont 1998. *East Greek Pottery*. London-New York.
- Cool, H. (ed.) 2005. *Annales du 16e Congrès de l'Association Internationale pour l'histoire du Verre*. Nottingham.
- Cordova, C.E. & P.H. Lehman 2003. Archaeopalynology of synanthropic vegetation in the chora of Chersonesos, Crimea, Ukraine, *JASc* 30, 1483-1501.
- Couilloud, M.-Th. 1974. *Exploration archéologique de Délos 30. Les monuments funéraires de Rhénée*. Paris.
- Crowfoot, J.W., K.M. Kenyon & G.M. Crowfoot 1957. *Samaria-Sebaste 3. The Objects of Samaria*. London.
- Curtis, R.I. 1991. *Garum and Salsamenta. Production and Commerce in Materia Medica* (Studies in Ancient Medicine, 3). Leiden.
- Curtis, R.I. 2001. *Ancient Food Technology*. Leiden-Boston-Köln.
- Curty, O. 1995. *Les parentés légendaires entre cités grecques. Catalogue raisonné des inscriptions contenant le terme suggeneia et analyse critique*. Genève.
- Dana, M. 2004. Lettre sur plomb d'Aptorios à Léanax. Un document archaïque d'Olbia du Pont, *ZPE* 148, 1-14.
- Dana, M. 2007. Lettres grecques dialectales nord-pontiques (sauf IGDOP 23-26), *REA* 109, 69-97.
- Daševskaja, O.D. 1976. Kamennye sklepy Beljausskogo mogil' nika, *KSIA* 145, 55-60.
- Davidson, J. 1997. *Courtesans and Fishcakes. The Consuming Passions of Classical Athens*. London.
- Davies, J.K. 1971. *Athenian Propertied Families: 600-300 BC*. Oxford.

- Davies, J.K. 1984. Cultural, social and economic features of the Hellenistic world, in: *CAH*, 2nd edn., vol 7.I. Cambridge, 257-320.
- de Angelis, F. 1994. The foundation of Selinous: overpopulation or opportunities?, in: G.R. Tsetschladze & F. de Angelis (eds.), *The Archaeology of Greek Colonisation*. Oxford, 87-110.
- Debidour, M. 1986. En classant les timbres thasiens, in: Empereur & Garlan (eds.) 1986, 311-334.
- Debord, P. 1990. Sinopéens et Amisénien en Grèce et en Égée à l'époque classique et hellénistique, in: J.L. Bacqué-Grammont (ed.), *Tarih Boyunca Karadeniz Kongresi Bildirileri. Congrès international sur la mer Noire (1-3 juin 1988)*. Samsun, 516-525.
- Denisova, V.I. 1981. *Koroplastika Bospora*. Leningrad.
- Derow, P.S. & W.G. Forrest 1982. An inscription from Chios, *BSA* 77, 79-92.
- de Ruyt, Cl. 1983. *Macellum. Marché alimentaire des romains* (Publications d'histoire de l'art et d'archéologie de l'Université Catholique de Louvain, 35). Louvain-la-Neuve.
- de Souza, P. 1999. *Piracy in the Graeco-Roman World*. Cambridge.
- de Ste. Croix, G.E.M. 1972. *The Origins of the Peloponnesian War*. London.
- Dmitriev, A.V. & A.A. Malyšev 1999. Mogil'nik VI-II vv. do n.e. v ust'e Lobanovoj ščeli, *Istoriko-arheologičeskij al'manach* 5, 17-52.
- Dmytrenko, M.M. 1946. Archeologične obstežennja Bilozers'kogo gorodišča 1946 r. Archeologična rozvidka Tjaginskogo gorodišča: Zvit. *Naučnyj archiv Instituta archeologii Nacional'noj Akademii nauk Ukrainy* 1946/34, FE K844, 1, 1-7.
- Dobrovol'skij, A.V. 1954. Otčet o raskopkach poselenija bronzovogo veka Babino III v 1954 g. *Naučnyj archiv Instituta archeologii Nacional'noj Akademii nauk Ukrainy* 1954/2a.
- Dolgorukov, V.S. 1967. Pozdneantičnoe poselenie na gorodišče Batarejka II, *KSIA* 109, 116-123.
- Domăneanțu, C. 2000. *Histria. Les résultats des fouilles XI. Les bols hellénistiques à décor en relief*. Bucarest.
- Domanskij, J.V. 1970. Zametki o karaktere torgovyh svjazej grekov s tuzemnym mirom Severnogo Pričernomor'ja v VII v. do n.e., *ASbor* 12, 47-53.
- Domžalski, K. 1996. Terra sigillata from Nymphaion. Survey 1994, *ArcheologiaWarsz* 47, 95-112.
- Domžalski, K. & V.N. Zin'ko 1999. Roman fine pottery from rescue excavations conducted outside the defensive walls of the town of Nymphaion in 1995. *ArcheologiaWarsz* 50, 73-82.
- Domžalski, K. & D. Zhuravlev 2003. Bosporskaja sigillata, in: V.N. Zin'ko (ed.), *Bospor Kimmerijskij i varvarskij mir v period antičnosti i srednevekov'ja. Materialy IV Bosporskich čtenii*. Kerč, 89-92.
- Doonan, O.P. 2004. *Sinop Landscapes. Exploring Connections in a Black Sea Hinterland*. Philadelphia.
- Dow, S. 1937. The Egyptian cults in Athens, *HarvTheolR* 30, 183-232.

- Dubois, L. 1996. *Inscriptions grecques dialectales d'Olbia du Pont* (Hautes Études du Monde Gréco-Romain, 22). Genève.
- Dumont, A. 1872. *Inscriptions céramiques de Grèce*. Paris.
- Dumont, J. 1976-1977. La pêche du thon à Byzance à l'époque hellénistique, *REA* 78-79, 96-116.
- Dunand, F. 1973. *Le culte d'Isis dans le bassin oriental de la Méditerranée* 1-3. Leiden.
- Dundua, G.F. 1987. *Numizmatika antičnoj Gruzii*. Tbilisi.
- Dundua, G.F. & G.A. Lordkipanidze 1977. Monetnye nachodki iz Vani, in: Lordkipanidze (ed.) 1977, 197-199.
- Dundua, G.F. & G.A. Lordkipanidze 1983. *Denežnoe obraščenie Central'noj Kolchidy v V-I vv. do n.e.: Po materialam Vanskogo gorodišča*. Tbilisi.
- Dundua, G.F. & O.D. Lordkipanidze 1979. Hellenistic coins from the Site of Vani in Colchis (Western Georgia), *NumChron* 19, 1-5.
- Dunham, A.G. 1915. *The History of Miletus: Down to the Anabasis of Alexander*. London.
- Durrbach, F. 1921. *Choix d'inscriptions de Delos avec traduction et commentaire*. Paris.
- Dyczek, P. 2001. *Roman amphorae of the 1st-3rd centuries AD found on the Lower Danube*. Warsaw.
- Ebert, M. 1913. Ausgrabungen bei dem "Gorodok Nikolaevka" am Dnjepr, *Gouv. Cherson, PZ* 5, 80-113.
- Ehrenberg, V. 1968. *Aristophanes und das Volk von Athen. Eine Soziologie der altattischen Komödie*. Zürich.
- Ehrhardt, N. 1988. *Milet und seine Kolonien*. Frankfurt-am-Main.
- Eiring, J. & J. Lund (eds.) 2004. *Transport Amphorae and Trade in the Eastern Mediterranean, Acts of the International Colloquium at the Danish Institute at Athens, September 26-29* (Monographs of the Danish Institute at Athens, 5). Athens.
- Élaigne, S. 2000. Imitations locales de céramiques fines importées: le cas des "colour-coated ware" dans les contextes hellénistiques d'Alexandrie, *CahCerEg* 6, 99-112.
- Élaigne, S. 2002. L'introduction des céramiques fines hellénistiques du bassin oriental de la Méditerranée à Alexandrie. Importations et imitations locales, in: Blondé, Ballet & Salles (eds.) 2002, 159-173.
- Emec, I.A. & O.D. Čevelev 1995. Epigrafičeskie materialy s Kerčenskogo poluostrova, *Epigrafičeskij vestnik* 1, 9-27.
- Emec, I.A. & B.G. Peters 1993. Graffiti i dipinti antičnoj Feodosii, *KSIA* 207, 77-83.
- Emec, I.A. & B.G. Peters 1994. Graffiti iz poselenija u s. Michajlovka, *RosA* 2, 164-178.
- Emec, I.A. & V.G. Zubarev 2000. Graffiti i dipinti s gorodišča u sela "Belinskoe", *Drevnosti Bospora* 3, 27-37.

- Empereur, J.-Y. 1982. Les anses d'amphores timbrées et les amphores: aspects quantitatifs, *BCH* 106, 219-233.
- Empereur, J.-Y. & Y. Garlan (eds.) 1986. *Recherches sur les amphores grecques. Actes du Colloque international organisé par le CNRS, l'Université de Rennes II et l'École française d'Athènes (Athènes, 10-12 septembre 1984)* (BCH Supplément, 13). Athènes-Paris.
- Empereur, J.-Y. & Y. Garlan 1987. Bulletin archéologique. Amphores et timbres amphoriques (1980-1986), *REG* 105, 58-109.
- Empereur, J.-Y. & Y. Garlan 1992a. Bulletin archéologique. Amphores et timbres amphoriques (1987-1991), *REG* 105, 176-220.
- Empereur, J.-Y. & Y. Garlan 1992b. Grečeskie amfornye masterskie, in: Kac & Monachov (eds.) 1992, 8-31.
- Empereur, J.-Y. & Y. Garlan 1997. Bulletin archéologique. Amphores et timbres amphoriques (1992-1996), *REG* 110, 161-209.
- Engelmann, H. & D. Knibbe (eds.) 1989. *Das Zollgesetz der Provinz Asia: Eine neue Inschrift aus Ephesos* (Epigraphica Anatolica, 14). Bonn.
- Erskine, A. (ed.) 2005. *A Companion to the Hellenistic World* (revised paperback edition). Oxford.
- Erten, H.N., D. Kassab Tezgör, I.R. Türkmen & A. Zararsız 2004. The typology and trade of the amphorae of Sinope. Archaeological study and scientific analyses, in: Eiring & Lund (eds.) 2004, 103-115.
- Etienne, R. & F. Mayet 2002. *Trois clés pour l'économie de l'Hispanie romaine 2. Salaisons et sauces de poisson hispaniques*. Paris.
- Ettlinger, E., B. Hedinger & B. Hoffmann 1990. *Conspectus formarum terrae sigillatae italico modo confectae* (Materialien zur römisch-germanischen Keramik, 10). Bonn.
- Fabrycius, I.V. 1929. Zvit pro dijalnist' Chersons'kogo istoryko-archeologičnogo muzeju: Červoni roky, *Litopys Chersons'kogo muzeju 1917-1927*. Vyp. 8. Cherson.
- Fabrycius, I.V. 1930. Ljubymivs'ke gorodišče (rozkopuvannja 1926, 1927, 1929), *Visnyk Odes'koi komisii kraeznavstva* 4-5, 113-119.
- Farmakovskij, B.V. 1914a. Archaičeskij period na juge Rossii, *Materialy po archeologii Rossii* 34, 15-78.
- Farmakovskij, B.V. 1914b. *Miletskie vasy iz Rossii* (Drevnosti, 25). Moskva.
- Faudot, M., A. Fraysse & E. Geny (eds.) 2002. *Pont-Euxin et commerce. La genèse de la "Route de la Soie"*. Actes du IX^e Symposium de Vani (Colchide) – 1999. Paris.
- Fedoseev, N.F. 1992. Itogi i perspektivy izučenija sinopskich keramičeskich klejm, in: Kac & Monachov (eds.) 1992, 147-163.
- Ferguson, W. 1911 (reprinted 1969). *Hellenistic Athens*. New York.
- Fialko, O. & Ju. Boltrik 2003. *Napad skifiv na Trachtemirivs'ke gorodišče*. Kyiv.
- Figueira, T.J. 1981. *Aegina*. Salem.

- Figueira, T. 1986. *Sitopolai and Sitophylakes in Lysias "Against the Graindealers"*: governmental intervention in the Athenian economy, *Phoenix* 40, 149-171.
- Figueira, T.J. 2002. Typology in Archaic Greek maritime trading states, *AncWestEast* 1.1, 24-27.
- Finkielsztejn, G. 1990. *Amphores et timbres d'amphores importées en Palestine à l'époque hellénistique: orientations de recherches et premiers résultats* (Mémoire présenté à l'Académie des Inscriptions et Belles-Lettres, École Biblique et Archéologique Française de Jérusalem).
- Finkielsztejn, G. 2001. *Chronologie détaillée et révisée des éponymes amphoriques rhodiens, de 270 à 108 av. J.-C. environ. Premier bilan* (BAR International Series, 990). Oxford.
- Finkielsztejn, G. 2002. Du bon usage des amphores hellénistiques en contextes archéologiques, in: Blondé, Ballet & Salles (eds.) 2002, 227-233.
- Finley, M.I. 1962. The Black Sea and Danubian regions and the slave trade in Antiquity, *Klio* 40, 51-59.
- Finley, M.I. 1981. *Economy and Society in Ancient Greece*. London.
- Finley, M.I. 1985. *The Ancient Economy*, 2nd edn. London.
- Finogenova, S.I. 1990. Antičnyje terrakotovye maski Severnogo Pričernomor'ja, *SovA* 2, 189-203.
- Fol, A., V. Zhivkov & N. Nedjalkov (eds.) 1987. *Acta Centri Historiae Terra Antiqua Balcanica* 2. Sophia.
- Forsén B. & G. Stanton (eds.) 1996. *The Pnyx in the History of Athens. Proceedings of an International Colloquium Organised by the Finnish Institute at Athens, 7-9 October, 1994*. Helsinki.
- Forster, G. 2001. The Roman Period, in: J.N. Coldstream, J. Eiring & G. Forster (eds.), *Knossos Pottery Handbook Greek and Roman* (BSA Studies, 7). Athens, 137-167.
- Fossey, J.M. 2003. Illuminating the Black Sea in Antiquity, in: L. Chrzanowski (ed.), *Nouveautés Lychnologiques*. Sierre, 91-95.
- Foxhall, L. 1998. Cargoes of the heart's desire: the character of trade in the Archaic Mediterranean world, in: N. Fisher. & H. van Wees (eds.), *Archaic Greece. New Approaches and New Evidence*. London-Swansea, 295-309.
- Fragiadakis, Ch. 1988. *Die attischen Sklavennamen von der spätarchaischen Epoche bis in die römische Kaiserzeit: eine historische und soziologische Untersuchung* (Diss. Mannheim). Athen.
- Fraser, P.M. 1960. *Samothrace II.I. The Inscriptions on Stone*. New York.
- Fraser, P.M. 1972. *Ptolemaic Alexandria*. Oxford.
- Fraser, P.M. 1977. *Rhodian Funerary Monuments*. Oxford.
- Fraser, P.M. 1993. Thracians abroad: three documents, *Archaia Makedonia* V.2, 443-454.
- Frayn, J.M. 1993. *Markets and Fairs in Roman Italy*. Oxford.
- Frayn, J.M. 1995. The Roman Meat Trade, in: J. Wilkins, D. Harvey & M. Dobson (eds.), *Food in Antiquity*. Exeter, 107-115.

- Frazer, A. 1990. *Samothrace X: The Propylon of Ptolemy II*. Princeton.
- French, D.H. 1994. Sinopean notes 4. Cults and divinities: the epigraphic evidence, *ZPE* 23, 99-108.
- Frolov, E.D. 1998. Skify v Afinach, *VDI* 1, 135-152.
- Frolova, N.A. 1964. Monety skifskogo carja Skilura, *SovA* 1, 44-55.
- Frolova, N.A. & S. Ireland 1999. O chronologii emissij na Bospore v mitridatovskij period (110/109 – 63 gg. do n.e.), *Drevnosti Bospora* 2, 222-265.
- Funke, P. 1989. *Homonoia und Arche*. Wiesbaden.
- Furtwängler, A.E. 1992. Zur Handelsausrichtung der Stadt Demetrias im Lichte neuerer Grabungsergebnisse, in: *Diethnes synedrio gia ten archaia Thessalia sten Mneme tou Demetre P. Theochare, Volos, 29 Oktovriou* 1 Noemvriou 1987. Athens, 366-369.
- Gabrielsen, V. 1994. *Financing the Athenian Fleet. Public Taxation and Social Relations*. Baltimore-London.
- Gabrielsen, V. 1997. *The Naval Aristocracy of Hellenistic Rhodes* (Studies in Hellenistic Civilization, 1). Aarhus.
- Gabrielsen, V. 2001. Economic activity, maritime trade and piracy in the Hellenistic Aegean, *REA* 103, 219-240.
- Gabrielsen, V. 2005. Piracy and the slave-trade, in: A. Erskine (ed.), *A Companion to the Hellenistic World* (Blackwell Companions to the Ancient World). Oxford, 389-404.
- Gajdukevič, V.F. 1952, *Raskopki Tiritaki i Mirmekija v 1946 – 1952 gg.* (MatlssIA, 85). Moskva, 149-218.
- Gajdukevič, V.F. 1959. *Mirmekij 2. Sovetskie raskopki v 1956 g., 1934-1956*. Varšava.
- Gajdukevič, V.F. 1987. *Antičnye goroda Bospora. Mirmekij*. Leningrad.
- Gajdukevich, V.F. 1971. *Das Bosporanische Reich*. Berlin-Amsterdam (Russian original 1949).
- Galetti, P. (ed.) 2004. *Civiltà di legno, per una storia del legno come materia per costruire dell' antichità ad oggi*. Bologna.
- Gallant, T.W. 1991. *Risk and Survival in Ancient Greece*. Cambridge.
- Ganina, O.D. 1972. Naslidki doslidženn'ja rann'o-skifs'kogo poselenn'ja bilja sela Zalissja Borščivs'kogo rajonu Ternopil'skoj oblasti v 1970-1971 rr., in: V.D. Baran (ed.), *Tezisy dokladov 15-j naučnoj konferencii Institutu Archeologii Akademii Nauk URSR*. Odesa, 201-203.
- Gardner, P. 1885. Amphora-handles from Antiparos, *JHS* 6, 192-194.
- Garlan, Y. 1978. Signification historique de la piraterie grecque, *DialHistAnc* 4, 1-16.
- Garlan, Y. 1984. *Les esclaves en Grèce ancienne*. Paris.
- Garlan, Y. 1987. War, piracy and slavery in the Greek world, in: M.I. Finley (ed.), *Classical Slavery*. London, 7-21.
- Garlan, Y. 1989. Le comblement d'un puits public à Thasos 2. Les timbres céramiques, *BCH* 113, 477-480.

- Garlan, Y. 1990. À propos de la chronologie des timbres amphoriques thasiens, in: C. Koukouli-Christanthaki & O. Picard (eds.), *Mneme D. Lazaridi. Polis kai chora stin archaia Makedonia kai Thraki*. Thessaloniki, 479-483.
- Garlan, Y. 1992. O proischozdenii amfor tipa "Solocha", *ArcheologijaKiiv* 1992.4, 32-42.
- Garlan, Y. 1993. Nouvelles remarques sur la chronologie des timbres amphoriques thasiens, *JSav* 1993, 149-181.
- Garlan, Y. 1998. Les fouilles des ateliers amphoriques de Sinope, *CRAI* 1998, 29-32.
- Garlan, Y. (éd.) 1999a. *Production et commerce des amphores anciennes en mer Noire* (Publications de l'Université de Provence). Aix-en-Provence.
- Garlan, Y. 1999b. *Les timbres amphoriques de Thasos I. Timbres protothasiens et thasiens anciens* (Études Thasiennes, 18). Athènes.
- Garlan, Y. 2000. *Amphores et timbres amphoriques grecs. Entre érudition et idéologie*. Paris.
- Garlan, Y. 2002. Bulletin archéologique. Amphores et timbres amphoriques (1997-2001), *REG* 115, 149-215.
- Garlan, Y. 2004. *Les timbres céramiques sinopéens sur amphores et sur tuiles trouvés à Sinope. Présentation et catalogue* (Varia Anatolica, 16). Paris.
- Garnsey, P. 1985. Grain for Athens, in: P. Cartledge & F.D. Harvey (eds.), *Crux. Essays presented to G.E.M. de Ste. Croix on his 75th Birthday*. London, 62-75.
- Garnsey, P. 1988. *Famine and Food Supply in the Graeco-Roman World: Responses to Risk and Crisis*. Cambridge.
- Garnsey, P. 1998. *Cities, Peasants, and Food in Classical Antiquity: Essays in Social and Economic History*. Cambridge.
- Gauthier, Ph. 1979. 'Εξάγωγή σίτου. Samothrace, Hippomédon, et les Lagides, *Historia* 18, 76-89.
- Gauthier, Ph. 1989. *Nouvelles inscriptions de Sardes II* (Archaeological Exploration of Sardes/École Pratique des Hautes Études, IVE'section). Paris.
- Gavriljuk, N.A. 1999. *Istorija ekonomiki stepnoj Skifii 6-3 vv. do n.e.* Kiev.
- Gavriljuk, N.A. 2003. The Graeco-Scythian slave-trade in the 6th and 5th centuries BC, in: Bilde, Højte & Stolba (eds.) 2003, 75-85.
- Gavriljuk, N.A., V.P. Bylkova & S.N. Kravčenko 1992. *Skifskie poselenija IV v. do n.e. v Stepnom Podneprov'e*. I-II. Kiev.
- Gavriljuk, N.O. & M.P. Olenkovskij 1992. *Pam'jatki skifiv*. Cherson.
- Gernet, L. 1909. L'approvisionnement d'Athènes en blé au Ve et IVE siècles, *Mélanges d'histoire ancienne*, 271-391.
- Gertsiger, D. 1984. Antičnye kandelyabry v sobranii Ermitazha, *TrudyErmit* 24, 83-99.
- Gibbins, D. 2001. Shipwrecks and Hellenistic trade, in: Archibald, Davies, Gabrielsen & Oliver (eds.) 2001, 273-312.
- Gilevič, A.M. 1968. Antičnye inogorodnie monety iz raskopok Chersonesa, *NumSfrag* 3, 3-61.

- Gilevič, A.M. 1985. Chersones i Pontijskaja država Mitridata VI po numizmatičeskim dannym, in: O. Lordkipanidze (ed.), *Pričernomor'e v epochu ellinizma*. Tbilisi, 608-617.
- Gilevič, A.M. 1999. Chronologija i topografija kladov i kolektivnyh nachodok chersonesskich monet IV-II vv. do n.e., *Archeologičeskie vesti* 6, 346-373.
- Gilevič, A.M. 2002. Coins, in: Hannestad, Stolba & Ščeglov (eds.) 2002, 245-251.
- Gill, D.W.J. 1988. The distribution of Greek vases and long distance trade, in: J. Christiansen & T. Melander (eds.), *Ancient Greek and Related Pottery (Proceedings of the 3rd Symposium, Copenhagen 1987)*. Copenhagen, 175-185.
- Gill, D.W.J. 1991. Pots and trade: space fillers or objets d'art?, *JHS* 111, 29-47.
- Gilula, D. 2000. Hermippus and his catalogue of goods (fr.63), in: D. Harvy & J. Wilkins (eds.), *The rivals of Aristophanes*. London, 75-90.
- Gofas, D.C. 1969. Les Carpologues de Thasos, *BCH* 93, 337-390.
- Goldman, A. 2005. Reconstructing the Roman-period town at Gordion, in: L. Kealhofer (ed.), *The Archaeology of Midas and the Phrygians. Recent Work at Gordion*. Philadelphia, 56-67.
- Golencov, A.S. 1983. Graffiti iz Kerkinitidy, *KSIA* 174, 56-62.
- Golenko, K.V. 1960. Iz istorii monetnogo dela na Bospore v I v. do n.č., *Num-Epigr* 2, 28-40.
- Golenko, K.V. 1964a. Monetnaja med' gorodov Ponta i Paflagonii vremeni Mitridata VI v bosporskich nachodkach, *Palestinskij sbornik* 11 (74), 58-73.
- Golenko, K.V. 1964b. Sostav denezhnogo obraščeniya Chersonesa v I v. do n.č., *VDI* 4, 50-73.
- Golenko, K.V. 1965a. Pontijskaja moneta vremeni Mitridata VI na Bospore, *Klio* 46, 307-322.
- Golenko, K.V. 1965b. Fantalovskij klad bosporskich didrachm I v. do n.č., *VDI* 4, 141-158.
- Golenko, K.V. 1966. Podražanija mednym monetam gorodov Ponta i Paflagonii vremeni Mitridata VI Evpatora, *VDI* 3, 142-149.
- Golenko, K.V. 1968. Neskol'ko serebrjannyh monet Pantikapeja II v. do n.č. so sledami perečekanki, *NumEpigr* 7, 37-42.
- Golenko, K.V. 1973. Pontus und Paphlagonien (Veröffentlichungen in Russland und der Sowjetunion), *Chiron* 3, 468-499.
- Golenko, K.V. 1977. K datirovke monet Dioskuriady, in: V.A. Lekvinadze (ed.), *Numizmatičeskij sbornik, posvojaščennyj pamjati D.G. Kapanadze*. Tbilisi, 60-61.
- Golofast, L. 1998. K voprosu o steklodelii v rannevizantijskom Chersonese, *MAIET* 6, 312-236.
- Golofast, L. 2001. Steklo rannevizantijskogo Chersonesa, *MAIET* 8, 97-260.
- Gomme, A.W. 1933a. *The Population of Athens in the Fifth and Fourth Centuries BC*. Oxford.

- Gomme, A.W. 1933b. A forgotten factor of Greek naval strategy, *JHS* 53, 16-24.
- Göransson, K. 2007. *The transport amphorae from Euesperides: The maritime trade of a Cyrenaican city 400-250 BC* (Acta Archaeologica Lundensia, Series in 4°, 25). Lund.
- Gorman, V.B. 2001. *Miletos, the Ornament of Ionia. A History of the City to 400 B.C.E.* Ann Arbor.
- Gorončarovskij, V.A. 1983. Pergamskaja keramičeskaja masterskaja i ee produkcija na Bospore, *SovA* 2, 117-124.
- Goškevič, V.I. 1913. *Drevnie gorodišča po beregam Nizovogo Dnepra* (IAK, 47). St Peterburg, 118-133.
- Gow, A.S.F. (ed.) 1952. *Theocritus* 2. Cambridge.
- Grace, V. 1934. Stamped amphora handles found in 1931-1932, *Hesperia* 3, 197-310.
- Grace, V.R. 1949. Standard pottery containers of the ancient Greek world, in: *Commemorative Studies in Honour of Theodore Leslie Shear* (Hesperia Supplement, 8). Princeton, 175-189.
- Grace, V. 1952. Timbres amphoriques trouvés à Délos, *BCH* 76, 514-540.
- Grace, V.R. 1956. Small objects from the Pnyx II. Part III: stamped wine jar fragments (Hesperia Supplement 10). Princeton, 117-189.
- Grace, V.R. 1961. *Amphoras and the Ancient Wine Trade* (Excavations of the Athenian Agora Picture Book, 6). Princeton.
- Grace, V.R. 1985. The Middle Stoa dated by amphora stamps, *Hesperia* 54, 1-54.
- Grač, N.L. 1984. Otkrytie novogo istoričeskogo istočnika v Nimfee, *VDI* 1, 81-88.
- Grač, N.L. 1989. K voprosu o političeskich kontaktach Bospora s Egiptom v III v. do n.e., in: B.A. Raev (ed.), *Skifija i Bospor*. Novočerkassk, 44ff.
- Grach, N.L. 1987. Ein neu entdecktes Fresko aus hellenistischer Zeit in Nymphaion bei Kertsch, in: L. Galanina et al. (eds.), *Skythika* (Bayerische Akademie der Wissenschaften, Phil.-Hist. Klasse, Abhandlungen, 98). München, 87-95.
- Graham, A.J. 1964. *Colony and Mother City in Ancient Greece*. Manchester.
- Grainger, J.D. 1997. *A Seleucid Prosopography and Gazetteer*. Leiden-New York-Cologne.
- Grakov, B.N. 1954. *Kamenskoe gorodišče na Dnepre* (MatIssIA, 36). Moskva.
- Grammenos, D. V. & E.K. Petropoulos (eds.) 2003. *Ancient Greek Colonies in the Black Sea I-II*. Thessaloniki.
- Grandjean, Y. 1992. Contribution à l'établissement d'une typologie des amphores thasiennes. Le matériel amphorique du quartier de la Porte du Silène, *BCH* 116, 541-584.
- Grant, M. 1997. *Dieting for an Emperor. A Translation of Books 1 and 4 of Oribarius' Medical Compilations with an Introduction and Commentary*. Leiden.

- Greaves, A.M. 2000. A note on the archaeology of Miletos, in: Oliver (ed.) 2000, 111-116.
- Greaves, A.M. 2002. *Miletos: A History*. London.
- Greaves, A.M. 2004. The cult of Aphrodite in Miletos and its colonies, *AnatSt* 54, 27-33.
- Greaves, A.M. forthcoming. *The Land of Ionia*.
- Greene, K. 2005. Roman pottery: models, proxies and economic interpretation, *JRA* 18, 34-56.
- Gudimenko, I.V. & S.M. Il'jašenko 2001. Amforenaufschriften aus der Siedlung Rogožkino XIII im Don-Delta, *EurAnt* 7, 481-504.
- Gunn, B. 1943. Notes on the Naukratis Stela, *JEA* 29, 55-59.
- Guščina, I.I. & I.P. Zaseckaja 1994. "Zolotoe kladbišče" rimskoj epochi v Prikuban'e. St Peterburg.
- Habicht, C. 1970. *Gottmenschentum und griechische Städte* (Zetemata, 14). 2nd edn. München.
- Hamilton, R. 1999. *Treasure Map. A Guide to the Delian Inventories*. Ann Arbor.
- Hammond, N.G.L. & G.T. Griffith 1979a. *A History of Macedonia* 1. Oxford.
- Hammond, N.G.L. & G.T. Griffith 1979b. *A History of Macedonia* 2. Oxford.
- Hammond, N.G.L. & F.W. Walbank 1988. *A History of Macedonia* 3. 336-167 BC. Oxford.
- Hannestad, L. 2002. The dating of the monumental building U6 at Panskoe I, in: Stolba & Hannestad (eds.) 2005, 179-192.
- Hannestad, L., V.F. Stolba. & A.N. Ščeglov 2002. Conclusion, in: Hannestad, Stolba & Ščeglov (eds.) 2002, 280-282.
- Hannestad, L., V.F. Stolba & A.N. Ščeglov (eds.) 2002. *Panskoye I. Vol. 1. The Monumental Building U6*. Aarhus.
- Hansen, M.H. 1988. *Three Studies in Athenian Democracy*. Copenhagen.
- Hansen, M.H. 1996. City-ethnics as evidence for polis identity, in: M.H. Hansen & K. Raaflaub, (eds.), *More Studies in the Ancient Greek Polis* (Papers from the Copenhagen Polis Centre, 3; Historia. Einzelschriften, 108). Stuttgart, 169-196.
- Hansen, M.H. 1997. Emporion. A study of the use and meaning of the term in the Archaic and Classical periods, in: Nielsen (ed.) 1997, 83-105.
- Hansen, M.H. & T.H. Nielsen (eds.) 2004. *An Inventory of Archaic and Classical Poleis*. Oxford.
- Harlaut, C. 2002. Productions céramiques égyptiennes d'Alexandrie à l'époque ptolémaïque. Évolution des formes et des fabriques: traditions locales et innovations, in: Blondé, Ballet & Salles (eds.) 2002, 263-287.
- Harris, E.M. 1999. Notes on the new grain-tax law, *ZPE* 128, 269-72.
- Harris, E.M. 2002. Workshop, marketplace and household: the nature of technical specialization in classical Athens and its influence on economy and society, in: P. Cartledge, E.E. Cohen & L. Foxhall (eds.), *Money, Labour and Land: Approaches to the Economies of Ancient Greece*. London, 67-99.

- Hatzfeld, J. 1910. Inscriptions de Rhodes, *BCH* 34, 242-248.
- Hatzopoulos, M.B. 1987. Le Pont Euxine et le monde méditerranéen, in: Fol, Zhivkov & Nedjalkov (eds.) 1987, 118-129.
- Hayes, J.W. 1975. *Roman and Pre-Roman Glass in the Royal Ontario Museum*. Toronto.
- Hayes, J.W. 1983. The Villa Dionysos excavations, Knossos: the pottery, *BSA* 78, 97-169.
- Hayes, J.W. 1984. *Greek and Italian Black-Gloss Wares and Related Wares in the Royal Ontario Museum. A Catalogue*. Toronto.
- Hayes, J.W. 1985. Sigillate orientali, in: *Enciclopedia dell'arte antica classica e orientale: Atlante delle forme ceramiche II. Ceramica fine romana nel bacino Mediterraneo (tardo-ellenismo e primo impero)*. Roma, 1-96.
- Hayes, J.W. 1991. *Paphos 3. The Hellenistic and Roman Pottery*. Nicosia.
- Hayes, J.W. 1992. *Excavations at Saraçhane in Istanbul 2. The pottery*. Princeton.
- Hayes, J.W. 1997. *Handbook of Mediterranean Roman Pottery*. London.
- Hayes, J.W. 2001. Les sigillées orientales, in: É. Geny (ed.), *Céramiques hellénistiques et romaines 3*. Paris, 145-160.
- Heinen, H. 1972. *Untersuchungen zur hellenistischen Geschichte des 3. Jahrhunderts v. Chr. zur Geschichte der Zeit des Ptolemaios Keraunos und zum Chremonideischen Krieg* (Historia. Einzelschriften, 20). Wiesbaden.
- Heinen, H. 1996. Statues de Pairisadès I et deses fils erigées sur proposition de Démosthène (Dinarque, *Contre Démosthène*, 43), in: P. Carlier (ed.), *Le IVe siècle av.J.-C.: approches historiographiques*. Paris, 357-368.
- Heinen, H. 2001. Sklaverei im nördlichen Schwarzmeerraum: Zum Stand der Forschung, in: H. Bellen & H. Heinen (eds.), *Fünfzig Jahre Forschungen zur antiken Sklaverei an der Mainzer Akademie, 1950-2000. Miscellanea zum Jubiläum* (Forschungen zur antiken Sklaverei, 35). Stuttgart, 487-503.
- Heinen, H. 2006. *Antike am Rand der Steppe. Der nördliche Schwarzmeerraum als Forschungsaufgabe* (Akademie der Wissenschaften und der Literatur Mainz, Abhandlungen der Geistes- und socialwissenschaftlichen Klasse, 5). Mainz-Stuttgart.
- Henderson, J. 2000. *The Science and Archaeology of Materials. An Investigation of inorganic materials*. London-New York.
- Hepding, H. 1952. Eine hellenistische Töpferwerkstatt in Pergamon, *Nachrichten der Gießener Hochschulgesellschaft* 21, 49-60.
- Hiller von Gaertringen, Fr. 1898. Inschriften aus Rhodos, *AM* 23, 390-403.
- Hind, J. 1994a. The Bosporean Kingdom, in: *CAH*, 2nd edn., vol. 6. Cambridge, 476-511.
- Hind, J. 1994b. The trade of Getic slaves and the silver coins of Istria, *Thracia Pontica* 5, 153-158.
- Hind, J. 1995-1996. Traders and ports-of-trade (*emporoi* and *emporía*) in the Black Sea in Antiquity, *MarNero* 2, 113-126.

- Hind, J. 1996. Achilles and Helen on White Island in the Euxine Sea: side B of the Portland Vase, in: Tsetschladze (ed.) 1996, 59-62.
- Hind, J. 1997. Colonies and ports-of-trade on the Northern Shores of the Black Sea: Borysthenes, Kremnoi and the "other Pontic *emporía*" in Herodotos, in: Nielsen (ed.) 1997, 107-116.
- Höckmann, O. 1999. Naval and other graffiti from Nymphaion, *AncCivScytSib* 5/4, 303-356.
- Hölbl, G. 2001. *A History of the Ptolemaic Empire*. London-New York.
- Holwerda, J.H. 1936. *Het laat-Grieksche en Romeinsche gebruiksaardewerk uit het Middellandsche-zee-gebied in het Rijksmuseum van Oudheden te Leiden*. 'S-Gravenhage.
- Hopkins, K. 1980. Taxes and trade in the Roman Empire, 200 BC - AD 400, *JRS* 70, 101-125.
- Hopkins, K. 1995-1996. Rome, taxes, rents and trade, *Kodai: Journal of Ancient History* 6/7, 41-75, reprinted in: W. Scheidel & S. von Reden (eds.), *The Ancient Economy* (Edinburgh Readings on the Ancient World). Edinburgh 2002, 190-230.
- Horden, P. & N. Purcell 2000. *The Corrupting Sea. A Study of Mediterranean History*. Oxford.
- Hornblower, S. 1996. *A Commentary on Thucydides* 2. Oxford.
- Howland, R.H. 1958. *The Athenian Agora* 4. *Greek Lamps and their Survivals*. Princeton.
- Hübner, G. 1993. *Die Applikenkeramik von Pergamon. Eine Bildersprache im Dienst des Herrscherkultes* (Pergamenische Forschungen, 7). Berlin-New York.
- Hübner, G. 1997. Die Keramik mit aufgesetztem Relief aus Pergamon: Herstellungsverfahren und arbeitstechnische Organisation, in: *D' Epistimoniki Synantisi gia tin Ellenistiki Keramiki. Chronologika problimata, kleista synola, ergastiria. Mytiline 1994, Praktika*. Athens, 257-266.
- Højte, J.M. 2005. The archaeological vidence for fish processing in the Black Sea region, in: Bekker-Nielsen (ed.) 2005, 133-160.
- Iconomu, C. 1967. *Opaițe greco-romane*. Constanța.
- Ignatiadou, D. 2002a. Colorless glass in Late Classical and Early Hellenistic Macedonia, *JGS* 44, 11-24.
- Ignatiadou, D. 2002b. Erevna gia to Chalastratio vitro, *AErgoMak* 16, 241-248.
- Ignatiadou, D., E. Dotsika, A. Kouras & A. Maniatis 2005. Nitrum Chalestricum: the natron of Macedonia, in: Cool (ed.) 2005, 64-67.
- Il'inskaja, V.A. 1975. *Ranneskifskie kurgany basseina r. Tjasmin*. Kiev.
- Il'jašenko, S.M. 1996. Ob odnoj kategorii dipinti na svetloglinjanych amforach iz Tanaisa, *VDI* 4, 54-67.
- Imhoof-Blumer, F. 1912. Die Kupferprägung des mithradatischen Reiches und andere Münzen des Pontos und Paphlagoniens, *NumZ* 5, 169-192.
- Ireland, S. 2000. *Greek, Roman, and Byzantine Coins in the Museum at Amasya (Ancient Amaseia, Turkey)*. London.

- Isager, S. & M.H. Hansen 1975. *Aspects of Athenian Society in the Fourth Century B.C.* Odense.
- Ivanchik, A.I. 2005. Who were the "Scythian" archers on Archaic Attic Vases, in: D. Braund (ed.), *Scythians and Greeks. Cultural Interactions in Scythia, Athens and the Early Roman Empire (Sixth Century BC-First Century AD)*. Exeter, 100-113.
- Ivanova, N.V. 1994. Fish remains from the archaeological sites of the northern part of the Black Sea region (Olbia, Berezan), *Offa* 51, 278-283.
- Jacobson, E. 1995. *The Art of the Scythians*. Leiden-New York-Cologne.
- Jacopi, G. 1932. Nuove epigrafi dalle Sporadi meridionali, in: *Clara Rhodos. Studi e materiali pubblicati a cura dell'Istituto storico-archeologico di Rodi II*. Rhodi, 167-255.
- Jacopi, G. 1932-1933. Esplorazione archeologica di Camiro II, in: *Clara Rhodos. Studi e materiali pubblicati a cura dell'Istituto storico-archeologico di Rodi VI/VII.I*. Rhodi.
- Jaeger, W. 1945. *Paideia* 3. Oxford.
- Jajlenko, V.P. 1980. Graffiti Levki, Berezani i Ol'vii, *VDI* 2, 72-99.
- Jajlenko, V.P. 1985. Novye epigrafičeskie dannye o Mitridate Evpatore i Farnake, in: O.D. Lordkipanidze (ed.), *Pričernomor'e v epochu ellinizma*. Tbilisi, 617-626.
- Jardé, A. 1925. *Les céréales dans l'antiquité grecque*. Paris.
- Jefremov, N. 1989. Einige vergessene Keramikstempel von Sinope aus dem Mittelmeerraum, *Klio* 71, 550-554.
- Jöhrens, G. 1999. *Amphorenstempel im Nationalmuseum von Athen zu den von H.G. Lolling aufgenommenen "unedierten Henkelinschriften" mit einem Anhang Die Amphorenstempel in der Sammlung der Abteilung Athen des deutschen archäologischen Instituts*. Mainz.
- Jubier, C. 2003. Les épaves dans la Méditerranée occidentale. L'épave archaïque IA de la Ponte Lequin: une épave hors du commun, in: Rouillard & Verbanck-Piérard (eds.) 2003, 119-124.
- Kac, V.I. 1994. *Keramičeskie klejma Chersonesa Tavričeskogo*. Saratov.
- Kac, V.I. 1999. Les timbres amphoriques de Chersonèse Taurique (essai d'analyse documentaire), in: Garlan (ed.) 1999b, 91-103.
- Kac, V.I. & S.J. Monachov (eds.) 1992. *Antičnye amfory. Problemy razvitija remesla i trgovli v antičnom mire*. Saratov.
- Kac, V.I., S.J. Monachov, V. Stolba & A.N. Ščeglov 2002. Tiles and ceramic containers, in: Hannestad, Stolba & Ščeglov (eds.) 2002, 101-126.
- Kačarava, D.D., G.G. Kipiani, O.D. Lordkipanidze & R.V. Puturidze 1979. Archeologičeskie raskopki na verchnej terrasse Vanskogo gorodišča (1970-1977 gg.), in: O.D. Lordkipanidze (ed.), *Vani IV. Archeologičeskie raskopki*. Tbilisi, 135-155.
- Kadeev, V.I. 1969. Importnye svetil'niki I-IV vv. iz Chersonesa, *SovA* 2, 159-170.

- Kadeev, V.I. 1970. *Očerki istorii ekonomiki Chersonesa Tavričeskogo v I-IV vekach n.e.* Char'kov.
- Kadeev, V.I. 1996. *Chersones Tavričeskij. Byt i kul'tura (I-III vv. n.e.)*. Char'kov.
- Kadeev, V.I. & S.B. Soročan 1985. Egipetskie i sirijskie svetil'niki pervych vekov našej ery iz Chersonesa, *Vestnik Char'kovskogo universiteta* 268, 95-100.
- Kadeev, V.I. & S.B. Soročan 1989. *Ekonomičeskie sojazi antičnych gorodov Severnogo Pričernomor'ja v I v. do n.e. – V v. n.e. na materialach Chersonesa*. Char'kov.
- Kalinka, E. 1913 *Die pseudo-Xenophontische Athenaion Politeia*. Leipzig.
- Kallet-Marx, L. 1993. *Money, Expense and Naval Power in Thucydides History 1-5.24*. Berkeley.
- Karivieri, A. 1996. *The Athenian Lamp Industry in Late Antiquity* (Papers and Monographs of the Finnish Institute at Athens, 5). Helsinki.
- Karjaka, O.V. 1996. K voprosu o specifikе torgovych otnošenij grekov i varvarov, in: A.S. Rusjaeva, S.B. Bujskich & V.V. Krapivina (eds.), *Mir Ol'vii: Pamjatnik issledovatelju i issledovanie pamjatnika. K 90-letiju professora L.M. Slavina*. Kiev, 127-129.
- Karjaka, O.V. 1997. Amfory Kam'janskogo gorodišča, *ArcheologijaKiiv* 4, 110-117.
- Karjaka, O.V. 1999. Torgivel'ni šljachy v Nyžn'omu Podniprov'i v IV st. do n.e., *Archeologičnyj litopys Livoberežnoi Ukraini* 2, 29-32.
- Karyškovskij, P.O. 1953. Ešče raz o knige A.N. Zographa "Antičnye monety", *VDI* 1, 105-111.
- Karyškovskij, P.O. 1965. Denežnoe obraščenie Ol'vii v konce II i v pervoj polovine I v. do n.e., *NumEpigr* 5, 62-74.
- Karyškovskij, P.O. 1988. *Monety Ol'vii. Očerk denežnogo obraščeniya Severo-Zapadnogo Pričernomor'ja v antičnuju epochu*. Kiev.
- Kassab Tezgör, D. 2002. La production sinopéenne et ses relations avec la Colchide à l'époque romaine, in: Faudot, Fraysse & Geny (eds.) 2002, 199-218.
- Kassab Tezgör, D. 2003. La céramique fine de l'atelier A1 de Cnide, in: Abadie-Reynal (ed.) 2003, 35-43.
- Kassab Tezgör, D. & M. Touma 2001. Amphores exportées de Mer Noire en Syrie du Nord, *AnatAnt* 9, 105-115.
- Kastanajan, E.G. 1981. *Lepnaja keramika bosporskich gorodov*. Leningrad.
- Käufler, S. 1999. Funde aus Milet II. Die Frühstufe des Middle Wild Goat I-Stils, *AA*, 203-212.
- Kawerau, G. & A. Rehm 1914. *Das Delphinion in Milet*. Berlin.
- Keen, A.G. 2000. Grain for Athens: the importance of the Hellenistic route in Athenian foreign policy before the Peloponnesian War, in: G. Oliver, R. Brock, T. Cornell & S. Hodkinson (eds.), *The Sea in Antiquity* (BAR International Series, 899). Oxford, 63-73.

- Kenrick, P.M. 1985. *Excavations at Sidi Khrebish Benghazi (Berenice) III.1. The Fine Pottery* (Supplements to *Libya Antiqua*, 5.3). Tripoli.
- Kerschner, M. 2006. Zum Beginn und zu den Phasen der griechischen Kolonisation am Schwarzen Meer, *Eurasia Antiqua* 12, 227-250.
- Kinch, K.F. 1914. *Vroulia*. Berlin
- Klaffenbach, G. 1964. *Die Grabstelen der einstigen Sammlung Roma in Zakynthos* (Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin. Klasse für Sprachen, Literatur und Kunst, 2). Berlin.
- Klenina, E.Ju. 2000. Tarnaja keramika, in: T. Sarnowski & O.Ja. Savelja (eds.), *Balaklava. Römische Militärstation und Heiligtum des Iupiter Dolichenus* (Swiatowit Suppl. Series A, Antiquity, V). Warschau, 123-134.
- Klenina E.Ju. 2004. *Keramičeskie sosudy II-III vv. n. e. iz usad'by "Bliznecy" (Chora Chersonesa Tavričeskogo)*. Poznan.
- Kljačko, N.B. 1966. Stely Germokopidov kak istočnik svedenij o rabach v V v. do n.e., *VDI* 3, 114-127.
- Knigge, U., A. Rügler, A. Schöne & B. von Freytag gen. Löringhoff 1991. Die Ausgrabungen im Kerameikos 1988/89, *AA*, 371-388.
- Kobyлина, M.M. 1976. *Divinités orientales sur le littoral nord de la Mer Noire*. Leiden.
- Kocevalov, A. 1932. Die Einfuhr von Getreide nach Athen, *RhM* 81, 321-323.
- Koehler, C.G. 1996. Wine amphoras in ancient Greek trade, in: P.E. McGovern, S.J. Fleming & S.H. Katz (eds.), *The Origins and Ancient History of Wine*. Amsterdam, 323-337.
- Koenen, L. 1977. *Eine agonistische Inschrift aus Ägypten und frühptolemäische Königsfeste*. Meisenheim am Glan.
- Kolobova, K.M. 1949. Farnak I Pontijskij, *VDI* 3, 28-37.
- Konstantinopoulos G. 1963. Epigrafai ek Rodou, *ADelt* 18 A', 1-36.
- Konstantinopoulos, G. 1969. Archaïotites kai Mnimeia Dodekanisos, *ADelt* AD 24 B' 2, 451-485.
- Kontorini, V. 1975. Neai rodiakai epigrafai, *AAA* 8, 37-41.
- Kontorini, V. 1981. To skythiko basileio tis Krimaias kai i Rodos tou 2. p.Ch. ai. Oi epigrafikes kai archaiologikes martyries, *Archaïognosia* 2, 224-233.
- Kontorini, V. 1989. Anekdoties epigrafes Rodou 2. *Inscriptions inédites de Rhodes* 2. Athenai.
- Kopejkina, L.V. 1968. Gruppya rodoskikh amfor s ostrova Berezan', *SoobGE* 29, 44-47.
- Kopejkina, L.V. 1972. Raspisnaja rodosko-ionijskaja ojnochoja iz kurgana Temir-Gora, *VDI* 1, 147-159.
- Kopejkina, L.V. 1973. Samyj rannij obrazec raspisnoj drevnegrečeskoj keramiki iz raskopok na ostrove Berezan', *SovA* 2, 240-244.
- Kopejkina, L.V. 1982. Rodosko-ionijskaja keramika VII v. do n.e. s o. Berezan' i ee značenie dlja izučenija rannego etapa suščestvovanija poselenija, in: Boriskovskaja (ed.) 1982, 6-35.

- Korobkov, D.Ju. 2001. Vnov' ob iudejskich sjužetach antičnych svetil'nikov, in: *Problemy religij stran Černomorsko-Sredizemnomorskogo regiona*. Sevastopol'-Krakov, 149-157.
- Korovina, A.K. 1987. Nekropol' Fanagorii (raskopki 1964-1965), *SoobGMII* 8, 71-109.
- Korpusova, V.N. 1983. *Nekropol' Zolotoe (K etnokul'turnoj istorii evropejskogo Bospora)*. Kiev.
- Koscjuško-Valjužinič, K.K. & M.I. Skubetov 1911. Izvlečenie iz otčeta o raskopkach v Chersonese v 1907 g., *IAK* 42, 1-91.
- Kostromičev, D.A. 2004. Metalličeskie predmety iz raskopok zol'nika rimskogo vremeni v Kerči, *Bosporskie issledovanija* 5, 422-433.
- Kovalenko, S. 1996. Some notes on the production of Hellenistic Mould-Made Relief Ware in the Bosporan Kingdom, in: Tsetskhladze (ed.) 1996, 51-57.
- Kovpanenko, G.T. 1968. Raskopki Trachtemirovskogo gorodišča, *Archeologičeskie otkrytija v Ukraine* 2, 108-111.
- Kramer, N. 2002. Aspekte zur Anbindung des Schwarzen Meeres an den Mittelmeerhandel in spätklassisch-hellenistischer Zeit, in: Faudot, Fraysse & Geny (ed.) 2002, 77-93.
- Krapivina, V.V. 1993. *Ol'vija. Material'naja kul'tura I-IV vv. n.e.* Kiev.
- Kremenetski, C.V. 1995. Holocene vegetation and climate history of South-western Ukraine, *Review of Palaeobotany* 85, 289-301.
- Kroll, J.H. 1993. *The Athenian Agora 26. The Greek Coins*. Princeton.
- Kropotkin, V.V. 1970. *Rimskie importnye izdelija v Vostočnoj Evrope, II v. do n.e. – V v. n.e.* (SAI, D1-27). Moskva.
- Kruglikova, I.T. 1962. O gončarnoj masterskoj Gorgippii, *SovA* 2, 218-224.
- Kruglikova, I.T. 1966. *Bospor v pozdneantičnoe vremja. Očerki ekonomičeskoj istorii*. Moskva.
- Kruit, N. 1992a. The meaning of various words related to wine, *ZPE* 90, 265-276.
- Kruit, N. 1992b. Local customs in the formulas of sales of wine for future delivery, *ZPE* 94, 167-184.
- Kruit, N. & K. Worp 2000. Geographical jar names: towards a multi-disciplinary approach, *ArchPF* 46, 65-146.
- Krysin, G. 1929. Archeologični doslidy beregiv nižn'oi tečii r. Ingul'cja (korotke zvidomlennja), *Litopys Chersonskogo muzeju 1927-1928*, 9. Kherson, 10-21.
- Kryžickij, S.D., N.A. Lejpunskaja, A.S. Rusjaeva, M.V. Skržinskaja, V.V. Krapivina & V.A. Anochin 1999. *Ol'vija. Antičnoe gosudarstvo v Severnom Pričernomor'e*. Kiev.
- Kryžhytskyy, S.D., V.V. Krapivina, N.A. Lejpunskaja, & V.V. Nazarov 2003. Olbia – Berezan, in: Grammenos & Petropoulos (eds.) 2003, I, 389-506.
- Kunina, N.Z. 1983. Antičnye chudožestvennye izdelija iz Kerči, *SoobGE* 48, 33-37.

- Kunina, N.Z. 1997. *Ancient Glass in the Hermitage Collection*. St Petersburg.
- Kutajsov, V.A. & V.B. Užencev 1994. Vostočnye vorota Kalos Limena, in: V.A. Kutajsov (ed.), *Severo-Zapadnyj Krym v antičnuju epochu*. Kiev, 44-70.
- Kuziščin, V.I. & A.I. Ivančik 1998. "Usad'ba Basilidov" v okrestnostjach Chersonesa Tavričeskogo, *VDI* 1, 205-232.
- Kuznecov, V.D. 2000. Afiny i Bospor: chlebnaja trgovlja, *RosA* 1, 107-20.
- Labaree, B.W. 1957. How the Greeks sailed into the Black Sea, *AJA* 61, 29-33.
- Lagos, C. 2000. Two second century BC bronze hoards from the Black Sea, *NumChron* 160, 268-274.
- Lambert, S. 2001. Fragmente Athenischer Ehrendekrete aus der Zeit des Lamischen Krieges (zu AG XVI 94 und IG II², 292), *ZPE* 136, 65-70.
- Lambert, S. 2002. Fish, low fares and IG II² 283, *ZPE* 140, 73-79.
- Lancov, S.B. 2001. Monety iz antičnogo svjatišča okolo g. Saki, in: Zolotarev (ed.) 2001, 116-128.
- Lane, F.C. 1966. *Venice and History. The Collected Papers of Frederic C. Lane*. Baltimore.
- Lane, F.C. 1979. *Profits from Power. Readings in Protection Rent and Violence-Controlling Enterprises*. Albany.
- Lang, M. 1976. *The Athenian Agora* 21. *Graffiti and Dipinti*. Princeton.
- Lapis, I.A. & M.E. Matie 1969. *Drevneegipetskaja skulptura v sobranijach Gosudarstvennogo Ermitaža (Ancient Egyptian Sculpture in the Collection of the State Hermitage Museum)*. Leningrad.
- Lapp, E.C. 1991. Zwei spätantike jüdische Tonlampen aus Kleinasien, *JbAC* 34, 156-158.
- Latyševa, V.A. 1983. Graffiti poselenija Masliny, *Vestnik Char'kovskogo Gosudarstvennogo Universiteta* 238, 101-110.
- Latyševa, V.A. 1985. Issledovanija v Severo-Zapadnom Krymu, in: R.M. Munčaev (ed.), *Archeologičeskie otkrytija 1983 goda*. Moskva, 305-306.
- Lauer, J.-P. & C. Picard 1955. *Les statues ptolémaïques du Sarapeion de Memphis*. Paris.
- Lauffer, S. 1979. *Die Bergwerksklaven von Laureion*, 2nd edn. (Forschungen zur antiken Sklaverei, 11). Wiesbaden.
- Lawall, M.L. 1999. Studies in Hellenistic Ilion: transport amphoras from the Lower City, *StTroica* 9, 187-224.
- Lawall, M.L. 2000. Graffiti, wine selling, and the reuse of amphoras in the Athenian Agora, ca. 430 to 400 B.C., *Hesperia* 69, 3-90.
- Lawall, M.L. 2002. Ilion before Alexander: amphoras and economic archaeology, *StTroica* 12, 197-243.
- Lawall, M. 2005a. Amphoras and Hellenistic economies: addressing the (over) emphasis on stamped amphora handles, in: Archibald, Davies & Gabrielsen (eds.) 2005, 189-232.

- Lawall, M. 2005b. Negotiating chronologies: Aegean amphora research, Thasian chronology, and Pnyx III, in: Stolba & Hannestad (eds.) 2005, 31-67.
- Leaf, W. 1916. The commerce of Sinope, *JHS* 36, 1-15.
- Lebedev, V.D. & Ju.E. Lapin 1954. *K voprosu o rybolovstve v Bosporskom carstve* (MatIsslA, 33). Moskva, 197-214.
- Lehmann-Hartleben, K. 1921. Das Kap Hieron und die Sperrung des Bosphorus, in: K. Regling & R. Reich (eds.), *Janus I. Festschrift zu C.F. Lehmann-Haupts sechzigsten Geburtstag*. Vienna-Leipzig, 168-181.
- Lehmann-Haupt, C.F. 1923. Zu den Inschriften und Skulpturen von Hieron, *Klio* 18, 366-374.
- Lejpunskaja, N.O. 1973. Pro import Fasosa ta Geraklei Pontijskoj v Pivničnomu Pryčornomor' i, *ArcheologijaKiiv* 12, 27-33.
- Lejpunskaja, N.A. 1975. *O standartach geraklejskoj amformoj tary*, in: S.D. Kryžickij, S.N. Bibikov, Ju.I. Kozub & A.S. Rusjaeva (eds.), *Olvija*. Kiev, 126-138.
- Lejpunskaja, N.A. 1981. *Keramičeskaja tara iz Ol'vii. Iz opyta izučenija amfor VI – IV vv. do n.e.* Kiev.
- Lenger, M.-Th. & V. Grace 1958. Anses d'amphores et tuiles timbrées de Thasos (Trouvailles des années 1954 et 1957), *BCH* 82, 368-434.
- Leper, R.Kh. 1902. Grečeskaja nadpis' iz Ineboli, *Izvestija Rossijskogo archeologičeskogo instituta v Konstantinopole* 8, 152-157.
- Levi, D. & G. Pugliese Carratelli 1961-1962. Nuove iscrizioni di Iasos, *ASAtene* 39-40, 573-632.
- Levi, E.I. 1964. Keramičeskij kompleks III-II vv. do n.e. iz raskopok ol'vijskoj agory, in: V.F. Gajdukevič (ed.), *Ol'vija. Temenos i agora*. Moskva-Leningrad, 225-280.
- Levina, E.A. 1992. *Antičnye svetil'niki Odesskogo arčheologičeskogo muzeja (I-VI vv. n.e.)*. Odessa.
- Levkovskaja, G.M. 1970. Rekonstrukcija paleogeografičeskich uslovij gorodišča Čajka po dannym sporo-pyl'cevogo analiza, *KSIA* 124, 102-108.
- Lewis, D.M. 1992. The Thirty Years Peace, in: *CAH*, 2nd edn., vol. 5 Cambridge, 121-146.
- Ličeli, V.T. 1977. Novootkrytoe gorodišče v mestnosti "Sakančia", in: Lordkipanidze (ed.) 1977, 184-185.
- Lightfoot, C.S. 1996. The Coins from Satala, in: R. Ashton (ed.), *Studies in Ancient Coinage from Turkey*. London, 145-150.
- Lissarague, F. 1990. *L'autre guerrier. Archers, peltastes, cavaliers dans l'imagerie attique*. Paris-Rome.
- Ljapuškin, I.I. 1961. *Dneprovskoe lesostepnoe levoberež'e v epochu železa* (MatIsslA). Moskva-Leningrad.
- Lomouri, N.Y. 1979. *K istorii Pontijskogo carstva*. Tbilisi.
- Long, T. 1986. *Barbarians in Greek Comedy*. Carbondale & Edwardsville.
- Loroux, N. 1986. *The Invention of Athens*. Cambridge, Mass. -London.
- Lordkipanidze, O.D. (ed.) 1977, *Vani III. Archeologičeskie raskopki*. Tbilisi.

- Lordkipanidze, O.D. *et al.* 1983, in: O.D. Lordkipanidze (ed.), *Vani VII. Archeologičeskie raskopki. Antičnyj (grečeskij) import v Vani i ego okrestnostjach*. Tbilisi.
- Loukopoulou, L. & A. Łaitar 2004. Propontic Thrace, in: Hansen & Nielsen (eds.) 2004, 912-923.
- Lund, J. 1995. A synagogue at Carthage? Menorah-lamps from the Danish excavations, *JRA* 8, 245-262.
- Lund, J. 1997. The distribution of Cypriot Sigillata as evidence of sea-trade involving Cyprus, in: S. Swiny, R.L. Hohlfelder & H.W. Swiny (eds.), *Res Maritimae. Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity. Proceedings of the Second International Symposium "Cities on the Sea", Nicosia, Cyprus 1994* (ASOR Archaeological Reports, 4). Atlanta, 201-215.
- Lund, J. 1999. Rhodian amphorae in Rhodes and Alexandria as evidence of trade, in: V. Gabrielsen, P. Bilde, T. Egberg-Pedersen, L. Hannestad & J. Zahle (eds.), *Hellenistic Rhodes: Politics, Culture, and Society* (Studies in Hellenistic Civilization, 9). Aarhus, 187-204.
- Lund, J. 2004. Oil on the waters? Reflections on the contents of Hellenistic transport amphorae from the Aegean, in: Eiring & Lund (eds.) 2004, 211-216.
- Lund, J. 2005. An economy of consumption: the Eastern Sigillata A industry in the late Hellenistic period, in: Archibald, Davies & Gabrielsen (eds.) 2005, 233-252.
- Lund, J. 2006a. On the circulation of pottery in Late Hellenistic and Early Roman Cyprus, in: L.W. Sørensen & K.W. Jacobsen (eds.), *Panayia Emat-housa II. Political, Cultural, Ethnic and Social Relations in Cyprus. Approaches to regional studies* (Monographs of the Danish Institute at Athens, 6.2). Athens, 31-49.
- Lund, J. 2006b. Writing long-term history with potsherds: problems – prospects, in: Malfitana, Poblome & Lund (eds.) 2006, 213-227.
- Lund, J. & V. Gabrielsen 2005. A fishy business: transport amphorae of the Black Sea Region as a source for the trade in fish and fish products in the Classical and Hellenistic periods, in: Bekker-Nielsen (ed.) 2005, 161-169.
- Lungu, V. 1999-2000. Céramique du style Hadra à Histria, *MarNero* 4, 43-87.
- Lungu, V. & G. Trohani 2000. Vases hellénistiques à décor peint de la Plaine Roumanie, in: M. Iacob, E. Oberländer-Târnoveanu. & F. Topoleanu (eds.) *Istro-Pontica, Muzeul tulcean la a 50-a aniversare*. Tulcea, 137-62.
- Ma, J. 1999. *Antiochos III and the Cities of Asia Minor*. Oxford.
- Macalister, R.A.S. 1901. Amphora handles, with Greek stamps, from Tell Sandahannah, *PEQ* 33, 25-43; 124-144; 394-397.
- MacClellan, M. 1984. *Core Formed Glass from Dated Contexts*. PhD dissertation, Univ. of Pennsylvania, Ann Arbor, Michigan: Univ Microfilms International, 1998.

- MacDonald, B.R. 1981. The Phanosthenes Decree, taxes and timber in late fifth century Athens, *Hesperia* 50, 141-146.
- MacDonald, B.R. 1982. The import of Attic pottery to Corinth and the question of trade during the Peloponnesian War, *JHS* 102, 113-123.
- MacDowell, D.M. 2004. Epikerdes of Kyrene and the Athenian privilege of ateleia, *ZPE* 150, 127-133.
- Magie, D. 1950. *Roman Rule in Asia Minor*. Princeton.
- Maioli, M.G. 1976. Terra sigillata tarda del Ravennate, *ReiCretActa* 16, 160-171.
- Maiuri, A. 1916. Nuove iscrizioni greche dalle Sporadi meridionali, *ASAtene* 2, 133-179.
- Maiuri, A. 1925. *Nuova silloge epigrafica di Rodi e Cos*. Firenze.
- Makaronas, Ch.I. 1963. Anaskafai Pellai, *ADelt* 18 B'2, 200-206.
- Maksimova, M.I. 1956. *Antičnye goroda Jugo-Vostočnogo Pričernomor'ja*. Moskva-Leningrad.
- Malaise, M. 2000. Le problème de l'Hellénisation d'Isis, in: Bricault (ed.) 2000b, 1-19.
- Malaise, M. 2004. Isis en Occident: Thèmes, Questions, et Perspectives d'un Colloque, in: L. Bricault (ed.), *Isis en Occident. Actes du IIe Colloque international sur les études isiaques, Lyon III, 16-17 mai 2003*. Leiden-Boston, 479-490.
- Malamidou, V. 2005. *Roman Pottery in Context: Fine and Coarse Wares from five sites in North-Eastern Greece* (BAR International Series, 1386). Oxford.
- Malfitana, D., J. Poblome & J. Lund (eds.) 2006. *Old Pottery in a New Century. Innovating Perspectives on Roman Pottery Studies. Atti del Convegno Internazionale di Studi Catania, 22-24 Aprile 2004*. Catania.
- Maljukevič, A.E. & A.N. Prisjažnjuk 2000. Lepnye svetil'niki pozdneskifskoj Mologi, in: *Čobručskij archeologičeskij kompleks i drevnie kul'tury Podnestrov'ja (materialy polevogo seminara)*. Tiraspol', 154-162.
- Malkin, I. & N. Shmueli 1988. The "City of the Blind" and the founding of Byzantium, *MedHistR* 3, 21-36.
- Malyšev, A.A. 1992. Raboty Novorossijskoj archeologičeskoj ekspedicii IA AN SSSR v 1990 g, in: I.I. Marčenko, N.Ju. Limberis & A.F. Ivanov (eds.), *Archeologičeskie raskopki na Kubani v 1989-1990 godach*. Ejsk, 54-58.
- Mancevič, A.P. 1987. *Kurgan Solocha*. Leningrad.
- Manning, J.G. 2003. *Land and Power in Ptolemaic Egypt: The Structure of Land Tenure*. Cambridge.
- Mănucu-Adameșteanu, M. 2000. Céramique archaïque d'Orgamé, in: A. Avram & M. Babeș (eds.), *Civilisation grecque et cultures périphériques. Hommage à Petre Alexandrescu à son 70e anniversaire*. Bucurest, 195-204.
- Marčenko, I.D. 1962. Novye dannye ob antičnom svjatilišče vblizi Fanagorii, in: *50 let Gosudarstvennogo Muzeja Izobrazitel'nych Iskusstvo imeni A.S. Puškina*. Moskva.

- Marčenko, K.K. 1993. O skifskom protektorate v Severo-Zapadnom Pričernomor'e v 5 v. do n.e., *Peterburgskij Archeologičeskij Vestnik* 7, 43-48.
- Marčenko, K.K., V.G. Žitnikov & V.P. Kopylov 2000. *Elizavetovskoe gorodišče na Donu/Die Siedlung Elizavetovka am Don* (Pontus Septentrionalis, 2. Tanais, 2). Moskva/Moskau.
- Marti, V.Ju. 1941. Novye dannye o rybnom promysle v Bospore Kimmerijskom po raskopkam Tiritaki i Mirmekija, *SovA* 7, 94-106.
- Martin, A. & E.C. de Senna 2003. Ostia – Overview of the pottery, *ReiCret Acta* 38. Abingdon, 43-51.
- Martschenko, K.K. 1986. Die Siedlung von Elizavetovka – ein griechisches barbarisches Emporion im Dondelta, *Klio* 68, 377-398.
- Maslennikov, A.A. 1987. Graffiti i dipinti s mysa Zjuk, *KSIA* 191, 45-53.
- Maslennikov, A.A. 1997. Sel'skij temenos (?) v Vostočnom Krymu (predvaritel'naja publikacija), *VDI* 4,150-172.
- Maslennikov, A.A. 1998. *Ellinskaja chora na kraju ojkumeny: sel'skaja territorija evropejskogo Bospora v antičnuju epochu*. Moskva.
- Maslov, S.P. 1991. Kompleks sgorevšich stroitel'nych ostatkov, obnaružennych pri raskopkach pomeščenija CXVIII gorodišča "Čajka" v 1976 g, in: Ju.L. Ščapova & I.V. Jacenko (eds.), *Pamjatniki železnogo veka v okrestnostjach Evpatorii*. Moskva, 76-81.
- Maslov, S.P. & V.R. Filin 1976. K voprosu o prirodnych uslovijach okrestnostej gorodišča "Čajka" (Evpatorijskoe poberež'e Kryma) v antičnoe vremja i srednevekov'e, *Istorija biogeocenzov SSSR v golocene*. Moskva, 175-182.
- Masson, O. 1973. Les noms des esclaves dans la Grèce antique, in: *Actes du colloque 1971 sur l'esclavage*. Paris-Besançon, 9-23.
- Matiašvili, N.N. 1976. Krasnolakovaja keramika, in: O.D. Lordkipanidze (ed.), *Vani II. Archeologičeskie raskopki*. Tbilisi, 91-102 and 228-229.
- Matiashvili, N. 2004. The red-gloss pottery from Vani in Colchis, in: C.J. Tuplin (ed.), *Pontus and the Outside World. Studies in Black Sea History, Historiography and Archaeology* (Colloquia Pontica, 9). Leiden-Boston, 121-130.
- Mattingly, H.B. 1964. The financial Decrees of Kallias IG I² 91/92, *Proceedings of the African Classical Society* 7, 35-55.
- Mattingly, H.B. 1996. Athens and the Black Sea in the fifth century BC, in: O. Lordkipanidzé & P. Lévêque (eds.), *Sur les traces des Argonautes*. Besançon, 151-158.
- McCredie, J.R. 1966. *Fortified Military Camps in Attica* (Hesperia Supplement, 11). Princeton.
- McGing, B.C. 1986. *The Foreign Policy of Mithridates VI Eupator, King of Pontus* (Mnemosyne Supplement, 89). Leiden.
- Mehl, A. 1987. Der Überseehandel von Pontos, in: E. Olshausen (ed.), *Stuttgarter Kolloquium zur historischen Geographie des Altertums 1, 1980* (Geographica Historica, 4). Bonn, 103-185.
- Meiggs, R. 1972. *The Athenian Empire*. Oxford.

- Meiggs, R. 1982. *Trees and Timber in the Ancient Mediterranean World*. Oxford.
- Meritt, B.D. 1935. Inscriptions of Colophon, *AJPh* 56, 358-397.
- Meritt, B.D. 1954. Greek inscriptions, *Hesperia* 23, 233-283.
- Merkelbach, R. 2001. *Isis Regina Zeus Sarapis. Die griechisch-ägyptische Religion nach den Quellen dargestellt*. 2nd edn. Leipzig.
- Merle, H. 1916. *Die Geschichte der Städte Byzantion und Chalkedon*. Kiel.
- Mertens, M. 1995. *Les Alchimistes Grecs IV. Zosime de Panopolis, Mémoires Authentiques*. Paris.
- Meyer-Schlichtmann, C. 1988. *Die Pergamenische Sigillata aus der Stadtgrabung von Pergamon. Mitte 2. Jh. v. Chr. Mitte 2. Jh. n. Chr.* (Pergamenische Forschungen, 6). Berlin-New York.
- Michałowski, K. 1958. *Mirmeki I. Wykopalska odcinka polskiego w r. 1956*. Warszawa.
- Michell, L., A. Powell & L. Rubinstein (eds.) forthcoming. *Epigraphy in the Greek City. Papers in Honour of P.J. Rhodes*.
- Migeotte, L. 2001. *Quelques aspects légaux et juridiques de l'affermage des taxes en Grèce ancienne*, in: E. Cantarella & G. Thür (eds.), *Symposion 1997. Vorträge zur griechischen und hellenistischen Rechtsgeschichte (Altafiumara, 8.-14. September 1997)*, Köln-Weimar-Wien, 165-174.
- Miller, M.C. 1997. *Athens and Persia in the Fifth Century BC. A Study in Cultural Receptivity*. Cambridge.
- Milojčić, V. & D. Theocharis 1976. *Demetrius I* (Beiträge zur Ur- und Frühgeschichtlichen Archäologie des Mittelmeer-Kulturräume, 12). Bonn.
- Minchev, A. 1980. Ancient glass in the Varna Museum (5th to 1st century BC), *Izvestiya na Narodniya Muzei vuv Varna* 16, 111-114.
- Minns, E.H. 1913. *Scythians and Greeks*. Cambridge.
- Mirčev, M., G. Tončeva & D. Dimitrov 1962. Bizone-Karvuna, *Izvestija na Varnenskoto Archeologičesko Družestvo* 13, 21-109.
- Mitchell, S. 1993. *Anatolia. Land, Men, and Gods in Asia Minor 1. The Celts in Anatolia and the Impact of Roman Rule*. Oxford.
- Młynarczyk, J. 2000. Pottery from the Hellenistic cistern at Sha'ar ha-Amakim, in: *E' Epistimonike Synantisi gia tin Ellinistiki Keramiki. Chronologika problimata, kleista synola, ergastiria. Chania 1997, Praktika*. Athens, 225-235.
- Młynarczyk, J. 2002. Hellenistic fine wares at Tell Keisan. A pattern of importations, in: Blondé, Ballet & Salles (eds.) 2002, 117-132.
- Molev, E.A. 1994. *Bospor v period ellinizma*. Nižnij Novgorod.
- Molev, E.A. 2003. Graffiti na černolakovyh sosudach iz raskopok Kiteja (1970-1995), *Drevnosti Bospora* 6, Moskva, 217-238.
- Monachov, S.Ju. 1989. *Amfory Chersonesa Tavričeskogo IV-II vv. do n.e. Opyt sistemnogo analiza*. Saratov.
- Monachov, S.Ju. 1997. Ob amfornych kompleksach: "čistych" i "nečistych", uzkich i širokikh, in: S.B. Ochotnikov, I.V. Brujako, N.M. Sekerskaja & Ja.I.

- Morozova (eds.), *Nikonij i antičnyj mir Severnogo Pričernomor'ja*. Odessa, 202-212.
- Monachov, S.Ju. 1999. *Grečeskie amfory v Pričernomor'e. Kompleksy keramičeskoj tary VII-II vekov do n.e.* Saratov.
- Monachov, S.Ju. 2003. *Grečeskie amfory v Pričernomor'e. Tipologija amfor veduščich centrov-eksporterov tovarov v keramičeskoj tare. Katalog-opredelitel'*. Moskva-Saratov.
- Montevocchi, O. 1944. Ricerche di sociologia nei documenti dell'Egitto Greco-romano IV: Vendite a termine, *Aegyptus* 24, 131-158.
- Montgomery, H. 1986. Merchants fond of corn: citizens and foreigners in the Athenian grain trade, *SymbOslo* 61, 43-61.
- Morelli, D. 1955. Gli stranieri in Rodi, *StClOr* 5, 126-190.
- Moreno, A. 2003. Athenian bread-baskets: the grain-tax law of 374/3 BC reinterpreted, *ZPE* 145, 97-106.
- Morgan, C. 1989. Divination and society at Delphi and Didyma, *Hermathena* 147, 17-42.
- Morricone, L. 1949-1951. I sacerdoti di Halios. Frammento di catalogo rinvenuto a Rodi, *ASAtene* n.s. 11-13, 351-380.
- Morris, I. & W. Scheidel (eds.) 2006. *The Cambridge Economic History of the Greco-Roman World*. Cambridge.
- Morrison, J.S. 1984. *Hyperesia* in naval contexts in the fifth and fourth centuries B.C., *JHS* 104, 48-59.
- Morrison, J.S. & J.F. Coates 1994. *Greek and Roman Oared Ships 399-31 BC*. Oxford.
- Morrison, J.S., J.F. Coates & N.B. Rankov 2000. *The Athenian Trireme: The History and Reconstruction of an Ancient Greek Warship* (2nd edition). Cambridge.
- Mozolevs'kyj, B.M. 1979. *Tovsta Mogyla*. Kyiv.
- Muchopad, S.E. 1988. Raspisnaja rodosko-ionijskaja amfora iz kurgana u sela Šandrovka v Priorel'e, in: I.I. Artemenko, I.Ja. Merpert, N.N. Bondar', I.F. Kovaleva, A.A. Moruženko & A.V. Androsov (eds.), *Archeologičeskie pamjatniki Pridneprov'ja v sisteme drevnostej Vostočnoj Evropy*. Kiev, 110-117.
- Müller, C. 1882 *Geographi Graeci Minores* 2. Paris.
- Mulliez, D. 1982. Notes sur le transport du bois, *BCH* 106, 107-118.
- Murray, W.M. 2001. A trireme named *Isis*: the *sgraffito* from Nymphaion, *International Journal of Nautical Archaeology* 30/2, 250-256.
- Myc,V.L., A.V. Lysenko, S.V. Semin, H.B. Teslenko & M.B. Ščukin 1997. Issledovanija Čatyrdagskogo Nekropolja, in: V.A. Kutajsov et al. (eds.), *Archeologičeskie issledovanija v Krymu, 1994 god. Simferopol'*, 211-221.
- Nawotka, K. 1998. Graffiti and dipinti of Nymphaion 1993-1997, *ArcheologiaWarsz* 49, 85-98.
- Nenna, M.-D. 1998. Les ateliers de verriers dans le monde grec aux époques classique et hellénistique, *Topoi* 8, 693-700.
- Nenna, M.-D. 1999. *Exploration archéologique de Délos* 37. *Les verres*. Athènes.

- Nenna, M.-D., M. Picon, V. Thilion-Merle & M. Vichy 2005. Ateliers primaires de Wadi Natrun: nouvelles découvertes, in: Cool (ed.) 2005, 59-63.
- Nesterenko, N.D. 1987. Zametki po deneznomu obraščeniju medi Bospora poslednej četverti II v. do n.e., *VDI* 2, 74-84.
- Neumann, J. 1991. Number of days that Black Sea bound ships were delayed by winds at the entrance to the Dardanelles near Troy's Site, *StTroica* 1, 93-100.
- Newskaja, W.P. 1955. *Byzans in der Klassischen und Hellenistischen Epoche*. Leipzig (Russian original: Moskva, 1953).
- Nicolaou, I. 2005. *Paphos 5. The Stamped Amphora Handles from the House of Dionysos*. Nicosia.
- Nielsen, T.H. (ed.) 1997. *Yet More Studies in the Ancient Greek Polis*. Stuttgart.
- Niemeyer, H.G. 2004. Phoenician or Greek: is there a reasonable way out of the Al Mina debate? *AncWestEast* 3.1, 38-50.
- Nieto, X. et al. 2001. *Culip IV. La Terra Sigillata decorada de La Graufesenque. Excavacions arqueològiques subaquàtiques a Cala Culip 3* (Monografies del CASC, 3). Girona.
- Nikolaeva, E.J. 1974. Terrakoty goroda Kep, in: M.M. Kobylina (ed.), *Terrakotovye statuetki. 4. Pridon'e i Tamanskij poluostrov* (SAI, G1-11). Moskva.
- Nikolaeva, E.J. 1991. Steklodelie na Bospore, *KSIA* 204, 50-57.
- Noonan, T. 1973. The grain trade of the Northern Black Sea in Antiquity, *AJPh* 94, 231-242.
- Novičenkova, N.G. 2002. *Ustrojstvo i obrjadnost' sviatilišča u perevala Gurzufskoe Sedlo*. Jalta.
- Oberhummer, E. 1899a. Bosporos, *RE* III.1, 741-757.
- Oberhummer, E. 1899b. Byzantion (1), *RE* III.1, 1116-1127.
- Oder, E. 1890. Beiträge zur Geschichte der Landwirtschaft bei den Griechen I.II, *RhM* 45, 58-99 and 212-222.
- Oder, E. 1893. Beiträge zur Geschichte der Landwirtschaft bei den Griechen III, *RhM* 48, 1-40.
- Oehler, J. 1896. *Ateleia*, *RE* II.2, 1911-1914.
- Oikonomides, A.N. 1988. Greek graffiti and dipinti inscriptions from the excavations of the Athenian Agora at Kerameikos 2, *Horos* 6, 39-53.
- Oliver, G. 2000 (ed.), *The epigraphy of death*. Liverpool.
- Olshausen, E. 1974. Zum Hellenisierungsprozess am pontischen Königshof, *AncSoc* 5, 153-170.
- Olshausen, E. 1996. Bosporos, in: *Der Neue Pauly* 1. Stuttgart-Weimar, 750-754.
- Onajko, N.A. 1966. *Antičnyj import v Pridneprov'e i Pobuž'e v VII-V vekach do n.e.* Moskva.
- Onajko, N.A. 1970. *Antičnyj import v Pridneprov'e i Pobuž'e v IV-II vekach do n.e.* Moskva.
- Opaiț A. 1980. Considerații preliminare asupra amforelor romane și romano-bizantine din Dobrogea, *Peuce* 8, 291-327.

- Opaiț, A. 1998. North African and Spanish amphorae in Scythia Minor, *MarNe-ro* 3, 47-95.
- Opaiț, A. 2000. Early Roman amphorae from Leptiminus, *ReiCretActa* 36. Abingdon, 439-442.
- Opaiț, A. 2004. *Local and Imported Ceramics in the Roman Province of Scythia (4th-6th centuries AD)* (BAR International Series, 1274). Oxford.
- Ormerod, H.A. 1924. *Piracy in the Ancient World*. Liverpool.
- Osborne, R. 1987. *Classical Landscape with Figures*. London.
- Osborne, R. 1991. Pride and prejudice, sense and subsistence: exchange and society in the Greek city, in: J. Rich & A. Wallace-Hadrill (eds.), *City and Country in the Ancient World*. London-New York, 119-145.
- Ostroverchov, A.S. 1974. Jagorlyckoe poselenie, in: *Archeologičeskie Otkrytija* 1973g. Moskva, 323.
- Ostroverchov, A.S. 1981. Drevnejšee antičnoe proizvodstvo stekljannykh bus v Severnom Pričernomor'e, *SovA* 4, 214-228.
- Palaczyk, M. & E. Schönenberger 2003. *Eretria. Ausgrabungen und Forschungen* 12. *Amphorenstempel. Grabungen 1965-2001*. Lausanne, 163-233.
- Panella, C. 1986, Oriente ed Occidente: considerazioni su alcune anfore "egee" di età imperiale a Ostia, in: Empereur & Garlan (eds.) 1986, 609-636.
- Papachristodoulou, I. 1979. Eforeia Proistorikon kai Klasikon Archaio teton Dodekanesou, *ADelt* 34, 411-448.
- Papuci-Władyka, E. 1995. *Nea Pafos. Studia nad ceramiką hellenistyczną z polskich wykopalisk (1965-1991)*. Kraków.
- Paris, J. 1914. Timbres amphoriques de Rhodes, *BCH* 38, 300-326.
- Parisinou, E. 2000. *The Light of the Gods. The Role of Light in Archaic and Classical Greek Cult*. London.
- Parke, H.W. 1967. *Greek Oracles*. London.
- Parke, H.W. 1985. *The Oracles of Apollo in Asia Minor*. London.
- Parker, A.J. 1992. *Ancient Shipwrecks of the Mediterranean and the Roman Provinces* (BAR International Series, 580). Oxford.
- Parkins, H. & C. Smith (eds.) 1998. *Trade, Traders and the Ancient City*. London-New York.
- Parlasca, K. 1955. Das Verhältnis der megarischen Becher zum alexandrischen Kunsthandelwerk, *Jdl* 70, 129-154.
- Paton, W.R. & E.L. Hicks 1891. *The Inscriptions of Cos*. Oxford.
- Peacock, D.P.S. 1982. *Pottery in the Roman World: an Ethno-Archaeological Approach*. London-New York.
- Peacock, D.P.S. & D.F. Williams 1986. *Amphorae and the Roman Economy: an Introductory Guide*. London-New York.
- Pearson, L. & S. Stephens (eds.) 1983. *Didymi In Demosthenem Commenta*. Stuttgart.
- Pébarthe, C. 2000. Fiscalité, empire athénien et écriture: retour sur les causes de la guerre du Péloponnèse, *ZPE* 129, 47-76.
- Peek, W. 1942. Attische Inschriften, *AM* 67, 1-217.

- Perlzweig, J. 1961. *The Athenian Agora*, VII. *Lamps of the Roman Period*. Princeton.
- Perrot, G. & E. Guillaume 1862. *Exploration archéologique de la Galatie et de la Bithynie*. Paris.
- Petrakos, V. 1999. O Demos tou Pamnountos II (Bibliothiki tis en Athinais Archaialogikis Etaireias, 182). Athens.
- Petrovskaja, E.A. 1970. Ranneskifskie pamjatniki na južnoj okraine Kieva, *ArcheologijaKiiv* 24, 129-144.
- Pippidi, D.M. 1962. *Epigraphische Beiträge zur Geschichte Histrias in hellenistischer und römischer Zeit*. Berlin.
- Pippidi, D.M. 1964. Sur la diffusion des cultes égyptiens en Scythie Mineure, *StCl* 6, 108-18 (reprinted in *Studii de istorie a religilor antice*. Bucharest 1969, 60-82).
- Pippidi, D.M. 1966. Sclavi "histrieni" la Rheneia?, *StCl* 8, 232-235.
- Pippidi, D.M. 1973. Le problème de la main d'œuvre agricole dans les colonies grecques de la mer Noire, in: M.I. Finley (ed.), *Problèmes de la terre en Grèce ancienne*. Paris-La Haye, 63-82.
- Pippidi, D.M. 1975. *Scythica Minora. Recherches sur les colonies grecques du littoral roumain de la mer Noire*. Bucarest-Amsterdam.
- Pippidi, D.M. 1988. *Studii de istorie și epigrafie*. Bucharest.
- Pirenne-Delforge, V. 1994. *L'Aphrodite grecque*. Athens-Liege.
- Pjatyševa, N.V. 1974. Raskopki Gosudarstvennogo Istoričeskogo Muzeja v Chersonese v 1946 i 1948 gg, in: *Archeologičeskie issledovanija na Juge Vostočnoj Evropy*. Moskva, 72-83.
- Platz-Horster, G. 2002. Zum Handel von Glas zwischen dem nahen Osten, dem Mittelmeer- und dem Schwarzmeergebiet im 1. Jahrhundert v. Chr, in: M. Faudot, A. Frayesse & É. Geny (eds.), *Pont-Euxin et Commerce. La genèse de la "route de soie"*. Actes du IXe Symposium de Vani (Colchide). Paris, 95-108.
- Plešivenko, A.G. 1992. Torgovye svjazi Kamenskogo gorodišča (po amfornym klejmam), in: G.N. Toščev, G.I. Šapovalov & B.D. Michajlov (eds.), *Drevnosti Stepnogo Pričernomor'ja i Kryma* 3, 162-172.
- Pogrebova, N.N. 1958. Pozdneskifskie gorodišča na Nižnem Dnepre (gorodišča Znamenskoe i Gavrilovskoe), in: K.F. Smirnov (ed.), *Pamjatniki skifo-sarmatskoj archeologii v Severnom Pričernomor'e*. Moskva, 103-247.
- Polin, S.V. 1991. Amfory kurgana Čertomlyk, in: A.Ju. Alekseev, V.Ju. Murzin & R. Rolle (eds.), *Čertomlyk*. Kiev, 365-374.
- Pomeroy, S. 1994. *Xenophon, Oeconomicus*. Oxford.
- Pope, H. 1947. *Foreigners in Attic Inscriptions*. Philadelphia.
- Porro, G.G. 1916. Bolli di anfore rodie del Museo Nazionale Romano, *ASAtene* 2, 103-124.
- Prêtre, C. 1997. Imitation et miniature. Étude de quelques suffixes dans le vocabulaire délien de la parure, *BCH* 121, 673-680.
- Pridik, E. 1896. Amphorenstempel aus Athen, *AM* 21, 127-187.

- Pringsheim, F. 1950. *The Greek Law of Sale*. Weimar.
- Pucci, G. 1977. Le terre sigillate italiche, galliche e orientali, in: L. Anecchino *et al.* (eds.), *L'instrumentum domesticum di Ercolano e Pompei nella prima età imperiale* (Quaderni di cultura materiale, 1). Roma, 9-21.
- Pugliese Carratelli, G. 1939-1940. Per la storia delle associazioni in Rodi antica, *ASAtene* 22, 1-2, 147-200.
- Pugliese Carratelli, G. 1955-1956. Nuovo supplemento epigrafico rodio, *ASAtene* 33-34, 17-18, 157-181.
- Pulak, C. & R.F. Townsend 1987. The Hellenistic shipwreck at Serçe Limanı, Turkey: preliminary report, *AJA* 91, 31-57.
- Pülz, S. 1985. Milet 1983 - 1984. Kaiserzeitliche Keramik aus dem Heroon III, *IstMitt* 35, 77-99.
- Purcell, N. 2005. Tax morphology, in: W.V. Harris (ed.), *Rethinking the Mediterranean*. Oxford, 200-232.
- Reeder, E.D. (ed.) 1999. *Scythian Gold: Treasures from Ancient Ukraine*. New York.
- Reger, G. 1993. The public purchase of grain on independent Delos, *CIAnt* 12, 299-334.
- Reger, G. 1994. *Regionalism and Change in the economy of Independent Delos* (Hellenistic Culture and Society, 14). Berkeley.
- Reger, G. 2005a. The manufacture and distribution of perfume, in: Archibald, Davies & Gabrielsen (eds.) 2005, 253-297.
- Reger, G. 2005b. The economy, in: Erskine (ed.) 2005, 331-353.
- Reger, G. 2006. Hellenistic economies: Greece and Western Asia Minor, in: Morris & Scheidel (eds.) 2006.
- Rehren, Th., L. Spencer & P. Triantaphyllidis 2005. The primary production of glass at Hellenistic Rhodes, in: Cool (ed.) 2005, 39-43.
- Reinach, Th. 1905. A Stele from Abonuteichos, *NumChron* 4 ser. 5, 113-119.
- Reinach, Th. 1906. Remarques sur le décret d'Athènes en l'honneur de Pharnace I, *BCH* 30, 46-50.
- Reisner, G.A., C.S. Fisher & D.G. Lyon 1924. *Harvard Excavations at Samaria 1908-1910 I*. Cambridge, Mass.
- Reynolds, P. 2005. Levantine amphorae from Cilicia to Gaza: a typology and analysis of regional production trends from the 1st to 7th centuries, in: J.M. Gurt i Esparraguera, J. Buxeda I Garrigós & M.A. Cau Ontiveros (eds.), *LRCW I. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean. Archaeology and Archaeometry* (BAR International Series, 1340). Oxford, 563-611.
- Rhodes, P.J. 1992. The Delian League to 449 B.C., in: *CAH*, 2nd edn., vol. 5. Cambridge, 34-61.
- Rhodes, P.J. & R. Osborne (eds.) 2003. *Greek Historical Inscriptions, 404-323 BC*. Oxford.

- Riley, J.A. 1979. The Coarse Pottery from Berenice, in: J.A. Lloyd (ed.), *Excavations at Sidi Khrebish Benghazi (Berenice) II* (Supplements to Libya Antiqua, 5.2). Tripoli, 91-467.
- Robert, L. 1959. Les inscriptions grecques de Bulgarie, *RPhil* 33, 165-236.
- Robert, L. 1973. Sur des inscriptions de Délos, in: *Études déliennes* (BCH Supplément, 1). Athènes & Paris, 435-489.
- Robert, L. 1977. Monnaies hellénistiques. II: L'argent d'Athènes Stéphanéphore, *RNum* 19, 34-45.
- Robert, L. 1978. Monnaies et textes grecs. Retour à Aigeai de Cilicie. Deux tétradrachmes de Mithridate V Evergète, roi du Pont, *JSav*, 145-163.
- Robert, L. 1989. *Opera minora selecta V*. Amsterdam.
- Robert, L. 1980. *À travers l'Asie Mineur. Poètes et prosateurs, monnaies grecques, voyageurs et géographie*. Paris.
- Robertson, M. 1941. The excavations at Al Mina, Sueidia IV. The early Greek vases, *JHS* 60, 2-21.
- Robinson, D.M. 1906. Ancient Sinope. A historical account, *AJPh* 27, 125-153 and 245-279.
- Robinson D.M. 1950. *Excavations at Olynthus XIII. Vases Found in 1934 and 1938*. Baltimore.
- Robinson, H.S. 1959. *The Athenian Agora V. Pottery of the Roman period, Chronology*. Princeton.
- Roebuck, C. 1959. *Ionian Trade and Colonization*. New York.
- Rogov, E.Ja. & V.F. Stolba (forthcoming). *Panskoye I. Vol. 2. The Necropolis*. Aarhus.
- Rolle, R. 1989. *The World of the Scythians*. London.
- Rosivach, V.J. 2000. Some economic aspects of the fourth-century Athenian market in grain, *Chiron* 30, 31-64.
- Rossiter, J.J. 1981. Wine and oil processing at Roman farms in Italy, *Phoenix* 35, 345-361.
- Rostovcev, M.I. 1914. *Antičnaja dekorativnaja živopis' na Juge Rossii*. Petrograd.
- Rostovtzeff, M. 1922. *Iranians and Greeks in South Russia*. Oxford.
- Rostovtzeff, M. 1931. *Skythien und der Bosporus I. Kritische Übersicht der schriftlichen und archäologischen Quellen*. Berlin.
- Rostovtzeff, M. 1941. *Social and Economic History of the Hellenistic World I-III*. Oxford.
- Rostovtzeff, M. 1993. *Skythien und der Bosporus II. Wiederentdeckte Kapitel und Verwandtes*. Stuttgart.
- Rotroff, S.I. 1991. Attic West Slope vase painting, *Hesperia* 60, 59-102.
- Rotroff, S.I. 1996. Pnyx III: pottery and stratigraphy, in: Forsén & Stanton (eds.) 1996, 35-40.
- Rotroff, S.I. 1997. *The Athenian Agora XXIX. Hellenistic Pottery. Athenian and Imported Wheelmade Table Ware and Related Material*. Princeton.

- Rotroff, S.I. 2002. West Slope in the East, in: Blondé, Ballet & Salles (eds.) 2002, 97-115.
- Rotroff, S.I. 2005. Four centuries of Athenian pottery, in: Stolba & Hannestad (eds.) 2005, 11-30.
- Rotroff, S.I. & J.M. Camp II 1996. The date of the third period of the Pnyx, *Hesperia* 65, 263-294.
- Rouillard, P. & A. Verbanck-Piérard (eds.) 2003. *Le vase grec et ses destines*. Munich.
- Roussel, P. 1915-16. *Les cultes égyptiens à Délos*. Paris-Nancy.
- Roux, G. 1992. Structure and style of the Rotunda of Arsinoe, in: J.R. McCredie, G. Roux, S.M. Shaw & J. Kurtich, *The Rotunda of Arsinoe*. Princeton, 92-230.
- Rubel, A. 2001. *Hellespontophylakes – Zöllner am Bosporos? Überlegungen zur Fiskalpolitik des attischen Seebundes (IG I³ 61)*, *Klio* 83, 39-51.
- Rubinstein, L. forthcoming. *Ateleia* grants and their enforcement in Classical and early Hellenistic periods, in: Michell, Powell, & Rubinstein (eds.) forthcoming.
- Rutishauser, B. 2001. Island strategies: the case of Tenedos, *REA* 103, 197-204.
- Sackett, L.H. 1992. The Roman pottery, in: Sackett, L.H. (eds.), *Knossos from Greek City to Roman Colony. Excavations at the Unexplored Mansion II* (BSA Supplement, 21). Oxford, 147-256.
- Salles, J.-F. 1993. *Kition-Bamboula 4. Les niveaux hellénistiques*. Paris.
- Salviat, F. 1986. Le vin de Thasos. Amphores, vins et sources écrites, in: Empereur & Garlan (eds.) 1986, 145-196.
- Samojlova, T.L. 1988. *Tira v VI-I vv. do n.e.* Kiev.
- Saprykin, S.Ju. 1990. Review of McGing 1986, *VDI* 2, 204-210.
- Saprykin, S.Ju. 1996a. *Pontijskoe carstvo*. Moskva.
- Saprykin, S.Ju. 1996b. Monety Ponta iz raskopok Chersonesa Tavričeskogo, *Chersonesskij sbornik* 7, 69-85.
- Saprykin, S.Ju. 2002. Neskol'ko neizdannych gorgippijskich graffiti, in: V.Ju. Zuev et al. (eds.), *Bosporskij fenomen: Pogrebal'nye pamjatniki i svjatilišča 1*. St Petersburg, 284-291.
- Sazanov, A.V. 1989. O chronologii Bospora rannevizantijskogo vremeni, *SovA* 4, 41-60.
- Schäfer, J. 1968. *Hellenistische Keramik aus Pergamon* (Pergamenische Forschungen, 2). Berlin.
- Scheidel, W. 1998. Grain for Athens: addendum, in: P. Garnsey (ed.), *Cities Peasants and Food in Classical Antiquity*. Cambridge, 195-200.
- Schiering, W. 1957. *Werkstätten orientalisierender Keramik auf Rhodos*. Berlin
- Schiering, W. 1991. *Die Werkstatt des Pheidias in Olympia 2. Werkstattfunde* (Olympische Forschungen, 18). Berlin.
- Schlottzauer, U. 2000. Die südionischen Knickrandschalen. Formen und Entwicklung der sogenannten Ionischen Schalen in archaischer Zeit, in: F.

- Krinzinger (ed.), *Die Ägäis und das westliche Mittelmeer. Beziehungen und Wechselwirkungen 8. bis 5. Jh. v.Chr. Akten des Symposions, Wien 24. bis 27. März 1999.* Wien, 407-416.
- Schnebel, M. 1925. *Die Landwirtschaft im hellenistischen Ägypten I. Der Betrieb der Landwirtschaft.* Munich.
- Schöne, A. (ed.) 1967. *Eusebii chronicorum canonum quae supersunt*, reprints of 1875, 1866. Berlin.
- Schumacher, K. 1886. Zu rhodischen und delischen Inschriften, *RhM* 41, 222-241.
- Schwahn, W. 1934. Tele, *RE* V.1, 226-310.
- Sciallano, M. & P. Sibella 1991 (reprinted 1994). *Amphores. Comment les identifier?*. Aix-en-Provence.
- Ščeglov, A.N. 1961. Svetil'nik s klejmom XPYCOY, *Soobščeniya Chersonesskogo muzeja* 2, 45-51.
- Ščeglov, A.N. 1978. *Severo-Zapadnyj Krym v antičnuju epochu.* Leningrad.
- Ščeglov, A.N. 1985. 25 let rabot Tarchankutskoj ekspedicii: itogi i perspektivy, *KSIA* 182, 3-7.
- Ščeglov, A.N. 1987. Un établissement rural en Crimée: Panskoje I (fouilles de 1969-1985), *DialHistAnc* 13, 239-273.
- Ščeglov, A.N. 2002. Monumental building U6, in: Hannestad, Stolba & Ščeglov (eds.) 2002, 29-98.
- Scorpan, C. 1977. Contribution à la connaissance de certains types céramiques romano-byzantins (IVe-VIIIe) siècles) dans l'espace istro-pontique, *Dacia* 21, 269-297.
- Scorpan, C. 1978. Descoperiri arheologice diverse de la Sacidava, *Pontica* 11, 155-180.
- Šelov, D.B. 1956. *Monetnoe delo Bospora VI-II vv. do n.e.* Moskva.
- Šelov, D.B. 1958. K istorii svjazej ellinističeskogo Bospora s Rodosom, *SovA* 28, 333-336.
- Šelov, D.B. 1962. Tira i Mitridat Evpator, *VDI* 2, 95-102.
- Šelov, D.B. 1965. Materialy k istorii denezhnogo obraščeniya v gorodach Bospora v VI - I vv. do n.e., *NumEpigr* 5, 31-50.
- Šelov, D.B. 1972. *Tanais i Nižnij Don v pervoje veka našej ery* (MatIsslA, 183). Moskva.
- Šelov, D.B. 1978. Ličnye imena na amforach iz Tanaisa, *NumEpigr* 12, 47-55.
- Šelov, D.B. 1983. Goroda Severnogo Pričernomor'ja i Mitridat Evpator, *VDI* 2, 40-58.
- Šelov, D.B. 1986. Ideja vsepontijskogo edinstva v drevnosti, *VDI* 1, 36-42.
- Šelov, D.B. 1989. Dipinti na amforach iz tanaisskich kompleksov, *NumEpigr* 15, 97-125.
- Šelov-Kovedjaev, F.V. 1985. Istorija Bospora v VI-IV vv.do n.e, in: *Drevnejšie gosudarstva na territorii SSSR.* Moskva, 5-187.
- Semenov-Zuser, S.A. 1947. Rybnyj rynek v Chersonese, *VDI* 2, 237-246.
- Shamba, S.M. 1980. Monety Ešerskogo gorodišča, *Mazne* 3, 142-145.

- Shcheglov, A.N. 1990. La commerce du blé dans le Pont septentrional, in: O. Lordkipanidzé & P. Lévêque (eds.), *Le Pont-Euxin vu par les Grecs*. Paris, 141-160.
- Simonenko, A.V. 2003. Glass and faience vessels from Sarmatian graves of Ukraine, *JGS* 45, 41-57.
- Skadovskij, G.L. 1897. Belozerskoe gorodišče Chersonskogo uezda Belozerskoj volosti i sosednie gorodišča i kurgani meždu nizov'em r. Ingulec i načalom Dneprovskogo limana, *Trudy VIII Archeologičeskogo S'ezda v Moskve 1890 g.* Vol. 3. Moskva, 81-85.
- Skeat, T.C. 1974. *Greek Papyri in the British Museum 7. The Zenon Archive*. London.
- Slane, K.W. 1986. Two deposits from the Early Roman Cellar Building, Corinth, *Hesperia* 55, 271-318.
- Slane, K.W. 1997. The fine wares, in: S.C. Herbert (ed.) *The Hellenistic and Roman Pottery, Tel Anafa II.1* (JRA Supplementary Series, 10). Ann Arbor, 247-406.
- Slane, K.W. 2000. East-West trade in fine wares and commodities: the view from Corinth, *ReiCretActa* 36, 299-312.
- Smekalowa, T.N. & J.L. Djukov 2001. *Monetnuje splavy gosudarstvo Pričernomor'ja: Bospor, Ol'vija, Tyra*. Sankt-Peterburg.
- Smirnova, G.I. 1996. Nemirovskoe gorodišče – obščaja charakteristika pamjatnika 8-6 vv.do n.e., *ArcheologijaKiiv* 4, 67-84.
- Smirnova, G.I. 1998. Skifskoe poselenie na Nemirovskom gorodišče, *MAIET* 6, 77-121.
- Smirnova, G.I. 1999. Ešče raz o seroj kružal'noj keramike iz ranneskifskich pamjatnikov Srednego Podnestrov'ja, *ASbor* 34, 44-57.
- Smirnova, G.I. 2001. Gal'statskij komponent v ranneskifskoj kul'ture Lesostepi Severnogo Pričernomor'ja (po materialam Nemirovskogo gorodišča), *RossA* 4, 33-44.
- Snodgrass, A.M. 1980. *Archaic Greece*. London.
- Snodgrass, A.M. 2002. The history of a false analogy, *AncWestEast* 1.1, 19-23.
- Sokolova, O.Ju. 2000. Investigations of an Early Hellenistic shrine in Nymphaeum, *AncCivScytSib* 6/3-4, 155-172.
- Sokolova, O.Ju. 2001. Novaja nadpis' iz Nimfeja, *Drevnosti Bospora* 4, 368-376.
- Sokolova, O.Ju. 2004. Lučšie nachodki iz raskopok Nimfeja za poslednie desjat' let, *SoobGE* 62, 91-96.
- Sokol'skij, N.I. 1971. *Derevoobrabatyvajuščee remeslo v antičnyh gosudarstvach Severnogo Pričernomor'ja*. Moskva.
- Sokol'skij, N.I. 1976. *Tamanskij tolos i rezidencija Chrisaliska*. Moskva.
- Solomonik, E.I. (ed.) 1978. *Graffiti antičnogo Chersonesa (na černolakovyh sosudach)*. Kiev.
- Solomonik, E.I. 1984. *Graffiti s chory Chersonesa*. Kiev.

- Solomonik, E.I. 1993. Napysi na kryms'kych amforach peršych stolit' našoj ery, *ArcheologijaKiiv* 1993.2, 102-116.
- Solovyov, S.L. 1999. *Ancient Berezan: The Architecture, History and Culture of the First Greek Colony in the Northern Black Sea* (Colloquia Pontica, 4). Leiden.
- Son, N.A. & S.B. Soročan 1988. Antičnye svetil'niki iz Tiry, in: V.A. Anochin (ed.), *Antičnye drevnosti Severnogo Pričernomor'ja*. Kiev, 115-133.
- Šonov, I.V. 2003. Klad serebrjanych chersonesskich monet II v. do n.e., *MAIET* 10, 342-354.
- Šonov, I.V. 2005. Klad mednych monet II v. do n.e. iz okruzi Chersonesa, *MAIET* 11, 430-436.
- Sorda, S. & L. Mercado 1974. La necropoli romana di Portorecanati, *NSc* 28, 142-445.
- Soročan, S.B. 1978. Importni svetil'niki jak džerelo vivčenn'ja torgovel'nych zv'jazkiv Chersonesa iz Schidnim Sredizemnomor'jam u I-III st. n.e., *Vestnik Char'kovskogo universiteta* 167, 43-49.
- Soročan, S.B. 1982. O tak nazyvaemych rubčastych svetil'nikach iz Chersonesa, *ArcheologijaKiiv* 38, 43-50.
- Soročan, S.B. & A.V. Ševčenko 1983. Zapadnopontijskie svetil'niki II-IV vv. iz Čhersonesa, *Vestnik Char'kovskogo universiteta* 238, 94-100.
- Soročan, S.B., V.M. Zubar' & L.V. Marčenko 2001. *Žizn' i gibel' Chersonesa*. Char'kov.
- Soročan, S. 2002. Light for life and death in Early Byzantine Empire, in: Zhuravlev (ed.) 2002d, 111-119.
- Sorokina, N.P. 1971. O stekljannyh sosudach s kapljami sinego stekla iz Pričernomor'ja, *SovA* 4, 85-101.
- Šramko, B.A. 1973. Vostočnoe ukreplenie Bel'skogo gorodišča, in: V.A. Il'inskaja, A.I. Terenožkin & E.V. Černenko (eds.), *Skifskie drevnosti*. Kiev, 82-112.
- Šramko, B.A., 1975. Krepost' skifskoj epochi u s. Bel'sk - gorod Gelon, in: V.A. Il'inskaja, B.N. Mozolevskij, A.I. Terenožkin & E.V. Černenko (eds.), *Skifskij mir*. Kiev, 94-132.
- Šramko, B.A. 1987. *Bel'skoe gorodišče skifskoj epochi (gorod Gelon)*. Kiev.
- Stadter, P.A. 1980. *Arrian of Nicomedia*. Chapel Hill.
- Stambaugh, E. 1972. *Sarapis under the early Ptolemies*. Leiden.
- Steenngaard, N. 1972. *Carracks, Caravans and Companies: The Structured Crisis in the European-Asian Trade in the Early Seventeenth Century*. Copenhagen.
- Steenngaard, N. 1981. Violence and the rise of Capitalism: Frederik C. Lanes Theory of Protection and Tribute, *Review* V.2, 247-273.
- Stern, E. von. 1897. Graffiti na antičnych južno-russkich sosudach, *Zapiski Odesskogo obščestva istorii i drevnostej* 20, 163-199.
- Stern, E.M. 1999. Glass dedications in the inventories of the Parthenon and the Asklepieion, *JGS* 41, 19-50.

- Stolba, V.F. 1989. Novoe posvjaščenie iz Severo-Zapadnogo Kryma i aspekty kul'ta Gerakla v Chersonesskom gosudarstve, *VDI* 4, 55-70.
- Stolba, V.F. 1991. Dom 4 v. do n.e. na poselenii Panskoe I: raskopki 1987 g., *KSIA* 204, 78-84.
- Stolba, V.F. 2002. Graffiti and dipinti, in: Hannestad, Stolba & Ščeglov (eds.) 2002, 228-244.
- Stolba, V.F. 2005. Hellenistic Chersonesos: towards establishing a local chronology, in: Stolba & Hannestad (eds.) 2005, 153-177.
- Stolba, V.F. & L. Hannestad (eds.) 2005. *Chronologies of the Black Sea Area in the Period c. 400-100 BC* (Black Sea Studies, 3). Aarhus.
- Stroud, R.S. 1998. *The Athenian Grain-Tax Law of 374/3 BC* (Hesperia Supplement, 29). Princeton.
- Strželeckij, S.F. 1959. Pozdneantičnyj mogil'nik v Inkermanskoj doline, *KSIA* 8, 139-145.
- Summerer, L. 1999. *Hellenistische Terrakotten aus Amisos. Ein Beitrag zur Kunstgeschichte des Pontosgebietes* (Geographica Historica, 13). Stuttgart.
- Šurgaja, I.G. 1963. Pozdneellinističeskie rel'efnye kubki iz Mirmekija, *KSIA* 95, 107-111.
- Šurgaja, I.G. 1965. K voprosu o pergamskom importe na Bospore vo II v. do n.e., *KSIA* 103, 41-44.
- Šurgaya, I.G. 1979. Der griechisch-ägyptische Kult im nördlichen Schwarzmeergebiet, *Klio* 61/2, 453-458.
- Tacheva-Hitova, M. 1983. *Eastern Cults in Moesia Inferior and Thracia*. Leiden.
- Takács, S.A. 1995. *Isis and Sarapis in the Roman World*. Leiden.
- Technau, W. 1929. Griechische Keramik im samischen Heraion, *AM* 54, 6-64.
- Terenožkin, A.I., V.A. Il'inskaja, E.V. Černenko & B.N. Mozolevskij 1973. Skifskie kurgany Nikopol'sčiny, in: A.I. Terenožkin (ed.), *Skifskie drevnosti*. Kiev, 113-187.
- Terenožkin, A.I. & B.N. Mozolevskij 1988. *Melitopol'skij kurgan*. Kiev.
- Thiersch, F.W. 1838. Ueber Henkel irdener Geschirre mit Inschriften und Fabrikzeichen aus dem äusseren Kerameikos von Athen, *Abhandlungen der philos.-philol. Classe des Königlichen Bayerischen Akademie der Wissenschaften* 2.3, 779-839.
- Thompson, H.A. 1982. Architecture as a medium of public relations among the successors of Alexander, in: Barr-Sharrar & Borza (eds.) 1982, 173-189.
- Todua, T.T. 1990. *Kolchida v sostavye Pontijskogo carstva*. Tbilisi.
- Tolstikov, V.P. 2003. Panticapaeum, in: Grammenos & Petropoulos (eds) 2003, II, 707-758.
- Tolstikov, V. & D. Zhuravlev 2004. Hellenistic pottery from two cisterns on the acropolis of Panticapaeum, in: *ST' Epistimoniki Synantise gia tin Ellinistiki Keramiki. Chronologika problimata, kleista synola, ergastiria. Volos 2000, Praktika*. Athens, 269-276.

- Tolstikov, V.P., D.V. Žuravlev & G.A. Lomtadze 2005. Cisterna rimskogo vremena na Zapadnom plato Pervogo kresla gory Mitridat, *Drevnosti Bospora* 8, 340-376.
- Tolstoj, I.I. 1953. *Grečeskie graffiti drevnich gorodov Severnogo Pričernomor'ja*. Moskva-Leningrad.
- Toncheva, G. 1972. Za egipetskite fayansovi sadove ot Odesos, *Izvestiya na Bulgarskiya Archeologicheski Institut* 32, 103-111.
- Tonnet, H. 1988. *Recherches sur Arrien. Sa personnalité et ses écrits atticistes*. Amsterdam.
- Touriaeff, B. 1911. Objets égyptiens et égyptisants trouvés dans la Russie Méridionale, *RA* 18, 20-35.
- Tracy, S.V. 1995. *Athenian democracy in transition*. Berkeley.
- Trails, J.S. 1994. *Persons of Ancient Athens* 1. Toronto.
- Treister, M. 1985. Bospor i Egipet v III v. do n.e., *VDI* 1, 126-139.
- Treister, M. 1993. Rimljane v Pantikapee, *VDI* 2, 50-74
- Treister, M.Ju. 1999a. The workshop of the gorytos and scabbard overlays, in: E.D. Reeder (ed.), *Scythian Gold*. New York, 71-79.
- Treister, M.Ju. 1999b. Attic sculptors in Bosporus?, in: E. Savostina & E. Simon (eds.), *Tamanskij Rel'ef*. Moskva, 117-121.
- Treister, M.Ju. 2005. Bronze lamps of the Hellenistic period and the first centuries A.D. in the North Pontic area, in: L. Chrzanovski (ed.), *Lychnological Acts I: Actes du 1er Congrès International d'études sur le luminaire antique*. Montagnac, 293-298.
- Trevett, J.C. 1990. P. Oxy. 2537 and Isocrates' *Trapeziticus*, *ZPE* 81, 22-26.
- Tsetsckhladze, G.R. 1990. Zu den kolchischen Sklaven in der griechischen Welt, *Klio* 72, 151-159.
- Tsetsckhladze, G. 1994. Greek penetration of the Black Sea, in: G.R. Tsetsckhladze & F. de Angelis, (eds.), *The Archaeology of Greek Colonisation*. Oxford, 111-135.
- Tsetsckhladze, G.R. (ed.) 1996. *New Studies on the Black Sea Littoral* (Colloquia Pontica, 1). Oxford.
- Tsetsckhladze, G.R. 1997a. Plutarch, Pericles and Pontus: some thoughts, in: C. Schrader et al. (eds.), *Plutarco y la historia. Actas del V simposio español sobre plutarco*. Zaragoza, 461-466.
- Tsetsckhladze, G.R. 1997b. A survey of the major urban settlements in the Kimmerian Bosporos (with a discussion of their status as poleis), in: Nielsen (ed.) 1997, 39-81.
- Tsetsckhladze, G.R. 1998a. Trade on the Black Sea in the Archaic and Classical periods: some observations, in: Parkins & Smith (eds.) 1998, 52-74.
- Tsetsckhladze, G.R. 1998b. More on Bosporan chamber tombs, *Tamanskaja Starina*, 48-61.
- Tsetsckhladze, G.R. (ed.) 1998c, *The Greek Colonization of the Black Sea Area. Historical Interpretation of Archaeology* (Historia Einzelschriften, 121). Stuttgart.

- Tsetschladze, G.R. 1999. *Pichvnari and its environs*. Paris.
- Tsetschladze, G.R. 2000. Pistiros in the system of Pontic *emporion* (Greek trading and craft settlements in the hinterland of the Northern and Eastern Black Sea and elsewhere), in: L. Domaradzka, J. Bouzek & J. Rostropovicz (eds.), *Pistiros et Thasos. Structures économiques dans la Péninsule balkanique aux VIIe–Ile siècles av. J.-C.* Opole, 233-246.
- Tsetschladze, G.R. 2000-2001. Black Sea Piracy, *Talanta* 32-33, 11-15.
- Tsetschladze, G. (ed.) 2004. *Greek Colonisation: An Account of Greek Colonies and Other Settlements Overseas*. Leiden.
- Tuplin, C.J. 1982. Satyros and Athens: IG II² 212 and Isokrates 17.57, *ZPE* 49, 121-128.
- Turovskij, E.Ja., M.Ju. Nikolaenko, V.N. Gorjačuk & I.V. Ladjukov 2001. *Drevnie amfory v Severnom Pričernomor'e: spravočnik-opredelitel'*. Kiev.
- Vachtina, M.Ju. 1998. Osnovnye kategorii grečeskoj importnoj keramiki iz raskopok Nemirovskogo gorodišča, *MAIET* 6, 122-139.
- Vachtina, M.Ju. 2000. Grečeskaja stolovaja keramika VI v. do n.e. iz raskopok Nemirovskogo gorodišča v Pobuž'e, in: L.V. Šadričeva, E.Ju. Andreeva, A.A. Dubovskij, Ju.P. Kalašnik, K.K. Marčenko, D.A. Mačinskij & S.R. Tochtas'ev (eds.), *ΣΥΣΤΙΤΙΑ. Pamjati Jurija Viktoroviča Andreeva*. St Petersburg, 209-217.
- Vachtina, M.Ju. 2004. O načale rasprostranjenja južno-ionijskogo keramičeskogo importa v varvarskom mire Severnogo Pričernomor'ja, in: V.Ju. Zuev et al. (eds.) 2004, 204-211.
- Vallet, G. & F. Villard 1964. *Megara Hyblaea 2. La céramique archaïque*. Paris.
- Van Alfen, P. 2002. *PANT'AGATHA. Commodities in Levantine-Aegean Trade during the Persian Period, 6-4th c. BC*. PhD dissertation, University of Texas at Austin.
- Van Groningen, B.A. 1933. *Aristote: Le second livre de l'Économique*. Leiden.
- Van t'Dack, E., P. van Dessel & W. van Gucht (eds.) 1983. *Egypt and the Hellenistic World*. Louvain.
- Vanderpool, E. 1966. Some Attic Inscriptions, *Hesperia* 35, 274-283.
- Vejmarn, E.V. 1963. Archeologični roboty v rajoni Inkermana, *Archeologični pam'jatky URSR* 13, 15-89.
- Vélissaropoulos, J. 1980. *Les Naoclères grecs. Recherches sue les institutions maritimes en Grèce et dans l'Orient hellénisé*. Geneva-Paris.
- Velkov, V. 1964. Zur Frage der Sklaverei auf der Balkanhalbinsel während der Antike, *Études balkaniques I*, 125-138.
- Velkov, V. 1986. L'esclavage en Thrace antique, in: J. Kalcyk, B. Gullath & A. Graeber (eds.), *Studien zur alten Geschichte. Siegfried Lauffer zum 70. Geburtstag am 4. August 1981 dargebracht von Freunden, Kollegen und Schülern III*. Rome, 1023-1030.
- Velkov, V.I. & L. Domaradzka 1994. Cotys I (383/2-359 av. J.-C.) et l'*emporion* Pistiros de Thrace, *BCH* 118, 1-15.

- Vestergaard, T. 2000. Milesian immigrants in Late Hellenistic and Roman Athens, in: Oliver (ed.) 2000, 81-110.
- Vetšstejn, R.I. 1975. Mestnaja keramika Ol'vii pervych vekov n.e, in: S.D. Kryzhickij (ed.), *Ol'vija*. Kiev, 164-191.
- Vickers, M. 1994. Nabataea, India, Gaul, and Carthage: reflections on Hellenistic and Roman gold vessels and red-gloss pottery, *AJA* 98, 231-248.
- Vickers, M. & A. Kakhidze 2004. *Pichvnari. Results of excavations conducted by the joint British-Georgian Pichvnari expedition I. Pichvnari 1998-2002, Greeks and Colchians on the east coast of the Black Sea*. Tbilisi.
- Vidman, L. 1970. *Isis und Sarapis bei den Griechen und Römern*. Berlin.
- Vinogradov, Ju.A. 2001. Kurgany varvarskoj znati V v. do n.e. v rajone Bospora Kimmerijskogo, *VDI* 4, 77-87.
- Vinogradov, Ju.A. & S.R. Tochtas'ev 1998. Novye posvjatitel'nye graffiti iz Mirmekija, *Hyperboreus* 4.1, 22-47.
- Vinogradov, Ju.G. 1972. Keramičeskie klejma ostrova Fasos, *NumEpigr* 10, 3-63.
- Vinogradov, Ju.G. 1980. Persten' carja Skila: Političeskaja i dinastičeskaja istorija skifov pervoj poloviny V v. do n.e., *SovA* 3, 92-109.
- Vinogradov, Ju.G. 1987. Votivnaja nadpis' dočeri carja Skilura iz Pantikapeja i problemy istorii Skifii i Bospora vo II v. do n.e., *VDI* 1, 55-87.
- Vinogradov, Ju.G. 1997a. A letter from Gorgippean rural estates, *AncCivScytSib* 4, 232-244.
- Vinogradov, Ju.G. 1997b. *Pontische Studien. Kleine Schriften zur Geschichte und Epigraphik des Schwarzmeerraumes*. Mainz.
- Vinogradov, Ju.G. 1998. The Greek colonisation of the Black Sea Region in the light of private lead letters, in: Tsetschladze (ed.) 1998c, 153-178.
- Vinogradov, Ju.G. 1999. Der Staatsbesuch der "Isis" im Bosporos, *AncCivScytSib* 5, 271-302.
- Vinogradov, Ju.G., & S.D. Kryzhickij 1995. *Olbia. Eine altgriechische Stadt im nordwestlichen Schwarzmeerraum*. Leiden.
- Vinogradov, Ju.G. & A.S. Rusjaeva 1991. Der "Brief des Priesters" aus Hylaia, in: R. Rolle, M. Müller-Wille & K. Schietzel (eds.), *Gold der Steppe. Archäologie der Ukraine*. Schleswig, 201-202.
- Vinogradov, Ju.G. & M. Wörrle 1992. Die Söldner von Phanagoreia, *Chiron* 22, 159-170.
- Vinogradov, Ju.G. & M.I. Zolotarev 1999a. Worship of the sacred Egyptian triad in Chersonesus (Crimea), *AncCivScytSib* 5, 357-381.
- Vinogradov, Ju.G. & M.I. Zolotarev 1999b. L'orstracismo e la storia della fondazione di Chersonesos taurica. Analisi comparata con gli ostraka dal *Kerameikos* di Atene, *MinEpigrP* 2, 111-131.
- Vipard, P. 1995. Les amphores carottes (forme Schöne-Mau XV). État de la question, in: *Société française de l'étude de la céramique antique en Gaule, Actes du congrès Rouen, 1995*. Marseille, 51-77.
- Vizantijskij Cherson 1991. *Vizantijskij Cherson. Katalog vystavki*. Moskva.

- Vlasov, V.P. 2005. Antičnye vlijanija v pozdneskifskoj keramike Kryma, in: D. Žuravlev (ed.), *Bosporskie issledovanija* 8, 75-94.
- Vnukov, S.Ju. 2003. *Pričernomorskie amfory. I v. do n.e. – II v. n.e. (Morfoložija)*. Moskva.
- Vogt, J. 1983. Sklaven im Kontakt der Völker: skythische Bogenschützen als Beispiel, in: J. Vogt (ed.), *Sklaverei und Humanität. Studien zur antiken Sklaverei und ihrer Erforschung. Ergänzungsheft zur 2. erweiterten Auflage*. Wiesbaden, 46-53.
- Vokotopoulou, I. 1990. *Oi taphikai tymboi tis Aineias, Dimosieumata tou Archaialogikou Deltiou* 41. Athens.
- Vos, M.F. 1963. *Scythian Archers in Archaic Attic Vase Painting*. Groningen.
- Waagé, F.O. 1948. *Antioch-on-the-Orontes IV.I. Ceramics and Islamic Coins. Hellenistic and Roman Tableware of North Syria*. Princeton.
- Walbank, F.W. 1957, 1967 & 1979. *A Historical Commentary on Polybius I-III*. Oxford.
- Waldhauer, O. 1914. *Kaiserliche Ermitage. Die antiken Tonlampen*. St Petersburg.
- Walker, S. & P. Higgs (eds.) 2001. *Cleopatra of Egypt. From History to Myth*. London.
- Walter, H. 1968. *Samos 5. Frühe samische Gefäße. Chronologie und Landschaftsstile ostgriechischer Gefäße*. Bonn.
- Walter-Karydi, E. 1973. *Samos 6.1. Samische Gefäße des 6. Jahrhunderts v. Chr. Landschaftsstile ostgriechischer Gefäße*. Bonn.
- Wankel, H. 1976. *Demosthenes Rede für Ktesiphon über den Kranz*. Heidelberg.
- Weimert, H. 1984. *Wirtschaft als landschaftsgebundenes Phänomen. Die antike Landschaft Pontos. Eine Fallstudie*. Frankfurt am Main-Bern-New York.
- Weinberg, G.D. 1969. Glass manufacturing in Hellenistic Rhodes, *ADelt* 24 A', 143-151.
- Weinberg, G.D. 1983. A Hellenistic glass factory on Rhodes: progress report, *JGS* 25, 37.
- Welwei, K.-W. 1974. *Unfreie im antiken Kriegsdienst I. Athen und Sparta (Forschungen zur antiken Sklaverei 5)*. Wiesbaden.
- Whitby, M. 1998. The grain trade of Athens in the fourth century BC, in: Parkins & Smith (eds.) 1998, 102-128.
- Whitcher, I.N. 1999. *The Systematics and Biogeography of Hazelnuts, Corylus L. (Betulaceae)*. MA Thesis Colorado State University.
- White, K.D. 1975. *Farm Equipment of the Roman World*. Cambridge.
- Wiemer, H.-U. 2002. *Krieg, Handel und Piraterie. Untersuchungen zur Geschichte des hellenistischen Rhodos (Klio Beih. NF, 6)*. Berlin.
- Wilhelm, A. 1978. Bemerkungen zu den attischen Grabinschriften I.G. II², *ZPE* 29, 57-90.
- Will, E. 2003. *Histoire politique du monde hellénistique, 323-30 av. J.-C.* (Reprint of 2nd edition, 1979-1982, with a new introduction by P. Cabanes). Paris.

- Wilson, C.A. 2002. Distilling, sublimation, and the four elements: the aims and achievements of the earliest Greek chemists, in: C.J. Tuplin & T.E. Rihll (eds.), *Science and Mathematics in Ancient Greek Culture*. Oxford, 306-322.
- Wilson, J.P. 1997. The nature of Greek overseas settlements in the Archaic period: *emporion* or *apoikia*?, in: L.G. Mitchell & P.J. Rhodes (eds.), *The Development of the Polis in Archaic Greece*. London, 199-207.
- Wilson, J.-P. 1997-8. The illiterate trader?, *BICS* 42, 29-56.
- Wright, M. 2004. *Euripides' escape tragedies*. Oxford.
- Yalçın, Ü. 1993. Archäometallurgie in Milet: Technologiestand der Eisenverarbeitung in archaischer Zeit, *IstMitt* 43, 361-370.
- Yardeni, A. 1994. Maritime trade and royal accountancy in an erased customs account from 475 B.C. on the Ahiqar Scroll from Elephantine, *BASOR* 293, 68-87.
- Yoyotte, J. 1998. Pharaonica, in: Fr. Giddio, A. Bernard, E. Bernard, I. Darwish & J. YoYotte (eds.), *Alexandria. The Submerged Royal Quarters*. London, 199-244.
- Zabelina, V.S. 1968. Gruppa rel'efnoj keramiki iz Pantikapeja, *SoobGMII* 4, 119-124.
- Zabelina, V.S. 1984. Ellinističeskaja importnaja keramika iz Pantikapeja, *SoobGMII* 7, 133-152.
- Zabelina, V.S. 1992. Antičnye glinjannye svetil'niki Pantikapeja, in: D.Ju. Molok (ed.), *Archeologija i Iskusstvo Bospora* (SoobGMII, 10). Moskva, 298-328.
- Zalesskaja, V.N. 1988. Dva rannesrednevekovych glinjannyh svetil'nika iz Severnogo Pričernomor'ja, *SovA* 4, 233-237.
- Zaseckaja, I.P. 1993. Materialy bosporskogo nekropolja vtoroj poloviny IV – pervoj poloviny V vv. n.e, *MAIET* 3, 23-105.
- Zavojkin, A.A. 1995. O vremeni avtnomoj čekanki Fanagorii, *Bosporiskij Sbornik* 6, 89-94.
- Zavoikin, A. & D. Zhuravlev 2005. Lamps from the Sanctuary of Eleusin Goddesses in Kimmerian Bosporus, in: Chrzanovski (ed.) 2005, 309-312.
- Zaytsev, Yu.P. 2002. Imported Lamps and Candelabra from Ust'-Alma Necropolis (Crimea, Ukraine), in: Zhuravlev (ed.) 2002d, 41-59.
- Zaytsev, Yu.P. 2004a. *The Scythian Neapolis (2nd century BC to 3rd century AD)* (BAR International Series, 1219). Oxford.
- Zaytsev, Yu.P. 2004b. The ceramic complex of Neapolis Scythian (Crimea, Northern Black Sea), in: *ST' Epistimoniki Synantisi gia tin Ellinistiki Keramiki. Chronologika problimata, kleista synola, ergastiria. Volos 2000, Praktika*. Athens, 751-758.
- Zaytsev, Yu.P. 2005. Absolute and relative chronology of Scythian Neapolis in the 2nd century BC, in: Stolba & Hannestad (eds.) 2005, 259-273.
- Zedgenidze, A.A. 1978. Attičeskaja krasnofigurnaja keramika iz Chersonesa, *KSIA* 156, 69-78.
- Zeest, I.B. 1960. *Keramičeskaja tara Bospora* (MatIsslA, 83). Moskva.

- Zervoudaki, I. 1978. Dodekanesa, *ADelt* 33 B, 396-406.
- Zhuravlev, D. 2000a. A skyphos from the House of Chrysaliskos and Pergamene pottery import in the Bosporan Kingdom, in: *E' Epistimoniki Synantisi gia tin Ellinistiki Keramiki. Chronologika problemata, kleista synola, ergastiria. Chania 1997, Praktika*. Athens, 269-272.
- Zhuravlev, D. 2000b. Terra Sigillata and Red Slip Pottery from the late Skythian necropoleis of the south-western Crimea (1st-3rd centuries AD), *ReiCretActa* 36, 151-160.
- Žuravlev D.V. 2001. K voprosu o klejmach planta pedis na rimskoj keramike, in: Zolotarev (ed.) 2001, 90-99.
- Zhuravlev, D. 2002a. Late Skythian burial with a lamp from Belbek IV necropolis, in: Zhuravlev (ed.) 2002d, 75-80.
- Zhuravlev, D. 2002b. Terra sigillata and red slip pottery in the Northern Pontic region (A short bibliographical survey), *AncCivScytSib* 8.3-4, 237-309.
- Zhuravlev, D. (ed.) 2002c. *On the Edge of Oikoumene. Greeks and Barbarians on the Northern Coast of the Pontus Euxinus. Catalogue of the Exhibition*. Moscow.
- Zhuravlev, D. (ed.) 2002d. *Fire, Light and Light Equipment in the Graeco-Roman World* (BAR International Series, 1019). Oxford.
- Zhuravlev, D. 2003. Italian and other western sigillata in the northern Pontic area, *ReiCretActa* 38, 219-224.
- Žuravlev, D. 2005. Okeramičeskom proizvodstve Bospora v pozdneellinističeskoje vremya, in: O.L. Gabelko (ed.), *Antiquitas aeterna. Povolžskij antikovedčeskij žurnal* 1. Kazan'-Nižnij Novgorod-Saratov, 235-254.
- Zhuravlev, D. & N. Zhuravleva 2002. Bosporan late Hellenistic multi-nozzled lamps: a preliminary report, in: Zhuravlev (ed.) 2002d, 1-12.
- Zhuravlev, D. & N. Zhuravleva 2005. Light equipment in the Early Bosporan Kingdom (6th-5th centuries BC), in: Chrzanovski (ed.) 2005, 313-316.
- Ziebarth, E. 1929. *Beiträge zur Geschichte des Seeraubs und Seehandels im alten Griechenland*. Hamburg.
- Zimmermann, M. 1992. Die lykischen Häfen und die Handelswege im östlichen Mittelmeer. Bemerkungen zu P Mich I 10, *ZPE* 92, 201-217.
- Zin'ko, V.N. 2000. Pontijskije monety iz pantikapejskogo chrama v antach, *MAIET* 7, 219-222.
- Zlatkovskaja, T.D. 1971. O karaktere rabstva vo Frakii VII-V vv. do n.e., *VDI* 1, 54-64.
- Zograph, A.N., 1940. Nachodki pontijskich monet mitridatovskogo vremeni v Ol'vii, in: *Ol'vija I*. Kiev, 293-299.
- Zograph, A.N. 1951. *Antichnye monety* (MatIsslA, 16). Moskva-Leningrad.
- Zograph, A.N. 1977. *Ancient Coinage. Part 1. The General Problems of Ancient Numismatics* (BAR Supplementary Series, 33.1). Oxford.
- Zolotarev, M.I. (ed.) 2001. *ANAXAPΣIΣ. Pamjati Jurija Germanoviča Vinogradova* (Chersonesskij sbornik, 11). Sevastopol'.
- Zolotarev, M.I. 2003. Chersonesus Tauricus, in: Grammenos & Petropoulos (eds) 2003, I, 603-644.

- Zorn, J.R. 1994. Estimating the population size of ancient settlements. Methods, problems, solutions, and a case study, *BASOR* 295, 31-48.
- Zubar', V.M. 1996. Ol'vija i Skilur, *RosA* 4, 44-50.
- Zubar', V.M. 1998. *Severnyj Pont i Rimskaja imperija*. Kiev.
- Zubar', V.M. 2002. O karaktere pozdneskifskoj gosudarstvennosti vo II v. do n.e. – pervych vekach n.e., *Problemy istorii, filologii, kul'tury* 12, Moskva-Magnitogorsk, 272-291.
- Zubar', V.M. & S.B. Soročan 1984. Svetil'niki v pogrebal'nom obrjade antičnych gorodov Severnogo Pričernomor'ja, in: S.D. Kryžickij (ed.), *Antičnaja kul'tura Severnogo Pričernomor'ja*. Kiev. 147-156.
- Zubarev, V.G. 2003. Nekotorye osobennosti sakral'noj žizni naselenija sel'skoj territorii Evropejskogo Bospora v pervych vekach našej ery, *Drevnosti Bospora* 6, 138-151.
- Zubarev, V.G. & A.A. Krajneva 2004. Svetil'niki gorodiša "Belinskoe", *Drevnosti Bospora* 8, 199-216.
- Zuev, V.Ju. et al. (eds.) 2004. *Bosporskij fenomen: problemy chronologii i datirovki pamjatnikov*. St Peterburg.
- Zujkov, Ju.V. 1987. Pozdneellinističeskij keramičeskij kompleks iz Gorgippii, *KSIA* 191, 70-75.

Indices

1. Geographical names

- Abdera 188
Abonouteichos 197
Abydos 43
Adriatic 307
Aegean 18, 39-41, 49-51, 55, 56, 63, 64
n. 7, 65 n. 8, 73, 95, 104, 106, 119,
136, 138, 140, 144, 147, 161-163, 171,
177, 178, 178 n. 10, 179 n. 27, 184,
186, 188-190, 192 n. 38, 195-197,
255-259, 261, 262, 264-266, 273,
276, 278, 280, 282, 287, 291, 295,
300, 303, 304, 306, 311, 316
Africa 103, 229, 230
Aigina 44, 51, 55, 292, 303
Aigospotamoi 54, 73, 241
Aineia 264, 265
Ainos 144, 248 n. 16, 257, 260
Akanthos 49, 66 n. 27, 136
Ak-Burun 265
Alexandria 128, 147, 155, 188, 189,
255, 261, 263, 266, 273, 274, 280,
283 n. 11
Alexandria Troas 199
Alma River 90
Al-Mina 28
Alps 93
Amaseia 199, 200
Amastris 96, 97, 196, 199, 200, 201,
205, 281
Amisos 21 n. 32, 53, 92, 196-199,
200-207, 207 n. 7, 208 n. 27, n. 31,
211, 246, 315
Amphipolis 93, 94
Anadolu Kavagi-Yenimahalle 303
Anapa 32, 92
Anatolia 11, 19, 195-197, 199, 201, 220,
264, 269 n. 53
Andros 256, 257, 303
Antiochia 172, 176, 188, 211, 216
Antiparos 146
Apameia 87
Apennines 93
Aphytis 48, 51, 291
Apollonia (Aegean) 241
Apollonia (Kyrenaika) 146
Apollonia Pontike 11, 13, 19, 146, 241,
258, 259, 279, 323 n. 83
Apollonia-on-the-Rhyndakos 19, 21
n. 35
Argos 187, 253, 282
Arkadia 46, 65 n. 13, 67 n. 69
Armenia Minor 199, 202, 204
Asia Minor 17, 55, 67 n. 54, 85, 86, 92,
94, 128, 129, 166, 172, 176, 184, 185,
195, 199, 201-203, 205, 217, 221, 229,
249 n. 66, 256, 260, 283 n. 11, 305
Assos 185
Astike 323 n. 83
Astypalaia 281
Athenian Agora 149, 156, 185, 186,
275
Athens 14, 17, 39-45, 47-64, 64 n. 3, n. 7,
65 n. 9, n. 10, n. 15, n. 28, 66 n. 33,
n. 40, n. 41, n. 44, 67 n. 66, n. 72,
68 n. 73-74, 69, 70, 73, 74, 76, 77,
81-82, 82 n. 2, 83 n. 8, n. 18, 93, 94,
96, 98 n. 30, 99 n. 54, 125, 126, 143,
146-148, 148 n. 2, n. 5, 159 n. 45,
161-165, 170, 172, 174, 176, 178 n. 4,
n. 10, 179 n. 20, 185-189, 196, 197,
199, 201, 205, 207 n. 1, n. 7, 217-220,
235 n. 44, n. 49, 241-244, 246, 248
n. 22, 249 n. 26, 275, 276, 280, 282,
290-298, 300-312, 316, 318 n. 2, n. 6,
n. 10, 319 n. 23, 320 n. 25, 321 n. 35,
n. 47, 322 n. 61, n. 69, 323 n. 72
Attalid Kingdom 173
Attica 39, 46, 51, 52, 55, 65 n. 15, 93,
242, 248 n. 21
Augusta Traiana 260
Azov Sea, see Maiotis

- Bachčisaraj 90
 Balaklava 90, 109, 110, 116, 121 n. 44
 Balearic Islands 146
 Bargyilia 281
 Batarejka I 91
 Batarejka II 91, 226, 232
 Bel'skoe 24, 25
 Belbek IV 227
 Belinskoe 227, 233
 Beljaus 176, 180 n. 46
 Belozerskoe 135, 136
 Beregovoj 232
 Berenike 187-189, 191 n. 12
 Berezan' 18, 32, 34, 35, 285 n. 47
 Bezymjannaja 109, 116
 Bithynia 85-87, 93, 96, 98 n. 28, 126,
 196, 202, 246, 287, 315-317, 324
 n. 87
 Bizone 172
 Black Sea 9-11, 13, 16-19, 23, 27, 28, 32,
 34, 39-45, 47, 49-53, 55, 57, 58, 60,
 62, 64, 64 n. 1, n. 2, n. 7, 65 n. 11,
 66 n. 31, 69, 72-74, 76, 82, 83 n. 18,
 85-87, 90, 92-97, 97 n. 2, 101, 106,
 107, 109, 119, 120 n. 17, 124, 129,
 133, 136, 140, 141, 143, 144, 146,
 147, 149, 157, 159 n. 45, 161, 162,
 164, 166, 171, 173, 175-177, 178
 n. 1, 179 n. 16, 180 n. 38, 183-190,
 190 n. 1, 191 n. 30, 192 n. 38, 194
 n. 98, 195-199, 201-206, 209, 214,
 216, 217, 220, 226, 239-242, 244,
 245, 247, 247 n. 9, 248, 251 n. 98,
 253-255, 258-264, 266, 267, 269
 n. 53, 273-278, 280-283, 283 n. 1,
 n. 11, 284 n. 45, 287, 289, 292, 295,
 301, 303, 304, 306-308, 310, 315,
 317, 318 n. 10, 319 n. 21, 321 n. 38,
 322 n. 72
 Bliznecy 109
 Bol'saja Bliznica 265
 Bolšoj Kastel' 113
 Boltyška 24
 Borysthenes 23, 239, 240
 Bosphoran Kingdom 40, 41, 43, 44,
 50, 51, 53, 55-64, 69, 70, 73, 74, 76,
 78, 80-82 n. 8, 83 n. 8, 83 n. 17, 92,
 94, 97, 114, 140, 176, 184, 195, 197,
 198-206, 209-212, 214, 215, 220, 222,
 226, 227, 230-233, 237 n. 118, 253,
 254, 262, 264, 267, 273, 276-278,
 298, 302, 304, 307-309, 320 n. 25,
 321 n. 35, 322 n. 69
 Bosphoros 70, 73, 173, 176, 197-199,
 200-206, 210, 212, 214, 226, 227,
 232, 233, 237 n. 118, 253, 254, 287,
 290, 294, 302, 319 n. 23, 320 n. 25,
 324 n. 85
 Bosphoros, see Kimmerian Bosphoros
 and Thracian Bosphoros
 Britain 265
 Bruttium 97 n. 3
 Bug 23, 25, 34, 106, 133, 266
 Bulganak River 90
 Bulgaria 40, 188, 230
 Büyük Menderes 20 n. 23
 Bysbiskos 290
 Byzantine Empire 230, 231
 Byzantion 41, 42, 48-50, 54, 65 n. 9, 66
 n. 41, 73, 86, 96, 196, 241, 245, 258,
 260, 261, 287-298, 300, 301, 307-317,
 318 n. 3, n. 6, n. 9, 319 n. 14, n. 18,
 n. 21, 320 n. 31, 323 n. 79, n. 80,
 n. 82-84, 324 n. 87, n. 90
 Čajka 88, 89
 Černeča 135
 Campania 275
 Çandarlı 176, 180 n. 40
 Canopus 320, n. 32
 Cape Gerastos 303
 Čatyrdag 111
 Caucasus 88, 92
 Certomlyk 138
 Chabakta 200
 Chaironeia 55
 Chalastra Lake 266
 Chalchis 242
 Chalkidike 48, 51, 93

- Char'kov 123
 Cherson 133
 Chersonesos 18, 40, 52, 53, 55, 66 n. 37,
 n. 44, 90, 106, 107, 109, 110, 112,
 113, 117, 123-130, 140, 143, 144,
 146, 149, 150, 152, 154, 155, 158
 n. 10, n. 11, 173, 176, 178 n. 9, 180
 n. 33, n. 46, 185, 186, 188, 195-198,
 200, 201, 203-206, 214-233, 235
 n. 49, 237 n. 119, 254, 255, 262, 268
 n. 8, 277, 279
 Chersonesos Taurica 195-198, 200,
 201, 203-206
 Chios 24, 25, 28, 30, 51, 140, 141, 144,
 156, 158 n. 37, 248 n. 11, 274, 305
 Chortica Island 136
 Chotovskoe 26
 Chrysopolis 293, 294, 310, 311, 319
 n. 18
 Constantinople 231
 Corinth 65 n. 13, 95, 129, 147, 187-189,
 235 n. 44
 Čornoričes'kyj 109
 Corsica 93
 Crete 46, 94, 95, 119, 146, 187, 256, 269
 n. 51
 Crimea 31, 33, 40, 41, 52, 61, 63, 83
 n. 12, 88-90, 92, 98 n. 16, 114, 120
 n. 18, 124, 127, 149, 158 n. 11, 161,
 178 n. 9, 192 n. 62, 196, 204, 208
 n. 27, 214, 215, 228, 301, 308
 Cyprus 44, 55, 81, 92, 164, 171, 172,
 187, 189, 220, 256, 260
 Dacia 216
 Damascus 275
 Danube 106, 239, 260
 Dardanelles 143, 321 n. 38
 Dekleia 42, 51, 52, 54, 63, 73
 Delion 48
 Delos 66 n. 44, 95, 143, 146-147, 148
 n. 5, 166, 197, 201, 207 n. 1, n. 5,
 n. 7, 244, 257, 265, 273, 277-280,
 320 n. 34
 Delphi 17-19, 95, 244, 245, 259, 277
 Demetrias 155, 158 n. 27, 185
 Demirci 147 n. 1, 184, 186
 Dibsi Farja 147 n. 1
 Didyma 17-19, 277
 Dionysiopolis 260
 Dioskurias 206, 207 n. 17
 Dnieper 24, 25, 76, 91, 106, 133-136,
 138-140
 Dnister 106
 Dobrudja 109, 113, 120 n. 18
 Don 72, 106, 128, 152, 159 n. 40, 244
 Doris 282
 Egypt 17, 43, 44, 46, 47, 51, 55, 56, 65
 n. 11, 154, 156, 171, 173, 220, 230,
 231, 253-258, 260, 262-267, 270
 n. 69, 273-278, 280, 283 n. 5, n. 13,
 284 n. 44, 320 n. 32
 El Sec 146, 147, 157
 Elephantine 320 n. 32
 Eleusis 95
 Elizavetovskoe 159 n. 44, 244
 Emporio 30
 Ephesos 87, 184, 186, 209, 211, 216, 234
 n. 31, 254
 Epidauros 95, 256
 Eretria 146
 Erythrai 21 n. 32
 Escheri 201
 Euboia 42, 46, 48, 51, 52, 63, 65 n. 8,
 93, 242, 281, 301, 303
 Euesperides 188
 Euktimon 216
 Euphrates 147 n. 1
 Europe 75, 92
 Euxine, see Pontos
 Fayum 275, 283 n. 12
 Forlimpopoli 119
 Galatia 86, 193 n. 73, 202
 Gaul 93, 287, 317
 Gazioura 200
 Gemlik 130 n. 14
 Georgia 198
 Gibraltar, straits of 102
 Golden Horn 287

- Gölyazı 21 n. 35
 Gordion 188
 Gorgippia 44, 72, 109, 114, 116, 171, 198, 203, 221, 239
 Greci 109, 110
 Greece 10, 19, 43, 44, 51, 56, 57, 93-96, 118, 129, 143, 164, 178 n. 10, 186-188, 232, 262, 276, 277, 282
 Groty 152, 154, 159 n. 40
 Gulf of Corinth 95
 Gulf of Latmos 17
 Gurzuf Saddle 203, 208 n. 38
 Hadra 273
 Halai Araphenides 52
 Halonnesos 301
 Halys River 87
 Helike 44, 65 n. 13
 Hellas 93
 Hellespont 40-43, 46, 47, 49-51, 54, 55, 63, 65 n. 9, 66 n. 31, 67 n. 54, 74, 257, 291, 292, 294, 305, 306, 310
 Herakleia Pontike 53, 55, 66 n. 37, 66 n. 55, 86, 92, 125, 139, 140, 143, 144, 185, 187, 188, 191 n. 32, 196, 199, 201, 204, 211, 246, 249 n. 23, 258, 259, 269 n. 33, 274, 307, 324 n. 90
 Herakleian Peninsula 90, 154
 Hieron 61, 70, 94, 96, 241, 303-307, 312, 314-316, 322 n. 53, n. 61, n. 64, 324 n. 85, n. 87
 Hestiaia 281, 282
 Hylaia 91
 Hypanis 63
 Hypata 126, 129
 Iasos 146, 147
 Iberian Peninsula 103
 Il'ičevka 91
 Ilion 185
 Ilouraton 114, 236 n. 82
 Imbros 41, 65 n. 7, 318 n. 10, 321 n. 47
 Inkerman 90, 158 n. 11
 Ionia 14, 15, 17, 19, 23-26, 28, 29, 31, 32, 34, 177
 Isideion on Delos 279
 Isle of Patroklos 146
 Istanbul 192 n. 62
 Istros 32, 109, 111, 181 n. 50, 185, 244, 245, 254, 258-262, 280, 283 n. 2, 315, 324 n. 90
 Italy 16, 44, 47, 65 n. 17, 92, 94, 97 n. 3, 165, 187, 188, 194 n. 99, 214-216, 221, 227, 232, 280
 Itanos 256
 Jagorlyk 266
 Jura 9
 Kača River 90
 Kachovskoe Lake 133, 134
 Kalchedon 54, 73, 254, 261, 280, 289, 290, 294, 311-313, 322 n. 53, 323 n. 80, 323 n. 83
 Kallatis 130 n. 15, 245, 258, 259, 262, 273, 279, 281, 315, 324 n. 90
 Kallipolis 290
 Kalos Limen 89, 109, 114
 Kalpe Limen 86
 Kamenka 140
 Kamenskoe Gorodišče 134-136, 138, 172
 Kappadokia 87, 201, 202, 242, 246, 282
 Kapulovskoe 134, 136, 138, 140
 Kardašinskij 91
 Kardias 21 n. 32
 Karia 15, 17, 256, 281
 Karthago 46, 223
 Kaunos 275
 Keos 188, 256, 303
 Kepoi 73, 169, 171, 217, 220, 221, 226, 232
 Kerch 72, 217-219, 231, 266, 308
 Kerch Peninsula 91, 92
 Kerkinitis 268 n. 8
 Ketios, river 174, 176
 Kilikia 92, 184, 256, 275
 Kimmerian Bosphoros 91, 102, 106, 161, 162, 166, 171, 174, 175, 244, 276, 309

- Kimmerian Chersonesos, see Crimea
 Kios 258
 Klazomenai 21 n. 32, 26, 28
 Knidos 94, 119, 144, 146, 147, 177, 209,
 216, 227, 281
 Knossos 104, 113, 187-189
 Koblevo 90
 Kolchis 11, 47, 64 n. 2, 147 n. 1, 186,
 195, 199, 201, 202, 204-206, 207
 n. 17, 242, 244, 250 n. 59, 264, 301
 Kollytos 73
 Kolomak 24
 Kolophon 281
 Komana 200
 Koresia 256
 Korkyra 46
 Kos 144, 147, 196, 245, 254, 279, 281,
 284 n. 37
 Košarskoe Gorodišče 90
 Kozyrskoe 109
 Krasnodar 228
 Krasnyj Mak 158 n. 11
 Kremnoi 10
 Kuban 63, 106, 228
 Kul' Oba 77, 79, 265
 Kutjanskij Mogil'nik 140
 Kyme 74
 Kypsela 257
 Kyrenaika 146, 171, 256
 Kyrene 46, 56, 77
 Kytention 282
 Kytoros 97
 Kyzikos 55, 65 n. 9, 311-313, 323
 n. 80
 La Graufesenque 183
 Lade 14
 Lampsakos 54
 Laodikeia 200, 283 n. 11
 Larissa 158 n. 27
 Laurion 244, 245
 Lekton 321 n. 38
 Lemnos 41, 65 n. 7-8, 318 n. 10
 Lenaia 47
 Leptiminius 119
 Lesbos 25, 28, 50, 51, 66 n. 31, 156,
 257, 260
 Leuke 282
 Levant 96, 106, 188, 189, 256, 264,
 267
 Libya 46, 187
 Lobanovaja Ščel' 171
 Locrian Physkeis 243
 Lydia 11, 17, 19, 44, 256, 260, 282, 318
 n. 6
 Lysaja Gora 135, 140
 Lysimacheia 257
 Macedonia 49, 70, 92-95, 98 n. 30, 146,
 158 n. 27, 164, 257, 264, 266, 321
 n. 38
 Magna Graecia 262
 Magnesia-on-the-Maeander 20 n. 23,
 129, 185
 Maiotis 70, 72, 242, 244, 245, 281, 308
 Majačka 138
 Majskaja Mountain 237 n. 118
 Mallorca 147
 Malta 187
 Margiana 200
 Marissa 146
 Maroneia 49, 66 n. 27, 148 n. 5, 241,
 257, 269 n. 51, 305, 307
 Meander River 17
 Meander Valley 15, 16, 20 n. 23
 Meden Rid Hills 11
 Mediterranean 9, 18, 51, 54, 60, 85,
 93-98, 98 n. 28, 102, 104, 106-108,
 118, 119, 143, 144, 146-148 n. 2, 149,
 161, 164-166, 171-173, 175, 176, 178
 n. 10, 179 n. 22, 183-190, 192 n. 61,
 194 n. 98, 197, 209, 211, 216, 221,
 223, 235 n. 67, 255, 261, 275, 280,
 287-290, 292, 295-297, 300, 301, 308,
 311, 315-318, 318 n. 10
 Megara 39, 65 n. 15, 143
 Melas 239
 Melitopol' 138
 Melos 301
 Memphis 255, 280

- Mende 49, 66 n. 27, 136-138, 140, 144, 156, 157
 Mesembria Pontike 254, 258, 260, 261
 Methana Peninsula 256
 Methone 44, 48-51, 65 n. 23, 291, 292, 318 n. 11
 Michajlovka 91
 Milesia 15
 Miletos 9-11, 13-20, 20 n. 23, 28, 37 n. 44, 39, 147, 187, 277
 Moesia 215, 216, 229, 230, 260
 Moldavia 113
 Moryllos 266
 Mount Grion 15
 Mount Ida 92
 Mount Mithridates 266
 Myrmekion 110, 113, 114, 116, 117, 121 n. 44, 121 n. 51, 171, 175, 176, 180 n. 47, 236 n. 82
 Mysia 313
 Mysian Olympos 92, 97
 Mytilene 50, 51, 63, 66 n. 30-31, 67 n. 69, 70, 248 n. 16, 322 n. 54, 323 n. 73
 Naukratis 18
 Naupactos 243
 Naxos 279
 Nea Paphos 179 n. 19, 187
 Near East 18, 283 n. 13
 Nemirovo 24-34, 37 n. 44
 Nicopolis ad Istrum 187, 260
 Nikolaevka 158 n. 11
 Nikomedeia 87
 Nikonion 198
 Nile 47
 Northern Bay 90
 Nosaki 138
 Novo-Otradnoe 180 n. 33
 Nymphaion 54, 66 n. 44, 71, 73, 83 n. 13, n. 18, 161-164, 166, 167, 170, 171, 173, 176, 178 n. 1, 179 n. 19, 180 n. 46, 237 n. 118, 254, 259, 278, 284 n. 22, 308, 309, 322 n. 69, n. 70
 Nysa 200
 Odessa 66 n. 44
 Odessos 196, 197, 244, 245, 262, 280, 281, 315
 Odrysian Kingdom 287, 311, 318 n. 7
 Olbia 10, 18, 43, 53, 54, 64 n. 2, 66 n. 44, 90, 91, 109, 110, 112, 115, 125, 127, 129, 171, 172, 176, 177, 180 n. 46, 195, 197, 200-206, 209, 214, 215, 221, 226, 233, 236 n. 82, 239, 248 n. 11, 262, 264, 266, 267, 273, 278, 279, 282, 284 n. 24, 297, 304, 306, 320 n. 31, 321 n. 45
 Olympos 46
 Olynthos 101, 102
 Orgame 34
 Ostia 113, 187, 188
 Pagasai 46
 Palestine 146, 147, 171, 216, 218, 224
 Pamphylia 184, 256
 Pannonia 215
 Panskoe I 89, 149-151, 153, 154, 159 n. 40
 Pantikapaion 67 n. 69, 72, 74, 81, 82, 87, 91, 96, 97, 114, 158 n. 11, 168, 171, 173, 176, 180 n. 46, 197, 198, 200, 202-204, 210-217, 219-221, 223, 225, 227, 230-233, 236 n. 82, 255, 262, 264, 266-268, 268 n. 16, 273, 278, 279, 281, 284 n. 23, 308, 322 n. 69
 Paphlagonia 45-47, 197, 201, 202, 204, 242, 246, 281, 315
 Paphos 185
 Parion 21 n. 32
 Paros 21 n. 32
 Pastyrskoe 26
 Patrasys 232
 Peiraiæus 42, 51, 54, 55, 57, 61, 64 n. 5, 73, 81, 82, 125, 146, 280, 291, 298, 300, 303-305, 312, 321 n. 4
 Pella 146, 147 n. 1, 148 n. 5
 Peloponnesos 43, 44, 51, 65 n. 15, 291, 310

- Pelousion 274
 Peparethos 136, 138, 140
 Perdikkas 46
 Pergamon 146, 166, 172-176, 180 n. 38,
 n. 40, n. 41, 216
 Perinthos 247, 248 n. 16, 323 n. 83
 Persia 14, 17, 19, 43, 275, 290, 318
 n. 6
 Pervomaevka 135, 136
 Pervyj Mordvinovskij 138
 Petuchovka 159 n. 40
 Phanagoreia 170, 171, 176, 177, 180
 n. 46, 198, 202-204, 213, 221, 222,
 232, 237 n. 118, 240, 241, 281
 Pharnakeia 196, 200
 Phasis 47
 Philippopolis 260
 Phoenicia 46, 47, 92
 Phokaia 21 n. 32
 Phrygia 46
 Pichvnari 270 n. 75
 Pikrolimni 266
 Pistiros 241, 298
 Pitane 176
 Pompeii 188
 Pontic Kingdom 85, 86, 94, 188, 195,
 196, 198-204, 207, 255
 Pontos 11, 19, 39, 42-45, 47, 48-51,
 53-60, 63, 65 n. 10, 14, 66 n. 41, 73,
 93, 94, 97, 101, 106-108, 113, 117-120,
 129, 135, 143, 162, 164, 165, 171-173,
 176-178 n. 4, 181 n. 50, 183-190,
 190 n. 1, n. 2, 193 n. 73, 195-206,
 209-211, 214, 216-218, 220-225, 227,
 229, 231, 234 n. 31, 235 n. 55, 235
 n. 67, 239-241, 244, 248 n. 13, 259,
 264, 273-276, 278-280, 282, 283 n. 5,
 n. 11, 284 n. 44, 288, 289, 291-293,
 295, 299, 300, 306-308, 310-317, 319
 n. 17, 323 n. 72, 324 n. 85, see also
 Black Sea
 Portorecanati 188
 Pribugskoe 159 n. 40
 Prokonnesos 258, 311
 Propontis 18, 97, 104, 130 n. 14, 241
 Provence 265
 Prusa 87
 Prusias ad Mare 130 n. 14
 Ptolemaic Kingdom 93, 253, 254, 267,
 280, 283 n. 12, 323 n. 82
 Ptolemais 253
 Ranževoe 91
 Ras al-Bassit 147 n. 1
 Ras Ibn Hani 147 n. 1
 Ravenna 188
 Rhakotis 263
 Rhamnous 242, 243
 Rheneia 242, 243, 244
 Rhodos 30, 31, 46, 85, 86, 94, 96, 97,
 98 n. 5, 143, 144, 146, 147, 148 n. 5,
 166, 172, 173, 175-178, 179 n. 24,
 179 n. 25, 185, 188-190, 193 n. 91,
 196, 197, 209, 241, 244-246, 250
 n. 66, 261, 265, 266, 273-275, 278,
 280-283 n. 11, 284 n. 43, 287, 308,
 316, 317
 Rhyndakos 93
 Rogožkino XIII 158 n. 11
 Roman Empire 195, 197, 203-206, 261,
 318 n. 2
 Romania 40
 Rome 93, 94, 98 n. 28, 125, 128, 129,
 165, 166, 173, 187, 216, 280
 Saki Lake 89
 Salamis 55
 Samaria 146
 Samos 25, 94, 146, 147, 184, 293
 Samothrake 256, 257
 Samydessos 248 n. 16
 Šandrovka 24
 Sapanca Lake 87
 Sardinia 188
 Sardis 93, 95
 Satala 199
 Scythia 23-26, 28, 35, 74-79, 81, 84
 n. 24, 135, 136, 138, 140, 196-199,
 214, 242, 244, 247, 248 n. 21, n. 22,
 265, 273, 301, 315, 318 n. 7

- Scythian Neapolis 172, 214
 Sea of Marmara, see Propontis
 Seleukia Pieria 147 n. 1
 Seleukid Kingdom 93, 165
 Selymbria 323 n. 83
 Semenovka 91
 Sestos 64 n. 5, 257, 321 n. 38
 Sevastopol 123
 Ševčenko III 140
 Sicily 44, 51, 56, 63, 65 n. 9, n. 15, 94, 232
 Sidon 256
 Sikyon 95
 Sindia 276
 Sindike 78
 Sinope 9, 53, 55, 83 n. 18, 86, 87, 92, 94, 96, 97, 110, 114, 118, 120 n. 17, 140, 143, 144, 146, 147, 147 n. 1, 150, 152, 184-189, 190 n. 2, 192 n. 59, 193 n. 86, n. 91, 196-199, 200-202, 204, 205, 207 n. 7, 208 n. 31, 211, 246, 251 n. 88, 263, 279-282, 284 n. 31, 284 n. 37, n. 43, 308, 315, 322 n. 72
 Sinopitis 87
 Širokoe 140
 Širokoe II 140
 Sitalkes 46
 Skymnos 155
 Skyros 41, 65 n. 7, 301, 318 n. 10, 321 n. 47
 Smyrna 148 n. 3, 188
 Solocha 77, 80, 81, 138
 Southern Russia 67 n. 65
 Southern Spain 183
 Sovchoz 111, 113-116, 118, 231
 Sovutina Skelja 135
 Sozopol 11
 Sparta 42, 46, 51, 54, 55, 63, 73, 94, 294, 303, 310, 311, 319 n. 23
 Sphettos 256
 St Jean d'Acres 146
 Stanica Ust'-Labinskaja 227
 Straits of Bosphoros, see Thracian Bosphoros
 Suchumi 92
 Sulicke 136
 Sveshtari 83 n. 17
 Sybaris 18
 Syrakousai 46, 58, 127
 Syria 46, 92, 166, 171, 184, 193 n. 91, 216, 218, 231, 274, 275, 283 n. 5, 283 n. 11
 Taman Peninsula 32, 63, 73, 91, 92, 96, 114, 171, 202, 205
 Tanais 87, 109, 110, 116, 128, 150, 157 n. 4, 170-172, 176, 180 n. 47, 225, 226, 228, 236 n. 82, 315
 Tarantos 146
 Taranza 93
 Tarentum 265
 Tarpanči 89
 Tegea 129, 130
 Teion 196, 246, 315
 Tel Sandahannah 146
 Tell Atrib (Athribis) 173
 Temir-Gora 31, 33
 Tenedos 279, 321 n. 38
 Tenos 311
 Thasos 136-140, 144, 146, 148 n. 3, n. 5, 150, 155, 156, 158 n. 37, 186, 188, 241, 257, 284 n. 45
 Theodosia 59, 61, 70, 82 n. 3, 204, 276, 304, 320 n. 25
 Thera 13, 256, 260
 Thermodon Plain 41
 Thessaloniki 264
 Thessaly 46, 47, 126
 Thrace 83 n. 17, 92, 197, 216, 241, 242, 245, 248 n. 16, 257, 259, 264, 270 n. 75, 287, 290, 298, 301, 311, 315, 317
 Thracian Bosphoros 94, 106, 259, 261, 287, 289, 290, 293-296, 298-300, 303, 304, 307, 309-311, 313-316, 319 n. 23, 324 n. 85
 Thracian Chersonese 301, 311
 Thrasyboulos 16
 Tiligulo-Berezanka 91

- Tjas' min, river 35
 Tocra 24, 32
 Tolstaja Mogyla 77, 78
 Tomis 108, 109, 172, 216, 258, 260-262, 315, 324 n. 90
 Tovsta Mogyla 138
 Trachtemirov 24-26, 36 n. 16
 Trapezous 196, 201
 Troizen 243
 Tsarskii Kurgan 83 n. 17
 Turkey 21 n. 35, 86, 143, 187, 188
 Tylian Kingdom 287, 291, 316, 317
 Tylis 246
 Tyras 172, 201, 202, 215, 221, 256
 Tyritake 106, 114, 117, 198, 231, 236 n. 82
 Tyrrhenian Sea 307
 Ukraine 67 n. 65
 Ulpia Traiana Sarmizegetusa 216
 Ust'-Al'ma 228
 Vani 172, 176, 180 n. 46, 180 n. 48, 201, 205
 Varna 118
 Velikaja Znamenka 138
 Vetren 298
 Vetrenaja Bay 89
 Vorskla River 24, 25
 Vosges Mountains 93
 Vulci 244
 Vyšetarasovka 138
 Wadi Natron 265, 266
 Xanthos 282
 Žabotin 25
 Zakros 146
 Zales'e 25, 35, 36 n. 7
 Zaporož'e 133, 135
 Znamenskoe 134
 Zolotaja Balka 134
 Zolotoe 180 n. 33
- 2. Gods and mythological figures**
 Achilleus 279, 285 n. 47
 Anoubis 254, 261, 262, 279
 Aphrodite 220, 278, 285 n. 47
 Aphrodite Euploia 278
 Apollon 95, 197, 198, 204, 207 n. 5, 254, 257, 261, 277-279
 Apollon Iatros 277
 Ares 199-201
 Artemis 203, 204
 Artemis Ephesia 278
 Artemis Tauropolos 52
 Asklepios 95
 Athena 200, 204
 Athena Lindia 278, 281
 Demeter 232, 233, 237 n. 118
 Dionysos 46, 198, 199, 203
 Eros 220
 Gorgon 199-201
 Great Goddess: 74
 Hera 198
 Herakles 126, 216, 258
 Hermes Agoraios 125
 Hesperidai 216
 Iphigenia 52
 Isis 254, 255, 260-263, 267, 268 n. 8, 273, 279, 280
 Kalliope 284 n. 36
 Muses 46
 Nike 199-201
 Pan 67 n. 69
 Parthenos 155
 Persephone 232, 233
 Perseus 197, 200
 Poseidon 46, 203
 Rhodos 278
 Sarapis 217, 219, 254, 255, 260-263, 267, 273, 279, 280
 Syrene 227
 Twelve Gods 303
 Zeus 46, 75
 Zeus Atabyrios 278
 Zeus Ourios 303
 Zeus Polieus 281
- 3. Ancient proper names**
 Achillodoros 239
 Agis 54, 73

- Agrotos 284 n. 21
 Agryrhios of Kollytos 41, 73, 74, 84
 n. 18
 Aischines 57
 Aischylos 77
 Alexander the Great 165, 166, 256,
 260, 266, 269 n. 43, 276, 277, 282
 Alexander of Pherai 311
 Alkibiades 73, 94
 Anacharsis 75-77, 81
 Anaxagoras 239
 Androtion 70, 71, 74, 81, 82 n. 8
 Angellis, wife of Glaukos 279
 Antalkidas 54, 55, 310, 319 n. 23
 Antigonos I Monophthalmos 256
 Antigonos II Gonatas 252, 258
 Antigonos III Doson 85, 98 n. 5
 Antiochos II 258-260, 323 n. 84
 Antiochos III 93, 95
 Antiphon 319 n. 20
 Apatourios 239
 Apollodoros 77
 Apollonios of Kallatis 130 n. 15
 Apollonios 253
 Apollonios 275
 Apuleius 125, 126, 280
 Aristides 43
 Aristophanes 43, 47, 125, 242
 Aristoteles 125
 Arrianos 282, 285 n. 46
 Arsinoe II 255-257, 268 n. 16, 278
 Athenais of Sinope 281
 Attalids 19
 Baton 246
 Bdelykleon 48
 Caesar 125, 130 n. 12
 Chares 306, 307
 Charmippos 254
 Choerlios 75
 Chrysaliskos 214
 Chryseis 98 n. 5
 Comontorius 287, 296, 316
 Darios 75
 Demetrios, son of Panamonos 279
 Demokritos 274
 Demosthenes 39, 40, 57-64, 67 n. 62,
 n. 69, 68 n. 74, 74, 82 n. 2, n. 3, n. 8,
 282
 Dinarchos 74
 Dio..., son of Philadelphos 124
 Diodoros of Sinope 279
 Diodoros, son of Agrotos 279
 Dion Cassius 125
 Dion Chrysostomos 129
 Dionysios II of Syrakousai 127
 Dionysios of Byzantion 314
 Dionysios of Sinope 284 n. 37
 Dionysios 244
 Diopethes 305
 Dioskourides 274
 Diotimos 306, 322 n. 60
 Drosanis of Paphlagonia 281
 Epagatos 216
 Ephoros 74-77, 79, 84 n. 25
 Epikerdes 67 n. 49
 Epinikos 257
 Erasinides 306
 Erasinios of Kallatis 281
 Eratosthenes 77
 Euandros, son of Dionysios 281
 Euathlos 47
 Eubios of Amastris 281
 Eumelos 78, 246, 276, 308
 Euripides 52
 Gelon 58
 Glaukos of Kallatis 279
 Gylon 57, 73, 74, 84 n. 19, 309
 Hadrian 282
 Harpokration 319 n. 20
 Hekataios 72
 Herakleides 247, 248 n. 16
 Hermippos 46, 47
 Herodes 248 n. 16
 Herodotos 39, 43, 44, 50, 52-54, 74,
 76
 Hesiod 75
 Hippomedon 257
 Histiaios of Miletos 291, 300, 301

- Homer 61, 75-77, 79, 81
 Ischomachos 56
 Isidoros 280
 Isokrates 53, 58, 68 n. 78, 74, 76, 80, 81,
 82 n. 8, 83 n. 8, 84 n. 30
 Kallias 43, 293, 295
 Kallias of Sphettos 256
 Kallimedes 323 n. 84
 Kalliope of Odessos 280
 Kallisthenes 59
 Kamasarye 277, 279
 Kavaros 246, 317
 Klearchos 54
 Klerias of Sinope 281
 Kleopatra VII 268 n. 16
 Koiranos of Pantikapaion 278
 Lamachos 323 n. 72
 Leochares 257
 Leptines 59, 60, 62
 Leukon 50, 59-62, 65 n. 13, 67 n. 69, 68
 n. 79, 69-74, 81, 83 n. 13, 276, 298,
 304, 307, 320 n. 25, 322 n. 54
 Limnaios 85
 Lucian 76
 Lucullus 165
 Lysander 66 n. 41
 Lysanias 85
 Lysias 66 n. 41
 Lysimachos 257, 259
 Machares 206
 Mantiheos 53, 57
 Mithridates II of Pontos 85, 86, 94,
 188
 Mithridates V Euergetes 197, 198, 202,
 207 n. 5, 208 n. 32
 Mithridates VI Eupator 61, 88, 97,
 165, 195, 196, 198-200, 202-207,
 207 n. 17, 208 n. 38, 211, 250 n. 59,
 259, 281
 Mithridates the Younger 206
 Nectanebo I 320 n. 32
 Nikokles 81
 Nikomedes 258
 Olympichos 85
 Otanes 318 n. 6
 Pairisades I 70, 276, 278
 Pairisades II 253, 254, 276, 277, 279,
 283 n. 13
 Pairisades III 277
 Pairisades IV 277
 Paramonos, son of Glaukos 279
 Pasion 73
 Patroklos 256
 Paul 129
 Pausanias 318 n. 6
 Perdikkas of Macedonia 49
 Perikles 43, 45-47, 53, 54, 63, 65 n. 10,
 83 n. 18, 301, 310, 319 n. 21, 322
 n. 72
 Perseus 94
 Pharnakes I 196, 197, 202, 207 n. 1
 Philip II 70, 94, 247, 295, 296, 300, 301,
 306, 307, 320 n. 27
 Philochoros 43, 48, 94
 Philoxenos 44
 Plato 46, 81
 Plautus 129
 Pliny 98 n. 28
 Ploutida of Odessos 281
 Plutarch 43, 65 n. 11, 83 n. 18, 126
 Pollis 303
 Polybios 41, 57, 85, 94, 97, 97 n. 5, 98
 n. 6, 278
 Polychares 257
 Pompeius Magnus 165, 211
 Posideos, son of Dionysios 278
 Posideos, son of Posideos 278, 279
 Protarchos 280
 Protogenes 127
 Prusias I 85, 86, 96, 287, 316, 317, 324
 n. 87
 Prytanis 254
 Psammetichos 43, 65 n. 11
 Ptolemaios I Soter 256
 Ptolemaios II Philadelphos 254, 256,
 257-260, 262, 263, 269 n. 43, 275,
 276, 283 n. 13, 323 n. 83

- Ptolemaios III Euergetes 85, 97 n. 5,
257, 269 n. 33
Ptolemaios VI 277
Ptolemaios Keraunos 257, 259
Ptolemies 254-256, 260, 262, 269 n. 43,
276-278, 280
Pyrrhias, son of Metrodoros 281
Romanesis 216
Satyros I 53, 62, 66 n. 41, 68 n. 78,
72-74, 83 n. 8, n. 14, 308
Satyros II 78
Seleukids 276, 314, 323 n. 84
Seleukos I 259
Seleukos II Kallinikos 85, 98 n. 5
Seuthes II 247
Sindes of Sinope 281
Sitalkes 318 n. 7
Skilouros 197, 214
Skythes 242
Sokrates 56, 57
Sopaios 73, 76, 83 n. 8
Sosikles 126
Sosis 83 n. 8
Spartokidai 53, 55, 57, 62, 70-74, 80,
83 n. 8, 15, 197-199, 276-278, 322
n. 69
Spartokos II 70, 322 n. 54
Spartokos III 74, 276
Spartokos V 277
Strabo 41, 61, 63, 76, 77, 82 n. 3
Sulla 202
Theagenes, son of Diogenes 124-127,
129, 130, 130 n. 6
Theodosios 83 n. 8
Theognis 84 n. 30
Theon, son of Potamon 273, 274, 278
Theophrastos 92, 94, 97, 274, 275
Theopompos 323 n. 83
Thukydides 42, 45, 46, 50, 66 n. 30
Thymoleos 239
Tigranes II 202
Timotheos 74
Trajan 87
Trasyboulos 322 n. 60
Vespasian 215
Xenophon 43, 47, 54-57, 66 n. 35, 86
Xerxes 43, 44
Zenon of Kaunos 253, 275
Zeuxis 93
- 4. Ancient authors**
- Aischines**
Orationes
1.63: 131 n. 18
3.171-172: 73, 309, 322 n. 69-70
3.50: 324 n. 85
- Andokides**
1.133-134: 294
1.138: 301
- Antiphon**
5.20: 248 n. 16
- Apollonios of Aphrodisias**
FGrH 740 F 14: 269 n. 48
- Appianos**
Mithridateios
10: 203
17: 200
57: 203
69: 204
- Apuleius**
Metamorphoses
1.25-26: 130 n. 13
- Aristophanes**
Acharnenses
723: 130 n. 7
824: 130 n. 7
968: 130 n. 7
Equites
919: 249 n. 67
Vespae
237: 310
715-718: 65 n. 22
1407: 130 n. 7

Aristoteles*Athenaion politeia*

24.3: 310

51.1: 130 n. 9

Oeconomica

1346a8: 319 n. 16

1346b18-19: 292

1346b24: 320 n. 31

1346b30-35: 312

1347b25-26: 323 n. 81

Politica

1321b12-14: 130 n. 8

1338b20-25: 301

Athenaios

1.25: 156

1.26a-b: 156

1.28: 158 n. 37

2.36: 156

6.266e-f: 250 n. 59

Clemens of Alexandria*Protrepticus*

4.48.2: 263

Demosthenes

5.25: 323 n. 79

7.2: 301

8.24-25: 305

12.13: 301

15.26: 323 n. 79, n. 83

17-19: 321 n. 38

18.73-74: 322 n. 61

18.241: 301

19.87: 301

19.230: 301

19.301-302: 301

20: 67 n. 49, 284 n. 44

20.29-36: 61, 69, 70, 82 n. 3, 298, 304,
320 n. 25, 322 n. 54

20.60: 294, 296, 310

23.177: 296, 319 n. 23

35: 284 n. 44

35.10-13: 66 n. 27, n. 34, 300, 302, 304

36.36: 66 n. 27

50: 311, 312

50.6: 301, 313

50.17-19: 300, 322 n. 56-57

50.20-21: 66 n. 27

50.53: 321 n. 38

50.69: 320 n. 31

58.56: 301

Dinarchos

1.43: 74

Dion Cassius

36.54-37.4: 211

37.8: 130 n. 11

75.10.1: 318 n. 5

Diodoros of Sicily

13.64.2-3: 293, 310

13.66.2: 319 n. 22

14.12.2: 318 n. 7

15.34.3: 303

20.22.3: 78

20.25.2: 246, 308, 321 n. 43

20.25.4: 79

20.81.3: 322 n. 68

20.111.3: 322 n. 53

29.23: 196

Diogenes Laertius

6.95: 251 n. 88

6.99: 8, 251 n. 88

Dion Chrysostomos

40.30: 87

Dionysios of Byzantion*Anaplous Bospori*

41: 259, 323 n. 83

58: 323 n. 84

Doiskourides*De materia medica*

1.25.3: 283 n. 7

Ephoros*FGrH* 70 F 42: 75**Eusebios***Chronica*

95b: 23

Frontinus*Strategemata*

1.5.18: 203

Herodotos

1.17: 17

1.18: 20 n. 23

1.19: 17

1.21: 17

1.147: 300

3.5-7: 159 n. 45

3.20.1: 264

4.75: 76

4.76-77: 76

4.144.1: 318 n. 5

4.144.2: 318 n. 1

4.150-159: 13

5.6: 247

5.26: 318 n. 6

5.92: 17

5.103.2: 318 n. 6

5.120: 15

6.5: 291, 300

6.6: 15

6.8: 14

6.18: 17

6.26: 49, 64 n. 2

6.33.2: 318 n. 6

7.147: 43, 291

7.158: 58

9.89: 318 n. 6

9.114: 321 n. 38

Hippokrates*De Morbo Sacro*

3.12: 156

3.17: 156

Homer*Iliad*

18.600: 75

Odyssey

2.340: 156

3.391: 156

Isidoros*Etymologiae*

17.7.24: 283 n. 10

Isokrates

3.24-26: 81

3.35: 81

3.37: 81

4.115: 301

15.112: 74

15.224: 73

17: 73

17.4: 73

17.5: 61

17.31-32: 73

17.57: 66 n. 40, 83 n. 8, 322 n. 65

Justinos

9.1-2: 247

17.2.6-7: 257

17.24.2-3: 257

37.4.3: 202

38.1.1-5: 202

38.3.2-3: 203

38.5.4: 202

70: 203

Krateros*FGrH* 342 F 8: 322 n. 70**Lucian***Anacharsis*

102-105: 76, 77

Toxaris

7: 77

Lysias

16.4: 66 n. 41, 73
 19.50: 306, 322 n. 60
 22.14: 320 n. 25

Macrobius

Saturnalia
 7.12.13-16: 101

Martial

8.45: 156

Memnon of Herkleia

FGrH 434 F 1: 269 n. 33
FGrH 434 F 13: 258, 269 n. 36, 324
 n. 90
FGrH 434 F 14: 258
FGrH 434 F 15: 269 n. 39, 323 n. 84
FGrH 434 F 17: 269 n. 34, 284 n. 44
FGrH 434 F 19: 204
FGrH 434 F 53: 205
FGrH 434 F 54: 204, 205

Oribasios

Collectiones
 2.58.4: 283 n. 9

Paul

1 *Corinthians*
 10.25: 131 n. 30

Philochoros

FGrH 328 F 119: 65 n. 11
FGrH 328 F 130: 65 n. 22
FGrH 328 F 162: 70, 99 n. 37, 320 n. 27,
 322 n. 61

Philostratos

Vita Apollonii
 8.7.12: 247

Phylarchos

FGrH 81 F 8: 323 n. 83

Pindar

Olympian Odes
 9.48: 156

Plato

Laches
 191a-191c: 81
Leges
 705c: 92

Plautus

Captavi
 823-824: 130 n. 11
Rudens
 979: 131 n. 27

Pliny Maior

Naturalis historia
 5.122: 9
 6.15.16: 321 n. 43
 9.13: 264
 12.2.4-5: 85
 14.6.55: 156
 15.88: 283 n. 10
 16.42: 90
 16.66: 96
 16.76.197: 93
 16.137: 97

Pliny Minor

Epistulae
 7.30: 131 n. 16
 10.41: 87

Plutarch

Alcibiades
 29.6: 319 n. 22
Aristides
 26.1: 43
Cimon
 8: 301
Lucullus
 17: 200
Moralia

2.324: 203

Pericles

19: 301

20: 66 n. 38, 310, 319 n. 21, 322 n. 72

20.1-2: 83 n. 18

37.4: 65 n. 11

50: 321 n. 43

Pompeius

34-36: 211

38-39: 211

42: 200

Sulla

5.6: 203

35.1: 156

Timoleon

14: 131 n. 17

Pollux

Onomasticon

7.14: 242

Polyainos

Strategmata

4.16: 269 n. 39

6.25: 323 n. 79, 323 n. 83

8.55: 83 n. 15

Polybios

1.41.6: 324 n. 86

3.2.5: 7

4.38: 41, 316

4.38.1-10: 287, 288, 316

4.38.4-5: 241, 288, 295, 318 n. 5, 315

4.39.5-6: 261, 321 n. 51

4.44.4: 293, 318 n. 5, 319 n. 18

4.45.1: 318 n. 7

4.45.7-8: 319 n. 14

4.45.9-10: 288

4.46.3-4: 316, 317

4.47.1: 298, 319 n. 17, 322 n. 68

4.47.3: 7

4.49.1-4: 287

4.50.2-3: 241, 314, 321 n. 51

4.50.4: 323 n. 83

4.50.9: 323 n. 83

4.52: 96

4.52.1: 317

4.52.5: 288, 293

4.52.7-8: 324 n. 87

4.56: 86, 94, 188

5.34.7-8: 269 n. 29

5.88.1-2: 85

8.22: 246, 317

23.9: 94

25.2: 196

25.4: 94

27.17: 197

Procopius

De aedificiis

5.1.6-16: 321 n. 38

Pseudo Skylax

67: 321 n. 51

68: 309

92: 321 n. 51

Stefanos of Byzantion

s.v. Astai: 323 n. 83

s.v. Ankyra: 269 n. 48

Strabon

4.3.2: 319 n. 16

7.3.7: 78

7.3.9: 75

7.3.12: 241

7.3.16: 203

7.3.18: 203

7.4.4: 199

7.4.6: 61, 70, 204, 320 n. 25, 322 n. 38

7.6.2: 318 n. 5

7.7.4: 309

11.2.2: 246

11.2.3: 315

11.2.12: 87, 302, 321 n. 43

11.2.15: 88

11.2.17: 88

11.2.18: 88

12.2.10: 87
 12.3.1: 202, 246
 12.3.9: 202
 12.3.10-11: 96
 12.3.12: 87, 96
 12.3.32-34: 200
 12.4.2: 322 n. 53
 12.8.11: 323 n. 83
 14.2.5: 322 n. 68
 16.2.29: 251 n. 88
 17.3.24: 321 n. 43

Suetonius

Divus Iulius
 9: 130 n. 12

Tacitus

Historiae
 3.47: 321 n. 43
 4.83.2: 263

Theokritos

Epigrammata
 7.147: 156

Theophrastos

Characteres
 6: 131 n. 18
De causis plantarum
 4.2.1: 283 n. 10
Historia plantarum
 3.3.8: 283 n. 10
 3.7.3: 283 n. 10
 3.15.1-2: 283 n. 9-10
 4.5.3: 87, 92, 97
 5.1.5: 92
 5.1.7: 93
 5.2: 93
 5.3.3: 95
 5.7.1-3: 92
 5.7.4-5: 95
 5.7.6: 96

Theopompos

FGrH 115 F 62: 292
FGrH 115 F 247: 323 n. 83
FGrH 115 F 292: 70, 99 n. 37, 320 n. 27,
 322 n. 61
FGrH 115 F 328: 70

Thukydidēs

1.94.2: 318 n. 6
 1.115.5: 293
 1.117.3: 293
 1.131.1: 318 n. 6
 2.34.3: 99 n. 54
 2.38: 45
 2.97.1-6: 318 n. 7
 3.2: 50, 66 n. 33, 323 n. 73
 3.115: 65 n. 15
 4.75.1-2: 323 n. 72
 4.108.1: 93, 94
 6.90.3: 94
 7.28.1: 52
 8.80.3: 293, 294

Varro

De lingua Latina
 8.21: 249 n. 51

Xenophon

Anabasis
 4.4.9: 156
 5.2.5: 86
 5.2.24: 86
 5.4.28: 148 n. 11
 5.6.19: 201
 6.4.2: 307
 6.4.4: 86
 7.1.19: 292
 7.3.48-7.4.2: 248 n. 16
 7.4.2: 247
 7.5.12: 321 n. 43
Cyropaedia
 1.2.16: 324 n. 85
De vectigalibus
 3.14: 322 n. 59

Hellenica

1.1.22: 293, 310, 321 n. 43
 1.1.35-36: 66 n. 48, 73, 291, 294, 300,
 310
 1.3.1-12: 319 n. 22
 1.3.15: 294
 1.7.2: 306
 2.1.21-24: 66 n. 46
 2.2.1: 66 n. 41, 73
 2.2.9: 66 n. 47
 4.8.27: 293, 294
 4.8.31: 293, 294
 5.1.1-13: 301
 5.1.28-29: 55, 67 n. 50, 310
 5.4.60-61: 303
Oeconomicus
 20.27-28: 56, 320 n. 25
 [Respublica Athenensium]
 2.7: 44

5. Inscriptions*ATL*

I, 250: 318 n. 9
 I, 527-529: 322 n. 70
 I, 557: 322 n. 70
 III, 206: 290, 318 n. 6

CIRB

6: 83 n. 10, 283 n. 15
 6a: 83 n. 13
 8-9: 283 n. 15
 19-25: 276
 37: 65, n. 13, 67 n. 69, 283 n. 15
 75: 284 n. 21
 113: 283 n. 15
 124: 197
 129: 197
 131: 197
 180: 284 n. 40
 530: 197
 972: 283 n. 15
 1014: 283 n. 15
 1037-1038: 283 n. 15
 1111: 283 n. 15

1242: 6, 131 n. 21
 1243: 6, 131 n. 21
 1245: 131 n. 22
 1247: 131 n. 22

I.Callatis

31: 130 n. 15
 155: 283 n. 1

I.Cos

ED 20: 284 n. 37

I.Didyma

463-464: 284 n. 20

I.Histriae

5: 261, 268 n. 8, 284 n. 35

I.Magnesia

179: 131 n. 31

ID

290-510: 99 n. 51
 298: 283 n. 17
 442: 284 n. 29
 1416: 284 n. 29-30
 1439: 284 n. 30
 1442: 284 n. 36
 1497b: 207 n. 1
 1569-1570: 200
 1572-1573: 200

IG

I³, 40.52-57: 320 n. 35
 I³, 52A.7: 295, 319 n. 19
 I³, 58: 65 n. 24
 I³, 61: 65 n. 23, 66 n. 26, 319 n. 11-12
 I³, 62-63: 66 n. 26, 319 n. 11
 I³, 71 II.175: 318 n. 9
 I³, 100: 322 n. 70
 I³, 263 V.16: 318 n. 9
 I³, 269 II.26: 318 n. 9
 I³, 279 II.32: 318 n. 9
 I³, 281 III.18: 318 n. 9

- I³, 421: 242, 244
 I³, 422 II.198-199: 249 n. 24
 I³, 427 I.7-8: 249 n. 25
 I³, 1032 VI.128: 242
 I³, 1180: 322 n. 72
 I³, 1453: 66 n. 44
 II², 212: 67 n. 61, 71, 73, 74, 81, 83 n. 8,
 322 n. 65-66
 II², 337: 284 n. 33
 II², 398a: 67 n. 54
 II², 408: 67 n. 54
 II², 409: 67 n. 56
 II², 416: 301
 II², 628.37-42: 322 n. 60
 II², 652: 68 n. 77
 II², 653: 74, 322 n. 54
 II², 903: 324 n. 85
 II², 1013: 283 n. 10
 II², 1623.279-285: 301
 II², 1629.165-277: 322 n. 63
 II², 1632.276-282: 306, 322 n. 60
 II², 1672: 99 n. 49
 II², 2938: 249 n. 57
 II², 8409: 251 n. 87
 II², 8410: 251 n. 85
 II², 8411: 251 n. 87
 II², 8412: 251 n. 86
 II², 8954: 250 n. 71
 II², 8956: 250 n. 74
 II², 8957: 250 n. 72
 II², 8958: 250 n. 73
 II², 9049: 244
 II², 9252: 249 n. 38
 II², 9253: 249 n. 36
 II², 9254: 249 n. 39
 II², 9257: 249 n. 41
 II², 10051: 250 n. 68
 II², 10243: 249 n. 29
 II², 10244: 249 n. 30
 II², 10448: 251 n. 97
 II², 12064: 249 n. 31
 IX, I², 3, 638: 243
 IX I², 3, 679: 243
 IX I², 4, 1778: 248 n. 20
 XI, 1, 105: 284 n. 29
 XI, 1, 107: 284 n. 29
 XI, 2, 287: 283 n. 16
 XI, 4, 1238: 284 n. 30
 XI, 4, 1256: 284 n. 30
 XI, 4, 1299: 284 n. 34
 XII, 1, 11: 284 n. 38
 XII, 1, 147: 284 n. 37
 XII, 1, 400: 251 n. 96
 XII, 1, 465: 251 n. 90
 XII, 1, 466a: 251 n. 92
 XII, 1, 467: 251 n. 93
 XII, 1, 496: 250 n. 76
 XII, 1, 497: 250 n. 77
 XII, 1, 498: 250 n. 81
 XII, 1, 514: 249 n. 46
 XII, 1, 525: 249 n. 32
 XII, 1, 526: 249 n. 27
 XII, 1, 527: 242
 XII, 9, 1186: 284 n. 42
- IGBulg*
- I², 40: 196
 I², 388: 269 n. 40
 5, 5557 ter: 248 n. 17
- IK*
- 29, 16: 130 n. 15
- IOSPE*
- I² 24: 320 n. 31, 322 n. 55
 I², 32: 131 n. 19
 I² 43: 321 n. 45
 I², 77: 284 n. 26
 I², 128-129: 130 n. 10
 I², 168: 284 n. 25
 I², 189: 284 n. 27
 I², 201: 284 n. 27
 I², 359: 125
 I², 361: 130 n. 6
 I², 386: 130 n. 6
 I², 402: 196
 I², 670-671: 284 n. 25
 I², 672: 284 n. 25, 285 n. 47
 I², 685: 130 n. 10

NEPKh

II, 129: 123

OGIS

54: 269 n. 29

56: 270 n. 66

366: 197

372: 200

374: 200

SEG

14, 204: 250 n. 76

23, 144: 249 n. 37

24, 1091: 268 n. 8

28, 338: 249 n. 31

28, 381: 248 n. 20

29, 229: 249 n. 42

35, 893: 251 n. 91

36, 718: 65 n. 13

39, 830: 249 n. 61

39, 1180: 318 n. 4

44, 1021: 284 n. 31

47, 1101: 248 n. 17

48, 486: 248 n. 17

49, 911: 248 n. 17

49, 1068: 269 n. 51

49, 1207: 269 n. 51

50, 691: 268 n. 8

51, 1015: 242, 244, 249 n. 58, 251
n. 84*SGDI*

1696: 245

1724: 242

1796: 245

1799: 245

1851: 245

1906: 245

1959: 246

2108: 243

2110: 243

2142-2143: 243

2163: 243

2218: 244

2274: 243

4351: 249 n. 47

*Syll.*³

135: 319 n. 16

211: 83 n. 10

212: 298

212: 322 n. 54

218: 320 n. 31, 322 n. 55

372: 257

439: 283 n. 19

495: 321 n. 45, 322 n. 59

502: 257

640: 324 n. 85

1010: 321 n. 51

Tod, *GHI*

II, 115: 67 n. 69

II, 163: 66 n. 32, 67 n. 69

II, 168: 68 n. 79

Papyri

P. Cair. Zen. IV, 59741: 159 n. 45

P. Lond 1988 (SB 7263): 283 n. 13

P. Oxy XIV 1735: 156

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