

THE INA QUARTERLY

A PUBLICATION OF THE INSTITUTE OF NAUTICAL ARCHAEOLOGY

BURGAZ HARBORS PROJECT

EXCAVATING THE HARBORS OF OLD KNIDOS



LEGACIES OF GIVING
INA DIRECTOR SUPPORT
STAYS IN THE FAMILY

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INA'S ANNUAL BOARD
MEETING HIGHLIGHTS

WINTER 2013
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BY ELIZABETH S. GREENE, JUSTIN LEIDWANGER, & NUMAN TUNA

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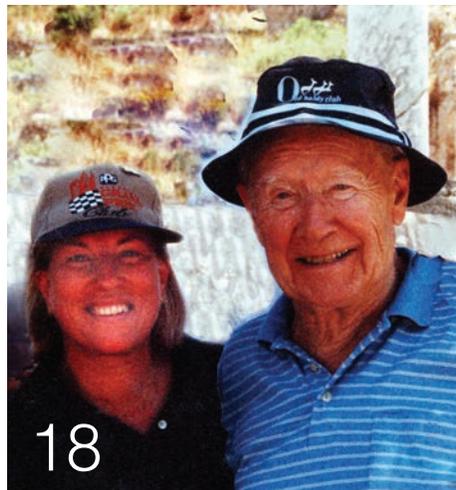
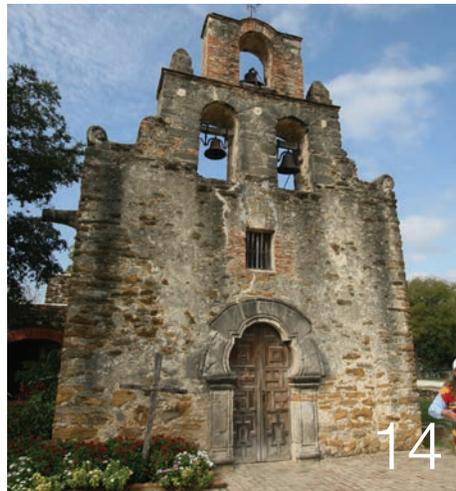
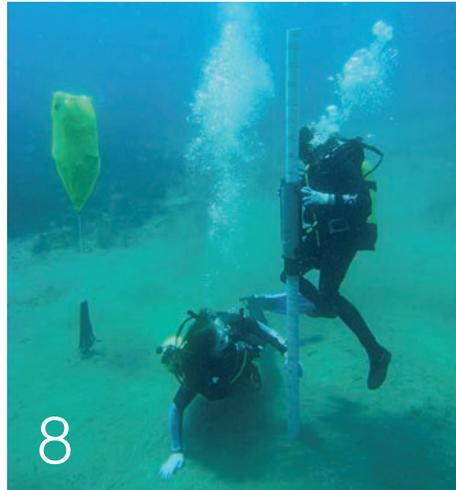
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BY GEORGE F. BASS



ON THE COVER: INA Archivist and TAMU graduate student Megan Anderson records the lower courses of the south wall in harbor L2 at Burgaz, Turkey. Photo: K. Krusell

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

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If you are interested in submitting an article for publication please contact the Editor at inaq@nauticalarch.org

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LETTER FROM THE CHAIRMAN



INA's 40th annual Board Meeting in San Antonio, Texas was a fun and stimulating gathering of friends old and new. The fabled city of San Antonio was an appropriate setting for our diverse group and its love of cultural history. Although seeing treasured friends is one of the best parts of every INA meeting, hearing and seeing the project presentations given by some of our many affiliated scholars is my favorite part.

Sponsoring as many research projects and excavations as possible has been a goal from well before I became INA Chairman in 2010. To find historically significant shipwrecks we must cast a wide net. The recent meeting of the INA Archaeology Committee granted \$60,000 to 13 projects, including the first annual Claude Duthuit Archaeology Grant, a \$25,000 block grant to one archaeological project, which was conferred on Dr. Kroum Batchvarov's Scarborough Harbour Project on the Caribbean island of Tobago.

This issue of the *INA Quarterly* features an article about a favorite place of mine in Turkey, the tranquil and

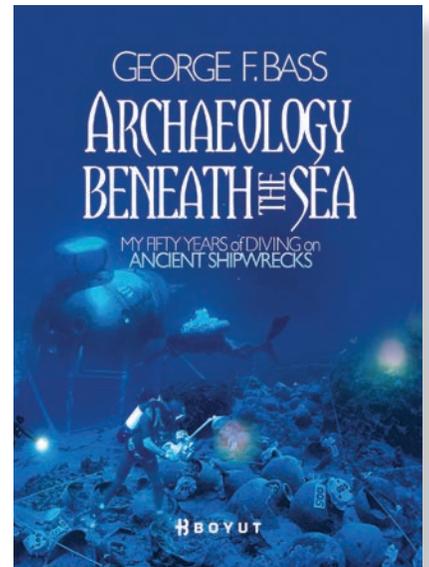
fertile Datça peninsula. During Dr. Elizabeth Greene's presentation at the INA Board Meeting I learned that the small city of Datça was originally the ancient city-state of Knidos, located 40 km from what we know as the historic city of Knidos at the rocky end of the peninsula. With its broad plains, alluvial soil and many natural harbors it makes sense that this was the origin of a city as important, productive, and prosperous as Knidos. The area is well known today for its prized almonds, honey and olive oil.

Also featured in this issue is an article from our prolific founder and official INA historian, Dr. George Bass, about the many multi-generational families who have been early, generous and continual supporters of INA. It is inspiring that after 40 years INA has this many interested and active second- and third-generation benefactors. These families form the core and foundation of INA, literally and figuratively. We are fortunate and appreciative to have them and to benefit from their loyal support.

John De Lapa



John De Lapa steers *The Sultan* which he designed and built in 1992.



NOW AVAILABLE IN E-BOOK FORMAT

This is the incredible story of a half century of unlocking the mysteries of ancient shipwrecks by INA Founder George F. Bass and his team, who are recognized as the pioneers of marine archaeology. **ARCHAEOLOGY BENEATH THE SEA: MY FIFTY YEARS OF DIVING ON ANCIENT SHIPWRECKS** chronicles the enormous challenges faced in developing techniques of underwater surveys and excavations, with remarkable results. Their most significant excavations, in Turkey, are illustrated with breathtaking photos. **ARCHAEOLOGY BENEATH THE SEA** is a unique adventure not to be missed.

**Kindle edition now available
at www.amazon.com**

File Size: 87354 KB

Print Length: 404 pages

Optimized for larger screens

Boyut Publishing (2013)

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NEWS & EVENTS

INA equipment donations, Keith Muckelroy award, the BRC, NRG, AIA and SHA

GIFTS OF EQUIPMENT THAT KEEP GIVING

Two important pieces of INA equipment are being refurbished for shipment to Sri Lanka, where they will be used by an INA team excavating the ancient shipwreck at Godavaya (*INAQ* 40.1). The first is a unit for making oxygen-enriched breathing gas (Nitrox), which arrived at the initiative of previous INA Diving Safety Officer Bill Charlton Jr. The unit was funded by INA Director George Robb, built by Bob and Cindy Olsen of Nitrox Technologies Inc, and used for the first time on INA's Byzantine shipwreck excavation at Bozburun, Turkey in 1999. Breathing oxygen-enriched air allows divers to benefit from longer bottom times, shorter surface intervals between dives, and increased mental clarity at depth.

The second item is a recompression chamber donated to INA by Texas A&M University Professor Emeritus Dr. Bill Fife. Fife, a colonel in the U.S. Air Force, retired after 30 years of active duty and went on to become a pioneer of undersea medicine, director of TAMU's Hyperbaric Laboratory, and Head of the Department of Biology. Both units were recently refurbished at Gulf Coast Breathing Air in Houston, Texas, before being installed in a 20'-long shipping container and shipped to Sri Lanka for INA's upcoming excavation of the ancient shipwreck at Godavaya.

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Find the latest news, excavation blogs, photos and more at www.nauticalarch.org. Like our Facebook page, too!

WACHSMANN WINS 2013 MUCKELROY AWARD

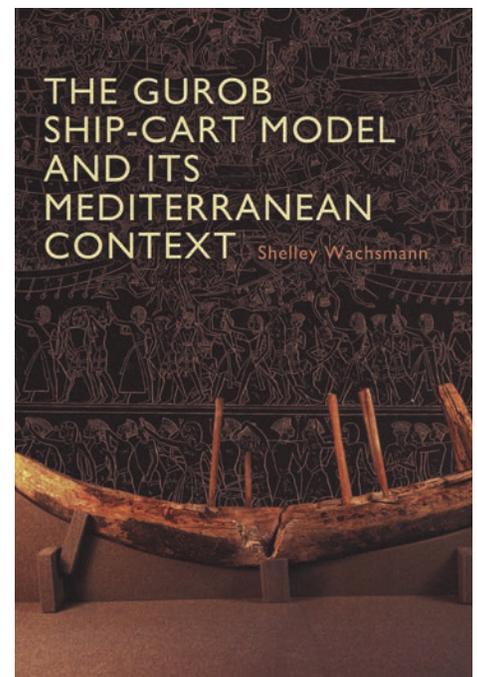
Congratulations to Shelley Wachsmann, Chair of INA's Archaeological Committee, who was named joint winner, with Sir Barry Cunliffe, of the Nautical Archaeology Society's 2013 Keith Muckelroy Memorial Award. The committee conferred the award jointly on Wachsmann's latest book, *The Gurob Ship-Cart Model and Its Mediterranean Context* (*INAQ* 40.3) and Cunliffe's *Britain Begins*, noting: "*The Gurob Ship-Cart Model* is an impressive and attractive piece of scholarship, which we all felt that Keith would have enjoyed. It is tightly focused on an unusual and very narrow subject, which the author considers with great originality and rigour. Wachsmann uses this discovery and his expertise on Bronze and Iron Age ships and seafaring to provide a thorough survey of the historical situation in the late second millennium BC, and the available evidence for early Mediterranean shipping, thereby giving the ship-model its wider context. It is also a very enjoyable read. In many ways this is maritime archaeology at its best."

The Gurob Ship-Cart Model is Wachsmann's fifth book and this is his third book award.

INA AND THE NAUTICAL RESEARCH GUILD

In October 2013, INA scholars continued the tradition begun by pioneer researcher and model builder J. Richard 'Dick' Steffy by participating in the annual meeting of the Nautical Research Guild (NRG). The NRG (www.thenrg.org) was founded in 1948 and strives to advance historically-accurate ship modeling through the quarterly *Nautical Research Journal*, which features articles on shipbuilding, model building,

naval history, and maritime trade. The 2013 meeting, held in Charleston, South Carolina, featured a presentation by Loren Steffy on his father Dick's first model of an Egyptian ship from 1400 BC (*INAQ* 40.2). During the technical sessions that followed, former INA president Fred Hocker, now Director of Research at the *Vasa* Museum, shared new insights into the history and design of the famed 17th-century Swedish warship. Recent Nautical Archaeology Program (NAP) Ph.D. graduate and INA Research Associate Rebecca Ingram gave a presentation on eight Byzantine shipwrecks from the Theodosian Harbor at Yenikapı in Istanbul, Turkey, excavated by an INA team. We are optimistic that the collaborative fieldwork of NAP students and INA researchers will be featured at the 2014 NRG conference, October 16-19, in St. Louis, Missouri.





SUMMER RESEARCH IN BODRUM

INA's Bodrum Research Center (BRC) in southwestern Turkey was the summer home of many researchers during 2013, including INA Vice President and TAMU faculty member Cemal Pulak who continued his ongoing analysis of the Uluburun, Yassiada Ottoman, and Yenikapı shipwrecks with the assistance of various students and researchers. INA President and TAMU faculty member Deborah Carlson continued her research on the Kızılburun column wreck and began mechanical cleaning of the marble column drums with the help of TAMU students and INA conservation staff. Together with colleagues visiting from the University of Cyprus, INA affiliated scholar Nicolle Hirschfeld (Trinity University) analyzed metal fragments from the Late Bronze Age shipwreck at Cape Gelidonya. TAMU Professor Emeritus Fred van Doorninck, in his ongoing study of the amphoras from the Byzantine shipwreck at Yassiada, was assisted by various TAMU alumni including Justin Leidwanger (Stanford University), who was also co-directing field research at Burgaz

with INA affiliated scholar Elizabeth Greene (Brock University). In addition, BRC staff members were delighted to greet INA Director Danielle Feeney, editor Mehmet Bezdhan (Aktuel Archaeology Magazine), scientist Lee Drake (Bruker Elemental), archaeologist Nergis Gunsenin (Istanbul University), botanist Nili Liphshitz (Tel Aviv University), historian Michael McCormick (Harvard University), and dendrochronologist Tomasz Wazny (University of Arizona), as well as groups from National Geographic Expedition Tours, Archaeological Institute of America Tours, and the Sardis excavation team.

ACRONYM ANYONE? INA AT THE AIA AND SHA

INA researchers prevailed against the fearsome weather and cancelled flights this winter in order to attend the annual meeting of the Archaeological Institute of America (AIA) in Chicago and the Society for Historical Archaeology (SHA) in Quebec City. In Chicago, presentations on INA fieldwork and research were given by Grace Tsai, Mark Polzer, and Deborah Carlson and Elizabeth S. Greene, who co-chaired the

Ships, Shipwrecks and Harbors session. Also participating were INA affiliated scholar Justin Leidwanger, INA research associate Peter van Alfen, and INA archivist Megan Anderson.

At the SHA conference in Quebec City, INA Vice President and TAMU faculty member Kevin Crisman co-chaired, with INA research associate George Schwarz, a symposium dedicated to steamboat archaeology in North America. INA research associate John Pollack and INA Treasurer Robyn Woodward delivered a paper on the steamboats of western Canada, and INA affiliated scholar Kroum Batchvarov presented the results of his recent fieldwork at Rockley Bay, Tobago. Numerous graduate students and faculty of the INA-affiliated Nautical Archaeology Program at Texas A&M University delivered papers about various aspects of artifact conservation, digital technology, and ship reconstruction; to view the abstracts visit <http://www.sha2014.com/program.pdf>.

We thank all of these individuals for showcasing the research and results of so many INA-supported projects at these important scholarly venues!



EXCAVATING THE HARBORS OF OLD KNIDOS

INA Affiliated Scholars continue their collaborative exploration of ancient Greek harbors on Turkey's Datça peninsula in order to document the area's changing maritime landscape

BY ELIZABETH S. GREENE, JUSTIN LEIDWANGER, & NUMAN TUNA

Since 2011, a team from Brock University and Stanford University has been conducting survey and excavation, in collaboration with Middle East Technical University (METU) and INA, in the shallows at Burgaz in southwest Turkey. The settlement here, complete with four built harbors, flourished especially during the Archaic and Classical periods (ca 700-350 BCE), but remained in use throughout antiquity. Located just east of the modern town of Datça, the site has long been identified as the settlement of the Knidians before their move to the tip of the peninsula, where extensive habitation at Tekir—about 30 km to the west—can be traced only from around the 4th century. While the nature of the connection between the two sites has sparked scholarly debate, most current accounts of the region accept the notion of two related settlements, and the identification of Burgaz as ‘Old Knidos’ seems well supported in readings of the historical evidence.

Burgaz initially prospered because of its proximity to fertile agricultural land as well as its ready access to the sea. In its foundation and initial development, the

site served as a hub for communication and trade with links to Halicarnassus, Simi, Kos, and Rhodes. The late 4th century saw fundamental shifts in the urban fabric at Burgaz, with more rudimentary workshops and industrial facilities replacing earlier civic and domestic spaces throughout the city center. This transformation is concurrent with, and almost certainly connected to, the founding of New Knidos on the tip of the Datça Peninsula, a site probably best known for its 4th-century Aphrodite cult statue carved by Praxiteles. Travelers from around the Greek world made pilgrimages to the city to visit the nude statue, so awe-inspiring that the goddess upon viewing herself is said to have wondered (*Greek Anthology* 16.160), “Where did Praxiteles see me naked?” The Aphrodite stood as a symbol of the cultural internationalism of the new Knidian city: a civic and religious center and a maritime hub of Hellenistic cosmopolitanism marked by its double harbors.

Although our interests focus on the earlier socioeconomic activity at Burgaz, the complementary relationship between Old and New Knidos reflects an evolving local, regional and international maritime centrality that speaks to our project’s overall research aims. Through collaborative fieldwork that juxtaposes evidence from the terrestrial and underwater areas

Opposite: Aerial view of Harbor 1 in the foreground and the large Harbor 4 in the distance; running between the two parallel to the shore can be seen remains of the seawall.



PHOTO: N. TUNA.

of the site, we explore how the changing maritime landscape of Burgaz reflects a series of fundamental socioeconomic shifts along the Datça Peninsula, from the city's rise as an Archaic maritime center, to the late Classical relocation of the civic core, and its ultimate decline at the end of antiquity.

Looking farther seaward, the project is poised to answer questions at the heart of INA's long-term explorations along the Bodrum and Datça Peninsulas, where

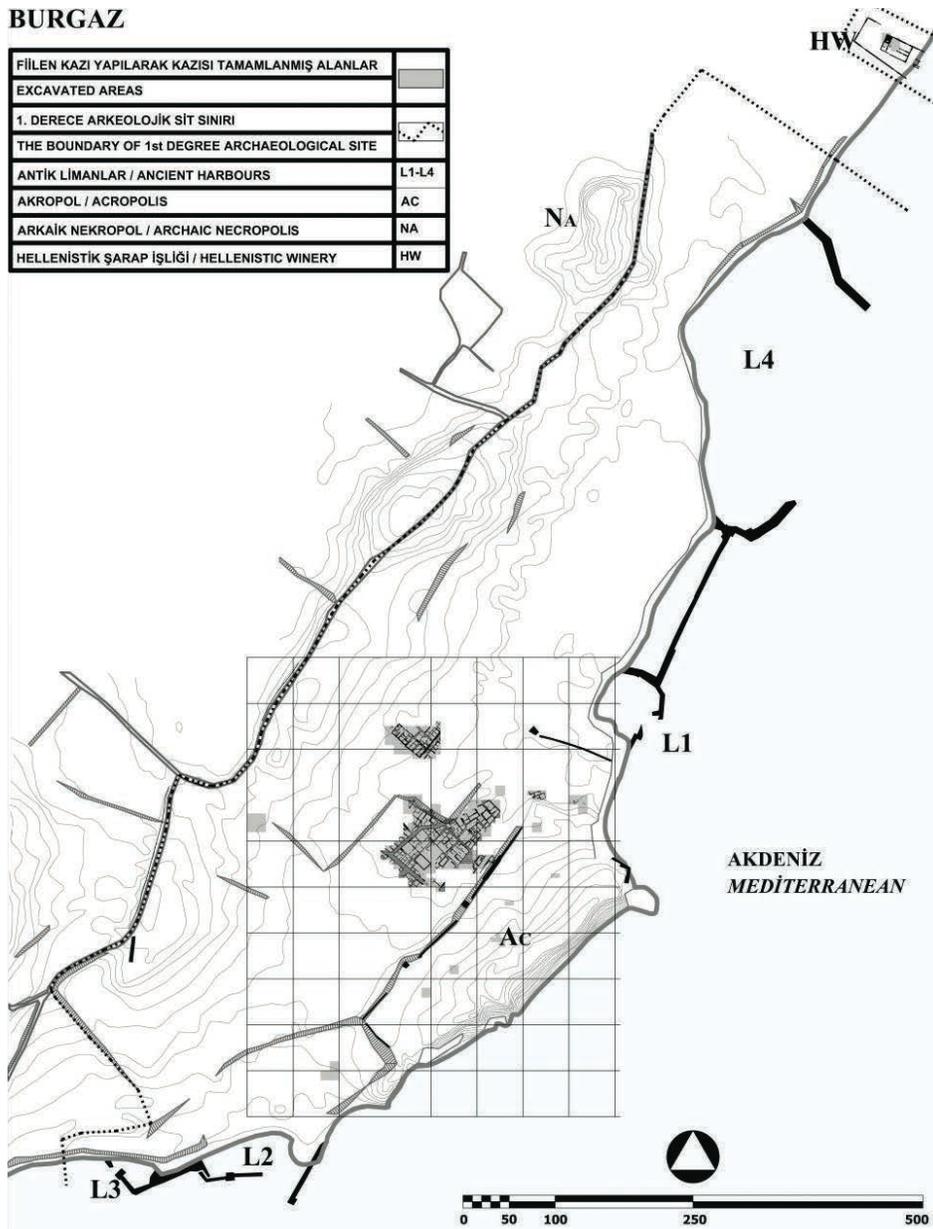
decades of underwater investigations have revealed shipwrecks from the Bronze Age through the Byzantine period and beyond. Excavated wrecks in the region include those at Şeytan Deresi, Pabuç Burnu, Yassıada, Bozburun, and Serçe Limanı. These projects have demonstrated clearly that the southeast Aegean was for centuries an important point of transit, where ships carried goods for distribution around the region and internationally, particularly between the eastern Mediter-

anean and Aegean worlds.

Our project explores the breadth of maritime socioeconomic interaction, including the fundamental stages that came before and after the distribution of commodities through shipping. How and where were goods produced? How were cargoes and shipments organized and by whom? To what degree are literary descriptions of maritime loans and the busy socioeconomic lives of ports and harbors mirrored in the archaeological record? And when goods reached their destinations, how did the harbors at Burgaz and other cities facilitate their redistribution and consumption? What was the relationship between harbor installations and the nearby settlements? How did the positioning of port cities change depending on shipping trends,

BURGAZ

FİLEN KAZI YAPILARAK KAZISI TAMAMLANMIŞ ALANLAR	
EXCAVATED AREAS	
1. DERECE ARKEOLOJİK SİT SINIRI	
THE BOUNDARY OF 1st DEGREE ARCHAEOLOGICAL SITE	
ANTİK LIMANLAR / ANCIENT HARBOURS	L1-L4
AKROPOL / ACROPOLIS	AC
ARKAİK NEKROPOL / ARCHAIC NECROPOLIS	NA
HELLENİSTİK ŞARAP İŞLİĞİ / HELLENISTIC WINERY	HW

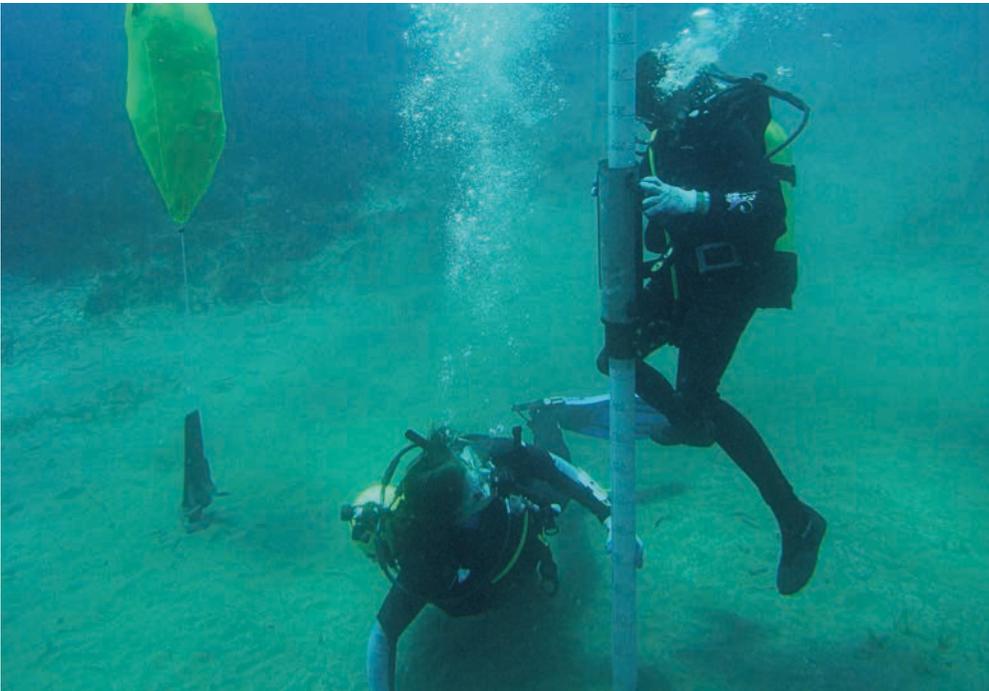


The project is poised to answer questions at the heart of INA's long-term explorations along the Bodrum and Datça Peninsulas.

and what happened to those sites left behind? The phenomenon of wandering cities—what we might think of as ‘portable ports’—is a curious but not unusual occurrence in antiquity, where pragmatic economics may have served as critical motivators behind urban relocations.

HARBOR 1 (L1)

The shift from civic to industrial activity is reflected in the town's harbors, connected to the settlement by a series of paved streets. The closest harbor, designated Harbor 1 (L1 for ‘Liman 1’ on the plan), probably served the settlement in its earliest stages. An excellent natural harbor, it offers good mooring space during the prevailing northwest *meltem* winds. Today, the basin's maximum dimensions are barely 65 m across by 60 m from shore, and the entrance channel between its two moles is relatively nar-



row at only 10-15 m, figures that would suggest a very modest capacity. The extremely shallow depth—at present no deeper than 3 m—and the general topography in the area suggest that considerable sedimentation may have pushed the shoreline outward and reduced an area that originally extended into the adjacent

Opposite page: Map of Burgaz showing the general layout of the four harbors and the excavations in the city center. **This page from top:** Late Classical and early Hellenistic workshops excavated by METU in the southeast sector of the site; **Yael Braun and Nairouz Qubty** take a core in the waters just outside L1.

low-lying fields.

A primary focus of our project has been the excavation of a trench in L1 along the northern harbor mole in L1 and extending toward the seawall. All ceramics were collected for quantification by ware and fabric, as well as more detailed study of diagnostic sherds for dating purposes. Sherd counts reveal a high proportion of amphora material in comparison to cooking pots or domestic common wares, as would be expected from a harbor context. Ceramics recovered from the trench are all fragmentary, with the majority of datable sherds from the

lowest levels belonging to the late Classical and early Hellenistic eras (4th and 3rd centuries BCE).

Large rocks throughout the area—and in some places quantities of roof tiles—likely point to the collapse of the harbor structures, perhaps associated with a sea level change after the Hellenistic era, as preliminary geophysical analysis indicates. In 2013, geophysical coring in and around L1 was initiated by Beverly Goodman-Tchernov from the University of Haifa. Results from these cores may help to clarify the formation process of the harbors and provide a

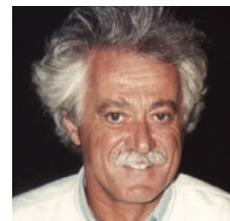
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clearer picture of the depths of the original harbor floors. Outside the basin, survey has revealed evidence for maritime activity ranging from the Archaic period through the late Roman.

HARBOR 4 (L4)

After the 4th century the focus of commercial activity at Burgaz seems to shift toward the north of the original settlement core, in particular to the area surrounding the large Harbor 4, labeled L4, a less sheltered but also larger, deeper, and less silted alternative to L1. Along the southern end of L4, an area of mixed architectural features can be identified as belonging to a series of workshops, complete with several built storage basins and a submerged fragmentary wine press of Hellenistic date. From an architectural perspective, submerged harbor features near L4 are typical of Hellenistic masonry construction, confirming the continued interest in maintaining maritime infrastructure after the relocation of the city's habitation complexes to New Knidos toward the end of the Classical era.

In addition to architectural features on shore and in the shallows, the scattered ceramic remains of a probable late Roman

shipwreck were investigated at approximately 4 m of depth just inside the northern mole of L4. Diagnostic features of at least 25-30 Late Roman 1 (LR1) and Late Roman 2 (LR2) amphoras—similar to the two types that dominate the 7th-century Yassiada shipwreck cargo—lie exposed on the seabed, and some additional material was uncovered beneath the fine sand. Oral reports suggest that this collection was once larger and included intact examples. Today, many artifacts appear disturbed from their original context, likely the result of the site's location near a popular swimming area.

HARBOR 2 (L2) & HARBOR 3 (L3)

To the south of the town and its acropolis, harbor facilities continue throughout the area designated as Harbor 2 (L2). Built

structures here include moles and two probable towers: one located at the end of the northeast mole, the other near the midpoint of the southwest mole. Both towers are approximately square, with dimensions ranging from 7.5 m to nearly 9 m. The architectural style, preliminarily explored through test excavations in 2013, exhibits strong parallels with the city walls and suggests that these features incorporated into the walls of L2 may be associated with Burgaz's late Classical fortifications. Construction of walls over a rubble base is typical for earthquake-prone regions and hints at the engineering questions that lay beneath harbor constructions before the age of hydraulic cement. Together, the moles protect the basin in most seasonal weather conditions and the towers may suggest a military purpose; perhaps the

Conversations with local residents have underscored the need for full documentation of the harbor structures, shipwreck remains, and other underwater cultural heritage.



This page from top: Annie Parker and Nairooz Qubty sample a core taken from the seabed outside L1; Recording partially submerged structures along the southern end of L4. Opposite page: Karl Krusell floats above the excavation area in L2 with the harbor wall and square tower visible in the background.

military harbor in which Thucydides (8.43) suggests ship repair took place during the Peloponnesian War.

Conversations with local residents have underscored the need for full documentation of the harbor structures, shipwreck remains, and other underwater cultural heritage in light of destructive winter storms and the inevitable expansion of tourism in the area. One of the many key differences between our work at Burgaz and the 'typical' INA shipwreck excavation is that we do not cling to the side of an isolated cliff, idyllic as that can be. Instead we work among dog walkers, swimmers, joggers and campers, local residents and summer visitors, all of whom have differing knowledge and levels of interest in the site. Through our work in and among the community at Burgaz we hope to raise awareness of this significant site as well as the continued importance of maritime archaeology in Turkey.

ACKNOWLEDGMENTS

Supporting institutions and agencies that made possible the fieldwork at Burgaz

include Middle East Technical University, Brock University, Stanford University, INA, the Social Sciences and Humanities Research Council of Canada, the Canadian Foundation for Innovation, and Texas A&M University. Thanks are due to the Turkish Ministry of Culture and Tourism and its representatives on the project, as well as the Bodrum Museum of Underwater Archaeology. Critical logistical support was provided by Tuba Ekmekçi and Volkan Demirciler. Nadire Atıcı and İlham Sakarya have offered assistance and guidance in the field and the lab, while the geomorphological contributions of Beverly Goodman-Tchernov and her team have been vital in bettering our understanding of the dynamic coastline along this area. Many students and staff have participated over the past three seasons, and the project could not have succeeded without their assistance; particular thanks are due to our two field supervisors, Troy Nowak and Lana Radloff. Finally, we owe immense debts to the local residents of Burgaz and Eski Datça for their kind welcome and interest in the exploration and preservation of this local maritime cultural heritage.

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TOP PHOTO: K. KRUSELL; BOTTOM LEFT: E. GREENE; BOTTOM RIGHT: M. ANDERSON





1. John Cassils and Ann Bass 2. Orkan Köyağasioğlu and Tuba Ekmekçi 3. Deborah Carlson 4. Ken Trethewey, with John Carlson (R) and Orkan Köyağasioğlu (L)

2013 BOARD MEETING HIGHLIGHTS

INA Directors and Officers gather in San Antonio to celebrate another successful year and prepare for upcoming projects in 2014.



6



7



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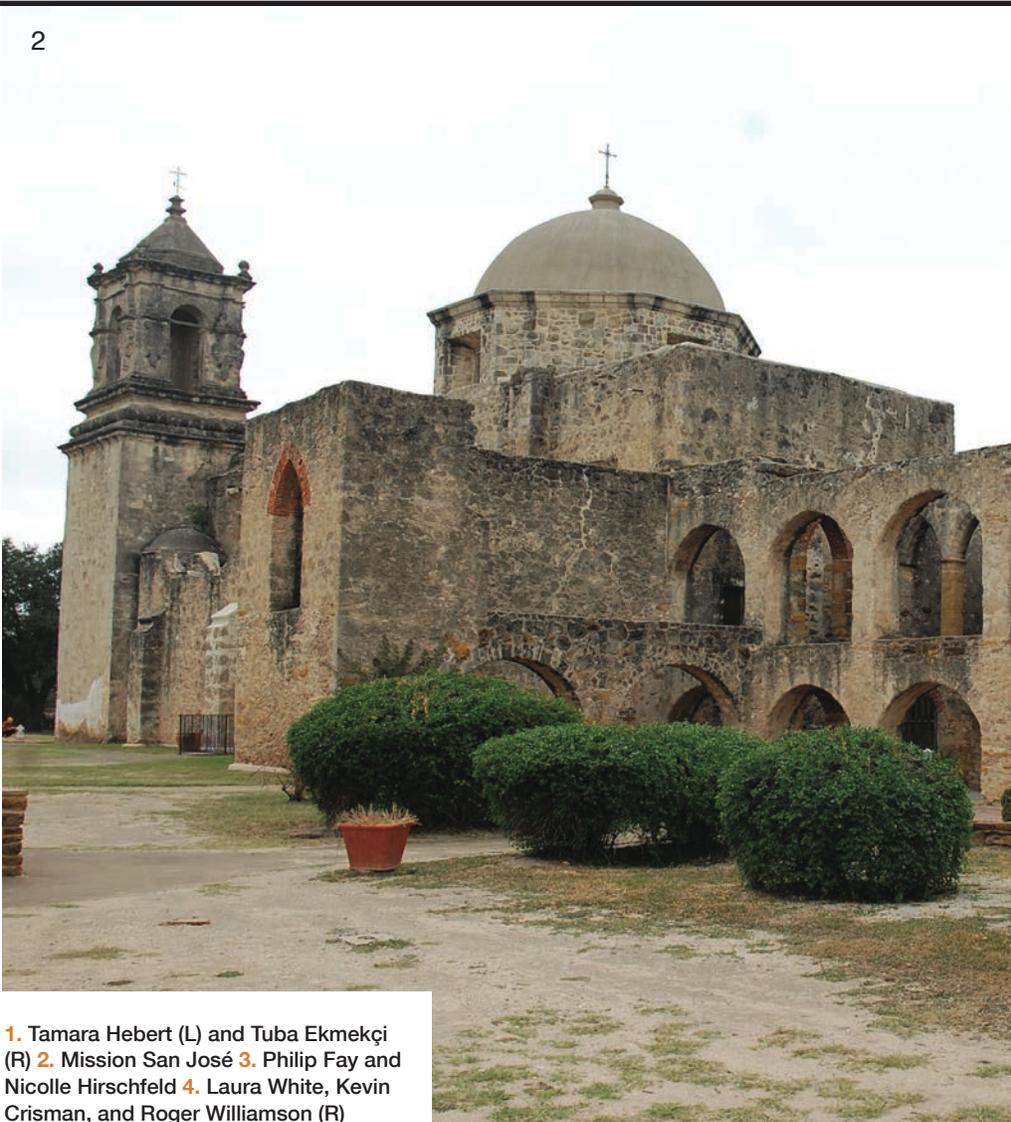
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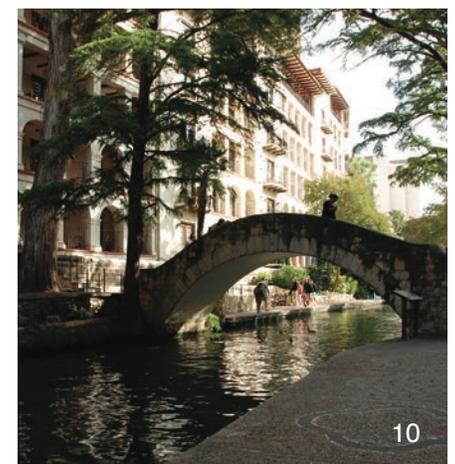
5. Mission Espada church 6. Terry and Laurie Ray 7. Raynette and Ned Boshell
8. Cocktail reception at the Alamo
9. Jason Sturgis (L) and Jonathan Oge (R)
10. Danielle Feeny at Casa Hernan

PHOTOS: DEBORAH CARLSON; JOHN LITTLEFIELD



1. Tamara Hebert (L) and Tuba Ekmekçi (R) 2. Mission San José 3. Philip Fay and Nicolle Hirschfeld 4. Laura White, Kevin Crisman, and Roger Williamson (R)





5. The Alamo chapel 6. Attendees await the project presentations 7. John De Lapa 8. Cemal Pulak, Susan Katzev, and Faith Hentschel (R) 9. Marja and George Newton 10. San Antonio Riverwalk



INA: A FAMILY AFFAIR

BY GEORGE F. BASS

In 1972, my wife Ann, our lawyer Steve Gadon, and I served as the minimal three directors required to form a corporation. Other than a hundred-dollar gift from a friend for stationery, however, we had an institute in name only.

Early the next year a small group of people assembled in a Philadelphia hotel to organize and give substance to what has become the Institute of Nautical Archaeology (INA). That founding board of directors included John Baird, John Brown Cook, Nixon Griffis, Michael

Katzev, Ann Bass, and me. Looking back half a century, I am delighted that all of our families later became involved with INA, as did families of directors who later joined the board.

John Baird was the second person, after his friend Jack Kelley, to make a multi-year pledge to INA, thereby helping make viable the fledgling institute. Over the years, John probably visited more INA excavations than anyone, from Turkey to Maine, from Virginia to the Azores, and even to Kenya, all the while hunting for rare spare parts for INA's ship *Virazon*, whose diesel engine was no longer manufactured. Well into his 90s, he remained fully involved in INA.

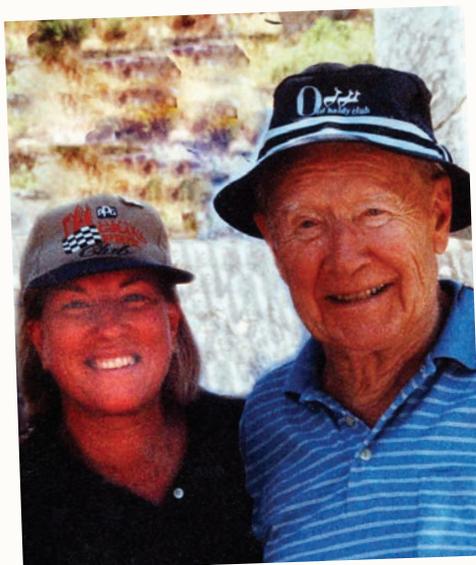
After John's death, his place on the board was taken by his daughter, Lynn

Baird Shaw, who in 2000 came within an hour's sail of INA's Tektaş Burnu excavation with her dad before being thwarted from reaching the site by unseasonably bad weather.

John Brown Cook was the third person to make a multi-year financial commitment to INA. He had long supported Michael Katzev's excavation and restoration of a 4th-century B.C. wreck off the coast of Cyprus. Michael's uncovering of a shipment of wine first piqued John's interest because of his love of wine, the Mediterranean, and cutting edge technology. When he learned that Michael had agreed to serve as vice president of INA, he joined forces with INA, but lived only four more years.

Marian Cook, John's widow, was not

This page from left: Lynn Baird Shaw and John Baird in Turkey; John and Marian Cook with children Gregg and Marcia; **Opposite:** Gordon and George Bass at Long Island Sound in 2004.





Legacies and continuing family interest in INA did not stop with directors, founding or otherwise.

only elected to the board, but later served as a gracious chairwoman, her twinkly smile unforgettable. As she grew older, the Cooks' son Gregg became both a second-generation INA director and a second-generation chairman of the board! Surely it was this experience that led to his second career with the establishment of Submergence Group, LLC, which designs and builds manned and unmanned submersibles for the military.

Michael Katzev had joined the staff of my Yassiada excavation in 1964 when he was a graduate student of art history at Columbia University. He soon transferred to the University of Pennsylvania to work more closely with us in what was then called simply "underwater archaeology." On Yassiada (Flat Island) he met Susan Womer, who had been our staff artist since 1961, when she was a Swarthmore College undergraduate. Within

two years they were married and during their honeymoon on Cyprus were taken by sponge diver Andreas Cariolou to the wreck near Kyrenia that Michael and Susan made famous.

Michael, with a B.A. in economics from Stanford and an M.A. in art history from the University of California at

Berkley, had the perfect background to serve as INA's first vice president. Memorably, he was a stickler for the board's adherence to Robert's Rules of Order.

Susan Womer Katzev has not only joined the board since Michael's untimely passing, but has taken on the responsibility of seeing that the Kyrenia wreck is fully published.

Nixon Griffis, while president of Brentano's Bookstores in New York, Washington, and Paris, was the first individual ever to support my work in the Mediterranean. We met in Peter Throckmorton's New York loft in early



From top left: Susan and Michael Katzev in Kyrenia; Nicholas Griffis at the entrance to the Griffis Lab at the Bodrum Research Center (BRC); George Bass with Alex Nason opening the Nason Computer Center at the BRC; Claude and Barbara Duthuit with Ann Bass in Paris. **From bottom left:** Nixon Griffis departing Serçe Limani; George and daughter Sally Yamini attending an INA dinner.



1960, before I'd even learned to dive, to listen with a few others to Peter's illustrated sales pitch about a Bronze Age shipwreck he had located at Cape Gelidonya, Turkey, and how he thought that it could be excavated as carefully under water as on land. Nixon not only continued to support my work through the years at Yassiada (Turkey), but joined us there as a diver, as he had at Cape Gelidonya, taking his turn as night watchman on the deck of the dive barge.

After Nixon's death, his daughter Heathea, who had spent a summer on Yassiada when she was a teenager, called to say that she wanted to do something in her father's memory, which led to the establishment of the Nixon Griffis Conservation Laboratory at INA's Research Center in Bodrum, Turkey. The wing of the lab that houses wood treatment tanks, which were just joined by a huge freeze-dryer, is named after Heathea, who died tragically young.

Cary Denney was Nixon's companion in Florida in his later years, accompanying him to a board meeting in Bodrum. To my astonishment she

willed her entire estate to INA, saying it was because of Nixon's love of it and the entire field his initial contribution helped to create.

Surprisingly, when we first met Nicholas Griffis, Nixon's archaeology-student grandson, he was unaware of his grandfather's involvement in nautical archaeology. It was an emotional experience for me, therefore, when the younger Nick Griffis dived to see the 5th-century B.C. wreck being excavated by INA at Tektaş Burnu.

Of course Ann and my sons, Gordon

and Alan, have grown up with INA, spending summers in expedition camps and once out of school for an entire year in Bodrum to help sort and mend glass from the medieval shipwreck at Serçe Limanı. I was delighted, therefore, that as soon as he was able to offer support, Gordon showed continuing interest by joining the INA board. The only time we dived together, however, was on a personal visit to where the S.S. *Atlantic* sank in a terrible storm in Long Island Sound in 1846, killing Gordon's great great grandfather.

Legacies and continuing family interest in INA did not stop with directors, founding or otherwise. In 1973, although he did not become a director, F. Alex Nason, a founder of the Lubrizol Corporation, where John Baird spent his career, paid for the double-lock, multi-person recompression chamber that is still in use aboard *Virazon*. Years later, John brought Alex Nason's grandson, a much younger Alex Nason, to a meeting of the INA board, which he joined not long after, and donated a wing of INA's Bodrum Research Center (BRC) in Turkey.



Over the years, family involvement has had varied beginnings. In 1980, Michael Katzev guided INA's first cruise from Athens as far as Serçe Limani, Turkey, where INA was excavating the 11th-century "Glass Wreck." Among those on board the Greek ship *Orea Eleni* were Bill and Judy Sturgis of Gardnerville, Nevada. Bill saw our primitive expedition camp, to which all fresh water for washing, drinking, and cooking was brought out a couple of times a week by a fishing boat in two 55-gallon oil drums. As soon as he returned home, Bill bought a fresh-water maker for us, which changed our lives. Soon he was on the board. When visiting Turkey, even directors don't have a free ride. On a return trip, Bill found himself helping paint *Virazon* under the hot sun!

Although Bill is still with us, Judy attended some board meetings in his place until their son Jason was elected to a directorship. Jason has been active in the field, as well, taking part in INA's Yukon project.



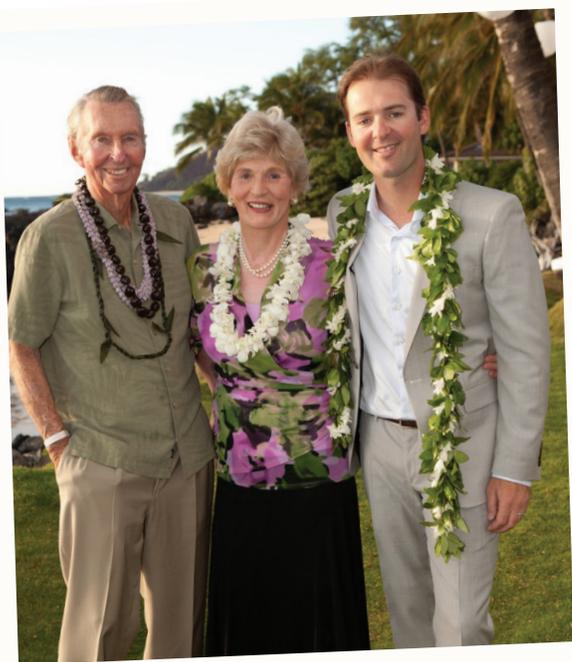
Claude Duthuit was not only an early INA director, but a pioneer from the very first of the work that made INA possible, actively engaged in excavations or surveys with me from 1960 until 2010. With her husband, Barbara Duthuit experienced camp life at Yassiada and Uluburun, and *Virazon* accommodations, and dived in the submersible *Carolyn* to watch him excavate the Pabuç Burnu wreck. After losing

Claude, Barbara continued to support INA projects in Spain and Vietnam, has endowed an INA fieldwork grant in his name, and pledged to replace the aging INA fleet.

When Frank Darden read a newspaper article about our work in 1983, he called me immediately from Fort Worth to learn more about the Institute. Probably because he was an avid yachtsman, the study of ship evolution intrigued him, and later that year, with wife Lucy and daughter Anne, he attended an INA board meeting in Jamaica that included a visit to INA's excavation of the drowned colonial city of Port Royal. Frank quickly became a loyal INA director.

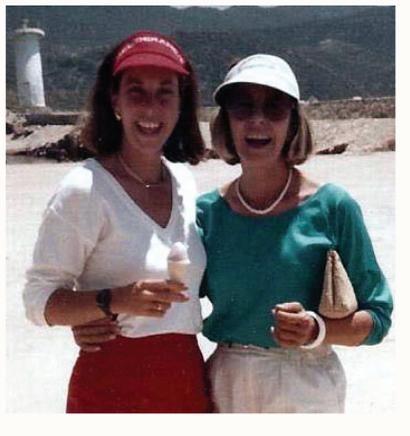
After Frank's passing, his place on the

Top left: Frank Darden at the 1986 INA Board Meeting. Top right: Lucy Darden with daughter Anne at Kaş to visit Uluburun wreck site. Bottom from left: Bill and Judy Sturgis with son Jason; Lucy Darden and granddaughter Grace at the 2012 INA Board Meeting in Bermuda; Raynette and Ned Boshell at an INA event; Francine LeFrak and her husband visiting Bodrum Castle; Sam LeFrak.



board was taken by Lucy, joined by son Thomas (Toby). Daughter Anne and son Glenn became associate directors, and granddaughter Grace, who attended the 2012 board meeting in Bermuda, has now lent her support. Surely the three-generation Dardens have set a family record that will be hard to best!

George Yamini was introduced to INA by director Robert Walker and in 1983 became a director himself. A former Texas A&M University (TAMU) student, he was equally interested in the INA-affiliated Nautical Archaeology Program at TAMU, for which he endowed two professorships. George, who visited INA's BRC with his wife Sara, was also instrumental in the founding of the Texas Maritime Museum in Rockport, where they retired. George



and Sara's daughter Sally joined the board soon after his death.

Sam LeFrak was one of the few INA directors who never made it to Bodrum, but I met his daughter Francine there,

where she noticed her father's name on a wall plaque in the BRC, and where we visited the Museum of Underwater Archaeology with her husband, Rick Friedberg. I was able to visit Sam in a New York hospital shortly before he died. Francine soon took his place on the INA board.

Director and former chairman Ned Boshell first became involved with the institute while sailing down the Turkish coast on an INA cruise with his daughter Betsey and Betsey's then fiancé and now husband David. That was only the first time Ned visited Bodrum because of INA. Small wonder, then, that Ned's wife Raynette and Betsey are now associate directors.

For forty years, INA has been a family business; here's to fourth and fifth generations of INA directors!

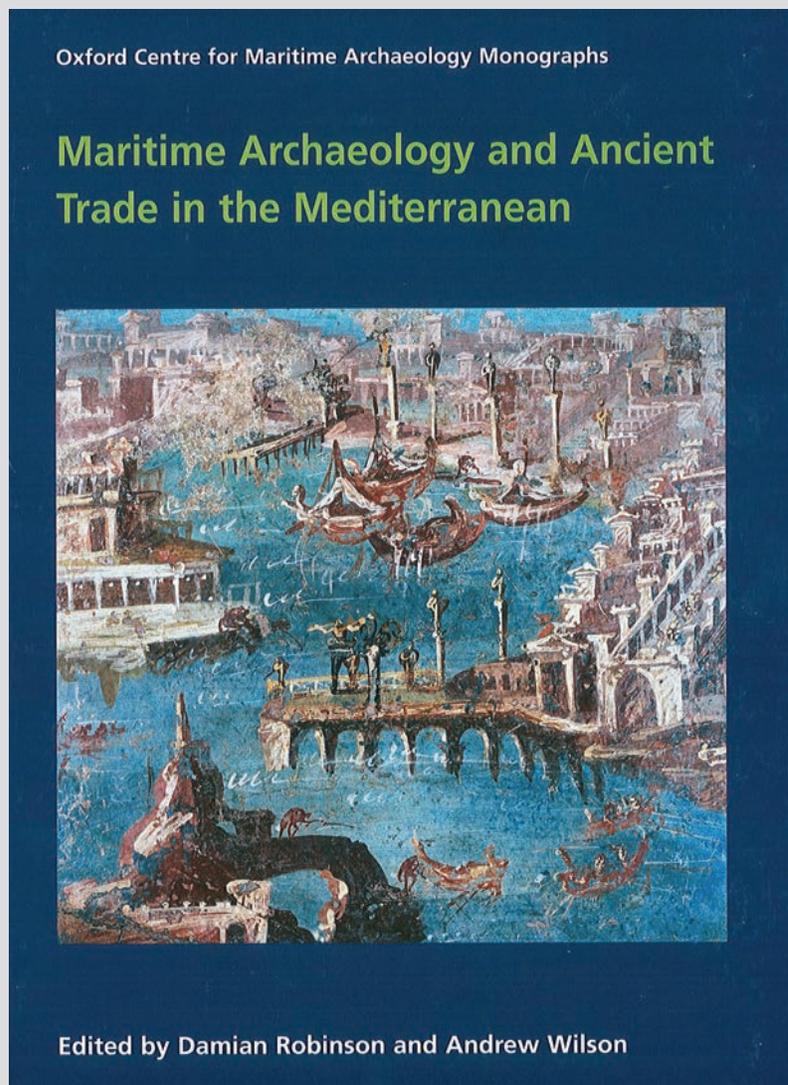
When Frank Darden read a newspaper article about our work in 1983, he called me immediately from Forth Worth to learn more about the Institute.



REVIEW

MARITIME ARCHAEOLOGY AND ANCIENT TRADE IN THE MEDITERRANEAN

Edited by Damian Robinson and Andrew Wilson



**OXFORD CENTRE FOR MARITIME
ARCHAEOLOGY, 2012
ISBN 978-1-90590-517-1
REVIEWED BY RACHEL MATHENY**

The book *Maritime Archaeology and Ancient Trade in the Mediterranean* includes twelve papers that explore a wide range

of topics including trade patterns, maritime technology, specialized cargoes, and port cities, using archaeological evidence from harbors, shipwrecks, and ceramic distribution at terrestrial sites. The book is advertised as a compendium covering a broad swath of time (i.e. the ancient period), yet the editors note that most of the chapters focus on the Roman and Late Antique periods.

There is no inherent organization to the book's twelve chapters, so they have been grouped thematically here. Andrew Wilson's introductory chapter provides a basic overview of maritime trade from 200 BC to AD 1000, covering broad topics such as maritime traffic and ship-building technology. Unfortunately, Wilson does not delve into any particular subject in detail but spends most of the chapter re-examining A.J. Parker's 1992 chronological study of ancient shipwrecks datable to before AD 1500 and creating his own version of Parker's graph. Both David Fabre and Franck Goddio discuss, in two separate chapters, recent finds at Heracleion-Thonis, Egypt. Fabre's chapter focuses on the architecture of the 60 pre-Ptolemaic shipwrecks found during the surveys and excavations undertaken in the late 1990s. As wood sampling revealed that most of the wrecks were of Egyptian origin, Fabre uses these wrecks to explore Egyptian ship-building. Goddio's chapter deals with the submerged landscapes of both Heracleion-Thonis and *Portus Magnus*, the main port of ancient Alexandria. Goddio's topographical maps of the ancient harbors are based on geological and geophysical surveys from 1992, archeological excavations, and the ongoing work of the French Institut

Européen D'Archéologie Sous-Marine (IEASM).

Three authors examine ceramic distribution, demonstrating that archaeological finds from terrestrial sites are equally useful for shedding light on the ancient maritime economy. Candace Rice looks at connectivity within the ancient Mediterranean by examining transport amphoras and finewares from coastal sites in an attempt to gauge the geographical limitations of their trade connections. Victoria Leitch reviews production and distribution of African cooking wares at inland and coastal sites to determine which geographical factors may have influenced its trade. Theodore Papaioannou uses the distribution of Late Roman C ware at terrestrial sites to reconstruct trade routes during the Late Antique period, but her reconstruction is based solely on ceramic evidence and does not take into account factors such as ocean currents or wind patterns. Pascal Arnaud also examines ancient trading

patterns and sailing-route, though his chapter focuses primarily on literary and epigraphic evidence (e.g. treaties and loans); his is one of the stronger chapters in the book.

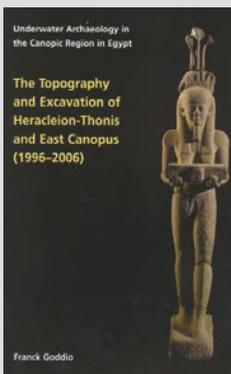
Two chapters are focused specifically on ancient harbors: John Oleson, Christopher Brandon, and Robert Hohlfelder present the latest results from the ROMACONS harbor project, in which they analyzed core samples collected from Roman maritime structures at nine sites around the Mediterranean. Their ongoing work provides insight into the chemical composition of Roman concrete, how it was used in harbor construction, and the trade in volcanic ash from Puteoli. Katia Schörle, applying a theoretical approach to port studies, discusses the development of harbors along the Tyrrhenian coastline and proposes a port hierarchy based on size.

Ben Russell analyzes 73 Roman-era shipwrecks with stone shipments looking at their chronological and geographical

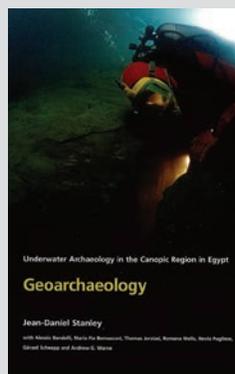
distribution, tonnage and vessel size, and complementary cargo. In the last chapter, Hohlfelder addresses maritime connectivity by providing a historic overview of the Lycian port cities Aperlae and Andriake during the Late Antique period.

This book aims to move beyond the basic use of maritime data in interpreting the ancient economy and to a certain extent it is successful. The chapters by Wilson, Rice, Russell, and Heslin are based on quantitative analysis; the authors create a database and look for patterns within it. On one hand, this type of work contributes useful knowledge and information about ancient maritime trade. Conversely, the presence of these chapters begs the question: to what extent can quantitative analyses explain ancient maritime trade? Overall, this book provides a plethora of valuable information about basic concepts in maritime archaeology which are useful for those who are not familiar with ancient maritime trade.

OTHER TITLES IN THE OXFORD CENTRE FOR MARITIME ARCHAEOLOGY SERIES



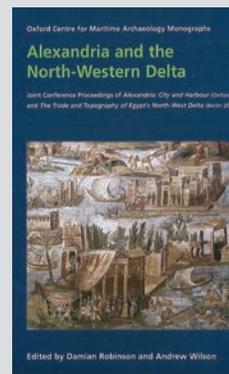
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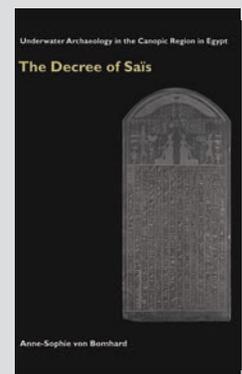
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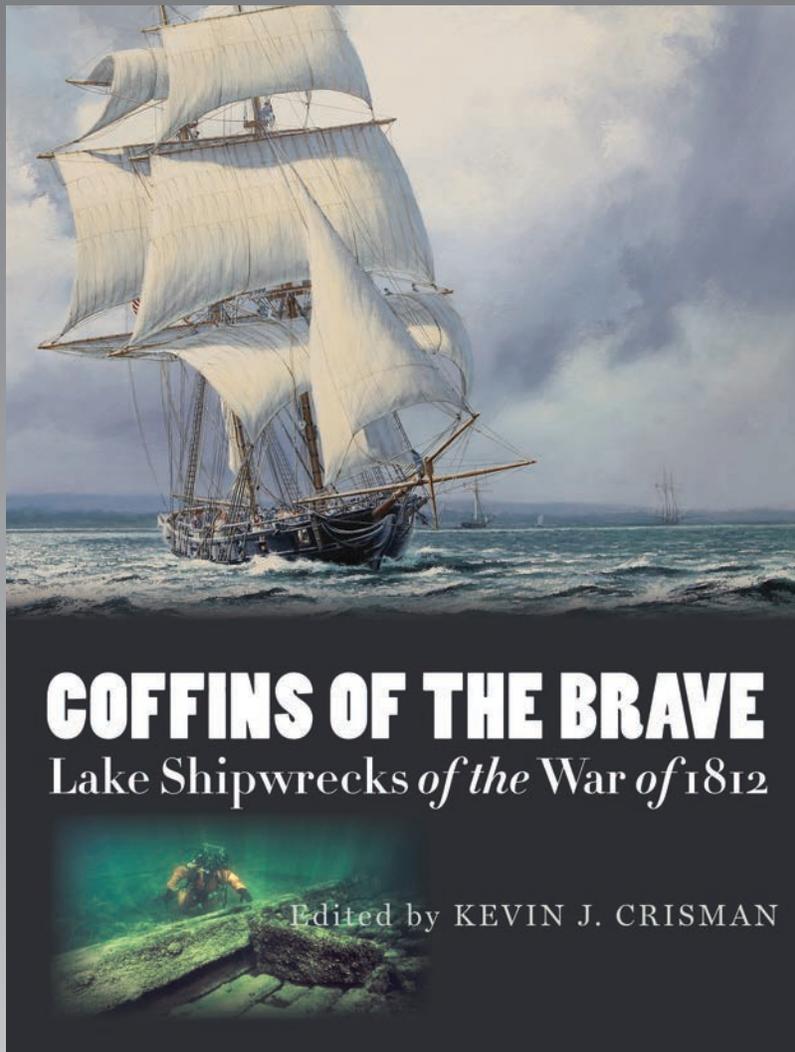
The Decree of Saïs
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COFFINS OF THE BRAVE

Lake Shipwrecks of the War of 1812 · EDITED BY KEVIN J. CRISMAN

In *Coffins of the Brave: Lake Shipwrecks of the War of 1812*, archaeologist Kevin J. Crisman and his fellow contributors examine sixteen different examples of 1812-era naval and commercial shipbuilding. They range from four small prewar vessels to four 16- or 20-gun brigs, three warships of much greater size, a steamboat hull converted into an armed schooner, two gunboats, and two postwar schooners. Despite their differing degrees of preservation and archaeological study, each vessel reveals something about how its creators sought the best balance of strength, durability, capacity, stability, speed, weatherliness, and seaworthiness for the anticipated naval struggle on the lakes along the US-Canadian border.

8 1/2 x 11. 416 pp. 23 color, 114 b&w photos. 5 maps. 90 line art. Bib. Index. \$60.00 hardcover
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