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The Public Boats of Olbia: Warships or State Merchantmen?

Emmanuel Nantet

Abstract: The "public boats", mentioned in the inscription IosPE I², 32, found in Olbia, have been identified variously as warships or as state merchantmen. This statement is all the more important since it would imply that cities may have owned merchantmen. Nevertheless, it seemed to many scholars that ancient cities were unable to maintain commercial ships. Therefore, it was suggested at first that these πλοῖα δημόσια could have been triereis, as the word πλοῖον, although used most often for merchantmen, is occasionally applied to fighting ships. However, Xenophon's recommendation to create a fleet of public merchantmen reveals that the existence of such boats was not an extravagant idea. Moreover, a close reading of the inscription IosPE I², 32 shows that these πλοῖα δημόσια were probably used to carry stones for the repair of the rampart. Yet triereis were not suitable to convey ashlars, as their hull was too narrow. Last but not least, the existence of πλοῖα δημόσια is very well evidenced in 4ᵗʰ-century-CE Egypt. Thus, it was quite feasible for ancient cities to maintain public boats.

Keywords: ship; ancient maritime trade; trieres; stone conveyance; Black Sea

Published studies tend to indicate that city-owned warships are usually categorically distinct from privately-owned merchantmen. However, the inscription IosPE I², 32, found in Olbia,[1] mentions the existence of "public boats", that have been identified variously as warships or as state merchantmen.

Research has long focused on this intriguing inscription as this text describes the relationship between the northern pontic city of Olbia and its preeminent citizen, Protogenes, who shouldered many expenses, such as grain supply or the renovation works of the rampart. Indeed, when the city faced a "crisis", it was solved by Protogenes' intervention. Such crisises may have been connected to the abandonment of many rural settlements between 250 and 150 BCE, and as such result not only from Barbarian pressure, but also from internal financial problems.[2] Since the inscription provides many details, it has attracted deserved attention from scholars,[3] and although it can be roughly dated to c. 200 BCE, its datation has been much discussed. Shafranskaja suggests more or less the 3ʳᵈ or 2ⁿᵈ century BCE.[4] According to Knipovich, who focused

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[1] Latyshev (1885); Syll.³ 495; Maier (1959), no. 82 (side B only); SEG 49.1041. For a translation into English, see Austin (1981), 217-222.

[2] Braund (2007), 62-74.

[3] For a full reappraisal of the inscription, see Muller (2010), 391-399, and (2011); Vélissaropoulos (2011), vol. 2, 161, 243-244, 253, 256, 363-364.

[4] Shafranskaja (1956).

on the datation issue,[5] it could be the late 3rd or early 2nd century, and to Karyshkovskij,[6] the first decade of the 2nd century. A close examination of the epigraphical context and of the prosopography conducted by Jajlenko would evidence a datation between 180 and 170.[7] However, Ju. G. Vinogradov speaks in favour of a datation in the years 220-210.[8] He is followed by his homonym, Ju. A. Vinogradov, who claims that this inscription must have been engraved in the last decades of the 3rd century, certainly before the collapse of the Celtic state in Thrace in 213; and even before 216 when the Bastarnai appeared in the Danube region.[9] Nevertheless, as noted by C. Muller, such precision seems dubious.

1. State Merchantmen: A "Castle in the Air"?[10]

Amongst much crucial information, the existence of "public boats" (τὰ πλοῖα τὰ δημόσια, B51) has only been addressed briefly, as it was considered a mere detail within the general understanding of the inscription. Therefore, the issue has not been properly appraised so far.

The πλοῖα δημόσια are all the more interesting since they remind one of numerous innovative proposals raised by Xenophon.[11] The Athenian writer suggested that his citizens bolster the income of the city with the creation of a fleet of merchantmen (ὁλκάδες δημόσιαι) after it lost its maritime confederacy in 355 BCE, only a few months earlier.[12] This suggestion was part of his political program, which inspired Eubulus' reforms in the period that followed the Social War.[13] However, as the latter does not seem to include Xenophon's proposal, it should be assumed that it had been turned down.[14]

Although Boeckh mentions these public boats, he does not linger over this measure.[15] He only criticizes its relevance on the grounds that the state would not give sufficient guarantee to convince the Athenians to contribute their private savings. As the great program suggested by Xenophon had no reasonable source of sufficient funding, Boeckh considered that the Athenian writer "built a castle in the air".[16] Andreades asserted that it was an "extremely doubtful expediency", as the management would not have been

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5   Knipovich (1966).
6   Karyshkovskij (1968).
7   Jajlenko (1990).
8   Ju. G. Vinogradov (1989), 177-227.
9   Ju. A. Vinogradov (1999), 70-5.
10   Boeckh (1886), 704.
11   Xenophon, *Poroi* 3.14.
12   Aside from Xenophon's recommendation, no other written source seems to evidence the existence of πλοῖα δημόσια for that period. As for the inscription from Samothrace and dated from 90 BCE (IG XII 8, 205 = Syll.[3] 1053, lines 12-13), quoted by Gabrielsen, the reading of ὑπηρετικὸν πλοῖον δημόσιον must be rejected. Only the first word can be deciphered, while the rest of the expression is almost fully reconstructed. See Gabrielsen (1997), 103.
13   Boeckh (1886), 698-708; Cawkwell (1963).
14   Cawkwell (1963), 64.
15   Boeckh (1886), 703-704.
16   Boeckh (1886), 704.

efficient, not producing as much profit as the private shipowners.[17] Providing a comparison with the Greek Navy after World War I, he wrote that, everywhere, the attempt to build up a state merchant marine has been a failure. De Ste. Croix goes so far as to argue that it was useless for a Greek state to have both a war fleet and a merchant marine.[18] As for Cawkwell, he emphasises the fact that Xenophon's recommendation encountered a negative answer from the Athenians, providing evidence that it was not realistic. This was a "naive" idea, since merchantmen required maintenance, which the city would not have been able to afford.[19]

2. Could the πλοῖα δημόσια Be Warships Converted into Merchantmen?

Suspicion rests, therefore, on the possibility that such a fleet of public merchantmen existed. The public boats, mentioned in the inscription IosPE I² 32, may have not been properly understood. In his commentary on the *Poroi*, Gauthier considered that the πλοῖα δημόσια mentioned in the inscription were "of course" warships, that had been repaired and converted into merchantmen.[20] Although he did not provide any evidence to support his assertion, he was followed by Vélissaropoulos.[21] However, the word πλοῖον, although used most often for merchantmen, is occasionally applied to warships.[22] And in a city, the warships were owned by the state, while merchantmen belonged to private citizens — hence Gauthier's assertion.

At first, the inscription SEG XXXIV 758 edited by Vinogradov[23] seemed to confirm the view that these πλοῖα δημόσια could have been fighting ships, as it evidenced a πλοῖον that may have been a warship.[24] Indeed, when the scholar edited that decree, also found in Olbia and also from the 3rd century BCE, he read πλοῖον μ. Although only the first stroke of *mu* at the left is certain, he reconstructed πλοῖον μ[ακρὸν]. A πλοῖον μακρόν is a long ship,[25] as opposed to a στρογγύλον πλοῖον, a rounded ship.[26] The expression πλοῖον μακρόν can only be for a warship, as the ratio beam to length of an oared warship is usually close to 1:7 or 1:8, while it is only between 1:3 and 1:4 for a sea merchantman in the classical period and onwards. Greek literature provides some

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17   Andreades (1933), 386.
18   De Ste. Croix (1972), 393-6.
19   Cawkwell (1963), 64, n. 15.
20   Gauthier (1976), 107-108.
21   Vélissaropoulos (1980), 59.
22   Many writers use πλοῖον for merchantmen and ναῦς for warships, cf. Xenophon, *Hellenica* 1.1.35-36. But some others may sometimes use the word πλοῖον for warship, cf. Thucydides 7.7.3. Cartault (2001), 72; Williams & Morrison (1968), 244; Casson (1995), 157 n. 1; Vélissaropoulos (1980), 58. On the use of the word πλοῖον on the Nile, see Arnaud (2015), 119-123.
23   Vinogradov (1984), 51.
24   Vinogradov, 1984: 70. Kozlovzkaya provides evidence revealing that Olbia had a fleet of warships. Kozlovskaya (2008). However, as Kozlovzkaya noted, the reference to a single warship does not imply the existence of a fleet, cf. Kozlovzkaya (2008), 45-46.
25   Cartault (2001). 68-73; Williams & Morrison (1968), 244; Casson (1995), 157 n 1; Vélissaropoulos (1980), 58.
26   Xenophon, *HG* 5.1.21.

occurrences of the expression πλοῖον μακρόν,[27] even though ancient writers prefer other words for a warship such as ναῦς. Most of these occurrences of πλοῖον μακρόν date back to the classical period,[28] although this expression was often used by Polybius, and sometimes in some later accounts.[29] This kind of boat was mentioned by Pollux in his list that included many warships.[30]

J. and L. Robert noticed that three inscriptions may contain that expression.[31] The reconstruction of the short inscription from Delos is uncertain (ID 2556). The second one, from Thera and from mid-3rd century BCE, is hardly more convincing, as the inscription is mostly reconstructed, especially the terms referring to the nautical aspects (IG XII 3, 1291, l. 8-10). However, the third one describes the victory of the Apolloniatae, commanded by the *nauarchos* Hegesagoras with the help of the Istrian fleet, over the Mesambrians.[32] In that inscription, the reading of the expression πλοῖά τε μακρ[ά] is not open to doubt. As it is dated from the 2nd century BCE and deals with an event that took place in the Black Sea, this inscription shows that the expression may not have been unusual. Another inscription, from Kalymna and dated to the last years of the 3rd century BCE, confirms that this expression was used in that period. However, the lacunarious state of preservation of the inscription from Olbia prompts caution with Vinogradov's suggestion.[33] It has been suggested that the 1st-century-BCE shipwreck found in Phanagoria could have been an oared ship, as she was 15m long and 3m beam.[34] Because of this ratio of 5:1, which looks like the main feature of the ancient military ships, it was suggested that she could have been a fighting ship. Certainly, this interpretation remains uncertain, as no final report of the excavation has yet been published. Nevertheless, it would be tempting to identify this shipwreck with the remains of a πλοῖον μακρόν. She was surely not a large ship like a trieres or a penteres, but a much smaller unit, or even a support vessel. Numerous graffiti of warships also decorated the room of the Hellenistic sanctuary of Aphrodite at Nymphaion, a Greek city of the Bosporan Kingdom.[35] The most famous of them is of course the *Isis*,

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[27]   Herodotus 2.102, 5.30; Thucydides 1.14.1; Xenophon 5.1.11; Plato, *Politicus* 298d; Isocrates, *Orat. Panegyricus* (*orat*. 4) 188, *Orat. Areopagiticus* (*orat*. 7) 80, *Orat. Panathenaicus* (*orat*. 12), 59.

[28]   Thucydides 1.14.1; Herodotus 2.102, 5.30, 7.97; Isocrates, *Panegyricus* 118, *Areopagiticus* 80, *Panathenaicus* 59; Xenophon, *Anabasis* 5.1.11; Plato, *Politicus* 298d, Demosthenes, *De falsa legatione* 273, *In Theocrinem* 55; Lycurgus, *In Leocratem* 73; Theophrastus, *Historia Plantarum* 5.7.1, 5.7.5; Philochorus, frag. 104a.

[29]   Polybius 1.20.13, 1.52.7, 5.94.8, 15.2.6, 15.18.3, 22.7.4.

[30]   Pollux 1.82., 1.119.

[31]   Robert 1961, 419. They also mention two other inscriptions, but the expression (τᾶν μακρᾶν ναῶν) is slightly different (Syll.³, 1000, l. 31, from Kos, late 2nd cent. BCE; Syll.³ 567, l. 5-6, from Kalymna, late 3rd cent. BCE).

[32]   ISM I 64 = IGB I² 388 bis (l. 8), first edited by Pippidi & Popescu (1959). The last part of the inscription is lost. However, Avram suggests that the inscription ISM I 34, found in Istros, might be a copy of that decree, more precisely its last part. See Avram (2007), 10-11, no 34. About the event, cf. Bounegru (2007).

[33]   Yailenko (1990), 273-274, n. 69 (in Russian); Pleket & Stroud (1984).

[34]   Olkhovskiy (2012; 2015).

[35]   Höckmann (1999).

probably a small unit like a trieres.[36] Thus, Gauthier's assertion that the πλοῖα δημόσια mentioned in the IosPE I², 32 are warships should not be hastily rejected, but requires further discussion.

However, this opposition between merchantmen and warships may be overly simplistic. Beside the oared warships, the fleets included numerous auxiliary ships that were used to convey troops, horses, or supplies.[37] Some of them were warships that were converted into troop- or horse-carriers.[38] Some others were mere merchantmen that were not built for a military purpose but used as auxiliary ships.[39] Therefore, the architectural features of the warships, oared and provided with rams, are very different from the merchantmen. Classical and Hellenistic fleets did not include any kind of hybrid ships, that would be half military and half commercial, although warships could occasionally be used to carry cargoes. For instance, Demosthenes reproaches Meidias for having used his *trieres* to convey fences, cattle and timbers.[40] In fact, he does not accuse him of having twisted the military goal for which the ship was built; since Meidias constructed the ship, he could do whatever he wanted with her. Demosthenes merely reproaches him for claiming to have provided many gifts to the Athenians in order to receive their favour; the *trieres* built by Meidias was not an actual gift, as he used her for his own interest. In fact, Demosthenes' reaction implies that Meidias' behaviour in using his trieres for trading occurred more than once. Certainly, Demosthenes appears to be much offended, as this account is part of legal proceedings. Thus, it would be possible that the πλοῖα δημόσια from Olbia were *triereis* that either had been used occasionally to carry cargoes, or were fully converted in merchantmen.

3. The πλοῖα δημόσια, State Merchantmen?

Later, this interpretation, that πλοῖα δημόσια could have been warships, was rejected. When Austin included a translation of the inscription in his source book, he considered that they were "public (transport) ships".[41] Certainly, this translation can be read in a neutral way, that emphasizes the role of these ships, i.e. as transport ships, whether a military or a commercial ship. Alternately, the term can be read as referring to structure, or how the ships were built: as commercial vessels, and not as warships. Both cautious and well informed, Peters, when dedicating his book to navigation in the Black Sea, seems to follow Austin's interpretation that these ships could have been merchantmen as well, as he wrote that transport ships in Olbia could be owned either by merchants or the state.[42] Here, again, he does not specify if these transport ships are military units or commercial boats.

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36   Basch first identified this ship with a supergalley (Basch 1985). However, the comparison of *Isis*' ram with the Athlit ram reveals that the latter is considerably larger; thus *Isis* would rather be a smaller warship like a trieres (Murray 2001).
37   Casson (1995), 93-94.
38   Morrison, J.S., Coates, J.F., & Rankov, N.B. (2000), 156.
39   For example, Diod. 20.49.6; 20.82.4.
40   Dem. 21.167.
41   Austin (2006), no 115.
42   Peters (1982), 79.

Then, Lewis, followed by Jansen, clearly rejected Gauthier's interpretation that they were warships.[43] According to Lewis, the "public boats" of Olbia were undoubtedly commercial ships, which would imply that cities may have owned merchantmen, in addition to the numerous commercial ships privately owned by their citizens. In other words, Xenophon's recommendation to acquire public merchantmen may have been implemented. However, these scholars do not provide any argument. As for Gabrielsen, he asserts at first that the public boats were neither "regular warships" nor "plain merchantmen",[44] though in a more recent article, he seems much less assertive regarding the claim that they could not be merchantmen.[45]

Certainly, the inscription provides some details that indicate that the πλοῖα δημόσια of Olbia could have been warships. It is made clear that they were damaged[46] and deprived of their sails.[47] It is true that both merchantmen and warships were provided with a sail.

However, the inscription recounts that Protogenes repaired the boats, so that they could be used to convey stones. These stones were surely intended to be used for the rampart and other buildings that Protogenes promised to repair as well.[48] Most probably, these stones were ashlars, as was usual for a city wall. Unfortunately, it has not been possible to identify on the field which part of the rampart was repaired with Protogenes' ashlars; therefore, the dimensions of these ashlars are unknown.

The inscription clearly says that this task was usually carried out by private traders, who are named by the term ἰδιώταις, as opposed to δημόσια. These citizens were paid with a fare (ναῦλον). In other words, the conveyance of the ashlars for the ramparts of Olbia was conducted by merchantmen. Recent decades have shown many shipwrecks with ashlar cargoes.[49] The Carry-le-Rouet shipwreck gives an idea of the stowage of the ashlars (Fig. 1).[50] Unfortunately, the hulls of these shipwrecks are hardly ever preserved. Therefore, the architectural features of the ships carrying stones, if any, remain an issue for ship archaeologists. But it is obvious that these ashlars could not fit in a *trieres*, such

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43 Lewis (1990), 254 note 25; Jansen (2007), 335 n. 164. Muller only mentions the "public boats", but does not provide any interpretation, cf. Muller (2011), 327.

44 Gabrielsen (1997), 195-196 n. 106.

45 Gabrielsen (2007), 306. The date provided by the author, 320 BCE, may be a typing error for 220 BCE.

46 About archaeological evidence of ship repairs, see the forthcoming publications by H. Chaussade, extracted from her MA thesis that I advised.

47 κακῶς διακεῖσθαι καὶ μηθὲν ἔχειν τῶν ἀρμένων (l. 51-52). Austin translates ἀρμένον with "tackle", cf. Austin, (1981), 220. But the accurate translation is the sail. See Casson, (1995), 233 n. 39.

48 κατεσκεύασε δὲ καὶ τοὺς πύργους κακῶς διακειμένους, τοὺς πρὸς ταῖς μεγάλαις πύλαις ἀμφοτέρους καὶ τὸγ Καθηγήτορος καὶ τὸγ κατὰ τὴν ἁμαξιτὸγ καὶ τὸν Ἐπ[ι]δαυρίου· ἐπεσκεύασε δὲ καὶ τὸ σιτόβολον· κατεσκεύασε δὲ καὶ τὸμ πυλῶνα τὸν ἐπὶ τοῦ δείγματος (l. 44-49).

49 Beltrame & Vittorio (2012); Russell (2013); Nantet (2016), 189-191.

50 Long (1986); Nantet (2016), 331-333 (no 23). The conveyance of unquarried stones, sometimes identified with ballast, is evidenced by the Gela 1 and Ma'agan Mikhael shipwrecks, see Panvini (2001) and Shimron & Avigad (2003). Also see Nantet (2016), n° E14 and E17.

as the *Olympias* (Fig. 2). The hull of the warships was narrow and tapered, which was not appropriate at all for the carrying of ashlars. Flat-bottomed, wine-glass shaped boats[51] would be required. In fact, the πλοῖα δημόσια of Olbia do not seem to have been previously used in the conveyance of stones for the improvements of the city, as this task was performed by private citizens. That may explain why they were not called λιθηγοί, as evidenced by some other sources.[52] These boats must have been used for more than one specific purpose. Since the ὁλκάδες δημόσιαι that Xenophon recommends constructing[53] would have been dedicated to producing a revenue for the city (πρόσοδος), it must be understood that they would have been merely a hired workforce for merchants.

But why is there so little evidence of these πλοῖα δημόσια? The rarity could be explained by the availability of alternate solutions to the lack of ships for construction, such as willing contributions from the wealthiest citizens, or contracts settled with traders. It should be emphasized that the Hellenistic period provides some cases of large fleets performing public tasks, but belonging to a private person. Among many examples, Hiero possessed grain carriers,[54] while the Ptolemaic queens owned numerous ships,[55] that may have been exempted from taxes.[56] However, the πλοῖα δημόσια of Olbia show that a city could possess its own ships, without requiring any intermediate in order to perform a task.

4. The Maintenance of the Public Boats

In spite of Cawkwell's doubts regarding the efficiency of a city carrying out the maintenance of public boats, it should be emphasized that a series of papyri, mostly dated from the 4th century CE, reveal the existence of public boats[57] — with the very same words πλοῖα δημόσια. The *SB 16 12340* (Hermopolites, 312 CE) recounts that Aurelios Ammonas, son of Besarion, is the *naukleros* of a public boat from

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[51]   The hull of the Hellenistic merchantmen was wine-glass shaped, cf. Pomey & Rieth (2005), 163-166; Nantet (2016), 121-138; Pomey (forthcoming).

[52]   Arnaud (2015). The *P.Cairo Zen. 4 59745* (255-254 BCE) mentions a λιθηγός [βᾶρις] (l. 66), see Casson, (1995), 340 n. 60. The *P.Petr. 3.46* (3rd cent. BCE) mentions a λιθηγὸς, see Arnaud (2015), 119.

[53]   Xenophon, *Poroi*, 3.14.

[54]   Pomey & Tchernia. 2006; Nantet (2016), 126-131.

[55]   Hauben (1979).

[56]   Nantet (2016), 71-72.

[57]   *PSI 4 298*, l.5 (292-293 CE); *P.Oxy 12 1421*, l. 8 (3rd cent. CE); *P.Panop.Beatty 2*, l. 2 (300 CE); *P.Oxy 59 3980*, l. 8 (300-302 CE); *P.Oxy 18 2187*, l. 21 (304 CE); *SB 16 12340*, l. 4 (312 CE); *SB 16 12636*, l. 3-4 (301 CE-325 CE); *P.Sakaon 29*, l. 2 (276-350 CE); *CPR 17A 7*, l. 2 (317 CE-327 CE); *P.Oxy. 60 4078*, l. 6 (327 CE); *P.Lond 5 1823*, l. 4 (335 CE-340 CE); *P.Oxy 1 86*, l. 8 reconstructed (338 CE); *SB 24 16270*, l. 2 (341 CE); *P.Oxy 34 2715 dupl.*, l. 8-9 (386 CE); *P.Oxy 24 2415*, l. 33, 40, (4th cent. CE); *P.Oxy 62 4343*, l. 2 (4th cent. CE). The expression πλοῖον δημόσιον is also mentioned in an *ostrakon* of the 2nd cent. CE: *O.bodl 2 1651*, l. 3 (129 CE). The tonnage seems to be usually low or average, as it ranges from 500 to 5200 artabas for the papyrus where it is preserved. The public boats could be of different kinds, such as πολύκωπα and πλατυπηγία, see Arnaud (2015), 127 and 131. About the πλατυπηγία, see also Bounegru (2010; 2011).

Kaine/Maximianopolis (Qena). The use of public boats may have been very common in 4th-century-CE Egypt. Although this context is quite different from Hellenistic Olbia, it shows that it was *technically* possible to maintain a public fleet of merchantmen. Indeed, in Hermoupolis, the maintenance was entrusted to a procurator.[58] The appointment of an official dedicated to this task was all the more necessary, since the boats were in a poor condition.[59]

Whether the situation occurred in Hellenistic Olbia or in Byzantine Egypt, the public boats were damaged and their maintenance may have been an issue. However, it is hard to ascertain if these damages were caused by the carelessness of the leasers (if rented to leasers, as suggested by Xenophon) or by the specific tasks to which these boats were dedicated. In any case, may the maintenance of the public boats in Olbia have required the involvement of a magistrate? It has been suggested that this duty could have been carried out by the *naukleroi* mentioned on an *ostrakon* found in Olbia and dated from the 3rd or 2nd cent. BCE.[60] Nevertheless, this interpretation should be considered cautiously, all the more so since the *ostrakon* is not issued by a political institution, but results from commercial daily use. These *naukleroi* could simply have been ship owners, as often evidenced in Hellenistic period.[61] Therefore the name of the magistrate to watch over the public boats remains unknown.

The magistrates were absolutely necessary for the registration of a guarantee. Indeed, Xenophon suggested asking for a guarantee (ἐπ᾿ ἐγγυητῶν) from merchants renting these boats, as noticed by Gauthier. The inscription IosPE I[2], 32 shows that Xenophon's recommendation was particularly relevant, and reveals that he was well informed regarding the maintenance issue. His proposition is anything but "naive", as Cawkwell asserted.[62]

Certainly, the existence of public boats in the Hellenistic period is evidenced by a few documents only. However, as the papyri show for 4th-century-CE Egypt, the state may have owned more boats than previously suspected. Indeed, when no owner is mentioned for a boat, it may indicate that the ship was public property. Even though the scale of the public fleets in the Hellenistic period is hard to determine, it seems that the opposition between state-owned warships and privately-owned merchantmen is oversimplified and should be transcended.[63]

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[58]   *SB 22 15733* and *SB 22 157734*, cf. Arnaud (2015), 127.
[59]   *SB 26 16763*, col. 1 and 2 = *P.Vind.Bosw. 14*.
[60]   Shebalin (1968), 298-299; Vinogradov (1989), 261; Anokhin & Rusyaeva (1999), 379. Shebalin dates the fragment from the 3rd cent. But Anokhin and Rusyaeva do prefer to date it from the 2nd cent. See also Kozlovzkaya (2008), 44.
[61]   Vélissaropoulos (1981), 48-56.
[62]   Cawkwell (1963), 64.
[63]   Prof. Alexandru Avram and Dr. Stéphanie Binder kindly read this article. Ahron Shovkun provided his help. The two reviewers also offered valuable comments. I wish to express my gratitude to all of them.

List of References

Andreades, A.M. (1933). *A History of Greek Public Finance*. New York: Arno Press (translated from Greek, reprint 1979).

Angelescu, M.V. (2011). 'Ploia platypegia. Militärischer Nachschub zu Wasser in spätrömischer Zeit'. *Skyllis* 11: 21-24.

Anokhin, V.A., & Rusyaeva, A.S. (1999). 'Gosudarstvennoe ustroistvo Ol'vii. Istoriya razvitiya gosudarstvennoi vlasti v VI-I vv. do n. é'. In *Ol'viya. Antichnoe gosudarstvo v Severnom Prichernomor'e*, Kryzhitskii, S.D. et alii (eds.). Kiev. 342-380 (in Russian).

Arnaud, P. (2015). 'La batellerie de fret nilotique d'après la documentation papyrologique (300 avant J.-C.-400 après J.-C.)'. In *La batellerie égyptienne: archéologie, histoire, ethnographie*, Pomey, P. (ed.), Alexandrie: Centre d'Études Alexandrines. 99-150.

Austin, M.M. (2006). *The Hellenistic World from Alexander to the Roman Conquest: A Selection of Ancient Sources in Translation*, Cambridge: University Press (1st ed. 1981).

Avram, A. (2007). 'Le Corpus des inscriptions d'Istros revisité'. *Dacia* 51: 10-11.

Basch, L. 1985. 'The ISIS of Ptolemy II. Philadelphus'. *The Mariner's Mirror* 71: 129-51.

Beltrame, C., & Vittorio, V. (2012). 'Roman Ships Carrying Marble: Where These Vessels in Some Way Special?'. In *Between Continents*, ISBSA 12, Günsenin, N. (ed.), Istanbul: Yayınları. 141-148.

Boeckh, A. (1886). *Die Staatshaushaltung der Athener*, Berlin: G.Reimer (3rd ed.).

Bounegru, O. (2007). 'L'expédition navale de l'amiral histrien Hegesagoras et la guerre sacrée d'Apollonie Pontique'. *Pontica* 40: 85-92.

Bounegru, O. (2010). 'Ploia platypegia: sources et interpretations'. In *Antiquitas istro-pontica: mélanges d'archéologie et d'histoire ancienne offerts à Alexandru Suceveanu*, Angelescu, M.V. (ed.), Cluj-Napoca: Mega. 139-144.

Braund, D. (2007). 'Greater Olbia: Ethnic, Religious, Economic, and Political Interactions in the Region of Olbia, c. 600-100 BC'. In *Classical Olbia and the Scythian World*, Braund, D. and Kryzitskiy, S.D. (eds.), Oxford: University Press. 38-77.

Cartault, A. (2001). *La Trière athénienne : étude d'archéologie navale*, Paris: Claude Tchou (1st ed. 1881).

Casson, L. (1995). *Ships and Seamanship in the Ancient World*, Ann Arbor (Mich.): Princeton University Press (2nd ed.).

Cawkwell, G.L. (1963). 'Eubulus'. *JHS* 83: 47-67.

Chaussade, H. (2015). *Les réparations navales en Méditerranée du VIIIe siècle av. l'è. chr. au VIIe siècle de l'è. chr.* MA thesis, Le Mans University [unpublished].

De Ste. Croix, G.E.M. (1972). *The Origins of the Peloponnesian War*, London: Duckworth.

Gabrielsen, V. (1997). *The Naval Aristocracy of Hellenistic Rhodes*, Aarhus: University Press.

Gabrielsen, V. (2007). 'Trade and Tribute: Byzantion and the Black Sea Straits'. In *The Black Sea in Antiquity: Regional and Interregional Economic*, Gabrielsen, V., & Lund, J. (ed.), Aarhus: Aarhus Universitetsforlag. 287-324.

Gauthier, P. (1976). *Un commentaire historique des "Poroi" de Xénophon*, Geneva: Droz.

Hauben, H. (1979). 'Le transport fluvial en Égypte ptolémaïque. Les bateaux du Roi et de la Reine'. In *Actes du XVe Congrès International de Papyrologie*, Bingen, J., & Nachtergael, G., (eds.), Bruxelles: Fondation Égyptologique Reine Elisabeth. 68-77.

Höckmann, O. (1999). 'Naval and other graffiti from Nymphaion'. *Ancient Civilizations from Scythia to Siberia* 5: 303-355.

Jajlenko, V.P. (1990). 'Ol'vija i Bospor v ellinističeskuju epohu [Olbia and Bosphorus in the Hellenistic Time]'. In *Ellinizm: ekonomika, politika, kul'tura*, Golubcova, E.S. (ed.), Moscow: Nauca. 249-309.

Jansen, J.N. (2007). *After Empire: Xenophon's Poroi and the Reorientation of Athens' Political Economy*. PhD Dissertation, University of Texas at Austin.

Karyshkovskij, P.O. (1968). 'Do pytannja pro datu olvijskogo dekretu na chest Protogena [Concerning the Date of the Olbian Decree in Honour of Protogenes]'. *Arkheologija* 21: 95-105.

Knipovich, T.N. (1966). 'K voprosu a datirovke ol'vijskogo dekreta v chest Protogena [About the Datation of the Olbian Decree in Honour of Protogenes]'. *Vestnik drevnej istorii* [Journal of Ancient History] 2: 142-149.

Kozlovskaya, V. (2008). 'The Harbour of Olbia'. *Ancient Civilizations from Scythia to Siberia* 14: 25-65.

Latyshev, B. (1885). *Inscriptiones antiquae orae septentrionalis Ponti Euxini Graecae et Latinae. 1, Inscriptiones Tyrae, Olbiae, Chersonesi Tauricae, aliorum locorum a Danubio usque ad Regnum Bosporanum*, Saint-Petersburg: [Imp. Russkoye Archeologicheskoye Obshchestvo].

Lewis, D. (1990). 'Public property in the city'. In *The Greek City: From Homer to Alexander*, Murray, O., & Price, S. (eds.), Oxford: Clarendon Press. 245-264.

Long, L. (1986). 'The Wreck of Carry-le-Rouet: An Evidence about the Stone-Sea-Transport at the End of the Second Century or at the Beginning of the First Century BC'. In *Beneath the Waters of Time*, Austin: Texas Anquities Committee Publication. 22-27.

Maier, F.G. (1959). *Griechische Mauerbauinschriften*, I. Heidelberg: Quelle & Meyer.

Morrison, J.S., Coates, J.F., & Rankov, N.B. (2000). *The Athenian Trireme. The History and Reconstruction of an Ancient Greek Warship*, Cambridge: University Press (2nd éd.).

Muller, C. (2010). *D'Olbia à Tanaïs : territoires et réseaux d'échanges dans la mer Noire septentrionnale aux époques classique et hellénistique*. Bordeaux: Ausonius.

Muller, C. (2011). 'Autopsy of a Crisis: Wealth, Protogenes and the City of Olbia in c. 200 BC'. In *The Economies of Hellenistic Societies, Third to First Centuries BC*, Archibald, Z.H., Davies, J.K. & Gabrielsen, V. (ed.), Oxford: Oxford University Press. 324-344.

Murray, W.M. 'A Trireme Named *Isis*: The *sgraffito* from Nymphaion'. *The International Journal of Nautical Archaeology* 30: 250-256.

Nantet, E. (2016). *Phortia. Le tonnage des navires de commerce en Méditerranée du VIIIe siècle av. l'ère chrétienne au VIIe siècle de l'ère chrétienne*, Rennes: Presses Universitaires de Rennes.

Olkhovskiy, S. (2012). 'Фанагорийский корабль.' подводная археология 6, 22-26 (The Phanagorian Shipwreck).

Olkhovskiy, S. (2015). 'The Phanagorian Shipwreck: Continuation of Study'. In *ISBSA 14. Baltic and Beyond. Change and Continuity in Shipbuilding (National Maritime Museum in Gdansk, 21-25 September 2015)*, Ossowski, W. (ed.), Gdansk: The National Maritime Museum in Gdansk, 83.

Panvini, R. (2001). *La Nave greca arcaica di Gela*. Palermo: Salvatore Sciascia Editore.

Peters, B.G. (1982). *Morskoye delo v antichnykh gosudarstvakh Severnogo Prichernomor'ya*. Moscow: Nauka (in Russian).

Pippidi, D. & Popescu, E. (1959). 'Les relations d'Istros et d'Apollonie du Pont à l'époque hellénistique. A propos d'une inscription inédite'. *Dacia* n.s. 3: 235-258.

Pleket, H.W. & Stroud, R.S. (1984). 'SEG 34-758. Olbia. Honorary Decree for Anthesterios, ca 250-225 B.C.'. In *Supplementum Epigraphicum Graecum* 34: 758.

Pomey, P. & Tchernia, A. (2006). 'Les inventions entre l'anonymat et l'exploit: le pressoir à vis et la *Syracusia*'. In *Atti convegno Innovazione tecnica e progresso economico nel mondo romano, Atti Incontri capresi, Capri 2003*, Lo Cascio, E. (ed.), Bari: Edipuglia. 81-99.

Pomey, P. & Rieth, É. (2005). *L'Archéologie navale*. Paris: Errance.

Pomey, P. (forthcoming). 'Naval Architecture. The Hellenistic Type: Origin and Evolution'. In *Sailing from Polis to Empire: Maritime Scales in the Eastern Mediterranean during the Hellenistic Period (4th-1st centuries BCE)*, Nantet, E. (ed.).

Robert, J. & L. (1961). *Bulletin Epigraphique* 419.

Russell, B. (2013). *The Economics of the Roman Stone Trade*, Oxford: University Press.

Shafranskaja, N.V. (1956). 'O mikséllinakh'. *Vestnik drevnej istorii* [= Journal of Ancient History] 3: 37-48.

Shebalin, N.V. (1968). 'K ol'viiskim gosudarstvennÿm drevnostyam (po materialam graffiti)'. In *Antichnaya istoriya i kul'tura Sredizemnomor'ya i Prichernomor'ya*, Gaidukevich, V.F. (ed.), Leningrad. 296-299 (in Russian).

Shimron, A. & Avigad, D. (2003). 'The Rock Assemblage'. In *The Ma'agan Mikhael Ship: The Recovery of a 2400-Year-Old Merchantman. Final Report*, Linder, E., & Kahanov, Y. (eds.), Haifa: The Israel Exploration Society. Vol. 1, 153-182.

Vélissaropoulos, J. (1980). *Les Nauclères grecs: recherches sur les institutions maritimes en Grèce et dans l'Orient hellénisé*, Genève: Droz.

Vélissaropoulos-Karakosta, I. (2011). *Droit grec d'Alexandre à Auguste, 323 av. J.-C.-14 ap. J.-C.: personnes, biens, justice*, Athens: Centre de recherche de l'antiquité grecque et romaine, Fondation nationale de la recherche scientifique: 2 vol.

Vinogradov, J.G. (1984). 'A Decree Honouring Anthesterios and the Critical Situation of Olbia in the Hellenistic Epoch'. *Vestnik drevnej istorii* 167/1: 51 (in Russian).

Vinogradov, J.G. (1989). *Politicheskaja istorija olviskogo polisa* [= A Political History of Olbia]. Moscow: Historical and Epigraphic Studies (in Russian).

Vinogradov, J.G. (1999). 'The Black Sea after the Fall of the Great Scythia'. *Hyperboreus* 5: 56-82 (in Russian).

Williams, R.T., & Morrison, J.S. (1968). *Greek Oared Ships, 900-322 B.C.*, London: Cambridge University Press.

Yailenko, V.P. (1990): 'Ol'viya i Bospor v ellinisticheskii period'. In *Ellinizm: Ekonomika, politika, kul'tura*, Golubcova, E.S. (ed.), Moscow: Nauka. 249-309 (in Russian).
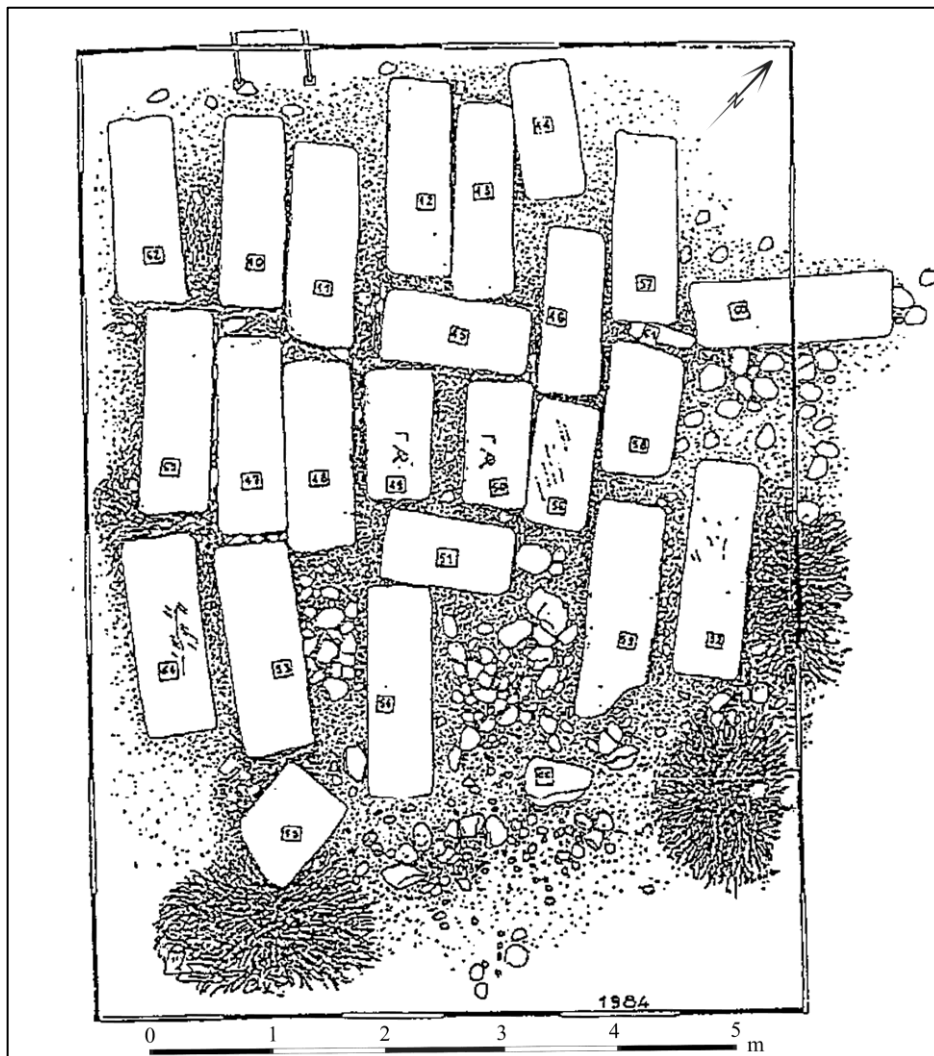

Fig. 1. Carry-le-Rouet shipwreck (France, 125-75 BCE). Cargo of stone ashlars. After Long, 1986.
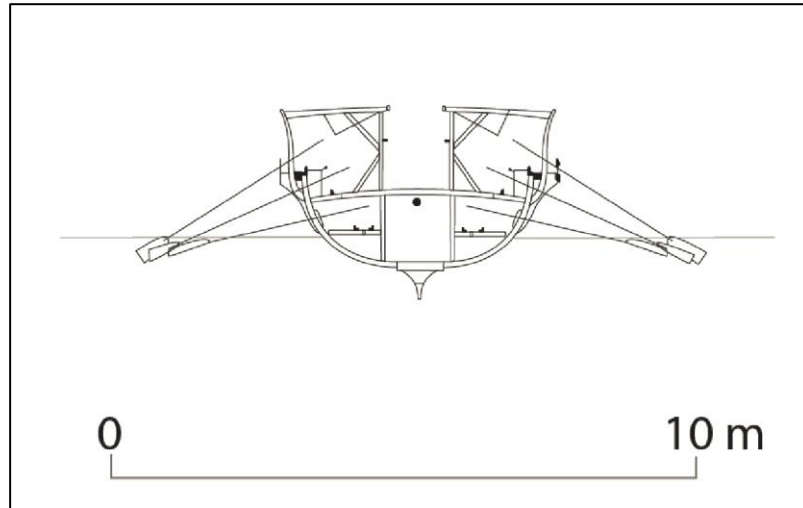
Fig. 2. *Olympias*. Cross section of the floating hypothesis. Ed. Anne-Laure Pharisien/CReAAH, after Morrison, J.S., J.F. Coates, and N.B. Rankov. 2000. *The Athenian Trireme. The History and Reconstruction of an Ancient Greek Warship*. Cambridge: University Press (2nd ed.), 208.