

Rowing Ancient Warships: Evidence from a Newly-Published Ship-Model

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A clay model of the 6th or 5th century BC may be evidence for the nature of ancient Mediterranean warships in general.

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Key words: ship model, ancient Greece, *hemiolia*, warship.

A small clay model of a ship, tentatively dated to the 6th or 5th century BC (Fig. 1) was published in *IJNA* by Dr Arvid Göttlicher (2004, figs 1–5). The model has a formidable ram, and is clearly intended to represent a fighting vessel of some sort. It has only eight rowing benches. Göttlicher rightly points out that if the real vessel had only eight, it would have been ‘too small for a regular warship. However, the length would have been appropriate for a smaller naval craft such as a coastal patrol or customs vessel or such as might be used by pirates’ (2004: 155). Göttlicher does not suggest a name for the type of vessel represented by the model, but *hemiolia* would have been very suitable for a small naval or piratical craft, and Göttlicher agrees (pers. comm.). It is clear from ancient literature that a *hemiolia* was a small fighting vessel. Casson (1995: 128) defined the *hemiolia* as ‘the ancient pirate’s favored craft’. Three authors of the 4th century BC describe pirates using *hemioliai* (Morrison, 1980: 121).

The rowing arrangements

The model’s rowing benches have holes in them, which Göttlicher suggested would have been for peg-in dummies of the crew. He is surely quite right: it is difficult to think of any other explanation. The benches amidships each have two holes, and those nearer the bow and stern have only one. That indicates two oarsmen on each bench amidships, where there is enough width, and only one oarsman a bench near the

extremities, where the model narrows. There are several ways in which ancient seamen might have described such a rowing system and the vessels which used it.

Ancient nomenclature

In categorizing oared ships ancient Greeks used two different systems. The earlier types of ship were identified by the total number of their oars. Thus the word *pentekontoros* incorporates the number ‘50’ and originally described a ship with 50 oars. Similarly, ships were categorized *eikosoros* for their 20 oars, and others *triakontoros* for their 30. But for later types of ship a different system was used, one in which the number in the name was related not to the total number of oars, but to the number of oarsmen in a cross-section of the ship. The controversial question is whether the number in those names referred to the number of oarsmen in a *complete* cross-section or to the number *on either side* of a cross-section. Fig. 2 will serve to illustrate the controversy. It shows the commonplace arrangement of a port oarsman and a starboard oarsman on each bench, and the question is whether it was described in ancient Greek as a *moneres* (a 1-er) or as a *dieres* (a 2-er). The debate has been at its warmest in connexion with the trireme, the Greek *trieres*. Did it have six oarsmen in cross-section or only three?

The debate can be difficult to follow because there are many different ways of saying much the same thing. What I have loosely called a

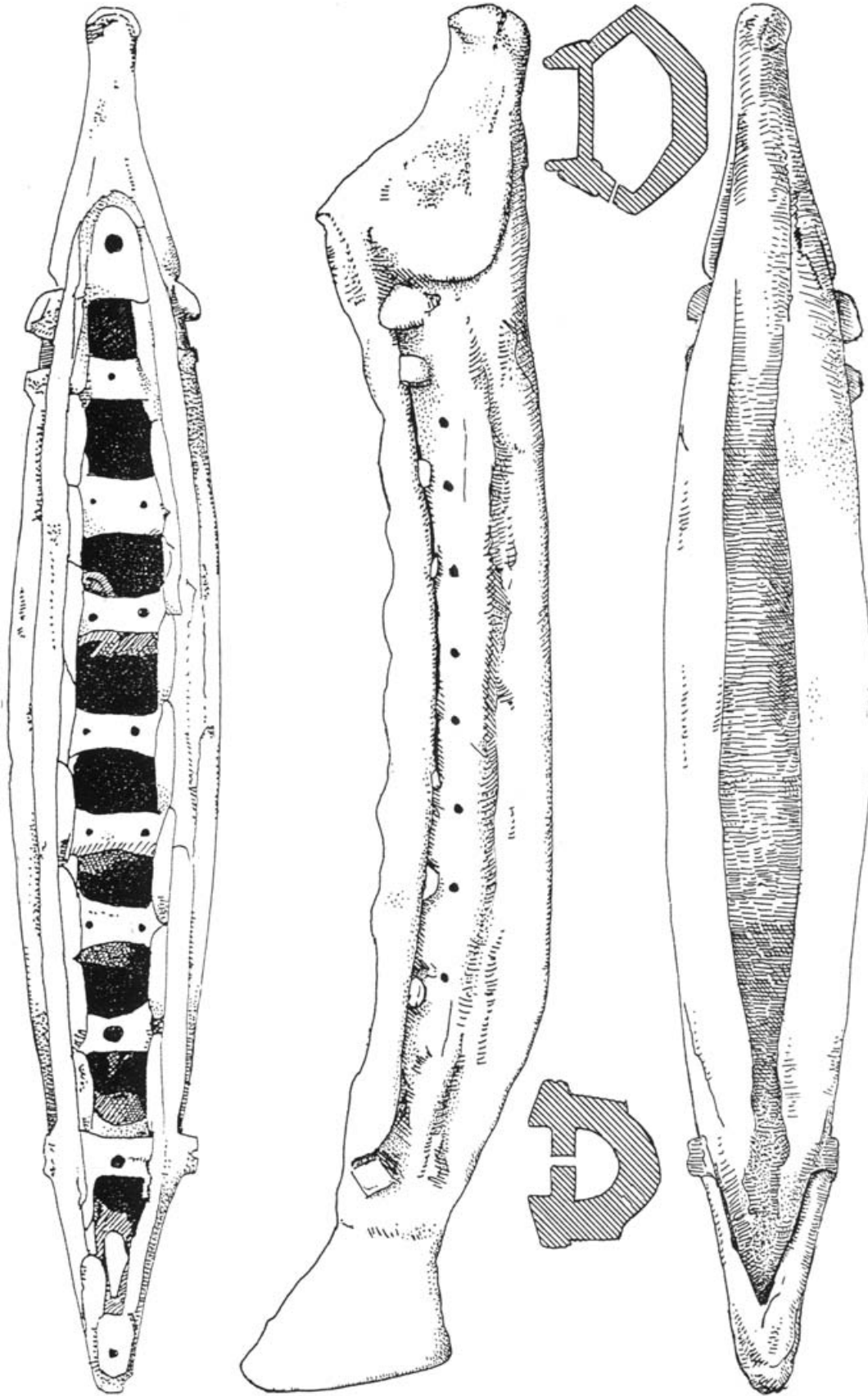


Figure 1. Clay ship-model in the Staatliche Museum, Kassel, Germany. (Göttlicher, 2004, 156 fig. 5, reproduced with permission)

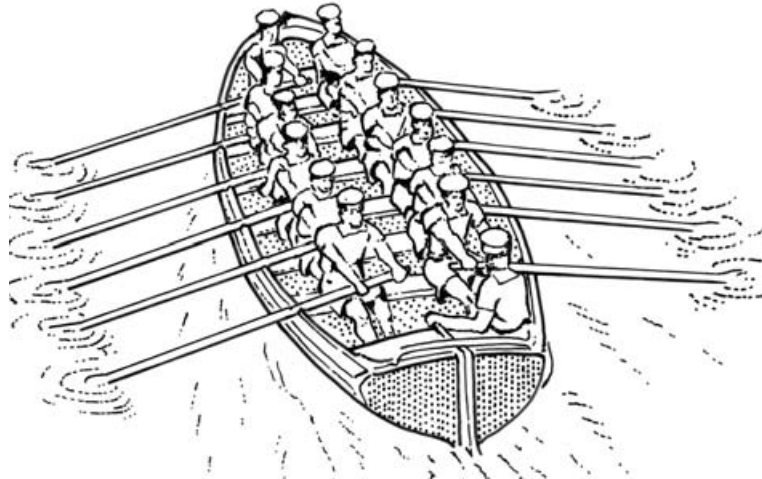


Figure 2. A 'double-banked' boat. (after *Admiralty Manual of Seamanship*)

cross-section is often called a 'unitary division' or 'room' or *interscalmium*. Moreover one can avoid the idea of a cross-section (or 'unitary division' or 'room' or *interscalmium*) by saying that Fig. 2 shows two fore-and-aft files of oarsmen, or one file of oarsmen either side. In addition to these legitimate alternatives, unwarrantable ambiguity in modern English has confused the debate. The *Oxford English Dictionary* calls the arrangement in Fig. 2 'double banked', reflecting the usage of seamen, while nearly all writers on the subject of ancient ships ignore the dictionary and call it 'single banked'. Further confusion is illustrated in Morrison's definitions of the *trieres*, *tetreres* and *penteres* (Morrison and Williams, 1968: 339):

trieres, *-eis*: = trireme, a ship in which there were three oarsmen to each unitary division or "room", called in Latin "interscalmium", the distance of about three feet between one thole pin and the next at one level. *Tetreres*, *penteres* ships with four and men to this division, probably rowing more than one man to each oar.

It is clear from his diagrams that Morrison meant 'three oarsmen on *each side* to each unitary division' and it is now widely accepted that that is what the ancient Greek terminology was intended to convey, an interpretation that might be called the current orthodox doctrine.

However, in a book written before the publication of this ship-model, it was suggested that the numbers contained in the names of Greek warships in the '-eres' series reflected the total number of oarsmen in a cross-section (or unitary division or 'room' or *interscalmium*) rather than the numbers on either

side—that Morrison was wrong in what he meant but right in what he wrote—and that consequently,

a *hemiolia* would have had two oarsmen per bench on the middle benches, where the boat was wide enough, and only one oarsman per bench on the forward and after benches where the boat was narrower (Tilley, 2004: 52)

It is pleasing to see a merely-hypothesized rowing arrangement confirmed by Göttlicher's model. With two oarsmen on about half the rowing benches and only one on the others, the average is about one-and-a-half, which is what the ancient Greek word *hemiolia* meant. Admittedly, with three one-man benches and five two-man benches, this particular model would have been more exactly described as a 'one-and-five-eighths-er' but ancient seamen might well have considered 'one-and-a-half-er' near enough. On the other hand, there is no word in Greek or Latin literature applied to a type of ship and incorporating the number 'three-quarters'. Thus the model suggests that ancient seamen used the whole number of oarsmen in a cross-section, rather than the number either side when they coined words to describe their warships. That is only negative evidence, but it reinforces similar negative evidence that has been consistently overlooked: the absence of an ancient Greek nautical word incorporating the number 'a half' to designate a boat with only one oarsman per cross-section.

The Greek language is far older than complicated systems of rowing, so for many centuries ancient Greek seamen were in the same position as seamen today, in that they had only



Figure 3. The Siren Vase. (Reproduced courtesy of the Trustees of the British Museum)

to distinguish vessels with one oarsman to a rowing bench from those with two. In that simple era, it is unlikely that they would have described a boat after the number 'a half' on the grounds that it had half an oarsman on each bench either side, or that (long before oars at more than one level had been contemplated) they described a boat after the number 'one' on the grounds that all the oarsmen were at one level. That contention will be undermined if a word or phrase describing an oared vessel as a 'half-er' or a 'three-quarter-er' is ever found in ancient literature, but until then it ought to feature in discussions as to how to row an ancient warship.

The Siren Vase

A vessel with three oarsmen on each rowing bench would have been called a *hemiolia* according to current orthodox doctrine. Such an arrangement

of oars was suggested some 35 years ago (Tilley, 1970) but was widely ignored until recently, when it appeared in the British Museum. The ship of Odysseus on the well-known Siren Vase (Fig. 3) shows four port-side oarsmen but six oars, where one would expect the same number of each. In 2004 the museum added a diagram explaining the apparent discrepancy (Fig. 4), together with a note that the empty oar-port would have given the foremost centre-line oarsman the ability to row either side.

This interpretation of the ship of Odysseus was once endorsed and called a *hemiolia* by the late Professor Morrison, who wrote: 'His [Tilley's] main argument is that a red-figure vase ... shows a ship with three banks in the modern English nautical sense. That is, I think, a valuable suggestion' and went on to say that it might well provide a solution to the *hemiolia* puzzle (pers. comm., 1969). But Morrison never published that

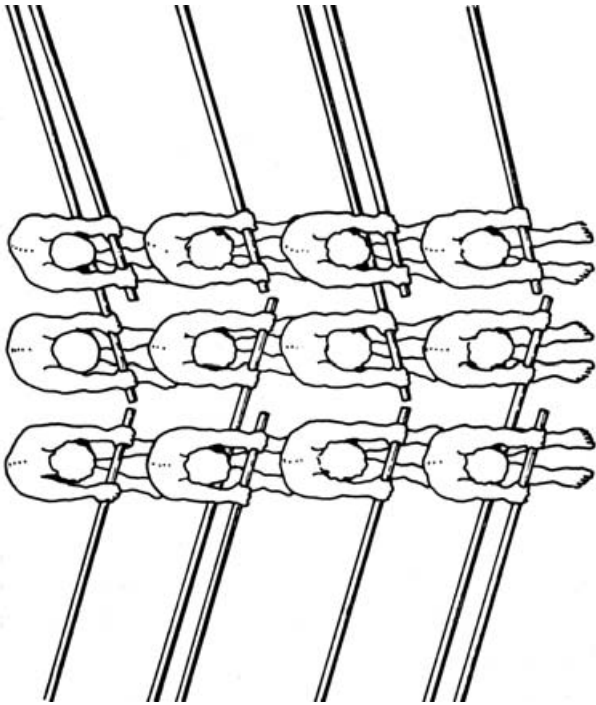


Figure 4. The ship on the Siren Vase 'decoded'. (Tilley, 1970, fig. 1, reproduced courtesy of Antiquity Publications Ltd)

opinion, and subsequently published a lampoon implying that the three-fold interpretation (Fig. 4) was incomprehensibly absurd, as though it had been suggested that:

The name *trieres* was first adopted to describe a system of "benches" one behind each other throughout the rowing compartment of the ship, on which sat sets of three oarsmen. In each set the port and starboard oarsmen row normally while the midships oarsman sculls at a lower level (how then is he on the same "bench"?) pulling a pair of longer oars (1978: 204).

Morrison subsequently published several suggestions for *hemioliai* averaging three oarsmen per cross-section. One system he suggested had a one-man oar and a two-man oar in each. Another had two men per cross-section forward and four aft (1980: 123–4). Later he supported the idea of four men per cross-section (with either one-man or two-man oars) in the middle part of the vessel and only two forward and aft (1996: 262). In the same book, he also advocated a *hemiolia* with oars at two levels, but raised objections (1996: 262) to the two-level *hemiolia* put forward by Casson (1995: 128–9). But in all his published work on the subject Morrison was consistent in one thing: he ignored his original views on rowing the ship on the Siren Vase. By contrast,

Professor Casson accepted the arrangement in Fig. 4, suggesting that, as all the oarsmen were at one level, the vessel would have been called a *moneres*; but he has not published his opinion, though he kindly allows me to do so. However, one endorsement of the arrangement in Fig. 4 has recently been published, the only one in 35 years, I believe, apart from the British Museum's label:

While I do not accept the conclusion that the vessel [the ship of Odysseus on the Siren vase, shown here as Fig. 3] represents a trireme, I am convinced by Tilley that the vessel appears to be rowed by three files of oarsmen (Murray, 2006: 157).

Professor Murray gave no clue as to how he considered an ancient seaman would have described such an arrangement of oars, but he did say that it was 'a three-banked vessel according to his [Tilley's] terminology'. That opens up the question of modern terminology, which quite apart from any relevance it may or may not have to ancient terminology, is important in its own right, as was emphasised in the editorial of a recent edition (2006. 35.1) of this journal.

Modern nomenclature

Calling a boat with one oarsman to a bench 'single banked' and a boat with two oarsmen to a bench 'double banked' and so on, is not merely, as Murray would have it, 'Tilley's terminology': it is the language of all English-speaking seamen. It is not merely the language of seamen, as Murray implies when he called it 'the nomenclature of English seamanship manuals'. It is normal English usage: the *Oxford English Dictionary* defines the term 'double banked' in that way, citing: '1697 DAMPIER *Voy.l.* xv.492 They row double-banked; that is, two Men sitting on one Bench, but one rowing on one side, the other on the other side'. A similar definition is included in Falconer's *Maritime Dictionary* of 1780, and in Admiral W. H. Smyth's *Sailor's Word Book* of 1867.

It is not merely English usage. In French, the expressions *armé à couple* or *armé en couple* contain the idea of the number 'two' and describe boats with two (not four) oarsmen to a bench. So does the German *doppel ruderig*. Italian seamen say that a boat with two oarsmen to a bench has '*doppio ordine di reme*', although when modern scholars translate the Latin *ordo* in connection with rowing they assume it referred to an *ordo* of oarsmen either side. The most significant is modern Greek, in which *diplokopos* describes a

boat with two oarsmen to a bench, while the ancient Greek *dikrotos* is commonly translated as though it indicated oars at two levels or four oarsmen to a bench. It is the jargon of modern English-speaking authorities on ancient ships that is parochial and confusing, especially to anyone who comes new to the subject.

But change may be on the way. A respected author and authority, Professor Seán McGrail, in his recent *Boats of the World* (2001: 119) has used the term 'double-banked' as the *Oxford English Dictionary* defines it. Until then, all authors on the subject of ancient ships (except me—for example, Torr, 1894: 19; Tarn, 1905: 145; Anderson, 1962: 13; Casson, 1995: 62; Lloyd, 2000: 83; Scott, 2000: 103) had misused the term to describe a vessel with oars at two levels or with four oarsmen to a bench.

Linguistic evidence

Much of the evidence that ancient Greeks used the number of oarsmen in a cross-section in the names of types of warship is contained in *Seafaring on the Ancient Mediterranean* (Tilley, 2004), but there is more. The largest warship described in ancient literature is the *tesserakonter* with the number '40' in its descriptive name. Admiral Rodgers, in considering the 'numeral root' in the descriptive names of ancient warships, wrote: 'in the case of the 40-er (*tesserakonter*), it must have referred to the whole number of rowers on both sides of the ship in one longitudinal rowing space' (Rodgers, 1937: 256). Rodgers did not give any specific reason for his opinion, and he shared the orthodox view of the rowing arrangements in other ancient warships, but ancient evidence supports what he wrote about the *tesserakonter*. It was about 420 English feet (c.128 m) long and had 4000 oarsmen, as Casson (1995: 108–9), citing the ancient evidence, points out. In the orthodox view, that would mean 80 files of oarsmen, each 50 oarsmen long. But files of 50 are far too short for a length of 128 m. 40 files each 100 oarsmen long, as Rodgers envisaged, fit

the evidence much better. Another ship, with the proper name *Leontophoros*, was huge, but not bigger than the *tesserakonter*. 'In each file, 100 men rowed' (Casson, 1995: 112–3). Admiral Rodgers' suggestion that the significance of the 'numeral root' changed over the course of time is worth following up more energetically than has been the case so far.

The Nike of Samothrace

In deciding whether the oars of an ancient *hemiolia* were arranged like those of the clay model in Fig. 1 or on the other hand like those of the ship of Odysseus (Figs 3 and 4), or in some other way, there is one other well-known ancient representation of a warship that is relevant. The much-admired Nike of Samothrace is prominently displayed in the Paris Louvre. On either side of the warship she stands on are a pair of oar-ports, the one nearer the prow a little lower than the other. The arrangement is exactly suited to the system of triple-banked rowing shown on the Siren Vase. The width between the thole pins is too little for the four men abreast who are implied by the four oar-ports, but is just right for three oarsmen. The centre-line oarsman would be able to row either to port or to starboard, leaving one oar-port empty, exactly as can be seen on the Siren Vase. It will be interesting to see whether the Louvre will ever be persuaded to display the suggestion that the ship in this famous work of art might have used the same arrangement of oars and oarsmen as the ship on the Siren Vase.

Conclusion

The idea that the number in the name of an ancient warship referred (when it did not refer to the total number of oars) to the number of oarsmen in cross-section either side, has hardly been questioned in the pages of this journal until now. Perhaps this note will cause it to be questioned in future.

References

- Anderson, R. C., 1962, *Oared Fighting Ships*. London.
 Casson, L., 1995, *Ships and Seamanship in the Ancient World*. Baltimore.
 Göttlicher, A., 2004, A Newly Acquired Ancient Ship-Model, *IJNA* 33.1, 154–7.
 Lloyd, A. B., 2000, The Saite Navy, in G. Oliver, R. Brock, T. Cornell and S. Hodkinson (eds), *The Sea in Antiquity*. BAR Int. Ser. 899, Oxford.
 McGrail, S., 2001, *Boats of the World*. Oxford.
 Morrison, J. S., 1978, Rowing the Trireme, *Mariner's Mirror* 64, 203–08.
 Morrison, J. S., 1980, Hemiolia, trihemiolia, *IJNA* 9.2, 121–6.

- Morrison, J. S., 1996, *Greek and Roman Oared Warships*. Oxford.
- Morrison, J. S. and Williams, R. T., 1968, *Greek Oared Ships*. Cambridge.
- Murray, W. M., 2006, review of A. Tilley, *Seafaring on the Ancient Mediterranean*, *IJNA*, **35**.1, 156–7.
- Rodgers, W. L., 1937, *Greek and Roman Naval Warfare*. Annapolis.
- Scott, L., 2000, Were there polis navies in Archaic Greece?, in G. Oliver, R. Brock, T. Cornell and S. Hodkinson (eds), *The Sea in Antiquity*. BAR Int. Ser. 899, Oxford.
- Tarn, W. W., 1905, The Greek Warship, *Journal of Hellenic Studies* **25**, 137–56.
- Tilley, A., 1970, The Ship of Odysseus, *Antiquity* **44**, 100–104.
- Tilley, A., 2004, *Seafaring on the Ancient Mediterranean*. Oxford.
- Torr, C., 1894, *Ancient Ships*. Cambridge.