

The
INA

quarterly

MAGAZINE OF THE INSTITUTE OF NAUTICAL ARCHAEOLOGY

Crossroads OF CONSTANTINOPLE

Summer Field Season

From Phoenician Treasures to Klondike Steamers

Artful Shipwrecks

AT THE DALLAS — MUSEUM OF ART

FALL 2007 • Volume 34 • No. 3



Institute of Nautical Archaeology
is pleased to announce the sale of
Tom Freeman's
naval and maritime historical limited edition art prints.
Proceeds from the sale of the prints will benefit the workings of the
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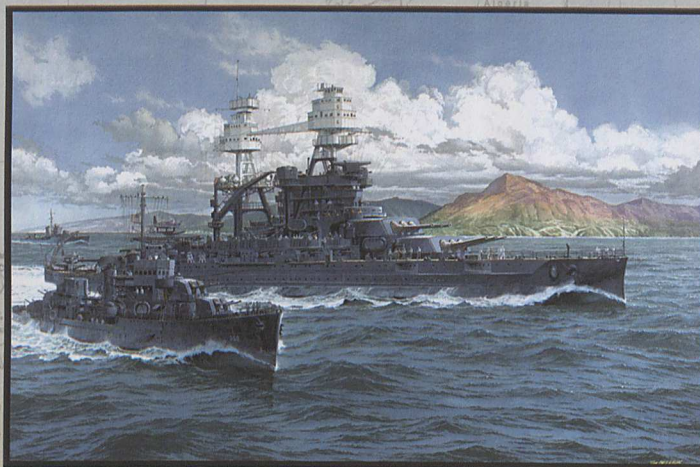
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SM&S
NAVAL PRINTS

Most of the Institute of Nautical Archaeology's scholars and students have returned from the field with

exciting results. Mark Polzer and Juan Pinedo's first season at Bajo de la Campaña, off the Spanish coast, discovered an early-sixth-century B.C. Phoenician wreck. Part of its cargo is elephant tusks with graffiti. George Robb, Jeff Royal, and the RPM crew discovered an amphora-laden wreck of the sixth-to-fifth century off Butrint, Albania. Deborah Carlson and crew removed the last stone column drums at Kızılburun. Cemal Pulak and crew excavated and documented another amazing wreck at Yenikapi, and John Pollack, director Robyn Woodward, and Texas A&M Nautical Program student, Sam Koepnik, surveyed intact Gold Rush-era riverboats in Canada's fabled Klondike.

The Yukon team, with the assistance of our friends Pacific Survey and Epicscan, also employed a three-dimensional laser mapping system, and are the first to map a complete wooden wreck with this system, a feat accomplished in only five days—inside and out! John Pollack, a professional surveyor by training, said it would have taken decades to map by hand every point the laser and computer did in less than a week. An incredible new tool joins the field, and INA is helping pioneer its use.

Just back from Bodrum and Kızılburun, I (Donny) spent time meeting with the Bodrum Center staff, inspecting and overseeing needed upgrades and repairs to the facilities, and participated in Debbie Carlson's ongoing excavation of the Roman Column Wreck. I also participated in important discussions regarding the possibility of a new INA project in Bodrum at the Yalıkavak site, whose mound of amphorae covers what may be a well-preserved hull. Yalıkavak's proximity to Bodrum means it could be a significant project in terms of reaching the public, including the many tourists who come to Bodrum.

I returned to College Station to assume new duties as the Head of the Anthropology Department at Texas A&M and to prepare for the fiscal year-end with the staff as we also make ready for the annual meeting in Dallas.

Meanwhile, I (Jim) have been working on INA's membership and fundraising initiatives. We've also started work on a new membership brochure, a package for generating support for INA's projects, programs, initiatives and endowment, and a new look for the *Quarterly*. Smaller, trimmer, and packed with exciting news about INA, the *Quarterly* will also focus on how support makes a difference, and why what INA does counts.

From both of us, and the rest of the team, either in the office or in the field, we hope your summers were equally productive and enjoyable, and thanks for your ongoing support of INA. We'll see you in Dallas in October if not sooner!

D. L. Hamilton

[Signature]



Donny L. Hamilton,
President



James (Jim) Delgado,
Executive Director

*Bronze weight depicting
Athena, ca. 5th century A.D.,
from Yenikapi*



IMAGE
Sengul & Haldun Aydingün
Kocaeli University - Turkey

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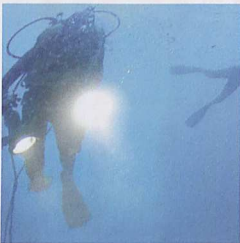
A remarkable discovery in Istanbul has brought a contingent of INA's experts to this ancient and venerable city.



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The Institute of Nautical Archaeology is a non-profit organization whose mission is to continue the search for the history of civilization by fostering excellence in underwater archaeology.

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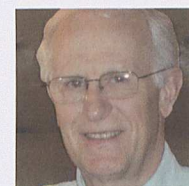
We are pleased and privileged to announce the election and appointment of three new directors.

George Belcher is an art dealer, undersea explorer and filmmaker. In the early 1980s, George led the team that discovered the wreck of the notorious brig *Somers*, setting of the only high seas mutiny in U.S. Navy history and the inspiration for Herman Melville's novella *Billy Budd*. George worked with the Mexican and U.S. governments to see the *Somers* studied and protected, and produced a documentary film on the wreck. George, his wife Lan Huong Nguyen, who is also an art dealer and gallery owner, and their daughter Lily, make their homes in San Francisco and Ho Chi Minh City, Vietnam.

Clyde Paul Smith is a retired banker who today serves as a police lieutenant in Washington D.C. as well as a director and special projects director of Clive Cussler's National Marine Underwater Agency (NUMA). Clyde participates in a wide range of NUMA searches, including the ongoing hunt for John Paul Jones' famous *Bonhomme Richard*. Clyde also served as special projects director for Cussler's National Geographic television series "The Sea Hunters." Clyde and his wife Paula Michaels, a vice-president with Morgan Stanley, live in Great Falls, Virginia. They have two grown children, Masha and Paul.

Dr. Roger A. Williamson is professor of obstetrics and gynecology at the University of Iowa. A graduate of the Baylor College of Medicine, Dr. Williamson's career has included a two-year fellowship in medical genetics at the University of Washington. Roger is currently working on the development of a statewide integrated first and second trimester screening for fetal abnormalities. He is also participating in the development of stem cell therapies for muscular dystrophy, and the inactivation of muscular dystrophy genes in stem cells. A longtime member and friend of INA, Roger joined the dive team at Yassada. Roger makes his home in Iowa City.

Please join us in welcoming George, Clyde, and Roger to the INA Board.



FROM TOP
George Belcher
Clyde Paul Smith
Dr. Roger A. Williamson

FYIdates

Annual General Meeting
October 18, 2007

Tradition & Transition
Texas A&M University
November 2-4, 2007

The Waitt Institute for Discovery (WID), a foundation created by computer pioneer and philanthropist Ted Waitt, **has generously granted INA \$20,000** towards this year's field projects. Together with funds from the RPM Foundation and INA directors, the WID grant has supported a variety of exciting surveys and excavations, including the upcoming submersible survey of the Turkish coast by Dr. George F. Bass.

Dr. Dominique Rissolo, the Waitt Institute's director of research, is an INA member, and conducts research in submerged caves and cenotes in Central America. Dr. Bass sits on the WID board of directors, as do INA research associates Dr. Jerome Hall, Dr. Pilar Luna Erreguerena and Dr. Gordon P. Watts. INA is working with Dr. Rissolo and WID to plan possible surveys in Central America, and we are hopeful that other opportunities will arise.

The Waitt Institute and INA share a common commitment to exploration, scholarship, and outreach. INA is pleased and proud of the emerging partnership with WID and we thank them for their support of the 2007 field season.

Shipwrecks at the Dallas Museum of Art

Thanks to an idea from, and the generous sponsorship of, INA director Ned Boshell, a supporter of both INA and the Dallas Museum of Art, scholars from around the world gathered in Dallas on May 12th to provide the public with an overview of world history lavishly illustrated through shipwreck discoveries and nautical archaeology. The event, *Shipwrecks Throughout History: From Tut to the Atomic Age*, also included children's programs, sea shanty performances, shipwreck-related tours of the museum's art collection, screenings of INA films, and a book signing.

The speakers, largely drawn from INA and Texas A&M Nautical Program alumni, included Dr. George Bass, who spoke on Bronze-Age shipwrecks, and Dr. Deborah Carlson, who discussed Greek and Roman ships and cargoes. Traveling all the way from Stockholm and his work on the Swedish warship *Vasa*, Dr. Frederick Hocker gave a talk on the seafarers of Northern Europe. He was followed by Dr. Roger Smith and Corey Malcom, speaking on early Spanish shipwrecks of the New World and the slaver *Henrietta Marie*, respectively. Following Dr. John Broadwater's talk on the evolution of naval technology, the day concluded with a discussion by Dr. James Delgado of modern "iconic" shipwrecks such as the *Titanic*, the USS *Arizona*, and the "nuclear fleet" at Bikini Atoll.



The day's events were a wonderful opportunity to reach out to the public and share the excitement, knowledge, and amazing images of what INA does.

Please contact us if you're interested in sponsoring a **Shipwreck Day** in your city —we'd love to do more events like these!

The Donald A. Frey Endowment Fund

Don Frey has been a driving force at INA for decades, capturing our work in his beautiful photographs and being the indispensable good-will ambassador in Bodrum, among the best known of his many contributions to the Institute.

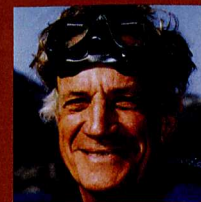
With the retirement of *Don Bey*, as many folks know and love him, a fund is being established in his name to endow surveys and fieldwork in the Aegean, Mediterranean, Adriatic, and Black Seas. We're honoring Don and his wife Sanna at this year's annual meeting, and looking for a donor to establish the endowment and as per Don's wish...

"to keep the magic of fieldwork going."

When Don Frey first volunteered to work on the Roman shipwreck at Yassiada in 1969, he had no idea that he was on the threshold of beginning a 30-year relationship with George Bass and the Institute of Nautical Archaeology. Up to that point he had been a physics professor, not an archaeologist, but by 1975, after participating in numerous archaeological projects in Greece and Turkey, Don became a research associate with the Institute and in the years following worked with INA at Lipari, Mombasa, Sheytan-Deresi, Yassiada, and the Turkish surveys. In 1982 he became the president of INA and worked hard to expand the Institute into a world-class organization during his six-year tenure.

Don Frey's contributions to the Institute are many: he is one of INA's chief language experts (he speaks four comfortably), he has designed measuring and recording equipment for divers to use under water, and he became INA's principal photographer through his excellent work on many INA projects. His underwater filming and photography have also been featured on Turkish television and in a National Geographic Society documentary.

Celebrate the contributions of Don Frey and ensure that his passion for fieldwork in nautical archaeology continues through INA.



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Tradition and Transition

Maritime Studies in the Wake of the Byzantine Shipwreck at Yassiada

INA's excavation of the seventh-century A.D. shipwreck at Yassiada, Turkey more than four decades ago marked a turning point in the field of archaeology. Directed by Drs. George Bass and Frederick van Doorninck, it was the first full underwater excavation of a wreck with substantial hull remains. The final excavation report, published in 1982, has helped a generation of archaeologists and historians elucidate one of the most poorly understood transitional periods of the ancient world.

The 25th anniversary of the Yassiada final report provides us with an opportunity to consider where we are in our understanding of this wreck and its historical context, as well as the techniques and technology that enabled INA to excavate and study the wreck.

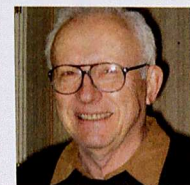
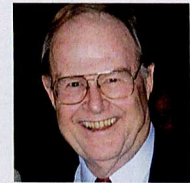
It is in this spirit that **Tradition and Transition: Maritime Studies in the Wake of the Byzantine Shipwreck at Yassiada, Turkey**, will be held at Texas A&M from November 2-4.

More than 40 scholars from 10 countries, including many former students, will be joining us to highlight the impact of the work of Drs. Bass and van Doorninck, both in the field of nautical archaeology and beyond.

Many interesting themes are planned, including Material Culture of Ships and Sailors, Comparative Byzantine Ships and Ancient Ship Construction, and the International Medieval Mediterranean. Additional themes and program details will be available on the INA website.



Nov 2-4
at Texas A&M
UNIVERSITY 2007



ABOVE

Dr. George F. Bass
Dr. Frederick van Doorninck

BELOW

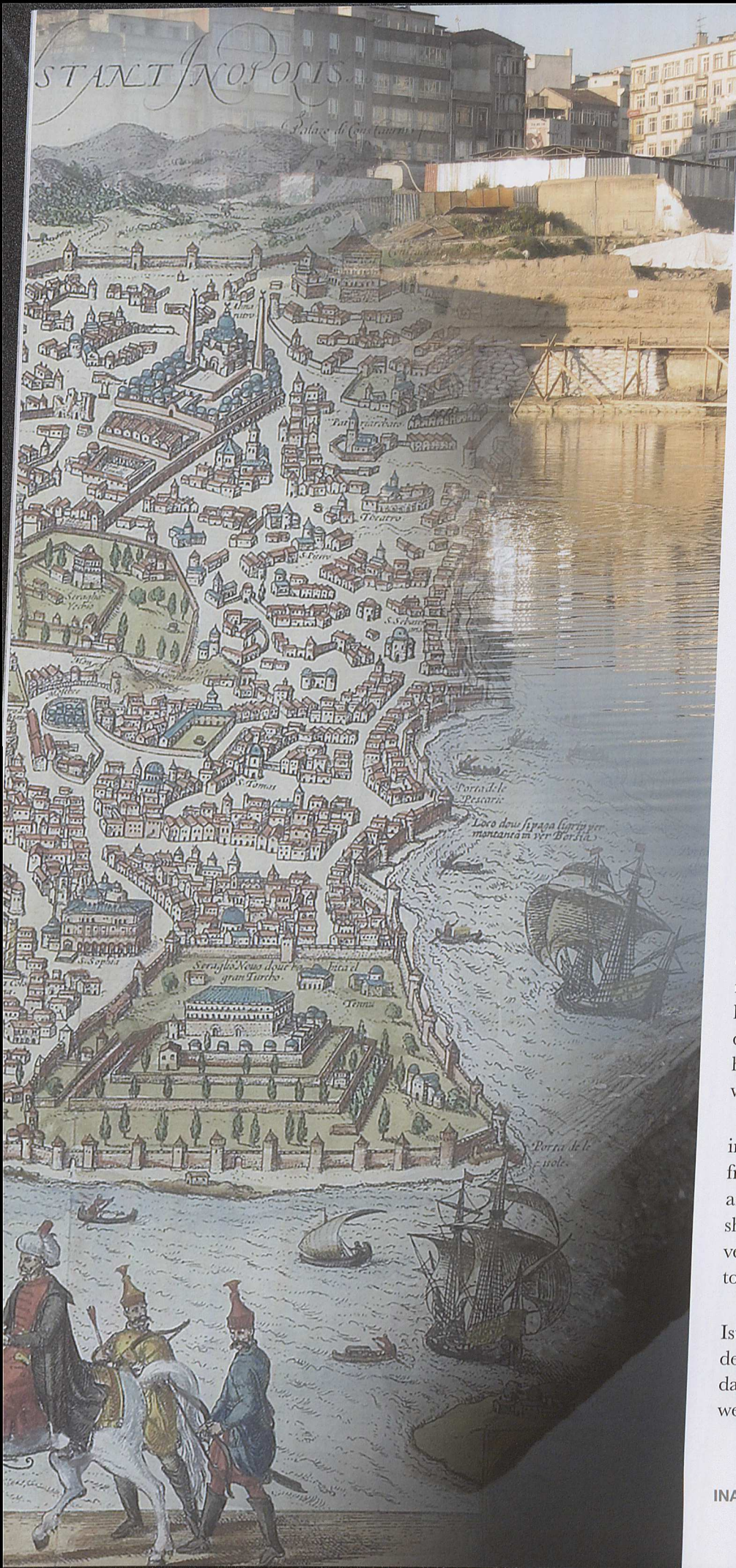
George & Fred (early 60s)
INA pioneered the use of submersibles in excavations with the use of *Asherah* at Yassiada.

In the circle
Ann Bass christening the *Asherah*.



STANTINOPOLIS

Palacio de Constantino



CROSS

by James P. DELGADO

INA has enjoyed an uncommonly close bond with Turkey since founder George Bass led the first scientific underwater excavation of a twelfth-century B.C. wreck at Cape Gelidonya in 1960. For most of the near-half-century of research, however, the institute's activity in Turkey has been primarily focused along its Aegean and southern coasts and around the INA headquarters in Bodrum. Now, a remarkable discovery in Istanbul has brought a contingent of INA's experts to this ancient and venerable city.

The Yenikapi site, located near the ferry terminals on the city's Marmara shore, was first revealed in 2003 during construction of a new rail link between Europe and Asia. Istanbul Archaeological Museum archaeologists quickly realized they were looking at the ancient harbor of Constantinople. A major trade center from the fifth century until river silt filled it in around the tenth century, the harbor, its stone walls, and amazingly well-preserved remnants of the port's activities lay forgotten for centuries.

Now one of the world's largest archaeological digs, the site is a beehive of activity. Each day, hundreds of laborers dig under the direction of the Istanbul Archeological Museum. Yenikapi's wet soils have revealed everything from the foundations of wattle-and-daub mud huts from the Chalcolithic period (4500 to 3500 B.C.) to elegant Ottoman structures, and myriad artifacts ranging from wooden combs and Byzantine leather shoes to the bones of hard-worked dockside horses and human skulls that may have come from criminals whose severed heads were tossed in the harbor.

Archaeologists have also found an ever-increasing number of ship remains and anchors from what was once the harbor floor. The first archaeological examples of Byzantine rowed ships—perhaps warships—as well as merchant vessels, some with cargoes, lay preserved thanks to their burial in a thick layer of wet mud.

Istanbul Archaeological Museums turned to Istanbul University's conservation department to deal with most of the ship remains, but six hulls dating from the seventh to the tenth centuries were turned over to INA's vice-president Cemal

ROADS OF CONSTANTINOPLE

Pulak. With his characteristic attention to detail and meticulous scholarship, Cemal, INA archaeologist Sheila Matthews and the rest of the INA/Texas A&M team have been working for two years in the heat and mud of the active construction site in tent-covered pits to document and carefully recover the ship remains. While many of the timbers are well preserved, with original tool marks and intricate detail, they can also be very fragile, with the consistency of wet cardboard. It makes the job even more challenging, and yet the patience and persistence of Cemal's team is making a difference.

The Yenikapi dig is most likely the once-in-a-lifetime opportunity to work with a diverse collection of hulls from this period. It also means that, after careful analysis, the work at Yenikapi should rewrite the book on Byzantine shipbuilding, as well as the role of maritime trade in the history of Constantinople and the later Roman Empire.

In early May, several INA directors and spouses gathered in Istanbul to visit the ongoing excavation at Yenikapi. At the time of our visit, excavation had revealed 24 hulls, making this one of the greatest nautical archaeological discovery sites of all time, a repository of lost and forgotten Byzantine shipbuilding and nautical technology.

It is ironic that this rich collection of nautical information comes out of the wet ground in the midst of streets and sidewalks. "Why did I ever learn to dive?" joked Cemal as he took us around the site. It is a remark that is more than just Cemal's quiet humor and good nature. Recently, Texas A&M professor and INA archaeologist Deborah Carlson was interviewed in the newsletter of the Archaeological Institute of America. When asked where she felt nautical archaeology was headed, Deborah spoke to what many of us are now feeling. "On one hand," she said, "technology seems to be driving some researchers into deep water, while at the same time dry excavations of silted harbors... are poised to tell us more about naval technology and hull construction than we might ever learn from a single shipwreck."

Information from Yenikapi will continue to



come to light long after the excavations have concluded. Years of conservation and analysis will follow the dig, and one day, if plans are realized, a museum will rise on part of the site to house and display the hulls and the more significant finds. It is not certain how long the excavations will continue, because at every turn, more ships appear. The evening before our arrival, Cemal was awakened at midnight by a member of the team who brought him fragments of wood from a hole the construction crew was boring for a foundation. "Are these from a ship?" he was asked. Instantly awake, Cemal answered that they were, and with that, the number of vessels at Yenikapi rose to twenty-four.

Once the team completes their field documentation of hull number five, a tenth-century vessel, and lifts it for the long trip to Bodrum for conservation, they will turn their attention to the next hull. This wreck, hull number six, is very

FACING PAGE
The harbor of Byzantine Constantinople, forgotten for centuries and accidentally revealed during construction of a rail link, is considered one of the greatest nautical archaeological discoveries of all time.

LEFT
Cemal Pulak explains the intricacies of Byzantine ship building.

LEFT BELOW
Night and day hundreds of laborers dig under the direction of the Istanbul Archeological Museum.

PHOTOS Sengül & Haldun Aydıngün / Kocaeli University - Turkey PHOTO ILLUSTRATION www.blackberrycreative.ca

CROSSROADS

James P. DELGADO

THIS PAGE

Upper

An INA/Texas A&M crew excavate the remains of a Byzantine-era vessel at the bottom of a cofferdam at Yenikapi.

Lower

This beautifully carved head, found at the site, may have belonged to a doll or decorated a ship.

significant, because it dates from the seventh century. If it is as intact as the other Yenikapi finds, this particular hull will allow INA scholars to reassess what we know about ships of this period.

Between 1961 and 1964, INA's excavation of the seventh-century wreck at Yassiada, under the direction of George Bass, carefully recovered the fragmented hull of that vessel from 105 to 130 feet of water. The preservation of about 40 percent of that hull, even in pieces, allowed Fred van Doorninck and, later Dick Steffy, with his characteristic skill, to develop what van Doorninck calls a "reliable reconstruction," with only the shape of the ship's bow in doubt. With perhaps even more of the hull remaining at Yenikapi, we now have a chance to not only learn about the shape of bows and other details that did not survive beneath the sea, but also the opportunity to be reminded of Dick Steffy's seemingly magic way of bringing broken ships back to life. One of the great images he produced from the Yassiada excavation is a reconstruction drawing of the seventh-century ship alongside a pier. Now, thanks to Yenikapi, we have an opportunity to excavate one of these vessels, ironically right alongside a pier.

The data from the Yenikapi hull, combined with the Yassiada hull remains, also comes at a time when van Doorninck's reassessment of the amphorae brings a new understanding of the significance of the Yassiada ship's cargo. The beauty of nautical archaeology is that we can return to the work done earlier, look at it with fresh eyes and new data from other sites, and develop deeper, more complex and exciting interpretations. That type of magic happens because INA is supported by its directors and friends who ensure that our work is done to the highest standard, and that what we find is preserved and accessible for future scholarly reassessments as well as public enjoyment and appreciation, be it in Bodrum, Istanbul, or anywhere else in the world our research calls us.



A stop on the INA directors' tour at the Istanbul Naval Museum provided another reminder that not all nautical archaeology is wet. Since 1999, Cemal and his students have been documenting a rare and unique treasure in the museum's ship hall. A magnificent row galley, a ship used by both the Islamic and Christian worlds as they traded and fought on the Mediterranean for centuries, the naval museum's kadirga was a royal craft that nonetheless embodies the form of the galleys that fought in some of history's most famous naval battles, such as the battle of Lepanto off the Greek coast in 1571. Cemal explained the importance of these ships and how the kadirga, despite later repairs, most likely dates to the sixteenth century. As such, it is most likely the world's oldest preserved historic ship.



Members of the tour included INA directors and spouses Peter and Mary Faye Way, Ned and Raynette Boshell, Clyde Smith and Paula Michaels, Bill and Ginny Klein, executive director Jim Delgado and wife Ann Goodhart, and INA friends from Portland, Oregon, Jeff Handy and Marie Lilly. We were joined in Istanbul by INA directors Greg Kiez, John De Lapa, Selçuk and Nida Kolay, and Jeff and Carol Hakkö, as well as Oğuz Aydemir, Cemal Pulak and Don Frey.

We all stood in the great ship hall and looked at the massive oars, the angled rowers' seats, the unique form of the hull that allowed it to glide over the water, and the exquisitely detailed stern enclosure, decorated with mother-of-pearl, tortoise-shell, and ivory.

Our gracious hosts at the Naval Museum offered us tea alongside the Bosphorus and a tour of the museum, which will soon be closing for a major renovation and expansion. In the garden, we also saw another unique find: a World War 1 German submarine, sunk near the shores of the Black Sea and later buried beneath the discarded tailings of a nearby coal mine. It was rediscovered during dredging and rescued from the mine tailings by INA director Selçuk Kolay.

Organized by Peter Way, and expertly guided by Layla Topal, the INA directors' tour was a fully-packed, intensive look at Istanbul's art, history, architecture and archaeology. A Bosphorus cruise gave us another perspective on this ancient crossroads and the importance of the sea and these waterways to Istanbul, past, present and future. It is truly an honor that INA can participate in the recovery of this city's magnificent maritime history.

ABOVE LEFT
A royal row galley, or kadirga, on display at the Istanbul Naval Museum.

INA fieldwork

THIS PAGE

Upper photo
Using LIDAR,

INA researchers were able to obtain more than 160 million data points on the 1908 sternwheeler *Evelyn* in just five days.

Lower photo

The ghostly image of this Klondike riverboat reveals its many secrets.

FACING PAGE

Upper photo
Scanners are set up in this remote wilderness site.

Lower Left photo

Hulk of the 1899 sternwheeler *Gleaner* at Carcross, Yukon Territories.

Bottom right photo

Project co-director Juan Pinedo raises a large tusk from the area of the Phoenician wreck at Bajo de la Campana
Photo: Piotr Bojakoski.



in the YUKON

In July, a Canadian/American INA team spent sixteen days on the banks of the Yukon River. Thanks to hard work and cutting edge optical remote sensing technology, in that short time they managed to obtain a detailed scan of an entire ship, double the number of nationally cataloged vessels in Yukon Territory, and collect a wealth of new information and sites.

In the first phase, project director John Pollack, INA researcher Sam Koepnick, Doug Devine and Carlos Velazquez of Oregon's EPICSCAN, and Yukon-based Doug Davidge performed the largest-ever in situ LIDAR (Light Detection and Ranging) survey of a major vessel. More than 160 million data points were obtained on the 1908 sternwheeler *Evelyn*, now derelict and out of water at Shipyard Island, a remote wilderness site located more than 60 miles from the nearest road.

“Welcome to the mapping revolution... it is very exciting stuff.”





The team scanned the entire ship – upper decks, freight deck, hold and exterior – in five days. We then moved to Dawson City, where INA director Robyn Woodward and Tom Koppel, a writer for *Archaeology*, joined us. Here we documented seven major sternwheelers lying above water at West Dawson, and in less than a week doubled the number of nationally cataloged vessels in the Territory. The team concentrated on overview documentation on each vessel, and detailed measurements on the tiller and rudder systems on five of the ships. Notable finds included the archaic tiller-and-rudder systems on the *Seattle No. 3* and the *Schwatka*, and examples of heavily constructed hulls with large transverse timbers and kingposts.

The June 2008 field program will concentrate on the Thirty Mile Section of the river, and continue the search for more than 35 historic vessels.

John Pollack is an INA Research Associate.



in SPAIN

Over the years, the site of Bajo de la Campaña, “Shallows of the Bell,” off Spain’s southeastern Mediterranean coast has yielded an array of archaeological materials, presumably from shipwrecks, that are believed to belong to three distinct assemblages—Phoenician (late seventh-early sixth century B.C.), Punic (second century B.C.), and Roman (first century A.D.).

Over the course of six weeks, an international team led by INA research associate Mark Polzer and Spanish archaeologist Juan Pinedo conducted a detailed survey of the area to determine what remained of the ancient shipwrecks of Bajo de la Campaña and to assess their potential for excavation. The team collected surface material from an area measuring 20 meters wide and extending 20 meters downslope from the base of the shallows, with the vast majority of recovered material consisting of broken ceramic vessels, including Phoenician, Punic, and Roman amphoras.

In association with the Phoenician pottery, the team recovered four elephant tusks, including a particularly impressive specimen more than a meter long and inscribed with Phoenician characters. Two hemispherical tin ingots; nuggets of lead ore and galena; pieces of crumpled lead sheets; a wooden comb decorated with incised lines; pieces of dunnage; pine nuts; amber; and a well-preserved copper nail and numerous nail concretions, almost certainly from a ship’s hull, were also found. These materials clearly indicate that much remains buried of the ships that foundered on these treacherous shallows in antiquity.

Excavation of the site may produce the first-ever Phoenician merchant ship to be fully excavated and studied, which would provide exciting new information on Phoenician activity in the region, their trade routes in the western Mediterranean, and the vessels that carried them on their renowned mercantile voyages.

Mark E. Polzer is an INA Research Associate.

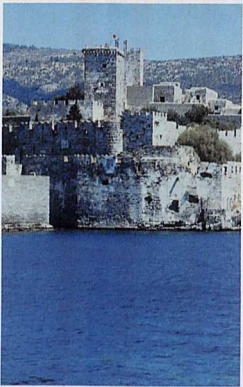


from **BODRUM**

Tumbling down a reef off Kekova Adası (Kekova Island) along the southern Turkish coast lie the scattered but intriguing remains of a ceramic cargo from a shipwreck dating probably to the seventh century B.C. No wreck from this century has been excavated in the eastern Mediterranean, and despite its somewhat less than glamorous cargo—a jumble of broken amphoras largely concreted to the seabed along with a pile of ballast stones—two subsequent survey teams have returned to the area to recover additional diagnostic pottery.

In June and July 2007 the humble finds from the Kekova site were seen in a new light in the English Tower of the Bodrum Museum of Underwater Archaeology. An examination of the artifacts raised at Kekova not only confirms a date around the seventh century, but also suggests that the wreck itself deserves another closer look. We identified remains of amphoras and other ceramics associated with wine and olive oil transported from Corinth and Samos or Miletus at a time when these cities were becoming key figures in the trading networks of the eastern Mediterranean. Cypro-Levantine “basket-handle” amphoras, a form seemingly developed in Cyprus and later manufactured in the Levant, were also identified. With its cargo of jars from Corinth, the southeast Aegean, and perhaps Cyprus or the Levant, along with small finds that may have trickled through the crevices of the reef, the Kekova wreck holds the potential to answer questions of trade and economy in the early Archaic eastern Mediterranean—a dynamic period of expanding agricultural production in a pre-monetary economy and reviving international relations between the Aegean and the Levant—as well as important questions about the typology and forms of amphoras that mark this underrepresented period.

Elizabeth S. Greene and Justin Leidwanger are INA Research Associates.



TOP

Ancient pottery in the English Tower storeroom.

MIDDLE

Bodrum Museum of Underwater Archaeology, Bodrum, Turkey

BOTTOM

The Albanian coast shows great promise for significant finds in the future.



in **ALBANIA**

July of 2007 was an auspicious month for RPM Nautical Foundation as we embarked on our first large-scale coastal survey of Albania. Thanks to Dr. George Bass, who explored coastal locations a decade earlier and formed crucial contacts in the region, this joint project with the Albanian Institute of Archaeology (AIA) came to fruition through the efforts of many individuals, particularly Mr. Auron Tare. Coordinating with Drs. Adrian Anastasi and Neritan Ceka of AIA, the R/V *Hercules* began the survey at Albania’s southern border with Greece with the goal of completing the entire coast over successive seasons. The survey extends to the 100-meter contour, and includes remote sensing with multibeam echosounder and ROV verification, as well as dive operations along the shoreline. During this inaugural field season, multi-beam coverage reached the city of Saranda, about 21 kilometers from the Greek border. As dive operations are more laborious, only small sections of this southern shoreline were completed. A total of 15 wreck sites were discovered during operations, with 14 of these being modern and buried in mud from the Butrint River; historic wrecks are undoubtedly buried below this mud and will require magnetometer survey. One wreck discovered near shore dates to the early third century B.C. and carried Greek amphoras of a type produced in Corinth and Apollonia. This site is on a steep, rocky slope and initial investigation indicates areas of buried material. Considering the nature of this site, the extensive individual finds, and the state of deeper material, the submerged cultural material along the Albanian coast is relatively untouched compared to the majority of Mediterranean countries. Based on this initial season, there is great potential for significant finds in the future.

*Dr. Jeffrey G. Royal, Archaeological Director
RPM Nautical Foundation*

INA innovators

by Deborah CARLSON

an UPlifting experience at Kızılburun

One of the greatest challenges facing us at Kızılburun, where INA has spent the last three summers excavating the remains of a stone carrier that likely sank in the first century B.C., has been the task of moving the eight large marble column drums—which weigh about 7 or 8 tons a piece—without disturbing wood remains preserved directly beneath them. In 2006, we enlisted the help of Subsolve president Richard Fryburg, who donated the four 4,000-pound lift balloons needed to move each drum. Our system was effective but time-consuming, particularly as the depth of the wreck (150 feet) limits us to 20-minute working dives. We carefully maneuvered three nylon lifting straps under the edges of each drum without damaging the wood below, then attached the straps to a 100'-long chain. Two lift balloons were secured to the chain directly above the drum, and two others attached to the top of the chain in approximately 30 feet of water. The balloons were filled in two stages, with the deeper ones first, so that when all were sufficiently full, the attached drum could only travel 30 feet off the bottom, and not to the surface in an uncontrolled ascent.

Hopeful that we could find a more efficient technique for raising the drums, I solicited the advice of people who make a living out of lifting, and was lucky enough to find Andy Graf, an engineer at Lift-All, Inc., the largest manufacturer of lifting slings in North America. Andy recommended we try their Tuflex Roundslings, which are made up of lots of individual polyester yarns covered by a nylon sleeve. In a choker hitch (which wraps around the drum walls like a lasso) these Tuflex slings hold tight, stretch very little, and are abrasion-resistant. Lift-All president

and Texas A&M alumnus Jeff Klibert generously agreed to provide the Kızılburun excavation with six Tuflex slings, manufactured almost overnight at their Houston plant, free of charge.

At Kızılburun, *Virazon* captain Feyyaz Subay, who coordinated the drum-lifting in 2006 and 2007, experimented with different hitches and sling lengths in an effort to find a secure and efficient arrangement. In the end, we utilized a triple choker hitch assembly, securing the slings with shackles to prevent the rig from riding too high or slipping off the drum. In little more than 3 weeks, and without much difficulty, we safely moved the remaining four column drums (and lone column capital) off-site, leaving us almost eight weeks to excavate, map, and raise the wooden timbers resting untouched, underneath.

A report on the 2007 excavation season at Kızılburun will appear in a forthcoming INA *Quarterly* issue.

takeNOTE

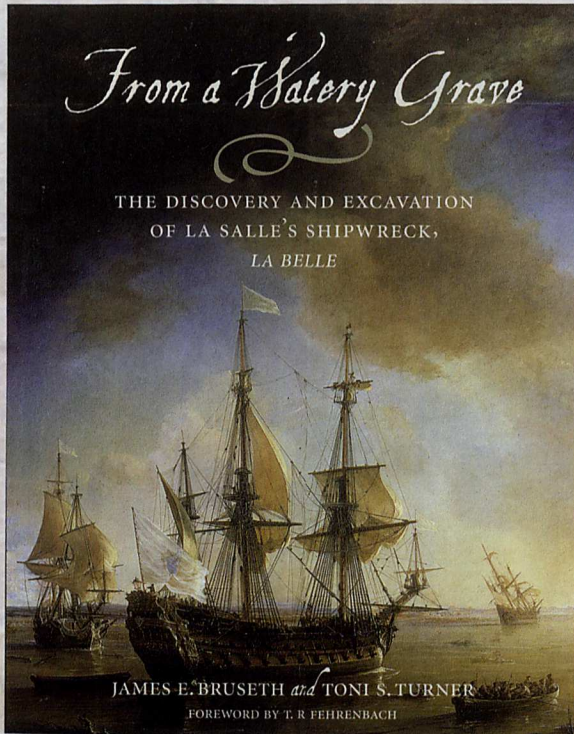
INA researcher and Texas A&M Nautical Archaeology professor Shelley Wachsmann joined the DANAOS project, a collaboration between INA, the Hellenic Centre for Maritime Research, and the Hellenic Institute of Ancient and Medieval Alexandrian Studies, in late June to look for Bronze Age wrecks along the ancient trade route between Crete and Alexandria.

Visit the "Latest News" at www.eu-hermes.net to read about the survey results in their summer 2007 newsletter.

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Deborah Carlson, Ph.D. is an Assistant Professor in the TAMU Nautical Archaeology Program.

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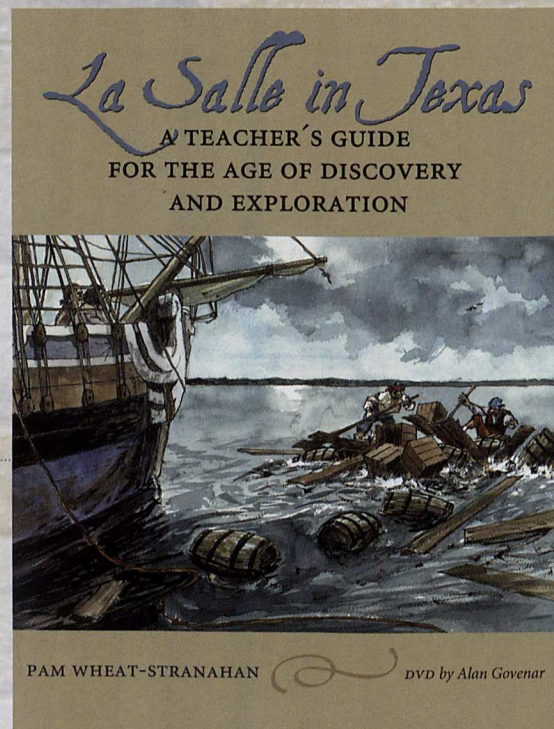
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