

THE INA QUARTERLY



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On the cover: Replicas of the *Skuldelev Ships* at the Roskilde Museum. *Skuldelev 3* stempost on left, *Skuldelev 5* stempost on right. Photo: Piotr Bojakowski

2006 Survey of the Turkish Coast

George F. Bass

After the completion of the 2006 campaign at Kızılburun (INA Quarterly 33.1, pp. 3-10), freeing INA's vessels, which with their crews play such an important role in both excavations and surveys, we continued INA's search for ancient shipwrecks off the Turkish coast (INA Quarterly 29.2, pp. 3-11). The goal of our surveys is to find another site worthy of excavation by expanding INA's inventory of ancient shipwrecks. Because we would especially like to find early wrecks, we chose to search farther north than usual, between Foça (ancient Phocaea) and Çeşme, because land excavations show a long history of continuous human habitation in this region, beginning at least in the Early Bronze Age. The survey was conducted in collaboration with Ankara University, with financial support from the Institute for Aegean Prehistory.

As our fleet sailed from Bodrum to Foça, where we would rendezvous, I drove up the coast with Claude Duthuit, friend and colleague since we excavated the Cape Gelidonya shipwreck together in 1960 (INA Quarterly 21.4, p. 27). On the way we visited Ankara University's excavations at the Early through Late Bronze Age site of Liman Tepe, where Professor Hayat Erkanal described the underwater archaeology center he is establishing at nearby Urla. We also had the chance to discuss survey plans with his assistant, Dr. Vasif Sahoğlu, who would be part of our staff. Although we could not then visit the Minoan settlement they are also excavating, in nearby Çeşme, Claude and I later had the opportunity to see it with INA friend and former director Oğuz Aydemir.

In Foça we joined the rest of the team. Archaeologist Feyyaz Subay was again captain of INA's 20-meter *Virazon*, on which we lived, and chief pilot for our two-person submersible Carolyn; Bayram Koşar captained *Millawanda*, the catamaran that carries, launches, and retrieves Carolyn; mechanics Murat Tilev and Zafer Gül were by now both licensed submersible pilots; and new cook Bülent Demirağ prepared delicious meals in *Virazon*'s galley.

The survey was shorter than planned because of the earlier onset of winter storms than we had encountered in recent years when we surveyed farther south. In the south, around the Bodrum and Knidian peninsulas, we had also been spoiled by visibility of over 100 feet. Now, especially in the vicinity of Foça, Urla, and Liman Tepe, we faced near zero visibility for the first time, perhaps due to sediment from the storms. In one case, the lack of visibility caused *Carolyn* to hit the 100-foot deep seabed before we could even see it! Nevertheless, in a week when conditions were favorable, we found two shipwrecks, recorded another, which we were directed to by a local diver, and stumbled onto a faux ancient wreck.

Claude and Feyyaz spotted the first, just over 100 feet deep, while searching up toward Arslan Burnu, north of Foça. The tops of three rectangular marble blocks, each about six feet long, were scarcely visible. The next day, Feyyaz and Murat examined the site by diving with scuba. I watched from *Carolyn*, with Zafer at the controls, as Feyyaz dug down next to one block as far as his arm would reach, without finding the block's lower face; Murat, meanwhile, probed the area with a pointed metal rod, hitting what may be a lower layer of blocks.

No other artifacts were visible, but Ömer Özyigit suggested the earliest date for the wreck. Based on his experience as the excavator of ancient Foça, with levels beginning in the Early Bronze Age, he pointed out to us that the importation of marble to Phocaea did not begin until Roman times. It was fitting that Parisian Claude, who also owns a home near Marseille, found



Carolyn approaches *Millawanda* to be retrieved.
Photo: Vasif Sahoğlu.



Relaxing on the deck of the *Millawanda* from left to right: Feyyaz, Ilknur, George, Claude, and Murat. Photo: Vasif Sahoğlu



The marble wreck as first seen and a close up of one of the marble slabs. Photos: George Bass

a wreck near Phocaea, for it was Phocaeans who first colonized Marseille--and are thought to have introduced wine to France!

On the west side of the Karaburun peninsula, near Eğri Liman, Vasif and Feyyaz found the second wreck, again about 100 feet deep, indicated only by a single intact Byzantine amphora resting against an iron anchor. Scarcely visible, however, are the tops of several other Byzantine amphoras almost completely buried in the seabed. Like the marble wreck, this wreck lies in such deep sediment that its hull, cargo, and personal possessions should be extremely well preserved.

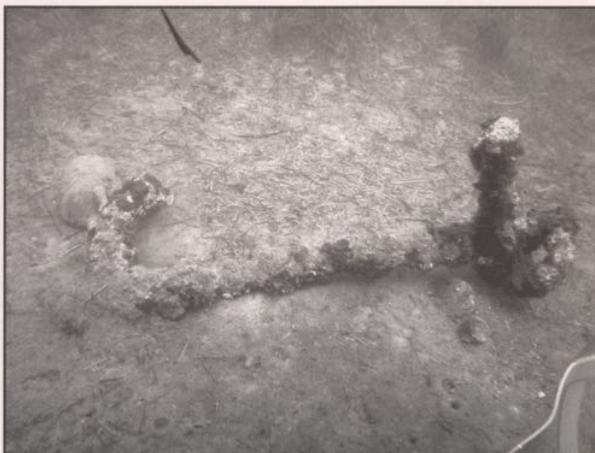
Not far away, near Gerence Körfezi, we found a wreck that a local spear fisher told us lay in the area. About 90 feet deep, the site is marked by a number of huge jars--Roman dolia--none intact.

The most exciting "wreck" proved not to be a wreck. Claude and Feyyaz called up from *Carolyn* with great excitement when they spotted a pile of beautifully preserved pottery 120 feet deep on the south side of Kara Ada, north of Dalyan. But their excitement subsided when they saw nearby a similar "wreck," which did not look quite right to them. Near it lay a large marble slab, with amphoras seemingly placed around it. Several of the team then dived with scuba, while Commissioner Ilknur Subası, representative of the Turkish Ministry of Culture, observed from *Carolyn*, piloted by Zafer. A little cleaning of the white slab revealed it to be the marble relief of a pair of facing gladiators! All this was clearly too good to be true. Much discussion ensued. It was felt that the site was too deep, at 120 feet, to have been assembled for tourist divers, since they normally are not taken deeper than 100 feet by commercial dive boats. Someone suggested that we must have found a stash of real antiquities waiting to be sold or smuggled out of the country. Another insisted that we raise the slab and take it to the Çeşme Museum. I wondered, however, if perhaps the slab was modern, carved by clever art students, for reasons I could not guess. The local Coast Guard, on receiving our verbal report, told us which of the local Dalyan dive clubs had made the site as an attraction for the tourist divers they take out almost daily in good weather; the marble slab had, indeed, been carved by students at an art academy in Istanbul!

In the third week of October we were trapped in the harbor at Dalyan by gale-force winds and high seas for five days, with predictions of continuing bad weather. This is the ideal time for searching farther south, where the weather is calm and the seas are flat. Frustrated, we decided to end the 2006 survey. But we are determined to return, certain that we will continue to find wrecks here, perhaps even the early ones we seek.

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Byzantine amphora and iron anchor. Photo: Vasif Sahoglu



Dolium fragment from the third site found during the survey. Photo: Claude Duthuit



Nautical Students Travel the World

Nautical Archaeology Students are encouraged by their professors to partake of real-world research outside of the program. Through the support of INA, the Nautical Archaeology Program, and external resources, students have been able to take advantage of opportunities, including attending lectures, workshops, summer courses, surveys and excavations. Students have researched in renowned libraries, visited museums, laboratories, and archaeological projects to build their professional skills and prepare for the real world. Travel with the following students as they share their exciting trips of discovery.

Roskilde Viking Course – Summer 2006

Piotr Bojakowski

This past summer, I spent a week in one of the most remarkable maritime centers in the world: the Viking Ship Museum in Roskilde, Denmark. Anyone who has ever been there will never forget the amazing atmosphere of this place. The museum is famous not only for its amazing Skuldelev ships exhibition, but also for many other maritime related activities. These activities include an authentic boatyard, an archaeological workshop center, as well as a large harbor, which shelters one of the largest collections of historical ships and other Nordic and international boats. The most remarkable thing about this unique collection is that it is not just for show. On the contrary, each boat in the harbor is fully operational and extensively used as a research tool to test numerous hypotheses and performance questions. As a result, the Viking Ship Museum in Roskilde is like a nautical fairy tale of a place that seems to exist somewhat apart from real life. It is an impressive research center concealed in the shadows of Viking history, tradition and cultural heritage.

Roskilde is said to be the first capital of Denmark and was founded around the 990s. From the beginning, it was inhabited by Vikings and rapidly grew into an important commercial, political, and cultural center during the Middle Ages. Even today, it is impossible to miss the overwhelming evidence of its mighty past. Indeed, along the road leading to the Viking Ship Museum, visitors will pass the grand Roskilde Cathedral, founded in 1170 and famous for being the resting place of 39 Danish Kings.

Modern Roskilde has a small town character. As a matter of fact, you can walk from one end of town to the other in about an hour. The only means of transport inside the city is either by bus or bicycle, of course the more pleasurable ride is on a bike. Bicycles are so universal in Denmark that you see them literally everywhere. This transport is taken to such an extent that it is quite easy to live there without a car, as most people do – but impossible without a bike. The Danish people, are very liberal, open-minded, and very opinionated. Being Polish myself, I felt particularly well and at home there. It was not only for the climate, however, but mostly for the people. Danes are, after all, northerners, living in their own small world which they truly love and value.

During that week between the 11th and 16th of June, 2006, I participated in a seminar entitled “Maritime and Experimental Archaeology – the Danish Experience”. This annual meeting is organized as a collaborative ef-



Viking Ship Museum Boatyard. Photo: Piotr Bojakowski

Sailing practice on a traditional Faroese boat. Photo: Piotr Bojakowski





Dr. Englert prepares rigging. Photo: Piotr Bojakowski

fort by the Maritime History Program of Southampton University and the Viking Ship Museum in Roskilde. It is interesting to note that students from Southampton University have been participating in this program for years, making this course an important component of their maritime curriculum. This year, thanks to the help of Dr. Filipe Castro and Dr. Donny Hamilton, as well as the help and kindness of Dr. Lucy Blue from the Centre for Maritime Archaeology at Southampton University, I had a chance to participate and represent the Nautical Archaeology Program and Texas A&M University at this important event.

The course, which was hosted by Dr. Anton Englert at the Viking Ship Museum in Roskilde, encompassed a variety of topics related to Northern European historical and maritime archaeology. We began by learning about the Nordic Stone Age under water, expanded “boats” (dugouts), and their relationship to the development of the early clinker tradition. We continued the lecture series by analyzing classical clinker-built ships from the early medieval and the medieval periods. This segment included an extensive lecture by Dr. Jan Bill about changes in small cargo vessels in Scandinavia, particularly interesting since small ships are not frequently studied in such a comprehensive way. We finally concluded the course with talks about documentation, hull and rigging reconstruction, and aspects of recreating full-scale historical replicas of authentic Viking ships.

To me, the most significant talk of this course was a lecture given by the famous Dr. Ole Crumlin-Pedersen entitled “The Danish Experience”. To people not familiar with the work of this distinguished scholar, Dr. Crumlin-Pedersen was the person behind an excavation of five mid-eleventh-century Skuldelev ships from the waters of Roskilde fjord in Denmark in 1962. This pioneering work not only set the foundations for the field of nautical

archaeology in Northern Europe, but also for numerous other projects and reconstructions, culminating with the establishment of the Viking Ship Museum and Nautical Institute in Roskilde. Two of the vessels excavated by Dr. Crumlin-Pedersen in 1962 proved to be cargo ships, two others were Viking warships, and the fifth one a small Norwegian fishing boat (Olsen, O., & Crumlin-Pedersen, O. 1958 and 2002). His presentation included historical background of the excavation, discussion of the role of these ships in the archaeological context of Northern Europe, as well as the latest developments on Viking shipbuilding philosophy, techniques and methods. He also touched on an important subject of how Nordic shipbuilders could mentally visualize such complex structures without even a single drawing. Afterwards, Dr. Crumlin-Pedersen gave us a tour around the Maritime Center and shared his personal stories and experiences gained during the reconstruction projects of Skuldelev’s replicas.

The best part of this course, however, was the practical experience with authentic shipbuilding tools as well as sailing practice on historical replicas of several different Nordic vessels. During this practical portion of the course, most of the participants, myself included, were astonished by the ease and simplicity of splitting an oak log, producing incredibly strong but flexible planks, and finally assembling all of these elements with traditional iron nails over square roves. Step by step, we were not only simply observers, but full participants in the process of developing the brilliantly simple floating masterpieces of the Viking times. I suggest to anyone to try working with wood and banding a few planks to visit. It is a very rewarding and highly enlightening endeavor, an endeavor which gives a completely new perspective into the study of ships.

During the afternoon periods, we combined all of the theoretical “classroom” knowledge with true sailing practice. For the first two days, we began by learning – and I emphasize the word learning – how to properly row a vessel. Not surprisingly, it is a challenging task. Our team had problems operating a vessel with 6 oars per side so I can only imagine the complexity of rowing a large warship of the drakkar type. After this initial training, we progressed to sailing vessels and learned how to operate a single square sail of the traditional Faroese boats. Our skippers, Søren Rasmussen and Dr. Anton Englert, were very patient and made sure that everyone was proficient with all the maneuvers and ship tasks, each person taking turns by the helm, tack, as well as operating sheets, braces, and doing simple navigation with GPS (admittedly not a very Viking-like activity).

Finally, during the last day of the course, we gained enough proficiency to graduate to sailing on the original replicas of Skuldelev 1 and 3 (Juel, 2005). It is difficult to describe such a rewarding experience, consider-



Viking training at Roskilde. Photo: Piotr Bojakowski

ing how much time and energy we put into studying these vessels in the Nautical Archaeology Program at Texas A&M University. I realized that reading about ships is important but somewhat dry. Sailing these vessels, on the other hand, especially sailing on the original replicas along the Roskilde Fjord can be very wet. It brings forth a completely new perspective and appreciation to our field that we tend to lose sometimes amongst the written pages.

Unfortunately, the Viking course in Roskilde lasted only a week, which is nothing in comparison to the material and experience that could have been gained if I had stayed there a few more weeks. I am sure, however, that even after one day anyone would fall in love with this incredible place, the Viking Ship Museum in Roskilde, Denmark. I know I did.

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Suggested Readings

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Olsen, O., & Crumlin-Pedersen, O. 1958. *The Skuldelev Ships. A report of the final underwater excavation in Roskilde Fjord, Zealand*. Acta Archaeologica, XXIX.

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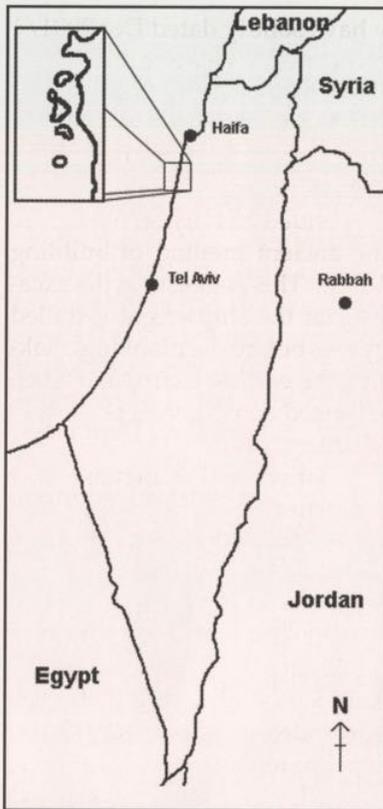
The Dor Lagoon Excavations 2006

Sarah M. Kampbell

Dor Lagoon, also known as Tantura, is located near ancient Tel Dor approximately 30 km south of Haifa and is sheltered from the open sea by four islands. As few natural or artificial harbors have existed along the Mediterranean coast of Israel, sailors have used this area as an anchorage from the Bronze Age to the present. Because storms appear suddenly, many ancient ships have wrecked along this coastline, including at Dor Lagoon. While relatively safe from storms inside the lagoon due to the protective islands, entering posed a significant danger because of underwater rocks and reefs. Ships were hurled into these obstacles and sunk sailing into the lagoon. Other mariners may have run their vessels aground due to the extremely shallow depth of this anchorage.

This stretch of coast is particularly interesting because the sands constantly move, quickly covering and preserving many shipwrecks. During winter months, thousands of tons of sand shift along the shore. After storms, shipwrecks may suddenly be exposed or new wrecks may disappear. Hundreds of anchors attest to the numerous ships that have used this location, perhaps the remnants of shipwrecks, or simply anchors cut loose because a storm buried them too deeply to raise.

INA, in conjunction with the Recanati Centre for Maritime Studies, carried out three seasons (1994-1996) of survey and excavation at Tantura Lagoon under the directorship of Dr. Shelley Wachsmann. During that work seven shipwrecks, designated Tantura A-G, were discovered. Tantura A dated to the fifth or sixth century AD and Tantura B dating to the early ninth century AD were excavated in situ. Since that time Dr. Yaacov Kahanov has continued studying shipwrecks in the lagoon.



Map of Israel with inset of Dor Lagoon. Map: Sarah Kampbell

2006 Season

In October I was able to join the Recanati Institute for Maritime Studies and the Department of Maritime Civilizations of the University of Haifa, in cooperation with the Nautical Archaeology Society and Mr. Kurt Raveh on the 2006 excavation at Dor Lagoon under the direction of Dr. Kahanov. Funding for my studies was graciously provided by a Biblical Archaeology Review Scholarship and Mr. George Blumenthal. In addition, Dr. Shelley Wachsmann provided generous support.

The 2006 excavation investigated three shipwrecks: Dor 2001/1 supervised by Ms. Hadas Mor, Tantura F supervised by Mrs. Ofra Barkai and Tantura E supervised by Mr. Dror Planer. Dr. Kahanov directs these excavations, which form the basis of the supervisors' theses and dissertations.

Excavations at Dor Lagoon provide more than simply data for the academic world. This project also serves as a field school hosting a large number of international students and volunteers in underwater excavation.

The excavation has been based out of a former diving center ideally located approximately 50 meters from the beach, providing access to shade, fresh water and secure equipment storage. The water temperatures average roughly 80° F, but incoming storms can significantly decrease that number. Divers worked in shifts participating in both land tasks (filling tanks and tracking divers) and water tasks (manning the safety boat, excavating, measuring, drawing and photographing). The typical diver worked two to three underwater shifts a day with each dive lasting no less than one hour.

Additional technical assistance and facilities were provided by the Recanati Institute's workshop. Since it was impossible to keep sand from damaging essential equipment such as regulators and gauges, an on-site staff was present to maintain gear and build excavation equipment as necessary. In addition, an on-site conservator, from the Recanati Institute for Maritime Studies worked to stabilize artifacts recovered from the sea.

While it was unfortunate that the 2006 season was plagued with storms, it did explain the large quantities of shifting sand. Excavation stopped several times because of the weather; we returned hoping that sand had not filled our pit. After one storm Raveh, who has been surveying this lagoon since 1975, took many of us on an underwater tour where we saw the spines of the Modern Wreck, provisionally dated to the 19th century AD, projecting from the sand. Stone and iron anchors were visible in many locations, often in conjunction with ballast piles. Raveh found two more



Divers hand-fanning sand into a water dredge to expose Tantura E. Photo: Steve Breistein. Courtesy of Recanati Institute for Maritime Studies.

wreck sites during the excavation season, adding to the already identified and precisely mapped 20+ shipwrecks.

Accurate maps of this lagoon are critical because an investigator may return to find only sand, with no visible evidence of the shipwreck. A large quantity of sand had unexpectedly covered Dor 2001/1 since the previous excavation, surprising even the most seasoned excavators. Those who had never worked at Dor Lagoon began to wonder if we would find the ship remains, or the underlying clay. However, prior to this season's excavation, the location of each shipwreck had been pinpointed. If the coordinates had not been so precise, the shipwreck easily could have been missed and many days spent fruitlessly searching. The mapping had been so accurate that the pit was not only opened above the wreck, but it was directly over the hull timbers requiring final documentation.

While most INA wrecks are located at greater depths, the maximum depth for the entire site was three meters, recorded at Tantura E. On the first day of the season the scuba tanks of those working on Tantura F often protruded above the sea. Throughout the excavation, divers could walk the majority of the way to the pits. This not only allowed easy access, but also confined the bottom-time only to tank capacity and the stamina of the diver.

However, the shallow depth caused some problems. As storms approached, the increasing wave action tossed around both divers and loose equipment. A current also ran through the lagoon, and its speed and strength were amplified by winter weather. To combat both of these stresses, divers increased the amount of weight carried, wearing double to triple their normal requirement.

To remove the many tons of sand, water dredges were employed; there were initially three at Dor 2001/1 and two at Tantura F. When the area of the 2001/1 wreck which needed final documentation was cleared, two of the dredges were moved and the excavation of Tantura E began. For a time, all three wrecks were being excavated and/or documented simultaneously. Dor 2001/1 and Tantura F had been investigated in previous years and could be aggressively excavated as the wood itself was protected by sandbags and the majority of artifacts had already been recovered.

Mor and Kahanov have solidly dated Dor 2001/1 to the late 5th or early 6th century AD. This wreck has been excavated for four years and 2006 was the final season. The goal was to re-excavate the first three meters of the northwestern end to complete documentation. This wreck is especially interesting because no edge-fastenings were employed. The ship thus depended heavily on frames for support, as opposed to the ancient method of building

shell-first. This suggests to the excavators that the shipwright installed the frames before the planking, making this the earliest example of such an advanced construction process in the Mediterranean.

Barkai and Kahanov have now finished their 3rd excavation season on Tantura F, an 8th-century AD Islamic period fishing vessel. They focused on clearing and measuring the ship and working in the stern. Because the entire length of the ship was exposed and the site was extremely shallow, a rectangular iron frame system was installed, allowing the divers to work above the wreck without fear of being pushed into the delicate timbers by a rogue wave. While it is a different ship type, it shares some construction techniques with the Dor 2001/1 wreck because no edge-fastenings were uncovered. However, the excavators have not yet raised a section for further analysis. This shipwreck will not only add much information about the period of transitional ship construction techniques, but it is also

the only 8th-century AD wreck excavated in the Mediterranean to date.

Planer and Kahanov opened the first systematic excavation of Tantura E, a vessel tentatively dated to the late Byzantine or early Islamic period, although a small area was cleared and documented in 1995 under Wachsmann. The main goal for the season was to determine the extent of the hull remains and their orientation. When the ship was opened, the rectangular iron framing system was also installed, providing easy access for documentation and artifact recovery. This wreck should prove to be very interesting as it is radiocarbon dated to end of the 6th century/beginning of the 7th century AD making it roughly contemporary with several other wrecks excavated across the Mediterranean, including INA's Yassiada 7th-Century shipwreck. Tantura E will enlighten archaeologists on the regional diffusion of ship construction techniques within



Keith Clark moving above Tantura F's framing system while documenting the exposed timbers. Photo: Steve Breistein. Courtesy of Recanati Institute for Maritime Studies

a single period.

Excavations at Dor Lagoon have a long and exciting future. Not only can archaeologists easily access and study the ships, but the vast quantity of known, and probably unknown, shipwrecks will continue to provide high quality material, thereby shedding light on a time during Late Antiquity heavy with political, economic and social upheaval.

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Suggested Readings

Barkai, Ofra and Yaacov Kahanov. Forthcoming. "The Tantura F Shipwreck, Israel." *International Journal of Nautical Archaeology*.

Mor, Hadas, and Yaacov Kahanov. 2006. "The Dor 2001/1 Shipwreck, Israel - a Summary of the Excavation." *International Journal of Nautical Archaeology*. 35 (2):274-89.

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Pursuing Evidence for the Iberian Caravel in Lisbon's National Archives

George Schwarz

During summer of 2005, with funding from the Luso-American Foundation, Instituto dos Arquivos Nacionais/Torre do Tombo, and Dr. Luis Filipe Vieira de Castro of Texas A&M University, I had the opportunity to visit Lisbon's national archives to conduct research on Portuguese caravels. My graduate research in the Nautical Archaeology Program at Texas A&M focuses on the development, construction, and historical impact of caravels from the 12th through the 17th centuries, where they appear in historical documents.

These ships, although used extensively for exploration during the Age of Discovery, are still a mystery to nautical archaeologists. Despite the popularity and wide-spread employment of caravels during this era, there is currently scant archaeological evidence for these vessels. For this reason, it is essential to investigate the properties and development of the ship through other lines of evidence; including iconographic representations, 16th- and 17th-century nautical treatises, archaeology of similarly-built ships, and historical documents. The last resource refers to the archival evidence for caravels, and is a major component of my work.

Probing the city's national archives, I found numerous documents referring to these ships. Many of these references were found at the Instituto dos Arquivos Nacionais/Torre do Tombo, in the form of original documents as well as microfilm copies. While in Lisbon I also searched other athenaeums for similar documents, and information found



Early 16th-century caravel from Livro de Lisuarte de Breu. Image: George Schwarz



A carving on the outside of the Torre do Tombo. Photo: George Schwarz

in those places is also mentioned in this report. Because it was such a common vessel of the times, characteristics of the caravel were not heavily documented throughout its history. For this reason descriptive references to its features are relatively scarce compared to other types of vessels from the Age of Expansion, of which in some cases archaeological evidence exists.

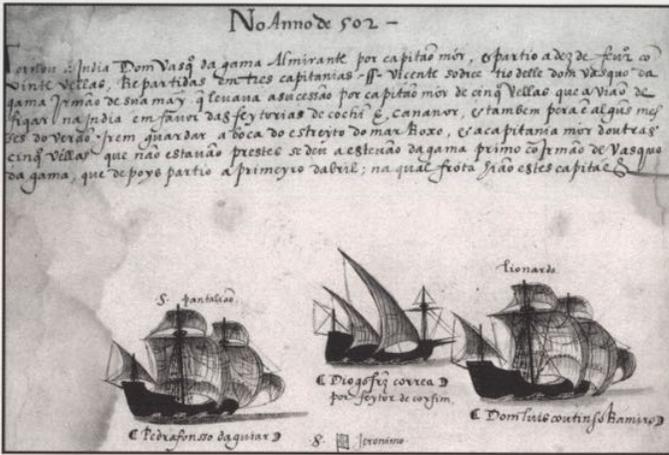
Scholars have sifted through the national archives for many years looking for references to Portuguese caravels, which have become a symbol of Portugal's identity. Most of the well-known sources mentioning these ships have been cited in a collection of excerpts assembled by João Martins da Silva Marques entitled *Descobrimentos Portugueses, Documentos Para a sua Historia, Publicados e Prefaciados*. This is a useful resource that I was able to take advantage of during my research fellowship at Torre do Tombo. This book contains numerous references to caravels which, naturally, are presented in the original archaic Portuguese. Although most of these records only mention caravels peripherally, they do give such pertinent information as how the caravel was employed throughout its history, how frequently it was used, and occasionally the sizes of the vessels.

Torre do Tombo has an extensive collection of documents chronicling Portugal's history, and the reservoir concerning the Age of Discoveries is vast. For this reason, it was somewhat problematic to search for records regarding caravels. Although the electronic catalogue used by Torre do Tombo is useful for broad searches, it is not a tool designed to locate a subject with such a scattered presence in documents. Since these ships were only mentioned tangentially in various letters, decrees, and

regiments, direct references to caravels are not only rare, but imbedded deep in the stacks of documents. Some of the searches in the electronic catalogue, under the headings "construção naval", "navios da guerra", and "naufragios" led to some of the larger collections like the *Mesa de Consciência e Ordens* (1128-1837) and the *Aclamações e Cortes* (1331-1832), but these collections are immense and not easily navigable for such subjects as 'caravela'. The *Guia Geral dos Fundos da Torre do Tombo* was helpful for keywords like "naufragios" and "navios", and even provided locations for the entries of particular naus and vessels of various origins, such as Holland, France, Portugal, and Greece. There were not, however, direct references to caravels in the guidebooks.

Despite the complexity of searching for the rare appearance of the caravel in historical documents, I was successful in locating useful records while scouring the archives. A certain document found in the Núcleo Antigo inventory from the Casa da Coroa, designated NA 596—2.7.2.8, was particularly useful. Dated to between 1509 and 1511, this record is of a payment to a certain captain and his men for their services at a fortress in Sofala. Also included in this official paper is the detailed equipping of a caravel, Santa Maria da Gracia, which was in service at the aforementioned fortress during this time. Another document found in the collection from Feitoria Portuguesa da Antuérpia (liv. 4, caixa 2, MF 913) gives information on the supplies, inventories, costs, and tonnages of the caravel Salvador, a 56-ton vessel from a document dating to 1536. This is useful data and contributes to the understanding of size variation that can be seen throughout the development of the vessels, as well as the multiple uses for caravels.

Other sources which mention caravels are the chronicles of kings. In chapter 8 of the *Chronicles of Dom João I* (MF 5436), there is information concerning the wine-carrying caravels that traveled to Tangier. The report relays who chartered the caravels, who went on the journey (besides crewmembers), the identity of the master, where the ships sailed, and the stops made along the way. The only descriptive statement regarding the caravel is that it was unarmed. Another entry, in chapter 50 of the *Chronicles of Dom Manuel*, gives an interesting account of caravels sailing to Arzilla on a pilgrimage to set up a post. During this expedition, a caravel was attacked by a Moorish vessel and lives were lost on both sides. Yet another report from these chronicles describes a caravel being chased by an armed English vessel and two French ships. These records, which mention the caravel only in passing, are numerous and not particularly helpful in understanding the appearance and physical features of the vessel. They are, however, important in the historical interpretation of the vessel, and give a good idea of how these ships were used, and how frequently they were



Caravels from Memoria das Armadas Anno de 1502. Image: George Schwarz

Iberian seafaring, especially involving supplies and crews of war ships. The first part of the book is a table of contents: mostly armament and orders for the construction of various ships, including a 1000 ton galleon and two naus. Also included are victuals for 160 men of the sea, liberties of chief captains and officers of the Carreira da India, and information regarding specific ships from the armada in Bahia. Finally, there are charts containing information about various ships, including particular caravels and their captains. Some of the caravels listed are Conçesaõ, Rodairo, Remedios, and São João. Incorporated in the charts for each ship is tonnage, number of mariners, number of warriors, victuals for the seamen, number of cannon, amount of vinegar, and number of military pikes. This kind of material gives an idea of how these later caravels were employed, how big they were, and perhaps what kind of structural integrity the ship required. This is a great source for researching the development and changing use of the caravel.

At the Biblioteca da Ajuda I found approximately a dozen references to the ship, mostly from the early part of the 17th century. These documents are largely letters and transactions corresponding to expeditions led to India and Brazil during this era. They provide few physical features of the ships themselves, mostly listing the captain of the vessel and the purpose of the voyage.

My visit to the Arquivo Histórico Ultramarino was not as successful as some of the other archives because the majority of the material dates later than the era I am studying. Nevertheless, there were a few documents that were noteworthy, such as the loose documents of the captaincy of Pará, Brazil. The consultation of the Conselho da Fazenda (1616) for Dom Filipe II, for example, describes the requirements for the ships to be sent to conquer the Amazon. These light vessels appear to have some of the characteristics of caravels, and some probably were smaller caravelões.

Overall the archival research I conducted was successful and has already made a positive contribution to the development of my thesis. It is clear there is an enormous amount of untouched information about the caravel in Portugal's expansive archives. I was only able to visit the institutions in and around Lisbon, but the data I acquired during my visit was worthwhile and has aided my research substantially. I am grateful for the opportunity to access the archives and intend to return for future projects in order to study Iberian vessels in even greater depth.

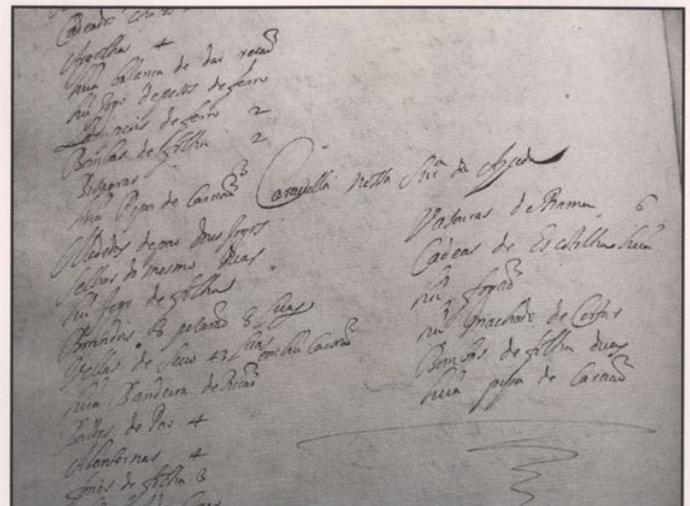
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Page from Das Coisas Tocantes à Arte Militar. Photo George Schwarz.

sought for various tasks throughout their existence.

Other documents that proved helpful were records that indicated ranks of various crewmembers on ships. An example is NA 679, labeled Lista dos Antilleiros do Galeon S. Andres anno de 1602. This is a list of the gunners for a galleon and provides an approximately one page description of each gunner; including full name, age, job, and length of employment. This information assists historical interpretation of life aboard the ships of this era, and supplies important data such as ship's rosters for determining crew sizes. Similarly, documents such as NA 761, the provisioning on an armada, provide extensive lists of the supplies for particular ships. The quantity of victuals allotted for a vessel, for example, helps scholars determine ship size and crew proportions.

At the Arquivo Geral da Marinha I studied a manuscript entitled Das Coisas Tocantes à Arte Militar, which dates to 1659. This book includes many facets of



From the President

2006 INA Annual Board Meeting

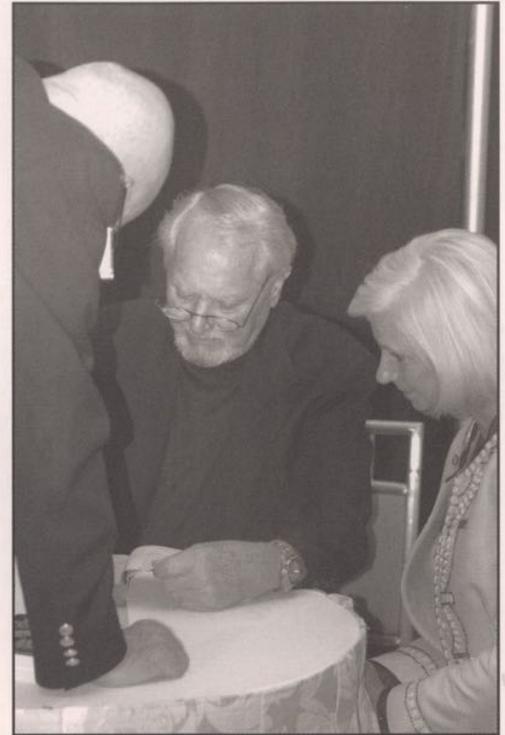
It wasn't New York like last year, but the INA directors and guests attending the 2006 Annual Board Meeting were back on familiar ground at The Mansion on Turtle Creek in Dallas, Texas. This meeting was notable in several ways. First, few failed to notice that Founder Dr. George Bass was not present. This is the only INA meeting that he has not attended, but he, along with Director Claude Duthuit, was conducting an INA survey along the Turkish coast near Çeşme. He was certainly missed, but he felt it more important to try and find the next big shipwreck for INA to excavate. Also, this was the formal introduction of Dr. James Delgado, the new INA Executive Director, to the Board. As usual, the various INA committee meetings (Executive, Audit, and Turkish Advisory) met Thursday to get the preliminary business out of the way. By the afternoon, everyone was ready for cocktails and hors d'oeuvres as well as conversations with old friends. Of course all were excited to meet Dr. Clive Cussler, renowned author of nautical oriented mysteries and founder of the National Underwater and Marine Agency (NUMA) who was the guest speaker at the evening banquet. Following the delectable meal coordinated by INA Administrator Claudia LeDoux, Peter Way opened the banquet with introductions. Dr. Delgado presented a short overview of the INA Projects conducted during the past year, his views for INA's future, and the current endowment drive status for INA, all of which he would be elaborating on at the Board Meeting Friday afternoon. After his presentation, Dr. Delgado introduced Dr. Cussler who delivered an entertaining assortment of stories about his trials and tribulations as an author. This was followed by a rush to the table set up at the front of the room where Clive had graciously agreed to sign copies of his books. While many were waiting in line for autographs, other took yet another opportunity to circle the room and visit with those friends that they may have missed earlier. Friday morning started early with the Board Meeting where the 2007 INA budget of more than one million dollars was approved, INA Directors Toby Darden, Sally Yamini, Bill Allen, and Donald Geddes III were re-elected, and INA officers, as indicated on the masthead of this INA Quarterly, were elected. The highlight of the meeting was the visionary presentation given by Dr. Delgado reviewing INA's past achievements and where INA needed to go in the future. Needless to say, there was a flurry of give and take discussions on INA's future and how the corpus of the INA endowments could be increased without compromising the research focus for which INA is internationally recognized. Lunch was a welcomed break leading to the afternoon presentations by Dr. Cemal Pulak on his excavations at Yenikapı, Mark Polzer on a proposed project in Spain, Dr. Deborah Carlson on her excavations at Kızılburun, Dr. Jeff Royal on the 2006 RPM Nautical Foundation survey in Turkey, Dr. Shelley Wachsmann on deep water projects in Greece, Dr. Kevin Crisman on the final season of the Red River Project, Dr. James Delgado on his investigation of a civil war submarine in Panama, and finally John B. Davis, President of Eco Nova, who delivered an interesting discussion on how to reach the public via the media. Dr. Delgado then closed the afternoon program.

The finale of the meetings was a special trip to the Trammell Crow Center where everyone was treated to an awe inspiring exhibit of the Crow Collection of Asian Art. This was topped off with cocktails and a buffet at the Center. Once we arrived back at The Mansion, many drifted to the bar for lively discussions on the day's events, some lingered in the lobby doing the same, while the smarter ones called it a night! One thing is for sure, even though we do not agree on everything, the future of INA is secure with the genuine support and passionate interest manifested by the current Board of Directors.

*-Donny Hamilton
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John and Nina Cassils with Suzy Williams



Autograph session of author Clive Cussler assisted by Janet Horvath, his newly announced fiancé



Director Lucy Darden and Associate Director Faith Hentschel



Founder Jack Kelley and Paula Michaels

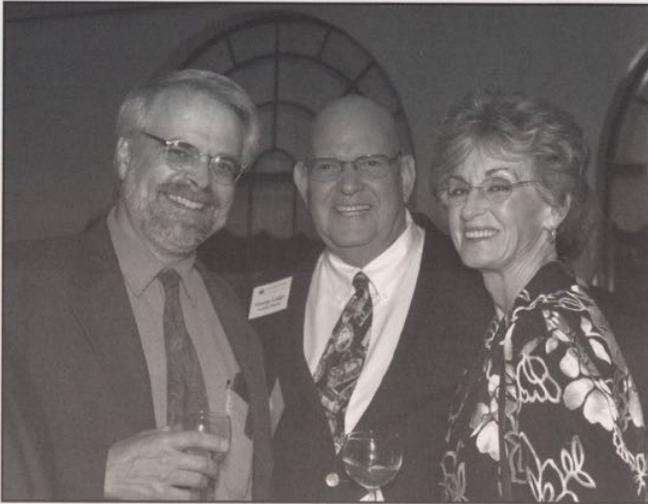
*Director John De Lapa with Vice Chairman
Donald Geddes*



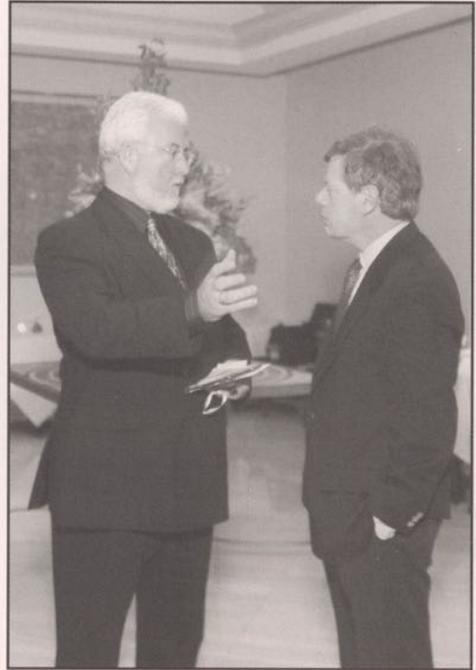
*Cemal Pulak, Donna Weber, and Associate
Director Garry Weber*



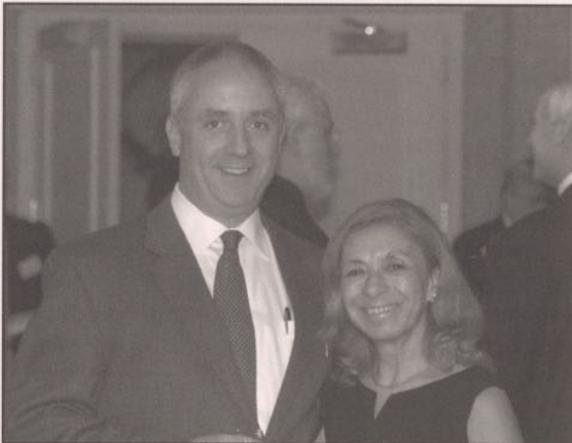
*President Donny Hamilton, Bobbie Lodge, Lisa Guzzetti, Director Charles Gar-
rison, and Minnie Caruth at the Crow Collection of Asian Art*



Kevin Crisman, Associate Director George Lodge, and Bobbie Lodge



Executive Director Jim Delgado and Past Chairman of the Board and General Counsel Jim Goold



Alex Nason and Jean Hamilton

Associate director Rob Hartmann and his wife Lanay with Chairman Peter Way



INA RECEIVES TWO MAGNIFICENT PORTRAITS OF FOUNDER DR. GEORGE F. BASS

Jim Delgado

One of the highlights of this year's annual meeting in Dallas was the presentation of two magnificent watercolor portraits of Dr. George F. Bass. Ann Bass was on hand to unveil the portraits with artist Marilyn Carter Geddes. One of the portraits now hangs in the entrance foyer of the INA office at Texas A&M University, while the other is a lifetime loan to the Bass family.

Depicting Dr. Bass around the time INA was founded in 1973, the portraits are different and reflect the scholarship, warmth and humanity of Dr. Bass in an engaging style. Marilyn Carter Geddes has painted hundreds of portraits of prominent business leaders, educators, physicians and the clergy. Described as a multi-faceted traditional artist who produces painterly works with recognizable imagery she is an acclaimed portraitist, muralist, illustrator, landscape painter and abstract expressionist. Marilyn makes her home in New Orleans in the Faubourg-Marigny district with husband G. Donald Geddes III, former New York investment advisor, undersea adventurer, author, and Vice Chairman of the Institute of Nautical Archaeology.

A native New Orleanian, Marilyn received her degree in art from St. Mary Dominican College where she studied under internationally recognized sculptor Angela Gregory after first studying art with her mentor Zella Frank in the Vieux Carre, the University of Colorado and the University of Louisiana in Lafayette. Her work is featured not only in homes, corporate offices and universities, but can also be found in prominent New Orleans landmarks such as the Commander's Palace, the New Orleans Municipal Auditorium, and at Dickie Brennan's Palace Café, where three immense canvases incorporate portraits of more than 35 of jazz's greatest entertainers in typical French Quarter settings.

And now, thanks to Marilyn Carter Geddes' artistry, a portrait of Dr. George F. Bass greets visitors to the INA offices, while another, in the Bass home, oversees the extensive Bass collection of opera music and DVDs of performances. For those who know of Dr. Bass' love of opera, Ann Bass' choice of a location for the second portrait is perfect.

We extend our heartfelt thanks to Marilyn and Donald Geddes for these superb portraits.

-jdelgado@neo.tamu.edu



Ann Bass (l) is overwhelmed during the unveiling of the first of the Bass portraits by Marilyn Carter Geddes (r).



Marilyn Carter Geddes stands with Ann Bass and the portrait of Dr. Bass, which presently hangs in the foyer of INA's College Station office.

From the Executive Director

A Year in Review

The year 2006 was a good year for the Institute of Nautical Archaeology. The excavation of the Red River wreck, the steamer *Heroine*, ended successfully with a helicopter plucking the last of the steamer's machinery for conservation and ultimate display at the Oklahoma History center. The excavation at Kızılburun also ended with a lift, with four of the huge marble drums of the sunken column moved to expose remains of the hull of the Roman stone carrier sunk there. A number of new and significant finds, including a well preserved herm figure, symbol of good luck, emerged from the dark blue waters of Kızılburun.

Surveys around the world, ongoing analysis and conservation from previous excavations, and the study of the results continued, with the faculty of the Nautical Archaeology Program and their graduate students at Texas A&M University not only carrying the INA flag but also continuing the tradition of scholarly excellence and achievement forward.

INA's endowment, as you will read in this issue of the Quarterly, not only grew, thanks to major gifts, but also provided more income for the Institute's programs and initiatives, thanks to wise investments. The year ends on a high note, with many exciting plans for 2007. They include surveys in Turkey, eastern Cyprus, Lebanon, Libya, the Dead Sea, Portugal, Japan and Lake Ontario, and an exciting deep-sea survey on the direct route from Crete to Egypt. That is the route ancient Minoan seafarers took, and the hope is that direct archaeological evidence of those seafarers, perhaps even a Minoan wreck, may at last be found. Projects in Denmark, Turkey and Italy will be our focus for documentation and ongoing scholarship in the Old World. Our New World documentation project is the first ever three-dimensional laser survey of exposed Gold Rush river steamers in the Yukon.

Excavations will continue at Kızılburun, where the last of the column drums will be lifted, exposing even more of this amazing Roman wreck and its cargo of stone and ceramics. Off Spain, work in cooperation with authorities and archaeologists will commence excavation of three wrecks, including what looks to be a Phoenician vessel. I will lead a team to Libya to search for the burned remains of the USS Philadelphia, captured during the "Barbary" wars of the United States with Tripoli in 1803 and burned in a daring raid led by Lt. Stephen Decatur of the US Navy in 1804 in Tripoli harbor. This project, with the support of the US and Libyan governments, is a first in this ancient land, and may lead to future projects on a coast settled by Phoenicians, Carthage, Greek, Rome and the Ottoman Empire.

Thank you for your interest in and support of the Institute of Nautical Archaeology, and for your contributions, which make a difference, providing the strength for the Institute to continue doing what it does, and to do it well.

-Jim Delgado
jpdelgado@tamu.edu

Recent Gifts to the INA Foundation

George F. Bass

The Institute of Nautical Archaeology Foundation, which I chair, has recently received three most welcome and generous gifts to the endowment fund that supports the separate Institute of Nautical Archaeology.

Carolyn Denney was first introduced to INA in 1982 when she accompanied the late Nixon Griffis, an INA Founding Director, to an INA Board Meeting held in Bodrum, Turkey. Carrie, as I knew her, never lost her interest. Several years ago she called to say that she had wanted it to be a surprise, but her lawyer advised her to tell me beforehand, that she planned to will her estate to INA. In 2004, after Carrie's death, the INA Foundation received \$1.3 million, one million of which went into the endowment. Carrie always had a special interest in INA's work in Turkey, so some of the income from her gift is being used to support INA's Bodrum Research Center.

At the 2005 INA Board Meeting held in New York, I was able to announce two additional million-dollar gifts to the INA Foundation, both from INA Directors who feel strongly that one should support what one believes in without expectation of any recognition. They allowed me to print their names here, however, after I said it would be good for INA and the INA Foundation if potential donors realized the faith those most knowledgeable about INA have in its future. They are Lucy Darden and Claude Duthuit.

Lucy Darden's first experience with INA was when she visited Jamaica in 1983 with her husband Frank and their daughter Anne to see Donny Hamilton's excavations at the drowned 17th-century city of Port Royal. Frank soon joined the INA Board, on which he served until his death in 2001. Lucy and Frank's son Thomas "Toby" Darden was almost immediately nominated and elected to the Board, followed soon after by Lucy, herself, who now serves on the INA Executive Committee. The Dardens' active interest in INA has taken them from the Caribbean to the Azores to Turkey to visit and dive at INA projects.

How can I not love Claude Duthuit after he slept for three months in the open on a rocky beach near Cape Gelidonya, Turkey, insisting that Ann and I take his pup tent, the only tent in the expedition camp, for our honeymoon in 1960? Claude and I have been together on many excavations since then, and just spent a month on INA's 2006 Fall survey for ancient shipwrecks off the Turkish coast. As an INA Director, Claude has quietly helped INA's Bodrum Research Center over the years, and has now added to an endowment which will help guarantee its future.

On behalf of everyone in INA and the INA Foundation, I express profound gratitude to all three for their generosity and faith.



Feyyaz Subay stands with Director Claude Duthuit on the Virazon. Photo: George Bass



Feyyaz Subay and Lucy Darden descend in Carolyn to see the Kızılburun wreck. Photo Donny Hamilton

Nautical Archaeology Digital Library

Filipe Castro and Richard Furuta

Archaeologists destroy archaeological sites as do looters or treasure hunters; perhaps even more so. The difference is that archaeologists record everything they find under the best possible standards.

On excavations of extensive sites the archaeologist's task is sometimes less daunting because he can excavate only a portion of the site, leaving the rest for the following generations, who will certainly look at the site with different research questions and better technological tools. Excavations of small or endangered places, such as graves, tombs, or ancient shipwrecks, almost always require the full excavation of the site, making the recording process particularly important.

In any case, recording is always an enormous responsibility and, although this is unfortunately not the rule in archaeology, primary data should be stored and organized having in mind the rest of the world and future generations. We should produce the best and most accurate record of the excavation process: how we have excavated, why we chose to sample our site in a particular way, what have we done to the artifacts to stabilize and preserve them for future generations to enjoy and study them, etc.

Since nautical archaeology is still a young sub-discipline of archaeology, it still is possible for some archaeologists to publish their interpretations of a particular site without making the primary data available to their peers. Today this practice is not acceptable in any of the hard sciences and it is unlikely that it will continue among nautical archaeologists for much longer. For instance, most European countries are enacting rules and restrictions for archaeologists that seek grants or state funds to excavate new sites while planning on sitting on their field excavation records until they die.

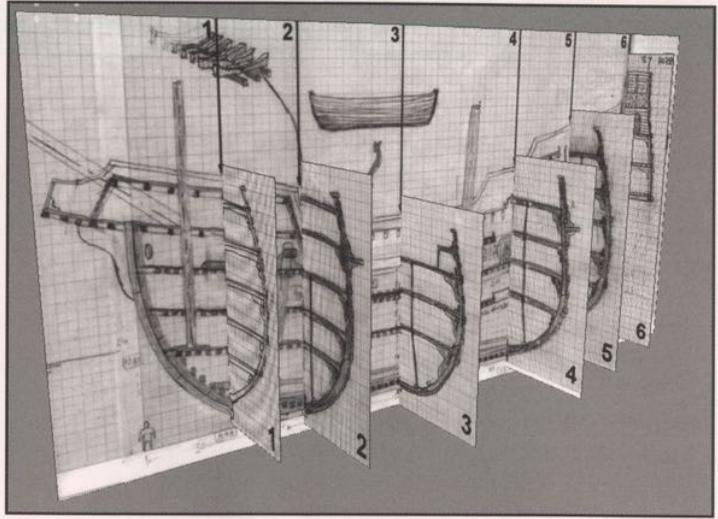
The situation is changing indeed. However, even after an archaeologist has published all he knows about the excavations that he has directed, and after he has made public—say, through his website—the excavation reports of every field season he has directed, he is still left with the age-old problem of finding things in his records—e.g., finding a detail of a timber that somebody sketched for him, or an idea that he had and scribbled down in a notebook somewhere.

Perhaps it would be possible to create a database to store and retrieve documents, perhaps using an off-the-shelf software package, but then the problem is how to place all the materials into it. Archaeology generates all sorts of different documents, in all sorts of formats: enormous drawings with real size timbers, plastic sheets, scans of diving slates, photocopies, notebooks, video, pictures, slides, computer databases, etc. And even if all of the materials could be digitized, an even harder problem would be to avoid simply transforming the physical process of searching through storage boxes of materials into a digital one involving opening directories and examining computer files one-by-one.

That is where computer science comes in handy—particularly the area of digital libraries. Fortunately, Texas A&M University's Center for the Study of Digital Libraries is located in the Department of Computer Science, just two buildings away from the Nautical Archaeology Program's offices.

The Center for the Study of Digital Libraries is a leader in its field, with strongly interdisciplinary projects that contribute both to traditional areas of academic scholarship and to research in the developing area of digital libraries. Two its best known projects, involving the College of Liberal Arts at Texas A&M University, have been developed together with the Department of Hispanic Studies: the Cervantes Project (<http://cervantes.tamu.edu/>) and the Picasso Project (<http://picasso.tamu.edu/>). A Nautical Archaeology Digital Library (NADL) seemed almost immediately as a natural step, profiting from all the synergies created in the work with the humanities.

One year after we started our first meetings, the NADL is sailing ahead (<http://nabl.tamu.edu/>), thanks to an award from the National Science Foundation. It encompasses two major tasks.



Understanding the ship: reconstruction in Maia© by Audrey Wells.

The first is the creation of a set of informatics tools that will allow archaeologists to enter all the data generated during an archaeological excavation in a simple way, and retrieve it later, back in their offices, during the interpretation process. Maps, plans, sketches, either on paper or in 3D software, notes, lists of measurements, pictures, diving slates, diaries, diving sheets, maintenance logs, expenses, lists of bibli-

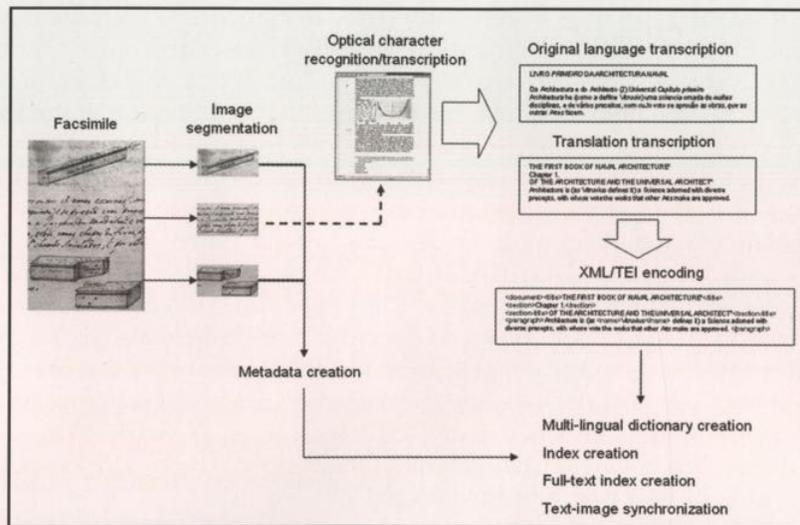
ography to acquire, press cuts, old pictures and images, tapes from interviews with local fishermen, videos, all the data that usually piles up fast during a field season, can be stored in a computer hard drive, copied, backed up, and printed again in many different formats.

Nicholas Parks, a student of computer science, is developing this part of the project. He has called it "On-Scene" and so far it can capture and process only a number of the data generated "on scene" or, in other words, in the field. But he has read a lot of books on archaeological theory, interviewed a lot of archaeologists, visited the Texas A&M University conservation laboratories—among the best in the world—and Dr. Crisman's *Heroine* excavation site, in the Red River, Oklahoma, and has generated hours and hours of ethnographical data on the peculiar people who are the focus of his investigation—the archaeologists.

It is easy to imagine how at a later stage of development "OnScene" will allow us to store and retrieve all the information of all the archaeological excavations we choose to include in NADL.

The second task is the creation of a library of information pertaining to our business: the interpretation of shipwrecks. When developed further, it will encompass a number of precious features; among them the most interesting is the J. Richard Steffy Database.

It is difficult to explain how much knowledge, experience, patience and hard work entailed the development of this precious tool. Over many years J. Richard Steffy entered the construction characteristics of over one hundred ships archaeologically excavated in a manner that allows the user to retrieve and compare precise constructional features, such as the average distance between mortise-and-tenon joints during a particular century in a particular region.



Shipbuilding treatises contribution: treatment of the texts and images by Carlos Monroy.

Carlos Monroy, also a student of computer science, is developing this part of the Nautical Archaeology Digital Library (Monroy et al. 2006). So far it consists of a number of tools that will be available to students and researchers. It includes an expandable glossary in several languages with the basic 400 or so ship part names; a timeline making access to the J. Richard Steffy Database easi-

er and display the shipwrecks archaeologists have found of any particular culture, region or period; a library of ship part images; and a number of shipbuilding treatises, some presented as transcriptions, some as transcriptions and translations, and some also with the facsimiles and images.

The work on ship treatises has started and developed around three significant Portuguese works, which previously were published in magnificent editions by the Portuguese Academia de Marinha, but that deserve a much wider divulgation (Fernandez, 1616, Lavanha c. 1610, and Oliveira, c. 1580).

With the support of the Academia de Marinha, the books will be placed on-line with the facsimiles, the transcriptions, and the translations connected and linked to a number of drawings, archaeological parallels, texts, and the glossary. When its most basic version becomes available on line, the computer screen will become a playground for specialists and students alike, permitting a much better understanding of the matters under analysis and allowing an extended discussion of the analyzed subjects.

Grant Sherrick, an undergraduate Computer Science student, supported by an NSF program that involves undergraduates in research projects, currently is working with the team to investigate topics related to the informatic treatment of the Portuguese ship treatises.

Neal Audenaert, another Center for the Study of Digital Libraries and Computer Science Department PhD student, is dealing with the problem of making the NADL data available to the different target audiences: scholars, graduate students, the general public and perhaps even K-12. Before joining the NADL project, Neal developed a framework comprised of computer systems that auto-

matically generate linkages among collections of computer-based documents. This technology may potentially allow for application in the NADL to tie together the library's heterogeneous resources.

Naturally, a number of students from archaeology are involved in this project. From the Nautical Archaeology Program, Paul Creasman is in charge of the scanning process and the coordination of the storing of all the information generated. Alex Hazlett is in charge of the tri-dimensional construction drawings that will illustrate the treatises glossaries. Bryana DuBard is in charge of a list of shipwrecks that that includes those from the J. Richard Steffy Database, the Iberian Ships Database, and various other databases which will be included in the timeline. Bryana also is handling the complex problem of the bibliographical references to be included and the keywords that will have to be entered. Piotr Bojakowski is working on the J. Richard Steffy Database, methodically introducing new shipwrecks, one at a time. Finally, Katie Custer is in charge of iconography. Copyright issues would be a very time-consuming problem if we were to include all the iconographical aids that we would like to include in NADL. Katie's work at this stage is to compile and collect the relevant iconography that pertains to the different subjects that are currently under analysis.

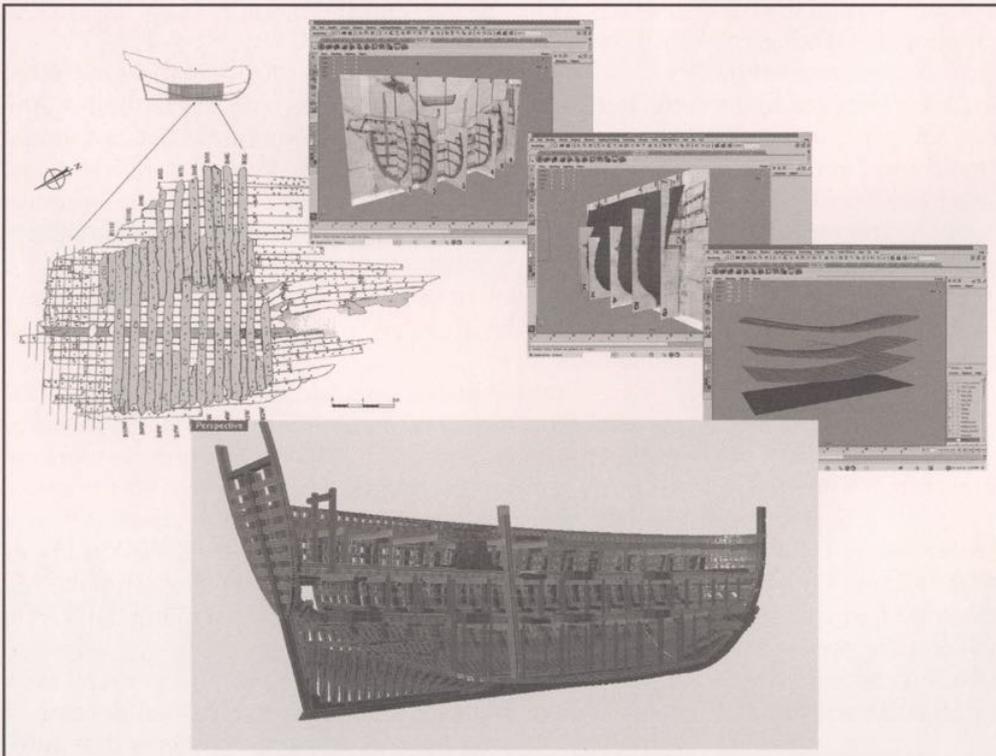
From the VizLab in the College of Architecture (Visualization Sciences Program), Audrey Wells is developing what is perhaps one of the most exciting parts of this project, at least as far as its appeal to younger or less specialized audiences is concerned: a three-dimensional virtual model of the Pepper Wreck. The Pepper Wreck, carrying a cargo of peppercorns from India, sank in 1605 near Lisbon, Portugal.

Since NADL evolved from the Pepper Wreck excavation, interpretation and reconstruction project, the Nautical Archaeology Digital Library is heavily focused on Iberian seafaring of the period of the discoveries and expansion overseas. But this is not, by any means, a bias that is going to continue. The next stages encompass: a contribution by Mauro Bondioli on the mid-15th century treatise of Giorgio Trombetta and another virtual reconstruction of a Dutch 17th-century ship, authored by Ab Hoving.

Following a tradition of three decades, the Nautical Archaeology Program, through the University's Center for Maritime Archaeology and Conservation, recently has started a lecture series that brings to the Department of Anthropology the best scholars in the world of our field. Both Mauro Bondioli and Ab Hoving have been the first leaders in their fields of study to be invited, and we hope that they become the first of a long series of scholars that will visit Texas A&M University and use and help develop the Nautical Archaeology Digital Library as their own research tool.

Two of the best things about digital information are that it does not take much physical space to store and

Understanding the ship: from the site plan to the reconstructions in Rhinoceros© by Alex Hazlett, and in Maia© by Audrey Wells.



that it can be transferred from location to location very fast. The NADL project allows us to envision a future where previous years' findings and the important literature references are immediately accessible, even to team members in remote locations in the field, and where the public can gain a first-hand glimpse into the excitement of nautical archaeology and acquire a better understanding of how treasure hunting threatens preservation of our cultural heritage.

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Where are they now?

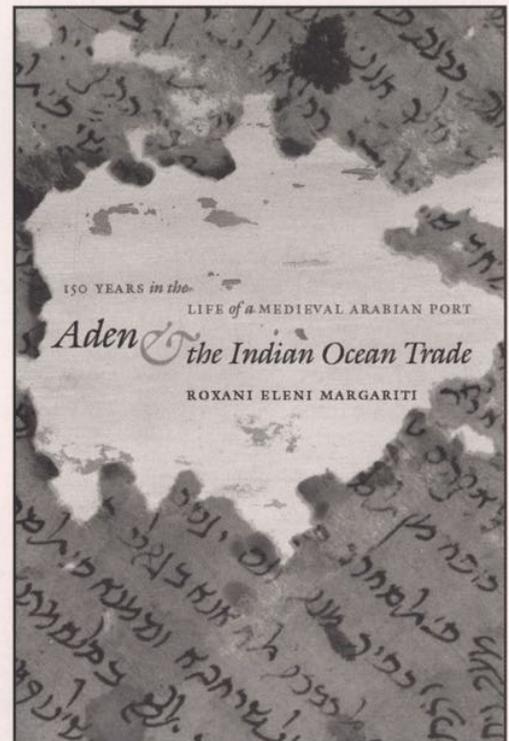
With each passing field season, the number of individuals involved in INA project increases. Often the crews of these projects are comprised of students from the Nautical Archeology Program at Texas A& M University and other similar programs. After their schooling is finished many of these students continue in the field of nautical archaeology. This new section of the Quarterly spotlights former students, to look at where they have gone with their degrees and their INA experience.

After the Shipwrecks

Roxani Margariti

Years ago, when I first left A&M to embark on a Ph.D. in Near Eastern Studies at Princeton University, I had a sinking feeling that I was drifting away from nautical archaeology. I submerged myself in the study of texts: I learnt new languages, I studied literary traditions of medieval Islam, I apprenticed in the decipherment and interpretation of medieval Judeo-Arabic documents from that exciting repository of texts known as the Cairo Geniza. But even as the years went by on dry land, archaeology and nautical subjects remained central to my work. In my study of Islamic cities, I quickly veered towards the ports of the Indian Ocean. In my readings of Arabic geographies and travel narratives I fished for accounts of seafaring, maritime trade, and sailors' lore. Even Islamic law seemed to be pointing to the institutions, procedures, and intricacies of transoceanic trade. The job talk that earned me my current position at the Department of Middle Eastern and South Asian Studies at Emory University centered on the Judeo-Arabic account of a shipwreck, the multiple legal, economic, and nautical layers of which I am still unearthing; one day, I hope, it will be part of a book on the nexus between the theory and practice of seafaring and navigation in the Indian Ocean. This coming February, I'm expecting to see my first book between hard covers, courtesy of The University of North Carolina Press. Entitled *Aden and the Indian Ocean Trade: 150 Years in the life of a Medieval Arabian Port*, it weaves textual sources and archaeology into a physical and institutional portrait of the Yemeni port city standing at the crossroads of major trade routes. Although it is the endpoint of an arduous academic odyssey, this book also outlines new intellectual destinations: from the nature of maritime principalities to the articulation of merchants' shipping networks and the shape of conflict and competition before the so-called "Vasco Da Gama Age," my enquiries will continue to focus on shores and high seas. Seas, ships, and seafarers are never far from my classroom either. Earlier this morning I taught my "Introduction to the Middle East," a required course for our Middle Eastern and South Asian Studies major. At the breathtaking pace of a survey class, today we covered the cultural and scientific achievements of the "golden age of Islam" and the world that immediately preceded the era of the Crusades. I just couldn't resist including a slide show on the Serçe Limani shipwreck and its lessons on the highly interconnected Eastern Mediterranean world of the 11th century. My students heard the sermon of maritime interconnectedness earlier in the semester and appear to have absorbed it. After all, what better way to tell the complicated story of social, economic, technological, and political trends in the Late Bronze Age (in less than 75 minutes!) than to show the stunning INA images of the Uluburun material? It turns out that what inspired me in that December issue of the National Geographic almost twenty years ago fires up young minds to this day.

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The cover of Roxani Margariti's new book, *Aden and the Indian Ocean Trade: 150 Years in the life of a Medieval Arabian Port*. Courtesy of University of North Carolina Press.

Where are they now?

Being a Nautical Archaeologist in Portugal

Taigo Fraga

In the fall of 2004 I returned to my country with the intent to finish my thesis and put my master's training to good use. I resumed my freelance career and now two years later I am a project director in Lagos, the first council of Portugal to undertake a systematic survey of their underwater cultural heritage. As the project manager and principal investigator, I help setup our schedule and research goals.

After leaving the Nautical Archaeology Program, I took with me an understanding that we must look beyond the excavation and the artefacts and see the people and history. The true goal of archaeology is to bring them back to life. My specific area of interest is Iberian seafaring, which involves the ships and shipping of the two countries of the Iberian Peninsula, Portugal and Spain. Presently very little is known about this subject and we often have a better understanding of the questions that

are asked, than the answers to them. With my assistants, two young undergraduate students from the University of Faro, Portugal, and an experienced diving instructor, I am looking for some of those answers. At the same time we try to present a better picture of the historic development of Lagos as a maritime city.

Most of our current work involves diving in the waters of sunny Algarve, surveying areas of interest, and trying to locate shipwrecks. At the end of the day supplementing the satisfaction gained from an accomplished dive, is a delicious boat meal and a sunset. Afterwards, in the quietude of my study, the library, or the archives, I try to make sense of the archaeological information that resulted from the fieldwork and digest it into written reports, papers, and articles. Additionally, I am planning to publish a book in the near future.

This last summer I had the privilege to work with my Texas A&M friends. A team from the Nautical Archaeology Program directed by Dr. Filipe Castro joined me at Lagos during the month of June to help me with the development of the underwater cultural heritage inventory.

Thanks to the training and education I received in the Nautical Archaeology Program, I went from a "shovel and pencil digger" (with scuba) to an archaeologist. I now understand that a scientist of archaeology starts with scientific questions, then does the necessary planning and field work in an attempt to answer them, and finishes with publications and disseminating the results also to the general public, and raising public awareness.

I now travel that road with confidence knowing two things:

1. For any obstacle I encounter there will always be a professor, or a friend (I have made many) from the Program to help me;

2. I love my job.

I leave you with an advice I strictly follow;
Have fun.

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Ponta da Piedade site, Lagos. Photo: Paul Creasman



Above- Texas A&M team. Summer 2006. Pictured left to right: George Schwarz, Pearce Paul Creasman, Alexis Catsambis, Tiago Fraga, Filipe Castro, Bryana DuBard, Sam Koepnick. Photo: João Marreiros

Left- Texas A&M colors flying over Lagos Fortress. Photo: Filipe Castro

Just Released

Before the Mast: Life and Death Aboard the Mary Rose
Editor: Julie Gardiner with Micheal J. Allen

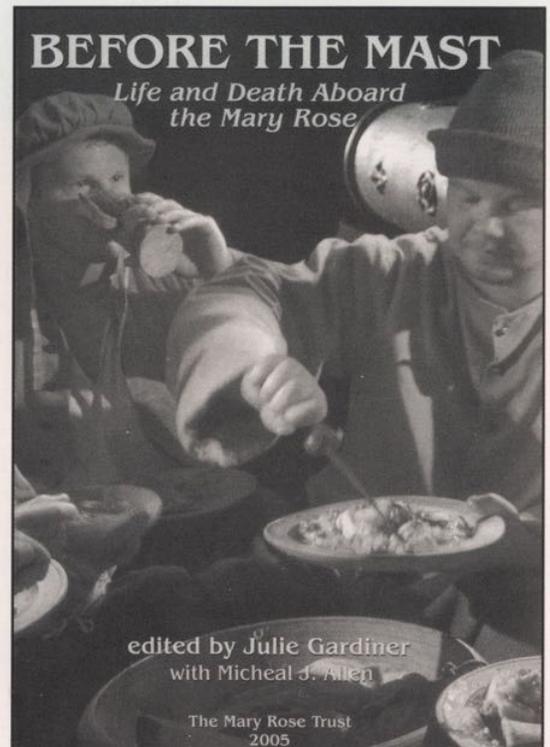
This book is the fourth installment in a series of five volumes on the history and archaeology of *Mary Rose*, an English warship lost in the last years of King Henry VIII's reign. *Mary Rose*, at about 35 years of age, was already quite old (by wooden warship standards) when she sank July 19, 1545 during an engagement with Admiral D'Annebault and the French fleet off Portsmouth.

The sinking of *Mary Rose* and the recovery efforts from 1972 to 1982 are now well documented, in large part to the three volumes that preceded *Before the Mast*. Becoming increasingly well known are the arduous tasks that the *Mary Rose* Trust has supported to ensure the preservation of the ship and her associated artifacts. This volume contains a description and brief analysis of the non-ordnance objects from the ship: from clothes (and the remains that were in them) to musical instruments, to pests and navigational tools, and numerous other categories.

With upwards of twenty-six thousand artifacts onboard, *Mary Rose* is an incredibly dense capsule from early-16th century England. This volume tackles the task of making sense of many of these artifacts. The introduction provides brief but clear understanding of the life of *Mary Rose*. Particularly interesting was the play-by-play of early excavations (including test trenching), artifact labeling system, and subsequent re-labeling. This is often the sort of information that goes conspicuously missing from catalogs or reports. Also encouraging was a note that during the bulk of the excavations, direct survey method (DSM) was employed and measurements from four datum points were taken for each artifact. With so many artifacts it would have been far easier to take them from the minimum three points generally necessary to map the xyz coordinates an artifact, the addition of a fourth is characteristic of the patience and dedication with which this opus must have been assembled.

The editors and contributors to this work have developed their own taxonomic system of organization for the artifacts that is easily navigable. Within each chapter there is a clear organization of the material. However, division of material among each chapter and the organization of one chapter to the next lacks an obvious thematic pattern, but often so do the shipwrecks themselves! For example, chapter four, "Septicaemia, Scurvy and the Spanish Pox: provisions for sickness and injury at sea" is separated from a similar chapter (fifteen) entitled "Conditions on Board: pests, parasites and pollen." Typically, pests and parasites are more relative to sickness and injury at sea than they are to pollen. Inevitably, in a work this size there will be difficulty in organizing material to please all and fortunately, a thorough index helps to alleviate concerns in locating specific information. In such a large undertaking, the lists of figures, tables, and plates would benefit from the addition of page numbers where they can be located for quicker reference.

This book is divided into three parts: part one, "Life on the *Mary Rose*: the Contents of the Ship," part two, "Scientific Studies: Crew, Conditions and Environment," and part three, the conclusion. Part one includes chapters 1-11; 1- The "Goode Shippe" *Mary Rose*: an Introduction, 2- Silk Hats to woolly Socks: clothing remains, chapter 3- "Personal Possessions: purses to paternosters," is an entertaining read, 4- Septicaemia, Scurvy and the Spanish Pox: provisions for sickness and injury at sea, 5- Dance and Skylark: musical instruments, 6- A Host of Shining Angles: money on board, 7- Navigation and Ship's Communication, 8- Routine Maintenance and Housework, 9- Plain and Functional: furniture on the *Mary Rose*, 10- 'Everything on Top and Nothing Handy': stowage on board, and perhaps the most interesting study is chapter 11- "Feeding the Crew: cooking, serving and eating," for its originality. Part two includes chapters 12-16; chapter 12- "Acquiring the Data: introduction to the palaeo-environmental and scientific analysis," adequately prepares the reader for the like-minded chapters to follow, chapter 13- "The crew of the *Mary Rose*" puts a human face on the study of the wreck where at least 179 individuals were recovered from their watery grave, 14- Provisions for Board and Lodging: the animal and plant remains, chapter 15- "Conditions on Board: pests, parasites and pollen," helps illustrate the actual living conditions on board a large warship, and 16- Science and the *Mary Rose*. Chapter 17 is



Cromwell Press: The *Mary Rose* Trust, Trowbridge
2005 ISBN: 0-9544029-4-4, 732 pages, illustrations,
71 color plates, tables, index and bibliography.
Hardcover. Price: £49.99 (\$94.41USD)

self explanatory, entitled "Concluding Comments and Avenues for Future Research." There are some formatting inconsistencies between the two sections such as "Part One" and "Part 2." Considering the density of the book, they could have benefited from being published as two separate books, vol. 4a and 4b, though this would have likely increased the purchase price. For what this book encompasses, the list price (£49.99, or about \$100.00) seems reasonable.

Above all, two things stand out most: the hundreds of well illustrated figures and the artifact distribution maps. The distribution maps alone make this book worth picking up for perusing. Due to the angle of list of *Mary Rose* when she sank, and several hundred years of distortion on the sea floor, the hull remains provided the researchers with a natural cut-away perspective on which to map the distribution of each group of artifacts (for example: all the chests are marked on one figure, on another all the shirts, pants, vests, etc.). The distribution maps validate many of the conclusions drawn by the authors regarding the allocation and application of space within the ship. Beating critics to the punch, the editors are quick to note that due to the nature of the ship's sinking, and the sea life, most artifacts are unlikely to be in their original position of use. Figure 1.7 (p 14) brings this point home: a scale model of the distribution of chests on the main and orlop decks, "as excavated" shows the large items strewn about at awkward angles. The facsimiles of the dive logs and sketches made during excavations add a nice touch.

As expected during the review of volume one in this series, (by Filipe Castro, *INA Quarterly* 30.4; 24-25), the artifacts presented here appear to have been carefully recorded, conserved, maintained, and analyzed. Although there are a multitude of further research projects to be conducted on the thousands of artifacts found here, this volume provides an excellent study of individual artifact groups. This book is sure to serve many researchers as a condensed catalog, but it is much more than that. The effort poured into each chapter (with appropriate notations and applicable references) is obvious. Each author has contributed something new and intriguing in their writings. This volume is an excellent source-book and is a must for those interested in the period. It will likely find application inside and outside the field of nautical archaeology.

-Pearce Paul Creasman

Just Released

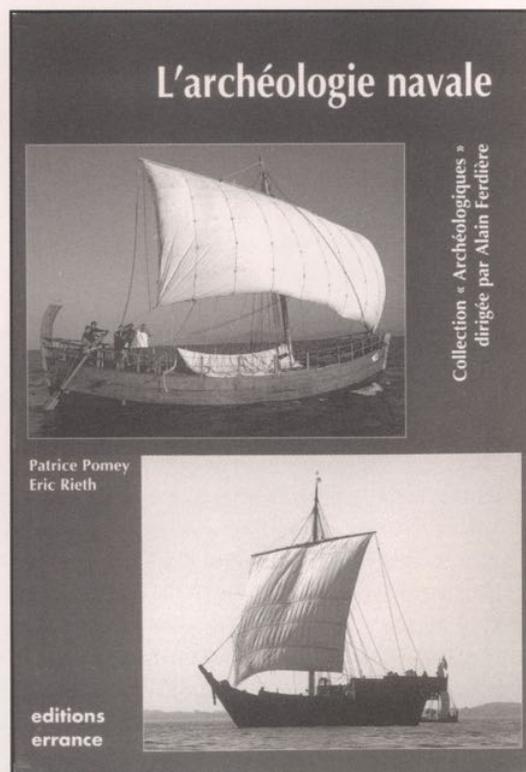
L'archéologie navale
Patrice Pomey and Eric Rieth

This is a great text book that should be translated into English and serve as the basis for every introductory course in nautical archaeology around the world. Not that French is not a beautiful language, and the book extremely well-written, but unfortunately French is not a widely spoken language in the USA, and the truth is that in the last two decades the number of publications concerning French shipwrecks has declined, and the laconic output of the French state agency for nautical archaeology – the DRASSM – does not give much incentive for nautical archaeology students to learn French.

In contrast, the two authors of this book, Patrice Pomey and Eric Rieth, are among the world's best scholars in this field, and have produced a steady stream of important publications that are regularly read and cited by their peers and are well-known to the Nautical Archaeology Program students.

Clearly written and well illustrated, this book presents a wonderful contemporary look at nautical archaeology, a useful reflection upon the methods and theory of this discipline, and an actualized summary of the important ideas advanced by these two scholars in the last two decades.

With a little bit over 200 pages and almost as many



Editions Errance, Paris 2005 ISBN 2 87772 301 1,
204 pages with illustrations, bibliography, glossary.
Softcover. Price: 28 Euros (\$35.90 USD)

illustrations, this book is light and easy to carry around, even if perhaps a little small for the middle-aged reader with a decaying eye sight.

The book starts with a short and clear introduction in which the importance of the French contribution for the development of this discipline is pointed out. Starting with the very title of Augustin Jal's pioneer work "Archéologie navale," published in 1840, the introduction addresses the evolution of scholarly interest from the time of naval history to the advent of nautical archaeology. It is worth noting that here again France pioneered the discipline in 1966 with the creation of the famous DRASM (Direction de des Recherches Archéologiques Sous-marines) by the French minister of culture André Malraux.

The introduction continues with a succinct discussion of the sources available to nautical archaeologists, the range of interests addressed by the discipline and the scope of the present book. This book is about ships carved or built since pre-historic times until the end of the pre-industrial era.

The work is divided into four parts: definitions and research questions, sources, methods, results and orientations. In the first part, which is perhaps the most interesting for the academic audience, the authors present a number of important concepts and ways in which we look at watercraft. It has long been agreed upon that it does not make much sense to look at ships outside the context in which they were conceived, produced and operated. The authors present here ships as complex artifacts that can be analyzed from many different points of view: as sailing machines, functional units, or habitats; as the final product of a chain of events that encompassed many decisions and contingencies; or as a composite structure that can be resolved into three primary components.

A short discussion follows on the three traditional construction principles – shell, frame, and bottom based hulls, which is almost consensually accepted in the scholarly world as the three main ways to build a ship: by building a shell that is reinforced with frames afterwards, by erecting the ship's frames and covering them with planks afterwards, or by building the ship's bottom and erecting the sides afterwards. The ships' basic taxonomy of construction principles is refined with a discussion – which was presented by Pomey elsewhere – about the difference between structural conceptual models and ship's hulls construction sequences. According to the authors a vessel can be built by raising portions of its shell and its frame alternately and still be a shell based ship, as far as the structural resistance is concerned. In fact, archaeology has demonstrated that the real universe of existing watercraft is largely composed of mixed shell- and skeleton-based shipbuilding solutions.

The next section of part one concerns the definitions of architectural families, types and units. In other words, the clues left by the shipbuilders for the archaeologists to try to understand which ideas came from where, what particular constructional solutions were developed in a particular place and are typical of a particular culture or population or region. Additionally it looks at which ideas were diffused and which remained where they were created until they were replaced.

The first part concludes with two important issues related to the study of watercraft. The first considers the environment in which the vessels operate, including the adaptations it imposes or inspires and the size and its perception and quantification.

The second part presents a overview of the sources – written, iconographic, graphic, models, and ethnographic – available to the researcher, addressing the question of how do we know what we know. Each source of information is analyzed by period: Antiquity, Middle Ages, and Modern Age.

This part ends with a discussion of the possible relations between archaeological and ethnographic sources.

Part three describes the methods used today by archaeologists in their work to reconstruct past human activity. It is not another manual of archaeology, but rather a description of how each of the tasks can be carried out. This section is a useful discussion of why things are done in a particular way. Each phase of the process is succinctly discussed: finding, excavating, opening, cleaning, consolidating, labeling, observing, documenting, disassembling and raising, protecting and conserving, dating and finding the ship's origin, reconstructing, and testing.

Part four is a discussion of the most important archaeological finds and of the most popular contemporary theoretical orientations concerning the history of wooden shipbuilding. Shipwrecks on which current theories are based, regarding the evolution of watercraft in Europe, are presented and discussed in a clear and organized manner. This section is presented following the structure used in the previous parts of the book. This part is divided into two main nautical spaces, the first being maritime spaces encompassing three periods: Antiquity, in the Mediterranean and in the north; Middle Ages, in the Mediterranean and in the Atlantic; and Modern Age. The second are riverine spaces and lakes that are subdivided into dugouts, expanded dugouts and assembled craft.

More than delivering a complete inventory of the relevant shipwrecks that have contributed to our knowledge of the history of European wooden shipbuilding, this part of the book emphasizes the gaps in the archaeological record and introduce some of the most important research questions archaeologists face presently.

In the conclusions the authors reiterate the intentions and aims of this wonderful book, but emphasize the importance of considering the ships as elements belonging to a society that has produced them and from which they are immensely important revealing elements. As Ole Crumlin-Pedersen wrote: too important to be left to the nautical archaeologists alone.

-Filipe Castro

Just Released

The Renaissance Shipwrecks from Christianshavn
Ships and Boats of the North, Volume 6
Christian P. P. Lemée

The Renaissance Shipwrecks from Christianshavn is yet another wonderful book from the Danish Viking Ship Museum series "Ships and Boats of the North," which is edited by Ole Crumlin-Pedersen. In the foreword, Thijs Maarleveld states that this series "was devised with the aim of presenting important ship-finds in their wider cultural-historical context," and these ship-finds are indeed of enormous importance from that point of view, because they provide information that covers a large gap in the history of northern seafaring.

As with the other five books in this series, this one is beautiful, it's binding is sturdy, and its graphics are pristine. The content is very interesting, well written, clearly organized, and beautifully illustrated.

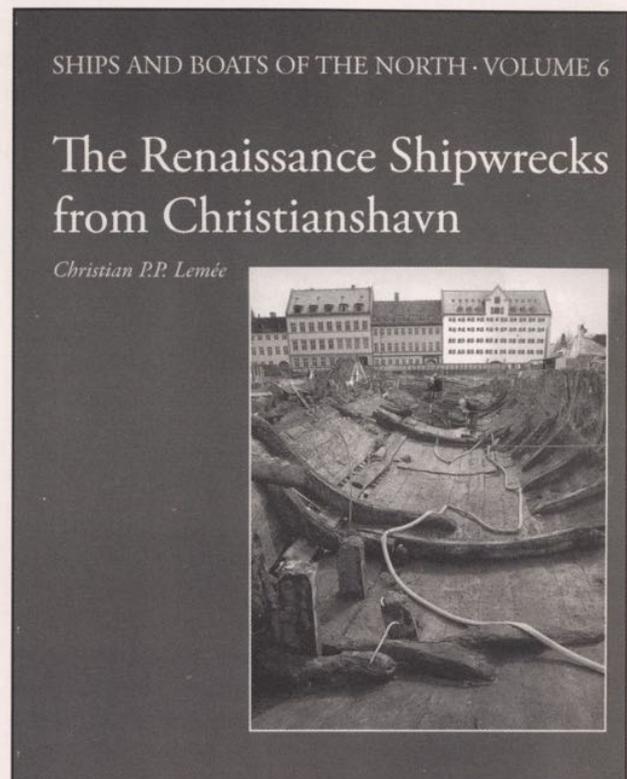
This book is a study of the remains of eight ships that were uncovered in 1996 and 1997, together with an old slipway, on the site of the ancient harbor of Grønnegaardt, "one of the oldest private harbors of Copenhagen."

The plot in which they were found belonged to company that manufactured marine engines, named Burmeister & Wain, and the ships were designated B&W1, B&W2, etc., to B&W8. Their excavation, documentation, study, and publication were entrusted to Christian Lemée, an archaeologist of the then Danish Centre for Maritime Archaeology and the author of this book.

The primary aim of his research was to analyze the ship remains of the four large carvel built vessels found (B&W1, B&W2, B&W4 and B&W5), dating to the late 16th and early 17th century, in order to understand a number of interesting and relevant questions pertaining to the state of the art of shipbuilding in Denmark during that period. The main research questions are stated clearly in the beginning of the book (p.19): "How did shipwrights work? Was there a standard method for building ships with carvel planking? What design principles and methods were in use in the shipyards? Is it possible to trace a specific Danish way of building? Were there relations within Europe to such an extent that everybody built in nearly the same way? Did the Danes have the necessary background to learn from foreign master shipbuilders, and how was the carvel shipbuilding method and its specific techniques introduced into the Nordic environment and its traditional shipbuilding culture?"

The ships were all extremely interesting finds, when individually considered. Together they present an inciteful image of a number of different ships of the late 16th and early 17th centuries, showing the diversity of construction solutions, life spans, repairing and refitting techniques, and final uses.

Following an introduction where the finds are described, the aims of the research laid, the cultural context summarized, and ships summarily described, the book is organized in five chapters. In the first chapter the archaeological site – the old Grønnegaardt harbor – is described and characterized, and its evolution along the time of its existence explained. The second chapter describes the process of development of carvel shipbuilding in Northern Europe,



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its arrival in Denmark, and the master shipwrights known to have played important roles in this process. The third chapter is a description of the archaeological methods of excavation, documentation and reconstruction used in this project. The fourth chapter deals with the archaeological finds, detailing each one of the shipwreck sites, its excavation, documentation, and analysis. The fifth and final chapter presents the results and discussion.

The author argues that although the shapes of the four large carvel built hulls (B&W1, B&W2, B&W4 and B&W5) were different, but they were all built by the Dutch shipbuilding concepts. These hulls were built by laying the bottom planking first, held together by cleats with shapes that guaranteed control over the angles between each two strakes, and then framed with floor timbers, knees and futtocks. The sizes of the ship's hulls were planked over with a number of existing futtocks whose shape was established with molds and ribbands.

The four vessels considered above belonged to two different groups of working craft. The first group is composed of middle-sized ships: B&W, originally ca 19 m long, and B&W4, 15 m long. These have length to beam ratios of, respectively, 3.16/1 and 3/1. The second group encompasses the large vessels: B&W1 lengthened to 26 m, B&W2 with 27 m, and B&W5 with 32 m. These ships have length to beam ratios of, respectively, 4.33/1, 3.6/1, and 4/1.

The ships have a lot in common. They share full hulls with the widest sections located between 1/4 and 1/3 of the length measured from the forward end of the keel, and sheer lines higher towards the aft end of the hull. They have sharp turn of the bilge arcs, however the medium-sized ships have sharper arcs than the larger vessels. While the middle-sized vessels' shape were defined solely by cleats and possibly a (small) number of master floor timbers, the large ships' shape was obtained with the help of molds and arcs, namely for the design of their sides and upper works.

Although the author advances the possibility that ships B&W2 and B&W5 were built in Holland, he stresses the fact that during the Renaissance the Frisian language unites the regions along the coastline of the North Sea, from present day Dutch-Belgium border to present day Danish-German border (p.307). These regions had integrated economies, based on agricultural, maritime and trading activities.

It is easy therefore to understand how shipwrights followed a standard method for building ships with carvel planking, using a series of design principles and methods that were later described by Witsen and van Yk. The Danish way of building ships may therefore have been a variation of the Dutch method described by Nicholaes Witsen, although English and Scottish influences are clearly indicated in historical documents (p. 309).

The remaining research questions can be answered from the results presented in this study. In spite of the mobility of this shipbuilding technology and the intense commercial and diplomatic relations within Europe, it seems that although similar knowledge was available almost everywhere – Genoese and Venetian shipwrights having brought it into the North Sea directly or through Portuguese and Spanish (Basque) shipwrights – not everybody built carvel ships in the same way.

It is clear from the study of these ships that the Danes have the necessary background to learn from foreign master shipbuilders, and that state-controlled shipbuilding played an important role in the introduction and development of carvel shipbuilding methods in the Nordic shipbuilding culture.

The author suggests that during this period, warships tend to be skeleton built and merchant ships tend to be shell-built. Perhaps one of the most interesting aspects of this book is that it shows a dynamic environment with shipwrights building their ships using traditional methods but integrating new technologies into their practices.

The scarcity of the remains of the B&W7 did not allow great speculations, but were perhaps the most interesting of the whole eight ship finds because they testify to the use of a well-known Iberian way to build ships (which is a variation of the Mediterranean way) in the North of Europe.

Ship remains like the Cattewater shipwreck or the Rye A timbers have shown that ships were built in the 16th century north of Europe according to a concept very common in Portuguese and Spanish state shipyards. The B&W7 ship is yet another example of these ships. Only more archaeological remains and perhaps further historical research, aimed specifically at the reconstruction of the process of adoption of skeleton-based ships in the North Sea will allow us to understand how this particular concept migrated from the Italian maritime republics into Portugal and Spain, and then into France, Belgium, England and the North Sea.

The *Renaissance Shipwrecks from Christianshavn* is a wonderful book that all Nautical Archaeology Program students will study carefully in the following years.

-Filipe Castro

News and Notes

INA-BRC's Tooze Library News



Peter Throckmorton in Turkey around 1960.

New additions to INA's Tooze Library at the Institute of Nautical Archaeology's Bodrum Research Center include over 400 books willed to INA by the late Peter Throckmorton, and recently forwarded to INA's College Station headquarters by his daughter, Paula Throckmorton Zakaria. Peter, of course, was the person who discovered the Cape Gelidonya and Yassiada shipwrecks in Turkey, and invited the University of Pennsylvania Museum to undertake their excavation. This led to the museum's excavation of the Cape Gelidonya shipwreck in 1960, by Peter and George Bass, and of course that eventually led to the formation of INA. Peter was also the one who started the world famous Bodrum Museum of Underwater Archaeology, now the most visited archaeological museum in Turkey, by using Bodrum's fifteenth-century Castle of Saint John as a depot for amphoras brought from the sea by local sponge divers, and

by urging George to ask the Turkish government to consider making such a museum in it. Peter's collection contains many of the earliest books on underwater archaeology, some quite rare, as well as books on all aspects of ships and sailing.

George Bass, from his own library, has just donated another 850 books, largely on Near Eastern and preclassical Aegean archaeology, to follow the 700 volumes he gave earlier.

Tufan Turanlı arranged through friends in the shipping business to have all seventy boxes of books, weighing well over a ton, transported from College Station to Bodrum almost without charge.

Although the property of the Institute of Nautical Archaeology, because of the close affiliation between INA and Texas A&M all of these books are also cataloged by the Texas A&M Library, and may be found in the library's online catalog.

These donations join the earlier donation of the library by G. Roger Edwards, a professor of pioneering underwater archaeologists George Bass, Frederick van Doorninck, and Michael Katzev when they were graduate students at the University of Pennsylvania.

The Tooze Library is fast becoming one of the best archaeological libraries in Turkey, well tended by librarian Nurgül Kūlah.



Reading room at Tooze Library, 2006. Photo: Don Frey

Nautical Archaeology Program Library at Texas A & M University News

Heather Brown, NAP Librarian

Donations to INA continue stateside, as two INA members donate books to the Texas A&M University's Nautical Archaeology Program Library in College Station, TX. The library houses an extensive collection of works on nautical archaeology and history, as well as over 5,000 articles collected over the program's thirty year history.

James Coggeshall, who received his master's degree from the Nautical Archaeology Program in 1997, is currently the Assistant Attorney General for the Open Records Division of the State of Texas. He generously donated 250 books, including a substantial number on the British Navy and the Spanish Armada. William H. Charlton, Jr., 1996 program graduate and current dive safety officer for Texas A&M University, donated 150 volumes from his collection, ranging from books on practical seamanship to ancient Egypt. We very much appreciate their consideration in giving back to the program and helping to support the scholarship of future nautical archaeologists.

Thanks to the grant-writing efforts of Josh Daniel, current NAP student and the anthropology department's Network Administrator, the library has also received a grant of \$7,200 from the university's Computer Access fund. With this money we were able to add four computer workstations and software to the library along with a dedicated library server which will house backup PDF copies of all the articles in our archive. While our collection is non-circulating, visiting students and scholars are always welcome to use our facilities while they are in town.

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