In November, 1969, we returned to the harbor of Porto Longo on Sapienza island, near Methone in the southern Greek Peloponnesus, to resume the shipwreck exploration our group had begun there in 1963.

Then we were concerned with the processes of dissolution in wooden shipwrecks, and had dug test trenches across two “modern” wrecks, the Heraclea, sunk in 1940 by German bombers, and an Austrian brig, whose name we never learned, which had sunk in 1860.

We had also looked, not very successfully, for the remains of H.M.S. Columbine, name ship of a large class of 18-gun brigs designed by Sir William Rule. Columbine had been sent on a diplomatic mission of reconnoitering the island to determine its worth to the British government, which had a tentative claim to Sapienza as a dependency of the Ionian islands, which the British then controlled. Columbine was lost in a scirocco, the seasonally southeastern gale which causes the harbor to be a mine of wrecks, and which caused us in our own research vessel, the 50-foot schooner Stormie Seas, a certain amount of trouble before the expedition ended.

Now we had returned with Dr. Harold Edgerton of M.I.T., Oceanographic Consultant Fred Feyling, and an EG & G (Geodyne Division) sonar device to look for wrecks as yet unknown, and to learn better how to interpret the sonar graphs by examining the records made by the device while being dragged over known wreck sites.

We hoped to find a number of wrecks. Methone, together with the nearby island of Sapienza, lies directly on the route of sailing ships traveling the traditional trade routes from the Near East and Aegean to Italy, from the earliest recorded times until the nearly universal installation of engines in sailing ships in the 20th century. Porto Longo offers shelter which is more limited than it seems—indeed, the British interests in Sapienza island disappeared altogether after the

This article was written before the Throckmortons returned to Greece last spring. We have just received a note from Mr. Throckmortin in which he says that “the work of the summer of 1970 was a more detailed study of the same problems, with the additional use of a Proton Magnetometer, in collaboration with Professor E. T. Hall of the Research Laboratory for Archaeology, Oxford. No new spectacular finds, but a vast increase in knowledge of how to work the equipment. The result of the whole job, when all the data is worked up, will be a method for searching for wrecks in the sea.”

—EDITOR.
disastrous loss of the Columbine. The bottom affords good holding ground for anchors in ordinary weather, but past a certain point of stress the slippery mud yields to a dragging anchor like cold butter.

We learned something of the precarious nature of this anchorage during a scirocco with our own ship, and learned also of the difficulties of maneuvering any ship under sail in the harbor. We were only 50 feet long, with an engine to get us out of trouble at need. Maneuvering very large sailing ships when several were in the harbor would have demanded a very high quality of seamanship indeed.

Since the opening of the Corinth canal, Methone has fallen into disuse as a harbor, and Sapienza is nearly deserted. The ruins of the Sapienza customs house are used as occasional shelter for a flock of goats and their herders. The only other boats there during our month's working period were a yacht, stopped overnight on its way west, a small village delivering supplies to the lighthouse keepers, and a boatload of Club Mediterranean tourist divers who couldn't resist the temptation to see what our buoy flags were about while we were away with the ship in Pylos for a few days. (Our buoys had for the most part dragged during a strong scirocco, so temptation was halted before they might dig for finds.)

Dr. Spirodon Marinatos, director of the Greek Archaeological Society, was general director of the Project. Its sponsors were the National Geographic Society, the Littauer and Old Dominion Foundations, the M.I.T. Strobe Laboratory, and the underwater archaeology section of the University Museum. The purpose was to learn about applying sonar techniques to underwater archaeology, and to see what Porto Longo might reveal about ships and trade routes through the ages.

The first step was to make an ordinary topographical survey of the harbor itself, the chart being on too small a scale to be useful for sonar surveying, as were other available maps. Six survey bench marks were established around the harbor, these marked with Roman numerals. David White survey instruments were used, these having an accuracy of about 0.2 degrees. Magnetic compasses with about one degree of accuracy were used for alignment.

White marks with either numbers or letters were painted on the harbor shoreline rocks, serving as a guide for the sonar navigation team. In some cases two marks at each station were located to aid the steersman to hold his course.

Reciprocal marks were then painted on the opposite shore, with the aid of a hand bearing compass and walkie talkie radios. Range poles for these marks were generally unnecessary since the rocky sides of the harbor are steep enough for compass alignment. Range marks were located on each station so that the boat carrying the sonar apparatus could navigate in a straight line along each section.

The harbor was surveyed with transits, using the original six bench marks and the painted numbers. Iron rods were cemented on the bench marks to preserve them throughout bad weather.

The point of the survey was to enable ourselves or others, returning later, to locate sites indicated by the sonar, this relocation of sites being one of the great difficulties of working at sea. As an aid to the topographical survey, a shore team walked (and crawled and waded) along the sharp, rough shoreline and measured distances between each mark. Buoys were thrown at each target signal given by the sonar. As a final aid
that test trenches be dug on the most promising sites.

Accordingly, an air compressor, like those used on construction jobs, was rented in Athens and tracked down to Methone. We installed this on a local work boat, and spent several days diving and digging with an air lift. These were the sites we explored:

1) A strong anomaly lay near the western shore. This closely coincided with the location reported in the court-martial of the captain of the Colubrini, but once again we were wrong about the site of the British brig. We airlifted a hole in the mud, about a meter and a half in diameter and about two meters deep. At the depth of approximately one meter there is a layer of sherds—bowls, amphorae, etc., mostly of similar manufacture, many pieces with green and yellow glaze. One pot base has an incised portrait of a woman. It is indeed a shipwreck, but not the Colubrini.

We did not trace this "vein" of pottery farther along at that depth, since we were working with limited time and money, and the last of Indian summer was obviously upon us. Working in pitch dark, unable to see our hands or anything else in front of our faces once the airlift had stirred up the mud, we felt for a few sample sherds and moved on to the next site.

2) This was in the middle of the harbor, and was assumed to be the wreck of the Congo, said to have sunk about 1890 with her cargo of raisins. There was a great deal of ship's timber just beneath the surface of the mud. We raised a plank, several sheaves from blocks, and half a broken bottle, enough to indicate that the wreck was from the late or middle 19th century. Raisins or not, the mud had a noticeably different smell from that of the rest of the harbor, an observation made with considerable distaste by the deck crew as divers returned from the site.

3) The "unknown wreck" had given a strong sub-bottom sonar signal on the east side of the harbor. We thought it might be the wreck of the Amerikni, a Greek sailing ship sunk in 1835. At the depth of one meter we found a heap of cut sandstone slabs, a broken plate, and a complete brown glazed bowl. Probably they are from the Amerikni.

4) A shallow exploration at the site of what Dr. Edgerton called the "hard reflection" wreck, because of the nature of its sonar signal, produced another heap of sandstone ballast, animal bones, and many small pieces of carbon. It is almost certainly a wreck, of unknown provenance. No pottery was recovered, so no date can be suggested.

**EXPLORATION**

**FALL 1970**

5) We then returned to within a few meters of the first site, that of the false Colubrini. Though probing with iron rods had given hopeful indications, a series of two-meter trial trenches produced no finds at all of any nature.

All these "trenches" or exploratory holes in the mud give only a cursory indication of what lies beneath the mud. We do not know what may lie within a few feet beneath or to the sides of these trenches, or what was indicated by the weaker sonar signals.

On the last day, still curious about the elusive Colubrini, divers were sent to make a visual search, without airlifting, of the area on the west side of the harbor north of site 1. In this area various miscellaneous finds had been made in both 1963 and 1969, either on the rocks or in shallow water. A few hours' search resulted in finds probably from three different wrecks: a 17th century Greek ship, a Byzantine ship, and, in somewhat deeper water than the other two, the wreck of the Colubrini. Protruding from the sand were bits of oak planking, three bottles of the period, an inscribed holy stone, copper sheeting, copper nails, and two fragments of willow-ware plates. All the material was taken to Pylos, catalogued in English and Greek, and arranged in groups in a storeroom of the museum.

The sonar survey also contributed some geological information. There is a distinct layer, about five meters below the bottom, which could have been formed when the ocean level was lower than it is now. Such a condition is known to have occurred during the last glacial period about 10,000 to 15,000 years ago. Porto Longo harbor was probably a freshwater lake then. This layer and several other weaker ones extend over most of the harbor's sub-bottom area.

The present sediments of the harbor show the effects of waves, storms, or tsunami. The sediments are very lumpy in depth and appearance. A sonar record across the entrance to Porto Longo harbor shows a mud-free surface with a distinct V-notch at the center. The notch may have been cut by tide action when the sea level reached the top of the barrier. Now the V-notch is partially filled with sediment.

Several conclusions can be drawn from the November survey. We want to dig test trenches
across the sites described above, with enough scope to identify them more precisely, and to dig on deeper sites indicated elsewhere by the sonar.

We learned that it is more efficient to work the airlift at the same time that the sonar is operating. (Dr. Edgerton had returned to the United States at the time that airlifting began.) The digging apparatus can be positioned accurately at once, without concern about dragging buoys, compass bearings, etc. A small target is difficult to hit by excavation.

The sonar seems very effective in this type of harbor bottom, though some difficulties were experienced in “seeing” known wrecks. Waterlogged wood may often register like sediment. But ballast and other solid objects give strong identifying reflections.

It seems likely that further investigations there may produce wrecks much older than the ones discovered this year. Not far away on the west coast of Greece are other sites where the system might be used with success: Lepanto, where there should be at least thirty Turkish galleys from the battle of 1577; Actium where Octavian defeated the combined fleets of Antony and Cleopatra; Navarino Bay where, in 1827, the allied fleet sank sixty Turkish and Egyptian warships and ensured the independence of modern Greece.

PETER THROCKMORTON has been devoting his time to underwater archaeology since 1958; his association with the University Museum beginning in 1960. Two seasons on Turkish sponge boats resulted in his discovery of dozens of ancient shipwrecks, including the Bronze Age ship at Gelidonya and the Late Roman ship at Yassi Ada, both of which have been reported on in Expedition. In 1964 he did a shipwreck survey in Taranto, in 1965 was Director of the Taranto Surveys and began excavation of Torre Sgarratta, which he continued in 1967 and 1968—all under the auspices of the British School at Rome and the University Museum, with the Italian Navy cooperating on Torre Sgarratta. In 1970 he worked at Porto Longo and Pelago Nisos, where he was Technical Adviser and Field Director for the Greek Archaeological Service. Mr. Throckmorton is the author of Lost Ships and Shipwrecks and Archaeology, and is presently working on a book about modern, traditional sailing ships.

Finds from an afternoon’s airlifting.
© NATIONAL GEOGRAPHIC SOCIETY

EXPEDITION