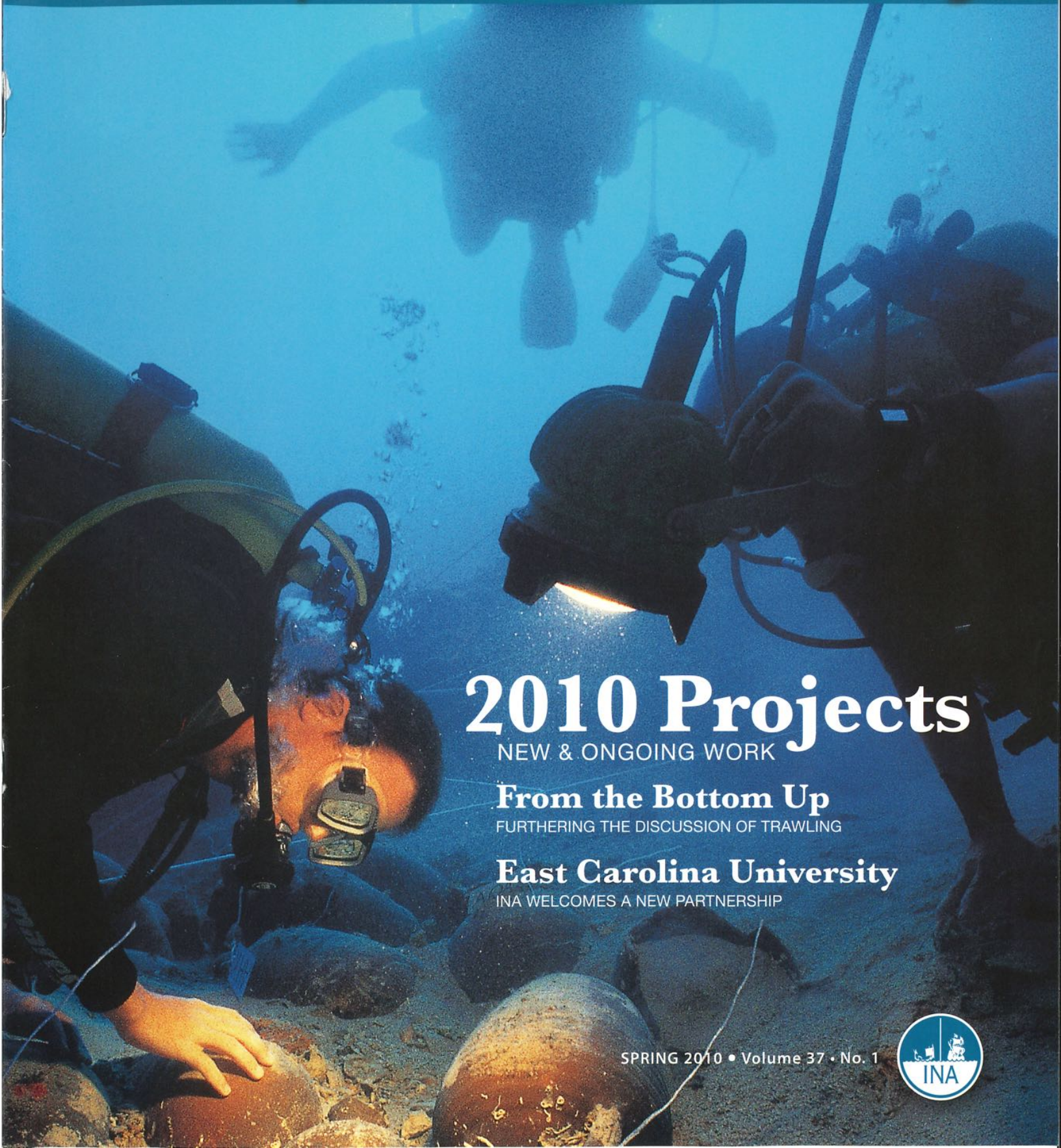




# quarterly

MAGAZINE OF THE INSTITUTE OF NAUTICAL ARCHAEOLOGY



## 2010 Projects

NEW & ONGOING WORK

### From the Bottom Up

FURTHERING THE DISCUSSION OF TRAWLING

### East Carolina University

INA WELCOMES A NEW PARTNERSHIP

SPRING 2010 • Volume 37 • No. 1



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# insideINA

A Letter from the President

As I write this, INA field teams are deployed across the globe, conducting research, surveying sites, excavating, conserving, analyzing finds in the laboratory, and writing up the results of their work. Working with our academic partners at Texas A&M University, Flinders University and East Carolina University, as well as with Research Associates and affiliated scholars from other institutions and schools, INA is represented, participating in, or lending support to, nearly 30 projects in 2010.

These range from our major endeavors—the excavation of the Phoenician shipwreck at Bajo de la Campana, Spain; the 50th Anniversary Cape Gelidonya project; the Battle of Bach Dang (1288) Survey in Vietnam; and the Gold Rush Steamer Survey in Canada's Yukon—to a number of exciting exploratory assessments, research, and writing being done by students at Texas A&M in support of their studies and their Master's Theses or Ph.D. dissertations.

An integral part of INA's mission, in addition to archaeology, is the mentoring and support of emerging scholars in the field. We've been proud participants with Texas A&M University since 1973, when Dr. George Bass and colleagues founded the Nautical Archaeology Program at A&M, and we remain committed to an ongoing, and even increased, role in that regard in the future at A&M and other selected institutions around the world.

The INA family has grown with important new additions to the team, a new Field Archaeologist and Dive Safety Officer, Frederick "Fritz" Hanselmann, and a new Lead Office Assistant, Tamara Hebert. You may also notice from our masthead that longtime INA staff member Chasity Hedlund has been promoted to Office Manager and is in charge of INA's

offices on the campus of Texas A&M University. I'm extremely pleased with the team we have in place here in Texas, just as I am of the exceptional team we have in Bodrum headed by Tuba Ekmekçi, Özlem Doğan and Asaf Oron. The strength of any organization like INA, is measured by its people—from the directors, staff, and volunteers, to members like you.

On a final note, INA's outreach to the world continues to grow. The INA Facebook Page, the INA YouTube Channel, and most significantly the INA website, [www.inadiscover.com](http://www.inadiscover.com) receive considerable visits from around the world. The website in particular offers in-depth coverage, content and breaking news about INA, and includes new blogging capabilities giving you an "over the shoulder" view into the world of nautical archaeology. I'd particularly like to thank the communications team of Po Wan and Sandy Robson, who make the website, the *INA Quarterly*, and the *INA Annual* successful.

Once again, it's all about people – from those who make a difference today, those who are inspired by the work we do and are part of our family, and those whose forgotten or lost stories we resurrect from the deep in the work that we do as archaeologists.

Thank you for being part of the Institute of Nautical Archaeology!



Jim Delgado  
President



Examining artifacts aboard  
RPM's *Hercules*, off the  
coast of Albania.

PHOTO INA

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SPRING 2010 VOLUME 37 • No. 1

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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A new partnership with East Carolina University

PHOTO Calvin Mires - ECU Maritime Studies Program, Bermuda (2008)



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PHOTO INA ARCHIVES

## 1 ON THE COVER

Director Fred Hocker leads his team in the (1995-1998) excavation of a 9th-century Byzantine shipwreck at Bozburun.

PHOTO DONALD A. FREY (INA ARCHIVES)

## INA welcomes new staff

Frederick H. Hanselmann (Fritz for short) is an underwater archaeologist who holds two Master's degrees and is a PhD candidate in anthropology at Indiana University. Learning to swim at age three, Fritz was fascinated with all things aquatic. He grew up watching re-runs of Jacques Cousteau's television series and reading biographies and non-fiction accounts of world history, particularly the conquest and colonization of the Americas. As a freshman at Brigham Young University, he wrote a term paper on Bronze Age Shipwrecks in the Mediterranean for an Introduction to Archaeology course. Following two years of volunteer work in Nicaragua and undergraduate thesis research in Guatemala, Fritz continued his graduate studies at Indiana University, where he was employed initially as Adjunct Faculty, Lecturer, and later as the Field Research Director with the Office of Underwater Science. There he also taught courses in scientific diving and underwater archaeology techniques. Fritz has conducted research in the Dominican Republic, California, and Florida on shipwrecks spanning the time periods from the age of exploration to the Gold Rush, as well as prehistoric sites in submerged caverns. His dissertation topic focuses on the archaeological analysis of *Cara Merchant* (or *Quedagh Merchant*), which was abandoned by Captain William Kidd off the coast of southeastern Dominican Republic in 1699. The site was the subject of the documentary entitled "Shipwreck! Captain Kidd," which aired on the National Geographic Channel in 2008. In addition, Fritz was an integral part of a multi-disciplinary team at Indiana University that initiated a project, funded by the US Agency for International Development, entitled Living Museums of the Sea, which developed a system of marine protected areas that focused on protecting shipwrecks, underwater cultural heritage, and associated biodiversity. As an INA Research Associate, he is also Co-Principal Investigator of the Rio Chagres Project in Panama and is very excited about this project and its future potential. Fritz is also very excited about his new role as a continuing member of the INA family and looks forward to working more closely with all members of INA in any capacity.

The second addition to our INA team is Tamara Hebert. Tamara is a hard working professional and a dedicated mother to five children. She has several years experience in graphic design, customer care and has owned a small business in the Bryan/College Station area. She loves being part of a team, has a knack for numbers and knows how to research. She is friendly, always willing to offer a helping hand and is committed to giving her best. Tamara will be working as our Lead Office Associate, and brings an array of skills that will support the office's daily activities, membership, fundraising, and development.

*"I am fascinated with nautical archaeology and I recognize that INA is a great place to learn more about it and actually be involved, even if it's in a small way. I look forward to being a support to all of the other INA team members and I'm truly honored to be a part of this outstanding organization."*

**Have you explored the new VIDEO page on [www.inadiscover.com](http://www.inadiscover.com)?** See the early days of underwater archaeology with "Nautical Archaeology: Beginnings" produced and narrated by Claude Duthuit and written by George Bass. View the excavations at Pabuç Burnu, watch the INA team in Panama or glide through the first-ever *in situ* digital survey of a major vessel using LIDAR scan technology.



Fritz Hanselmann with wife Lyndee at the 2009 INA annual general meeting in Washington, DC.



Lead Office Associate, Tamara Hebert





## ARCHAEOLOGICAL INSTITUTE of AMERICA

The Archaeological Institute of America (AIA) is North America's oldest and largest organization devoted to the world of archaeology. The AIA is a nonprofit group with some 200,000 members belonging to 107 local societies.



*"Our congratulations to Pilar (above) for this well deserved honor recognizing her many achievements and dedication to the field of underwater archaeology."*

—Jim Delgado

## Lecture Series Announced

The Archaeological Institute of America is pleased to announce the establishment of the *Bass Lecture Series*, named for INA founder Dr George F. Bass who also received the AIA's Gold Medal for Distinguished Archaeological Achievement in 1986.

The inaugural lecture will be delivered by Cemal Pulak, Ph.D., a nautical archaeology professor at Texas A&M University, and Vice President of the Institute of Nautical Archaeology. Dr. Pulak's lecture, *The Uluburun Ship and Late Bronze Age Maritime Trade in the Eastern Mediterranean*, will take place in Houston (location TBA) on April 12th, 2011.

Another lecture of note for INA members will be the latest in the *Steffy Lecture Series* in honor of J. Richard (Dick) Steffy and made possible by the generous contributions of members and friends of INA, and by members of the AIA's Underwater Interest Group/Subcommittee. The lecture, on October 24, 2010 at the Lincoln/Omaha Society in Nebraska, is entitled *Heroine of the Western Frontier: The Archaeology of an Early American River Steamboat*, and will be given by Dr. Kevin Crisman, Associate Professor Nautical Archaeology Graduate Program, Texas A&M University.

The AIA Lecture Program is now in its 114th year and presents top scholars from North America and abroad presenting a wide range of current archaeological topics at Societies throughout the United States and Canada. These lectures are free and open to the public.

For more information on the AIA Lecture Program visit... [www.archaeological.org](http://www.archaeological.org)

## The J.C. Harrington Medal

The Society for Historical Archaeology of the United States of America has announced that underwater archaeologist Pilar Luna Erreguerena, will be presented with the J.C. Harrington Medal, at the 44th SHA conference in Austin, Texas, next January.

The award acknowledges her lifelong achievement and dedication to the preservation of the underwater archaeological heritage of Mexico. A pioneer in this area, Pilar has been the head of the underwater archaeology area at the National Institute of Anthropology and History (INAH) since 1980, the official agency in charge of the protection, research, conservation, and dissemination of the national cultural patrimony.

An emeritus member of the Advisory Council on Underwater Archaeology, Luna is also a member of the Society for Historical Archaeology's UNESCO Committee, the International Commission on Monuments and Sites International Committee on the Underwater Cultural Heritage.

The J.C. Harrington Medal is named in honor of Jean Carl Harrington (1901-1998), one of the pioneer founders of historical archaeology in North America and honors a lifetime of contributions to the discipline centered on scholarship.



The Institute of Nautical Archaeology and East Carolina University's Program in Maritime Studies have signed an agreement to collaborate on projects both in the United States and abroad. The ECU Program, based in the Department of History, is comprised of faculty and staff who specialize in maritime history and underwater and nautical archaeology. Founded in 1981 by Dr. William N. Still, Jr. as the Program in Maritime History and Underwater Research, along with Gordon P. Watts, Jr., this interdisciplinary program offers a Master of Arts degree.

In addition to faculty from the Department of History, faculty from the Department of Anthropology, Planning, Geology, and the Institute for Coastal and Marine Resources also offer courses and mentor students in the Maritime Studies Program. Since its inception, the Program has graduated over 175 students, most of whom now hold prominent positions with the National Oceanic and Atmospheric Administration's Marine Sanctuaries Program, the National Park Service, Parks Canada, the U.S. Navy, the U.S. Coast Guard, various state underwater and nautical archaeology programs, museums, universities, colleges and cultural resource management firms.

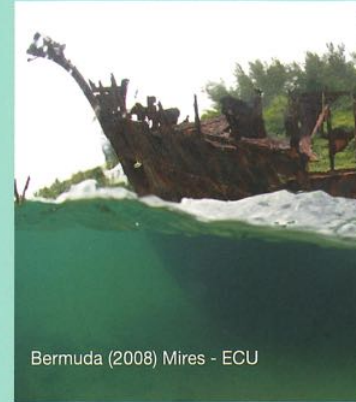
INA President James Delgado was an early graduate of the program, receiving his M.A. there. A number of ECU graduates, like Dr. Delgado, have received a Ph.D. from other universities, or are Ph.D. students—including some at Texas A&M University. East Carolina University also offers a Ph.D. in Coastal Resources Management,

and students from the Program in Maritime Studies have continued their graduate degrees in Coastal Resources Management.

In addition to classroom study and work in the Program's conservation laboratory, ECU students participate in yearly archaeological field schools and on individual research projects aimed at their thesis topics. ECU projects through the decades have focused on a variety of sites in the United States, Bermuda and Canada from prehistoric sites and watercraft, to historic period resources that date from the Colonial period up to more modern times, including Revolutionary War shipwrecks, Civil War wrecks—like the famous ironclad USS *Monitor*—blockade runners, transport ships and gunboats, early steamboats and steamships, and World War II wrecks.

The Program in Maritime Studies has its own offices in the historic Admiral Ernest M. Eller House, with a seminar room, offices, computer laboratory and library, and is currently planning an expanded facility. Headed by Dr. Lawrence E. Babits, the Program is an active participant and a leader in North American nautical archaeology, maritime history, and material culture studies. INA is currently providing some support for an ECU project headed by Dr. David Stewart and Dr. Fred Hocker of the Vasa Museum in Stockholm to archaeologically document the 1628 shipwreck *Vasa*, and this new agreement paves the way for continued collaboration.

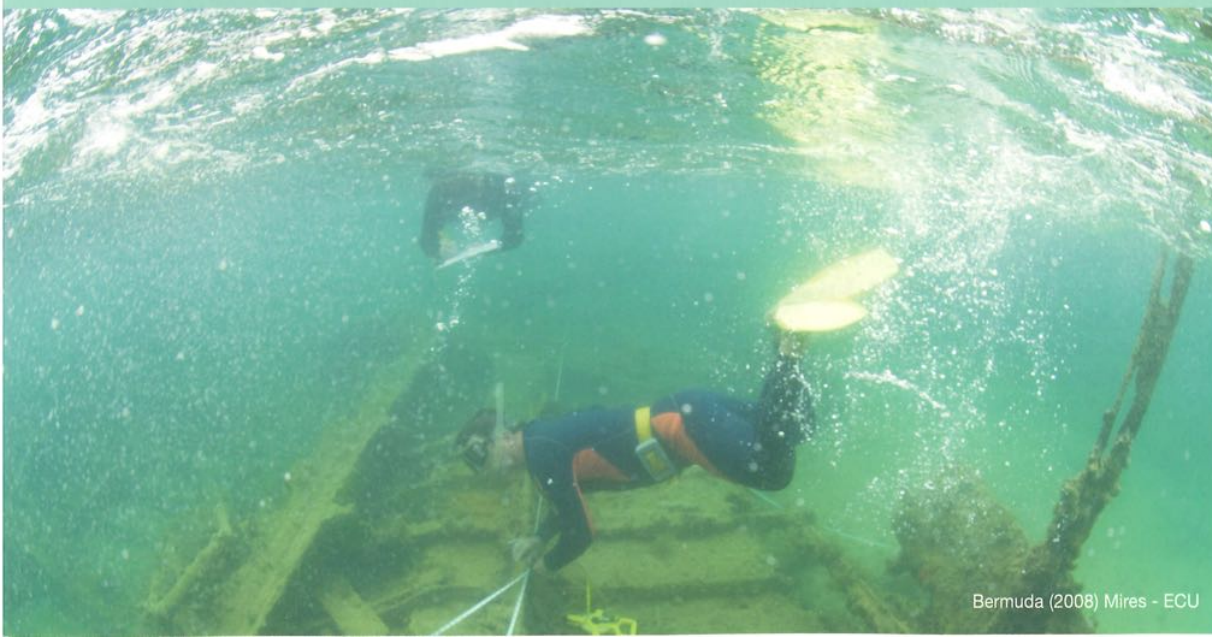
BELOW  
Photos taken by  
Calvin Mires (ECU  
Maritime Studies) and  
John McCord (UNC  
Coastal Studies Institute -  
CSI) during field schools  
in Bermuda (2008) and  
the Outer Banks (2010)



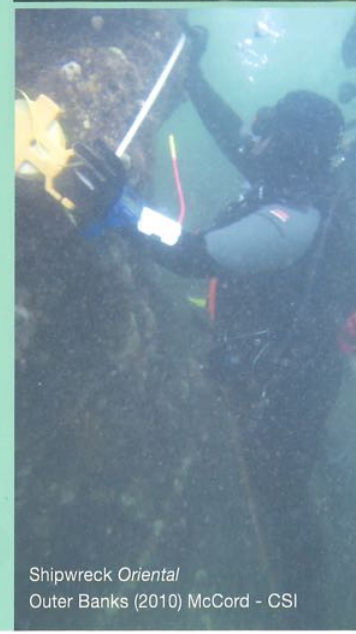
Bermuda (2008) Mires - ECU



Shipwreck *Oriental*  
Outer Banks (2010) McCord - CSI



Bermuda (2008) Mires - ECU



Shipwreck *Oriental*  
Outer Banks (2010) McCord - CSI

# INA projects

## VIETNAM

### **Bach Dang Documentation and Assessment**

Randall Sasaki and Jun Kimura.

A National Geographic Society-sponsored survey and assessment at the site of a famous battle outside Hanoi where Mongol invaders sent by Kublai Khan met with defeat in 1288. This year, excavation of a portion of the battlefield, and a coring survey of other areas of the site should pinpoint the location of the ships lost in the battle.

## SPAIN

### **Bajo de la Campana Phoenician Shipwreck Excavation**

Mark Polzer and Juan Pinedo

The third season of a National Geographic Society-sponsored excavation on a 7th-century BC Phoenician shipwreck will commence again this summer off Cartagena.

## TURKEY

### **Cape Gelidonya Re-Excavation\***

George F. Bass and Nicolle Hirschfeld

A 50th anniversary return to the site of the excavation of a 13th-century BC Bronze Age shipwreck, the first wreck completely excavated by an archaeologist working underwater. The team will resurvey the site, seeking new finds and insights after five decades.

## CANADA

### **Gold Rush Steamer Survey, Yukon**

John Pollack and Robyn Woodward

The well-preserved remains of Klondike Gold Rush era steamers will be the focus of a second season of field survey and documentation in this remote wilderness. *A.J. Goddard*, discovered in Lake Laberge, will be the focus of National Geographic Society-sponsored dives.

## USA - Ohio

### **Anthony Wayne Shipwreck Survey**

Bradley Krueger and Carrie Sowden

In partnership with the Great Lakes Historical Society, this project will investigate the remains of *Anthony Wayne*, a mid-nineteenth century side-wheel steamer that met a tragic end off the shores of Vermilion, Ohio.

## SWEDEN

### **Baltic Ghost Wreck Project**

Donovan Griffin

The 2010 field season will continue the documentation and filming of this perfectly preserved, nearly intact merchant vessel from the early to mid 17th century found off the coast of Sweden in the Baltic.

## USA - Texas

### **Blockade Runner *Denbigh* Write Up**

J. Barto Arnold

The process of writing up the results of the work for publication for the test excavation and documentation of this Civil War blockade runner's wreck continues.

## AUSTRALIA

### **Health and Disease on the Dutch High Seas\***

Coral Eginton

Working in collaboration with the Western Australia Maritime Museum, this student project will assess surgeon's instruments and medical chest contents from three Australian wrecks of Dutch East India Company vessels.

## CYPRUS

### **Eastern Cyprus Maritime Survey, Cyprus**

Justin Leidwanger

Cyprus' ancient shores once more are the setting for a survey of shallower water sites, seeking shipwrecks, lost stone anchors, discarded amphoras and other remains from maritime activity in the vicinity of Cape Greco. Continued excavation of an ancient wreck from the 2nd-3rd century AD, discovered on a previous survey will assess this site for future study.

## MEDITERRANEAN SEA

### **Erathosthenes Seamount Project\***

Shelley Wachsmann

In collaboration with the University of Rhode Island and the Institute for Exploration, an INA/Texas A&M team will participate as archaeological observers on a geological survey of this submerged seamount between Cyprus and Egypt to identify evidence of ancient seafaring.

## JAPAN

### **Frigate *Ertuğrul* Underwater Excavation**

Berta Lledo

The survey and excavation of the site of a tragic 1890 shipwreck of an Ottoman naval frigate on a mission to Japan again involves a joint Turkish-Japanese team.

## SRI LANKA

### **Excavation of an Ancient Ship at Godavaya\***

Deborah Carlson

In collaboration with scholars from the National Center for Scientific Research (CNRS) in Paris and the Department of Near Eastern Studies at UC-Berkeley, a small INA team will explore the remains of a recently discovered ancient shipwreck off the coast of Sri Lanka.

## EGYPT

### **Harbors of the Delta: Ancient Thmuis\***

Veronica Morris

This project, in collaboration with the University of Hawaii and Mansurah University, will seek to locate the buried harbor at Tell Timai, on the Nile Delta, using coring to drill into the sediments.

## BAHAMAS

### **Harbour Island Archaeological Survey**

Heather Hatch

This project will investigate sites on land associated with British maritime and mercantile activity from the late 17th and early 18th centuries at Harbour Island, a British settlement in the Bahamas.

In conjunction with Texas A&M University's Nautical Archaeology Program, Flinders University's Maritime Archaeology Program, and East Carolina University, this year INA will be conducting 27 archaeological projects around the globe in the United States, Canada, Bermuda, the Bahamas, Turkey, Spain, Lebanon, Cyprus, Sweden, Italy, Ukraine, Japan, Vietnam and at sea between Crete and Egypt.

Fourteen of the projects are new initiatives and thirteen are ongoing.

New projects are marked with an asterisk\*



**USA - Missouri**

**Missouri Shipwreck Legislation\***

Laura Gongaware

As part of a graduate student review of historic shipwreck legislation in the United States, this project focuses on the salvage of historic steamboat wrecks, the history of the State's legislation to protect historic wrecks, and its effectiveness.

**TURKEY - Bodrum Research Center**

**Nautical and Naval Foodways Assessment \***

Ulrica Söderlind

The project's aim is to work on artifacts from INA excavations that specifically address questions of nautical and naval foodways over a large time span and geographical area.

**PUERTO RICO**

**Puerto Rico Survey\***

Filipe Castro

This project will survey a four square mile section of the coast of Puerto Rico to locate and assess a number of potential shipwrecks in the area.

**ITALY**

**Renaissance Venetian Naval Manuscript Study**

Lilia Campana

An ongoing assessment and study of rare Venetian manuscripts dating from 1500 to 1620 will continue to add to our knowledge of Renaissance shipbuilding in this center of Mediterranean trade and culture.

**AUSTRALIA**

**St. Helena Submerged Maritime**

**Heritage Project\***

Wendy van Duivenvoorde

This project, in collaboration with the Western Australia Maritime Museum, will survey and assess James and St. Rupert's bays on the South Atlantic island of St. Helena, an important port for Portuguese, Dutch and English mariners from the 16th century AD as well as an important link in later maritime trade and naval activity linking Europe to South Africa, Asia and Australia.

**USA - Vermont**

**Steamboat Phoenix**

George Schwarz

This early American steamboat caught fire and sank in Vermont's Lake Champlain in October 1819. Rediscovered and the subject of a preliminary documentation project in 1981, *Phoenix* will now be extensively documented and virtually reconstructed on computer and on paper.

**SWEDEN**

**Vasa Upper Gundeck Recording Project\***

David J. Stewart and Frederick Hocker

This project, a collaboration with East Carolina University and the *Vasamuseet* in Stockholm, continues the detail archaeological documentation of the upper gundeck of the intact 1628 Swedish warship *Vasa*. A group of students will survey and document the gundeck using electronic instruments and hand measurement.

**SRI LANKA**

**Documentation and Analysis of Ship Remains at Wadi Gawasis \***

Cheryl Ward

This project will assess the conservation needs, develop a conservation plan, and continue the documentation, analysis and publication of ship remains from a later Old Kingdom (c. 2450 BCE) to New Kingdom (c. 1400 BCE) pharaonic port on the coast of the Red Sea.

**BERMUDA**

**Warwick Excavation\***

Piotr Bojakowski and Katie Custer Bojakowski

In collaboration with the Bermuda Maritime Museum, this project will excavate the race-built galleon *Warwick*, which wrecked while at anchorage in Castle Harbour, during a hurricane in 1619.

**CANADA**

**War of 1812 Shipwrecks Project\***

Ben Ford

This survey of portions of Lake Ontario will seek to locate the remains of three American warships from the War of 1812.

**BERMUDA**

**Western Ledge Reef Wreck Timber Analysis**

Piotr Bojakowski and Katie Custer Bojakowski

The timbers from this early 17th-century wreck, previously excavated in Bermuda, are being documented and reconstructed on paper and computer.

**TURKEY - Bodrum Research Center**

**Yassiada Amphora Study**

Frederick van Doorninck and Peter van Alfen

Amphoras recovered from the Yassiada excavation will be analyzed in the Griffis Conservation Laboratory to determine capacity.

**TURKEY - Bodrum Research Center**

**Yenikapi Vessel Conservation and Analysis\***

Rebecca Ingram and Michael Jones

Texas A&M Nautical Archaeology Program graduate students continue the conservation and analysis of Byzantine shipwreck hulls recovered from the Yenikapi excavations in Istanbul.

Our 2010 INA projects would not be possible without the generous support of donors, sponsors, partners, benefactors and friends who have supported the fieldwork, excavation and analysis represented here.

2010



This illustration by INA Research Associate, Pearce Paul Creasman, highlights the international cooperation of the many projects undertaken by the Institute of Nautical Archaeology.

# FROM THE BOTT

*In the winter issue of the INA Quarterly, the commercial fishing method known as “bottom trawling” was discussed as it related to our underwater cultural heritage (UCH). Professional archaeologists, sport divers, and maritime heritage officers have been aware of the damage caused to shipwrecks by trawling for many years. However, it has remained hidden in site reports, online discussions, and small excerpts in books relating to UCH. Through contacting various field archaeologists around the world, I began to understand that there was consensus regarding the need for more publication on this subject. Armed with curiosity, I delved into the topic from the bottom up.*

## Scope of the Work

In the spring of 2008, I began research to gain a better understanding of how commercial bottom trawling impacts shipwreck sites. It was important to start with the history of the practice to learn how long and in what areas of the world the gear was being used. The earliest reference to comparable equipment in use today was in the form of a complaint to the English parliament in 1376 regarding the use of the “wondyrchoun.” The “wondrous machine” derives its name from the amount of fish it would catch, but the small mesh size did not allow for juvenile fish to escape the net. Complaints arose based on the depletion of fish stocks and the destruction of the seabed. The description and dimensions of the wondyrchoun are comparable to a small modern beamtrawl.

The next evolution in bottom trawling was the application of steam power in 1865. This marked the beginning of the gradual increase in the size of trawl gear and the application of new types of fishing rigs. Most importantly was the introduction of “otter boards” in 1894, which are more commonly known today as trawl doors (Fig. 1). These doors made it possible to tow significantly larger nets as they used the hydrodynamic force of the water to hold the net open, rather than a fixed beam such as is the case with a beamtrawl. Once an understanding of the gear, its applications, and the scope of its use was understood, it was possible to begin searching the literature for its environmental impacts to the seafloor.

Large amounts of data have been gathered by marine scientists, that which has provided insight into how deep trawls penetrate, as well as the size of objects on the seabed that can be

displaced, removed, or crushed by the gear. This literature has also allowed for a better understanding of the changes to the chemical and sediment composition of the seafloor after trawling. These changes can affect the preservation of a shipwreck in the immediate region. Oxygen levels can be altered as the trawl causes sediment re-suspension. A site may also experience the removal of protective sediments depending on the nature of the wreck. The literature also revealed the ability of a bottom trawl to move boulders and large epifauna on the seafloor. A picture began to unfold of the damage a trawl could do to a fragile wreck. This was later confirmed after a number of wrecks were found in the archaeological literature in which heavy guns and ship timbers had been removed or displaced by trawl gear.

Scouring the archaeological publications proved most difficult. No publications were found that dealt with the threat of bottom trawling directly. More beneficial was personal communication with various archaeologists around the world with first-hand knowledge of the topic. It quickly became apparent that trawling is affecting shipwreck sites around the globe. The only limiting factors were areas of the sea closed to fishing, regions where the seabed is too rocky or steep for bottom gear, or regions and depths lacking enough oxygen to sustain a fish population.

## Managing the Threat

To further the discussion of bottom trawling we need to turn our attention away from the actual damage that is caused to shipwrecks and understand how it can be managed. According to

## FACING PAGE

Right (Fig. 1)

A steel trawl door on the NOAA ship *Oscar Dyson*. PHOTO courtesy of NOAA

Far Right

Detail from Landsat satellite image, Gulf of Mexico, Area 1, taken on 10/24/99. Individual trawling vessels can be seen as bright spots at end of sediment trails. Other bright spots are fixed oil and gas production platforms. One sediment trail can be traced for 27 km. Assuming a standard trawling speed of 2.5 knots, sediment from this trawl is visibly persistent for nearly 6 hours.

Image credit Skytruth (2008) Photographer John Amos

# OM UP...

## Furthering the discussion of BOTTOM TRAWLING

Article 5 of the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage, it is the responsibility of the Member State to manage all indirect threats to UCH within their EEZ. There is no governing body currently regulating the high seas. Within the fishing industry, Regional Fisheries Management Organizations (RFMO) are voluntarily joined by States for the purpose of managing fish stocks and other pertinent issues. These organizations are sanctioned by the U.N. and usually consist of a number of Nations which have interests in specific fishing grounds. RFMO's are an important resource for managing bottom trawling and UCH. Cooperation between fisheries organizations and State offices of cultural heritage is crucial to managing this threat. Fishermen are a great resource for archaeologists and often locate wrecks when they encounter artifacts in their gear. By having easy reporting and management procedures in place, damage may be mitigated and current wrecks protected. As Deborah Marks (2009) stated in the last issue of the *INA Quarterly*, fishermen do not wish to encounter wrecks as they are likely to damage expensive gear. Working together to identify the locations of wrecks and create a buffer around them would be beneficial to all parties.

What is not beneficial is to allow commercial salvage companies to raise artifacts from wrecks threatened by bottom trawling. It is the role of the UN member State to protect known wrecks within their EEZ, and thus protections should be put in place, either in the form of areas closed to navigation such as sites under the Protection of Wrecks Act (1973), or physical undersea protections which are commonly used in many areas of the world. Replacing one threat with another simply does not solve a problem.

### Discussion

If the issue of bottom trawling is to be addressed, it would be most beneficially done on a regional level where State governments can assess the impacts of this practice and how it pertains to their UCH. An example of this would be the

work of NOAA within their marine sanctuaries and updated management plans. With different gear types and intensity levels, fishing impacts will be varied by location. A comprehensive understanding of bottom trawling and its effects is necessary in order to create better management strategies. This will also be beneficial to those seeking to locate wrecks that have not been previously damaged, as efforts can be focused on areas that are not as extensively trawled. Michael Brennan (2009) presented an excellent example of this in the last issue of the quarterly. It is likely that a significant number of unknown wrecks have been impacted by trawling around the world. Hopefully with more cooperation and understanding, we can net some better ideas for managing bottom trawling.

— Christopher Atkinson



Figure 1

Chris Atkinson is currently enrolled in the TAMU Nautical Archaeology Program. He earned a B.A. in Anthropology from Drexel University and has since participated in numerous field projects in the U.S., Canada, Spain, and Greece. His Thesis focuses on commercial fishing impacts to UCH.

# Making History:

A RETURN TO THE BIRTHPLACE OF UNDERWATER ARCHAEOLOGY

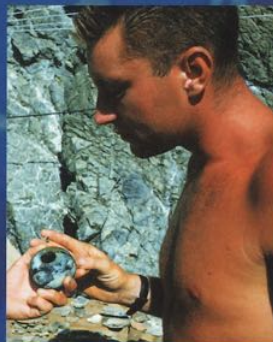
**BELOW**

"The way they were..."

George and Ann Bass (top),  
Claude Duthuit (mid)  
and Waldemar Illing  
(bottom - standing)  
at Cape Gelidonya in the  
summer of 1960.

**RIGHT**

The makeshift camp was  
regularly awash with the sea.



Fifty years ago off the coast of Turkey at Cape Gelidonya, a team of archaeologists, divers and adventurers began what would become for many of them a life long journey. This month four of the original members of this team led—as they were back in 1960—by Dr. George Bass, will return to the site of the birth of modern shipwreck archaeology.

Accompanied by friends, supporters and colleagues, Claude Duthuit, Ann Bass and Waldemar Illing will join Dr. Bass and return to the place where they not only uncovered history, but also made some history of their own. This was a grand adventure for all involved... taking them into a world they could likely never have imagined. George Bass had never even dived in open water before; Ann Bass was on her honeymoon with George when she arrived to live in a pup tent along a rocky shore; Claude Duthuit—who with wife Barbara would later spend his honeymoon staying with George and Ann at College Station—was a former French Legionaire and was, according to George, “a man of action” as well as being a skilled diver; Waldemar Illing also brought much needed diving expertise to the group.

When the excavation project began, equipment, supplies and funding were rudimentary or non-existent. Necessity being the mother of invention, the team improvised and experimented, developing tools and techniques along the way. It was a bare bones operation powered by the team’s ingenuity, and their youthful excitement for the project. The excavation would mark the beginning of the history of underwater archaeology itself, as it was the first ancient shipwreck ever excavated in its entirety on the seabed, and the first shipwreck excavation directed by a diving archaeologist. This is why National Geographic Magazine and many others have referred to Dr. George F. Bass as “the father of underwater archaeology.” At the time though, they could not have known they would later be considered pioneers in a new field of study.

In later decades additional visits were made to the site using better equipment, such as

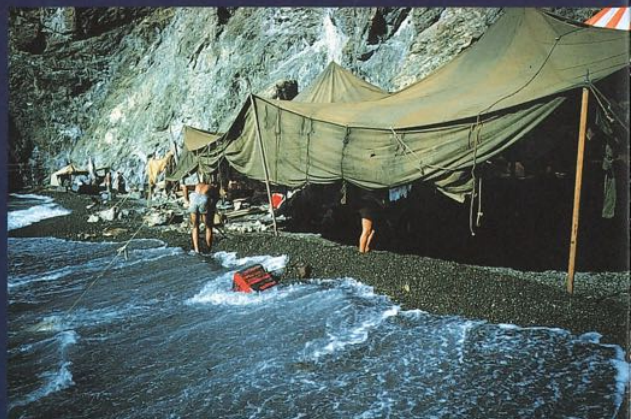
metal detectors and underwater scooters, leading to unexpected finds and ultimately to revisions of the “final” publications on the site. This summer’s return to Cape Gelidonya may yet reveal a new chapter in the history books.

This latest expedition to Cape Gelidonya is both a nostalgic celebration and a new beginning, as the excavation moves forward using technology, equipment and knowledge that was simply not available to the first investigators of this Late Bronze Age wreck.

With the support of National Geographic, and through contributions by patrons such as Mustafa Koç, through the Turkish Institute of Nautical Archaeology (TINA), there will be new opportunities for discovery and learning, and we look forward to seeing what might be revealed by this latest journey to Cape Gelidonya.

The expedition will be accompanied by photographer, Susannah Snowden, who worked on the National Geographic-sponsored Kızıllburn excavation, as well as young film maker Matthew Dames, who will capture the sounds and images of this latest adventure. We invite you to follow along via the *Cape Gelidonya Blog* on the INA website ([inadiscover.com](http://inadiscover.com)) this summer, as well as keep up-to-date with INA happenings on Facebook.

In the future we expect that this summer’s expedition, co-directed by Dr. Nicolle Hirschfeld and Dr. Bass, will also find its way into the history books through publications, films and on-line as we continue our mission to share what we learn with as wide an audience as possible.





## Assessing the potential of ancient mid-Atlantic crossings: a Mesoamerican perspective

By **Romeo H. Hristov**, INA Research Associate  
and **Richard T. Callaghan**, Associate Professor of Archaeology, University of Calgary, Canada

After more than five centuries of polemics, the archaeological excavations in El Bebedero (1985-90) and Buena Vista (2006-2009) in Lanzarote, the Canary Islands, have uncovered the first incontestable evidence of Roman, Punic, and Phoenician contacts with the archipelago between X century BC and IV-V century AD. The finds, although not particularly spectacular (in both sites they are restricted mostly to sherds of imported amphorae and a few metal artifacts) have provided relevant new information about the chronology and extension of the ancient navigation in the Atlantic ocean and, as a by-product, a few noteworthy insights on the possibilities of ancient transatlantic voyages. It requires no more than a glance at the Pilot Charts of the Atlantic to see that the currents and the winds around the archipelago make some drifts inside the ocean inevitable; in fact, several drifts across the Mid-Atlantic from the area around the Canaries have been documented between XVIII century and 2006. Although the scale of the ancient navigation toward and around the archipelago is still uncertain, considering its chronological span of nearly a millennium and a half, one may safely note that some trans-Atlantic drifts are highly likely to have happened during the above-mentioned period.

A grant from the Kon Tiki Museum made possible the undertaking in 2009 of a pilot project whose objective is a critical re-appraisal of the possibilities of some, most likely unintentional, trans-Atlantic voyages of ancient Mediterranean ships to Mesoamerica. Within this context, the archaeological data from the Canary Islands have raised two points worthy of close consideration. First, besides the objects imported from the mainland, a complex of local cultural traits such as imitations of amphorae, scaraboids, and three clearly identifiable symbols related to the cult of Tanit, among others, has been pointed out as evidence of both contacts and cultural interactions. Most of these traits can also be identified in the Olmec heartland (the present-day States of Veracruz and Tabasco, in Mexico), and their chronology is consistent with that of the ancient voyages to the Canaries. Among these parallels the scaraboids deserve special attention, due to their presence not only in the Canaries, but also in almost every Phoenician and Punic settlement along the Atlantic coasts of Spain and Morocco.

The second point is the pattern of cross-cultural interaction. Based on the existing evidence, the cultural exchanges in the Canaries seem to have been limited mainly to the borrowing of two forms of ceramic vessels and a few cultivated plants and religious beliefs (including related symbols and objects). Until now, no indication of a significant technological transfer, such as the pottery wheel or the metallurgy, has been attested. If a contact between the ancient Mediterranean and the Mesoamerican civilizations is decisively proven, their fundamental differences in technology, cultivated plants, languages and writing systems, among others, make an analogous pattern of cross-cultural interaction the only applicable one.

Another task of the project, completed by Richard T. Callaghan, is the computer simulation of one hundred trans-Atlantic drifts during each month of the year, starting off at the Canaries. These simulations demonstrate that the possibility of a successful crossing of the Atlantic is approximately 90% and, although most of the landfalls occur in the Antilles or Brazil, in certain months up to 21% of the voyages have reached the Central American and the Mexican coast.

The next phase of the project is aimed at locating areas along the coast of the Gulf of Mexico with the potential of providing traces of pre-Columbian trans-Atlantic voyages, and to conduct systematic survey and a series of test excavations. As the discovery of the Viking settlement in L'Anse aux Meadows, Newfoundland has demonstrated, only such an approach can legitimately verify or falsify any hypotheses of pre-Columbian transoceanic contacts and, in either case, advance our understanding of the topic further than most other research has accomplished so far.

Photo 1. Sherds of Roman amphorae discovered in El Bebedero, Lanzarote. Photo Pablo Atoche Peña.

Photo 2. Metal artifacts from El Bebedero, Lanzarote. Photo Pablo Atoche Peña

Photo 3. Scaraboids found in various archaeological sites in Lanzarote. Photo Romeo H. Hristov

Photo 4. Olmec artifact of green stone closely resembling scaraboid. Photo Romeo H. Hristov

Three foundry honors students from the University of Minnesota and a regional metals artist, have just finished an eight-month research project into the molding materials and casting techniques used in antiquity to make copper oxhide trade ingots. The funded research was performed under the auspices of the Undergraduate Research Opportunities Program and mentored by Professor Wayne Potratz (University of Minnesota-Twin Cities) and INA member Jeff Bennett.

The group worked sequentially through a variety of molding materials and casting procedures with resulting surface characteristics nearly duplicating published materials regarding various individual ingots from the Ulu Burun shipwreck, Kas, Turkey. Substantial background information for the group's molding efforts were taken from academically published materials by T.A.M.U. professor and scholars Dr. Cemal Pollack, doctoral candidate Mike Jones and Thomas Larson, M.A.

Students participating in the project were Joseph Kelly, Jen Haehnel, and Jessica Tank. Gita Ghei, a specialist in metallic patinas was also a major participant in the research efforts. Ms. Tank and Ms. Ghei both have backgrounds in ancient art and archaeology, as well as sculptural foundry work.

Plans exist this summer to use the ingots in marine side scan sonar runs to form an electronic digital database. The database will assist ongoing worldwide efforts to identify other wreck sites which may

also have contained cargoes of the oxhide ingots. The scanning work is to be done by Wolfshead Research of Duluth, MN.

The recast ingots were intentionally sized slightly different from the originals to avoid potential confusion. They will be cut up and recycled for further casting research after a public display in 2011 hosted by the James Ford Bell Library, which specializes in the history of trade, Dr. Marguerite Ragnow-Curator. Presentation is also being considered for upper midwest United States archaeological and school groups.

At least two technical papers are planned from the results of the research work. The papers will be stored in the University of Minnesota library system's Digital Conservancy and made available for public use through Google Scholar.

INA's long-term support of both student involvement and ongoing "tip of the spear" efforts to encourage research is pivotal to endeavors like this.

**BELOW**

(Left) Cooled ingot being pulled from mold

(Mid) Prof. Wayne Potratz, Jeff Bennett, Jessica Tank, Joseph Kelly, Gita Ghei from University of Minnesota (Twin Cities) Foundry

(Right) Molten copper oxhide ingot in clay mold showing degasification bubbles

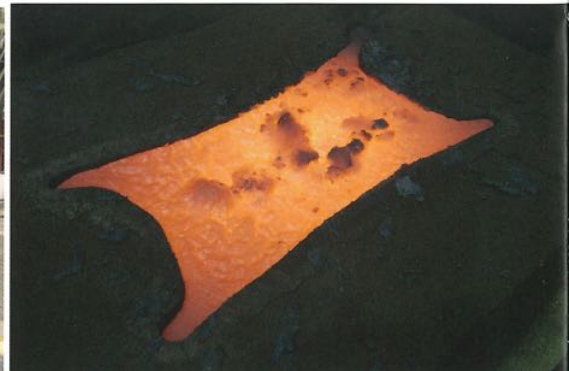
ALL PHOTOS **Jeff Bennett**

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## Archaeology and the Sea in Scandinavia and Britain

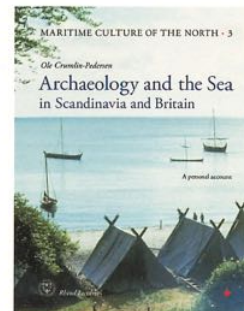
By Ole Crumlin-Pedersen

Published 2010 by the Viking Ship Museum in Roskilde

In this book, Ole Crumlin-Pedersen, the Danish pioneer of maritime archaeology, gives a fascinating overview of more than forty years of work. Beginning with the natural conditions for seafaring, the author explains the evolution of basic water craft into those plank-built, sail-carrying ships which enabled the seaborne activities of the Viking Age and the following medieval period, concluding with case studies of the maritime cultural landscape of Roskilde Fjord and the ship as symbol.

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## The Way of Herodotus: Travels With the Man Who Invented History

By Justin Marozzi

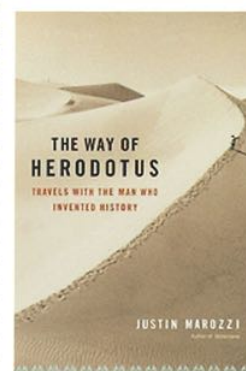
Da Capo Press, 2008

Our thanks to INA Director, Ned Boshell for his recommendation of this book. He notes "the book describes many of the activities of INA in Bodrum, especially the Museum, Tufan and George." The author retraces the footsteps of Herodotus through Greece, Turkey, Egypt and war-torn Iraq, exploring the cultures and places Herodotus described 2,500 years ago. The first two chapters involve his visit to Bodrum, once known as Halicarnassus, the home of Herodotus.

"A digressive, witty blend of travel history and popular history...Marozzi does not shy away from bold statements or prurient details...clever."

—Kirkus Reviews

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