



Underwater Reconnaissance off the Island of Chios, 1954

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UNDERWATER RECONNAISSANCE OFF THE ISLAND OF CHIOS, 1954

(PLATE 17)

IN June and July of 1954 a team of ten divers spent just over four weeks exploring the east coast of Chios. The team was based on Emporio in the south-east, where the British School was excavating under the direction of M. S. F. Hood and J. Boardman, and was thus able to rely on the archaeologists there for expert guidance. Most of the underwater work took place in this area, but the team was also able to spend some time exploring the north-east coasts of the island, thanks to Mr. Tom Dupree, who put his yacht *Kerynia* at their disposal.

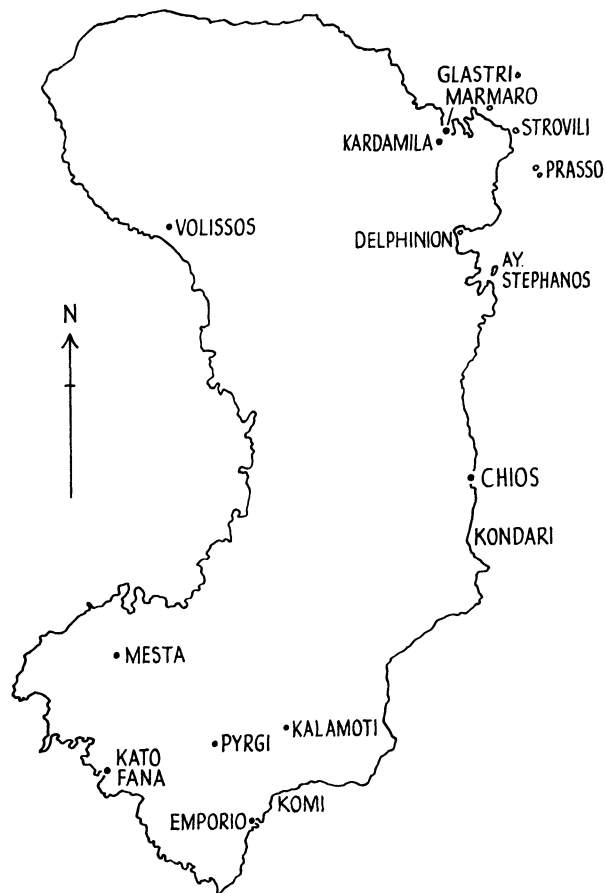


FIG. 1

The main diving equipment consisted of three twin-cylinder aqualungs with three spare twin-cylinder air-tanks, and a compressor to recharge them with air, belonging to the British School at Athens. The purchase of this expensive equipment had been made possible by the

great generosity of Lord Kelmsley and the *Sunday Times* newspaper. Miss Dilys Powell, as representative of the *Sunday Times*, joined the expedition for two weeks and took an active part in the work.

The compressor, once installed, could not be moved, and this somewhat limited the expedition's range. Two divers had their own single-cylinder aqualungs and one had a twin-cylinder. All the divers had their own basic gear, and there was also a good deal of home-made equipment, marker-buoys, measuring-rods, &c. Two divers had underwater cameras, one a Leica in an R.G. Lewis Photomarine case, and one a Contax in a home-made but highly efficient case with its own flash-gear.

Shallow areas were searched from the surface, often by a set of divers swimming abreast, without aqualungs, and looking down into the water through their face-masks. With divers between 5 and 10 metres apart according to the depth and visibility, a large area could be thoroughly searched fairly quickly. When the bottom was not visible from the surface, the first exploration had to be made with an aqualung. In that case divers usually went down and explored in pairs, but occasionally a primitive aquaplane was used to search large areas. This consisted merely of an aluminium plate with bicycle-grips at each end. It was towed on a bridle behind the motor-dinghy, the diver holding the handles and controlling his depth by tilting the plate. By this method a lot of ground was covered, but probably too cursorily to be of much value.

Finds were marked with marker-buoys and with small squares of white rubber sheeting the size of handkerchiefs. They could also be labelled with pads of white plastic with a roughened surface upon which it was possible to write with a pencil under water. Whenever possible, finds were photographed and plans were drawn of the sites under water. The more substantial sites were divided up by a grid of white plastic tape so that they could be plotted in sections.

EMPORIO (FIG. 2)

The harbour is a horseshoe-shaped cove 170 metres across and open to the south-east. For a distance of about 50 metres out from the shores the bottom is natural rock and shingle covered with weed, the central part being clear sand. Along the south-west shore a straight ridge of clean sharp stones, little worn by the sea, runs parallel to the shore and 60 metres out. It falls sharply to the sandy bottom (7 metres deep) on the north, but only rises a little above the bottom on the shoreward side. It may perhaps represent the remains of some form of wharf or harbour wall, although no signs of masonry were found in its vicinity. The sea-level has risen here, as in other parts of the Aegean, considerably since antiquity, and the remains of ancient (? Bronze Age and Roman) houses can be traced in the shallows by the south-west shore of the harbour.

In the centre of the harbour, near the border between the sandy bottom and the stones, lie four squared stones. One has two clear dowel holes, the fourth bears a trace of a moulding. Farther inshore are six cylindrical pieces of stone, A–E. These are 0.40 m. in diameter except for E, which is only 0.30 m.; but this may be due to erosion from the sea, since it is very worn. The lengths are as follows: A 1.40, B 1.0, C 0.80, D 2.0, E 0.90, F 1.50. A and C have dowel-holes in the ends. B is very sea-worn, and might possibly be a natural boulder, but its dimensions are so similar to the other cylindrical stones that it has been included here. Near these blocks were some ship's timbers and a ship's prow or stern embedded in the sand, although there is no reason to suppose that they are not modern.

From the harbour a few fragments of pottery were recovered, most of them either clearly modern or so sea-worn as not to be identifiable.

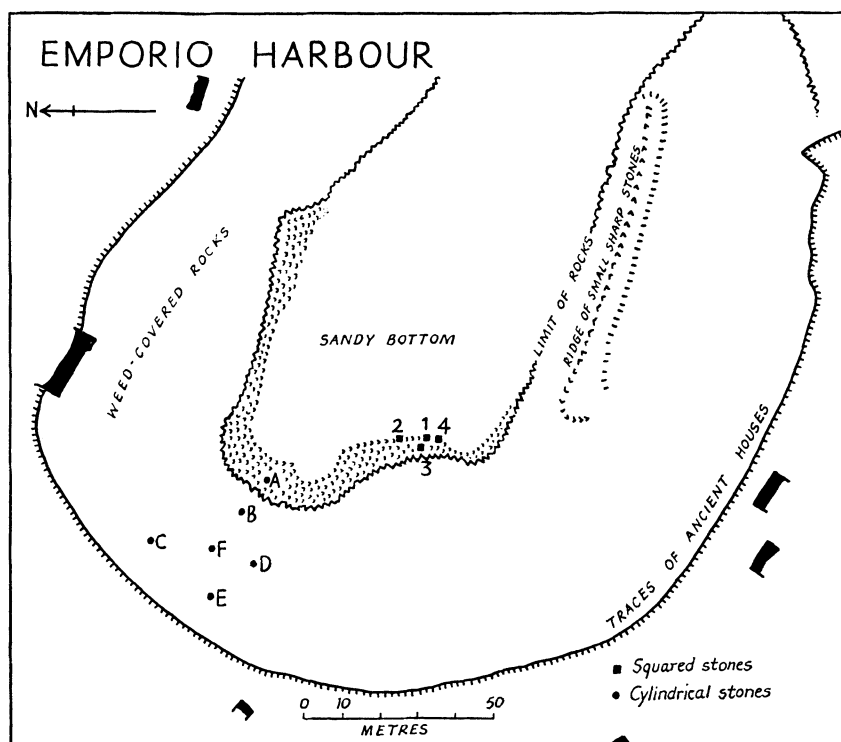


FIG. 2

KOMI (FIG. 3)

The coast north-east of Emporio to Komi and Kalamoti was searched. The only substantial find was beneath the rocky cliffs south of Komi and about a kilometre north of Emporio, where a low spur of rock projects 70 metres out to sea. Close inshore some 30 metres from this spur among large boulders, on a rocky bottom between 2 and 3 metres deep, there was a small

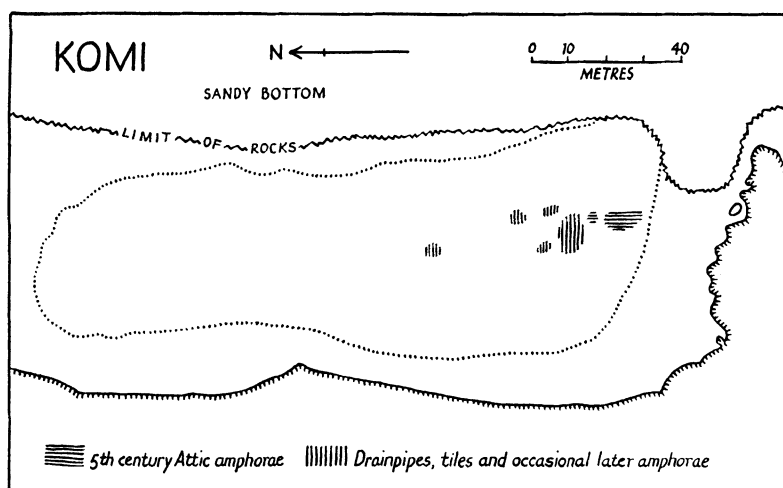


FIG. 3

but dense deposit of amphorae and sherds firmly cemented with a coating of lime formed by marine animalcula. Some amphorae were almost complete. Miss Virginia Grace of the American School of Classical Studies at Athens visited this site and inspected it under water; she identified these amphorae as Attic of the late fifth or early fourth century (PLATE 17a). A few metres to the north, and almost contiguous with these vases, was a larger mass of drainpipes and tiles together with a few sherds of amphorae of a later type. The two groups lay in an area of 21 by 11 metres. It was marked off with a grid of white plastic tape and planned by Miss Alison Marsh. Smaller fragments were scattered over a wide area to the north and to seaward. Two Roman amphora-necks were found 15 metres to seaward and two amphora-necks of the third century A.D. or later, 80 and 120 metres to the north.

No traces were discovered of any timber or other part of the boat in which these amphorae may have been carried. Indeed, during the whole of the expedition we only once came upon any remains of metal or timber with any pretensions to antiquity. It is clear that the amphorae represent the cargoes of at least two ships wrecked at the same dangerous headland, one in the fifth-fourth century B.C., the other later.

KATO FANA (FIG. 4)

This small harbour lies on the south-western shore of the island. It served the sanctuary of Apollo Phanaios and the small town beside it. It was here that Roman battlefleets sheltered in 191 and 168 B.C. (Livy xxxvi. 43, xlv. 10).

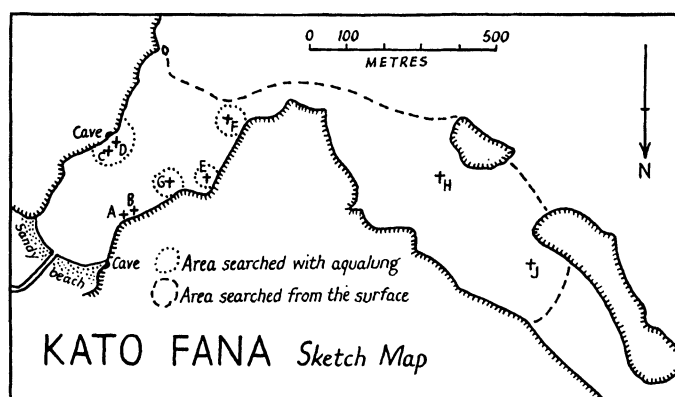


FIG. 4

The whole of the harbour and the coast beyond it for some three-quarters of a kilometre were searched by teams of swimmers working on parallel courses from the surface. Most of the harbour bottom proved to be smooth sand, which would cover most traces of wrecks. A number of small isolated finds was made, but there were only three substantial deposits. At G a pile of small sherds partly buried by small stones seemed to indicate rubbish fallen or thrown from the land rather than the result of a wreck. None of these sherds was recovered. Around H a large number of small fragments of Coan wine amphorae, of fourth or third century B.C. type were found scattered over a large area of rock in 2-5 metres of water; perhaps part of the cargo from a wreck. At J concreted fragments of pottery were seen at 7-10 metres, but no specimens were collected. Isolated sherds were found at points A, B, C, E, and F and the body of an amphora, lacking its neck and handles (9 below), raised from 10 metres at D. The sea-bed on this part of the south-eastern side of the harbour was remarkable in appearance, consisting of large towers

of rock, almost entirely undercut by the action of waves at the bottom. This may be due to a subsidence or alteration of the sea-level, since this undercutting usually occurs at the surface of the sea, and can indeed be observed at the present sea-level on the coast just north of Emporio.

The adjacent waters and the bay to the south-west were explored very cursorily with the aquaplane, but nothing was found. A trial dive to a depth of 30 metres off Cape Masticha also drew blank.

KONDARI

Kondari lies in a bay to the south of Chios Town. We had heard of submerged buildings off the beach, and were able to pay a single brief visit. There proved to be distinct signs of submerged buildings, but the water was so dirty and thick with weed, and the first small find (a drowned puppy) so discouraging, that we did no useful work and were able to make no further visits. This has been alleged by some to be the site of Leukonion (cf. *BSA* xli (1940-5) 33).

DELPHINION (FIG. 5)

For the ancient site see *BSA* li (1956) 41-54. The main harbour lies to the north-east of the small island of Tauros. It is 33 metres deep in the centre and very well sheltered. The island is steep and rocky on the eastern side, but slopes down gradually to the west, and the waters between it and the shore to the west are extremely shallow and rarely exceed 2 metres. There is a modern wreck on the north-east shore of the harbour, but we found no signs of ancient ones except around the island. The south-west corner of the island was explored with aqualungs to a depth of over 30 metres. Heaps of Chian amphorae dating from about 400 B.C. were found in gullies in the almost vertical rock-face at about 20 metres depth at A and C. There were outlying fragments in shallower waters at B and D.

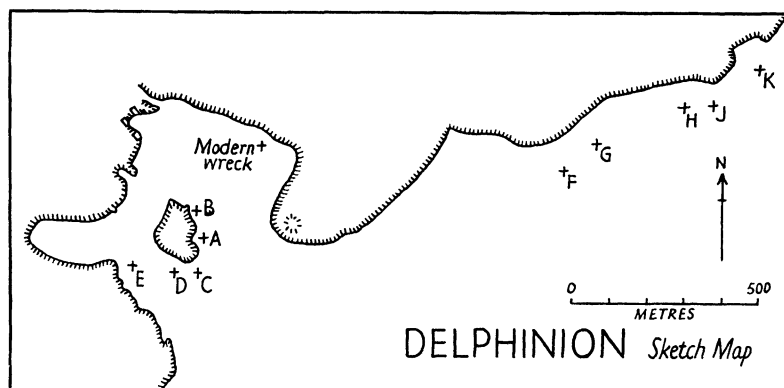


FIG. 5

In 2 metres of water at E among weed-covered stones was a single fragment of fluted column 0.90 m. long and tapering from 0.40 to 0.35 m. in diameter. The flutes were approximately 0.06 m. wide. We could find no other worked stones in the vicinity.

The coastal waters to the north-east were explored with the aquaplane and from the surface for a distance of almost 2 kilometres. Fragmentary sherds of Chian amphorae of the early fourth century were found at F and G, and two different amphora-bases of the same type at H. There were signs of a wreck, namely, a large number of fragments of Roman amphorae cemented together at a depth of 9 or 10 metres at K. At J a tapering piece of stone 0.60 m. long was

found (see below, **20**, FIG. 10). There was no unmistakable sign that it was worked and not natural stone, but its shape was so similar to half of the lead anchor-stocks found in France and to the stone anchors from Aegina, that it may well be part of an anchor-stock.

AY. STEPHANOS (FIG. 6)

This small, low, and rocky islet lies off the southern point of the bay of which Delphinion harbour is the north-western bight. It merges with rocks of the coast beyond when it is seen from the sea, and even today it carries no light or even sea-mark to warn the mariner coming into harbour. It is therefore hardly surprising that there is much evidence of wrecks round its shores.

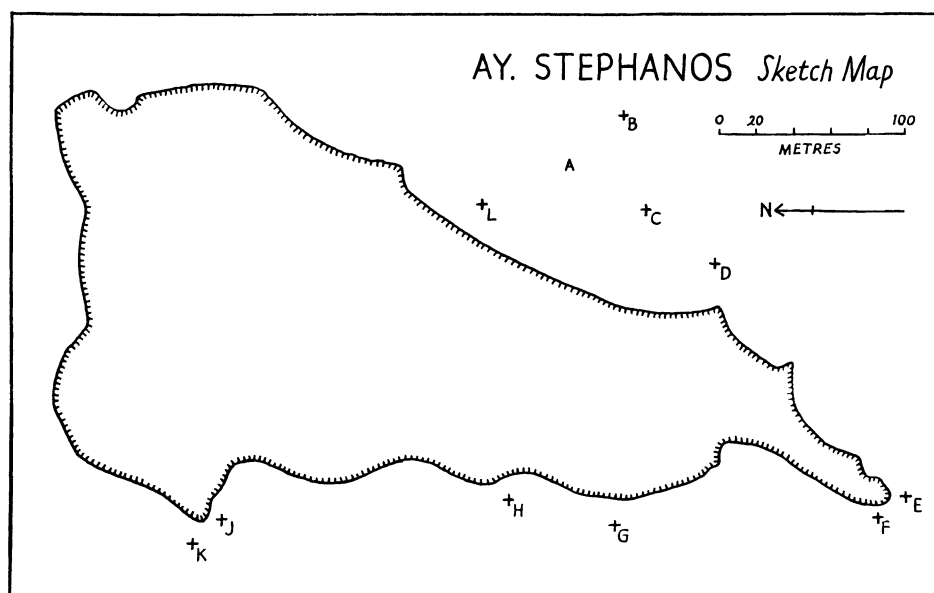


FIG. 6

The sea-bed to the south-east is relatively shallow and shelves gradually offshore. At A in 3–4 metres of water we found a mass of sherds firmly cemented together and extending over much of an area 24 by 12 metres, to a thickness of between 0.30 and 0.50 m. (PLATE 17*b*). Grid-lines of plastic 3 metres apart were laid across the area in a north–south direction and Miss Alison Marsh made a sketch-map of the site. It was also photographed in eight sections. The sherds cover an area of approximately 80 square metres, and their volume can be estimated at some 32 cubic metres. They must represent the remains of at least a thousand amphorae—possibly more—without taking into account the erosion the sherds have probably suffered by the sea. Only one amphora was found intact, and this was broken in raising it to the surface. Many of the pieces showed traces of a black tarry deposit on the inside. 50 metres farther to seaward, a single large tile, 0.49 m. wide, may possibly have come from the same wreck before it was driven inshore.

At L traces of a much later wreck in the form of some strange pottery with openwork rims and high swinging handles were found (**33**, **34**) with six stone cannon- or ballista-balls 0.17 m. in diameter. There were also, completely encrusted with a limy deposit, an unidentifiable piece of decayed wood and a much-corroded bar of iron.

The sea-bed off the southern tip of the island slopes more steeply. It was explored with the aquaplane and several photographs of shattered and cemented amphorae taken in depths between 7 and 13 metres.

The west side of the island was only explored by divers without aqualungs and the depths encountered did not exceed 10 metres. Small collections of sherds were found at F, G, H, and K, and the neck and handles of a Rhodian amphora of the fourth or third century B.C. at J.

PRASSO ISLANDS (FIG. 7)

These two islands lie almost in the centre of the channel between the north-east coast of Chios and the Oinoussai Islands. They are fairly low-lying and must have presented a considerable danger to shipping before the lighthouse was installed on the northern island. A single visit was paid to the islands by a small party of divers in rough weather. The reef to the south-east was explored with aqualungs, and the west and north coasts without them. The centre of this reef bore a quantity of modern French tiles, and small collections of ancient sherds of various kinds were found on ledges of the submarine cliff to the south-east to depths of 10 and 16 metres. There were amphora-handles of at least two different types at 4 metres at B, and quantities of small fragments between 8 metres at C and 5 metres at D. At E a green-glazed jug was found, and at A and F cemented deposits of amphorae.

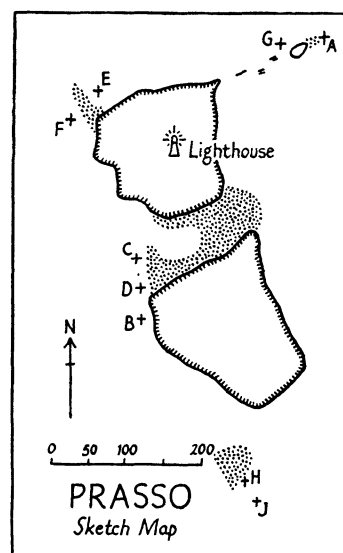


FIG. 7

STROVILO, GLASTRI, AND PONDIKO

Strovilo is a steep and conspicuous island divided from Cape Paraskevi on the north-eastern tip of Chios by a shallow strip of water about 100 metres wide. The sea-bed round Strovilo and between the island and the small bay in the end of Cape Paraskevi was searched by divers without aqualungs. Visibility was excellent, but only two small deposits of sherds of Roman amphorae were found: one in 2 to 3 metres in the cove at the western end of the island, and the other in 5 metres just south of the northern headland of the bay on the mainland.

Glastri is a low-lying, unlit rock 700 metres off the north-east shore between Cape Paraskevi and Cape Vamvakas. Seaward the sea-bed drops sharply; inshore there is a wide reef with some dangerously shallow patches. Although it seemed a very likely site for wrecks, a search all round down to a depth of 30 metres yielded no finds of any kind.

The channel between the two main Oinoussai Islands was not systematically explored, but two finds were made there. The site was in about 10 metres of water and 10 metres south-west of the south-west corner of a small unnamed island, the northernmost in the channel, 600 metres north of the island of Pondiko.

RICHARD GARNETT

THE FINDS

Some of the pottery from the sites explored was brought back to Emporio, drawn, and then stored in Chios Museum. Other pieces which are listed below were not kept, but identified on the spot. Samples only were brought back or recorded; for the relative frequency of the different

specimens the reader is referred to the account above, also for the record of some pieces which I have not seen. I have been sparing of dates in preference to committing such heavily encrusted, plain vases to even vague dates which may be seriously inaccurate. The classical and Hellenistic wine-jars, and the Late Roman pottery of types found in the excavations at Emporio, allow more precision.

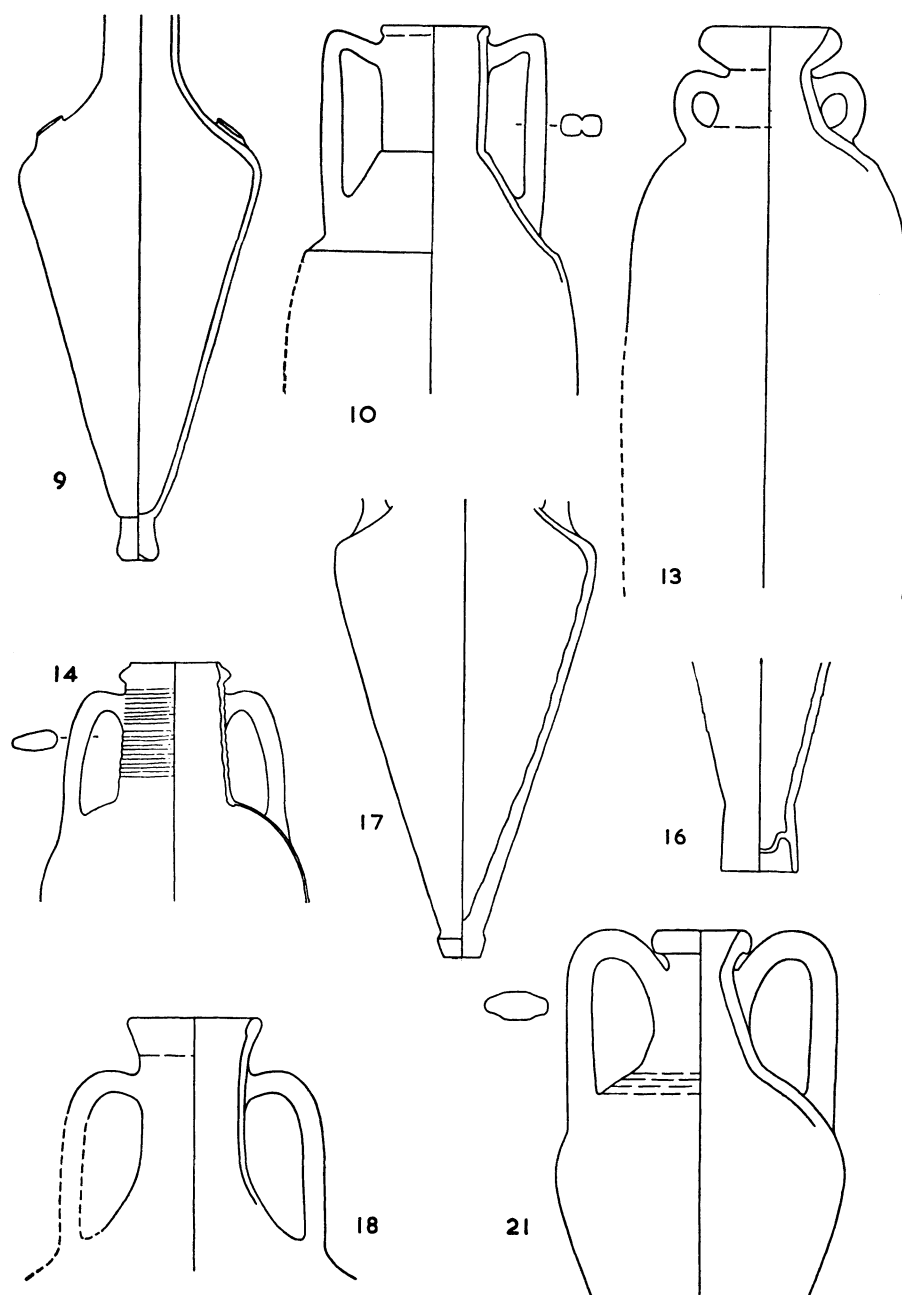


FIG. 8 (1:4)

Emporio

From the harbour:

1. Chian-amphora toe, c. 300 B.C.
2. Rhodian amphora-toe, 3rd–2nd century B.C.
3. Coan amphora-handle, 3rd–2nd century B.C.
4. Late Roman amphora fragments, 6th–7th centuries A.D., of the type excavated in the fortress at Emporio.

Komi

5. Athenian amphorae, late 5th–4th century B.C. PLATE 17a.
6. Coan amphora fragment, 3rd century B.C.
7. Late Roman spherical amphora with spiral incision, 6th–7th century A.D.

Kato Fana

Site A

8. Chian amphora-toe, late 5th century B.C.

Site D

9. Amphora, 4th century B.C. FIG. 8.

Site H

10. Coan amphora, Late Hellenistic. FIG. 8.

11. Chian amphora, 4th century B.C.

Delphinion

Site A

12. Chian amphorae, 4th century B.C.

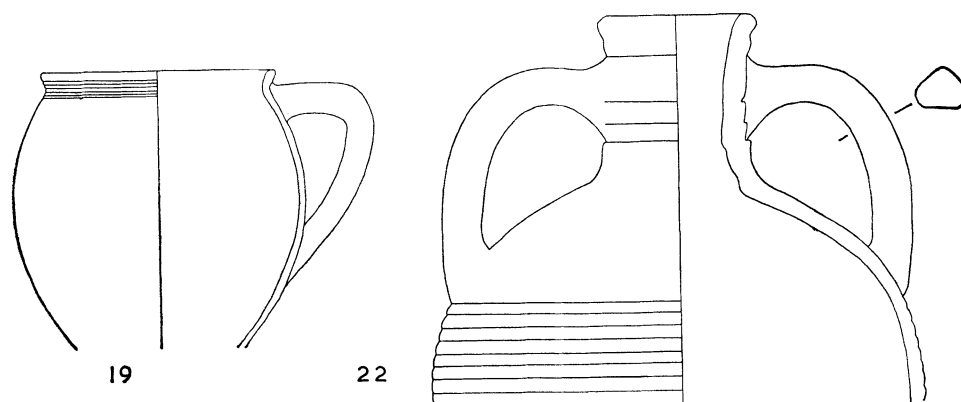


FIG. 9 (1:4)

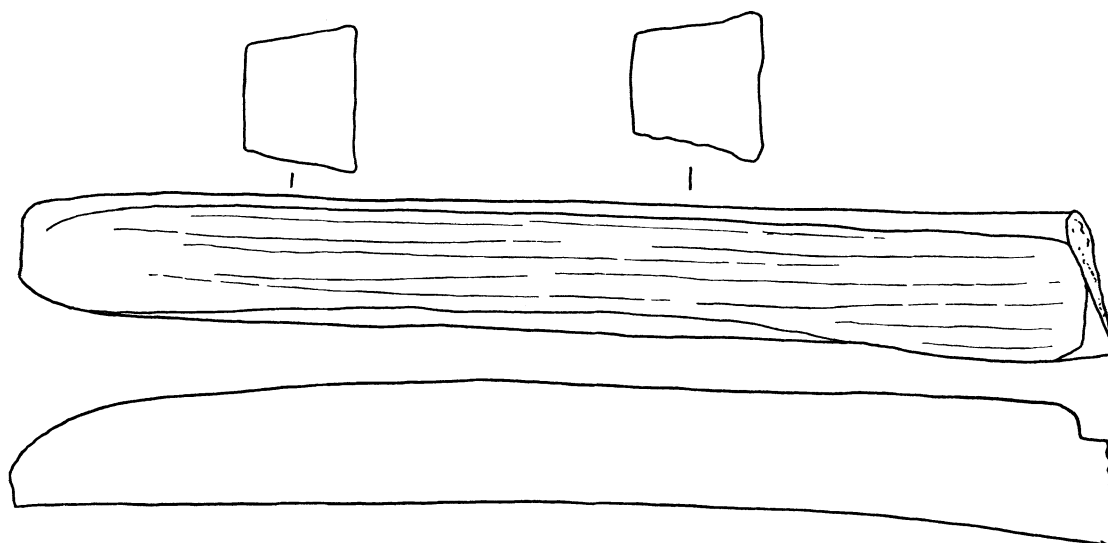


FIG. 10 (1:4)

13. Late Roman amphora, 6th–7th century A.D. FIG. 8.

Site D

14. Amphora, 6th century A.D. FIG. 8.

Site F

15. Late Roman spherical amphora with spiral incision, 6th–7th century A.D.

16. Amphora-base. A distinctive type; cf. *The Athenian Agora* iv, pl. 73 (P822; 3rd century A.D.); *Gerasa* 567, fig. 45. FIG. 8.

Site G

17. Chian amphora, later 5th century B.C. FIG. 8.

18. Amphora-neck, ?4th century B.C. FIG. 8.

19. One-handed jar. Probably Late Roman. FIG. 9.

Site J

20. Fragment of stone anchor-stock (?). FIG. 10.

Site K

21. Amphora, Roman. FIG. 8.

22. Amphora, Roman. FIG. 9.

Ay. Stephanos

Site A: all the amphorae, and the tile, are of the Late Roman period, 7th century A.D., of types familiar in the excavations at Emporio.

23. Amphora. FIG. 11.

24. Amphora. FIG. 11.

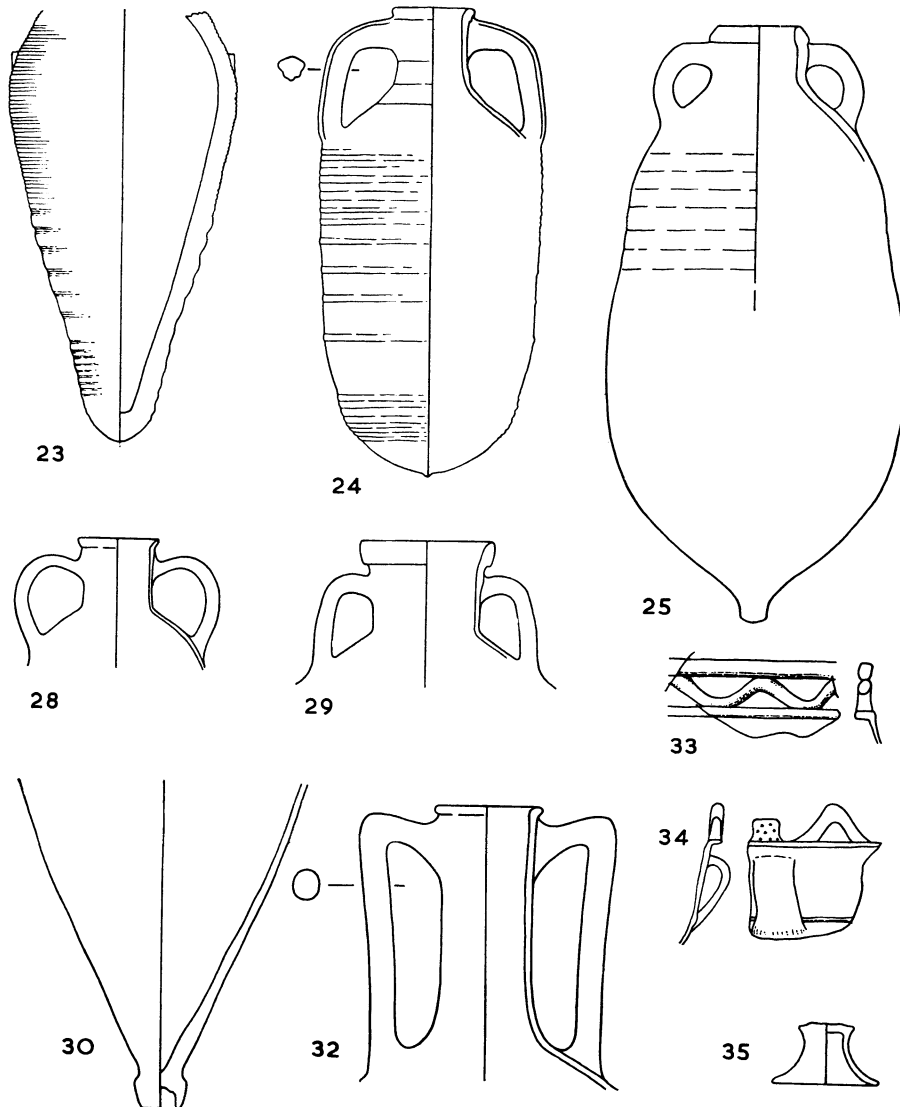


FIG. 11 (1:4)

25. Amphora. Not Greek; perhaps Palestinian. FIG. 11.

26. Cylindrical amphorae; cf. **13**.

27. Tile, 0.49 wide, with deep finger grooves and side ridges.

Site E

28. Amphora, ?5th century B.C. FIG. 11.

29. Amphora, ?5th century B.C. FIG. 11.

Site H

30. Chian amphora, c. 400 B.C. FIG. 11.

Site J

31. Rhodian amphora, 4th–3rd century B.C.

Site K

32. Rhodian amphora, 3rd century B.C. FIG. 11.

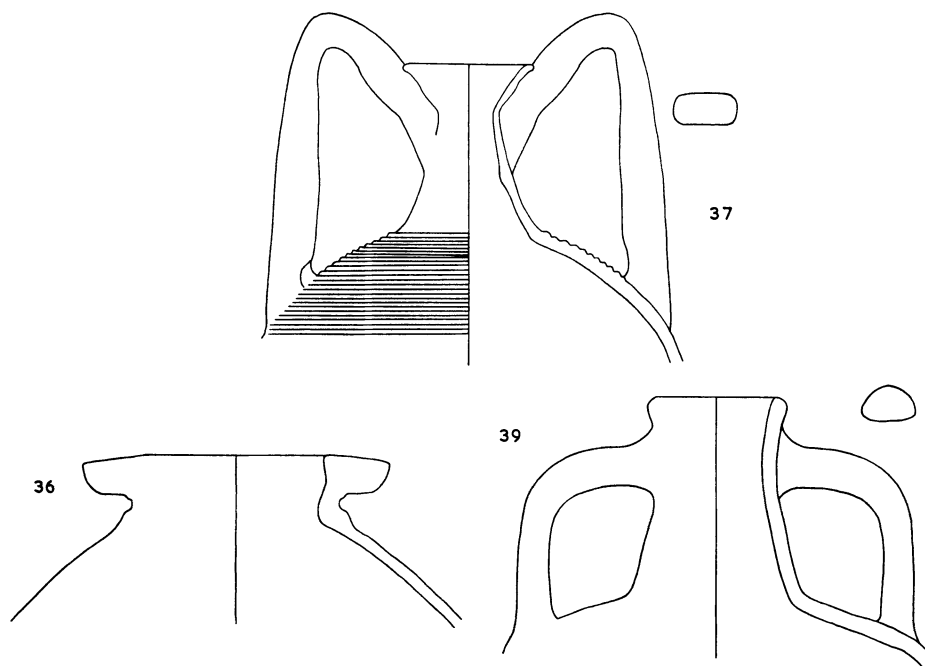


FIG. 12 (1:5)

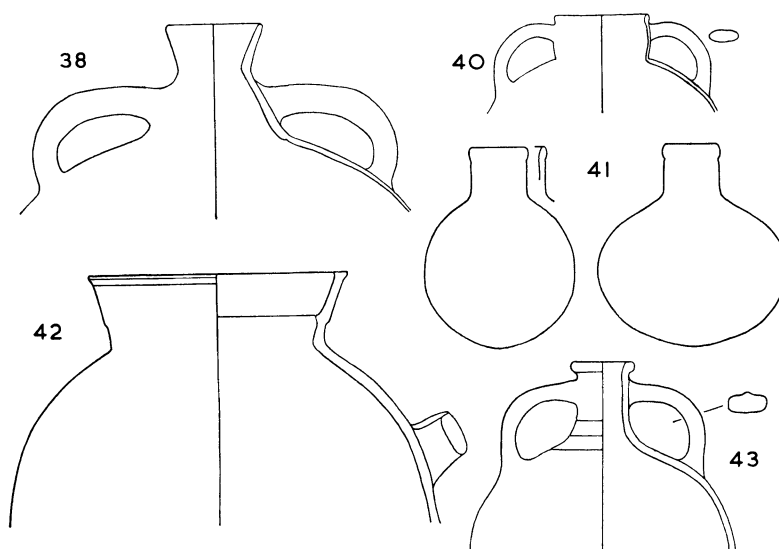


FIG. 13 (1:4)

Site L

33, 34. Fragments of open bowls with ornate rims; 'flower-pots'; ? Medieval or later. FIG. 11.

35. Cup, or ? lid. FIG. 11.

36. Pithos-neck. FIG. 12.

37. Amphora-neck. Probably Medieval. FIG. 12.

Prasso Islands

Site A

38. Amphora. FIG. 13.

Site D

39. Amphora, Late Roman, 4th century A.D. or later. FIG. 12.

Site G

40. Amphora. FIG. 13.

Site H

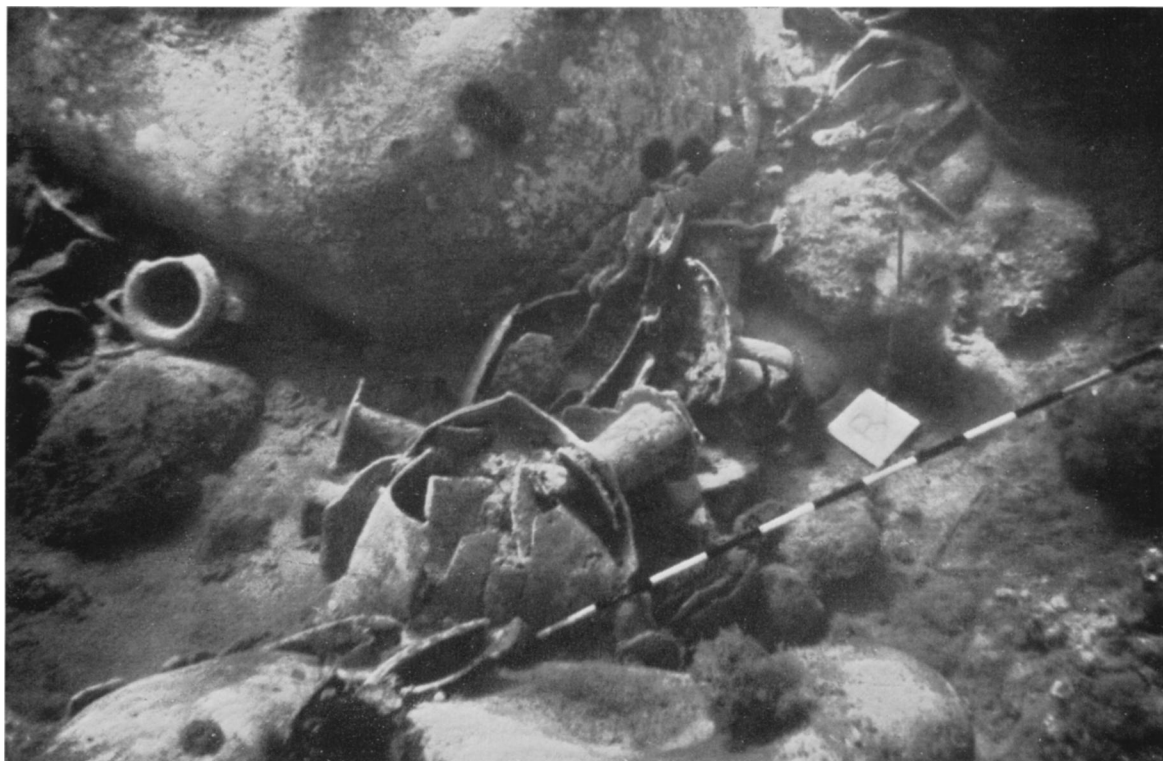
41. Ovoid flask. FIG. 13.

Pondiko

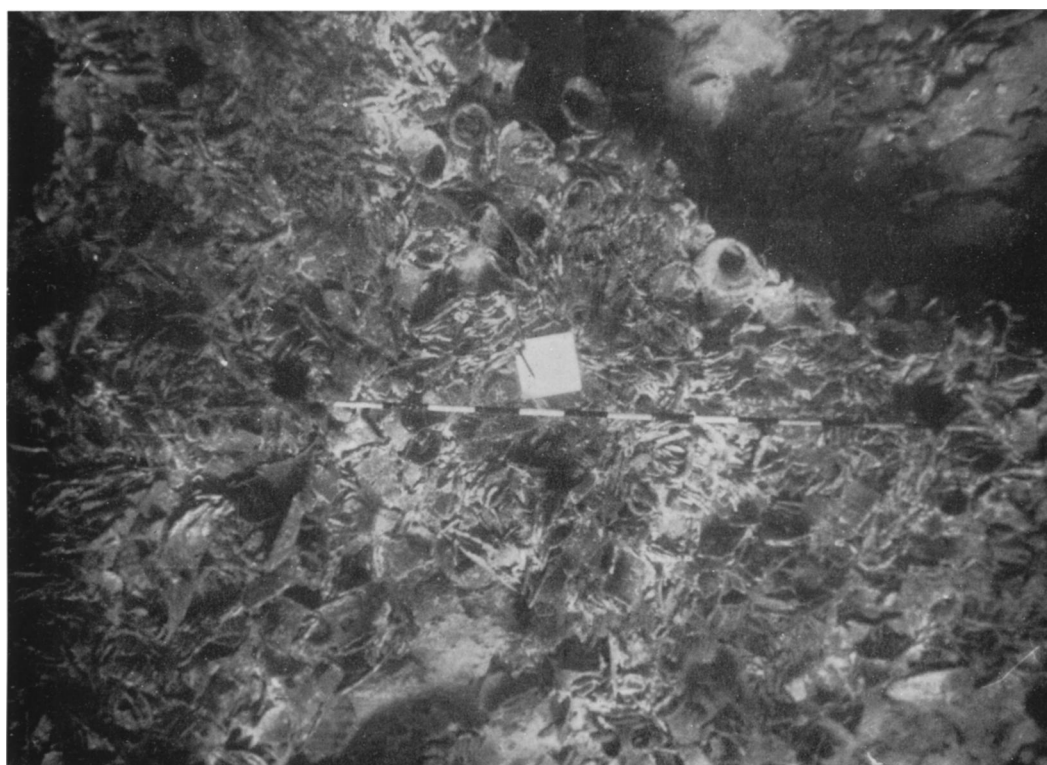
42. Open bowl with side handles. FIG. 13.

43. Amphora, Early Roman. FIG. 13.

JOHN BOARDMAN



(a)



(b)

UNDERWATER RECONNAISSANCE OFF THE ISLAND OF CHIOS, 1954

(a) KOMI, POTTERY ON SEA-BED. (b) AYIOS STEPHANOS, POTTERY ON SEA-BED.