

A preliminary report on an underwater survey at Plitra, South Laconia, Greece: 1980

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During the last three weeks of May 1980 a combined land and underwater survey was carried out by the Department of Underwater Antiquities of the Greek Ministry of Science and Culture, and a team of diving archaeologists and scientists from Cambridge University, at Plitra in the southern Peloponnese (Fig. 1). The directors of the project were N. Lianos and K. Muckelroy under the guidance of the ephor of antiquities Dr G. Papathanassopoulos. The

Greek team members were E. Hadjidaki, R. Papadima, L. Papathanassopoulos, M. Tzefronis and K. Konstantopoulos; the Cambridge Underwater Exploration Team consisted of M. Edwards, P. Lane, T. Mealing, M. Foale, and A. Edwards.

The purpose of this joint expedition in the first place was to determine the size of the area covered with antiquities for the drawing of an overall map 1 : 500. This done, the teams started

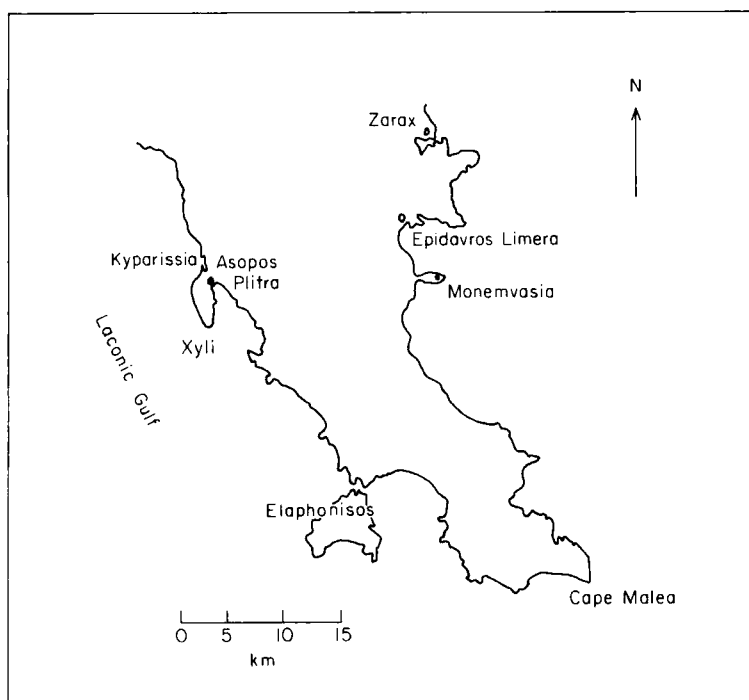


Figure 1. Map of the peninsula of Laconia. E. Hadjidaki.



Figure 2. A Map of the SW are drawn to 1 : 500. Map by N. Lianos and T. Mealing.

a detailed survey of the buildings along the present shoreline, some other remains in shallow-water were also planned at a scale of 1 : 50, so that the orientations, the functions of the structures and dates could be studied in the future.

During August 1982 a three-day survey was undertaken in the same area. N. Lianos, testing the MINI RANGE III positioning MOTOROCA system, re-surveyed most of the structures including the underwater mole. MINI RANGE III consists of two reference stations on land and a receiver and transmitter on the boat. Two LED indicators give the distance of the boat from the reference station. Testing this system, he found the positions of all the underwater structures with an accuracy of ± 3 m. The 1980 survey had been carried out by use of two theodolites and buoys on the surface. Next, a complete sonograph-mosaic was tested of the sea bottom of

the archaeological area using a Klein side scan sonar with 100 kHz 'fish'. At the same time sub-bottom profiles were taken with 3.5 kHz with parallel traverses for all the bay area. The reason for this project was to test the use of the sidescan sonar as a potential tool in Greek underwater archaeology, and to define the ancient shoreline of the area. A complete report with the results of the sonographs is to be published shortly.

General topography

Plitra, which lies in the Gulf of Laconia, on the central prong of the southern Peloponnese (Fig. 2A,B), is considered to be either the ancient town of Asopos (Pausanias 3.22.9) or Cyparissia (Strabo 8.360). The two geographers are our only sources for the history of the site, since, as yet no excavations have taken place in the area. Pausanias writes that Asopos is a

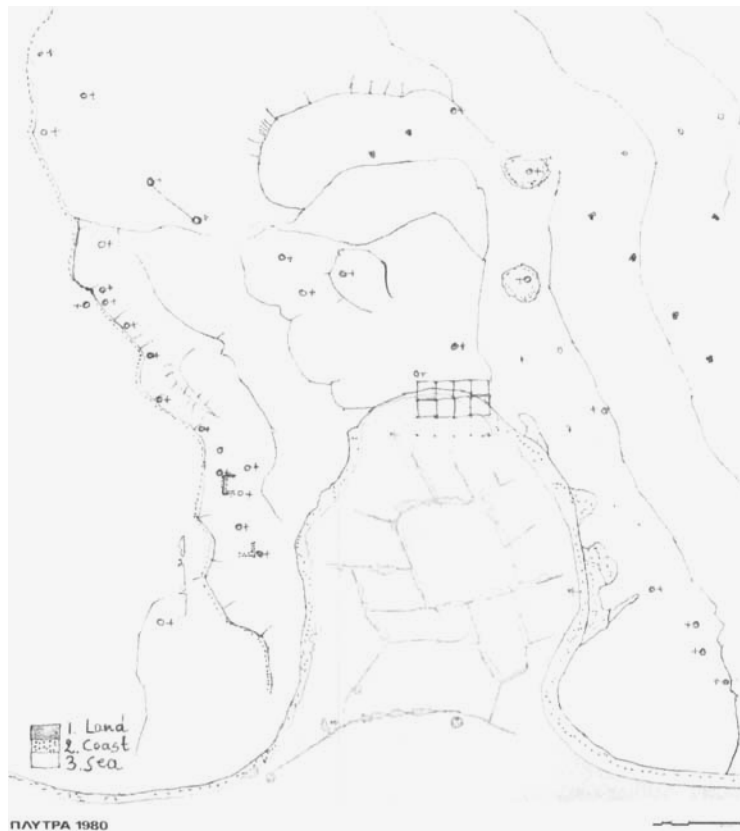


Figure 2. B. Map of submerged promontory.

coastal town which has a temple dedicated to Roman Emperors 'and on the acropolis there is a shrine dedicated to Athena Cyparissia; on the slopes of the acropolis there are remains of a town called Paracyparissia of the Achaeans'. Strabo says that the city of Cyparissia is situated on a peninsula and has a harbour.

Plitra covers a flat peninsula of more than 1 km long, which in antiquity must have stood at least 4 m higher above sea level. It is believed that all the places Pausanias refers to are situated south of modern Asopos on a small peninsula that ends at Cape Xyli (Papahatzis: 418). On the cape there are remains of a tower, a fact that might indicate the presence of the acropolis with the temple of Athena.

The underwater buildings are a continuation of these land remains, the majority of which are buried under the cultivated fields of the area in the northern part of the chersonese. Many walls and rectangular blocks emerging from

the ground, especially along the shore, are, nowadays, used as boundary-stones marking private properties. Scattered architectural marble elements can also be observed around the area, and many dry wells close to the shore may belong to ancient times. Along the coast the strong wave action and erosions reveal buildings and structures, mosaic floors, etc as well as walls which continue underwater.

The south Aegean world has been subject to many earthquakes, and tectonic movements of the earth must be the main cause of subsidence in the area. N. Flemming, who has made geological studies of several Peloponnesian sites including Plitra, asserts that the total sea-level rise has not exceeded the ± 1 m in the last 3000 years (Flemming, 1973:10). Land subsidence, however, does appear to have been much greater; of the order of 1 m every 1000 years, as is proved by a bank of earth 1–2 m high running along the eastern shore, which bears traces of



Figure 3. Theatre on shore (east bay). Photograph by E. Hadjidaki.

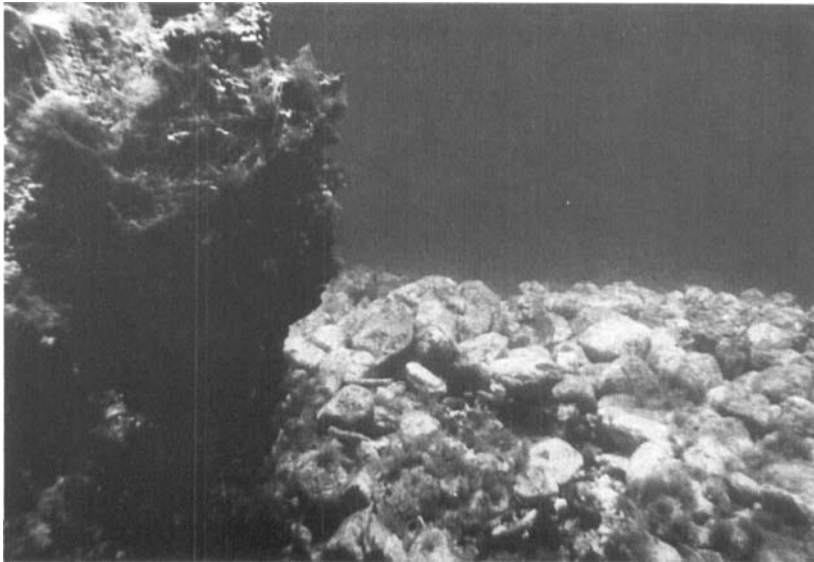


Figure 4. Part of the mole with tower. Photograph by F. Frost.

sudden destruction such as an earthquake, as various bones and pottery protrude from it.

Along the entire shoreline many remains of ancient structures survive surprisingly well, despite the force of the strong winds and waves which prevail throughout the year and can even destroy and change the shape of rocks.

Flemming and Frost, the archaeologist from the University of California, Santa Barbara, visited the area together in 1967 photographing the remains of many ancient buildings.

In 1979, Flemming revisited the place and noted tremendous changes and destructions of buildings due to erosion as well as to human

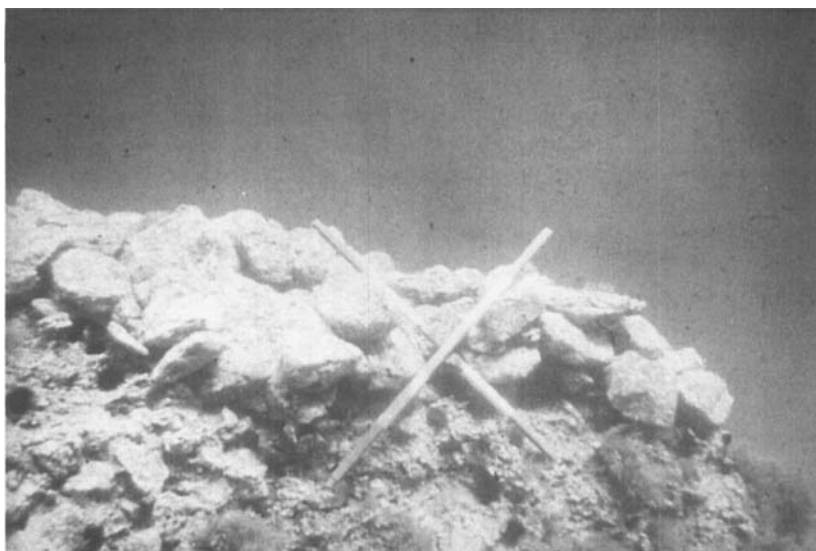


Figure 5. West end of mole. Photograph by N. Lianos.

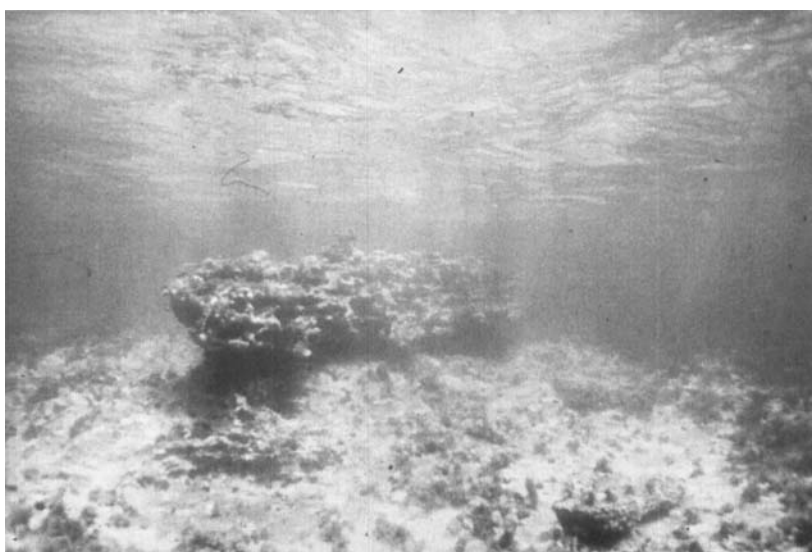


Figure 6. Concrete wall in front of the theatre. Photograph by N. Lianos.

intervention. Examples of destruction, personally communicated to us, are as follows:

(a) On the east side of the peninsula there was a small theatre 10–15 m in diameter with the benches of the seats more or less intact, especially at the lower levels. It faced into the eastern bay, and was almost identical with the

theatre at Iasus on the northern Aegean coast of Turkey. In 1980 the theatre was almost unrecognizable, and all that remained was a slight embayment on the eastern shore, with a concave surface and a few rectangular blocks still *in situ* (Fig. 3).

(b) South-east of the peninsula, in about 1 m of

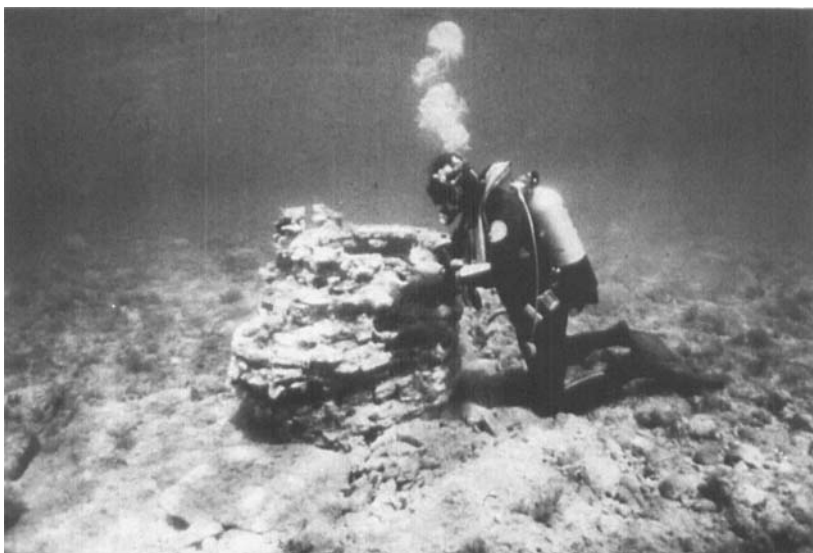


Figure 7. Well from 310° and diver drawing. Photograph by K. Muckelroy.

water, there was in 1967 a brick and mortar structure consisting of three low arches. The central arch was 50 m high and might belong to an apsidal building.

(c) At the extreme southern end of the site Flemming discovered in 3 m of water, free-standing walls forming right angles at several places as though they were parts of a structure of a house. They stood 1 m high, were round in shape and had no mortar or any other binding material between courses. A photograph of them is published in the book *'Cities in the Sea'* by Flemming.

Neither of the above-mentioned two structures were found during the 1980 survey. The apsidal building was completely missing, and of the primitive walls there remained only a scattered mass of loose rubble a few centimetres high.

We can assume that the lower layers of the archaeological material would have been well protected by the upper parts when it first sank. Nevertheless, once exposed in the sea bed, they would have been quickly eroded. Plitra recalls the Greek city of Apollonia in northern Africa where the wave action destroyed a massive tower foundation within a year.

Remains in the east bay

The submerged promontory is flat, running

downwards from 0·10–3 m below sea level. To the south east it continues for about 350 m, before suddenly dropping to a sandy bottom 7–8 m deep, on which are scattered pieces of broken amphorae and other jars. The eastern extremity is covered by a shapeless mole 250–300 m long running WNW–ESE. It is made of large rubble broken up into three sections in a way that it is difficult to determine the entrance to the harbour, if this was the harbour site. A concrete structure standing at the end of the mole higher than the rest, could belong to a tower (Fig. 4,5). The rest of the submerged area is smooth, but for the sea-urchins, which suggests that it had once been overlaid by buildings. The four main areas where ruins have survived are covered with various structures, some *in situ*, and others scattered over the sea bed. There are ashlar blocks of local stone, quarried from the nearby rocks, which belong to the Greek period of occupation; other structures of stone and brick bound together by mortar belong to the Roman period (Fig. 6), while others, constructed of tiles and mortar, may belong to the early Byzantine period. Although no dating was attempted at this early stage, the various necks and amphorae bases found underwater, as well as the building construction suggest the 4th century AD as the last period of habitation in the area. It is possible, however,

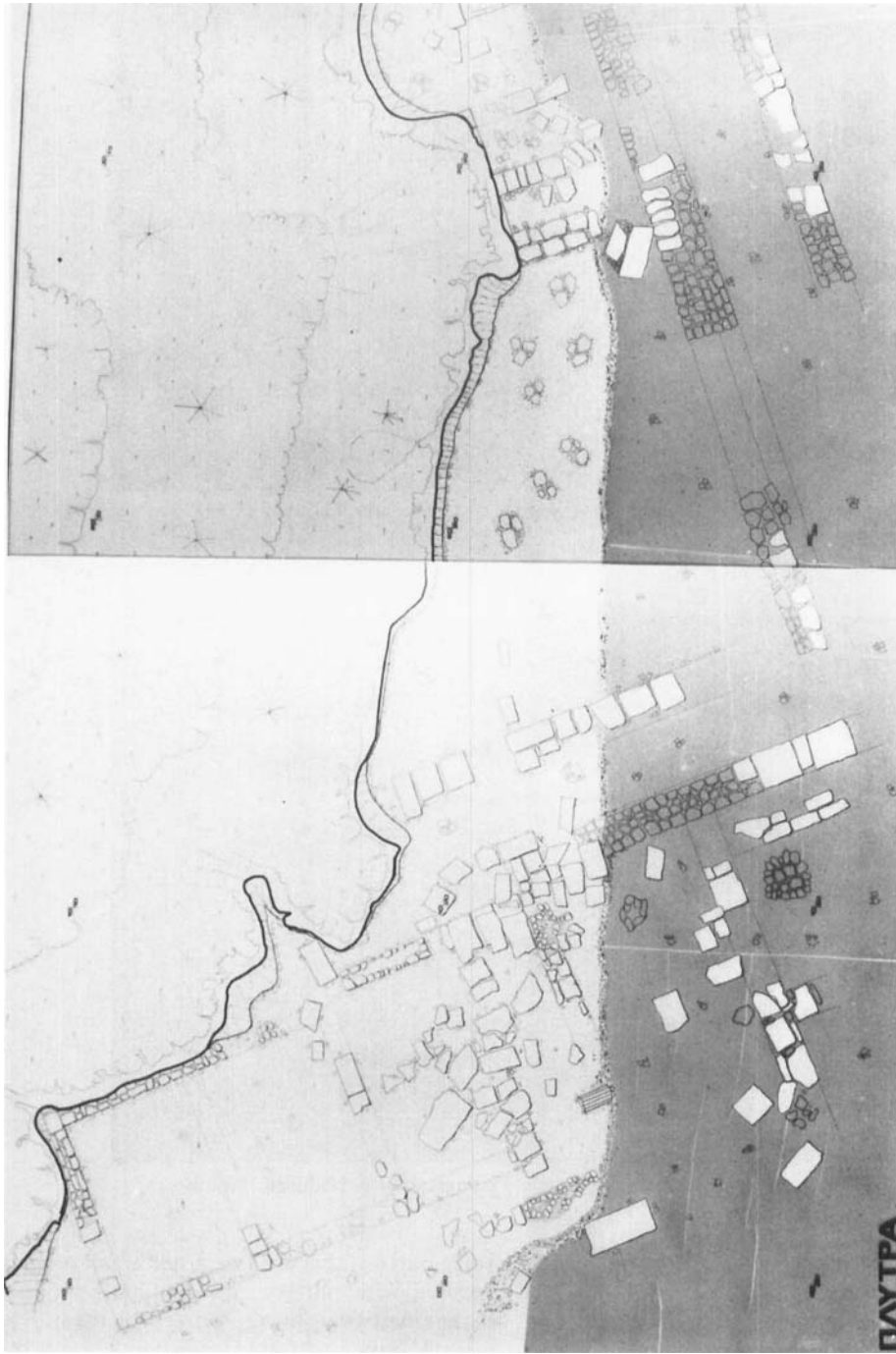


Figure 8. Map of a part of the south area drawn to 1 : 50. Map drawn by N. Lianos and T. Mealing.

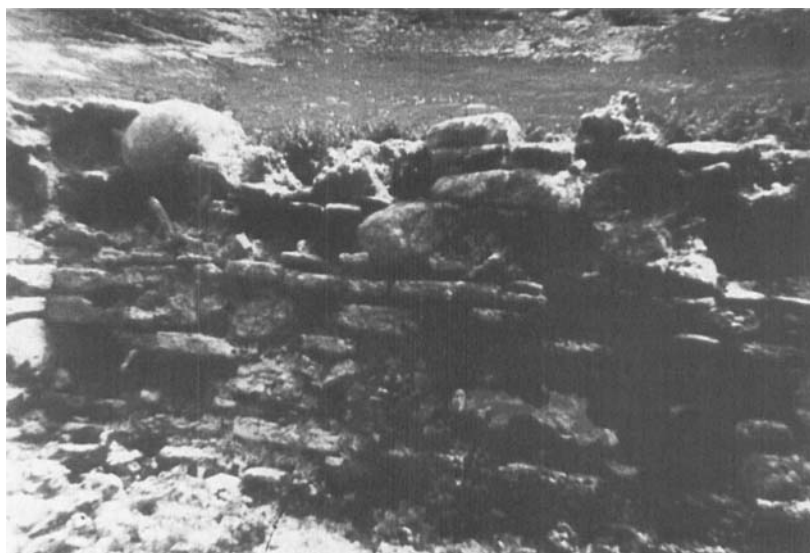


Figure 9. Piece of rubble and mortar walls in south-east area. Photograph by F. Frost.



Figure 10. Hellenistic buildings on shore. Photograph by E. Hadjidaki. (South area).

that material of a later date will be uncovered during future excavations.

Along the eastern bay both on shore and underwater lay the remains of buildings, as yet unidentified, belonging mainly to the early Byzantine period. A well made of tiles (Fig. 7) and mortar was found in 2.5 m of water. In

some parts of this area we noted small mounds covered with pottery and grey sand-spoil, as if they had been burnt. On top of them grew tall eel grass, not found anywhere else on this side of the bay on the submerged shelf. The phenomenon may be natural or there may be something buried beneath these mounds.

South buildings

At the south-east end of the peninsula a most interesting structure was discovered. It had a floor of square tiles on top of which are set vertically two large rectangular stones with holes in the middle. It looks like a hydraulic construction.

Elsewhere, the southern tip of the submerged promontory is covered with masonry walls, and onshore (Figs 8, 9), the foundation of a long building divided into five rooms, constructed of finely cut square and rectangular blocks of limestone still bearing the clamp-holes (Fig. 10). Other structures of the Greek period seem to have been built over in the Roman period, but those in the water are badly eroded. The buildings on the shore, not yet eroded by the waves, seem to have had plaster walls with frescoes in places and fine mosaic floors. Some architectural marble elements that were visible near the coast in 1967 are long gone. Nevertheless, more white marble pieces on the nearby fields, suggest the important function of certain buildings in the area.

West bay buildings

In the western bay are the remains of various round tanks artificially constructed of stone or brick, bound together with mortar, or hewn into the rock. Many rectangular cuttings with grooves in them, can be observed on the rocky shelf in the shallow water. Further out in deeper water near the modern jetty, there is a large area covered with rock cuttings of various sizes from where the material was probably quarried. This side of the peninsula does not seem to have been as heavily built over in antiquity, and it is likely that here was the working area with its water tanks, channels and storage rooms. Three large *pithoi* were found *in situ*, but many of their upper parts were missing, obviously taken as souvenirs by the various beachcomers. We tried to save what we could by collecting a few loose pieces.

Harbour area

Finally, the fourth area containing archaeological evidence is the most interesting, because it does not lie on a rocky promontory, but on the sandy bottom of the modern fishing harbour, west of the main submerged area. Here, probably for the first time, were discovered various

walls, tile floors with *pithoi* found *in situ*, a room of square tile walls bound together with mortar and many broken pieces of pottery, all lying in 2–3 m of water.

The area is overlaid by sand and silt, thus suggesting that a large part of the buildings may survive intact. On a small reef about 100 m away from the shore towards the harbour entrance there stands a structure made of brick and mortar. Various walls projecting from all sides, indicate that it had at least three rooms. Opposite this building and west of the modern jetty, lies a rubble bank composed of similar stones to those mentioned in the eastern bay. It is not clear whether this mound belongs to a smaller mole or to collapsed walls being swept to this side by the waves.

Starting from this end and all along the harbour parallel to the shore, there is an almost straight line of a 'stone wall' carved in the natural rock. No joining material was seen at this stage, but it has been suggested that these blocks belong to a sea wall or an ancient quay. If this is the case, then we must presume that the ancient coastline at this side started somewhere 50 m away from the present shore.

Conclusions and further plans

The archaeological site of Plitra covers a wide area, the original city extending over 300 m from the present shore lines. It is situated in a bay sheltered from the north-west winds, but exposure to the south in the Gulf of Laconia can bring in huge waves from the eastern Mediterranean which cause erosion of the buildings at a rate of 1 m every 10 years.

The above evidence will be re-investigated and it is hoped that work will continue for several years, until the ancient site has been fully surveyed and identified. This project includes the finding of the ancient harbour, the study of the past sea levels and the ancient coastlines. The bottom should be investigated and excavated in order to see whether there are any earlier buildings buried under the sand. Aerial photographs will be taken from a balloon, and mapping at 1:50 will continue. Ideally the buildings on the shore which were eroded by the waves should also be excavated.

Finally, a combined land and underwater survey is projected in the area behind Cape Xyli (which separates the main gulf of Laconia from

the gulf of Plitra), its object would be to situate and identify the two ancient towns mentioned by Pausanias and Strabo, and to find out why these two geographers confused the two names.

This article is dedicated to our dear friend, Keith Muckleroy who met with a tragic death in a diving accident at Loch Tay, Scotland in September 1981.

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