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LA MEDIA LUNA



Co-author Don Keith views Media Luna.
Photo: G. F. Bass.

On January 3, George Bass and Donald Keith of INA flew to Mexico City to conduct a three-and-a-half week course in underwater archaeological field methods at the invitation of the Grupo de Buceo Arqueológico de la E.N.A.H. - the archaeological diving group of the National School of Anthropology and History. Here they provide an account of their experiences.

Clouds of steam drifted over the lake, almost obscuring the reeds on its opposite bank and the mountains rising at a distance on all sides. The sound of bubbles popping on the surface was constant. The water, fed from five thermal springs, was far warmer than the chill morning air.

Small wonder that prehistoric people held the Lake of the Half Moon (*la Media Luna*) in awe. Their respect is known to us today by thousands of terra-cotta

figurines placed in the lake, often inside pottery vessels.

These offerings had not brought us to the lake. Our three-day visit was only a part of the training course we offered. Every evening in Mexico City, before and after the trip, we gave two-hour lectures, with simultaneous translations from English to Spanish by various members of the class. We discussed the history and theory of nautical archaeology, the history and principles of wooden hull construction, and techniques of underwater survey and excavation, often illustrating specific points with slides and plans of our own past projects.

Now it was time for the students to apply the theories to an actual field project.

Diving instructor Rafael Alducin was comfortable in only a bathing suit as he swam over a survey team thirty feet be-

low. He lifted his head and removed his snorkel:

"They found the first one!" he shouted.

The first team of student divers had done their job well, spotting a solitary sherd of pottery protruding from the lake bed.

We suggested that the second team, armed with stakes, strings and meter tapes, grid the area for photography before beginning the excavation. We left them to decide their methods, and then took turns either snorkeling above them, to observe their work and call out comments, or remaining on shore to record these comments for a later critique.

The newly trained divers made mistakes. It was difficult for them to keep their bodies and fins off the soft bottom which was covered by a thick layer of light, flocculent sediment. Often they were hidden from us and from one another in dark clouds of sediment before the barely discernible current carried it away.

Before the day was over, however, the students had uncovered a two-meter-square area of pottery and were beginning to label each fragment with a numbered plastic tag. The excavation, we felt, would be a success if they continued to improve with each dive on the site.

The site was by no means ordinary. We knew its exact age in advance: it could be measured in hours.

During the long drive from Mexico City



north to the lake, in the state of San Luis Potosi, we had discussed the training exercise with group leader Pilar Luna, who first had contacted INA about giving the course. The three of us had decided that we had no right, without proper permits and conservation facilities, to touch a single ancient artifact — despite the fact that amateur divers and even misguided archaeologists had raised thousands of figurines from the lake over the years. No plan exists of the original positions of those figurines, a plan that might have allowed scholars to date changes in the level of the lake or shifting patterns of ancient inhabitants.

Instead of causing further disturbance, we decided, we would make our own site.

On the first morning of the "excavation," we had remained in the little farming village of Rio Verde, where several of us had taken hotel rooms, to search the market for our "artifacts": an assortment of cheap, modern, glazed ceramic vessels. Then we jounced over a horrendously pot-holed road to Media Luna, where most of the group had camped.

We arrived to find the others finishing breakfast and making preparations to dive. With the assistance of Rafael and Jorge Rivera, a student from Honduras studying in Mexico, we assembled our equipment on the edge of the *laguna* and began our special preparations.

We broke the modern pottery into sherds, carefully recording the exact number of pieces to be sure that none remained in the lake following our "excavation" to confuse future archaeologists. Then we placed the sherds into mesh bags and entered the water.

Our teaching plan was simple: we would locate two areas no deeper than thirty feet and "salt" them with the modern pottery. The rest of the group, waiting out of sight of the *laguna* until we were finished, would then conduct a survey to locate the sites. Next they would excavate them, record the relative positions of the artifacts, and finally raise them.

Our first dive in the Media Luna was full of surprises. The water is geothermally heated and practically as clear as the air above. Small fish of unfamiliar species darted through patches of water lilies growing up to the surface from the shallows. At the surface, the water was almost body-temperature and completely unpolluted — an excellent place for practice work.

As we descended, Pilar and Rafael watched us from above. The bottom of



G. F. Bass critiques the group at Media Luna.
Photo: D. H. Keith.

the spring dropped away abruptly, forming a series of depressions which were its mouths, the deepest being about 125 feet. Strangely, the temperature seemed to increase slightly with depth. The periphery of the *laguna* was lined with the stumps and trunks of enormous cypress trees, the roots of which were embedded in the sides of the spring at a level about fifteen feet below the present surface. They had once stood at the edge of the spring and drunk its waters, until the level rose at some unknown time in the past to drown them.

We sank to a sill between two mouths of the spring and began to scatter and cover the sherds of three vessels over a small area on the bottom. We placed the last sherd so that one corner stood out to mark the "site." In another area, we repeated the process. We had dived on many sites, but this was the first time either of us had carried artifacts *down* into the water.

Back on shore at the staging area, we presented the group with the problem and stood by while they decided on their plan of action.

On the second day at the Lake of the Half Moon, as part of their practical field experience, we wanted to give the students a feel for the use and theory of the airlift. Unfortunately, funds had not been budgeted for the expensive but necessary low-pressure compressor, hose and lift pipe.

We wondered if they might be able to power a small airlift from the compressed

air in a scuba cylinder, so Jorge drove back to Rio Verde with Maria Jesus Rodriguez and rented a fifteen-foot length of three-and-a-half inch diameter plastic irrigation pipe. We disassembled a regulator, removing the second stage and mouthpiece so the hose could be inserted into the bottom of the pipe, and the air flow regulated by turning the tank valve. This simple expedient worked surprisingly well, resulting in a highly portable airlift which could be used anywhere in the *laguna*, often running for forty minutes on a single tank of air. More importantly, the students had learned one of the most important lessons of any field operation — the necessity for improvisation.

During the three-day exercise, the two sites were labeled and photographed with care; Juan Antonio Siller used his architectural training to draw the site plans under water. Although the artifacts were not heavy, we insisted that the students bring them to the surface with air-filled lift bags for the experience. Gabriela Zepeda kept a dive-log, Elsa Hernandez Pons a field notebook, and others kept object catalogues as carefully as if they were recording a true archaeological site.

On the last day, we all had the chance for a new experiment. The steep and soft sides of the *laguna* slid downward into trenches dug by the airlift, preventing excavation deeper than about 18 inches. We suspected that the sediments on the bottom of the *laguna* were stratified, but this could not be detected until the sides

(Continued on p. 7)

SERÇE LIMAN AND MARMORICE

With his tongue firmly in his cheek, Dr. Edwin Doran Jr. recently brought to our attention the following sidelight on the INA work at Serçe Liman.

As the INA group began excavations at Serçe Liman in 1977 they (and readers of this newsletter) may have been unaware that a famous naval officer preceded them by 171 years with a somewhat similar "excavation" in nearby waters. In March of 1806 Captain Horatio Hornblower entered the Bay of Marmorice (now Marmaris), only 25 miles northeast of Serçe Liman, in his ship *Atropos* and anchored near the wreck of the *Speedwell*, a former British transport.¹ Five years before, laden with a quarter of a million pounds sterling in gold and silver for payment and subsistence of the British fleet en route to the Nile, the latter had capsized and sunk at anchor in a gale. She lay in 17 fathoms, far below any British capability for diving, but the Admi-

rality had sent a wreckmaster and three Sinhalese divers from Southeast India aboard Hornblower's ship to make the salvage attempt.

Although the details of the successful effort to bring up five tons of silver and gold make exciting reading the excavation technique was a bit primitive. A keg packed with thirty pounds of gunpowder was exploded to blow a hole in the ship's side, and Hornblower had "... a mental picture of the wreck down there in the translucent water, with her strongroom torn open and the silver in a frozen stream pouring out of it." By standards of the day the excavation was an eminent success, as was Hornblower's feat of seamanship in sailing the treasure-laden *Atropos* out of the bay under the fire of two Turkish forts.

¹ Forester, C. S., (1953) *Hornblower and the Atropos*. New York: Pinnacle Books.

SYMPOSIUM ON ANCIENT TRADE

The Philadelphia Society of the Archaeological Institute of America and the University Museum, University of Pennsylvania announce a symposium on Trade in the Mediterranean in the 5th century A.D. The symposium will be held on Saturday, October 13, 1979, at the University Museum.

Speakers at the symposium will be John Boardman, Ashmolean Museum, Oxford; Lionel Casson, New York University; G. Kenneth Sams, University of North Carolina, Chapel Hill; Homer A. Thompson, Institute for Advanced Study, Princeton; Margaret Thompson, American Numismatic Society; and Peter S. Welles, Peabody Museum of Archaeology and Ethnology.

For additional information, interested persons should write to Cynthia J. Eisman, University Museum, 33rd and Spruce Streets, Philadelphia, Pa. 19104.

PROFILE



Roger Smith.

In 1971 when Roger Smith, then a senior at the University of Virginia, drove from Charlottesville to Philadelphia to ask George Bass about a future in underwater archaeology, he was not encouraged at all by the latter's answers. The academic regime, Bass hinted, was long, sober and scholarly, and there were few opportunities to learn and apply skills and knowledge, outdoors, on a site.

These prospects were not a deterrent, and Smith spent the next seven years readying himself for a career in the field. When he enrolled at Texas A&M University in January 1978 in the graduate nautical archaeology specialization, he already had developed, through experience and personal study, a reasonable knowledge and a vigorous curiosity about New World maritime history.

This summer, Smith is directing INA's

first archaeological effort in the Caribbean, a survey of the coastal cultural resources of the Cayman Islands. While the project will form the basis of his master's thesis research, its primary value, he says, is in bringing scholarly concern and methodology to the nautical archaeology of this part of the world.

"New World shipwreck archaeology has been dogged in the past by the reputation and actions of treasure hunters," Smith notes. "Not only have these people damaged sites, but they also have influenced popular opinion about the nature and necessity of underwater archaeology. I hope this project will begin to reverse these trends in the Caribbean."

During the June to September project season, Smith's crew of eight will use a magnetometer, radar positioning system, photographic and cartographic equipment, two support vessels and diver inspection of the seabed in their efforts to inventory the shipwreck sites of the Caymans.

Smith's field experience was garnered during employment with several archaeology oriented groups in Florida, including the state's Underwater Archaeological Research Section, where he worked as a field agent for two years before coming to Texas A&M. The latter position gave him the opportunity to survey the wrecks of the 1715 and 1733 Spanish

fleets and to work on the excavation of a Paleo-Indian site at Warm Mineral Springs.

In the spring and fall of 1978, Smith joined fellow nautical archaeology students on the survey of a side-wheel steamboat that sank in the late 1800's in the Trinity River near Liberty, Texas. During summer months, he worked with David Switzer in Maine as a member of the *Defence* field school, and spent January and February 1979 in Mombasa, Kenya, working with Robin Piercy on his late 17th century Portuguese site. He was named an INA research associate in the spring.

Born in Utah and raised primarily abroad, Smith says his experience with foreign cultures initially piqued his interest in history, art and archaeology. A commercial diving course and his enjoyment of the ocean helped to channel his direction into underwater archaeology.

Smith describes himself as both a bookworm and an outdoorsman who can be away from either pleasure for only a short while.

"For me, this field has all the elements of intellectual and physical pursuit combined into one. It is an academic synthesis that allows me to work at reconstructing one part of human history while at the same time be outdoors and experience nature on and under the ocean."

BOOK REVIEW

L'Épave romain de la Madrague de Giens (Var) (Campagnes 1972-1975). By A. Tchernia, P. Pomey, A. Hesnard et al. *Gallia Supplément XXXIV*. Éditions du Centre National de la Recherche Scientifique, Paris, 1978. Pp. 122, 16 Figs., 41 Pl. 85 F.

In the twenty years or so since French divers, under the direction of Fernand Benoît and Jacques Cousteau, examined remains of a shipwreck at Grand Congloué, French archaeologists now routinely do the work of excavation themselves, rather than merely supervising divers from the surface.

The Roman wreck at la Madrague de Giens is one of several large amphora carriers on the French coast that have been excavated in recent years. During four campaigns, nine and one-half months were devoted to excavation of the wreck marked by an amphora mound some 35 m. long and 10 to 13 m. wide and four months to removal of eel grass and to opening and closing the site annually. Yet it is estimated that only one-fourth to one-fifth of the total wreck has been examined, work having been concentrated in a trench 7 m. wide at the midships section. A remarkable amount of information has been gleaned from this effort, which is presented in an attractive and well illustrated volume worthy of a final publication, although the authors emphasize at the outset that the publication is neither exhaustive nor definitive.

The Introduction locates the wreck, describes its formation on the sea bed, and expressly avoids discussing excavation techniques, on the grounds that methodology has progressed sufficiently that it no longer needs to occupy a major place in publications.

Chapter I is a quick review of the ship's fundamentals: the cargo (wine amphoras and Campanian pottery), the ship's origin (S. Italy) and her wrecking date (ca. 75-30 B.C., with a preference for 60-50 B.C.). Chapter II offers a description of how the cargo amphoras and pottery were stowed in the hold. Chapter III suggests that in antiquity free divers worked the wreck to recover part of the cargo. Chapter IV is a description of the Dressel I amphoras which comprise the major portion of the cargo. Included are detailed studies of the shape variations, the stamps, graffiti, the names therein, the social position of free men and slaves and their relative functions in the amphora- and wine-producing industries of Republican Italy.

Chapter V concerns the smaller amount of cargo in the form of Campanian B and C pottery, and follows Lamboglia's typologies. Of four types of common

ware ("La Céramique Commune") listed in Chapter VI, only one is described in detail, open forms in red biscuit, as it is the most numerous. This pottery is best known from Gaul, and is so ordinary that it has generally been considered a local ware. Its presence in the cargo of a merchantman sailing from Italy indicates that such was not the case, and we are promised a detailed study of the problems and implications of the phenomenon at some future time.

Chapter VII is devoted to miscellaneous objects, including three lead ingots of Spanish origin; the oldest bronze counter-balance of the Roman world; and a solid lead *amphoriskos* of uncertain function.

Chapter VIII deals with the hull itself, incredibly well preserved under its load of amphoras and layers of sand and eel grass, and admirably illustrated in numerous *in situ* photographs and drawings. Elements of the hull discussed in some detail include the keel, two sets of strakes (inner and outer), frames, mortise-and-tenon joints, keelson, mast step, ceiling planks, stanchions, lead sheathing, and caulking. Observations were made of wood *in situ*, the mast step and some ceiling planks were removed (and later replaced), and a tunnel was run under the hull to permit observation of its external face. In addition, a square meter of the ship's bottom was raised, including keel, strakes, and frames. A good deal of space is devoted to a description of the hypothetical procedure by which the hull was constructed. It is suggested that the inner hull strakes and frames were assembled in five steps which alternate the frame-first and shell-first procedures. If we accept this hypothesis, the Giens ship would thus be the earliest example by some three centuries of this construction method. Moreover, it is noted that other vessels built by the mixed technique proceeded in different ways than the Giens ship.

On the basis of the Giens evidence, we are asked to re-examine some of our long-held notions about traditional Mediterranean ship construction: (1) mortise-and-tenon joints alone do not necessarily indicate shell-first construction; (2) frame-first construction was not entirely unknown in antiquity; (3) the earliest archaeological evidence for active frames goes back at least to the first century B.C., and can be regarded not simply as a transition between shell-first and frame-first construction methods, but rather as evidence of genuine frame-first

building; (4) the belief that shell-first gave way gradually to frame-first, and that this change took place some time around the end of the Roman empire must be scrutinized anew.

The Giens shipwreck publication offers scholars a rare opportunity. In it we are presented preliminary reports on a wide variety of subjects: Roman wine, Latin epigraphy and prosopography, Campanian pottery, wooden ship construction, and maritime trade. The studies, while more comprehensive than those generally appearing in preliminary reports, fall short of what is expected in a final publication. The temptation to criticize — or at least lament — the shortcomings is great. Yet are we not better informed than if we had to wait ten or fifteen years for the project's completion? And might we not do ourselves a favor if, instead, we use the opportunity to convey to M. Tchernia and his colleagues the information which we would like to see in the final publication? Let me cite two examples. I would like to see isotope analyses conducted on all lead and silver items which the wreck produces. If such tests are routinely performed — and to my knowledge they have not been done by French archaeologists in the past — it will not be long before scholars know much more about lead and silver mine exploitation and trade in antiquity.

Secondly, it is true that excavation methodology has progressed to a point where it need not dominate a site report. Nevertheless, some discussion of techniques is necessary to clarify some points. For example, the tunnelling procedure mentioned as a means of studying details of the hull's construction is unique in the short history of ship archaeology in the Mediterranean and deserves a detailed account. Since the technique was vital to understanding the hull construction method, and since the authors present us with a new construction technique, their theory might find firmer footing if the reader has a clearer understanding of how their evidence was acquired.

The excavation of the Giens shipwreck and the publication of this report are exemplary. The studies in the report will be of great use not only to other ship archaeologists but to any scholar concerned with Roman history. Unfortunately, prejudice against "underwater archaeology" is still, in some circles, so very great that this publication might not receive the attention it deserves. Yet scholars cannot afford to ignore it.

— Cynthia Jones Eiseman

THE GRAVISCA PORT SURVEY

Lisa Shuey (Serçe Liman 1977-78), now a Doctoral candidate at the University of California at Santa Barbara, was a member of the first graduating class in Nautical Archaeology at Texas A&M University. In the following article Ms. Shuey describes her Master's thesis work at the ancient harbor of Gravisca.

The first extensive survey and excavation of underwater remains at Gravisca, located 40 miles northwest of Rome, was undertaken in the summer of 1977. Funded by a grant from Texas A&M University and with additional support from the American Academy in Rome and INA, the project was carried out over a 6-week period by a team of 4 graduate students.

The name Gravisca was known from the ancient sources both as the port of the great Etruscan city Tarquinia and as a later Roman colony founded in 181 B.C.. However, nothing was known about the location or design of the port, and its location in particular has long been disputed by scholars. No less than four different locations have, in fact, been proposed for the port since the 1830's, but none of these involved actual underwater inspection of the sites in question.

Recent land excavations by Professor Mario Torelli focused considerable attention on one possibility, Porto Clementino, now a popular coastal resort. These excavations, in progress since 1969, uncovered traces of the Roman colony known from ancient sources, as well as evidence for earlier Etruscan occupation from the 6th to 3rd centuries B.C.. Large quantities of imported Greek pottery attested to the importance of Gravisca as a center for overseas commerce in the 6th



Survey area from bastion promontory.

and 5th centuries B.C. and left little doubt that this was the trading station built to serve Tarquinia, located around 3½ miles inland.

It was also known from the historical record that Porto Clementino served as a medieval and Papal port and that it was improved upon in various periods from the 15th to 18th centuries. No descriptions of these improvements were given in the sources, in fact, the only evidence of earlier port installations visible today are the ruins of a medieval bastion located on the promontory. But one 16th-century report did refer to a breakwater at the port, and it was logical to hypothesize that this structure might have been built over the remains of earlier Etruscan or Roman installations.

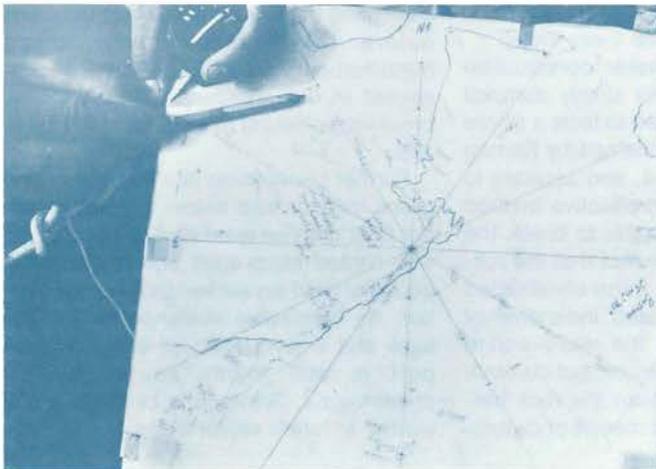
As all these factors pointed to Porto Clementino as a natural location for the ancient port of Gravisca, a thorough underwater investigation of the harbor was requested by Professor Torelli to confirm this hypothesis. With the hope of establishing the port's ancient identity

and determining the form and dating of the underwater remains, the objectives of the survey were: to examine and define the presumed area of the ancient breakwater; to map the underwater remains; and then to excavate test trenches to help determine the type of breakwater construction and overall design of the harbor.

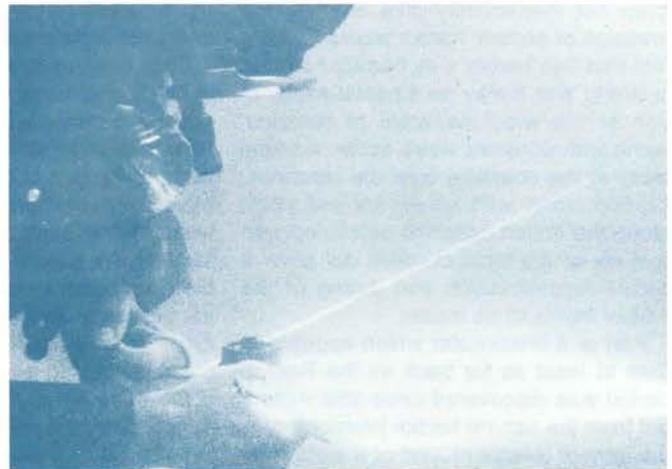
Aerial photographs of the site taken in 1974 were used in the initial stages of planning to help determine the location of underwater remains, which consisted primarily of low, broad beds of *Poseidonia* weed, more commonly called Poseidon grass, and scattered limestone rubble. A series of points were surveyed around these areas by divers holding a range pole over numbered stakes as the points were plotted in using shore-based theodolites. Details of the underwater areas surrounding each point were then measured, drawn, and photographed by the divers, and these data were later incorporated into the final plan.

Partial examination of the underwater remains was carried out by excavation with a shallow-water airlift, a type of lightweight suction dredge. A series of 9 trenches were excavated to depths up to 1.5 meters, both beside and on top of the rubble and grass mounds to examine their morphology, and between the mounds to determine if rubble buried beneath the sand may have connected them in antiquity. Only a small quantity of scattered stones was found between the mounds, suggesting that they were originally constructed as separate rubble mounds rather than as a solid breakwater.

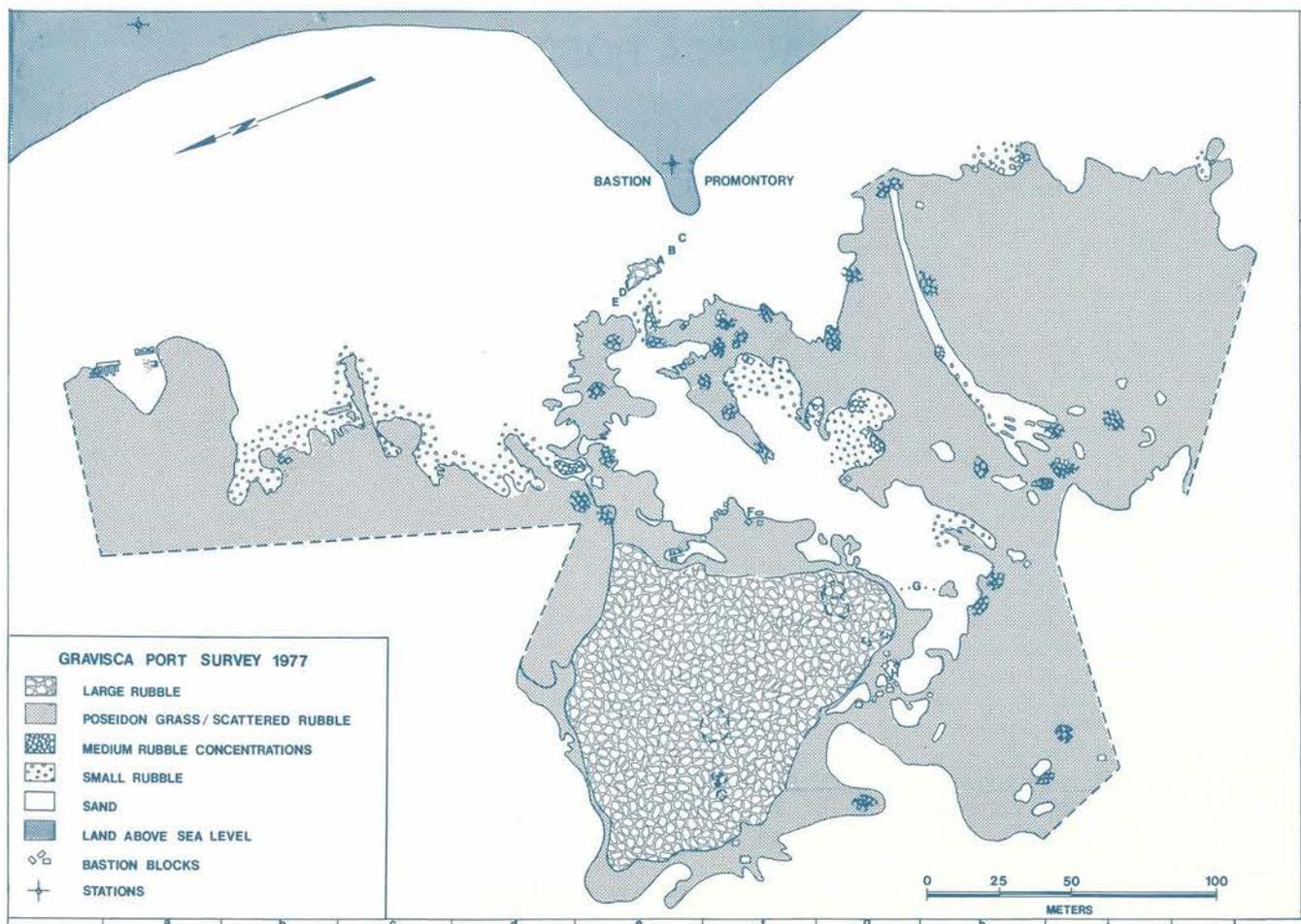
The results of the mapping and excava-



Radial mapping board with polar graph used to correlate underwater data.



Survey team member swimming circular pattern using radial mapping board.



Final plan of survey area.

tion revealed a curious formation of underwater remains presently visible in the area of the harbor believed to have been the ancient breakwater. Low mounds of sea grass and sparsely scattered rubble piles are spread over an area around 300 meters in diameter, which does not immediately give one the impression of ancient harbor works. But the fact that this harbor was heavily bombed in World War II may be a partial explanation of the wide dispersal of remains, along with constant wave action working away at the coastline over the centuries. Comparisons with other ancient ports along the Italian coastline combined with a study of the local currents did allow a partial reconstruction and dating of the harbor works to be made.

Part of a breakwater which appears to date at least as far back as the Roman period was discovered *circa* 250 meters out from the natural harbor promontory in the form of a large mound of a solid limestone rubble. The top layers of this pile were comprised in some parts of Roman

amphora sherds, which were excavated *in situ* from underneath the sea grass growing over parts of the mound. Another smaller mound of rubble was found directly off the promontory, and it is possible that other solid rubble mounds could have existed between these two in antiquity, although only scattered rubble and grass mounds are visible there today.

This type of breakwater construction consisting of large rocks simply dumped into a pile on the sea bed to form a single mound is also found at the nearby Roman ports of Pyrgi and Cosa, and appears to have been a simple but effective method used by the early Romans to break the force of the waves. The fact that the rubble piles seem to have been constructed as separate units is also indicative of Early Roman design; the wave action could be kept to a minimum, but currents could pass freely between the rock barriers providing a natural means of cleansing silt from the harbor.

Although it was not possible to determine for certain whether this breakwater

was in fact the original installation in the harbor, the port's identity as ancient Gravisca can no longer be doubted. But despite surface finds from the harbor floor consisting of an Etruscan amphora handle and a 3rd-1st c. B.C. amphora base, the intriguing possibility that the Etruscans built a breakwater at Gravisca before the Romans must remain hypothetical; no periods were represented in our sherd sampling from the breakwater mound itself, prior to the 1st c. A.D.

Further penetration into the rubble and grass mounds and below the sandy harbor floor than we were able to accomplish with limited excavation equipment might perhaps yield an earlier date for the harbor. As conclusive evidence for the design and construction of any Etruscan port is still highly sought by archaeologists, Gravisca is certainly a site worthy of future explorations.

— L. B. Shuey.



Pilar Luna, leader of the group, returns from a dive.
Photo: D. H. Keith.

(Continued from p. 2)

of the excavation were stabilized. The students discussed the problem and decided on a plan of action: they would build a cofferdam around three sides of the excavation on the steep submerged slope, and push the walls deeper into the bottom as the excavation progressed. Hortensia de Vega, Gabriela and Elsa brought from Rio Verde a sheet of corrugated asbestos construction material cut into panels one meter wide. Jesus Cuevas floated the panels out to the site and installed them on the bottom, supporting them vertically with iron rods. When the air lift was installed and the excavation begun, the panels held back the loose sediment, enabling the divers to excavate by strata.

An important part of the exercise was to impress upon the students that underwater archaeology is not divorced from land archaeology. When not diving, keeping records, or filling scuba cylinders from the camp compressor, they took turns mapping the shape of the *laguna* and surveying the immediate environs in order to understand the relationships of the *laguna* to its surrounding terrestrial features.

Most of our stay was spent in Mexico City, delivering lectures at night. After each lecture we had dinner with three or four of the students, a limited number that

allowed us to get to know them better than was possible in a crowded classroom. Sometimes Pilar Luna introduced us to divers who joined our evening repast and shared their knowledge of Mexico's shipwrecks and other underwater sites.

A special treat for us was meeting Señor Jesus Bracamontes, a naval architect and ship historian who has made the study of the maritime history of Mexico his life's work. One evening was particularly memorable. We had dinner with Señor Bracamontes, then accompanied him to his apartment. His flat was like a museum inside, and it was impossible to absorb and appreciate the amazing collection of objects and literature. Every object, every volume told a story. Here, was a figurine of an Aztec warrior, only six inches tall, which Señor Bracamontes had carved in minute, authentic detail; there, a complete collection of antique, leather-bound volumes on nautical affairs.

We stayed well into the wee hours, sipping Amaretto from tiny, stemmed glasses while discussing the maritime history of Mexico and what the future might hold. We learned that Señor Bracamontes is particularly interested in the ships that were built in Mexico to trade between

Acapulco and the Philippines — the Manila Galleons. To understand better their construction features, he made a scale model of the first of these ships built in Mexico, the *San Pedro*, which now resides in a museum in Spain. Señor Bracamontes refers to his three-dimensional work as "miniature ship construction," rather than "model building," and the reason for this distinction was obvious from the examples of his work we saw. Every piece was reproduced faithfully in miniature, and the assembled finished product gave every appearance of having been built by Lilliputians.

Señor Bracamontes finished the evening by presenting each of us with gifts. Don was pleased to receive a facsimile copy of a Mexican treatise on navigation and ship construction originally published in 1587!

Mexico's potential for underwater research is enormous: *cenotes* and springs associated with pre-Columbian civilizations, inundated prehistoric sites and shipwrecks on both the Caribbean and Pacific coasts exist in abundance. But as in most countries, including our own, the predations of amateur divers and professional looters are taking their toll. This was apparent even at Media Luna. Our last day at the *laguna* an American arrived in a plum-colored Volvo bearing Texas license plates. He watched quietly for a while as we worked, then told us we would never find anything where we were excavating. All the "goodies," he told us, were farther along the northeast side of the spring. He made no secret of the fact that he had come to loot the spring and had been here many times before.

In Mexico, as elsewhere, professional archaeologists who are capable of evaluating, excavating, and publishing underwater sites frequently are not able to secure the support and funding necessary to undertake major projects. Week-end divers, meanwhile, pick away at known sites and discover new ones. We are pleased that a younger generation of archaeologists, represented by the Grupo de Buceo, have demonstrated an appreciation for their country's underwater cultural resources, and have taken the initiative to improve their protection and management.

— D. H. Keith
G. F. Bass.

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 INA Newsletter is published periodically by INA and is distributed to its members and Supporting Institutions to inform them of INA's current activities. INA is an equal opportunity organization.



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