

nautical | archaeology



From Its Beginnings at Penn to Today's INA

BY GEORGE F. BASS

IT ALL BEGAN nearly half a century ago at the University of Pennsylvania Museum of Archaeology and Anthropology. In 1959, the Director of the Museum, Froelich Rainey, and the Curator of the Mediterranean Section, Rodney Young, asked me if I would be willing to learn to dive in order to excavate a Late Bronze Age shipwreck off the Turkish coast. As a graduate student in Penn's Classical Archaeology program, I had not the slightest idea where it would lead. But Professor Young, one of the wisest men I have ever known, must have seen the future.

In April of 1960, Rodney Young and the Museum's other classical archaeologists, Roger Edwards and Ellen Kohler, gave me a send-off dinner in Ellen's apartment.

While excavating the shipwreck off Cape Gelidonya Peter Throckmorton (right) and I (left) discussed the artifacts we recovered in our makeshift lab.

“Do you think that if I work hard and really persevere I might one day become Secretary of the American School of Classical Studies at Athens?” I asked.

“Do this underwater thing right and you won’t believe where it will take you,” Rodney responded. How could he have known?

Since those early days, the discipline of nautical archaeology has become accepted and respected, and our Institute of Nautical Archaeology (INA)—devoted to the study of ships and their cargos—is active on four continents and has two endowed publication series. Now based at Texas A&M University, our teaching program has seven full-time faculty and draws students from around the world. Our beginnings, however, were much more modest.

THE EARLY YEARS AT PENN

Throughout the 1960s my team of fellow Penn students and I developed the techniques of underwater research and excavation during our summer field seasons off the coast of Turkey. These techniques included both the means by which we located underwater sites and how we recorded and excavated them (*Expedition 3*(2):2-11). Much of this work involved creativity and applying existing technology in new ways to solve underwater problems (*Expedition 10*(3):2-10). For example, we were the first to map the seabed using stereo photographs,



Frederick van Doorninck, a colleague since we were graduate students together at Penn, was the first person to recreate on paper an ancient hull from the thousands of wood fragments we mapped on the seabed. Shown here inspecting an anchor concretion, he is now an emeritus professor at Texas A&M University.

George F. Bass (left), INA (right)



Michael and Susan Katzev developed the first underwater telephone booth to facilitate communication between divers and those above water. It also served as an emergency refuge if something went wrong with our breathing apparatuses.

the first to develop an underwater telephone booth to facilitate communication between the crew above and below water, the first to use sonar to locate an ancient shipwreck (*Expedition 11*(1):9-12), and the first to launch a commercially built research submersible in the United States—the *Asherah* (*Expedition 7*(2):19-30).

Our goal during this period was the complete excavation of shipwrecks and the recovery of their cargos. With such unique discoveries from beneath the waves we hoped to rewrite history, or at least gain a better understanding of ancient seafaring, ships, trade goods, and long-distance exchange networks. In 1960, we were the first to conduct the complete excavation of an ancient shipwreck on the seabed, a Bronze Age wreck just off Cape Gelidonya on Turkey’s south coast. This was



Left, at the suggestion of James Pritchard, the Museum's Curator of Biblical Archaeology, our submersible was christened *Asherah* (by my wife Ann) after a Phoenician sea goddess. Middle, its delivery to the Museum drew the attention of curious onlookers. Right, after five years of underwater use the Museum sold it in 1969.



followed by excavating a Byzantine shipwreck near the Turkish island of Yassiada from 1961 to 1964 and then a nearby Roman shipwreck from 1967 to 1969.

Unfortunately, our work was not sufficient to impress the many classical archaeologists who scorned me and my fellow scuba-diving students as “those people who had fun diving and pulling amphorae out of the sea.” As a result, after our 1969 campaign I decided to pack it all in and return to “real archaeology.” Burned out from directing and funding what the head of the U. S. Navy’s diving program had called “the largest diving operation in the world,” while now teaching a full course load at Penn as an assistant professor of classical archaeology, I turned my sights to excavating on land again.

However, in 1971, as I troweled through the soil covering a Pre-classical site in southern Italy, I realized I had abandoned something with great archaeological potential. What could have been more important than watercraft to people in the past? Didn’t ancient ships and boats deserve the same detailed study as pottery, sculpture, architecture, and coinage? And weren’t ancient shipwrecks virtual time capsules of material culture, much like the eye-opening discoveries sealed in ancient tombs or found covered by sudden catastrophic events such as the volcanic eruption that buried Pompeii in Italy? Where else might we expect to find such detailed evidence about the everyday context of trade and

exchange? Rather than walk away from underwater archaeology, perhaps I could solve my logistical problems by forming an institute devoted to the excavation of ancient shipwrecks.

Therefore, in 1972 I read a statement to the Penn Museum's Board of Managers requesting permission to form an institute devoted to underwater archaeology. I stated that I would raise all the necessary funds, including those for my own salary. Unfortunately, we disagreed on the details. Where I wanted to be a full-time administrator and researcher, like some of my colleagues at the Museum, the Board wanted me to remain on the teaching faculty. As a result, I gave the Museum a year's notice of my departure and began trying to raise funds to found an independent institute.

AINA ADRIFT

I soon discovered that no one who had supported my work for the Museum had any interest in sending funds directly to an institute consisting solely of stationery listing my home address. I kept at it, however, sending copies of my latest book, *A History of Seafaring Based on Underwater Archaeology*, to potential donors. Maybe the "First Alternate Selection" of the Book-of-the-Month Club would catch their eye.

I finally got a pledge, then another, and another, and at our first board meeting in Philadelphia in the spring of 1973 we had a small but committed Board of Directors for what I then named the American Institute of Nautical Archaeology (AINA). As President, I would be paid \$13,000 a year, while Michael Katzev—who had set a new standard for our field by not only raising but restoring a classical Greek ship off Cyprus at Kyrenia (*Expedition* 10(3):11-14, 11(2):55-59, and 12(4):6-14)—agreed to be Vice-President for \$8,000 a year. Initially we had no salary for our colleague John Gifford, who had a Master of Science in Oceanography, so he simply lived with me and my family in Philadelphia for several months until we came up with \$3,000 a year for him.

Since none of us had life or health insurance, or any kind of retirement plan, Michael and Susan Katzev convinced us that our money would go farther if we moved to Cyprus, where they already had bought a house, and set up our headquarters there. So my wife Ann and I sold virtually everything we owned—our house, car, furniture, pictures off the wall, and the children's toys—everything but her baby grand piano and my archaeological library, which we shipped to Cyprus. Cynthia Eiseman, who had worked with us in Turkey while she

was a Penn graduate student, agreed to serve as our Executive Director and tend the Institute's affairs in the States. She turned a spare bedroom in her Philadelphia house into an AINA office, and her husband James soon became our *pro bono* counsel.

At last, AINA had a home, but we knew of no more shipwrecks to excavate. So I left Ann in Nicosia, Cyprus, to find and furnish a house, enroll our sons in English-speaking schools, and buy a car (she learned to shift gears and drive on the left in busy downtown traffic), while I went to Turkey. With a few American and Turkish divers I lived on Turkish fishing boats for three months, sleeping on deck or in the fish hold, talking to sponge divers, chasing leads—some false and some good. We found 17 good shipwrecks in all. Eventually, we would excavate four of them along the southwest Turkish coast—those at Şeytan Deresi and Bozburun, and two inside Serçe Limanı.



Our excavations at Serçe Limanı (1977–79) uncovered the remains of an 11th century AD Byzantine ship that had carried a 3-ton cargo of recycled glass—a million-piece jigsaw puzzle to reconstruct.

It was a heady summer in 1974 when we began our Institute's first excavation and field school with ten paying students. We planned to complete the excavation of a Late Roman wreck off Yassiada that we had begun when I was still at Penn. But the news on the radio changed everything. A Greek-inspired coup on Cyprus led to a Turkish invasion and all coastal excavations in Turkey, Cyprus, and Greece were subsequently closed. The Turkish military gave us just a day to quit Yassiada.

Cyprus, where we had hoped to spend at least a decade, was now no longer tenable as our headquarters. On our return to the island, we found that our new car had been totally destroyed. Pierre Bikai, one of our field-school students and the manager of the excavations at Tyre in Lebanon, suggested we move our headquarters to Beirut.

"We Lebanese," he said, "love the good life too much to do anything stupid like the Cypriots did."

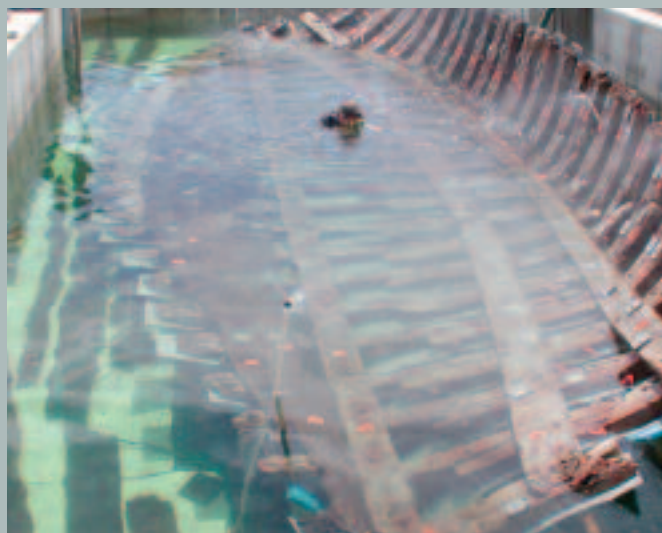
Although we did join Pierre briefly in Lebanon, where we were welcomed by the Lebanese government, something luckily told us it was time to return to the States. We thus avoided a second upheaval when the Lebanese Civil War erupted in 1975.

Back in the U.S., Ann and I moved to Denver, Pennsylvania, to live near J. Richard Steffy. Dick was a serious model builder who had lectured annually to a graduate seminar on ancient seafaring I had given at Penn. In the early 1970s, he had spent over a year on Cyprus with the Katzevs restoring the hull of the Kyrenia shipwreck. Despite the fact that his two sons were almost ready to go to college, Dick sold his electrical business and went to work for AINA for \$8,000 a year.

FINDING A NEW HOME

Once again we found ourselves searching for a home for AINA. One of the members of our Board of Directors, Elizabeth Whitehead, suggested that we might find a university home if we followed her husband's example. Jack Whitehead had just formed the Whitehead Medical Institute at the Massachusetts Institute of Technology (MIT), creating a relationship whereby the university and institute shared some personnel and facilities, but remained separate entities.

When the word got out that we were looking for such an affiliation, we were approached by several academic institutions. One university on the East Coast offered a contract, but it requested that we add a New World archaeologist to our staff to work on U.S. shipwrecks. When I invited Carl Clausen, the



Our internationally respected Conservation Research Laboratory at Texas A&M University is directed by Donny Hamilton and is currently conserving the hull and contents of the French Explorer La Salle's 17th century AD ship, *La Belle*, to become the centerpiece of the new Bob Bullock Texas State History Museum in Austin.

the uluburun shipwreck

state underwater archaeologist of Texas, to join us as a New World colleague, he agreed, but suggested that we ask Texas A&M University to make a counter offer. At the very least it would improve our bargaining position with the first university. A week later, Carl called to say that Texas A&M was truly interested and that I would soon receive a conference call from one of their Vice Presidents and two Deans inviting me to visit College Station, Texas, for a discussion.

My visit in early 1975 took my breath away. If AINA would affiliate with their university, Texas A&M would establish a separate graduate program, with its own head, budget, secretary, graduate assistantships, admissions, and degree requirements. Fred van Doorninck, Dick Steffy, and I would be hired onto the faculty, each of us to be paid for one term by the university and one term by AINA, with salaries during the summers when we would be expected to take students onto field projects paid by the university. We agreed to add a New World archaeologist during our second year, and every effort would be made to develop a true archaeological research library—this was eventually made possible by the acquisition of large personal collections on Classical and Near Eastern archaeology and history.

It was a perfect arrangement. Not only were we free to pursue field or publication projects for up to eight months a year, but we had graduate assistants far better trained in the theory and history of ships than any of us original pioneers had been. Soon we hired Donny Hamilton away from the University of Texas to be our New World archaeologist, since Carl Clausen decided to move back to the East Coast. Before long we shortened the name of AINA to simply the Institute of Nautical Archaeology (INA). This reflected our growing international involvement, including the international nature of our staff and Board of Directors.

THE INSTITUTE OF NAUTICAL ARCHAEOLOGY

Right from the start INA was involved in underwater excavations spanning the Old and New Worlds. In the Eastern Mediterranean we completed the reassembly of the Kyrenia ship in Cyprus and excavated a probable Middle Bronze Age cargo off Turkey's southwest coast at Şeytan Deresi. In the western hemisphere our work included shipwrecks from the American War of Independence—both an American ship in Penobscot Bay, Maine, and a British one in Virginia's York

The Uluburun shipwreck is considered by many scholars to be the most important Late Bronze Age site excavated in the second half of the 20th century. There is reason to believe it was a royal ship, carrying 20 tons of artifacts dating to the age of Ancient Egypt's King Tutankhamun, the late 14th century BC. Most of its cargo was raw material: ten tons of copper ingots, one ton of tin ingots (the earliest known), nearly 200 glass ingots (the earliest known), half a ton of terebinth resin burned as incense (the first found by archaeologists), logs of Egyptian ebony (the first found), Baltic amber, hippopotamus and elephant ivory . . . the list goes on. The wreck also yielded the largest single collection of Canaanite gold and silver jewelry, the oldest known "books" (ivory-hinged wooden writing tablets), and the only gold scarab of Egypt's famed Queen Nefertiti. Combining these with the musical instruments, weights and balances, fishing equipment, tools, weapons, foodstuffs, and hull remains also recovered, we have a vivid picture of life at sea in the Late Bronze Age.



Cemal Pulak, who directed the Uluburun excavations, has been an INA colleague for more than a quarter century and is now on the Texas A&M University faculty. He holds a Syrian pilgrim flask and a Mycenaean cup, with a gold chalice still lying *in situ* at the Uluburun site.



The Bodrum Museum of Underwater Archaeology is the most-visited archaeological museum in Turkey. Housed in the Castle of the Knights of St. John (left), its exhibits include the remains of one of the Serçe Limanı ship hulls and detailed evidence of shipboard life and trading business practices (as illustrated in the reconstruction of a Bronze Age ship cargo to the right).

River—as well as the excavation of the drowned city of Port Royal, Jamaica, which had sunk during an earthquake in 1692.

Within a few years, INA was excavating an 11th century AD shipwreck at Serçe Limanı in Turkey that carried the largest known collection of medieval Islamic glass and glazed ceramics, as well as Byzantine tools and weapons and the world's oldest dated chess set. Since then, INA has excavated the oldest known shipwrecks in both the New World—a 16th century AD Spanish ship of exploration found in the Turks and Caicos Island to the east of Cuba and north of Hispaniola—and the Old World—a late 14th century BC trading ship found off Turkey's south coast at Uluburun. In Africa, INA has excavated a 17th century AD Portuguese ship at Mombasa, Kenya, and an 18th century AD Indian Ocean trader in the Red Sea off Sadana Island, Egypt.

Overall, INA excavations have taken place in Europe (Bulgaria, Italy, Portugal, including the Azores, Spain, and The Netherlands), Asia (Israel and Turkey), Africa (Egypt, Eritrea, and Kenya), and, in the United States (in Vermont, Oklahoma, South Carolina, and Texas), while INA has surveyed for shipwrecks in or off the coasts of Bulgaria, France, Georgia, Italy, Turkey, Israel, Morocco, Jamaica, the Cayman Islands, and the American Great Lakes.

Our graduate students have come from even farther afield: Albania, Belgium, Bulgaria, Canada, China, Denmark, France, Greece, Jamaica, Japan, Malaysia, New Zealand, Peru, Portugal, South Africa, Spain, Switzerland, Turkey, The Netherlands, and the United Kingdom. At INA they receive a

full grounding in maritime history, the history and theory of wooden hull construction, the conservation of underwater artifacts, and, through our summer projects, an understanding of the techniques of shipwreck excavation. Other university departments at Texas A&M also offer courses specifically for our students, for example, in Spanish paleography and the history of Spanish colonial institutions in the New World.

One might best describe our situation vis-à-vis Texas A&M University as a symbiotic relationship, with the university being the academic arm and INA the field arm. As a result of this collaboration, not only do we train students in nautical archaeology, they also form a major part of our research program, often writing significant parts of our excavation reports. These, in turn, are published by the Texas A&M University Press, which now has an endowment for two series of nautical archaeological publications—one for large, often multi-volume, excavation reports and the other for smaller works on specific subjects of seafaring history.

Finally, in Turkey, where it all began, INA now operates a fully staffed research center, not too far from the Bodrum Museum of Underwater Archaeology. Housed in neo-Ottoman buildings designed by one of Turkey's leading architects, INA-Bodrum is led by our long-term colleague Tufan Turanlı and consists of an office building, a four-storey library, a large conservation lab, and a dormitory surrounded by a garden.

INA-Bodrum also operates our small Turkish research fleet, consisting of the 65-foot, steel-hulled *Virazon*, a two-person

Our two-person submersible, *Carolyn*, assists in the lifting of amphorae at the site of Tektaş Burnu.





This neo-Ottoman building serves as the central office on the INA-Bodrum campus.

submersible named *Carolyn* that allows the occupants to look in all directions, and the 45-foot catamaran, *Millawanda*, designed and built in Turkey, that carries, launches, and retrieves the submersible. In just one month, in 2001, we were able to locate 14 ancient shipwrecks and ten possible wrecks with this fleet, while revisiting a dozen wrecks we already knew in order to record their GPS coordinates.

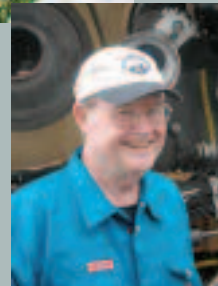
To maintain all this, and to staff the conservation laboratory, INA-Bodrum has a large year-round staff—Turkish, American, British, and Israeli—most of whom have been with INA for decades. On one side of our headquarters campus is a small cobblestone road, which the city of Bodrum



In 1964, I obtained on loan from the U.S. Navy, the *Virazon*, a 65-foot, steel-hulled vessel (left). When I temporarily left underwater archaeology in 1970, I transferred it to an American Air Force base in Turkey. In 1978 we acquired it outright for INA and outfitted it with living quarters and all the necessary equipment for a full-scale diving operation, including a double-lock recompression chamber to treat divers for the bends. Our fleet now includes a two-person submersible, *Carolyn*, and a 45-foot catamaran, *Millawanda*, which carries the submersible to our dive sites (right).

has allowed us to name *Sualti Sokak* (“Underwater Street”). Along it, a number of us own individual lots and houses, creating a neighborhood of colleagues who have been together for more than a quarter of a century. We have seen one another marry, have children, and even grandchildren.

How would I describe INA? I suppose the best word would be a “family,” and I remain eternally grateful that the University of Pennsylvania Museum provided the opportunity for so many of us to start that family. 🏠



GEORGE F. BASS received his Ph.D. in Classical Archaeology from the University of Pennsylvania in 1964. After serving as an Assistant and Associate Professor and Curator in the Museum’s Mediterranean Section from 1964 to 1973, he left Penn to found AINA. Currently, he is a Distinguished Professor Emeritus of Anthropology at Texas A&M University, the home of INA. In 2002 President George W. Bush presented him with the National Medal of Science.

For Further Reading

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