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On the cover: *Archaeologist Sheila Matthews uncovers a small marble hand basin next to the drum pile (D. Frey).*

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A Monumental Cargo: The Roman Column Wreck at Kızılburun, Turkey

Deborah N. Carlson

During the summer of 2005, an international team of INA archaeologists and students from the Nautical Archaeology Program at Texas A&M University initiated the excavation of a Roman stone carrier wrecked off the Aegean coast of Turkey at Kızılburun (fig. 1). In fewer than 12 weeks, our team of 20 logged over 1,000 dives to the wreck and raised over 800 artifacts. INA president Donny Hamilton served as the project director, and assistant professor Deborah Carlson as the team's archaeological director.

Kızılburun (pronounced Kyz-ul-burun), which is Turkish for "Crimson Cape," lies along a rugged part of the Karaburun peninsula southeast of Çeşme and just minutes beyond TektaşBurnu, the site of a fifth-century B.C. Classical Greek amphora wreck excavated by INA between 1999 and 2001 (*INA Quarterly* 26.4, 28.2, 29.2). The stone carrier is one of five wrecks discovered at Kızılburun during the 1993 INA survey directed by Dr. Cemal Pulak (*INA Quarterly* 21.4). A second INA group revisited the site briefly in 2001 in conjunction with a shipwreck documentation project led by INA's Tufan Turanlı.

Unlike the vast majority of ancient Mediterranean shipwrecks, which are characterized by two-handled clay transport jars called amphoras, this vessel was transporting a stone cargo made up of eight massive column drums what appears to be a Doric capital (fig. 2). Stacked together, these nine pieces would have comprised one monumental column as much as 30 feet tall, probably destined for the façade of a temple or other prominent civic structure.

The quarrying and export of various specialty stones – white marble from Greece and Asia Minor;



Fig. 1 Map of western Turkey, showing sites mentioned in the text (A. Catsambis).

colored marble from Numidia; red and gray granite from Egypt – was big business in antiquity, particularly during the Roman Empire: according to the Roman biographer Suetonius, the emperor Augustus (31 B.C.-A.D. 14) claimed to have found Rome a city of brick and left it a city of marble. Although dozens of stone cargoes have been identified in the shallow waters off Italy, France, and Spain, most have not been treated as coherent archaeological

sites; instead they are only superficially explored, their stones partly or wholly salvaged. The Kızılburun column wreck, by contrast, lies at a depth of between 140 and 150 feet, along a part of the Turkish coast that is closed to sport divers. Furthermore, the size, weight, and cohesion of the cargo suggest that a significant portion of the ship's hull may be preserved underneath the drums. The opportunity to study the remains of such a ship, which the Romans called a *navis lapidaria*, should provide valuable insight into the naval technology utilized to construct these enormous purpose-built vessels.

Before we could know the condition of any hull remains, we needed to determine the extent and date of the wreck. On June 6, the majority of our team – which eventually would include participants from the United States, Canada, Belgium, Italy, Greece, and Turkey – left Bodrum aboard INA's research vessel *Virazon* and catamaran *Millawanda*, but the ships were unable to reach Kızılburun due to strong winds and dangerous seas. Indeed, as we would come to experience several times over the course of this first season, the primary challenge of the Kızılburun site is that it (unlike Tektaş Burnu) lies completely exposed to the destructive *lodos*

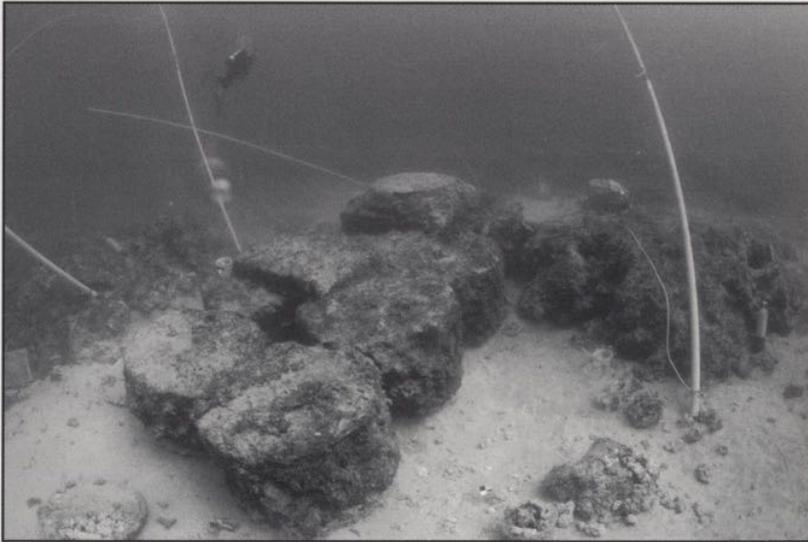


Fig. 2 The Kızılburun column wreck from the southeast (D. Frey)

winds that blow from the southwest. On June 10, just one day after the fleet was anchored safely at the site, Donny Hamilton and I traveled to Çeşme to meet Ilker Tepeköy, our representative of the Turkish Ministry of Culture. That very night, a treacherous *lodos* storm arrived at Kızılburun, forcing the early-morning evacuation of both vessels, which would not return until June 13. In the interim, the small team left on site finalized the camp construction initiated by Robin Piercy, which included a dormitory capable of sleeping six, a two-person cabana for the commissioner and team physician, communal toilets, an artifact processing area, and a central galley for meals and meetings (fig. 3).

Another challenge to be met early on in working at Kızılburun was the establishment of a reliable mooring over the wreck, which lies off the tip of the cape, 150 feet deep in the open sea. Although the *Millawanda* was designed primarily as a support vessel for the submersible *Carolyn* – and not as a stationary dive platform – she performed superbly in this capacity. *Virazon* captain Feyyaz Subay and *Millawanda* captain Bayram Kosar moored the catamaran over the column wreck using two bow lines to shore and a single stern anchor line. Buoys kept the lines floating near the surface, allowing us to secure the catamaran quickly every morning in preparation for the day's diving. At the end of each dive day, *Millawanda* made the two-minute trip back to camp, to be moored alongside *Virazon*, which provided berths for up to 10 people, an air-conditioned computer room, and a double-lock recompression chamber.

On June 15, we began a sequence of acclimatization dives to the wreck, and for the next ten days, our modest team of eight divers successfully installed on site all safety and excavation equipment, including airlift pipes, datum

Fig. 3 *Virazon* and *Millawanda* at anchor in front of the 2005 camp (D. Frey).



towers for mapping, spare scuba tanks, and the all-important “phone booth” which is an acrylic dome containing an emergency supply of air and a place to carry a conversation. Our first dives to the wreck confirmed the presence of what earlier survey reports had described as eight massive stone column drums, stacked neatly in four pairs, each about three feet tall and ranging in diameter from five to five and a half feet. Atop the drums sit what looks to be an inverted Doric column capital and two large rectangular stone blocks. At the shallower end of the wreck, adjacent to the drums, was a scatter of artifacts that included several Lamboglia 2 amphoras, produced in the Adriatic in the late second or early first century B.C. (fig. 4). In the sand at the opposite, deeper end of the drum pile was a large, flat marble “disk” which we originally thought might have served as a kind of shim for the column. The entire area, from the rocky slopes around the wreck to the drums themselves, was littered with intrusive (mostly Byzantine) archaeological material.

For mapping purposes we installed eight datum points (either stakes or steel towers) around the wreck but opted not to lay a string grid over the site as is customary with amphora wrecks (fig.5). Instead, we numbered the individual drums and allowed those numbers to designate individual work areas adjacent to and extending outward from the drums. These area designations were employed largely for orientation and reference, since the X, Y, Z coordinates of each artifact were recorded using an adaptation of a digital photogrammetry system developed at Tektaş Burnu by Tufan Turanlı, Jeremy Green and Sheila Matthews (2002). Numbered mapping flags of high-contrast vinyl were secured to the seabed atop, next to, or sometimes in place of an artifact, and photographed from a variety of angles with a digital camera with calibrated lens. The application of various software programs, including Site Recorder and PhotoModeler, makes it possible to measure the distances between an individual flag and three or more fixed datum points, thus giving the precise provenience of the artifact under the flag, while simultaneously saving countless hours of work on the seabed.

Excavation with airlifts began on June 27, and on June 30 Murat Tilev uncovered a second large marble “disk” adjacent to the drum pile at the deeper end of the wreck. It quickly became clear that each of these two objects had a slightly convex profile; these were not disks but large washbasins or *louteria*. A square tenon on the underside of each basin matches identically a square mortise in the top of a marble pedestal base later excavated at the shallower end of the wreck. In mid-August we successfully raised the pedestal base and both basins – which weigh about 400 lbs. a piece – to the surface from a depth of 150 ft.

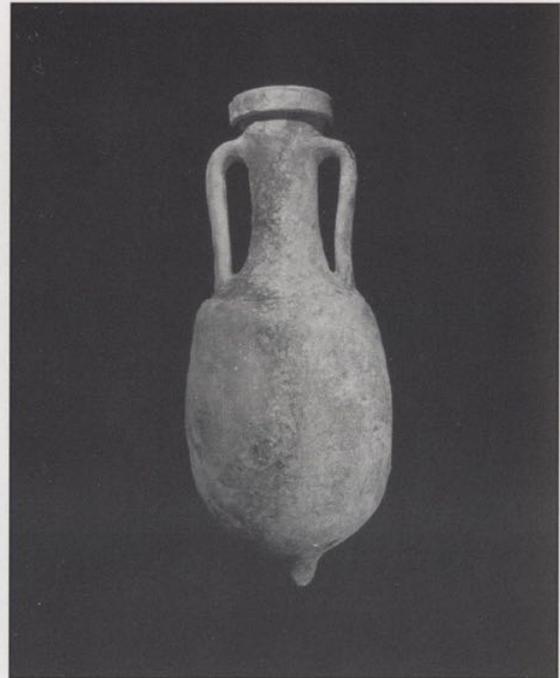
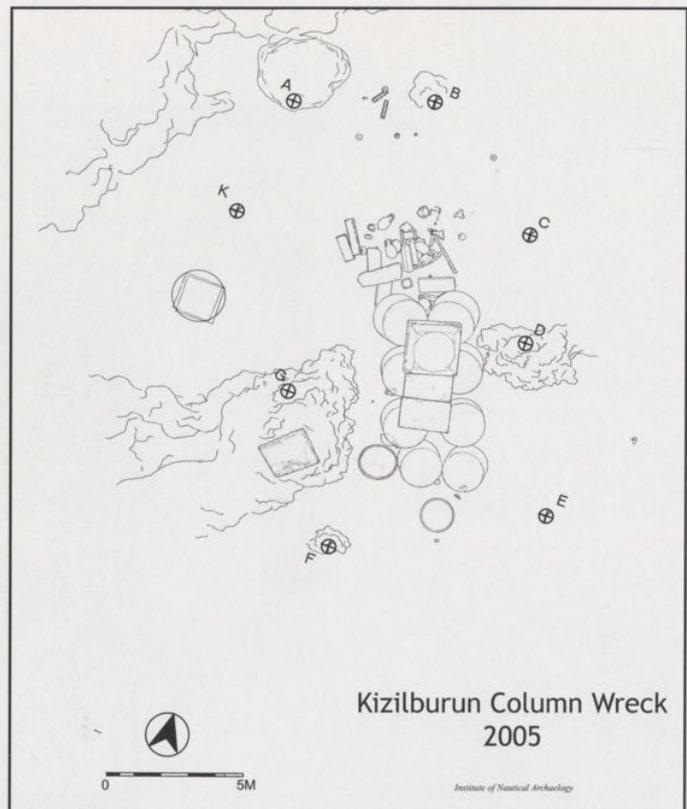


Fig. 4 One of four intact Lamboglia 2 amphoras raised in 2005 (D. Frey).

Fig. 5 The 2005 Kızılburun site plan (S. Matthews).



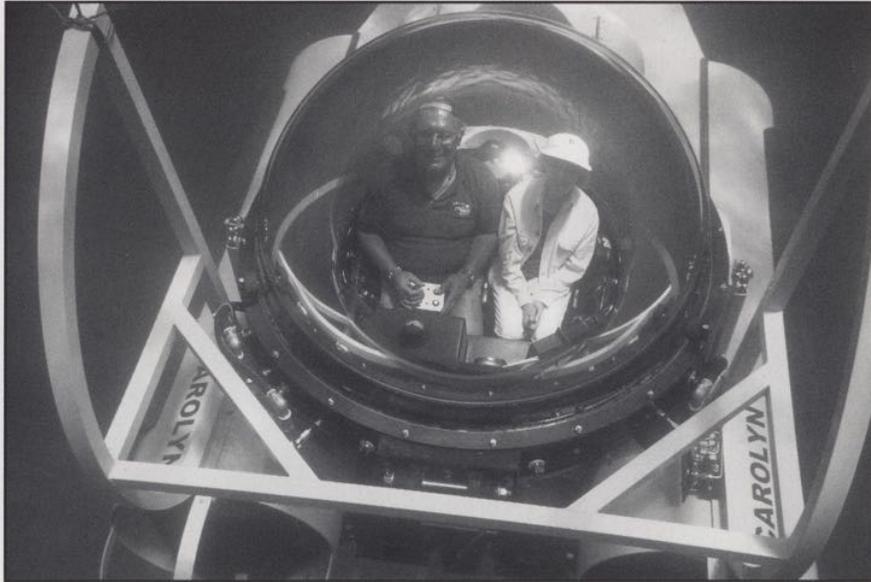


Fig. 6 Pilot Feyyaz Subay and INA Director Lucy Darden in the submersible Carolyn (J. Levin).

Fig. 7 Photographer Don Frey illuminates the upslope area. Artifacts in the foreground include a large piece of metal concretion, the marble stele (face down) and the spool-shaped marble pedestal (D. Carlson).



On July 8 – our weekly day-off, when many traveled to Çeşme to buy food, supplies, check e-mail or take in a movie – a handful of team members boarded *Millawanda* and sailed to nearby Alaçatı, where the two-person submersible *Carolyn* was loaded on board in preparation for a two-day visit by 30 INA Directors and their guests. Unfortunately, the group's arrival on July 12 brought with it some of the strongest (and coldest) currents we had ever experienced at Kızılburun, making it unsafe for *Carolyn* to dive on the column wreck. Nevertheless, in just two days, submersible pilot Feyyaz Subay logged more than 40 dives on the nearby Medieval millstone wreck, successfully accommodating every guest who wanted to experience diving inside *Carolyn* (fig. 6).

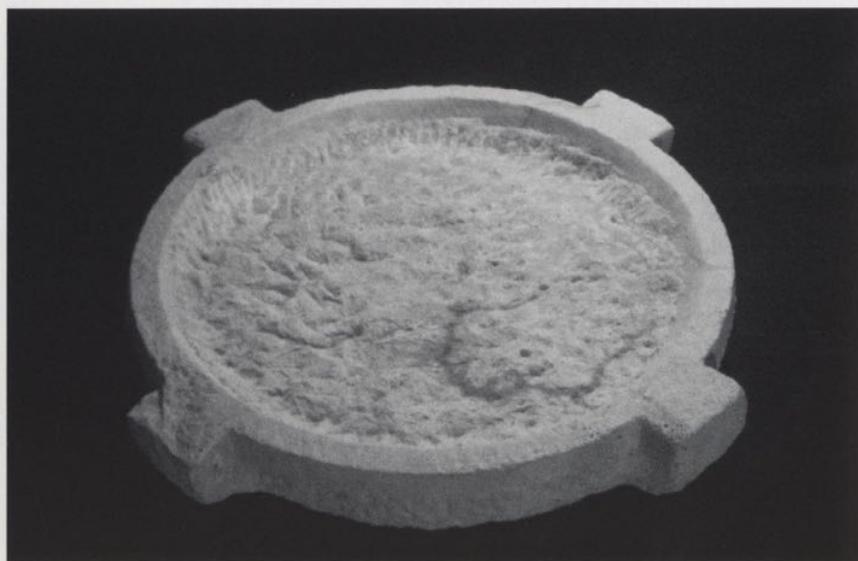
For the next eight weeks, work on the seabed continued apace in three distinct areas: (a) upslope of the drum pile, where archaeologists had begun to uncover portions of the ship's secondary cargo, (b) in the immediate vicinity of the column drums, and (c) on the drums themselves.

The area upslope of the drums is characterized by a group of large rectangular marble blocks which probably represent architectural elements associated with the column (fig. 7). This area also yielded an interesting array of newly-quarried, roughly-finished marble objects including a small basin or *mortarium* (fig.

8), the pedestal for one of the two large *louteria*, and an uninscribed grave stone or *stele*. This stele, which is described by team member Kristine Trego elsewhere in this issue, promises to be one of the more diagnostic artifacts from the wreck. Nearby, archaeologist Faith Hentschel spent many weeks excavating an elaborate and enigmatic pipe-like metal concretion that may represent an important piece of the ship's equipment. Other elements of the ship's gear include two lead anchor collars and a lead sounding weight, of a type that probably hails from the western Mediterranean (fig. 9).

Careful excavation in and around the large marble blocks adjacent to the drum pile revealed numerous interesting small finds, including nine bronze handles – which likely represent the remains of several metal buckets or cauldrons – and the stem of a small glass goblet found next to one of the massive column drums. Of special importance for dating purposes is the wreck's ceramic assemblage, which presently includes a wide variety of drinking cups, plates, casseroles, wine jugs, small bowls and salt cellars. The corpus includes both undecorated, utilitarian cookware and several types of typical Hellenistic fineware, such as moldmade bowls, black glaze, and grey ware. About a dozen transport amphoras from the wreck reflect the complex and cosmopolitan nature of commerce at this time, with

Fig. 8 The small marble basin excavated by Sheila Matthews (D. Frey).



examples from the Adriatic, Ionia, the Greek cities of Knidos and Kos, and even Egypt, as discussed by team member Josh Daniel elsewhere in this issue. Taken together, the amphoras and pottery suggest that the ship sank at Kızılburun in the early first century B.C., a period of intense “Romanization” in the eastern Mediterranean.

Excavation around the drums themselves exposed more than 250 fasteners, most of them copper (or copper alloy) nails and enough small but well-preserved wood fragments to suggest that some hull remains have survived beneath one or more of the drums. Though the contour of the seabed appears to slope at a fairly consistent angle, at least one of the large blocks at the shallower end of the drum pile is clearly positioned **under** the drum, which indicates that these enormous stone cylinders were not loaded directly into the ship’s hold. Indeed, there may well be additional cargo to be mapped and excavated once the drums have been removed.

One project that continued throughout the summer was the cleaning – with wire brushes – of the eight marble drums and capital. Initially it was hoped that the removal of marine growth and concretion would make it possible to determine whether the large square block atop the drums is in fact a Doric capital, as opposed to the base of an Ionic or Corinthian column. The uppermost, exposed surface of this important piece is circular and matches exactly the diameter of the smallest of the eight drums, suggesting that it was meant to be positioned at the top of the column as a capital. If the block was intended to serve as the base of a column (and Doric columns had no bases), then one would expect to have uncovered an Ionic or Corinthian capital, which has not been detected. The presence of a Doric column on a shipwreck of the late second or first century B.C. is unusual (but certainly not impossible) inasmuch as Hellenistic architects generally preferred the Ionic and Corinthian orders to the Doric.

During the course of the summer, however, it became clear that the exposed surfaces of the marble elements at Kızılburun are fairly eroded, and thus it may never be possible to know with confidence to which architectural order the capital belongs. That the stones were newly quarried seems assured, since the drums are not fluted (a process that was completed only after a column was erected) and still preserve traces of corkscrew-shaped hoisting grooves. These important features distinguish the Kızılburun column wreck from the contemporary stone carrier discovered at Mahdia (Tunisia), which was laden with monolithic column shafts and finished Ionic capitals likely salvaged from an existing structure.

Toward the end of the summer we used a pneumatic drill to take a small sample from one of the eight column drums, exposing a brilliant white stone beneath the dark crust of marine concretion. The sample was then sent to Dr. Scott Pike of the Environmental & Earth Sciences Department at Willamette University in Salem, Oregon. The results of stable isotope and maximum grain size analyses conducted by Dr. Pike indicate an 81% probability that this marble drum was quarried on the island of Marmara not far from Istanbul. In antiquity, Marmara (Greek for “marble”) island was known as Proconnesus – the source of one of the Mediterranean’s finest white marbles. Other, less intensively-exploited white marbles include Pentelic and Hymettan from Attica, Parian from the Cyclades, Thasian from Northern Greece and Lunese marble from Carrara, Italy.

Proconnesian marble is known to have been extremely popular during Roman and early Medieval times, and was widely exported: the marble elements of a pre-fabricated Christian basilica found in the sixth-century A.D. Marzamemi “Church” wreck off the coast of Sicily had been quarried on Proconnesus. From the second century



Fig. 9 *Divemaster Feyyaz Subay examines the lead sounding weight (D. Frey).*

A.D., Proconnesian sarcophagi appear all over the Mediterranean, including Egypt, Syria, the Adriatic and even the Black Sea. Owing in part to its proximity, the island was also the primary source of marble for numerous Hellenistic and Imperial architectural projects at nearby Ilium (Troy) and Pergamon, including the Great Altar at Pergamon, constructed in the second century B.C. and now on display in Berlin, Germany. Evidence for Proconnesian marble exports before the intensive exploitation of the Romans, however, is rather scarce, and consists largely of passing references among Latin authors, including Vitruvius (*de Architectura* 10.2.15), who mentions that the Ephesians had considered Proconnesus in planning for their grand Temple of Artemis, but chose ultimately to rely on local quarries. Pliny (*Historia Naturalis* 36.47) describes the use of Proconnesian marble revetments on the brick walls of the fourth-century B.C. palace of King Mausolus at Halicarnassus (Bodrum).

The Kızılburun column shipwreck, then, constitutes important evidence for the extraction of Proconnesian marble building materials at a time when Roman merchants, magistrates, art collectors and tax collectors were quite literally pouring into East Greece and Asia Minor. While isotopic analysis of the marble has given us a fairly sound idea of where the cargo originated, the process of tracing the ship's voyage and working out its final destination will no doubt occupy much of our future research.

The promise of hull remains beneath the drums, coupled with the possibility of additional cargo and small finds, are two compelling reasons why we intend to move the eight drums during the summer of 2006. Assisting us with the effort will be Richard Fryburg, president of Subsalve, Inc. an American company with more than 25 years of experience in the deepwater salvage of sunken ships and aircraft. Ultimately, we hope to raise these massive marble pieces to the surface, giving us the opportunity to clean and study them at length – free from the risks of nitrogen narcosis.

At the end of August, we closed the camp at Kızılburun and loaded more than 800 artifacts onto *Virazon* and *Millawanda*, which sailed back to Bodrum the following morning. The artifacts were then delivered to the Bodrum Museum of Underwater Archaeology, now under the direction of Yaşar Yıldız, who has served as Turkish representative on countless INA excavations and surveys over the years. In the interests of space and access, some objects were subsequently relocated to the Nixon Griffis Conservation Lab at INA headquarters in Bodrum, where they are being stabilized and restored by INA Conservator Asaf Oron and his staff.

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ACKNOWLEDGMENTS

This pivotal first excavation season at Kızılburun would not have been possible without the financial assistance of Texas A&M University and the directors and benefactors of INA, who together constitute two of the most enduring and dedicated sources of support for nautical archaeology. The project's archaeological director was the recipient of a Franklin Research Grant from the American Philosophical Society. On behalf of the entire team, I would like to extend our appreciation to the Turkish Ministry of Culture, representative Ilker Tepeköy of the Kocaeli Museum, and Bodrum Museum Director Yaşar Yıldız.

Special thanks go to the capable crew of INA's fleet: Feyyaz Subay, Bayram Kosar, Murat Tilev, and Zafer Gül. Captains Huseyin and Muhittin Aldemir continue to be the most precious local resource for INA's work in this part of Turkey. Thanks to Dr. Roy Marquardt, who served as team physician, and Sheila Matthews, for her painstaking work on the Kızılburun site plan. My own research has benefited enormously from discussions with Justin Leidwanger, a recent graduate of the Nautical Archaeology Program at Texas A&M University.

Among the 30 INA Directors and guests who visited the site in July were George Bass, Andy and Susan Billip, Ned and Raynette Boshell with grandson Jonathan, Jim and Jeannie Chaney, Bill and Tracy Culp, Lucy Darden, John De Lapa, Gilbert and May Kay Gaedcke, Charles Garrison, Donald and Marilyn Geddes, Tevis Grinstead and Marilee Wood, George Lodge and Bobbie Scallan, Russ and Lynn Shaw with son Curtis, Deniz Taner, Mary Tooze and daughter Chris Kern, Robert Walker, and Peter and Mary Faye Way.

The 2005 season was enhanced further by visits from University of Manitoba ceramicist Mark Lawall, University of Southampton graduate student Jeroen Vermeersch, Turkish students Deniz Karakoç and Baykal Ba'demir, and John Brock with grandson Coleman. Ayhan Sicimođlu dived on the site and filmed an episode for CNN-Turk which aired in Turkey on August 25.

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2005 Kızılburun Team

Front: Zafer Gul, Alexis Catsambis, Jon Swanson, Murat Tilev, Faith Hentschel
Middle: Dante Bartoli, Sheila Matthews, Josh Daniel, Roy Marquardt, Kris Trego, Debbie Carlson,
Josh Levin, Feyyaz Subay
Back: Donny Hamilton, Bayram Kosar, Don Frey

Not pictured: Asaf Oron, George Schwarz, Ali Temel, Ilker Tepekoy, Ken Trethewey

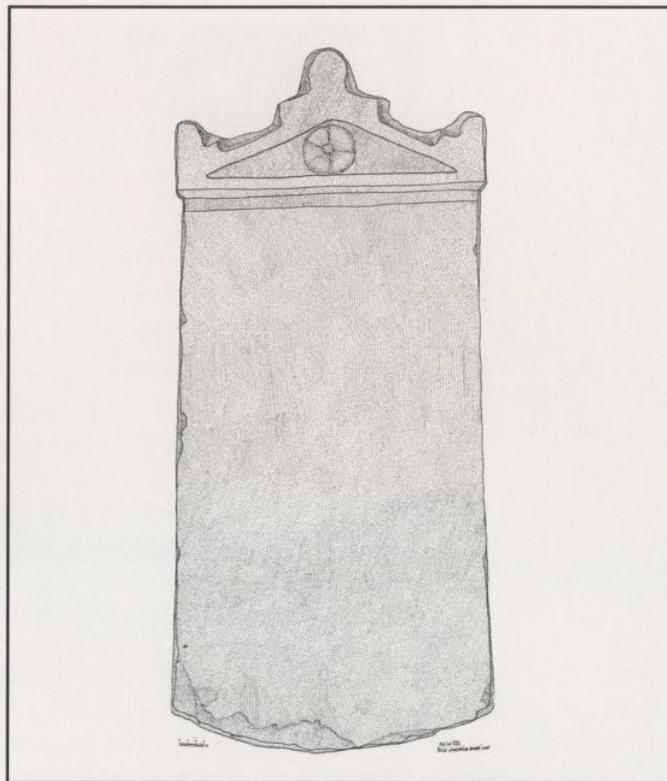
An Uninscribed Marble Grave Stele from Kızılburun

Kristine M. Trego

During the closing weeks of the 2005 excavation season at Kızılburun, Sheila Matthews – who had been excavating in the upslope area just north of the eight large column drums – discovered that one of the many marble blocks in the area was more than a rough-cut rectangular stone. After the white marble slab had been mapped and photographed, the excess sediment was cleared away in order to lift and raise it to the surface. It was then that excavators realized that the stone was in fact a partially finished marble grave *stèle*, or headstone. *Stelai* were commonly used in the Greek world to mark graves of the deceased, a practice that dates as far back as the Middle Bronze Age with examples from the Shaft Graves at Mycenae.

The Kızılburun stele measures 87.6 cm in length, 39.7 cm in width and 8.1 cm thick. Most of the stele has been well-preserved due to the fact that it was face down on the seabed beneath much dense overlying sediment. The lowest section has a rough, pocked surface; whether this is the result of marine exposure, a craftsman's tools, or a combination of the two is as yet uncertain. The stele is topped by a carved pediment with three *acroteria* (or roof ornaments frequently found on temples) and a central rosette with four petals surrounding a circular central knob. The smooth and blank surface below the pediment would have presumably been engraved with reliefs and/or commemorative inscriptions completed by a craftsman at the intended destination.

Although the stele is only partially finished, comparanda for the carved pediment exist among fully finished *stelai* from terrestrial excavations. Our most extensive resource on this subject is the catalogue of East Greek grave reliefs assembled by the German scholars Pfuhl and Möbius in the 1970s. Their catalogue contains more than a dozen *stelai* with the central four-petal rosette and three *acroteria* (for a selection of comparanda, see entries 114, 156, 160, 178, 434, 559 and 564). Nearly all of these *stelai* are thought to have originated from the ancient metropolis of Smyrna, modern Izmir, located on the mainland opposite the peninsula where the Kızılburun ship was wrecked. It must be borne in mind, however, that the provenance of some of these *stelai* is uncertain. Many have been acquired over the centuries by European museums from a variety of sources which often obscure an artifact's exact origin. Therefore, Pfuhl and Möbius assign a Smyrnaean provenance to those *stelai* that are stylisti-

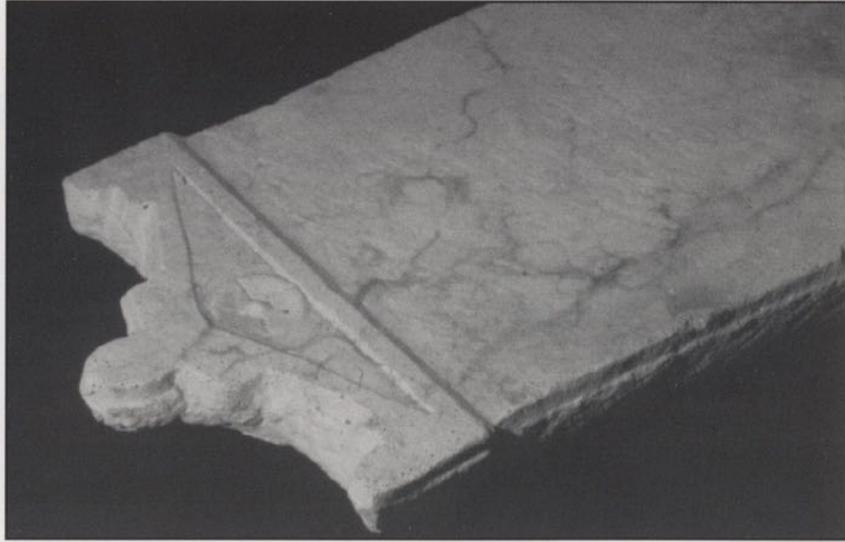


Marble Grave Stele drawn by Bilge Güneşdoğdu

cally similar to examples securely assigned to the ancient polis, but where the attribution is uncertain, the editors note it as such. The Smyrnaean *stelai* are dated by the editors to the 2nd and 1st centuries BC, which is consistent with the date of the various amphorae and pottery found on board the Kızılburun shipwreck.

Paul Zanker uses Pfuhl-Möbius' work to launch his discussion of unique components found on Hellenistic grave *stelai* from Smyrna that suggest a continuity of the citizen's self-image in a politically dynamic time. He uses the Smyrnaean *stelai* as a case study because of their homogeneous nature and the large number of examples available for consideration (see Zanker's note 5 for a list of those *stelai* included in his study). The majority of Zanker's investigation focuses on the pictorial reliefs in the large area under the pediment, which is, of course, uncarved on the Kızılburun example. Thus, we can only imagine what type of scene was destined to be carved on the blank Kızılburun stele: a group banquet, warriors in armament, pensive or mourning individuals, or other traditional grave relief scenes.

A conspicuous feature of the Smyrnaean *stelai* is the presence beneath the pediment of one or more carved wreaths enveloping an engraved *ho demos*, Greek



Close up of the top of stele

for "the citizenry", followed by a name with a patronymic, or father's name. Zanker believes that this wreath denotes some type of public honor conferred upon the deceased citizens, although, because he limits his investigation to the pictorial reliefs, he declines to investigate further the meaning behind this designation. Could the Kızılburun stele have been roughly carved with the pediment and rosette to be finished in a Smyrnaean workshop? It is impossible to claim this as certain without the engraved wreath or other more elucidating clues, but given the numerous similarities between the Kızılburun stele and Smyrnaean stelai the probability seems likely. If the Kızılburun marbles did indeed originate in Marmara, was this stele worked at the quarry according to specifications provided by a customer? Or were the architectural elements common enough in Asia Minor that the stele would find a buyer in a polis other than Smyrna? Does the fact that the ship sank south of Smyrna indicate that the cargo was destined for a port further south or did the crew voyage off course and fail to make an important turn? As it stands now, we cannot answer these questions, but continued excavation may reveal another stele or two at Kızılburun and help answer some of these queries. Whatever the case, this stele provides an important piece to the puzzle of the origin and destination of the Kızılburun cargo as well as the funerary imagery that was such a rich part of the cultural vocabulary of Hellenistic Asia Minor.

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An Egyptian Amphora from the Kızılburun Shipwreck

Joshua A. Daniel

Amphoras, or two-handled storage jars of fired clay, play a very important role within the archaeological record. They were used for the transport and storage of various goods, primarily wine and olive oil, but could also contain other materials such as fruit, nuts, meat, pitch and *garum*, or fish sauce. The form of an individual amphora can often tell us much about its origin and time period. The handles, rim, neck, shoulder, toe, and clay fabric of an amphora are indicative of its production location and time period. Stamps and graffiti are found occasionally on handles and rims and may contain names of people, places, and sometimes even month names. Because amphoras played a central role in commercial trade and they enjoy a high rate of survivability, their study often makes it possible to define the economic trends of a geographical area within a specific time period.

One of more than a dozen intact and partial amphoras excavated from the Kızılburun shipwreck during the summer of 2005 belongs to a type commonly referred to in French as “bitronconique”, or exhibiting a biconical body. The Kızılburun Egyptian amphora displays a tall, thin neck with half-moon shaped handles near the rim (fig. 1). A large portion of the body and toe of the amphora are missing, and are possibly among the many pottery sherds and other partial amphoras found in the upslope area of the wreck. While its form is diagnostic for dating, it is the fine, micaceous Nile clay from which this amphora is produced that makes it unique and places it solidly as an Egyptian product.

These bitronconique jars occur as just a handful of archaeological sites around the Mediterranean including Carthage in North Africa, Berenike on the Red Sea, and Ostia in Italy. The Egyptian amphora from Kızılburun is the first of its type found in the Aegean and is presumed to transport wine. In Egypt, several workshops around Lake Mareotis near Alexandria are known to have produced this type of amphora. Excava-

tions south of Alexandria have unearthed variations of this type of amphora. One of the more important sites is Coptos in Upper Egypt, excavated by the University of Michigan. Coptos, like Berenike, is a crossing point between Roman and Eastern trade and has produced many different artifact types from coins to cookware to amphoras, which provide definitive dates for the different strata at the site. The closest parallels for the bitronconique jar from Kızılburun come from Coptos and are dated by associated pottery to the second half of the 1st century BC.

While most of the other ceramics from the Kızılburun cargo give a date range from the 2nd to early 1st centuries BC, the bitronconique amphora type first appears in Egypt after the middle of the 1st century BC. Since the type does not appear in stratified archaeological contexts before this time, it is possible that this single amphora could provide a *terminus post quem* for the Kızılburun shipwreck, pushing forward the date of the wreck into the second half of the 1st century BC. Conversely, if the ship sank in the early 1st century BC, then the bitronconique amphora from Kızılburun could be one of the earliest examples discovered to date. This is the type of information archaeologists must contend with on a constant

basis, not only making changes to different chronologies as additional data are discovered, but also struggling to piece together the individual components of a given assemblage.

The column wreck at Kızılburun, which contained several types of amphoras, also aids in a broader study of Roman maritime trade. The different amphoras, including the Egyptian amphora, are a testament to the widespread trade and commerce brought about by Roman domination of the eastern Mediterranean. It is in the 1st century BC that we see the elimination of Mediterranean piracy by Pompey the Great (67 BC) as well as the famous battle of Actium, in which the future emperor Augustus secured Rome’s hold on Egypt – a critical

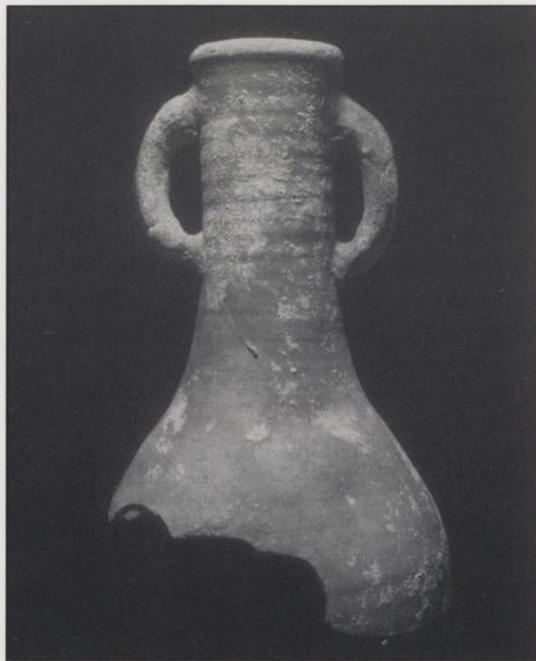
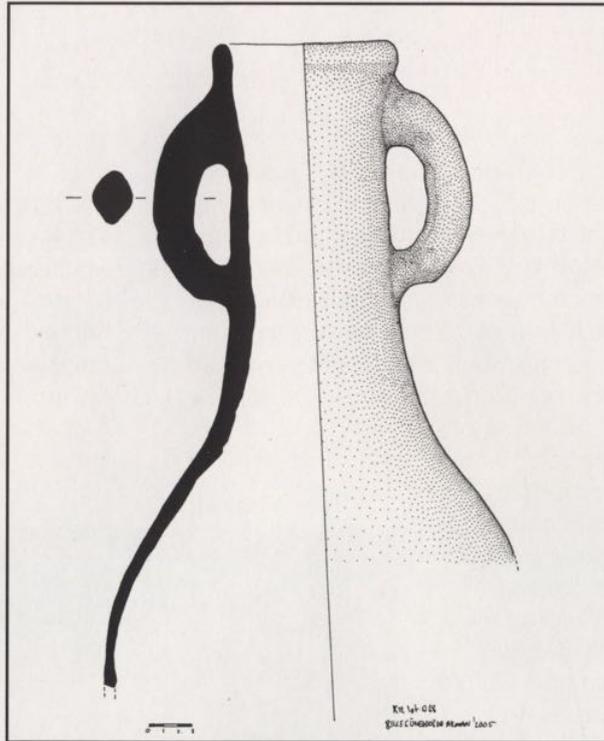


Fig. 1 Egyptian Amphora

Egyptian Amphora drawn by Bilge Güneşdoğdu



source of grain for Rome – with the defeat of Cleopatra and Marcus Antonius (31 BC).

One important aspect of shipwreck archaeology around the world is the recovery of discrete archaeological assemblages in sealed contexts. The column wreck at Kızılburun gives us a rare chance to study one specific moment in time. These time capsules, if excavated properly, can produce information that can change the way scholars view ancient trade and commerce in such a rapidly changing ancient world. The bitronconique amphora from Kızılburun is a compelling example of why the most mundane and least glamorous artifacts are often the most diagnostic.

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Acknowledgements: I am deeply indebted to Dr. Donny Hamilton and Dr. Deborah Carlson. Without their encouragement and support, the excavation of the Kızılburun column wreck would never have happened. I am also greatly appreciative of Dr. Carlson's ceaseless aid in the writing of this article.

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Dutch Ministry of Finance Violates Agreement on Submerged Cultural Heritage

By Wendy van Duivenvoorde

The Dutch Ministry of Finance has amazed and disappointed the archaeological world once again by making a deal with a commercial salvage company to split the bounty of a Dutch shipwreck and ignoring agreements made with the Dutch Ministry of Education, Culture and Science. They officially received their spoils, part of the silver cargo of a Dutch East-Indiaman, named *Rooswijk*, on the 12th of December 2005. By doing so, the Dutch government has openly given support to commercial salvaging of archaeological heritage, which goes against national—and international—policy regarding submerged cultural inheritance. The National Agency of Archaeological Research (ROB) of the Dutch Ministry of Education, Culture and Science is shocked; their archaeologists were not informed. Moreover, they are not allowed to voice their opinion as are British archaeologists who regret this state of affairs. Not only are Dutch archaeologists stunned, but so is the archaeological community worldwide. The *Rooswijk* affair is not just an unfortunate incident.

The large Dutch East-Indiaman *Rooswijk* (850 tons) was built by the Dutch East India Company (VOC) Chamber of Amsterdam in 1637. It sank on its second voyage to the Indies on January 8, 1740 on the Goodwin Sands near Kent. No one aboard the ship survived its wrecking. The shipwreck of *Rooswijk* was discovered in 2004 by a recreational diver - Cambridgeshire carpenter Ken Welling. The artifacts retrieved from the wrecksite comprise of more than a thousand silver bars and approximately 36,000 silver coins. According to some of the team members of the salvage operation, there simply was not more preserved than the bullion on the seabed, and therefore, not be called a shipwreck. However, one would have had to ignore all other artifacts such as sabers, bricks, kitchenware, a cannon, and even a small box with 23 spectacle glasses, made in Amsterdam. Furthermore, part of the ship's hull was still standing and had a gunport. This information is sufficient for an archaeologist to understand that *Rooswijk's* wreck must have been well-preserved.

Reportedly, the discovery of *Rooswijk's* wreck was kept top-secret as the salvage company of Rex Cowan and the Dutch Ministry of Finance were concerned about illegal salvaging and looting. It is more likely that the salvagers were worried about maximizing their pursuit of profit. The venture was made public for the first time on December 12, 2005 when the Dutch State Secretary of the Ministry of Finance, Joop Wijn (Christian Democratic Party) officially received part of the Ministry's twenty-five percent share near the English town of Plymouth. The salvage com-

pany of Cowan will get the other seventy-five percent of the proceeds. The share of the Dutch government will be distributed over several historical museums and the remainder is expected to be sold at auction. As a matter of fact, the first 1,000 coins will be sold at auction during the 2006 Chicago International Coin Fair via Ponterio & Associates on March 31 and April 1. Also, Ponterio & Associates is under contract to sell more of the *Rooswijk* coins in the next four auctions after Coin Fair.

According to newspapers the Dutch archaeological community was mainly surprised as no accredited archaeologists were involved or notified. The involvement of archaeologists and accordingly archaeological approach in the excavation of Dutch shipwrecks abroad was specifically agreed upon with the Dutch Ministry of Finance in 2002. Now with the salvage of *Rooswijk*, the Ministry of Finance has broken their commitment to protecting Dutch cultural heritage. This is not surprising as this particular Ministry is notorious for their indifferent attitude towards and participation in the systematic destruction of the country's submerged cultural heritage.

The VOC was established in 1602 and was the world's first multi-national company. According to the Dutch constitution from 1789, the Dutch government became the legal heir of the VOC after it was declared bankrupt in 1795, and, thus, owner of all the company's assets. Approximately fifty VOC shipwrecks from between 1606 and 1795 have been located and publicly announced to date. Many more have escaped notice and have silently disappeared in the hands of commercial salvagers. Of these fifty acknowledged VOC-shipwrecks, at least thirty have been systematically destroyed by commercial salvagers; most *with* the permission of the Dutch government.

The domain directorate of the Dutch Ministry of Finance deputizes the ministry to oversee all government buildings, land, objects, and real estate. This particular directorate has granted approximately fifty salvage permits for VOC shipwrecks around the globe since 1967. They are, however, only able to provide an *estimate* as they have not kept proper records that could have provided a precise number of the shipwrecks and their identifications. Unfortunately, the precise extent of VOC-shipwrecks worldwide will never be fully known as an unknown number is lost to future generations due to the commercial ventures that discover and salvage them.

Since the early 1980s, thanks to the efforts of Thijs Maarleveld, then Director of the Department of Underwater Archaeology of the Dutch Ministry of Education, Cul-

ture and Science, no *new* salvage permissions are granted by the Ministry of Finance for Dutch shipwrecks within Dutch territorial waters (a zone of 12 nautical miles from the coastline). In April 2002, the Ministry of Finance finally agreed to comply with the required archaeological standards for all new salvage permits granted and for existing permits to be extended. This agreement was violated with the salvage permit issued for the *Rooswijk*.

According to a Dutch newspaper, Jerzy Gwaronski, the Amsterdam city-archaeologist who was closely involved with the research of the VOC-ship *Amsterdam* between 1984 and 1986, stated: "It was agreed upon at the time, that salvage operations would only take place in cooperation with archaeologists. Today, that agreement is violated for the umpteenth time. State Secretary Wijn can easily say that Dutch cultural heritage is brought back to the Netherlands, but this is only the case in the most restricted sense of such concept. A shipwreck entails so much more than only gold and silver. Now, it is brought back to a boy's adventure story of a shipwreck and its treasure. We have been trying to get rid of that image for 25 years now."

Martijn Manders, a maritime archaeologist from the Department of Underwater Archaeology of the National Agency of Archaeological Research (ROB), confirms in a Dutch newspaper that his department was not notified or informed about the salvage operation. Manders agrees with Gwaronski; he regrets that the Dutch government decided not to involve his department and chose not to follow the proper archaeological approach.

A comprehensible understanding of Dutch shipbuilding and seafaring relating to large sea-going ships from the late sixteenth to the eighteenth centuries is difficult to achieve due to the limited written evidence and the lack of well-researched and *published* archaeological data. The most complete data for Dutch shipbuilding and seafaring from the sixteenth century onwards could have come from the remains of the ships itself. This period of study already has limited information because it has been destroyed over the last fifty years. Most historic Dutch shipwrecks have been systematically plundered, either by looters or by commercial salvagers in search of artifacts with market value. Furthermore, the number of shipwrecks that have been found and excavated by archaeologists is small. The number of archaeological excavations that have been fully published in a scholarly manner is even smaller. This is regrettable, for if mankind is to learn about their seafaring past and give their past a future, it is important that shipwrecks are not excavated from a commercial standpoint (how much profit can we make?) but from a scholarly or educational standpoint (how much can we learn?).

Most responsible for the systematic destruction of Dutch shipwreck heritage on the basis of financial gain is, undoubtedly, the Dutch Ministry of Finance by virtue of providing excavation permits to commercial salvagers. It is tragic that the Dutch Ministry of Finance can get away with such unethical behavior and disdain for the preservation of Dutch shipwrecks and their archaeological value.

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From the President

2005 INA Annual Meeting in New York City

The year 2005 was a year of change for the Institute of Nautical Archaeology (INA). Important events included the start of a new excavation at Kizilburun, Turkey, which is the first INA project to be directed by a woman. A visit to the site was the highlight of the 2005 Summer Tour. Another change this year was the location of annual meeting, from the usual January at The Mansion on Turtle Creek, in Dallas, Texas to October in New York City (NYC) at The Carlyle and the Explorers Club. This was a FIRST! All agreed it was a eventful change. The meeting was a more convenient location for some and others had the opportunity to see the sights in NY and even attend a Broadway show. On Thursday night, all of the early arrivals were treated to a welcoming reception at the NYC home of Barbara and Claude Duthuit overlooking Central Park, just a couple of blocks walking distance from The Carlyle. The camaraderie of old and new friends and the hospitality at the cocktail party was a wonderful way to welcome everyone to New York.

On Friday evening, Ned Boshell hosted a dinner party honoring the 200th anniversary of Admiral Horatio Nelson's victory at Trafalgar. Several short histories of events leading up to the battle were presented by Kevin Crisman, Don Frey, Gregg Cook, Jim Goold, and David Todd. It was a momentous get together with good food and ample libations, with everyone speaking English, for as Ned stated, if the battle had been won by the combined fleet of France and Spain, we might be speaking French. Claude Duthuit, as a matter of principal, stood by his country and boycotted the party, but he was back on the scene for the meetings the next day and the annual banquet.

The following day at the Director's meeting, we officially elected the new slate of INA officers. Peter Way became the new Chairman of the Board and Donald Geddes was elected as Vice Chairman. Jim Goold was given a gift of appreciation for the stupendous job he did as the past Chairman. The budget for the 2006 fiscal year was approved and various needs were discussed such as completing the conservation facilities in the INA Bodrum Research Center and the desperate need for new diving equipment and upgrading equipment on the INA ships and boats. Safety is always a major concern when conducting underwater archaeology excavations and we were over-due for these improvements as well.

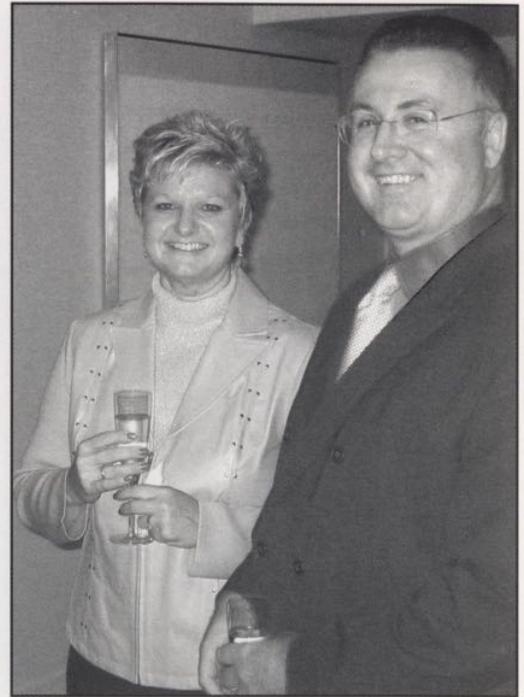
Long time Director and supporter of INA, Mr. John Baird, took heed of the plea and issued a challenge that he would match up to \$200,000 of new money contributed to these causes through the end of the 2005 year. I am ecstatic to report that we met and slightly exceeded the John Baird Challenge. This helped put a very good end to the 2005 year for INA.

Instead of having the annual banquet in the hotel, we arranged for the excavation project reports and the banquet to be held at The Explorers Club, a few walking distance blocks away. As everyone knows, The Explorers Club is one of the more prestigious clubs in New York and everyone enjoyed the regal splendor of the grand meeting room.

The accompanying pictures highlight the major events of the meeting. Of course, it is always impossible to get pictures of everyone at the INA annual meeting, but the selections included here are representative of the activities.

-Donny L. Hamilton

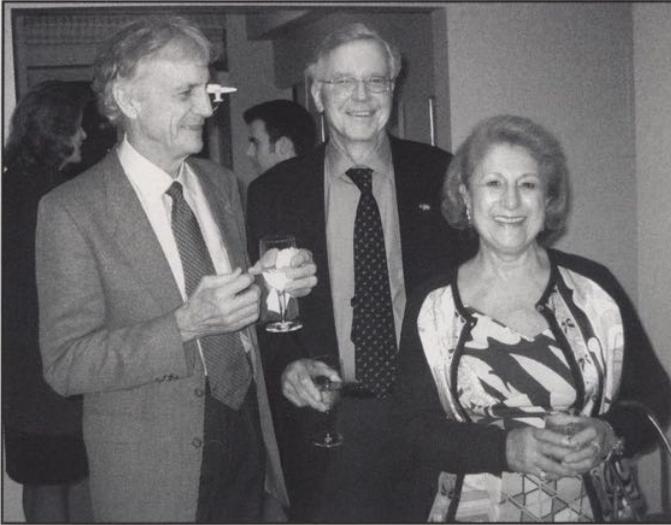
Marlene Campbell, Founder Jack Kelley and Mrs. Jean Kelley. Fred van Doornick in the background.



Claudia LeDoux and Jim Delgado.



Ela Aydemir, Director John De Lapa, Associate Director Raynette Boshell & Director Ned Boshell, and O—uz Aydemir



Don Frey and Director Ned Boshell with Director Danielle Feeney.



Director Gregory Kiez, Bülent Sağlam, and Tufan Turanlı.



Director Ned Boshell, Don Frey, and Director Claude Duthuit. Founder George Bass and Barbara Duthuit in the background.



Chairman Peter Way with wife Mary Faye Way and Director Gregg Cook.

Associate Director Faith Hentschel , Kevin Crisman, and Dante Bartoli.



Overview of the banquet at The Explorers Club .

Announcing the Texas A&M University Archaeological Diving Club

Ben Ford

The Institute of Nautical Archaeology has a long tradition of excellence in diving and underwater archaeology. The goal of the Texas A&M University Archaeological Diving Club is to build on this tradition by providing a forum for increased diving experience and the exchange of ideas and techniques. Much valuable archaeological interpretation is done "at the dredge head" and this analysis, not the technical skill of diving, should be the archaeologist's primary focus. Beyond what is required for safety, time and energy spent on the act of diving (adjusting buoyancy, struggling to remain in position, fumbling with equipment, becoming disoriented, etc.) detract from the efficiency and, ultimately, the results of an underwater excavation. Efficient, well trained, and prepared divers are better archaeologists, because archaeology is foremost in their thoughts while diving.

INA and the Center for Maritime Archaeology and Conservation (CMAC) have the benefit of many excellent divers, but even the best divers benefit from continued education and practice in diverse situations. For less experienced divers, the club will offer an opportunity to practice basic skills and learn from others with more training and dive time. Thus, the primary activity of the club will be monthly diving trips. These excursions will consist of two dives: an unstructured exploration dive and a structured skill-building dive. During the exploration dive, members will be encouraged to investigate the dive site, within the bounds of their training, fine tune their buoyancy, adjust gear, and enjoy diving. The skill dive will allow members to practice archaeological skills (e.g. hull recording, orienteering, surveying, etc.), experiment with new equipment (technical buoyancy compensators, drysuits, computers, etc.), and experience adverse diving conditions (e.g. cold and dark water). The goals and procedures for the skill dive as well as the logistics for the day will be discussed at a pre-trip meeting held during the previous week, and all dives will be conducted under the supervision certified dive masters with safety as the paramount concern.

The club will also promote the cross-pollination of ideas within INA and CMAC. Many students and members work in a single region or experience only one project during their tenure. Every site has its unique challenges and each principal investigator has their preferred methods. The club will create an environment for learning, applying and evaluating different methods for specific situations based on the experiences of its members. The goal will be to create the largest possible

"tool box" making the members more effective archaeologist.

At the time of writing, the club is in the final stages of university approval. We will hopefully have an organizational meeting mid-semester and get wet at least once before summer.

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Center for Maritime Archaeology and Conservation Lecture Series

Filipe Castro

Visits of outside scholars are wonderful opportunities to expose our students to the newest developments in the field, alternate problem solving methods, and information on their work and skills. From these first hand accounts, NAP students have been able to learn from their lectures, profit from formal and informal conversations and exchanges of ideas, and build network for future projects and scholarly research.

The Nautical Archaeology Program (NAP) has been open to scholars, students, and other interested persons to visit our headquarters and to see and use its laboratories, libraries, offices, and classrooms. This welcoming environment has hosted many visitors despite its geographical isolation; College Station is often out of the way for scholars inside and outside the USA. The reward of the travel is the opportunity for the guest to get abreast with NAP ongoing projects, research methods, and facilities, both in College Station and Bodrum.

The professional world of nautical archaeologist is becoming increasingly complex with such factors as the development of more nautical archaeology programs and new advancements in technology making these visits an invaluable supplement to the professors and students curriculums.

Center for Maritime Archaeology and Conservation (CMAC), within Texas A&M Department of Anthropology, operating in conjunction with the NAP has committed to try to invite one or two top world specialists every year to spend some time in College Station and interact with the faculty and the students.

The first invited scholar, Mr. Mauro Bondioli, has been studying shipbuilding techniques in the Italian Middle Ages and Renaissance for over 26 years, and is a renowned world specialist with a profound knowledge of the principles, techniques and rules that guided the naval construction particularly of galleys in Italy, in the 14th, 15th and 16th centuries.

Mr. Bondioli spent a week in College Station last November, visiting the laboratories, libraries and other facilities of the Nautical Archaeology Program and gave two lectures, totaling four hours, the first directed to



Mauro Bondioli with History of Shipbuilding class.
Courtney Higgins and Scott Sery in foreground.

students, and the second open to students, faculty and staff of the entire department.

The first lecture consisted on an overview of the known history of rowing craft in Italy, from its beginning to the late 16th century. The second was an account of the amazing discoveries of the archaeological field seasons carried out on the sites of the two amazing shipwrecks of Boccalama, Venice (directed by Marco D'Agostino) and the early 15th century *fusta* of Lazise (directed by Massimo Capulli).

The main purpose of his visit was the creation of an informal group for the study of Italian shipbuilding – similar to the existing Group for the Study of Iberian Seafaring (<http://nautarch.tamu.edu/shiplab/index-iberian.htm>) – involving students and faculty. The principal objective of such a group is the development of contacts between NAP students and Italian scholars that will facilitate the investigation of student's thesis subjects and facilitate an informal peer review process of their work.

One of the outcomes of Mr. Bondioli's visit was the establishment of a basic bibliography to be available – and mandatory – to all students interested in pursuing their studies on this subject. The second outcome of this visit was the establishment of an informal e-mail list where students can brainstorm and are asked to produce monthly short essays on core subjects of their research.

This teaching strategy creates an intense intellectual involvement and helps students to develop ideas, acquire knowledge, and advance their research topics at a faster rate. Furthermore, it and exposes them to the dynamics of group work and the often times counter-intuitive advantages of cooperation, such as quick and informal peer-review of ideas and share of information.

The third, and perhaps most important outcome of this visit, was the idea – presently under study – of publishing a two volume work on the world of Italian shipbuilding, from its origins to the late 16th century, directed and edited by Mauro Bondioli, one of the world greatest authorities on this subject.

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Acknowledgements

The Center for Maritime Archaeology and Conservation and the Nautical Archaeology Program would like to express its gratitude to Prof. Luigi Fozzati, from the Soprintendenza Archeologica per il Veneto, and director of NAUSICAA (Nucleo di Archeologia Umida Subacquea Italia Centro-Alto Adriatico), for having granted permission to Mr. Bondioli to represent all the scientists and their teams involved in these works and sharing with us all the knowledge already gathered in these ongoing projects.

Navigational instruments as a source of historic information

The National Maritime Museum Greenwich, keeper of the world's largest, and perhaps pre-eminent collection of navigational instruments, announces a call for papers for a symposium that will explore the topic: 'using navigational instruments for historical research'. The Museum invites maritime historians, historians of science and exploration, museum curators and maritime archaeologists to use the meeting to exchange their experiences and views on the subject. The aim of the symposium is to improve our understanding of the ways in which navigational instrument collections can illuminate history and historical process.

Papers should be for a maximum of 30 minutes. Those wishing to attend, and those interested in speaking at the conference are invited to submit a proposal of no more than 250 words to Mrs Janet Norton, Research Administrator, National Maritime Museum, LONDON SE10 9NF, by 1 May 2006. e-mail jnorton@nmm.ac.uk.

The symposium will be held at the National Maritime Museum Greenwich, London, on Thursday 16 November 2006. If there is sufficient response the meeting may be extended over the morning of Friday 17 November. That evening the Annual Lecture of the Scientific Instrument Society will be given by Dr Willem Mörzer Bruyns, who holds the National Maritime Museum's 2005-07 Sackler Research Fellowship in the History of Astronomy and Navigational Sciences, and will focus on the Museum's collection of navigating instruments.

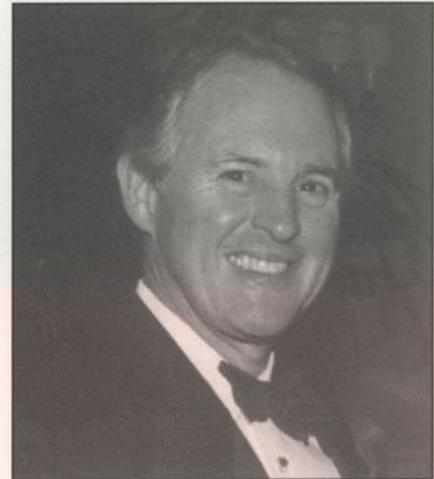
In Memoriam

Raymond H. Siegfried

Raymond H. Siegfried, former Chairman of the Board of the Institute of Nautical Archaeology, lost his battle with Amyotrophic Lateral Sclerosis on October 6, 2005. He was involved with INA from 1981 to 1999, and spoke up with pride when INA reached its first million-dollar budget, looking forward to the day when it would double that figure.

Ray is known for his success in turning the NORDAM Group of Tulsa, Oklahoma, from a company of 8 in the early 70s into a 2,500-employee, \$500 million international aerospace company. His drive, leadership, and innovation overflowed into his hobbies and community involvement. He was a sportsman, community leader, and most importantly a family man. His life was led by his spirituality; he strove always to do what was good, evident through his countless donations of money and time to various organizations, including his beloved alma mater, the University of Notre Dame. He had positions of leadership and involvements across the nation, including (but not limited to) the Tulsa Chamber of Commerce, the General Aviation Manufacturers' Association, the Tulsa Area United Way, and, of course, the Institute of Nautical Archaeology.

Ray Siegfried's involvement in INA began in 1981. He served as vice chairman from 1985 until 1990 when he became chairman. He was chairman until 1993 and continued on the Board of Directors until 1999. Through all those years he was an active participant with INA, visiting projects in the field with his wife, Milann, sometimes bringing their children with them. In Turkey, he dived on the Bronze Age shipwreck at Uluburun with his son, Hastings, who as an adult served on the INA Board of Directors. Always interested in the latest gadgets (he bought a DeLorean automobile as soon as they appeared), he is remembered for bringing perhaps a dozen of the first hand-held computer games to the Uluburun expedition camp, and a photograph of George Bass and Cemal Pulak deeply engrossed in them on *Virazon* shows that even excavation directors can relax. We shall always miss Ray, his infectious smile, and his incredible love of life.



Woodrow Jones

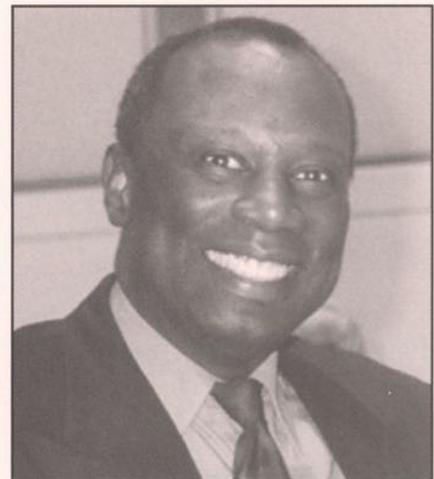
Woodrow Jones, the 1st African American Dean at Texas A&M, passed away on November 22, 2005. Jones served as both associate dean (1989) and interim dean (1993-1994) prior to being Dean of the College of Liberal Arts in 1994. He served until 2001 and was dean emeritus for the last four years.

He co-founded the Texas Association of Deans of Liberal Arts and Sciences (TALAS) and served as president during the 1999-2000. In addition, he co-founded the Black Faculty Alliance at Texas A&M and also served as president.

Jones' background was in political science with an emphasis in public health. He earned his master's and doctoral degree from University of Oregon. His research interests included public health policy, national public health planning and minority health care. He authored or co-authored eight books and numbers book chapters, refereed journal articles, and convention papers.

Jones worked to help infuse the liberal arts with diversity and internationalism by supporting study abroad programs and multiculturalism within the core curriculum.

He is survived by his wife, Mary Wolf, two children, one grandchild, his parents and two brothers. He was preceded in death by one brother.



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