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AINA NEWSLETTER

VOL 2 NO 1



Spring 1975

The Porticello Shipwreck

Like the Byzantine ship at Yassi Ada (AINA Newsletter Vol. 1, No. 2) the Porticello shipwreck was excavated by AINA staff members while still working for the University Museum. The wreck, located on the Italian side of the Straits of Messina, near the village of Porticello, was discovered by a local Italian fisherman and heavily plundered by him and diving associates in the Fall of 1969. As a result of a dispute among the looters, the wreck's existence was brought to the attention of the local antiquities authorities. Dott. Giuseppe Foti, superintendent of antiquities in Calabria, Italy, sought the aid of Franco Colosimo, a Sicilian diver who had assisted in the excavation of other ancient wrecks in Italian waters, and a group of specially trained divers of the Italian state police. They mapped the site and recovered remains still visible on the sea bed.

It was at Colosimo's suggestion that Dott. Foti subsequently invited the University Museum to undertake a salvage excavation. This took place in July, 1970, under the direction of David I. Owen, with support from the University Museum and the Geographical Society of Philadelphia. Dr. Owen has since asked AINA Executive Director Cynthia J. Eiseman to prepare the final excavation report, which will appear first as her doctoral thesis for the Department of Classical Archaeology, University of Pennsylvania. Here Mrs. Eiseman provides for AINA members an interim report on her research.

The Cargo

Nautical archaeologists are especially fortunate to have discovered and ex-



Fig. 1. Life-size bronze head.

cavated a considerable number of wrecks of the Roman period. Well-preserved Byzantine wrecks from Yassi Ada, Pantano Longarini, and Marzamemi have substantially supplemented our knowledge of Byzantine shipping from literary sources, and the Cape Gelidonya shipwreck has provided exciting new evidence for mechanisms of trade in the Bronze Age. The Kyrenia ship contains unparalleled information about ship construction techniques and maritime trade practices at the beginning of the

Hellenistic period. Only the Porticello wreck has yet been found from the 5th century B.C., when Greece was at her political, economic, and artistic acme. It is unfortunate that the ship was so heavily plundered that we have little idea of the cargo's lading (which might have told us the course of her last voyage), the proportion of the four amphora types to one another within the cargo, and their relationship to the remainder of the cargo. Also missing are large portions of two life-sized bronze statues which were part of the cargo. Nevertheless, the scraps which the looters left behind can contribute significantly to our knowledge of maritime trade, art history, and technology of the 5th century.

Unquestionably the most exciting object from the wreck is the bronze bearded head (Fig. 1). From black glaze bowls and lamps recovered from the stern of the ship, we can fix the time of the ship's sinking to the last quarter of the 5th century. The bronze head must, then, have been made no later than some time late in the 5th century, although some scholars, seeing the sculpture out of its archaeological context, would have placed it in the 4th century. With its prominent forehead, small, deep-set eyes, hooked nose, balding pate, moustache completely concealing the mouth, and massive beard, the head is unique among other monumental (that is, life-sized or larger) sculptural remains of the period, in which facial features are smooth and idealized, beards are short, and baldness is almost unknown. What does this tell us about our understanding of Greek sculpture at this time? Simply that, although modern scholars have made careful studies of the

Photo by David I. Owen

statuary which survives to this day, these are only a tiny proportion of what was made in antiquity, and our understanding of late 5th century Greek sculpture is correspondingly small.

This comes as no surprise, for the most prolific ancient writers on Greek art, Pausanias and Pliny, tell us that in the 5th century the predominant medium of sculpture was bronze. And while several hundred marble and limestone sculptured buildings and individual statues have survived to the present day, there is only a handful of monumental bronzes. Because of the vigorous characterization of the Porticello head, we believe it is a portrait. Although still in its infancy in the latter part of the 5th century, portraiture successfully reproduced both physical features and personality traits of the individuals represented. Typically, imaginary portraits of long dead literary figures such as Homer were produced at this time, and it is possible that the Porticello head is such an imaginary portrait.

Sculpture formed only a small part of the cargo, which included in addition amphoras containing wine and possibly preserved fish, lead ingots perhaps from the famous lead and silver mines of Laurion near Athens, and—most unusual—ink. The amphoras come from far-flung regions of the Mediterranean, as far east as the Bosphorus and as far west as the western extremity of Sicily. We know that bronze sculptures were

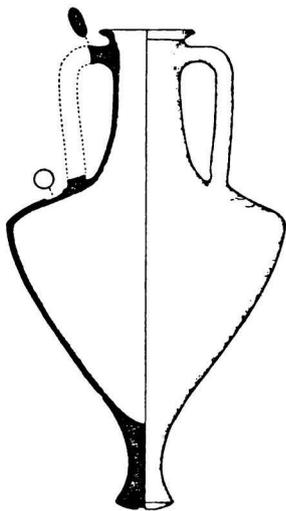


Fig. 2. Amphora from Mende.

Drawing by Jane Cook

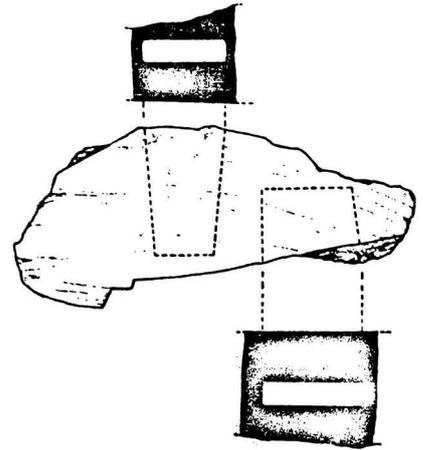
expensive items in antiquity as they are today. Ink was likewise a costly commodity, as was the fine vintage wine of Mende, which was carried in some of the distinctive amphoras recovered from the ship (Fig. 2). Thus the cargo represents a considerable cash investment for the merchant or merchants who provided financial backing for the voyage. If they were travelling on the ship—and we have no way of knowing this now—they may have lost their lives as well as their money, although this is unlikely, the ship having sunk so close to shore.

The Hull

AINA staff member J. Richard Steffy, reconstructor of the Kyrenia ship, has examined photographs and drawings of the few small remains of the Porticello ship's hull, and has been able to make many valuable suggestions about its construction, based on comparisons with features of the better-preserved Kyrenia ship. The reader is reminded that the Kyrenia ship, excavated and restored under the direction of AINA Vice-President Michael L. Katzev, was at least 80 years old when she sank around 300 B.C., and radiocarbon dates indicate that the Porticello vessel was built some time in the 5th century. It is, therefore, likely that the two ships were built by shipwrights separated by only one generation, as a man and his grandson. This is not to suggest that the ships were built in the same place—there is insufficient evidence to support such a claim—but rather to point out that close similarities between the two vessels are not at all surprising, considering the conservatism of the ship-building art.

Copper nails, used to fasten pre-erected hull strakes to frames, were distributed on the sea bed at Porticello over an area some 82 feet long. At Kyrenia, ship's nails were found in an area 60 feet in length, and that ship has been restored with an overall length of 47 feet. Using the same proportions, which allows for an outward collapse of stem and stern posts, we conjecture that the Porticello ship was approximately 66 feet long.

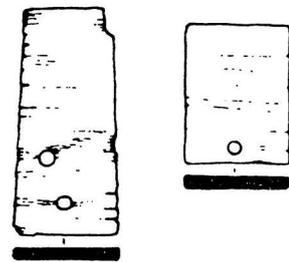
That the Porticello ship was built by the shell-first technique, using mortises and tenons, employed throughout the



Drawing by Jane Cook

Fig. 3. Fragment of hull strake, showing two mortises.

Mediterranean in antiquity, is evident from the single hull timber recovered (Fig. 3), with a mortise cut into either edge, and from three tenons (Fig. 4). The hull timber can be reconstructed to a width of approximately 4 inches (11 cm.), wider than the Kyrenia ship strakes and narrower than her wales. Thus, although the timber's original function and location will forever remain a mystery, it is an important clue to the ship's construction method. The mortises have tapered rather than straight edges, and are of different sizes. It is possible that the piece comes from a scarf joint. There is no evidence of wooden dowels or pegs transfixing the two mortises, but three tenons recovered from the wreck site do have dowel holes. Once hull strakes had been edge-joined to one another with mortise and tenon joints, which were transfixed with dowels, the shipwright adzed frames and set them into the hull. Strakes and frames were fastened to one another by



Drawing by Jane Cook

Fig. 4. Two of the three tenons recovered from the ship.

drilling holes from the outside, inserting wooden treenails into the holes, and finally driving long copper nails through the treenails to assure a tight fit. The ends of the nails were clenched over and their tips driven into the inner face of the frames. Although no actual treenails are preserved, a number of nails were brought up with a heavy concretion surrounding their shafts (Fig. 5). This concretion represents a partial corrosion of the nail, some of whose metallic elements permeated the wood of the treenail to form the concretion. The same phenomenon was observed on Kyrenia ship nails.

Unclenched nails were recovered as well, and these may have been used to join the garboard or other lower strakes to keel or floors. Where frames did not align exactly with the interior face of the strakes, the Kyrenia shipwright drove in wedge-shaped shims, and a shim from the Porticello wreck shows that her shipwright employed the same device.

The Porticello ship provides us with the earliest known examples of a number of features. Several small pieces of lead sheeting indicate that small leaks in

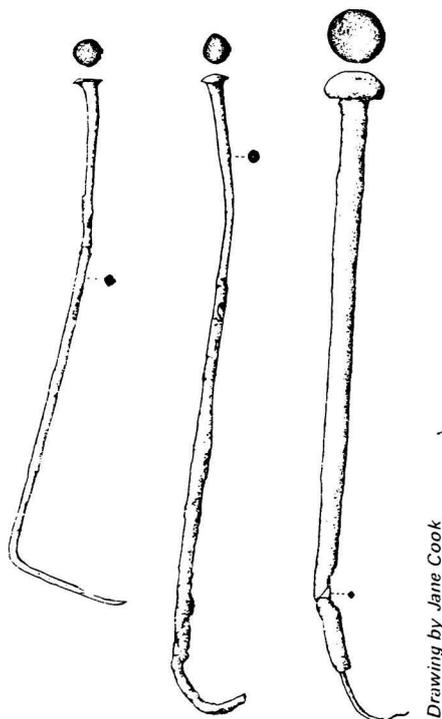


Fig. 5. Three copper nails, used to fasten hull strakes to frames.

Drawing by Jane Cook

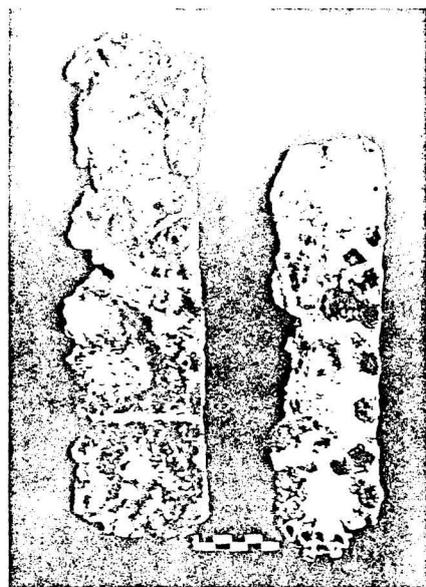


Fig. 6. Lead patches; note nails or nail holes at the right edge of each piece.

Photo by David I. Owen

the hull were patched with this material (Fig. 6). They further suggest that the hull was sheathed with lead on its outer face, for the Kyrenia ship used lead sheeting in both ways: whereas outer hull sheathing was applied in long, broad sheets, attached to the strakes with small nails creating a diagonal pattern, interior patches were small and rectangular, attached to the strakes only around the edges of the patch (as with the pieces from Porticello), and used nails virtually identical to those on the Porticello wreck.

The 5th century wreck has also produced the earliest example of a cleat (Fig. 7). It is quite small (just over 8 inches in length) but the principle of the cleat was evidently well understood at this time, for the rectangular hole for the bolt which fastened it down is tapered toward the bottom, providing resistance to the upward pull of the line which was wrapped around it.

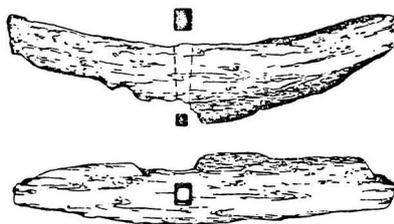


Fig. 7. Wooden cleat.

Drawing by Susan Womer Katzev

Perhaps one of the most exciting features of the Porticello ship's fittings is a wooden toggle (Fig. 8), for this small object alone gives us a clue to an important feature of the ship, its rigging. Mr. Steffy has studied seven wooden toggles recovered from the Kyrenia ship and has concluded that they were made on a lathe and varied in size and shape for identification purposes. There were originally two sets of five on the Kyrenia ship, with each set designated for one edge of the ship's square sail. They were used as a quick-release anti-luffing device when the ship was sailed into the wind. Their function was demonstrated in sea trials of the scale model of the Kyrenia ship and will be described in detail in a forthcoming publication. The Porticello toggle, also lathe made, is similar in size and general form to the Kyrenia examples, although it lacks decorative lathe-turned grooves. Its presence on the 5th century vessel proves that she was a square-rigged ship, for such a device would have no place on a ship with fore-and-aft rigging.

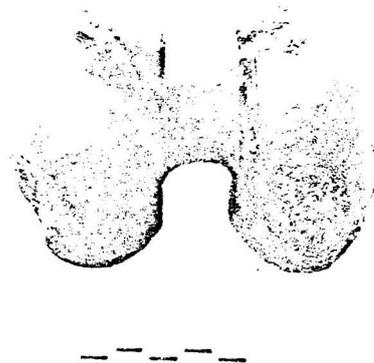


Fig. 8. Wooden toggle, used as anti-luffing device.

Photo by Susan Womer Katzev

Life at Sea

Life aboard ship probably changed little from the 5th to the 4th century. Here again the Kyrenia ship is helpful in understanding the less well preserved Porticello vessel. The larger ship may have required a bigger crew than the four who manned her smaller 4th century sister, but cooking and eating wares are not well enough preserved to provide clues. Only two fine, black glaze bowls

were recovered, and we have no way of knowing how many more, if any, were carried. In addition to these, a small wooden bowl, a terracotta mortar, a jug, a small cooking pot called a *chytra*, and two black glaze lamps are all that survive. These were recovered from the northern extremity of the site and would have been kept in a small storage area below the after deck. No trace of portable braziers common to Roman merchantmen, nor of hearth and roof-tiles as found on the Byzantine ship at Yassi Ada, was found. It is likely, therefore, that no galley existed, but rather hot meals were prepared ashore when the crew rested for the night. The same procedure has been postulated for the Kyrenia ship, and galleys seem not to have been common until Roman times.

Also found in the stern storage area was a lead-tipped awl with a wooden handle (Fig. 9). This little tool would have been used for mending sails, and it is not surprising that it was found in association with cooking and eating ware, for maintenance of sails must have taken place when the ship was at anchor. Also from the ship's stern came the wooden toggle mentioned earlier, but it is not possible to say with any certainty whether this indicated that the ship was moving under sail when she sank, or whether the captain had struck

Photo by Susan Womer Katzev

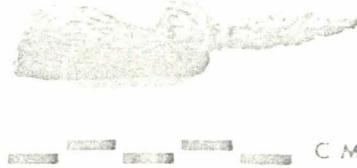


Fig. 9. Awl with wooden handle (broken) and lead tip.

the sail and stowed the gear before the ship came to grief.

Work on the many intriguing features of the Porticello ship continues. With the cooperation of Dr. Robert Brill of the Corning Museum of Glass, one of AINA's Supporting Institutions, various types of metals from the site are being analyzed, with the hope of identifying the sources of lead and determining the composition of copper and bronze. Study of sculpture fragments should supplement our knowledge of bronze manufacturing techniques. A new form of anchor, perhaps characteristic of the classical period, seems to have been used on both the Porticello and Kyrenia ships. Results of this and other research will be reported to AINA members in future newsletter.

—Cynthia Jones Eiseman

AINA's Growth Continues



Carl J. Clausen, AINA's recently appointed Adjunct Professor of North American Archaeology, brings to AINA a dozen years of experience in New World archaeology. A native of Dallas, Texas,

Mr. Clausen received his M.A. degree in Anthropology in 1964 from the University of Florida. Until 1972 he served as marine archaeologist for the State of Florida; his duties included supervision of all underwater exploration and salvage and publication of historical shipwrecks undertaken by contract with the State of Florida. Projects under his direction included investigations of cenote-like features in south Florida, at Little Salt Springs and Warm Mineral Springs, where 5,000- and 10,000-year-old human remains were found; a camp for salvagers and survivors of a Spanish fleet wrecked on the east coast of Florida in 1715; and an architectural survey of Colonial Spanish-Indian structures in Colombia, S.A.

In 1972 he was appointed marine archaeologist for the State of Texas. As
(continued on page 5)

George Bass Publishes Archaeology Beneath the Sea

Walker and Company and the American Institute of Nautical Archaeology are pleased to announce the publication of *Archaeology Beneath the Sea, A Personal Account*, by George F. Bass.

Fresh from Army service in Korea some fifteen years ago, a young University of Pennsylvania graduate student joined a small team of dedicated divers and with the bare essentials of gear set out to explore a reported wreck off the coast of Turkey. By the end of the summer, George F. Bass and his associates realized they had recovered the remains of the oldest shipwreck ever found. In *Archaeology Beneath the Sea*, Dr. Bass revives the excitement of these early days and the tensions, setbacks, and triumphs of his subsequent expeditions over the next fifteen years.

"His account of his experiences... is extremely well written. His vignettes of his colleagues, companions and others come off vividly and the whole book is a lively description of a fascinating and exciting new profession... Young readers as well as adults should enjoy the book."

—Publishers Weekly

This new book is available to AINA members at the special rate of \$6.95 plus postage (list price \$12.95). To order, complete the coupon and mail it with a check or money order in U.S. Dollars. Allow six weeks for delivery in U.S. and Canada. Overseas orders will be sent by surface mail.

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AINA's Growth Continues *(continued from page 4)*

project director, he designed, organized, and fielded the State's Padre Island Underwater Archaeological Research Project, the chief goal of which was the cultural and historical investigation of several mid-16th century Spanish ships destroyed off the Texas coast in 1554. During 1972 and 1973 one of these ships was completely excavated, and in 1973 served as the site for a nine-week summer field course in underwater ar-

chaeology for the Department of Anthropology of the University of Texas at Austin. Mr. Clausen was appointed lecturer and instructor for the field school.

Mr. Clausen serves as consultant for numerous private and governmental organizations concerned with underwater archaeology, and has published extensively in scientific journals. He lives near Georgetown, Texas, with his wife, three children, and a variety of four-legged creatures.

1779 Expedition

AINA's first New World project, the excavation of the American ship *Defense* in Penticot Bay, Maine, began on June 1. Under the direction of AINA Adjunct Professor David C. Switzer, the excavation is conducted with the cooperation of the Maine Maritime Academy in Castine, under the sponsorship of the Maine State Museum. Staff includes George F. Bass and J. Richard Steffy from AINA; David Wyman from the Maine Maritime Academy; and Mary Strouse and Faith Hentschel, archaeology students trained in Turkey during AINA's 1974 summer field school.

New students are Thomas C.C. Birchett, graduate student of anthropology, University of Mississippi; Richard M. Geffken, a post-graduate student of

anthropology at Montclair State College; Henry B. Graham, Assistant Professor of Art History, New College, Sarasota, Fla; Paul F. Johnston, doing post-graduate work in classical studies, University of Pennsylvania; Kenneth R. Pott, undergraduate student of Medieval Studies and Anthropology, Western Michigan University; Cynthia Orr, undergraduate student of anthropology, University of Pennsylvania; Rhys F. Townsend, graduate student of Art History, University of North Carolina at Chapel Hill; and Steven C. Ross, graduate student of anthropology, Northern Arizona University.

The project, to be described in a forthcoming Newsletter, will conclude in mid-July and will include a preliminary survey for other wrecks lost from the same fleet in 1779.



Photo by David C. Switzer

Henry Graham watches from the air-lift sieve as Paul Johnston (l.) and Tom Birchett report on their work under water to Mary Strouse (back to camera).



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The American Institute of Nautical Archaeology is a nonprofit scientific/educational organization whose purpose is to gather knowledge of man's past as left in the physical remains of his maritime activities and to disseminate this knowledge through scientific and popular publications, seminars, and lectures. The AINA Newsletter is published periodically by AINA and is distributed to its members and Supporting Institutions to inform them of AINA's current activities.

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