

ΤΡΟΠΙΣ V TROPIS V

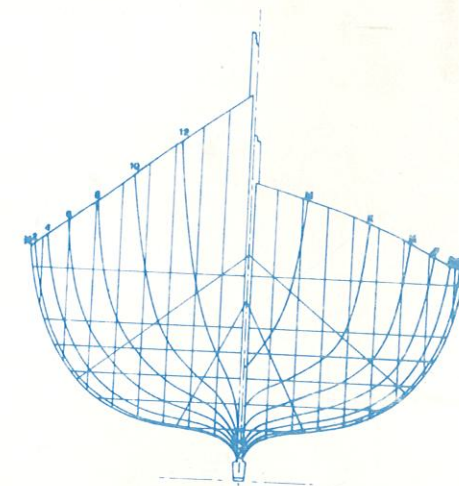
HELLENIC INSTITUTE
FOR THE PRESERVATION
OF NAUTICAL TRADITION

5th INTERNATIONAL SYMPOSIUM ON SHIP CONSTRUCTION IN ANTIQUITY

NAUPLIA 1993

proceedings

edited by
Harry Tzalas



ATHENS 1999

ISSN 1105-7947

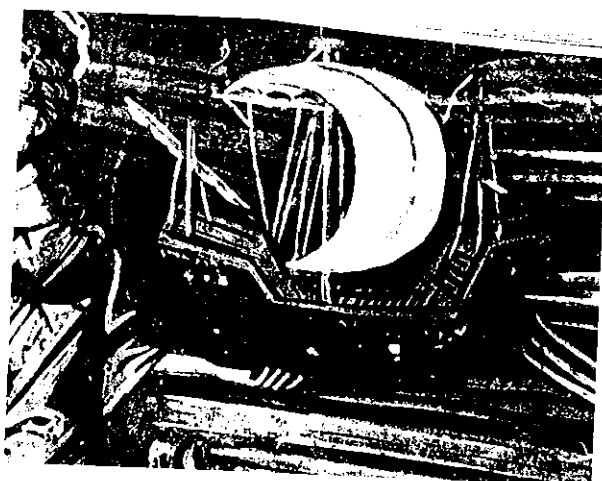


Fig. 12



Fig. 13

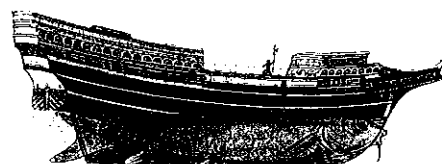


Fig. 14

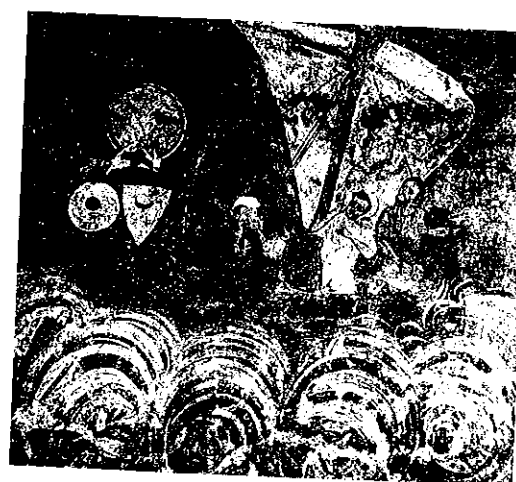


Fig. 15

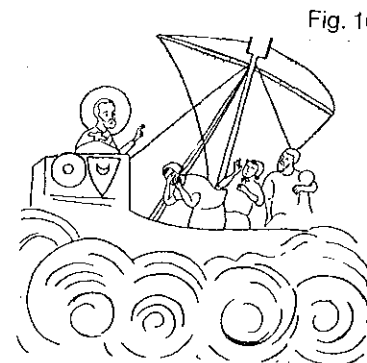


Fig. 16

ANCIENT PORTS OF ABDERA IN AEGEAN THRACE

As early as the 7th and 6th centuries BC, the colonists of Thrace created their towns either on slopes close to natural ports either artificially or naturally fortified. Thus between the river Nestos and Evros were founded Abdera¹ and other cities like Dikaia, Maroneia, Orthagoreia, Mesembria, Zoni, Drys and Sali (Fig. 1).

Abdera with Maroneia and Ainos were among the most secure and richest cities of Thrace. Abdera's wealth resulted largely from her commercial relations with the native population of Thrace and with the rest of the world. To increase the commercial activity of the region it was necessary to create a fleet of vessels and also a port for their protection. It's clear that Abdera's coastal location played a significant role in this, because the natural promontory on which the town was built had many inlets and bays. These could be used as harbours for anchored ships.

During the Persian War, Herodotus mentions that the Thracian fleet was surrendered at the port of Abdera, a fact that implies this port was one of the most important at the area.²

Geomorphological research has proved that the shore line in ancient times was to be found to the north and east of the present line formed by the river Nestos and that the sea frequently invaded the ancient city at the point, where today we think that the colonists first settled.³ In this area today there is an uncultivated marsh, which is probably the original site of the first port. Present sea level is obviously very different from the ancient one.

In this area,⁴ a section of the Northern fortified enclosure, two consecutive

constructions of the wall are located.⁵ Somewhere one can see the archaic wall which runs from East towards West in a similar fashion but not exactly parallel to later the wall.

The port was bounded and protected from the north by this particular stretch of the wall,⁶ which led down to the sea. The presence of the sea⁷ here can be shown by the rounded sherds and by the thick layers of sea sand which contains shells, and above all by the layer of rough stones at the level of the foundations, which seem to have started at sea level.

The section that is directed westwards, stops and forms an isolated widening⁸ where it meets the sea. Either this was to combat the waves or to be used as a base for a fort, which would have acted as an observation point for the port.

The case for the presence of the archaic port in this position is substantiated by the discovery of a shipshed,⁹ which is constructed at the end of the sixth or at the beginnings of the fifth century, because its layer of destruction contained pottery, mainly pieces of amphoras to the last half of the fifth century BC. It can be considered as one of the older known shipsheds.

This building had a roof of coloured (black or red) clay tiles which fell at the destruction layer. A colonnade was found at the east part of the north side of the shipshed. It was formed by square blocks of poros¹⁰ (as bases of the columns, that today have disappeared—except one).

A solid wall of regular masonry continued at the west end. The present length is at least 30m and the inclination 10°. South of it was found the western part of the enclosure wall, which runs North to South and forms the sea wall¹¹ that follows the ancient shore line and marks the limits of the sea in the 5th and 4th century BC, when the archaic wall was destroyed possibly by flood and thus abandoned.

A strong wall that was discovered about two hundred meters south of the shipshed, in an excavation of 1965 carried out by Lazaridis,¹² is made up of large granite boulders. This wall seems to have been used as a quay, which might have been connected with the presence on the slope beyond the buildings what with some reservations have been interpreted as a series of shops. The building phases date back to the 5th and 4th century BC.¹³

Further south in the area of the small modern port of the community of Abdera, below the naturally strong hill, there was an artificial port which protected ships from eastern and southern winds (Fig. 2).

The breakwater even though destroyed has preserved up to a point its original shape and perhaps its size (fig.3). The western limit of the port was probably further West and North in the region where today there are alluvia. Its length is approximately 180 m. and it runs from East to West.

Underwater excavation on the mole identified two building phases (A, B, Fig. 4). Both of them recognized on the north face of the breakwater, built of enormous granite boulders roughly worked; the older may date to the classical times. It is almost certain that this was used until the Byzantine period with some additional repairs. Two horse-shoe shaped towers meet the southern side of the mole, where it turns to the North at this point.

A third harbor was located at the eastern bay, in the area of Agios Giannis. Here the town's eastern fortification wall runs towards the seashore and forms a semicircular tower, 6 m. in diameter. Of this tower two building phases are also preserved; all the ashlar blocks have collapsed towards the East and South side, possibly from an earthquake. Various axe-shaped tenons (joints) and more architectural details can be seen on the tower stones (Fig. 5).

Ch. Samiou, archaeologist
Department of Underwater Antiquities
Ministry of Culture, Greece

NOTES

1. Δ. Λαζαρίδης, Ἀβδηρα καὶ Δίκαια, *ΑΕΠ*, 1971 καὶ Χ. Κουκούλη, *ΠΑΕ* 1982, 1983, 1984, 1987, 1988, 1989, 1990, 1991, 1992.
2. Ἡρόδοτος, 6.46.7.
3. Χ. Κουκούλη-Χρυσανθάκη, *ΑΕΜΘ*, 1987, 409.
4. This excavation belongs to the Archaeological Society of Athens under the direction of Ms. Koukouli-Chrysanthaki.
5. *Εργον* 1989, 101 καὶ *Εργον* 1990, 98-100, εικ. 137.
6. Χ. Κουκούλη, *ΠΑΕ* 1991, σελ. 196, πίν. 119.
7. *Εργον*, 1990, 101.
8. *Εργον*, 1990, 101, εικ. 139.
9. Χ. Κουκούλη, *ΠΑΕ*, 1991, 193-195 καὶ *ΠΑΕ* 1992, 162.
10. *ΠΑΕ* 1992, πίν. 66α, β.
11. Χ. Κουκούλη, *ΠΑΕ*, 1991, 195 πίν. 120 α,β.
12. Δ. Λαζαρίδης, *ΑΔ 20Β*, 1965, 459, πίν. 559.
13. Χ. Κουκούλη-Χ. Σαμίου, *ΠΑΕ* 1989, 226 καὶ *Εργον* 1989, 103.

ILLUSTRATIONS

- Fig. 1 The ancient cities-harbours of Aegean Thrace.
- Fig. 2 General view of the ancient mole (photo by N. Lianos).
- Fig. 3 The two building phases of the ancient mole.
- Fig. 4 The phase A of the mole.
- Fig. 5 The ancient mole, general view.

ANCIENT PORTS OF ABDERA IN AEGEAN THRACE

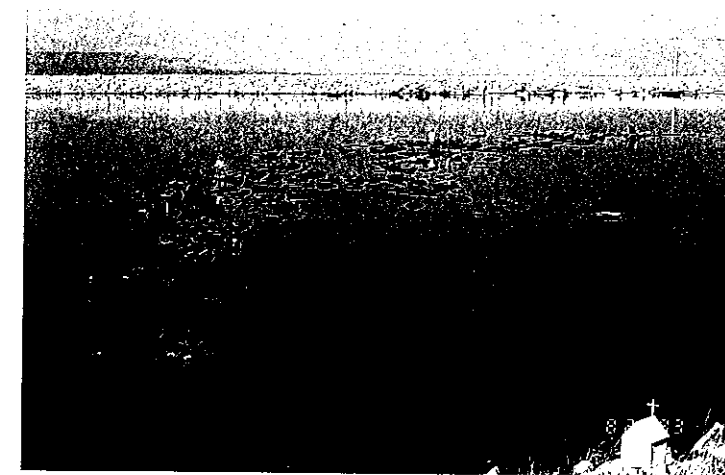
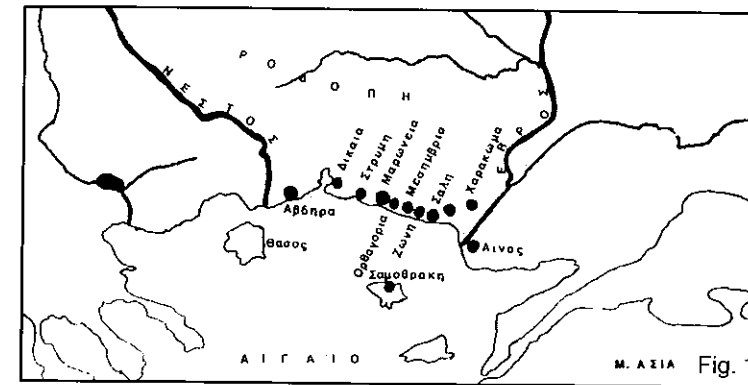


Fig. 3

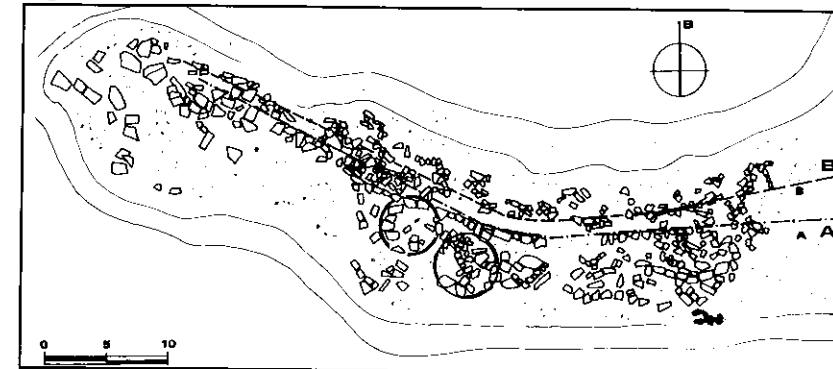




Fig. 4



Fig. 5

A PROPOSAL FOR BRONZE AGE AEGEAN SHIP-SHEDS IN CRETE

The site of Kommos in south-central Crete (fig. 1) has been under archaeological investigation for some 17 years since excavation started in 1976. The American School of Classical Studies at Athens, the Greek Antiquities Service, the University of Toronto and the Royal Ontario Museum are institutions under the auspices of which the work has been carried out¹.

Excavations revealed a Minoan town spread out on a hillside along the shore of the Western Mesara Plain (figs. 1-2). During the Bronze Age it was inhabited from chiefly c. 1900 B.C. to 1250 B.C., that is from Middle Minoan IB through Late Minoan IIIB².

South of the area with the houses³ lies a complex of huge Minoan civic buildings faced by ashlar masonry and orthostate blocks (fig. 3)⁴. The plan of the largest building, which is of Late Minoan I date, has an enormous court surrounded by rooms of various types, indicating that the building was of palatial style. Subsequently, in Late Minoan IIIA2 (during the period 1420/1380 - 1360/1325 B.C.), another structure was built upon its eastern wing. We have called this Building P (fig. 4), and it is on this that we focus on here. Although its plan, to be described, can be compared with plans of other Minoan buildings, its proportions and size are so far unparalleled. As was argued in the past⁵, P may have served, at least in part, for the storage of ships during the non-sailing months in the winter. The closest parallels for plan and scale are, interestingly, ship-sheds of the Greco-Roman period. Those, however, were set directly next to the water and used for the storage of warships, especially triremes.

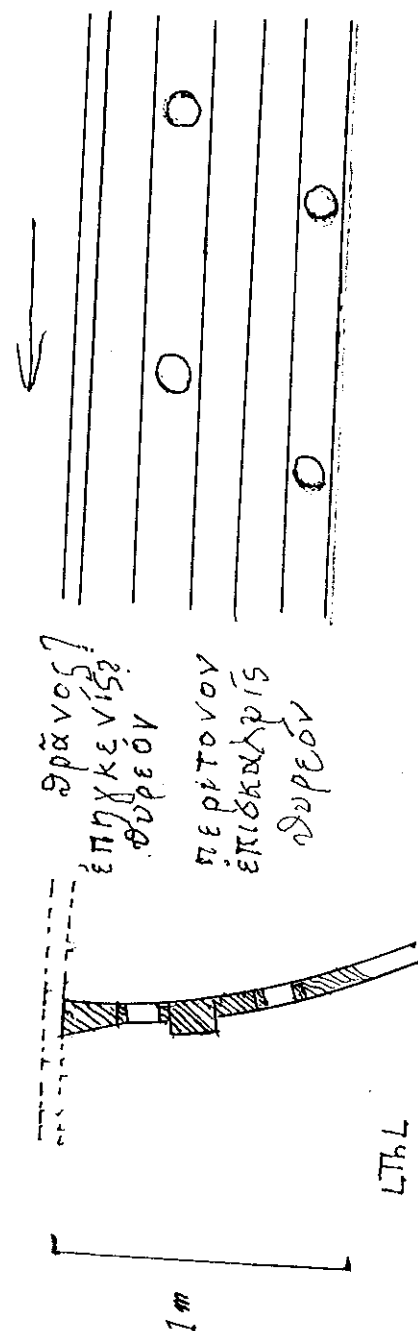


Fig. 1

THE AREA OF THE ANCIENT CLOSED PORT OF THASOS (A preliminary report)

Being mariners and tradesmen, the Parian colonists created at the island of Thasos early in the Archaic period a strong naval and mercantile fleet¹; as a result, the construction of port facilities to provide shelter for their ships must have become imperative² (Fig. 1).

The ancient geographer Scylax informs us that Thasos, the most important Parian colony, had two harbors: "Thasos an island and city and harbors two whereof one closed"³.

The naval harbor of Thasos, despite repairs effected in subsequent periods, retains most of its original form to this day and can accommodate small craft and fishing vessels⁴.

The re-use of the same site since the archaic period (as the latest archaeological evidence demonstrates), creates without doubt a very complicated archaeological site.

The reason for this presentation is to provide a synthesis of the new features that came to light after almost 10 years⁵ of excavation in an attempt to reconstruct the plan of the harbor.

All the information regarding the results of the excavations are already published in different archaeological journals⁶. In this article only features that are related to the harbor construction shall be considered.

A) South side of the Port (Fig. 1, area A, Fig. 2)

Among these features, perhaps the most impressive is the huge construction out of deep green schist stones and marble that was found outside the port on its western side.

Originally, the strange construction which lies under the present sea level, had been considered to be an archaic port mainly because of the dating of joints that were employed to connect the upper line of marble stones (which stood above sea level).

Such opinion published more than once⁷, cannot be satisfactory, mainly because of the shape of the structure which does not provide any shelter from the prevailing winds, and its style as harbour construction. The chronology of this structure can be based only on the pottery that was excavated (dated to the IV century BC⁸), because no other objects were found and the shapes of the metallic joints at the upper blocks were also used even later.

According to its construction technique (Fig. 3 a, b), the huge structure on the southern side of the port can be considered as a platform to pull the boats out of the sea. The whole structure presents a slight inclination. Together with other factors, such as holes on the surface of the stones similar to those used for cranes, the inclination strengthens the interpretation of the construction as a platform used for dragging ships ashore.

Another interesting feature that was briefly presented in Athens in 1991 were the schist stones (Fig. 4) with a profile similar to those of the "boat monument" in Samothrace⁹. They were found during the works for the laying of the foundations of a modern building SW of the port near the area where the impressive underwater construction was found.

The existence of the stone base of a ship (or "boat monument") in the area strengthens the hypothesis that the structure was used generally as a platform (*εξεδρα*¹⁰). A similar construction is described by M.G. Perrot at the beginning of mole between the two harbors¹¹. This platform is no more visible, but a rough sketch appears at Perrot's general plan of the city. A similar construction could be this one at SW mole of the military harbor. Its position near the temple of the *Θεά Σωτρίδα*¹² gives as more elements about the existence of a similar monument in Thasos and the adoration of the Goddess by the mariners.

B) South East side of the port (Fig. 1, area B)

In this area in 1983, some unusual elements were discovered during dredging operations. A certain number of marble blocks were found with one or two square cuts on the side (Fig. 5 a, 5 b and 5 c). The proposed explanation of these blocks was that they were used as the foundation for *νεώρεια* for dragging the ships ashore.

A reconstruction of their shape could be similar to those found at Kos¹³ (Fig. 6). The blocks were used in parallel lines and wooden beams were inserted in the cuts. On this structure the boats were dragged out of the water. The side of the port where they were found¹⁴ and also the existence of similar structures in Kos allow for the possibility such an interpretation.

C) North side of the Port (Fig. 1, area C)

At the north side of the port, the city wall turned to the Southwest and finished after 50 m. At the turn point, as well as at the end, the wall was fortified by two circular towers (Fig. 7). At this point the city walls end in the sea. The next addition is dated later on, probably after the Late Roman period¹⁵.

In the area between the coast and circular tower III, some new walls were found during dredging operations¹⁶. According to the drawing (Fig. 7, walls a-a, β-β, γ-γ), their orientation is parallel and vertical to the modern mole which is built over the ancient city wall. Although at first sight the two walls a-a and b-b seem quite parallel and can be interpreted as walls of shipsheds, their construction technique, the distance between them, their different dating¹⁷ and the absent of the characteristic inclination¹⁸ (Fig. 8, 9), make such an interpretation difficult. Certainly they belong to buildings for port facilities but their exact function still remains unknown. The first one (a-a) according to its construction looks more like an "anterisma" which is intended to keep in place an accumulation of sand etc., so creating a platform. The second one (b-b)¹⁹, is certainly the *στερεοβάτης* of a wall. Careful examination of its upper surface demonstrates the existence of "*μοχλοβόθρια*" for the construction of a wall above it with well squared blocks. According to the above observations these walls cannot be of the same building might have been whatever its function.

D) The entrance of the Port (Fig. 1, area D)

Despite the indications given by early nineteenth century travellers²⁰ of the existence of two more towers at the extension of the modern breakwater later the round tower IV (fig. 7), there is no archaeological evidence for such constructions but not even for the continuation of the mole after round tower IV²¹.

However in the foundations of the red beacon a square construction was found with big stone blocks connected with metallic joints (Fig. 10).

A construction, considered a square tower, was referred by J. Baker-Penoyre, who mentioned that not only round but also square towers were found at the port of Thasos²².

The existence of the sealed joint with lead provides evidence that at least the upper blocks of the small construction were above water.

Consequently the sea level during the classical period could be considered at roughly -1.5m below the present level (Fig. 11, plan). The existence of five courses of stones in some parts of the city walls below the actual sea level leads to the same conclusion²³.

This square construction (tower?) divides the entrance of the port in two. The existence of two entrances, one to the NNW and one to the N was probably a handicap for the security of the boats. Studying the predominant winds of the port, we notice that the strongest winds are those from the NNE side (Fig. 12). This means that, at first sight, the harbor was exposed to the North and the shelter provided was not good enough. The existence in that area of an underwater construction made of stone rubble (plan, A/F), may indicate the existence of a breakwater, the function of which was to provide shelter for this entrance of the port from the prevailing North winds²⁴. This, in conjunction with the two towers III and IV, could provide protection of the entrance from enemy fleets²⁵.

Similar constructions have been discovered elsewhere, as at the harbor of Aigina²⁶. With the rise of the sea level the breakwater became useless and thus later on, probably during the Middle Ages, this part of the entrance of the port was closed²⁷.

Conclusions

After this brief presentation of the most important features of the closed-military harbor, an attempt to reconstruct its form during the IVth century would place it among those harbors described by Vitruvius and very well represented in the first editions of his work during the renaissance. The harbor of Thasos represents an application of a standard pattern of a port composed of city walls which were also used as breakwaters and with its entrance divided in two by the little island-tower in the middle.

The ordinary facilities on the port were at the right and the left side of the harbor where the foundations of different construction techniques were found. This is also referred to by Perrot who at the beginning of the twentieth century state that the area housed port facilities.

I would like to conclude this preliminary report by saying that the new features that came to light after the previous years of excavation give us a lot of information about this important harbor, but also raise new questions for which the already excavated areas do not provide definite information.

The new topographical details of the area of the ancient harbor of Thasos radically change our knowledge of that harbor (Fig. 13).

Old debates like the one about the inscription with the regulations that concerned the berthing places of different sized vessels and the sanctions applied, must now be reconsidered²⁸.

Dr. N. A. Lianos
Department of Underwater Antiquities
Ministry of Culture
Greece

NOTES

1. Herodotus, VI, 46: «Οι γὰρ δὴ Θάσιοι[...] προσόδον εὐσεύων μεγάλων ἐχρέωντο τοῖσιν χρήμασι νέας τε ναυπηγευμένοι μακράς καὶ τεῖχος ἰσχυρότερον περιβαλλόμενοι».
2. An underwater excavation in Paros-Paroikia which provide some information about harbor installations in Paros took place in 1982 by the Ephoreia Enalioi Archaioititon (EEA) in collaboration with the Pennsylvania University. For further information see: G. Papathanassopoulos and D. Schilardi 1982, Underwater survey of Paros, *IJNA* 1981, 10.2:133-144.
3. Σκύλαξ, *Περίπλους*, 67, «Θάσος νῆσος καὶ πόλις, καὶ λιμένες δύο τούτων οἱ εἰς κλειστός».
4. Also in J. Baker-Penoyre, *JHS*, XXIX (1909).
5. The excavation of the port of Thasos started from the E E A. in 1980. Later on a "synergaseia" was formed with the French Archaeological school of Athens (E.F.A.).
6. N. Lianos, *Ενάλιες Ερευνες στο Λιμάνι της Θάσου 1980-1984*, in «Αρχαιολογικά Ανάλεκτα ἐξ Ἀθηνῶν», XVIII (1985), Athens 1988. Yearly reports of the "synergaseia" were published in the *AAA*, XVIII, 1985, p. 120-121, *AAA*, XVIII, 1985, p. 129-134, *AAA*, XX, 1987, p. 75-92, *Αναστήλωση, Συντήρηση, Προστασία Μνημείων*, 2, 1987, σελ. 73-77, and *BCH*: 111, II, 1987, p. 622-626, *BCH*: 1988, 112, 2, pp. 736-742, *BCH*: 1989, 113, II, pp. 734-740, *IJNA* 1989, 18, 1, pp. 52-56, *BCH*: 1990, 114, II, pp. 881-887, *BCH*: 1991, 115, II, pp. 712-720, *BCH*: 1992, 116, II, pp. 721-726, *BCH*: 1993, 117, II, by A. Archontidou, J. Y. Empereur and A. Simossi. (A.A., J.Y.E., A.S.). The drawings of the excavation were made by the author in collaboration with T. Kozelj. Drawings n. 3a, 3b were done by P. Abazopoulos. The photographs were taken by the author.
7. A.A., *Αναστήλωση-Συντήρηση-Προστασία*, τ. Β, 1987, pp. 73-77, *AA.*, JYE, AS, *IJNA*, 1989, 18, 1, pp. 52-56, *AAA*, 1985, pp. 129-134, *passim*.
8. *Idem*.
9. A short presentation by L. Basch took place at the previous conference in Athens 1991. The final publication by McCredie has not yet appeared.

10. According to an inscription published by J. Pouilloux (BCH 71-72, 1947-48) the round tower II and an «εξεδρα» were constructed with the sponsorship of Ηρακλεόδωρος. Although the term «εξεδρα» is generally understood as a base (cf. R. Ginoves, Dictionnaire methodique de l'architecture grecque et romain), its vicinity with Tower II could be considered as the platform discovered during the underwater survey.
11. M.G. Perrot, Memoire sur l'île de Thasos, Paris 1864, p. 78, "sur une sorte de plate-forme ou d'elargissement du quai, qui forme un rectangle dallé de larges plaques de marbre..."
12. BCH 68-69, 1944-45.
13. Χάρης Καλιγιά, Α.Δ., τ. 42 (1987), Χρονικά 632-635.
14. Again from G. Perrot, op. cit., and his rough but extremely useful plan (p. 74) we can see small "quais" along the coastline and the inscription "Quais avec cules". Because these features were discovered during dredging operations, their exact position is unknown, so their reconstruction is impossible. Further excavation in this area will certainly give more information's about the port facilities.
15. BCH, 113 (1989), passim.
16. I personally supervised the cleaning of this part of the port by the local authorities. The cleaning was stopped as soon as the wall b-b was discovered. No other wall was found in the middle distance.
17. JYE, AS, BCH-CXV 1991, BCH-CXVI-1992.
18. See also BCH, CXIV-1990, 881, 883 (fig. 2) and p. 885 (fig. 6).
19. That was misinterpreted as a mole (BCH, CXVI-1992, p. 721 and fig. 1).
20. G. Perrot, op. cit., p. 77 and the plan pl.II., Von A. Conze, Reise auf der Inseln den Thrakischen Meeres, Hannover 1860, p. 14; C. Fredrich, A.M., 33, 1908, pp. 217-223; A. Bon, Les ruines antiques dans l'île de Thasos..., Paris 1930, passim.
21. J.Y.E.-A.S., BCH, CXIII-1989, p. 734.
22. J.F.F. Baker-Penoyre, Thasos., J.H.S., XXIX (1909).
23. For example at the SW side of the port, close to the round tower II (IJNA, (1989), 18.1, fig. 11.
24. Unfortunately, no excavation took place in this area.
25. The lack of any sherds or other man-made objects on this construction, strengths the supposition that the whole construction was underwater and thus not in use.
26. N. Lianos, reported to the Ephoreia Enafion Archaioiton, 16/9/87.
27. J.Y.E., A.S., BCH, CXIV-1990, p. 881.
28. M. Launey, Inscriptions de Thasos, BCH, LVII-1933, pp. 194-410.

ILLUSTRATIONS

- Fig. 1 General plan of the port of Thasos, N. Lianos-T. Kozelj.
- Fig. 2 General view of the "platform" at the South side of the port.
- Figs. 3a, b Plan and section of the platform in area A.
- Fig. 4 Schist stone with a characteristic profile at the upper part for the positioning of a boat keel.
- Figs. 5a, b Blocks of marble with a square cut on the top side.
- Fig. 6 Kos plan of the shipsheds.
- Fig. 7 Northeast part of the port with the round towers III & IV, N. Lianos-T. Kozelj, 1:500.
- Fig. 8 Section at the a-a wall.
- Fig. 9 Section at the b-b wall.
- Fig. 10 Stone block connected with metallic joints.
- Fig. 11 Plan and section of the underwater structures at the entrance of the port.
- Fig. 12 Study of the predominant winds at the port of Thassos.

THE AREA OF THE ANCIENT CLOSED PORT OF THASOS

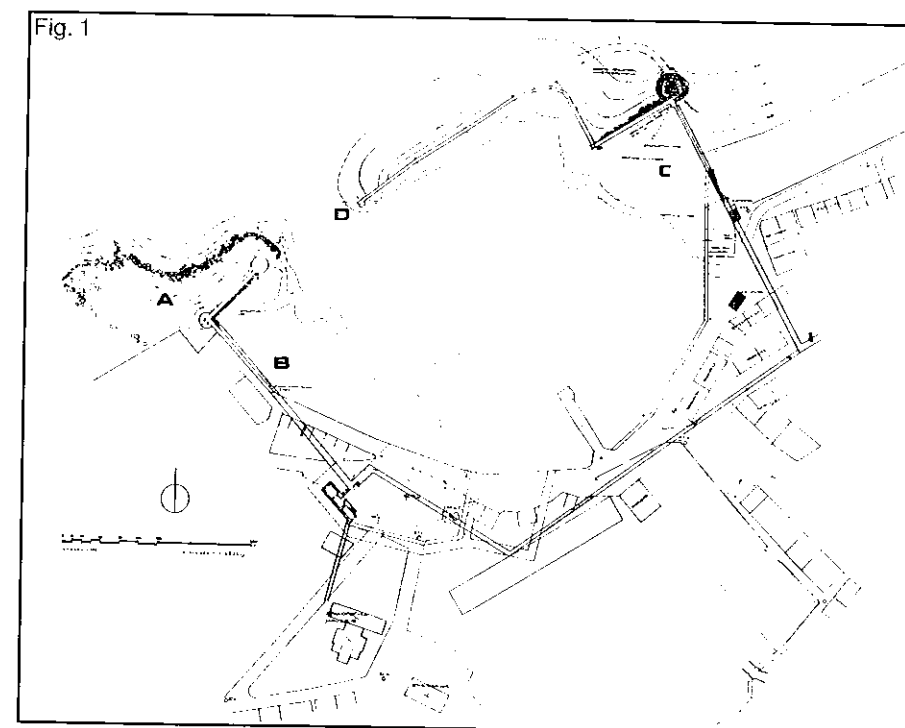


Fig. 2



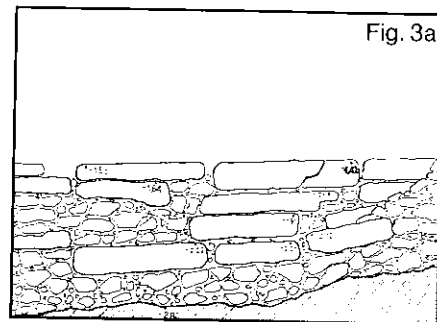


Fig. 3a

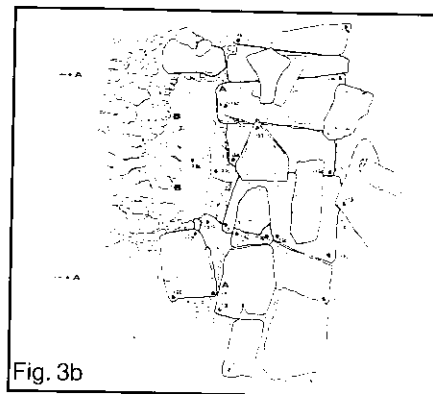


Fig. 3b

Fig. 4



Fig. 5a



Fig. 5b

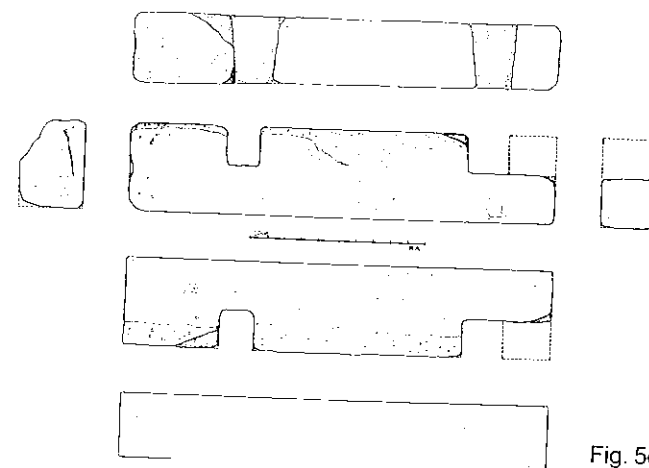
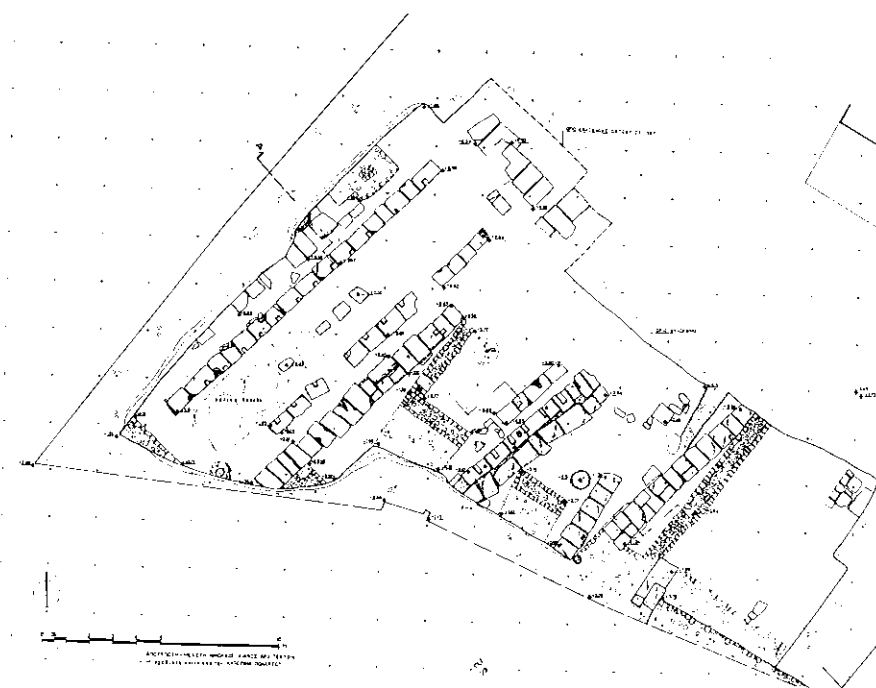


Fig. 5c

Fig. 6



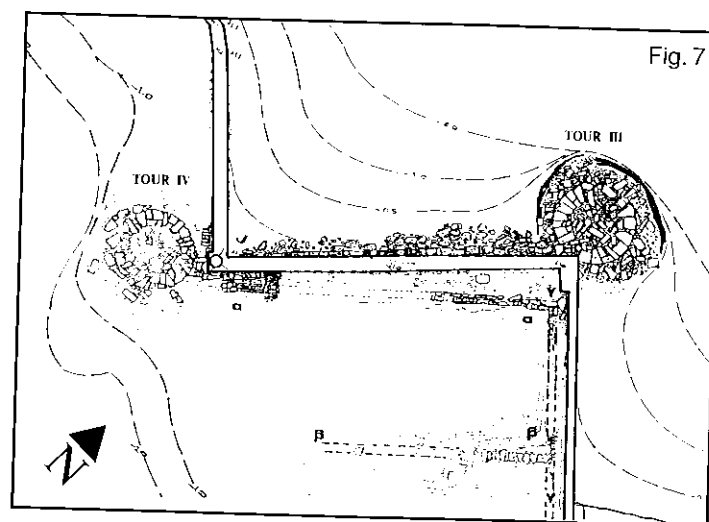


Fig. 8

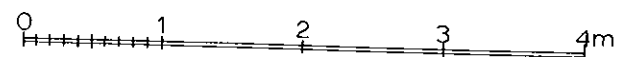
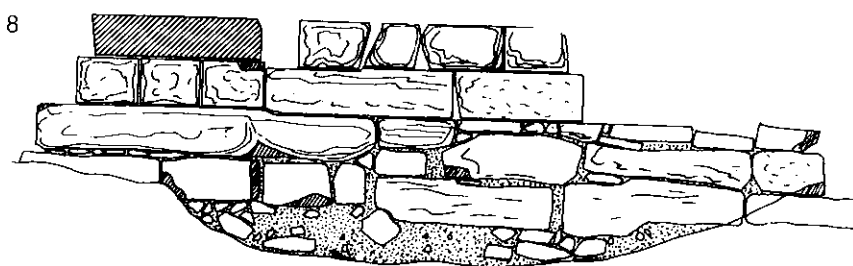


Fig. 9



Fig. 10

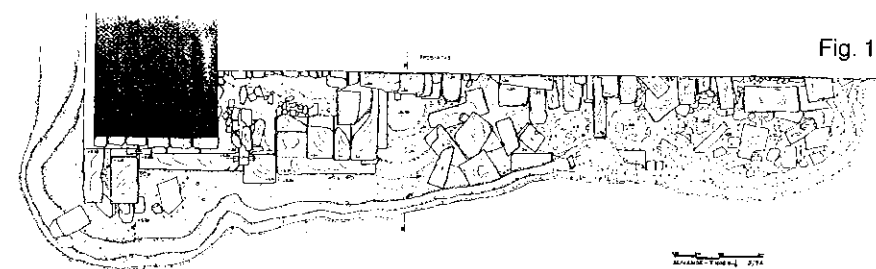


Fig. 11

Fig. 12

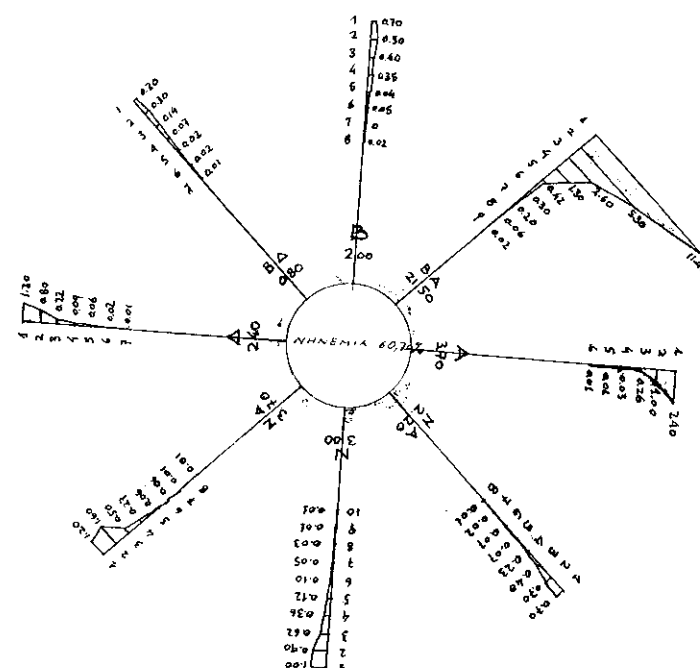
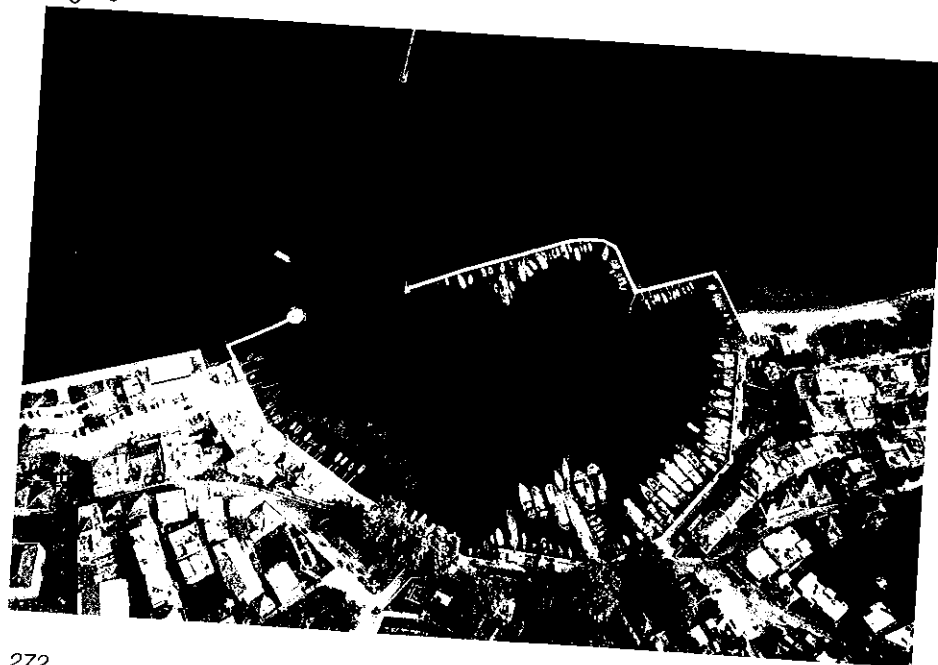


Fig. 13



SHIP ARCHAEOLOGY TOWARDS THE FUTURE. SOME CONCEPTUAL AND ORGANIZATIONAL OBSERVATIONS

With Albenga and the Grand Congloue, organized and scientifically orientated research in ship archaeology had its beginnings. Half a century later, the balance of credit is indisputable, now being acknowledged as an integral. There are however certain areas which require our immediate attention, others which should be considered as items for further development schemes.

- Deviation from the dominant trend of dealing with isolated accidental discoveries of shipwrecks to systematic search and survey at designated areas of maritime archaeological-historical significance. Implementation of advanced search and survey technologies. Encouragement of simultaneous land and sea excavations while counting on the increasing number of shallow water sites.
- Special attention to be given to the academization of the discipline in large, by introducing into the curriculum of Institutes of Higher Learning a formal study program leading to a graduate degree.
- International coordination in the planning and timing of conferences, symposia and workshops, stressing thematic and regional uniqueness, to avoid conflicts and duplications.
- Establishing a data base for ongoing research with a periodical publication of abstracts in 3-4 major language groups, to overcome present "compartmentalization".
- Arousing public awareness in every country to the urgent need of preserving the Maritime Cultural Heritage - with the Hellenic Institute serving as an example.

All the above requires a statutory change of our biennial symposium by widening the scope of themes beyond the present stress on the history and technology of