

## ROMAN SHIP GRAFFITI IN THE TOWER OF THE WINDS IN ATHENS

The Tower of the Winds, or Horologion of Andronikos, is situated on the northern slope of the Acropolis of Athens, in the eastern part of the Roman Agora (fig. 1). During a survey of the building in 1998 by Hermann J. Kienast, several ship graffiti were identified on the interior walls of the monument. A preliminary report on this study of the graffiti was presented during the 8<sup>th</sup> International Symposium on Ship Construction in Antiquity in 2002 with the permission of the 1<sup>st</sup> Ephorate of Prehistoric and Classical Antiquities<sup>1</sup>. In this paper we focus specifically on the two earliest ship graffiti of the monument, which, according to the preliminary study (Damianidis / Kienast 2002) have been dated to the Roman period, to (as late as) the end of the 4<sup>th</sup> century AD.

The monument is mentioned both by Varro and Vitruvius and due to their reference the construction is considered to have been completed by 40 BC at the latest. The artists James Stuart and Nicolas Revett documented the monument some 250 years ago (Stuart / Revett 1762). According to a recent study, an even earlier date for the erection of the monument has been proposed (von Freeden 1983, 185-208): the Hellenistic period (possibly in the 2<sup>nd</sup> century BC). The ground plan of the tower is octagonal, each side 3.25m long. Two propylae and a round extension are attached to the octagon, giving the entire structure an exact North-South axis. At the top of the nearly nine metres high, windowless walls there is a frieze depicting the eight winds, represented as winged male figures, each carrying its own particular symbol. It is interesting to notice that an element of maritime interest, the only one on the building published to date (Basch 1987, 365-366; Pomey 1997, 30-31), can be seen on this part of the building. The wind Lips (south-west) is portrayed as a winged man holding the *aphlaston* (the high up curving stern end of ancient oared warships) of a ship.

Inside the tower, the walls are arranged in four zones in height, separated by differently shaped cornices. Within the lower zone there are graffiti, either drawn or scratched on the marble surfaces. Most of these graffiti represent ships or boats and have generally survived in poor condition.

In order to give name to each of the ships, we introduced a numerative system based on the location of each graffito in the building. According to this system, we refer to the wall by the name of the wind, the number of the marble stone and the number of the vessel. We were thus able to distinguish 23 ships in a variety of forms and sizes (Damianidis / Kienast 2002, fig. 2-10). The largest of the ship graffiti has a length



Fig. 1 The Tower of the Winds or Horologion of Andronikos in Athens. – (Photo K. A. Damianidis).

of 170cm (Lips 6-vessel 9) while the two smallest are only 20cm long (Zephyros 1-vessel 4, Zephyros 4-vessel 7).

The ship graffiti can be divided into two groups, according to the materials used to draw them. The first group comprises the majority of the ships, which have been drawn with charcoal on the marbles of the interior surfaces of the walls. The second group is located only on the Euros wall and features graffiti that have been scratched onto the marble surface with a pointed tool. It should be noted that the appearance of both ship-groups suggests that they were drawn in completely different historical periods.

The first group of graffiti are sailing ships of the 18<sup>th</sup> and 19<sup>th</sup> centuries and were briefly presented in the preliminary report of this study in 2002 (Damianidis / Kienast 2002).

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The second group of graffiti, scratched on the marble stone, is certainly by far clearer than the first. Among the drawings there is one very nice hunting scene with a horseman and a kind of deer, and two other ships with similar characteristics (Euros 17 vessels nos. 17-18). One of them (no. 18) is remarkably well drawn, possibly by a craftsman who was familiar with this type of ship. This graffiti was doubtlessly the work of an artist and certain elements of the ship are obviously intentionally depicted in remarkable detail. In fact it is more than likely that all the main ancient graffiti on the surface of the Euros wall (**fig. 2**) are by the same artist.

Ship graffiti no. 17 has an overall length of 36.9cm, a total height of 17.5cm and is incomplete. The largest ship graffiti, no. 18, has an overall length of 126cm and a total height of 44.5cm, including the sails. The apparent similarities of both graffiti provoke the assumption that the smaller ship was a preliminary practice of the artist's on the form of the specific type of ship he wished to represent by the bigger one.

The stern appears only on ship no. 18 while on ship no. 17 the aft part of the vessel is missing. The stern of no. 18 is bent inwards as it is typical for many Roman ship representations<sup>2</sup>. On the external profile of the stern there is a sectional double line, which may indicate the position of a sternpost. On the upper part of the stern (on the deck) there is another curved line that begins at the end of the stern structure, runs almost parallelly to the sheer strake and ends at another short slanting line, which closes crossing the sheer strake. This line may indicate a raised aft deck or a kind of bulwarks on the aft part of the ship. The first option does not explain the purpose of the extension of this line all the way up to the end of the sternpost. The second option, on the other hand, leaves an unclear location of the fore part of the bulwarks since there is a crossing of this line and the lines of the hooked thole pins (cf. below). A possible explanation of this overlapping is that the represented bulwarks comprise only one rail, which is located above the hooked thole pins and leaves enough space below the rail for operating oars (**fig. 3**). The latter explanation also possibly suggests an additional use of the rail as a kind of fence structure for the quarter rudder. Potentially similar structures are identifiable in several representations of ships including those of the Neumagen type (**fig. 4**). Moreover, the location of the top of the quarter rudder supports the second option of the rail-bulwarks as opposed to the first one (raised deck). A similar line scratched on graffiti no. 17 confirms the significance of the represented component.

The quarter (lateral) rudder is presented only on ship no. 18; it has been carefully scratched onto the marble and has a very distinctive shape. The blade is noticeably unsymmetrical, extended only to the aft part of the shaft (where the axis of the rudder is located). This shape of rudder is rare for representations of Roman ships<sup>3</sup>. On the upper part of the rudder there are two very short lines that possibly indicate the fixing point

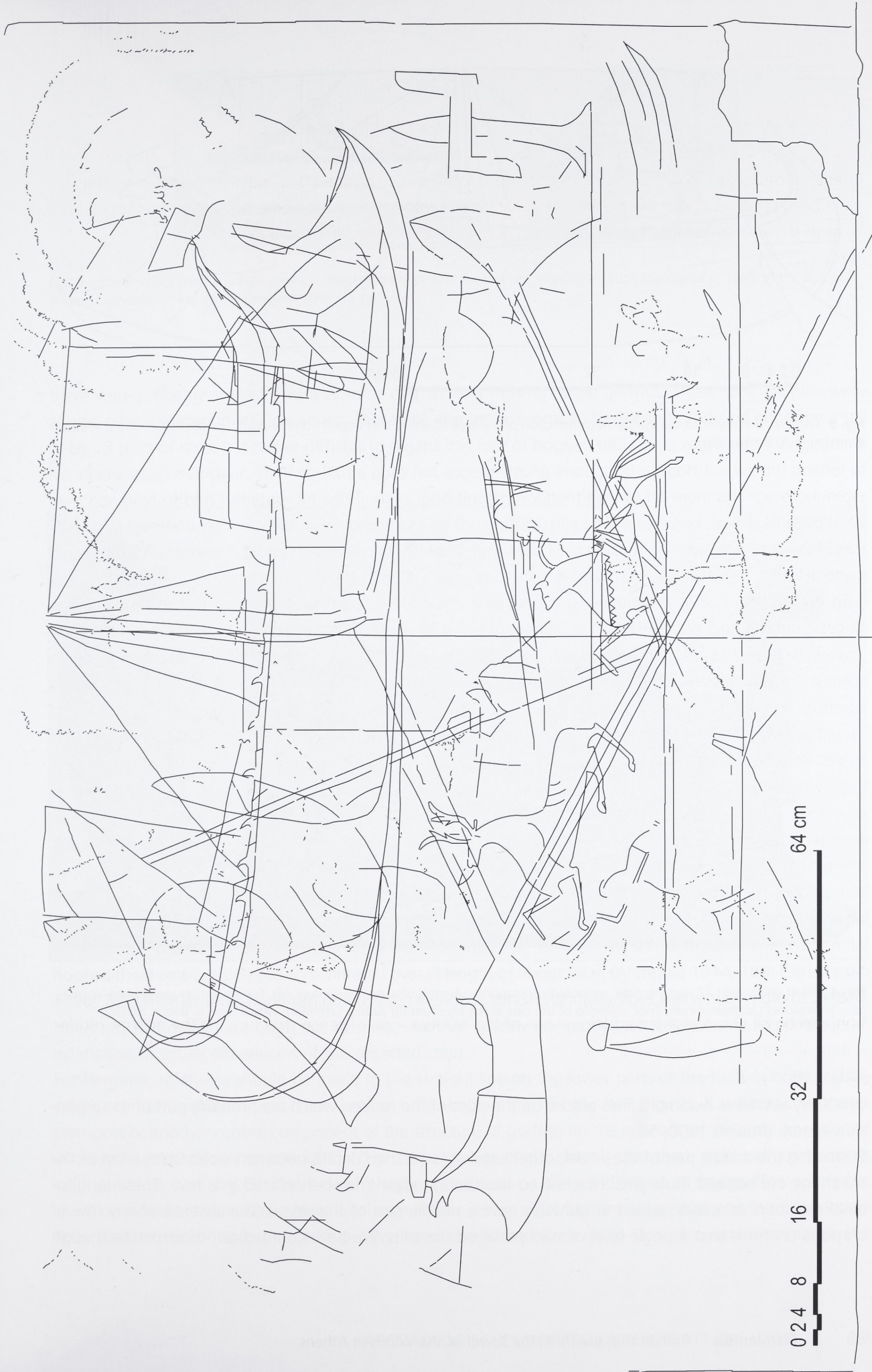
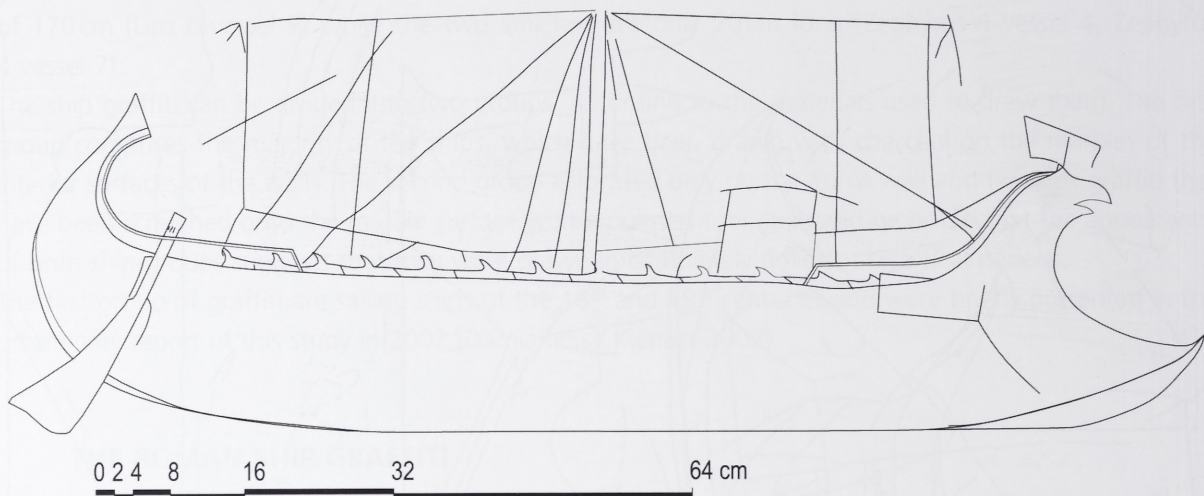
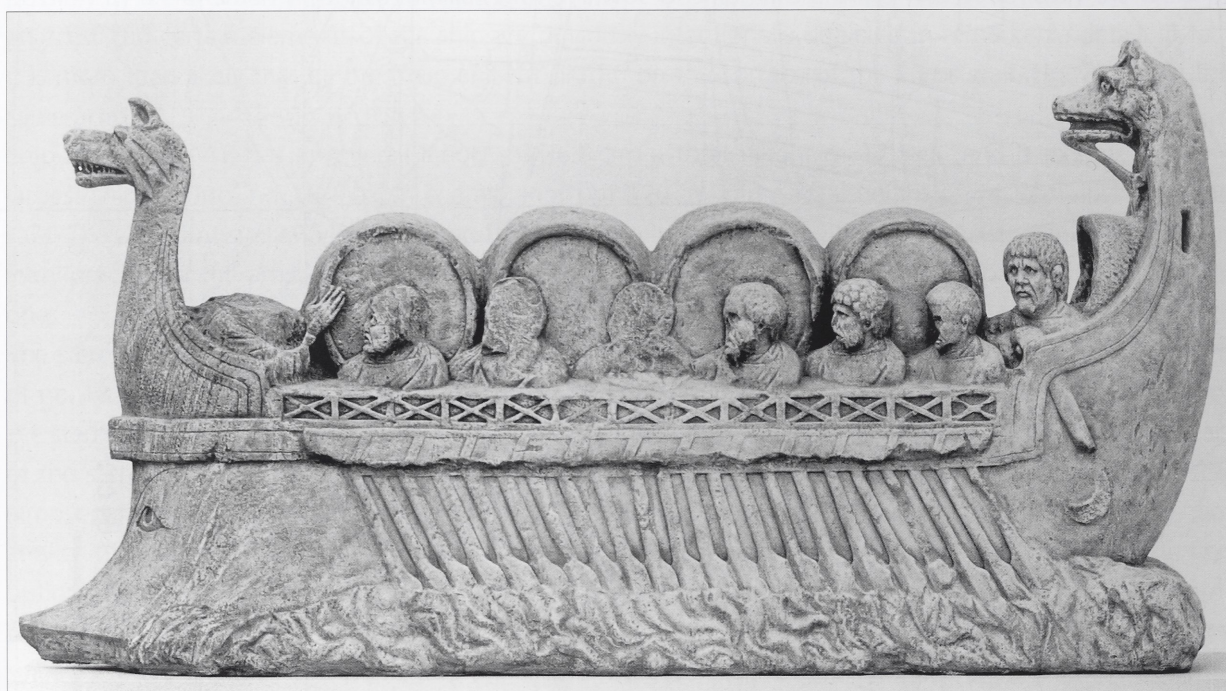


Fig. 2 Athens, the Tower of the Winds: The ancient graffiti on Euros 17, vessels 17 and 18. – (Drawing K. A. Damianidis).



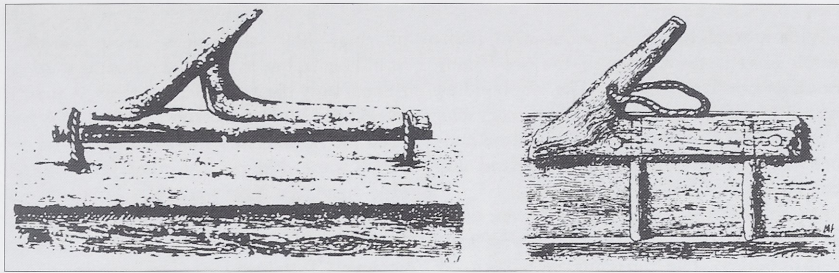
**Fig. 3** Athens, the Tower of the Winds: Reconstruction of the type of galley that appears on the graffiti of the Tower of the Winds. – (Drawing K. A. Damianidis).



**Fig. 4** River galley with 22 oars per side, supposedly transporting barrels of wine; 3<sup>rd</sup> century AD. Funerary monument from Neumagen, Rheinisches Landesmuseum, Trier. – (Photo of the cast in the Museum für Antike Schifffahrt, Mainz, by Ch. Beeck, RGZM).

of a tiller, as well as two more lines placed on the sides of the rudder, which are probably part of its suspension system (Bonino 1990, 58).

Examining the middle part of the vessel, other carefully scratched details become visible. On the top of the shear line are hooked thole pins attached to short longitudinal members placed in a row. These longitudinal members constitute a kind of gunwale on the middle part of the vessel. The absence of any row of oarports confirms that a single level of oars powered the ship. We have counted ten thole pins, although



**Fig. 5** Engelhardt's comparison of rowlocks (hooked thole pins) is the first use of living tradition (published in 1865) in the study of ancient Scandinavian vessels (Christensen 1996, 77 bottom).

there were probably at least a further three (**fig. 3**) now missing in the graffito. These 13 thole pins were almost evenly spaced in a single series. Therefore, the vessel seems to have been propelled either by a sail or by 13 pairs of oars. It is rather difficult to regard this row of hooked thole pins, attached to longitudinal members, as an outrigger. Their structure does not appear strong enough to support the weight neither of men nor even of oars, whereas an additional supporting component cannot be seen. It is therefore more likely that specific wooden pieces are represented on the graffito, placed in a row and used as hooked thole pins arranged at intervals along the sides of the ship. Several wrecks in northern Europe demonstrate similar hooked thole pins (rowlocks). In the Nydam Oak ship, early 4<sup>th</sup> century AD (Casson 1994, 145; Greenhill 1995, 177), and in the Mangersnes relicts, 1<sup>st</sup> to 3<sup>rd</sup> centuries AD (Christensen 1995, 73-80; Christensen 1996, 76), there were hooked thole pins similar to those in graffito no. 18. The same type of hooked thole pins was found in several northern European shipwrecks of later periods, including the Kvalsund shipwreck, around AD 700, the Sutton Hoo, 630 AD, the Årby shipwreck, 9<sup>th</sup> to 10<sup>th</sup> centuries AD and the Klåsted shipwreck, 10<sup>th</sup> to 11<sup>th</sup> centuries AD (Landström 1961, 56; Christensen 1996, 77-79; [www2.rgzm.de/navis/home/frames.htm](http://www2.rgzm.de/navis/home/frames.htm)). Hooked thole pins seem to have been very common in the maritime tradition of northern Europe since the Roman Iron Age (**fig. 5**), whereas equivalent evidence from the Mediterranean is missing, and the ship graffito no. 18 of the Tower of the Winds is the only representation of this kind of hooked thole pin known of from southern Europe, at least during the Roman period.

The distance between two adjacent thole pins in the graffito varies from 44-65 mm, the average distance being 57 mm. On the basis of this average we can estimate the length of other parts of the ship. For example, assuming a distance of some 0,8-1 m between two adjacent thole pins on the actual ship (reasonable distance between two adjacent oarsmen lengthwise) the overall length of the represented ship would consequently be between 17.5-22 m. It is worth mentioning that the Nydam Oak ship with 15 similar hooked thole pins per side has an estimated overall length of about 24 m (Arenhold 1914, 183; Christensen 1996, 76), while Crumlin-Pedersen (2003, 225) mentions 28 oars on both sides and a hull length of 22.8 m. However, ship graffiti are often not to scale – neither entirely nor partly – so it is not safe to conclude an estimation of actual dimensions of the depicted ships.

Furthermore, reference should be made to the straight line on the lower parts of the hulls of both graffiti, which represents either a rectilinear keel or a flat bottom part of the hull (**fig. 2**). If we presume that a sternpost or another central component of the structure of graffito no. 18 appears on the stern (mentioned above) and perhaps on the bow of the ship (cf. below), then it is notable that there is no such component on the middle part (**fig. 3**). The lack of a represented keel on the middle part of this graffito opens the question whether there was a plank-keel or whether it was a flat bottom vessel that was intended (other lines next to the bottom of the ship have been considered irrelevant). This of course contradicts the



**Fig. 6** The golden medallion of the Arras treasure commemorating the entry of Constantius I Chlorus into London after the defeat of Allectus in AD 296. British Museum, London. – (After a calendar photo).

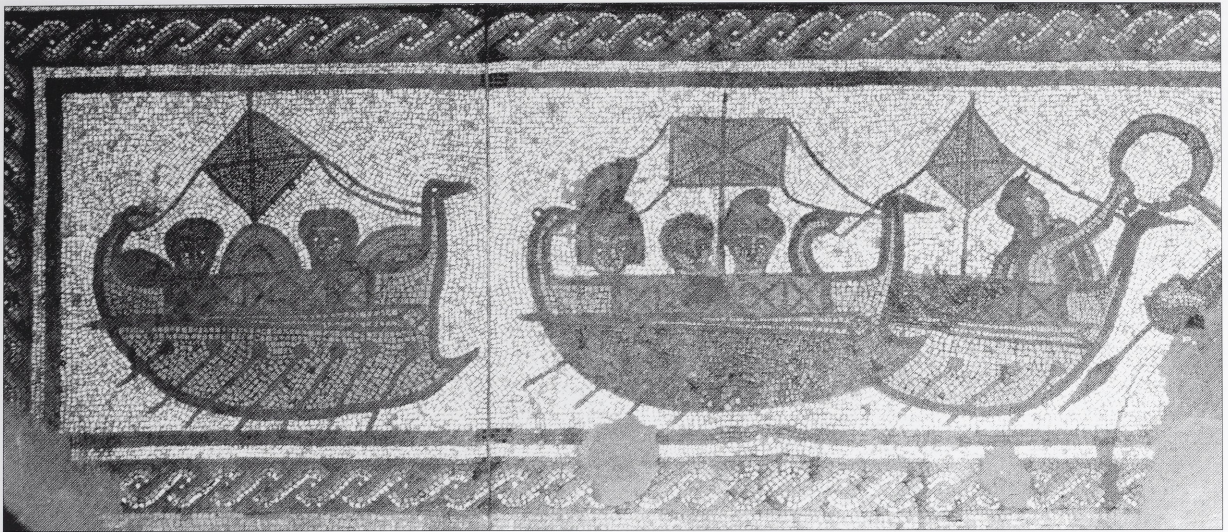


**Fig. 7** Coin struck under Allectus; the Emperor of the Britannic Empire, AD 293- 296. – (After Schaaff 2003, cat. no. 83a).

common assumption that Aegean ship-types usually had a real keel, but in this case the represented ships may belong to a rare type in the Aegean shipbuilding tradition.

The bows of both ships bear other very interesting details for study. The massive projection, like a cutwater or ram on the lower fore part is repeated almost identically on both vessels. This is definitely similar to those that appear in other Mediterranean ships' representations like on Trajan's Column, 113 AD (Morrison / Coates 1996, 248-251) or on several mosaics in Tunisia, 3<sup>rd</sup> and 4<sup>th</sup> centuries AD (Yacoub 1995, 24. 156. 172f. 175f. 192. 230. 234 figs 3a. 73. 85-88. 101. 116. 119) including the Althiburus mosaic (Pomey 1997, 83). The projections of these graffiti have the shape of the »retroussé nose« type of prow that apparently characterizes some specific representations of cutwater or ram (Basch 1983a, 133; Basch 1996, 50; Guillerm 2001, 215-219). For this type of ship the same projection could rather be considered a ram than a cutwater, since the main means of propulsion seem to have been the oars. It is possible, though, that this kind of ram was used rather as a »status symbol« according to Basch (1996, 56) than as an offensive weapon. In the case of the projection on the bow of the Neumagen type (fig. 4), the function of a false ram, for example as a kind of »camouflage« against pirates has even been suggested (Bockius 2001, 150). Furthermore it is not clear whether several lines next to the ram of ship graffiti no. 18 represent other structural components or are mere irrelevant scratches. One of them is a line that runs exactly above the lower line of the ram. This line possibly indicates a central component of the bow such as a massive lower timber or some other strong structure that reinforces the ram, determining its possible role as an offensive weapon for ramming. On the other hand, Casson (1995, 120-122) proposes that merchant galleys could have had a concave shaped prow with a fore foot jutting out as prominently to the waterline so as to strongly resemble a warship's ram. In this case the ships used oars as well as sails for propulsion and they were called *histiokopōs* in Greek or *actuaria* in Latin. There is even a picture on the Althiburus mosaic (3<sup>rd</sup> or 4<sup>th</sup> century AD) identified as an *actuaria* with the distinctive concave prow. We should mention, though, that the projections on the bows of both ship graffiti are more prominent than most other examples. This could be an indication of representations of rams rather than simple cutwaters.

Other considerable features of the bows are the figureheads, in the form of an intimidating animal head on the stem posts, and the small rectangular foresails located above them. The same feature appears on both vessels with appealing similarities. It is therefore likely that the artist worked carefully on the details of the bow on both ships, intending to represent a specific type of ship. There are several examples with



**Fig. 8** Detail of the mosaic from the Roman villa at Low Ham, 4<sup>th</sup> century AD. Somerset Country Museum. – (After Marsden 1964, 260).



**Fig. 9** Detail of the »taverna di vino« relief on a sarcophagus from the necropolis of the Isola Sacra, Ostia, 3<sup>rd</sup> century AD. Museo of Ostiense. – (After Pomey 1997, 13).

similar figureheads on the bows of ships from the late Roman period. The best known is the Neumagen type, represented in several depictions such as the Neumagener monument, in Trier, Rheinisches Landesmuseum (Basch 1987, 491; Bockius 2001, 148-153; 2008), early 3<sup>rd</sup> century AD (fig. 4); the golden medalion (fig. 6) of the Arras treasure (Bockius 2001, 151) commemorating the entry of Constantius I Chlorus into London after the defeat of Allectus in AD 296; the coins (fig. 7) struck under usurper Allectus who was Emperor of the Britannic Empire, AD 293 to 296 (Schaff 2003, 10) and the mosaic (fig. 8) from the Roman villa at Low Ham, 4<sup>th</sup> century AD (Marsden 1964, 260). On most of the previously mentioned northern European representations there is a similar intimidating animal head on the top of the bow and a cutwater or a ram protruding from the stem post. Further depictions showing a similar bow with an animal head also appear in some Mediterranean finds such as the vessel on a mosaic from the Palazzo Barberini in Italy (Casson 1994, 136), the vessel in the »taverna di vino« relief on a sarcophagus from the



**Fig. 10** The sarcophagus from the catacombe of Praetextatus in Rome, 3<sup>rd</sup> century AD. Museum of the Catacomb of Praetextarus. – (After Pomey 1997, 126 bottom).



**Fig. 11** The coin struck in Corinth during the Hadrian period (AD 117-138). – (After Schaaff 2003, cat. no. P7a).



**Fig. 12** The medallion of Diocletian (AD 284 to 305), reverse. Bibliothèque national de France, Paris. – (Photo by courtesy of BnF).

necropolis of the Isola Sacra, Ostia (fig. 9), the vessel on the sarcophagus from the catacomb of Praetextatus in Rome (fig. 10), both 3<sup>rd</sup> century AD and some of the vessels on the Commodus medallion from Rome, AD 191 (Pomey 1997, 126. 133). We should mention, however, that the distinctive ram that appears on the graffiti of Athens lacks among the above-mentioned Mediterranean illustrations. On the other hand two other pictorial sources, the vessel on a coin struck in Corinth (fig. 11) during the Hadrian period, AD 117 to 138 (Basch 1987, 491) and the vessels on the medallion of Diocletian (fig. 12), AD 284 to 305 (Dolley 1954, 312 pl. 2), represent ships that appear to have a figurehead like an animal head on the top of the stem (the pictures are not very clear) and a ram on the prow. Both of these representations have been identified as war galleys contrarily to the above-mentioned Mediterranean merchant ships with figureheads. Another characteristic common to the latter two representations and the ship graffiti are the high sides of the ships, which seem rather unusual for war galleys. Thus the type of bow represented on



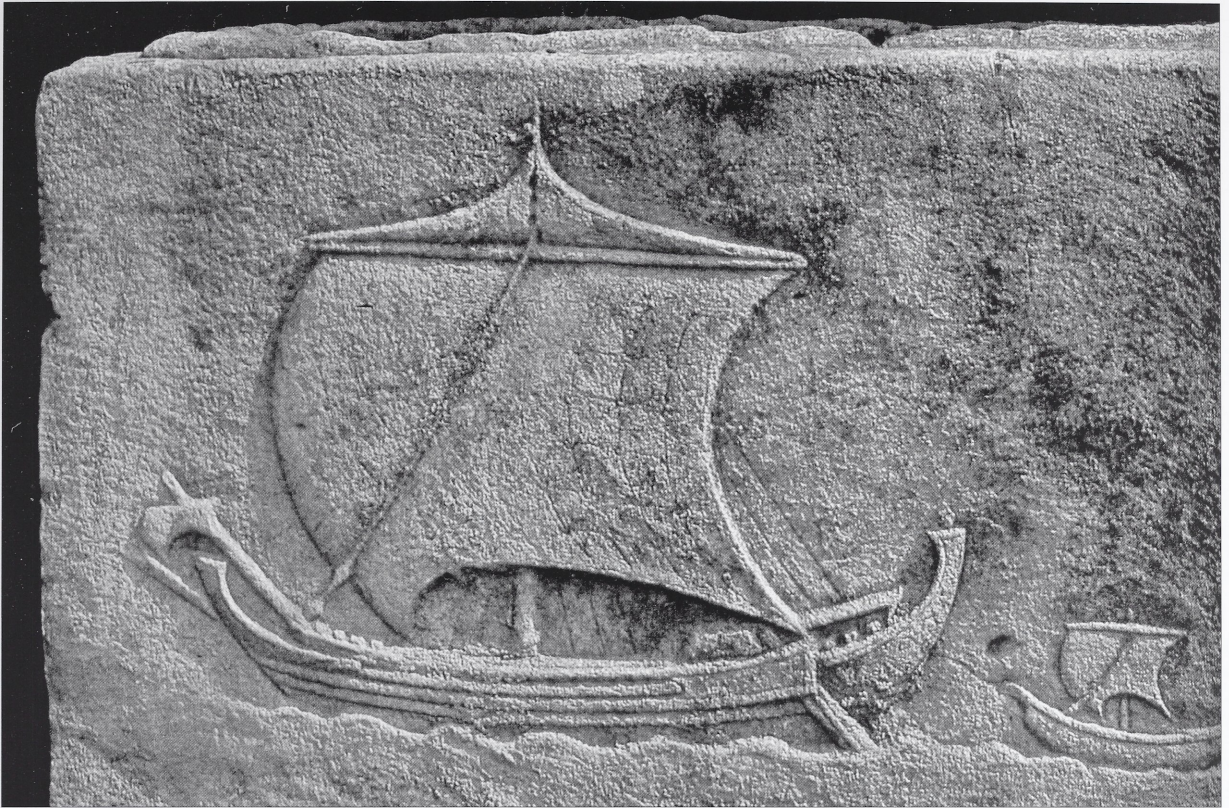
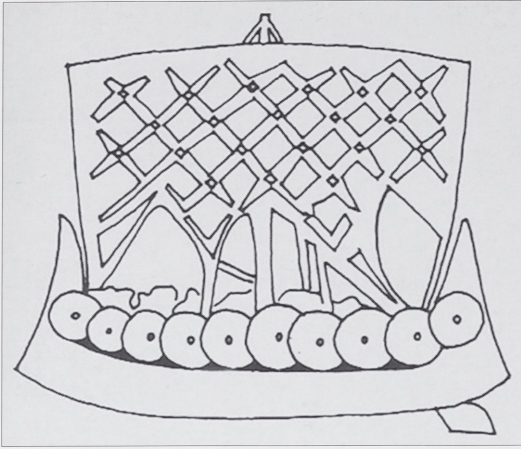


Fig. 13 The Sinope Sarcophagus, 4<sup>th</sup> century AD. Museum of Sinope. – (After Ballard 2001, 64-65 bottom).

the graffiti is similar to the Neumagen type: There appear to be two parallel Mediterranean depictions between the 2<sup>nd</sup> century and the early 4<sup>th</sup> century.

The Athens ship graffiti have the additional feature of foresails set on small masts placed right above the animal-heads on the bows. This foresail does not appear on any of the previously mentioned representations of vessels with an animal head on the bow and is a unique element on this type of ship. We can identify its appearance on some other contemporary types of Mediterranean vessels. The foresail (*artemon*) was common throughout the Mediterranean but is not documented on ships from northern Europe. The *artemon* appears on many ship representations on Roman coins from the 1<sup>st</sup> and 2<sup>nd</sup> century AD, including coins of the periods of Nero, Hadrian, Lucius Verus and Commodus (Schaaff 2003). The same sail-type appears on the tomb relief in the British Museum, ca. AD 100, Trajan's Column reliefs AD 113 (Morrison / Coates 1996, 248-253), the bas-relief on the sarcophagus of Sidon, 1<sup>st</sup> or 2<sup>nd</sup> century AD, the mosaics in the Square of the Corporations in Ostia, circa AD 200, and the Copenhagen sarcophagus, second half of 3<sup>rd</sup> century AD (Basch 1987, 463. 470. 472. 479 fig. 1031. 1056. 1059. 1062. 1082). Regarding the foresail, Casson (1995, 115) mentions that »by the first century AD – perhaps even earlier, but depictions are lacking so we cannot be sure – it had developed in two directions. On most ships it had become a headsail pure and simple, very much like the bowspritsail of later ages, a small rectangle of canvas on a mast slanting over the bows [...]. The foremast did not lose its forward rake until close to the beginning of the fourth century AD, when it was sometimes stepped almost upright«. The foresails in the graffiti of the Tower of the Winds are typical examples of pure and simple headsails. Additionally they have lost the forward rake and, according to Casson, should be dated close to the beginning of the 4<sup>th</sup> century AD.



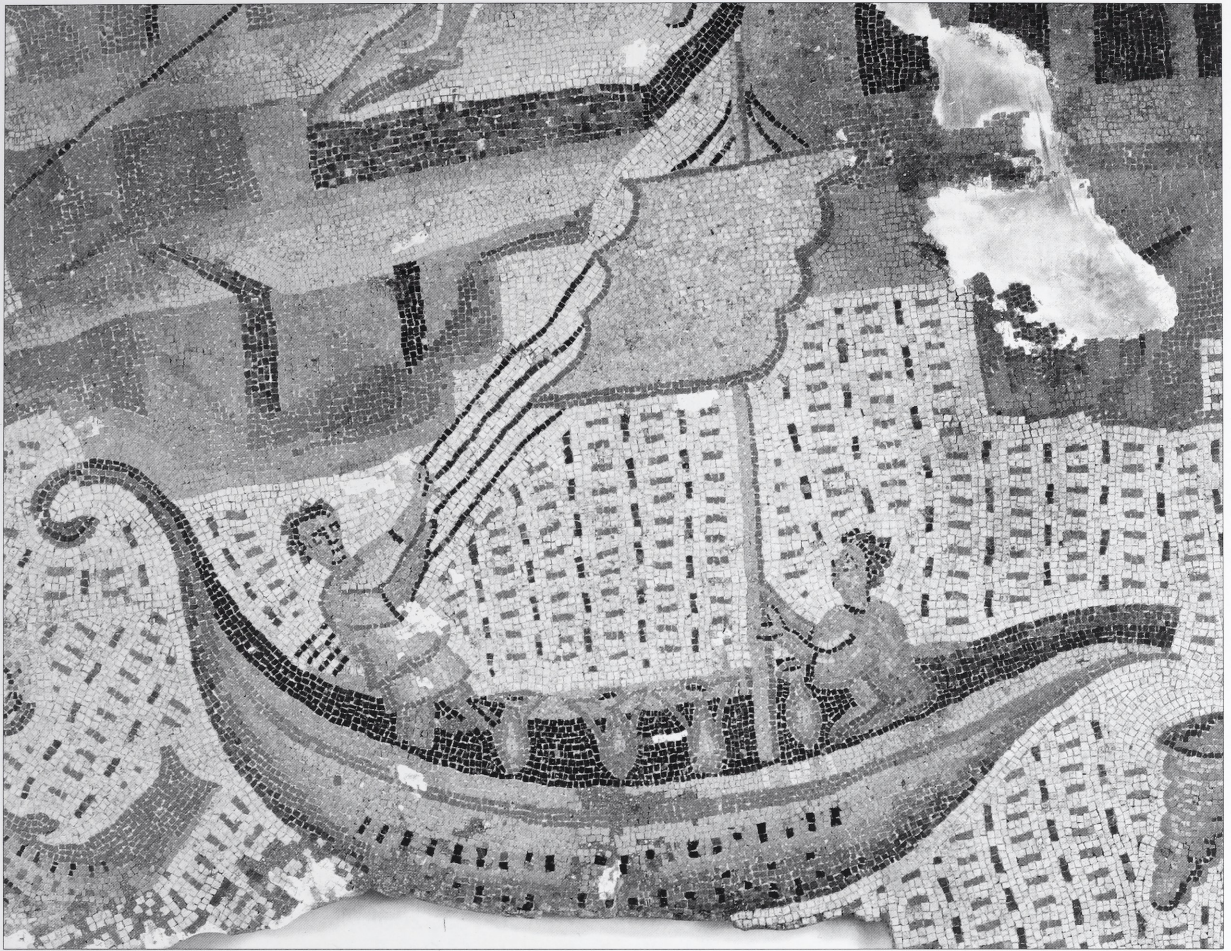
**Fig. 14** Stone engraving from Gotland (ca. AD 700). Gotlands Historical Museum. – (After Greenhill 1995, 189, fig. 225 bottom).

Moreover, the shape and size of these foresails could also be compared to the foresail on the Sinope Sarcophagus (fig. 13), 4<sup>th</sup> century AD (Ballard 2001, 64f.), and the foresail on a graffito found in the Sidi Khrebish (Berenice) near Benghazi, AD 50 to 250 (Basch 1987, 486). However, both of these representations depict sailing ships whereas the Athens graffiti represent oared vessels.

Behind the bow there are further lines representing other components of the vessels. In both graffiti there are lines placed above the sheer strakes similarly to the one mentioned previously on the sterns. These lines indicate either raised fore decks or a rail-bulwarks, as mentioned above. Raised bulwarks on the bow and the stern appear on a few other representations already mentioned, such as the Neumagen ship (fig. 4) and the vessel on the sarcophagus of Praetextatus (fig. 10), both from the 3<sup>rd</sup> century AD.

Other lines, only in graffito no. 18, are yet more difficult to explain. For example, the lines above the hooked thole pins and near the bow, which possibly represent a kind of superstructure like a forecastle. A similar superstructure, identified as a fighting tower, appears on a Roman warship on a relief found at Palestrina, Italy / Vatican Museum (Casson 1994, 92), second half of the 1<sup>st</sup> century BC. Other lines are located on the side of the hull and near the bow. They may extend a structure at the side of the bow of the ship. If these lines indeed belong to the ship graffito they would then appear to represent a feature similar to the epotis of the Greek galleys. However the epotis was the front part of an outrigger, which in these graffiti is missing. In conclusion, this could only be a short side extension at the level of a fore deck perhaps in order to facilitate the handling of ropes and anchors.

Ship graffito no. 18 also shows lines of the vessel's main sail. A rather short mast right in the middle of the ship yields a rectangular sail of rather unusual proportions: The width is three times the height of the sail whereas in other contemporary representations from the Mediterranean (including those mentioned above) the width ranges from almost equal to double the height of the sail. This »square« sail of very low aspect ratio could sail only before the wind and should realistically be considered an auxiliary means of propulsion. There is not even the isosceles triangle topsail that often appears above the main sail of late Roman ships (fig. 13). Before further discussion on the appearance of the sail of the graffito, it should be noted that an architectural cornice of the tower interior is located right above the graffito, which might delineate a technical limit for the full representation of the ship's sails and mast. In this case, we are faced with a somewhat random proportion of the main sail and an omission of the top of the mast, which puts an end to any further discussion. Nevertheless, as already noted, the graffito is remarkably well drawn and therefore we cannot neglect the possibility that these proportions of the represented sail had been drawn intentionally. In this case, the appearance of this unusual main sail requires some discussion concerning the way it functions. The extended width calls to mind Egyptian<sup>4</sup> and prehistoric Aegean<sup>5</sup> sailing ships with a boom along the foot as well as a yard along the head. The boom along the foot of the sail was necessary in order to set the extensive broad sail properly. In the context of Roman Mediterranean ships there is no representation of a boom along the foot of a rectangular sail. This prehistoric tradition had been abandoned many centuries before in the Aegean. The boom along the foot of the sail was used, however, on a »regional« type of sail that appears in two depictions found in Southwest Germany: On a Roman stone relief found at Jünkerath, Lkr. Bitburg-Prüm, and vessel no. 2 on the mosaic floor of the Roman villa in Bad



**Fig. 15** Detail of the Bad Kreuznach mosaic from the Roman Villa, 2<sup>nd</sup> to 3<sup>rd</sup> centuries AD. Vessel no. 1. Schlossparkmuseum Bad Kreuznach. – (Photo V. Iserhardt, RGZM).

Kreuznach, both dated to the 2<sup>nd</sup> to 3<sup>rd</sup> centuries AD (Ellmers 1996, 61-63; Bockius 2001, 144-147). This type of sail featured two horizontal spars and a boom along the foot in addition to the yard. This is different to the Mediterranean »square« sail and incomparable to the sail of the ship graffito of the Tower of the Winds. Furthermore the sail of the graffito seems to lack horizontal spars and a boom along its foot and thus its extensive width must have been controlled another way. A boomless foot of such a broad sail could be set with the use of some kind of »multiple sheets«, which would be adjusted along the length of the foot, thereby trimming the sail and controlling the airflow over it. Typical square sails of low aspect ratio and »multiple sheets« appear on the early Gotland picture stones (ca. AD 700) in the Baltic Sea (fig. 14). According to Greenhill (1995, 209) »these were vessels from the Baltic trade and for trade eastwards perhaps down the Russian rivers to the Black Sea, which involved portages where only relatively small vessels could be dragged over dry land«. Additionally, it is mentioned by Landström (1961, 57) that a yard at the foot of the rectangular sail was used on the early Gotland sailing ships. Multiple sheets possibly appeared on the sail of another boat (vessel no. 1) from the depictions found in Rheinland-Pfalz (fig. 15) and mentioned above ([www2.rgzm.de/navis2/home/FramesE.cfm](http://www2.rgzm.de/navis2/home/FramesE.cfm)). These are among the earliest representations of sails in northern Europe and perhaps bear some influence from the Mediterranean »square« sail. The solution of the use of »multiple sheets« in the ship graffito of the Tower of the Winds is the more prob-

ably way to trim this sail if its proportions are represented correctly. Moreover, in this graffito there are short lines between the foot of the sail and the hull of the ship (such as the sheet at the aft corner of the sail), which could be considered as «multiple sheets». Thus the sail of the graffito is another unusual feature that distinguishes it from common representations of Mediterranean ships and seems to have parallels only in Northern Europe.

Furthermore there are ropes such as the forestay, the backstay, the shrouds and the halyards that are clearly shown in the graffito. The absence of brails is noticeable although two vertical lines have been drawn within the area of the sail and in a symmetrical position to the axis of the mast. These lines could be some kind of reinforcements of the canvas and are extended below the foot of the sail, constituting two of the possible «multiple sheets». The last point concerning the rig is the absence of braces: Two and three short lines appear respectively at both ends of the yard-arms instead of braces. They seem merely indicated since they are not extended further below to meet the line of the gunwale of the ship. These short lines certainly belong to the ship graffito but an explanation of their function remains problematic. The limited height of both mast and sail constitute a rather slow means of propulsion but at the same time this rigging could be easily lowered during rowing or mooring.

## CONCLUSION

The type of vessel represented by both graffiti in the Tower of the Winds is an oared ship with an auxiliary main sail and a steering foresail. This type is not fully attested to by any contemporary pictorial source. Closest comes the one represented by the ship of the Neumagen monument (fig. 4). Basch (1987, 487) suggests that this type is a warship<sup>6</sup> but Casson (1995, 120) relates the same river galley to one of the types of merchant galleys, named *actuaria*. Bockius (2001, 150-153; 2008), in turn, also identifies characteristics of a warship, but finds arguments to prove a specific non-military transport scenario of the sculpture. On the other hand there are three Mediterranean representations of ships with animal heads on the bows, those of the sarcophagi from Sacra (fig. 9), and Praetextatus (fig. 10) and the Commodus medallion, which appear to represent merchant sailing ships, though without cutwater projection on the bow. Meanwhile, two further representations of ships, on the coin from Corinth (fig. 11) and Diocletian's medallion (fig. 12), appear to bear both the animal head and the forward projection of a ram or a cutwater. Both latter representations have been identified as warships (Dolley 1954, 312; Basch 1987, 491). Thus, we suggest that the ship graffiti of the Tower of the Winds represent a type of warship, probably the same as the one depicted on the coin from Corinth or the other one on the Diocletian's medallion and very similar to the Neumagen type. In this case, the ship graffiti of the Tower of the Winds should be dated between the 2<sup>nd</sup> and the beginning of the 4<sup>th</sup> century AD.

The representation of this specific type by these graffiti is invaluable in the provision of unique details about the appearance of galleys of the late Roman period. Some of these details allow us to consider an unusual comparison with ships of the Baltic Sea. The hooked thole pins, which are apparent in graffito no. 18, are so common in several shipwrecks in northern Europe, since the Roman Iron Age, that they are almost emblematic of the pre-Viking shipbuilding tradition (fig. 5). Furthermore, the trimming and controlling of the broad sail by »multiple sheets« at the foot of the sail, which appear probable for graffito no. 18, is a fundamental characteristic of the early sailing ships of the Gotland picture stones (fig. 14) and possibly appeared on vessel no. 1 of the mosaic of the Roman villa in Bad Kreuznach (fig. 15), mentioned above. Thus, it is astonishing how the Mediterranean characteristics such as the inwards inclined stern, the ram and the *artemon* foresail coexist with the hooked thole pins and the »multiple sheets« known from the

northern European maritime tradition. These remarkable ship graffiti seem to represent some sort of missing link between the Mediterranean galleys of the late Roman period and the pre-Viking shipbuilding tradition. But what can be the historical connection between Athens of the 2<sup>nd</sup>, 3<sup>rd</sup> or perhaps early 4<sup>th</sup> century AD and northern Europe, particularly the Baltic Sea? Indeed, there is evidence for the transfer of shipbuilding technology in the northern seas of Europe during the late Roman period (Lewis / Runyan 1990, 12f.). Roman conquerors attempted to import Mediterranean ship types and construction methods into northern Gaul, Germany, and Britain, without success (Hocker 1995, 88). If the ship type of the graffiti of the Tower of the Winds was common among the vessels of the imperial navy (it may even appear on a coin and a medallion as noted above) then some of its typological characteristics may have been diffused in the northern shipbuilding tradition. However, if the ships of the Tower of the Winds belong to a local Aegean type, a hybrid of the warship types of the late Roman period, then how could this possibly be connected to the pre-Viking shipbuilding tradition? This hypothetical question prompts us to consider the possibility of this transfer of technology occurred via inland waters, such as the river ways connecting the Black and the Baltic seas. Trade as well as migration along Russian rivers were quite common during this period. The Goths and other invaders such as the Heruls from the Black Sea maintained constant communication with the Baltic Sea through these inland waterways. The Heruls were a barbarian tribe in the Black Sea region; they had some skill in seafaring and along with a number of other tribes launched a daring naval attack on the cities of the Aegean. In AD 267/268 the Heruls attacked Athens, destroying nearly all the buildings of the Agora, the central public space of the city, in the process. A fleet appears to have been specially formed either with ships provided by local cities or with ships of the Italian fleets brought by the emperor Gallienus, in order to prevent the passage of the Heruls (Rankov 1995, 85). In these Aegean and Black Sea expeditions, special war galleys of the type of the Tower of the Winds may have taken part. Following such a hypothesis the possibility is considerable that the Heruls and other barbarian tribes could have been responsible for introducing some elements, copied or adapted from the specific ship-type of the Tower of the Winds to the Baltic Sea – by their ships and via the Russian rivers.

## Notes

- 1) I would like to thank Dr. Hermann J. Kienast and the 1<sup>st</sup> Ephorate of Prehistoric and Classical Antiquities for giving me the opportunity and permission to study the graffiti and Dr. Ronald Bockius, RGZM Mainz, for his kind assistance and for directing my attention towards parallels and useful material.
- 2) There are several representations of Roman ships with a similar stern shape such as the painting from Ostia, late 2<sup>nd</sup> to early 3<sup>rd</sup> centuries AD in the museum of the Vatican library, and the ship (fig. 9) on the sarcophagi of the necropolis of the Isola Sacra, Ostia, ca. 3<sup>rd</sup> century AD (Pomey 1997, 117, 119).
- 3) An asymmetrical, but schematic, quarter (lateral) rudder appears on the sarcophagus from the catacombe of Praetextatus in Rome (fig. 10), 3<sup>rd</sup> century AD, and on the ships depicted on the Carthaginian stelae of the 3<sup>rd</sup> BC (Basch 1987, 398-400). – On the other hand, asymmetrical quarter rudders have been found in many shipwrecks in northern Europe, from the time of the Nydam ship (early 4<sup>th</sup> century AD) to the age of the Vikings (Åkerlund 1965, 255-258; Crumlin-Pedersen 1966, 251-261; Salisbury 1965, 359-361). Furthermore, unsymmetrical quarter rudders on Greek ships appear on several depictions of early periods (6<sup>th</sup> to 4<sup>th</sup> centuries BC).
- 4) There are several representations from Egypt but it is worth focussing attention on the ships depicted on the Hatshepsut's expedition to Punt, Deir el Bahri during the New Kingdom (Wachsmann 1998, 18-29).
- 5) A prominent example is the sailing vessel in the miniature frieze of the flotilla of the wall painting from the West House at Acrotiri, Thera. Circa 1650 BC (Wachsmann 1998, 95-98 fig. 6, 20).
- 6) Particularly regarding the ships on the mosaic from the Roman villa at Low Ham (fig. 8) see Marsden (1964).

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### Römische Schiffsgraffiti im Turm der Winde in Athen

An den Innenwänden des Turms der Winde am Nordabhang der Athener Akropolis konnten zwei römische Schiffsgraffiti identifiziert werden. Beide zeigen einen Schiffstyp mit unten spitz vorspringendem Bug nach Art eines Rammsporns, einen oben in ein Tierprotom mündenden Vordersteven sowie Besegelung mit Groß- und kleinem Vorsegel. Es handelt sich um ein Ruderschiff mit alternativer Besegelung. Motivische Parallelen fehlen. Dem dargestellten Fahrzeug kommt das »Neumagener Weinschiff« am nächsten. Weitere Details der Graffiti, wie Riemendollen und die über ein ungewöhnliches Reffsystem verfügende Takelage, legen Vergleiche mit Schiffsfunden und Schiffsdarstellungen aus dem nördlichen Europa einschließlich des Ostseeraums nahe.

### Roman ship graffiti in the Tower of the Winds in Athens

Two Roman ship graffiti were identified on the interior walls of the Tower of the Winds on the northern slope of the Acropolis of Athens. Both represent a type of ship with a massive pointed projection on the lower fore part, the head of a figure on the upper fore part and a small rectangular sail on the top of the bow. This is an oared type of ship with an additional main sail. As yet there are no motive parallels (in contemporary pictorial sources) known of. The most similar type is the ship of the Neumagen monument. Furthermore other details of the graffiti, such as the thole pins and the sail with possibly »multiple sheets« at the foot of the sail, allow us to consider some unusual parallels in shipwrecks and representations of ships from Northern Europe including the Baltic Sea.

### Graffiti romains dans la tour des vents à Athènes

Deux graffiti de navires romains ont été identifiés à l'intérieur de la tour des vents, sur le versant Nord de l'acropole d'Athènes. Les deux graffiti représentent un type de navire avec une proue proéminente en dessous qui prend la forme d'un éperon, un étambot supérieur dont l'embouchure est un protome animal ainsi que la voilure: une grande et une petite voile avant. Il s'agit d'un navire à rames avec une voilure d'appoint. Aucun parallèle n'est connu à ce jour, c'est le »Neumagener Weinschiff« qui se rapproche le plus de ce type de navires. D'autres détails du graffiti, comme les attaches de rames, les gréments dont le système d'attache des voiles est original permettent de proposer des comparaisons avec les découvertes et représentations de navires du Nord de l'Europe en incluant la Baltique. L. B.

### Schlüsselwörter / Keywords / Mots clés

Griechenland / Ägäis / Mittelmeer / Schifffahrt / Graffiti / Schiffsdarstellung  
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