CONTRIBUTION TO THE KNOWLEDGE OF 8th CENTURY B.C. SHIP REPRESENTATIONS

νέες ώκεῖαι ῶς εἰ πτερόν ηέ νόημα (Ομηρος η. 36)

Dedicated to my husband Evangelos Tzahos

The beginning of the 8th century B.C. saw some important changes in Greek life. The spirit of the age is expressed in the visual arts¹. After three centuries of silence, following the downfall of the Mycenaean world, the first pictures with narrative figured scenes appear again. They are radically new and they are in accordance with Geometric visual and creative principles, and they are a purely Attic invention². Pictures of ships are already found at the end of the 9th century B.C³. But figured scenes with ships appear in the first quarter of the 8th century B.C.⁴. They coincide with the great Greek colonization, which started early in the 8th century B.C. On the shores of three continents great Greek cities were built and they attained high levels of commercial, maritime, and cultural development. The Greeks sailed over seas in their strong vessels, which were now provided with a ram⁵, an important new feature, which was to change naval warfare radically.

The number of representations of ships during that period is considerable⁶. We can distinguish two types of ships, the merchant ships and the warships. The merchant ships were broader and heavier, whereas, the warships were slim and light and correspond to Homer's description⁷ of his heroes¹ ships as swift and hollow (undecked). Nevertheless, the interpretation of some important elements in the construction of the ship, as suggested by horizontal and vertical lines, is problematic. The pictorial conventions of Geometric art create ambiguity often critical for our understanding.

The representations of some more geometric ships can be added to the already published material. I believe that the new elements they offer, are useful and will give us an opportunity to reconsider some of the known representations. Among the evidence useful for the dating of these new pieces is the representation of the human figure on some of them⁸.

During an excavation at Agioi Theodoroi in Corinthia at a site called Moulki, a number of Geometric tombs came to light⁹. This district is the site of the ancient Corinthian city of Cromyon.

Of special interest to us is an oenochoe (fig. 1), found in tomb 4, which also contained four other vases. The height of the vase is 0,34m. its max. diam. is 0,22m. and its base diam. is 0,135m. The clay is light orange; the surface is covered with black to brownish paint. Our oenochoe is of Attic fabric, according to the results of the atomic absorbsion analysis¹⁰. The oenochoe is of standard type, with a broad low ring foot, a tall body with a high straight neck, ending in a trefoil mouth, and a vertical handle, decorated with horizontal lines between two verticals; in a reserved band on the central lob of the mouth there are vertical strokes. In a reserved panel on the neck there is a hatched maeander running right, between three horizontal lines above and a dogtooth band underneath between two triple bands.

The body is decorated with five triple reserved bands. In a reserved panel between two mastoid knobs on the shoulder, we have a representation of a complete ship to the left (fig.2). Two painted Semicircles accentuate the knobs at each end of the panel. The form of the oenochoe and the system of body decoration with triple reserved bands present similarities to an oenochoe from the Kerameikos Cemetery from tomb 22 no.298¹¹, which is dated to the middle geometric II period¹². It also resembles another oenochoe no. 2145¹³, which is dated to the middle geometric I period¹⁴. For our oenochoe, a dating at the end of the first quarter of the 8th cent. B.C., or at the beginning of the second is very probable.

Examining the representation of the ship on our oenochoe we observe the following. Its total length with the ram is 0,09m. The line of the stern continues along the lower part of the hull to the tip of the ram ($\xi\mu\betao\lambda_0$). The ram is long and pointed. The bow (η πρώρα) is a solid concave stem with two projections ($\tau\alpha$ προεμβόλια). Above, the high stem post inclines slightly forward, then backwards, parallel to the hull. The bow area lacks room for a bow device. The platform by the bow (τo ($\kappa\rho_1o$) is surrounded by a protective palissade. The stern (η πρύμνη) is high, and curves well backward over the ikrion, which is an ample platform without railing. The lower part of the hull is solid. Above it is a thin line, probably representing the gunwale. The space between them is intersected by 19 verticals, which probably form a decorative band. Above the gunwale are 10 vertical posts, which may represent the tholepins ($\tauo\alpha \sigma \alpha \lambda \mu o \omega_2$) for the oars ($\tau \alpha \kappa \omega \pi c_2$). In the stern part there is a steering oar ($\tau o \pi \eta \delta \lambda \iota_0$). Amidship there is a mast ($o \iota \sigma \tau \delta c_2$), which, as in all geometric representations, is shown no taller than the bow and stern or naments, the steira and the aphlaston. The yard ($\tau o \kappa \epsilon \rho \alpha c_2$) is raised up to the top of the mast. From the yard hangs a rectangular sail ($\tau o \iota \sigma \tau \delta$), intersected by verticals, which denote the brails; two braces ($o\lambda \kappa o c_1$) start from the end of the yard.

If we accept, that the band intersected by verticals on the top of the hull is decorative, and the 10 vertical posts are the tholepins for the oars, then, this is a twenty oared ship, and it belongs to the one level type.

The idea that the 19 openings were oarports and not a decorative band, or the frames is less probable. Contemporary examples of the same type of ship, such as the one on the skyphos in the Eleusis museum no. 910¹⁵, show the same band intersected by diagonals, which could not have been used as oarports. Furthermore, if the 19 openings were oarports, then the ship would have been a fifty oared vessel. However, the dimensions of our ship are more appropriate for twenty oars, a standard type known from Homer¹⁶.

The evidence we have here is not decisive for the categorization of this ship as either a warship, or a merchant one. But taking into consideration the small number of ship representations during the M.G. period, their connections with sea battles and the importance of warfare in that period, *I* believe, that our ship is a warship, indicating probably at the same time the occupation of its owner¹⁷.

A similar ship without a sail appears on a bronze fibula (fig. 3) from tomb 41 of the Kerameikos cemetery¹⁸, dated to the Middle geometric I period, at the end of the 9th century B.C.

On the one handle skyphos in the Athens National Museum no. 18471 (fig. 4)¹⁹, we have two ships that exhibit the characteristics we mentioned above in the description of the Agioi Theodoroi ship. In this case, however, the vertical hatching on the top of the hull may be interpreted as indicating the frames ($\tau \alpha \epsilon \gamma \kappa o(\lambda \alpha)$ of the hull; an interpretation appropriate for

other examples too, even for the Agioi Theodoroi ship. The skyphos can be dated to the Middle Geometric II period.

The hydriskos²⁰, which was found in the same tomb, as the skyphos already described, remains unidentified; however, according to photographs, which appeared in the publications, it shows two ships with the same characteristics, as those mentioned above. Here we see the yard without sail, with fore and rear braces as on the Agioi Theodoroi ship, as well as a rare feature, the brailing ropes.

The skyphos in the Eleusis Museum no. 910 (fig. 5), which we have already mentioned²¹, is the most important piece of the group, because here we have one of the earliest appearance of the human figure. It shows an attack on a beached ship of the same type. The human figure is shown in total silhouette. Even the eyes are not shown, in contrast to figures in Late Geometric pictures. Figures are hardly ever standing still, and they are not static in form. They are floating in the air. The painter did not have a pictorial prototype and he immitated nature²².

The same type of ship can be found even later, on a krater in the Louvre no. A.525²³, which belongs to the Dipylon Master workshop, dated to the middle of the century, in the Late Geometric la phase.

But none of these ships is shown with a sail. On the ship of the Agioi Theodoroi oenochoe we have the earliest appearance of the sail in Geometric art.

The krater in the Metropolitan Museum of Art no. 34112^{24} , also of the Middle Geometric period, is of a later date than our oenochoe. Part of a sail is preserved on one of the two ships represented. Here the bird's eye view, shown on the Eleusis skyphos, has gone. The people fighting are shown as marching troops. The composition is more rigid, than the much freer composition on the Eleusis skyphos. The figures are silhouetted abstract forms. Heads are formless with pointed chin protruding. The human figure has begun to be geometrised.

Later, in the middle of the century, a good number of ships of the Dipylon group, have sails²⁵. Now these sails resemble checkerboards. Here we have a fragment of krater in the Athens National Museum no. 802²⁶, with a representation of a ship with a sail (fig. 6). It is rectangular with squares. The horizontal lines denote the seams while the verticals denote the brails. With one hand the helmsman holds the sail and with the other the sailyard brace, which is tied to the balustrade in the bow compartment. Ropes forming the sheet are attached to the balustrade.

Concerning the context of the Agioi Theodoroi oenochoe, we have already mentioned above, that within the same tomb were found another four vases. The analysis of the samples taken from these vases have shown two of them to be Corinthian while one is Attic²⁷. These vases are the following:

a) A hand made hydria (fig. 7); high 0,465m., max. diam. 0,352m; coarse corinthian clay, yellowish buff, surface stroke polish. Broken at the neck; a fragment from the flanged shape rim is missing. Two mastoid knobs on the shoulder; horizontal handles and the vertical one are cylindrical; ribbon base, flat underneath. We can compare it with the hydria of the tomb 16 of the North Cemetery at ancient Corinth²⁸.

b) A coarse aryballos (fig. 8); high 0,065m., max. diam. 0,062m., base diam. 0,032m.; fine orange attic clay. Broken on the shoulder; one piece from the flanged shape rim is missing. Cylindrical handle; flat base. It is comparable with the one from grave 97 of the Kerameikos Cemetery no. 358²⁹.

c) A skyphos (fig. 9); high 0,034m., max. diam. 0,226m., base diam. 0,135m.; fine yellow clay. Two small pieces missing. Paint dark brown to orange. Low ring base concave underneath; rolled handles; slightly flaring rim. Panels under the handles; the reserved panels in the handle zone front and back are decorated with chevrons; groups of small vertical lines inside the rim. It is identical with the skyphos from tomb 16 of the North Cemetery at ancient Corinth³⁰.

d) A trifoil-lipped oenochoe (fig. 10); high 0,11m., base diam. 0,063m.; fine yellow clay; complete and unbroken. Dark paint flaked off. ring base; rolled handle. Four stripes around the neck; groups of chevrons on the shoulder; four stripes around the belly; horizontal lines on the handle; mouth and lower body are covered with paint. Close to this vase is the oenochoe from tomb 17 of the North Cemetery at Ancient Corinth³¹.

The dating of these vases is the second quarter of the 8th century³²; this dating coincides with that given for the oenochoe bearing the ship representation,³³. the fifth vase of the tomb 4 of the Agioi Theodoroi Cemetery.

The second document of our research is a gold band (fig. 11 a,b). It was found during an excavation in the city of Athens at nos. 23-24 Kriezi Square in the tomb 106³⁴. Four skyphoi were found in the same tomb, which will be examined after the band.

Hammered out into a very thin sheet³⁵, with a whole at each end, the band is 0,41m. long and 0,018m. broad.

It is divided into metopes, which are separated by triglyphs. Each triglyph is composed of three vertical strips. two of the triglyphs are more elaborate, and are composed of a cross hatched band between vertical strips.

The central panel is the largest and is filled with two superimposed horizontal designs. The main one is a waved motif formed by semicircles in two rows, the other is a lozenge chain (fig. 12). The representations of the two ships are at either side of the central panel. The two panels next to the ships each contain a horse, one of which is represented upside down, possibly due to a mistake of the craftsman. The two terminal metopes are larger and are decorated with a row of four hoplites with round shields. From behind each shield two spears project above and below. Two of the soldiers have been left unfinished, probably because of the thinness fo the sheet. A row of dots borders the panel at the top and at the bottom.

The ship to the left (fig. 13) of the central panel shows the greatest interest. It is presented with its bow to the left, without a crew. The ram is long with a rectangular end. The bow has a screen; the stempost inclines slightly forward, then curves aft, forming a horn. The stern is high and has a pronounced sheer. The hull is hatched with diagonals, which must be ornamental. Eight oars with spade-shaped blades emerge under the keel, suggesting that they were dipped into the sea over the farside. Sixteen vertical posts on the deck probably for the railing, which extends from bow to stern. In the stern part there are two steering oars, shown with a tiller. The mast has a forestay and a backstay. The yard is hoisted to the top of the mast, and the sail is reefed up to the yard. We should also note, that the masthead, the karchesion, is bisected. A bird with a long neck appears just before the ram, indicating the existence of a shore.

The lack of ship representations on gold bands does not permit any comparisons for the time being. The ships on gold, or bronze fibulae, differ in technique and in design.

We can compare the hatched hull of the ship and oars emerging under the keel, with those of the ship represented on the oenochoe in the National Museum in Copenhagen, no. 1628³⁶,

dated to the third quarter of the century, the Late Geometric IIa phase. It bears the representation of a fight on and around a ship. The essential parts of stem and stem are missing. The curve of the post on the left suggests the stern. At this curve stand three spears, suggesting that the ship is a warship; in front sits a figure, who might be the helmsman, holding the steering oar. Below the line on which he is sitting, there is a strip decorated with diagonals. From the bottom of the hull there emerge six oars.

Two steering oars are represented on some of the items, we have already seen: On the one handled skyphos in the Athens National Museum no. 18471³⁷, or on the ships of the Dipylon group³⁸. An interesting example too is the famous Attic krater in the British Museum no. 1899.2-19-1³⁹, dated to the third quarter of the century, the late Geometric IIa phase. The drawing follows the Dipylon master's archetype; but the painter of this original vase is more remarkable for his innovation, a ship with two superimposed rows of oarsmen, usually interpreted as a two bank type ship. Also the Corinthian krater in the Royal Ontario Museum no.C.199⁴⁰ has two steering oars.

Steering oars shown with a tiller can be found on some ships on bronze fibulae, dated to the Late Geometric II period, or even later. The engraved plate fibula in the Athens National Museum no. 11765⁴¹, shows a ship to the right; the stern compartment has a rail and a steering oar with a tiller. On a second engraved plate fibula in the Athens National Museum no. 8199 (fig. 14)⁴², we have a ship with steering oars shown with a tiller. Similarly on another fibula in the British museum no. 121⁴³; on another at the National museum at Copenhagen no. 4803; and on the ship depicted on the fibula from Thisbe in the Berlin Antikenmuseum no. 8396⁴⁵.

A reefed sail on a yard occurs only on a fragment of a skyphos from Eretria⁴⁶, where below the yard hang brailing ropes; however, it is dated later, at the beginning of the 7th century B.C.⁴⁷.

The karchesion, represented as a bisected top is shown on a number of plate fibulae. The attic gold plate fibula from the Elgin Collection in the British Museum no. 1960.11-1-46⁴⁸, shows a careful engraving of a ship to left. The mast has a bisected top, and the backstay is attached to the rails in the stern compartment. A bisected top is shown on the bronze fibula in the Athens National Museum no. 8199⁴⁹; on the one in the British museum no. 121⁵⁰; on another in the same museum no. 3204⁵¹; on two fibulae at Oxford no. 1808.-624⁵², and no. G.376⁵³; and on one more in the National Museum of Copenhagen no. 4803⁵⁴ with a ship to the right. We can also discem a mast with a bisected top on some of the ships of the Dipylon group, as the one depicted on the fragment krater in the Athens National Museum no. 3134.45⁵⁶ with a ship to the left.

Returning to our band, the second ship (fig. 15) to the right of the central motif is less impressive, than the one already described, but equally well designed. It is turned to the left. The bow with its long narrow ram has a screen; the stempost curves forward, then upward, and widens at the end. The stern post has a pronounced sheer. The hull is intersected by diagonals. Eight oars emerge under the keel; they are probably dipped into the sea over the far side, as on the first ship. Fourteen vertical posts on the deck form the railing; they could have also been interpreted as the tholepins. In the stern part there are two steering oars, shown with a tiller. The mast amidships has a forestay and a backstay. Here again the karchesion for raising the mast is shown, as a bisected top.

We have already said, that the two terminal metopes bare the depiction of four hoplites holding round shields (fig. 16,17). The shields, each decorated with a row of dots, cover the upper part of the bodies, with the thighs appearing below them. The legs are apart, bent at the knees. The heads are round with protruding nose and chin, while a dot denotes the eve.

Decisive for the dating of our band is the procession of hoplites with the round shields. It is in the late Geometric II period, that the procession of soldiers with round shields appear in vase painting⁵⁷. At first the shield reaches down to the knees. Later the thighs apear below it. We can compare our hoplites with those depicted on two Attic amphorae. The one in the Ashmolean Museum at Oxford no. 1916.55⁵⁸, which follows the Dipylon workshop tradition, is dated in the Late Geometric IIa phase. The next one in the Athens National Museum no. 894 (fig. 18)⁵⁹, by the homonymous painter, working in the classical tradition, is dated in the Late Geometric IIb phase; and shows the Late Geometric version of the human figure, which here has reached its highest development; it is a characteristic example of a vigourous and progressive style of painting, looking ahead to the earliest orientalizing work of the Analatos Painter.

A date at the end of the third quarter of the 8th century B.C., or even at the beginning of the fourth quarter is appropriate for our gold band.

The gold band is unique both, for its technique and for its subject matter. The design is carefully incised with a blunt edge tool by an able artist directly on the gold sheet and not by impression. The sheet, as we have already said, is very thin. We can see the holes of the compass used for the central motive and for the shields. This method of incision is widely used even today in Greece for the production of small thin votives. The art and the style of the design on our band reflects the classical figure style. The purely geometric conception in the arrangement of the panel decoration, and the clarity of the line, point to an Attic workshop. We may say, that here we have the representation of a naval expedition⁶⁰, given in its essential elements, the hoplite, the ship, and the horse, framed in panels, in the style of the period. Diadems of gold foil with patterns impressed on them begin to reappear for the first time, after a long break, in graves of the 9th century B.C. A gold industry appears to have been established in Athens in the first half of the 8th century B.C., owing to her commercial activities and imports of various precious materials⁶¹. The Kriezi Street gold band gives us another example proving, that Athenian society at the end of the 8th century was richer and more refined than those of the other Greek states.

To the third quarter of the 8th century point the four vases, found in the same tomb with our band. These vases are now in the reserves of the 3rd Ephoria.

a) Skyphos no. 4052 (fig. 19); high 0,076m., lip diam. 0,113m., base diam. 0,06m. Light brown clay; restored from few pieces, a small bit missing. Black paint. Low ring base, concave underneath; wide body curving inward at the top; slightly flaring rim; rolled handles. The lower body and the interior are covered with paint. The handle zone is decorated with a large panel front and back filled by two sections of hatched meander running left; each panel is flanked by a triglyph, formed by three vertical lines. Over the edges of the handles there is a star. Three horizontal strips on the handles. Below the handle zone two horizontal lines. Around the rim three horizontal lines; on the reserved band inside the rim groups of 11 vertical lines. It resembles the group of the skyphoi, which were found during the excavation at Erechtheiou Street in the tomb $\Theta 2^{62}$.

b) Skyphos-pyxis no. 4053 (fig. 20); hight with lid 0,153m., hight without lid 0,093m., lip diam. 0,155m., base diam. 0,09m. Light brown clay; restored from a few pieces; bits and chips missing. Black paint. Low ring base with concave bottom; straight lip; strap horizontal handles. Conical lid witk bow cylindrical knob flanged shaped on top. The lower body and the interior are covered with paint. The handle zone is decorated front and back with a large panel filled by three sections of hatched meander running left; the ends of the panels are stopped by a column of chevrons between a pair of triple vertical lines; the handles are decorated on their outer faces with small vertical lines between two horizontals, at the middle two cross diagonals. Below the handle zone three horizontal lines. The decoration of the lip is as following; at the circ cumference on a reserved band there is a doted line between two couples of lines; furthermore there are another two reserved bands with three lines, around the handle three reserved lines, on the disk a star surrounded by concentric circles. The shape and decoration of the skyphos resembles the one in the Munich Museum of Staatliche Antiken sammlungen no. 8601⁶³.

c) Skyphos-pyxis no. 4088 (fig. 21); hight with lid 0,154m., hight without lid 0,095m., lip diam. 0,16m., base diam. 0,094m. Light brown clay; intact some chips missing. Black paint. Shape and decoration identical with no. 4053. The lid decoration instead of two sets of reserved bands has one and around the knob instead of three are five. This skyphos too is comparable with the one in Munich Museum of Staatliche Antikensammlungen no. 8601⁶⁴.

d) Skyphos-pyxis no.4087 (fig. 22); hight with lid 0,145m., hight without lid 0,097m. Yellow-red clay. Restored from two pieces; a small fragment missing. Black paint turned to orange. The shape and subsidiary decoration resembles the two previously described skyphoi; it differs in the panel decoration: here, we have the motif of the horizontal dotted wavy line and underneath two reserved lines; the panel is stopped at the ends by a triglyph of three vertical lines. Around the knob of the lid seven reserved lines. The dotted wavy line, which appears at the end of the Late Geometric lb phase⁵⁵, dates the vase in that period.

The Late Geometric lb phase is the terminus post quem for the dating of the vases of the tomb 106. But, even an early dating for this kind of vases, which were destined in life for every day use, does not prevent a later dating for the gold band. Taking into consideration, that the gold band is an object of purely funerary use, it could be the last of the offerings to the dead. And very probably it was a special command.

The last document of this study is the following. Among the pot sherds collected during an excavation in Argos at Danaou street no. 4 in the property of Katsaros⁶⁶, we found two sherds with a representation of a ship (fig. 23). The clay is yellow buff, its analysis has shown⁶⁷, that the sherds belong to a vase from an Argive workshop.

The whole piece is preserved to a length of 0,07m. and at a height of 0,049m. By its characteristic profile, curving at the top, I assume, that it belongs to the shoulder of an oenochoe. The picture of the ship would have been either part of a representation in a zone around the shoulder, or else the decoration in a panel on the shoulder under the spout of the vase, which is more probable.

Here, we have the middle section of a warship, sailing to the right. The hull is intersected by verticals, which probably represent the frames. The line of the deck is shown across the top of the frames. Through two of the openings, formed between the frames. on either side of the mast, we can see the mast-step system for securing the mast, by two pairs of superimposed horizontal supports. The yard is raised up to the top of the mast. From the yard hangs a trapezoidal sail hatched with diagonals, which denote the brails. On either side of the mast there is an oarsman. Each man sits on a rowing bench, facing towards the left, that is, away from the direction of the bow. Each rower holds a heavy oar with both hands. The oars apparently extend into the water over the far side. The bodies of the oarsmen are Y-shapd, the shoulders are rounded, the hands and the feet are not formed.

Behind the rower to the right of the mast we see the forepart of a horse. The animal is reduced to its simplest terms; the legs are short and denoted by single strokes; there are no fetlocks, and even the hoofs are omitted. The high carriage of the head, the protruding shoulder and the backward bend of the forelegs are local characteristics. The presence of the horse suggests, that the ship is a horse transporter. The two rosettes in front of the horse and below it are decorative. Over the animal's head and at the same level as the yard, we can see a small part of a horizontal line, which is easily recognized, as the ending of the steira; on geometric representations the mast is shown at the same height as the bow and steira ornaments.

Knowing that the mast is set amidships, we are able to calculate the length of the ship (fig. 24)⁶⁸. The distance from the mast to the bow is 0,06m. (without the ram); thus, the length of the ship is 0,12m.; the height of the hull is 0,014m. - 0,017m., and with the mast 0,047m.. Here we have a ratio of about 1 to 8.

The style of the painting of our vase shows kinship with the miniature argive style, dated to the late geometric II phase, about the end of the third quarter of the 8th century, or at the beginning of the fourth⁶⁹. We can see affinities in the rendering of the horses with those on the Argive oenochoe in the Athens National Museum no. 843, related to the Verdelis painter⁷⁰.

Useful for the dating of our fragment is an Attic pitcher, in the Athens National Museum no.18.542⁷¹, dated to the Late Geometric II a-b phase. Here, we have a musical aspect of a funerary ritual⁷². We can see some similarities to our Argive oarsmen, such as the tendency to elongate the waist, or the concave curve for the upper outline of the shoulders, the rounded edges of the shoulders and the protruding chin and nose of the head; even one stool, on which one figure is seated, is hatched like the one on our Argive fragment.

I believe, that the Argos fragment belongs to the Late Geometric II phase, at the end of the third quarter, or at the beginning of the fourth quarter of the 8th century.

Argive examples with ship representations are rather rare, and the existing items do not resemble the one found in Danaou Street.

In her communication Mrs Palaiologou-Kourahani presented two new items found in the city of Argos. One is a pithos with a representation of two merchant ships, which seem to be the earliest surviving argive examples. The other ship is represented on an open vase partly preserved. It shows a one level type, and it seems to be a contemporary of the one from Danaou Street, or even slightly earlier.

The potsherd from the Argive Heraeum, now in the Athens National Museum no.25428 preserves the bow and forepart of a ship to the right (fig. 25)⁷³. Inside we can see the back of a seated man. A helmeted archer is aiming towards the ship. The archer is still in the Dipylon painter tradition, although the figured scene is different from the Athenians. The Heraeum fragment must be earlier, than the one from Danaou Street.

A potsherd from Tiryns bears a representation of the middle section of a one level ship to the left⁷⁴. Six oarsmen and part of two others are preserved. The arrangement of the oarsmen recalls that of the oarsmen on the Louvre's krater no.522⁷⁵; nevertheless the krater is dated in the Late Geometric Ia phase; while it seems to me, that the Tiryns fragment belongs to the Late Geometric II phase, judging from the Y-shaped bodies of the oarsmen, the rounded shoulders and the profile of the heads, showing a pronounced chin and nose.

To these examples should be added a pair of firedogs in the form of warships, from a warrior's grave in the Argos museum nos. F.10, F.11⁷⁶.

Concerning the hull of the ship from Danaou Street, it is interesting to note, that since the 12th century B.C. some vase painters depict the hull intersected by verticals, denoting thus the frames ($\tau \alpha \epsilon \gamma \kappa o i \lambda \iota \alpha$), as we can observe on the ship depicted on the pyxis from Pylos, now in the Athens National Museum no. 6098⁷⁷.

The ships of the Dipylon group very commonly depict a type of ship with two levels, with⁷⁸, or without⁷⁹ intersections; they could be thought, as depicting ships with a raised deck⁸⁰. Those with intersections are rowed from the upper level⁸¹; while those without intersections are rowed from the lower⁸², or even from both levels⁸³. On the other hand there are ships, showing warriors fighting on the upper level⁸⁴, which proves the existence of a deck. On a ship of the same group we see the warriors standing on both levels⁸⁵; furthermore, we have examples of ships with warriors standing on the lower level⁸⁶, thus proving, that the deck of these ships is not continuous; very probably the deck covers the middle section of the ship through out its length. But none of these ships can be interpreted with certainty, as depicting a pireme, the invention of which is assigned to the Phoenicians⁸⁷.

Morrison and Williams have pointed out, that the two krater fragments from the Acropolis, now in the Athens National Museum, with openings in the hull, show a two level ship, and they interpret the openings as oarports.

On the first piece no. Acr. 276⁸⁸, the middle section of a ship to the left is preserved. Along the hull are reserved squares, alternating with painted rectangles. In each square we see rowers' arms. Above them is the deck and the gunwale with three rowers, and between them part of the mast of the ship.

The second fragment no. 277⁶⁰ again shows the middle section of a ship to left. A band just below the gunwale is decorated with diagonal hatching. Another horizontal band above is decorated with a lozenge chain. The zone between these two horizontal bands is divided into alternating open and hatched rectangles. In each port there is one rower, and on the deck there are three more. The rowers of both ships are represented behind the front side of the hull, as it is suggested by the decorated bands, which cannot represent the farside of the hull, at it was maintained for the ships of the Dipylon group. To avoid confusion, the artist made use of the convention, to paint the oars of the oarsmen of both levels, as if they were dipped in the water from the farside. Furthermore, another argument for considering both these ships as two level ships, is their similarity to a ship depicted on a krater fragment in the Athens National Museum no. 15.992⁸⁰, and this ship is considered as a bire⁹¹, because it is clearly rowed from two levels.

I believe, that the two krater fragments from the Acropolis cannot be later than the Late Geometric IIa period, judging from the figures of the rowers, which are in the Dipylon painter tradition.

On another fragment from the Acropolis, now in the Athens National Museum no. 259⁸², we have the middle section of a ship to the right. Four large oval ports in the hull frame rowers, which are partially covered by Dipylon shields; but we cannot tell with certainty, that we have here a two level ship.

The protocorinthian bowl from Thebes, now in the Royal Ontario Museum at the University of Toronto no. C.119³³ bears another representation of a two level ship. It shows nineteen oarsmen sitting on the top of the ship with their oars attached to the tholepins, while at a lower level are depicted twenty oarports with a tholepin inside of each.

In the late Geometric II period we have some more representations of ships with large or narrow openings in the hull; their design is simpler and they cannot be interpreted as depicting two level ships. The hull of these ships show similarities with the ship from Danaou Street at Argos. In these cases I believe, that the intersections in the hull can be interpreted as the frames of the ship, and the ships belong to a one level type with a raised deck.

The oenochoe at Hobart in the University of Tasmania no 31⁹⁴ preserves an image of the after half of a ship to the right, whose hull is depicted by rectangles, similar to those on the ship from Danaou Street. In two of these apertures there seem to be seated figures, while another figure sits above the deck. The remains of three oars cross the hull. The vase is dated to the late geometric IIa period.

Another oeochoe at Munich no. 8696⁹⁵ shows a scene of a shipwreck with a similar ship. The hull has eight openings resembling those on our painting from Argos. The shipwrecked men have crosshatched chests; the big round eyes with staring pupils give a new impression. We cannot tell whether this representation illustrates Homer's description in Odyssey, or whether the capsized ship merely illustrates a typical shipwreck. Images of everyday life are usual during the Late Geometric IIb period, to which the vase is dated.

A third oenochoe, which we have already mentioned, attributed to a Corinthian workshop, now in Berlin Antikenmuseum no. 31.43.45³⁶, depicts in a panel on the shoulder a ship with its hull intersected by vertical lines, which extend above the deck.

The Late Geometric II fragment krater from the Agora no. P.26817⁹⁷ shows intersections on its hull and belongs to the same type.

To these large scale examples we can add some more representations of ships with intersections on the hull depicted on bronze fibulae: The fibula in the Athens National Museum no.8199⁹⁹ already mentioned, attributed to the Ship Master; the fibula in the British Museum no.121⁹⁹ almost identical with the one in Athens and a third fibula in Berlin Antikenmuseum no.8396¹⁰⁰.

The ship depicted on the pot fragment from Danaou Street at Argos is of great importance, not only because of the rarity of argive ship representations, but also for the useful details it shows.

The mast-step system for securing the mast with two pairs of superimposed horizontal supports, provides a unique insight of an important detail of ship construction in the Geometric period. Some bronze fibulae, dated to the Late Geometric II period, or even later, depict the mast-step as a rectangular box without details: the bronze fibula in the National Museum of Copenhagen no.4803¹⁰¹, which we have already mentioned above; the two fibulae at Oxford no.1908.624¹⁰² and no.1893.266¹⁰³; the gold fibula from the Elgin Collection in the British Museum¹⁰⁴ and a fibula from Chaeronia in the Thebes Museum¹⁰⁵.

The mast-step as a rectangular box is also found in later pottery as the krater from Agrapidochori in Elis¹⁰⁶, and the fragment of a skyphos from Eretria¹⁰⁷, which we have already mentioned.

Returning to the Argos fragment, we observe, that the deck is not raised enough, to permit the insertion of rowers in the rectangular spaces, on the same scale as those on deck. The men are rowing over the farside, from deck level. Details of the near side are not shown. Our ship clearly belongs to the one level type with a raised deck. The artist was here trying to show a kind of cross section.

This representation of a ship carrying a horse is a rare one. Of course, horses are a favourite feature of argive iconography of the period, but not on a ship. Nevertheless we can find few examples on bronze fibulae: on the bronze fibula from Thisbe on the Berlin Antikenmuseum no.8396¹⁰⁸ the horse is shown in the bow compartment; and on a second fibula also from Thisbe in the same museum no.31013b¹⁰⁹ we see the same type of ship carrying a horse.

We learn from written sources, that horse-carrying ships were widely used. Herodotus mentions¹¹⁰ horse-carrying ploia and nees in Darius's fleet and later in that of Xerxes.

Thucydides says¹¹¹, that Perikles during the expedition against the Peloponnese in 430 used ships as horse transporters for the cavalry. But it appears that the Greeks transported horses in their warships from at least as early as the Mycenaean Period¹¹².

As regards our representation, we can conclude, that our ship is a warship, as are most of the 8th century ship representations, which was occasionally used as a horse transporter. We must not forget that local painters might have develop their own figured style; since Geometric Argive iconography is descriptive and at the same time depicts every day reality.

In conclusion, we may say the following:

The type of ship that appears at the end of the 9th century B.C. on the bronze fibula from Kermeikos Cemetery, remained unaltered in its general features, during the Middle Geometric period II until the appearance of the ship with a raised deck in the Late Geometric I Period, which was after the middle of the 8th century B.C. as seen on the ships of the Dipylon group. The ship on the Agioi Theodoroi oenochoe belongs to the first type, which is characterized by a low hull with a thin band on its top painted with vertical, or oblique lines; in the first case the lines may be interpreted as representing a decorative band, or the frames of the ship, while the band with the oblique lines could be interpreted only as a decorative. However the same type of ship continues down to the Late Geometric II Period; and the ships depicted on the gold band from Kriezi Street belongs to this one level type. Ships with a raised deck become common in the Late Geometric II Period. They, too, are of the one level type; such as the ship on the potsherd from Danaou Street. Some of these ships with a raised deck could be occasionally rowed from both levels alternatively, as the ships of the Dipylon group, but they are not real biremes. The interpretation of the ships, depicted on the Acropolis potsherds and the unique picture on the famous attic krater in the British Museum no.1899.2.19.1¹¹³ remains problematic.

The representations of the narrative scenes with the splendid warships in Geometric art, with

a few exceptions, are associated with the real world and probably depict events from the lifetime of the deceased persons, for whom the grave vases were made¹¹⁴. The great sea battles characteristic of the period about the middle of the century give way to images of every day life in the third quarter of the century. These changes in figures and compositions correspond to the new vision of the world, inticative of the period.

The frequency of 8th century B.C. ship representations and other nautical scenes in Attic vase painting provide useful evidence about the extent of Athenian trade at that time; their financial prosperity, and the role of navigation in their lives.

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NOTES

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- 1. J. L. Benson, Picture, Ornament, and Periodicity in Attic Geometric Vase-Painting, The Art Bulletin, 64, 1982, 542 ff.
- 2. J. N., Coldstream, Greek Geometric Pottery (1968), 26 ff.
- The bronze fibula from tomb 41 in the Kerameikos Cemetery: K. Kübler, Kerameikos V 1, Die Necropole des 10 bis 8 Jahrhunderts (1954), p. 175, 195, 236, Pl. 160f. D., Gray, Seewesen, Archaeologia Homerica, Band I, Kapitel G, (1974), G 21 no. E1. The pyxis from Lefkandi: M., Popham, An Early Euboean Ship, Oxford Journal of Archaeology, VI, 1987, 353 ff.
- 4. See: G., Ahlberg, Fighting on land and Sea in Greek Geometric Art (1971), 25-38. Gray, Seewesen G.21 G.25.
- 5. For the earliest ships see: L., Casson, Ships and Seamanship in the Ancient World (1971), p. 41 n.2 and p. 42 n. 4. For the geometric ships see: Casson, Seamanship, pp. 49-50, 52-53 and 58. See also Pindar, Pyth. 4, 191 and Herodot I, 166.
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- 7. Casson, Seamanship, 43-48. Gray, Seewesen, G.92 G.114, with bibliography G.158.
- 8. J. L., Benson, Horse, Bird and Man, The Origins of Greek Painting (1970), 77 ff.
- 9. G., Roux, Pausanias en Corinthie, (1958), 86-87. Δελτ. 17, 1961/62, Β' Χρονικά, σ. 52-54.
- 10. The sampling of the clay has been done by Mr Apostolos Voulgaris, conservator at the National Archaeological Museum of Athens, and the chemical analysis by Mrs Helen Mangou, chemist at the same museum. For the results see: Appendix, Table I, no.9 (vase 1).
- 11. Kerameikos V 1, 222-224, Pl. 75.
- 12. Coldstream, GGP, 26, Pl. 5b.
- 13. Kerameikos V 1, 236-238, Pl. 73.
- 14. Coldstream, GGP, 17, Pl. 3n.
- Wrongly reffered in the bibliography as no.741. Kraiker, in Neue Beitrage zur Klassischen Altertumswissenschaft (Festschrift B. Schweitzer, 1954, 36 ff. Pl. 2). J. M., Davison, Attic Geometric Workshops, Yale Classical Studies, (1961), 106, fig. 137. F. Matz, Geschichte der Griechischen Kunst I. Die Geometrische und die früharchaische Form (1950), 36f. 39f., Pl. 7. K. Fittschen, Untersuchungen zum Begin der Sagendarstellungen bei den Griechen (1969), 46f. n.232,239. Ahlberg, Fighting, 26 and 34ff., no. B11, p. 36, fig. 42,43, p. 59,97, fig. 105. Casson, Seamanship, 32,52,71 fig. 30. Gray, Seewesen, G 21 no. E4.
- 16. This is the smallest mentioned ship; it seems to have been used for ordinary dispatch and transport work; II 1. 309; Od. 1. 280; Od. 4. 669.
- 17. Schweitger, GGA, 37f.

- S. Benton, The Dating of Horses on Stands and Spectacle Fibulae of Greece JHS, 70, 1950, 20 no.57. Kerameikos V 1, 175, 195, 236, Pl. 160f. Gray, Seewesen, G.21, no. E1. The design published here is executed by Mrs Theodora Kakarouga.
- Davison, Workshops, 108f. P., Kahane, Die Entwicklungsphasen der attisch-geometrischen Keramik, AJA 44, 1940, Pl. 21,6. G. S., Kirk, Ships on Geometric Vases, BSA 44, 1949, 96, no. 1a, fig. 1. Morrison, GOS, 32, no. Geom. 26, Pl. 6c. Casson, Seamanship, 52 n.59. Gray, Seewesen, G.21, no. E2.
- 20. Kirk, Ships, 96, no. A2. Kahane, AJA 44, 1940, Pl. 22,1. Morisson, GOS, 32, no. Geom. 27. Gray, Seewesen, G.21, no. E3.
- 21. See above note 15.
- 22. Schweitzer, GGA, 35-37. Benson, HBM, 79f.
- CVA France, 18, Pl. 4, 3.6.7. Kirk, Ships, 98, no. 5, and 105, no. 19. E. Kunze, Disiecta membra attischer Grabkratere, Αρχ. Εφημ. Εις Μνήμην Οικονόμου, 1953/54, I, 162ff., Pl. 1; 2, 1. 2; 4, 2. Kunze, AJA, 61, 1957, 307 goes with F3c. Davison, Workshops, 135 Dip. B4, fig. 15a-c. Morrison, GOS, 25, no. Geom. 17, Pl. 4a. Schweitzer, GGA 44f., Pl. 39. Fittschen, Untersuchungen, 48f. Casson, Seamanship, 44f., 49f., 75, no.2, fig. 62. Gray, Seewesen, G22, no. F4, Pl. G VII a.
- 24. Kirk, Ships, 99, no. A6. BMMA, 1934, 170, fig. 1. Marwitz, JDI, 74, 1959, 103f.
- Kirk, Ships, 102f. no. 14-16 Pl. 40,1. E. Kunze, Disiecta Membra attischer Grabkratere, Αρχαιολογική Εφημερίς, Εις Μνήμην Γ. Π. Οικονόμου, 1953/54, I Pl. 5, 3 and 6, 1-2. Ahiberg, Fighting, 28 n.72. Davison, Workshops, 140 Dip. I F 18. Morrison, GOS, 22 no. Georn. 8, Pl. 2 c, d. Gray, Seewesen, G 22 no. F5 c, Pl. VII, b, d.
- 26. See note 25. Gray, Seewesen, G 22 no. 5 c, Pl. VII b. Here we publish a new photograph with the new piece.
- 27. See below p.351, Appendix, table I: no. 5 (vase 5) a skyphos, and no. 6 (vase 3) an oenochoe, which are corinthian; while no. 7 (vase 1) a coarse aryballos is Attic. The fifth vase of the tomb, the hand made hydria is corinthian.
- Cf. Blegen, C. W., Palmer, H., Young, R. S., Corinth XIII, The North Cernetery (1964), p. 23 and 41, Pl. 6, no. 16-9.
- 29. Kerameikos V 1, Pl. 156. Comparable also to the aryballos from the grave V of the potters' Quarter at Ancient Corinth: Newhall Stillwell, A. and Benson, J. L., Corinth vol. XV part III, The Potters' Quarter, The Pottery (1984), p. 13-4 and 20, Pl. 3 no.32. It belongs to the Argive monochrome class. The most likely date for the tomb is the first half of the 8th century B. C.
- 30. Cf. Corinth XIII, 23, Pl. 6, no. 16 10
- Cf. Corinth XIII, 24-26, Pl. 7, 17-1. Coldstream, GGP, 95, Pl. 18a. For tomb 4 and its content see: Δελτ. 17, 1961/2, B' Χρονικά, 53.
- 32. Tomb 16 of the North Cemetery is dated in the MG II period; cf.: Coldstream GGP, 95ff. Also tomb V at the Potters' Quarter is dated in the 1st half of the 8th century B. C. cf.: Corinth XV III, 13-14.
- 33. See above p. 3 n.12.
- 34. Δελτ. 22, 1967, Χρονικά Β 1, 95.
- 35. The techniques of gold relief production have been fully explained by Kunze, Reichel and Ohly: E. Kunze, Kretische Bronzereliefs (1931), 265f. (app. I). W. Reichel, Griechische Goldrelief (1942). D. Ohly, Griechiesche Goldbleche d. 8 Jhs. v. Chr. (1953). Since the friezes on gold bands, or parts of them, have repeated identical images, matrices must have been used to make them. Matrices made of hard material have been found. Also the accuracy and the fineness of their design advocates for the use of this method. The representations would have been hammered in positive into the thin gold plate with a soft hammer. But the Kriezi street band is worked by the method of incision, as we will see below: see p. 12.
- Kirk. Ships, 110ff., no. 36, fig. 3. CVA, Denmark II, Pl. 73 no. 4a. Davison, Workshops, Fig. 133. Morrison, GOS, 33, Geom. 29. Schweitzer, GGA, 49, Pl. 59. Ahlberg, Fighting, 25 and 29ff. no. B4, p. 29f., fig. 31-33. Gray, Seewesen, G.23, no. G6, Pl. G Xb.
- 37. See above note 19.
- 38. Krater fragment in the Louvre no. A 533. CVA, France 18, Pl. 6, 8. Kirk, Ships, 108 no. 28. Kunze, AJA, 61, 1957, 307. Davison, Workshops, 136, Dip. I B 15. Morrison, GOS, 23. no. Geom. 10, Pl. 3c. Casson, Seamanship, 55 n.73. Gray, Seewesen, G.22 no. F6, Pl. G VIIIc. Krater fragment in Brussels Cinquantenaire museum (ex Louvre no. 531) Kirk, Ships, 105 no. 21. Matz, Gr. Kunst, Pl. 13b. Morrison, GOS, 23, no.Geom 11, Pl. 4a.Casson, Seamanship, 55 notes 73 and 75. Gray, Seewesen, G.22 no. F8, Pl. G VIIc. Krater fragment in Athens National Museum no. 802. Morrison, GOS, 22, Geom. 8, Pl. 2d. Gray, Seewesen, G 22 no. F 5c, Pl. G VIId.
- A. S., Murray, A new Vase of the Dipylon Class, JHS 19, 1899, 198ff., Pl. VIII. E. Pernice, Geometrische Vase mit Schiffsdarstellung, Jdl, 15, 1900, 92ff. Pfuhl, MuZ. 72, fig. 15. R. Hampe, Frühe Griechische Sagenbilder iin Böotien (1936), 78f., Pl. 22. L. Curtius, Antike Kunst II, 1 (1938) 72, fig. 67. E. Buschor, Griechische Vasen (1969) 18, fig. 18. Matz, Gr. Kunst, 65, Pl 14 up. Hampe, Gleichnisse, 37, fig. 18b. F. Schachermeyr, Die Minoische Kultur des alten Kreta (1964). 314. fig. 164. Schefold, Sagenbilder, 22ff., Pl. 5c. G Neumann,

Gesten und Gebärden in der griechischen Kunst (1965), 18, fig. 6, p. 59f. D. Kallipolitis-Feytman, Les Louteria Attiques (1965), 29 no.2, Pl. 9. Morrison, GOS, 28 no. Geom 19, Pl. 4e. Fittschen, Untersuchungen, 51ff. (AA 2). Ahlberg, Fighting, 37 n. 97. Casson, Seamanship, 46, 49, 55, fig. 74. Gray, Seewesen, G 24 no. G15, Pl. G IX a.

- 40. Kirk, Ships, 113f. no. 38. Morrison, GOS, 36 no. Geom. 42, Pl. 7d. Schweitzer, GGA, 61, Pl. 76. Casson, 50, 75 no. 6. Gray, Seewesen, G 24 no. G 14, Pl. G XIc.
- From Krete. It is the latest and best piece by the Swan Master. See: Schweitzer, GGA, 209, 213, Pl. 233. Gray, Seewesen, G 25 no. G 18, fig. 18i. Morisson, GOS, 78 no. Arch. 20, Pl. 8e.
- From Thebes. Attributed to the Ship Master. P. Wolters, Βοιωτικές Αρχαιότητες, Αρχ. Εφ., 1892, 213f., Pl. 11,1. Blinkenberg, Fibules, 174 no. 3, fig. 206. Hampe, Sagenbilder, 98f. no. 13, Pl. 11. Schweitzer, GGA, 208, fig. 120. Morrison, GOS, 77 no.Arch.14. Gray, Seewesen, G 25, no. G 18, fig. 18g.
- From Thebes. Attributed to the Ship Master. Hampe, Sagenbilder, no. 93, Pl. 11. Morrison, GOS, 77, no. Arch. 15.
- 44. Attributed to the Ship Master. Hampe, Sagenbilder, no. 83. Morrison, GOS, 77, no. Arch. 16, Pl. 8d.
- A. Furtwängler, Erwerbungen der Antikensammlungen in Deutschland, AA, 1894, 115f. no. 1. Hampe, Sagenbilder, 98f. no. 60, p. 12 fig.1 H. L., Lorimer, The Hoplite Phalanx, BSA, 42, 1947, 117, fig. 11a. Schweitzer, GGA, 212, fig. 124.
- Αγγελική Ανδρειωμένου, Γεωμετρική και Υπογεωμετρική Κεραμεική εξ Ερετρίας, V, Αρχ. Εφ. 1983, 185, εικ. 10, Πιν. 64, αρ. 224 (χάραγμα πλοίου).
- 47. In this case the mast support a main top, the Karchesion, girdled with a protective railing, the crows nest, which is a later feature, found on items, dated later than the 8th century B. C. Miss Andreiomenou interprets the crow's nest as a flag. For crow's nests see: the ship on the bronze bow fibula in the British Museum, no. 3204: H. B., Walters, Catalogue of the Bronzes in the British museum, 1899, 37, figs. 85, 86. Schweitzer, GGA, 213, fig. 125. Gray, Seewesen, G 18, fig. 18e. See also the ship on the bronze bow fibula in the British antiquarium no. 31013a: Hampe, Sagenbilder, no. 62a, Pl. 4. Morrison, GOS, 75 no. Arch. 8, Pl. 8c. Schweitzer, GGA, 215. Gray, Seewesen, G25 no. G18, p. G 61 fig. 18c.
- Schweitzer GGA, 202, Pl. 231. Hampe, Sagenbilder, no. 88, 3, Pl. 7. Kirk, Ships, fig. 8. Matz, Pl. 38b. JHS, Archaeological Reports 1962-3, 53, fig. 3. Morrison, GOS, 78, no. Arch. 19.
- 49. See note 42.
- 50. See note 43.
- 51. Hampe, Sagenbilder, no. 100. Morrison, GOS, 76 no. Arch 10.
- 52. Hampe, Sagenbilder, no. 108. Morrison, GOS, 77 no. Arch. 17.
- 53. Hampe, Sagenbilder, no. 120. Morrison, GOS, 78 no. Arch. 18.
- 54. See note 44.
- 55. The Krater fragment in the Athens National Museum no. 802: Morrison, GOS, 22 Geom. 8(3), Pl. 2d. Gray, Seewesen, G 22 no. F5c, Pl. VIId.
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- 57. Coldstream, GGP, 61.
- 58. AM 53, 1928, Beil. 8, 13. Davison, Workshops, fig. 111a,b. Coldstream, GGP, 55f.
- 59. Jdl, 14, 1899, 197, fig. 6.1. BSA, 42, 1947, Pl. 22b. Davison, fig. 33. Arias Hirmer Schefton, Pl. 9. Coldstream, GGP, 58f.
- J. Cook, Athenian Workshops around 700, BSA, 42, 1947, 150, Pl. 19. Davison, Workshops, fig. 50. Schweitzer, GGA, 47, 49ff. Pl. 46. Coldstream, GGP, 81 no. XX2.
- 61. Schweitzer, GGA, 189 ff.
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- 63. CVA 3 (Deutschland 9), Pl. 122, 8601.
- 64. See note 63.
- 65. See Δελτ. 22, 1967, B 1, 95, Pl. 87 γ. Coldstream, GGP, 51.
- 66. Αρχ. Δελτ. 17, 1961/62, Χρονικά B, 56. P. Courbin, La Céramique Géometrique de l' Argolide (1966), 445 n.3.
- 67. See below appendix, table 1, no. 3.
- 68. The design is executed by Mrs Theodora Kakarouga.
- 69. Coldstream, GGP, 135ff.
- 70. Coldstream, GGP, 136, no. 7, Pl. 29a-b.
- W. Hahland, Neue Denkmaler des attischen Heroen und Totenkultes, in Festschrift Zucker (1954), 179, Pls 13-14, figs 10-12. Coldstream, GGP, 71, XIII no. 8. It belongs to the Rattle group.

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- 73. Ch. Waldstein, Argive Heraeum II (1905), 113, Pl. 57, 13. Ahlberg, Fighting, 26 and 34, no. B 10, p. 35, fig. 41. Gray, Seewesen, G 24, no. G 11.
- 74. P. Gercke U. Naumann, Tiryns Stadt 1972, AAA, VII, 1974, p. 20, fig. 14 and p. 23.
- Morrison, GOS, Geom.17, Pl. 4d. Coldstream, GGP, 30 (ii) no. 8. Schweitzer, GGP, 43, Pl. 39. Casson, Seamanship, 44f., 49f., 75, no. 2, fig. 62. Fittschen, Untersuchungen, 48f. Kunze I, 162ff., Pl. 1; 2, 1. 2; 4, 2. Kunze, AJA, 61, 1957, 307, fits F 3c Davison, Workshops, 135 Dip. B4, fig. 15a-c. Gray Seewesen, G 22, no. E 4, pl. G VIIa.
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- See the krater fragment in Cinquantenaire museum in Brussels: earlier in the Louvre, no. 531. Kirk, Ships, 105 no. 21. Matz, Gr. Kunst, Pl. 13b. Morrison, GOS, 23 Geom 11, Pl. 4 a. Casson, Seamanship, 55 notes 73,75. Gray, Seewesen, G 22 no. F8, Pl. G VII c.
- 80. Casson, Seamanship, 55f., believes for some of these ships that they show a raised deck, and thus they can be oared from either level, or from both, and he considers them as the forerunners of the bireme, which is considered a Phoenician invension. See Gray, Seewesen, G 84 G 90, where the author treats the whole subject.
- 81. Cf. the ship on the louvre krater no. A 517. see above note 78.
- 82. See note 79.
- Cf. the fragment krater in the louvre no. A 532: (CVA France 18) PI. 7, 2.3.5. Kirk, Ships, 106 ff. nos. 25, 29, 30, PI. 39, 3, 4. Morrison, GOS, 24 Georn. 14. Fittschen, Untersuchungen, 46 n. 230. Casson, Seamanship, 49, 52, 55f., 71, fig. 77. Gray Seewesen, G 23 no. F 10, PI. G VIII a.
- See the krater fragment in the Athens National Museum, no. 802: Ahlberg, Fighting, p. 26 B 8, p. 34, fig. 39.
 Cf. the fragment krater in the louvre no. A 528. CVA (France 18) Pl. 7, 7. Ahlberg, Fighting, 31, B 5, fig.
- 34. Morrison, GOS, 19 no. Geom. 4, Pl. 2 a. Coldstream, GGP, 31 no. 10. Schweitzer, GGA, 45, fig. 14. Gray, Seewesen, G 23 no. F 9. Seewesen, G 23 no. F9.
- 86. Cf. the ship on the krater fragment in the louvre, no. A 527: CVA (France 18), Pl. 2, 2 and 3, 7. Kirk, Ships, 100 no. 7 a, Pl. 38, 1. Kunze, I, Pl. 4, 1 down right. Morrison, GOS, 18 Geom. 2, Pl. 1 e. Ahlberg, Fighting, 25 and 33f. no. B 7, p. 32, fig. 36, 37, 38. Casson, Seamanship, 46 n. 22, p. 49, 51, 55, 71, fig. 68. Gray, Seewesen, G 22 no. F 3 a, Pl. G VI b. Compare also the ship on another fragment of the same krater: CVA (France 18), Pl. 3, 8. Kirk, Ships, 100 no. 8. Kunze, I, pl. 4, 1 (underneath left). Kunze, AJA, 61, 1957, 306 no. F 4. Davison, Workshops, 135 Dip. I B 3, fig. 13 a-c. Morrison, 18 Geom. 3. Schweitzer, GGA, 44f. Fittschen, Untersuchungen, 46 notes 230, 232. Ahlberg, Fighting, 26 and 37f. no. B 13, p. 37 fig. 45 and p. 41, 59. Gray, Seewesen, G 22, no. F 3c.
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- 92. Kirk, Ships, 109f. nos. 33, 34, Pl. 40,2. Morrison, GOS, 36 nos. Geom. 40, 41, pl. 7c. Gray, Seewesen, G 25 no. 17, Pl. G IX c.

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- 99. Hampe, Sagenbilder, no. 93, Pl. 11. Morrison, GOS, 77 no. Arch. 15.
- 100. Hampe, Sagenbilder, no. 60, fig.1. Morrison, GOS, 77 no. Arch. 13.
- 101. See above note 44.
- 102. Hampe, Sagenbilder, no. 108. Morrison, GOS, 77f. no. Arch 17.
- 103. Hampe, Sagenbilder, no. 110. Morrison, GOS, 76 no. Arch. 11.
- 104. See note 48.
- 105. Hampe, Sagenbilder, no. 140, Pl. 6. Morrison, GOS, 76 Arch. 12. Schweitzer, GGA, 205, fig. 115.
- 106. JHS, 1966 Arch. Rep. 11, fig. 16 up. Bass, 1972, 42, fig. 3. Gray, Seewesen, G 25 no. G 26, p. G 62, fig. 19.
- 107. See above note 46; in that case the mast step has been incorrectly interpreted as the captains cabin. 108. Hampe, Sagenbilder, no. 60, fig. 1. Moll, B. I, 42. Morrison, GOS, 77 no. Arch. 13. Schweitzer, GGA, 212,
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ILLUSTRATIONS

1. Oenochoe bearing a ship representation; Agioi Theodoroi, tomb 4. Ancient Corinth museum.

2. Detail of the Agioi Theodoroi oenochoe, the ship.

- 3. Bronze fibula, design. Kerameikos cemetery, tomb 41.
- 4. One handle skyphos, Athens National Museum no. 18471.
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- 7. Hand made hydria, Agioi Theodoroi Cemetery, tomb 4.

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10. Trifoil-lipped oenochoe, Agioi Theodoroi Cemetery, tomb 4.

11. Gold band, Athens Kriezi square nos. 23-24, tomb 106. Reserves 3rd Ephoria. a. photo, b. design.

12. Gold band, central panel.

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- 14. Engraved bronze fibula, Athens National Museum no. 8199.
- 15. Gold band, right panel with ship representation.
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- 20. Skyphos, 3rd Ephoria reserves no. 4053.
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- 22. Skyphos, 3rd Ephoria reserves no. 4087.
- 23. Oenochoe fragment with ship representation; Argos museum, from the excavation in the Katsaros propert
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APPENDIX

CHEMICAL ANALYSIS OF GEOMETRIC POTTERY BY ATOMIC ABSORPTION SPECTROSCOPY

Method: The samples selected for chemical analysis consisted of four Argive sherds and five Corinthian vases. They were obtained as a powder with a tungsten carbide drill.

The ceramic samples were prepared for analysis by the lithium metaborate fusion process and were chemically analysed by the atomic absorption spectroscopy technique (Hughes et al).

All the elements were determined by flame ionization except for titanium which was determined with a graphite furnace. The reference standards used were synthetically prepared in the laboratory with element concentrations which closely matched those of the clay matrices.

Results and discussion: The results of the chemical analysis, given in the table, indicate that the four Argive sherds and the Corinthian vases (No, 5,6) are similar in composition, especially eith respect to the origin-sensitive elements, magnesium, chromium and nickel. The three other Corinthian vases (No 7,8,9) and the two Attic sherds form a separate chemical group.

It is known that Attic pottery can be distinguished from Corinthian-Argive pottery on the basis of higher Mg. Cr and Ni contents in the former (eg, Jones 1986, Fig. 3.27, 202). In addition, Attic clays are usually less calcareous than those in the Corinthia - Argolid.

The two composition groups identified here have been compared with the published reference data for the two first group (No. 1-6) and the data for the Corinthia - Argolid, while the second group (7-11) matches the Attic reference data (see, for instance, Late Geometric and Protoattic craters from the Athenian Agora, Jones 1986, 156 and 683). No. 7,8,9 are therefore probably Attic imports.

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		Object No	Origin	Date	Si	AI	Fe	Na	к	Mn	Mg	Cr	Ni	Ti	Ca
	1.	Sherd with ducks	Argos (Katsaros property)	730-720 B.C.	60.02	13.34	6.44	1.95	2.24	0.09	4.49	0.053	0.044	0.57	6.63
	2.	Sherd with oval	11	n	63.27	13.23	6.15	1.99	2.52	0.10	4.58	0.051	0.032	0.74	8.21
	3.	Sherd with ship	n	n	63.35	13.05	6.01	2.13	3.08	0.11	4.58	0.058	0.033	0.63	8.70
	4.	Sherd with zig-zag	n	"	63.74	13.13	6.44	2.41	3.23	0.08	4.61	0.058	0.037	0.70	7.51
	5.	Tomb 4 vase 5 Skyphos	Ancient Corinth (cemetery of Ag. Theodoroi)	775-760	57.00	13.60	7.01	1.59	3.30	0.09	5.32	0.054	0.038	0.68	10.21
	6.	Tomb 4 vase 3 Oenochoe	и	"	63.25	12.47	6.29	1.65	3.21	0.11	4.66	0.052	0.037	0.71	10.34
	7.	Tomb 4 vase 2 Aryballos	"	H	51.92	9.22	6.30	1.07	2.39	0.10	6.88	0.067	0.099	0.78	14.52
	8.	Tomb 3 vase 9	"	н	57.47	13.74	7.01	1.47	3.31	0.07	6.18	0.111	0.104	0.85	5.35
	9.	Tomb 4 vase 1 Oenochoe with ship	"	W	59.84	13.96	7.15	1.32	3.36	0.07	6.46	0.098	0.086	0.91	6.72
	10.	National Museum sherd 802a	National Museum (Kerameikos cemetery)	740-730	57.36	12.58	6.44	1.54	2.87	0.09	6.25	0.086	0.064	0.89	8.72
	11.	National Museum sherd 802b	17	n	55.14	11.66	6.15	1.68	2.40	0.08	6.02	0.083	0.070	0.81	8.08

Chemical composition in oxides



















