VIRAZON II
AND THE ALBANIA
SHIPWRECK SURVEY

FORGOTTEN SCHOONER OF
TORONTO'S FORT YORK

HIGHLIGHTS FROM
2018 BOARD MEETING
IN VANCOUVER
2019 Projects

2019 Projects

NORTH AMERICA

Civil War Blockade Runners Archival Research
USA | Barts Arnold (INA)

King's Shipyard Project
USA | Dan Bishop (Texas A&M University)

Lake Champlain GPR Survey
USA | Dan Bishop (Texas A&M University)

Mid-Atlantic Logboat Registry
USA | John Broadwater (INA/Archaeological Society of Virginia)

Gaspe Bay Survey
Canada | Chris Dostal (INA/Texas A&M University) & Carolyn Kenneddy (Texas A&M University)

Yukon Gold Rush Steamboat Survey
Canada | John Pollack (INA) & Robyn Woodward (INA)

EUROPE

Albania Shipwreck Excavation at Joni
Albania | Staci Willis (INA/Houston Community College)

Albania Ancient Shipwreck Survey
Albania | David Ruff (INA/Texas A&M University)

Egyptian Boats and Coffins
England | Germany | Douglas Inglis (Texas A&M University) & Caroline Arbuckle McLeod (University of British Columbia, Vancouver)

Kaukana Underwater Survey
Italy | Massimo Capulli (INA/University of Udine)

Ribadeo Project
Spain | Miguel San Claudio (INA/Universidade Nova de Lisboa)

Yenikapı Shipwrecks Project
Turkey | Michael Jones (INA/Koç University)

ONGOING RESEARCH IN TURKEY

Yassıada Byzantine Shipwreck
Fred van Doorninck (INA)

Uluburun Late Bronze Age Shipwreck
Cemal Pulak (INA/Texas A&M University)

Tektaş Burnu Classical Greek Shipwreck
Deborah Carlson (INA/Texas A&M University)

Pabuc Burnu Classical Greek Shipwreck
Deborah Carlson (INA/Texas A&M University)

Ertugrul Ottoman Frigate Research
Japan | Berta Lledó (INA) & Tufan Tunali (INA)

Kizilburun Late Hellenistic Shipwreck
Deborah Carlson (INA/Texas A&M University)

Yenikapı Shipwrecks Project
Turkey | Comal Pulak (INA/Texas A&M University)

BENEFITS OF INA MEMBERSHIP

> Four print or digital issues of the INA Quarterly, now in its fifth decade
> Monthly e-news via the INA Insider, featuring behind-the-scenes field reports and announcements about upcoming lectures, publications, and book signings
> Exclusive access to members-only content on the INA website
> 50% discount on membership in the National Maritime Historical Society (NMHS) which includes four issues of Sea History magazine
> 35% discount on nautical archaeology titles from Texas A&M University Press
> 20% discount on membership in the Nautical Archaeology Society (NAS) which includes two issues of the International Journal of Nautical Archaeology (IJNA)
> 10% discount on merchandise available through INA’s online store
APRIL AIA LECTURE SERIES
Several INA officers and affiliated scholars are part of the Spring 2019 National Lecture Program sponsored by the Archaeological Institute of America (AIA). On April 5 in Toledo, OH, Kroum Batchvarov (University of Connecticut) will dazzle lecture attendees with images of the fascinating finds made by the Black Sea Maritime Archaeology Project. On April 11, Warren Riess (University of Maine) will visit Rochester, NY to deliver a lecture entitled “The Ship that Held Up Wall Street: The Archaeological Investigation of a Colonial Ship Discovered in Manhattan.” And on April 18, INA President Debbie Carlson will deliver the AIA’s Bass Lecture in Richmond, VA, where she will discuss INA’s excavation of a Classical Greek shipwreck at Tektaş Burnu, Turkey. All AIA lectures are free and open to the public! For more information visit www.archaeological.org/lectures.

INA RETURNS TO DEMA
In November 2018, the Diving Equipment and Marketing Association (DEMA) held its annual show in Las Vegas, NV and INA Diving Safety Officer (DSO) John Littlefield was in attendance. DEMA provides participants with the opportunity to handle and experience the latest technology in the dive industry, including ROVs, AUVs, and photographic equipment. Consequently, INA now has a partnership with Paralenz and will be field-testing their underwater cameras in concert with the Deep Trekker ROV recently acquired for INA. INA has also renewed our relationship with O.E. Enterprises, the manufacturer of the underwater diver recall system that has been a staple of INA excavations in Turkey for decades. DEMA is also a platform for continuing education, and John spent several full days in the classroom renewing and expanding his certifications to service and repair INA dive equipment. The 2019 DEMA Show will be held in November in Orlando, FL.

DENBIGH RESEARCHERS STEP BACK IN TIME
INA researchers are focusing their attention on two ships related directly to the fate of the Civil War blockade runner Denbigh—the U.S.S. Cornubia and the U.S.S. Gertrude of the Galveston Blockading Squadron. Their crews were dispatched to set fire to the grounded Denbigh upon her demise at the end of the Civil War. Among the archival documents from the U.S. Prize Court, researchers encountered depositions from crew members of both ships and priceless first-person accounts of the captures. The Denbigh research team also consulted U.S. Treasury Department ledgers recording prize money paid out to individual crew members. The giant ledgers with prize money payouts were still wrapped in clear plastic cling wrap, after having been transferred to the National Archives in Washington D.C., where they remained unexamined for over a century! Talk about stepping back in time! The Denbigh Project released its seventh volume in 2015; it and other Denbigh publications are now available for purchase at the INA online store.

GEORGE W. LODGE (1931-2018)
It is with deep sadness that we announce the passing of longtime INA Associate Director George Lodge of McKinney, TX. George graduated from Drexel University in 1954 with a degree in Business Administration and served as a lieutenant in the U.S. Army. He went on to obtain an MBA from Northwestern University’s Kellogg School of Management before launching himself on a stellar career in publishing that included the Saturday Evening Post, Newsweek, Southwest Spirit, and American Way magazines. Indeed, it was an article in American Way, American Airlines’ in-flight publication, that brought George and INA together. George shared his editorial expertise generously and graciously with the INA Communications Committee, and was always a vibrant and enthusiastic presence at INA Board Meetings. George is survived by his wife Bobbie (pictured here together), four children, ten grandchildren, and four great grandchildren; at their request, memorials in his honor may be made to the Frontiers of Flight Museum or the Commemorative Air Force.
ALBANIA ANCIENT SHIPWRECK SURVEY 2018:
Virazon II’s Inaugural International Deployment
DAVID RUFF AND STACI WILLIS

Albania has long been a desired site of exploration for the Institute of Nautical Archaeology (INA). The Albanian coastline was an important prehistoric habitat, and Greek colonies were founded as early as the 8th century B.C. in Butrintum (modern Butrint) and in the 7th century B.C. at Epidamnos (modern Durres). Throughout recorded history, both merchant vessels and warships passed through the straits of Otranto, less than 50 nautical miles (NM) wide at the narrowest point. Due to the unique political history of Albania, however, exploration and excavation along its coast have not been performed until recently, depriving Albanians of a sense of their maritime heritage.
The situation began to change in the early 2000s, when the RPM Nautical Foundation (RPM) commenced coastal surveys of Albania through their Illyrian Coastal Exploration Program, carried out in conjunction with the Albanian Ministry of the Coastline. Sites from all eras have been located by RPM, including Greek, Roman, Byzantine, Renaissance, and modern shipwrecks. As part of a cooperative partnership in 2018, RPM provided INA researchers with the location data for five ancient shipwrecks. Diver visits were planned for July to evaluate the data and to formulate site assessment plans. Three visits were planned for July to evaluate the data for five ancient shipwrecks. Diver surveys were performed along the coastline of Greece, but both ship and crew were up to the task. In addition to the INA archaeological staff, six Turkish crew members were hired to comply with Turkish-flagged vessel manning requirements.

**Butrint Wreck Assessment and Survey**

The first and the last weeks of the Albanian coastal survey and site assessment focused on the area south of the UNESCO World Heritage Site of Butrint, at the very southern tip of Albania. To conduct this phase of the project, *Virazon II* anchored in a nearby cove, allowing the team to survey dives from the small boat while the research vessel remained in protected waters.

Diver surveys were performed along several nautical miles over the course of six diving days. The typically four-person dive team worked in a line at staggered depths to follow the steeply sloping seabed. A number of ancient remains, primarily amphora types from a wide variety of sources, were documented. Additionally, the team was able to visit three ancient shipwrecks, entering the water at the exact coordinates provided by RPM. Visibility at Butrint degraded during the month, as the amount of silt suspended in the water column and the algae growing on the bottom increased.

For this season’s work, the team was not authorized to disturb or raise any objects, thus exact identification of amphora types was not always possible. However, some diagnostic features were visible in the photographs collected during survey dives, permitting broad trends to be formulated based on preliminary identifications. The earliest assemblages, Corinthian style amphoras datable to the 5th-3rd centuries B.C., suggest trade relations with Greek colonies, particularly the nearby island of Corcyra (modern Corfu). Late Roman trade is represented by Tripolitanian I amphora fragments as well as Late Roman amphoras of several styles. Regrettably, none of the wrecks we visited exhibits a discernible amphora pile that is likely to conceal wooden hull structure and no other large wrecks were located south of Butrint.

**Sazan Island Wreck Assessment**

*Virazon II’s* northernmost transit was to Sazan Island, just within the Adriatic Sea near the city of Vlorë. The Sazan Island wreck site, a large pile of Lamboglia-2 amphoras, lies at a depth of 30 m (98 ft). While *Virazon II* remained moored at Sazan Island, the team used the small boat to access the wreck site. Site setup included the placement of weighted meter sticks, which served both as orientation aids as well as photographic equipment.
scales, and the establishment of a down line. The team attempted two 20-minute dives each day to take measurements and photographs, but poor visibility impacted dive efficiency and caused several dives to be aborted.

The Lamboglia 2 amphoras are stacked in at least two, perhaps three, layers, with the cargo pile measuring approximately 18.5 m (60 ft) in length and 7.5 m (25 ft) in width. While the top layer of the pile is homogeneous, other finds include possible fine ware pottery, some amphoras of disparate types, and at least two flat, rectangular, ceramic slabs that may indicate a secondary cargo of tiles. The predominant Lamboglia 2 amphora cargo suggests a wreck date in the 1st century B.C. to 1st century A.D.

The Sazan Island wreck is a large, undisturbed site. As the heavy amphora pile sits on a sea bed of very fine silt, it is very likely that wooden ship remains are preserved under the amphora pile, making it a strong candidate for future excavation. The combination of poor visibility and currents at the sea floor are challenges that would need to be considered and overcome by a future excavation team.

**JONI WRECK ASSESSMENT**

The Joni wreck, located about 13 NM north of Sarandë along the coast, lies at a depth of 23 m (75 ft). The site is exposed, without a nearby inlet or bay, and it is adjacent to a shallow rock outcrop that lies only 3 m (10 ft) below the surface; thus, maneuvering and mooring at the site required finesse and attentiveness. To take advantage of the situation, we dropped anchor and ran a line to the rock outcrop, allowing *Virazon II* to moor directly over the site, so that dive operations could be launched directly from *Virazon II*’s deck.

The Joni site comprises a main amphora pile and an associated debris field of contemporaneous material about 20 m (65 ft) north of the amphora pile. The main pile is approximately 9 m (30 ft) long by 4.5 m (15 ft) wide and consists almost entirely of North African amphoras, which were produced in modern Tunisia and provide a tentative wreck date of the 4th century A.D. The corresponding debris field covers an area about 25 m (82 ft) by 8 m (26 ft) and is made up of both North African and Late Roman amphoras. Many of the amphoras in the main pile appear to be concreted together; removal of the coarse, sandy sediment at anchor and ran a line to the rock outcrop, allowing *Virazon II* to moor directly over the site, so that dive operations could be launched directly from *Virazon II*’s deck.

*Virazon II* has proven to be a superb archaeological and diving asset as well as a storm-tested, seaworthy ship.
the site is required in order to assess the magnitude of the encrustation. The conditions at the Joni site were ideal for archaeological work, with great visibility and little to no current. The team captured numerous digital photographs to support the creation of three-dimensional models of both the main amphora pile and the debris field. We also utilized power from Virazon II to deploy BIRNS lights for color-enhanced photography and created a 360° virtual reality video using the 360/Abys underwater camera system and six GoPro cameras.

The Joni wreck is an outstanding candidate for full scale excavation. Compared to the Sazan Island wreck, its shallower depth, excellent viability, and negligible current make it a significantly less challenging site at which to perform underwater work. The coarse sandy bottom at the Joni site would allow excavation without a major impact on visibility. While the main wreck site is fairly small, excavation and analysis of the associated debris field would enhance the amount of available information. Lastly, there is a possibility that some wood remains may exist under the main amphora pile.

The major challenge of an excavation at Joni is its remote location, about 10 NM from the nearest shelter and about 13 NM from the nearest port. A secondary challenge is the concretion of the main amphora pile. However, favorable site conditions should permit a quick evaluation of excavation parameters, including not only the labor required to separate concreted amphoras but also the extent to which wooden ship remains, if any, have been preserved. Following our evaluation dives at the Joni site, one day was spent near Livadhi Beach (just north of the city of Himara) searching for a possible Byzantine wreck, suspected because of amphoras recovered from the vicinity. Despite several hours of snorkeling, coupled with the use of SubWings towed behind a small boat, and two underwater dives, no wreck was located. Due to heavy growth of sea grass in the area, remote sensing equipment may be warranted.

CONCLUSION

After six weeks of successful international operations, Virazon II completed her inaugural deployment and returned to Bodrum. The ship steamed over 1300 NM, providing flawless support for both diver and survey operations along the coast of Albania. Virazon II has proven to be a superb archaeological and diving asset as well as a storm-tested, seaworthy ship. Of the shipwreck sites we visited in Albania in 2018, two have great excavation potential: the Sazan Island wreck and the Joni wreck. While the area south of Butrint has extensive fragmentary evidence of ancient shipping, no wreck site suitable for excavation was identified. Both the Sazan and Joni sites demonstrate archaeological significance, have the potential for hull preservation, and either would be an outstanding candidate for Albania’s first-ever underwater excavation. Based on overall site conditions and discussions with Albanian officials, the authors are presently hoping to conduct an exploratory test excavation at the Joni site in 2019, to evaluate air lift performance on the site’s sediment, to determine the amount of encrustation binding the amphoras, and to check for wooden hull remains. This work will require land conservation support to properly care for any amphoras and artifacts brought up from the site. As such, the authors are also collaborating with local officials to establish conservation facilities for artifacts recovered from marine contexts. Although 2019 discussions with Albanian officials are still in preliminary stages, the results of the 2018 Albania Ancient Shipwreck Survey and the associated performance of Virazon II provide great optimism for future INA projects in Albania. The capability provided by INA’s new archaeological research vessel is the perfect tool to explore Albania’s underwater frontier.

ACKNOWLEDGMENTS

Full credit for this year’s survey must be given to Auren Tare, the General Director of the Albanian National Coastline Agency and a member of the Advisory Body of the UNESCO Underwater Cultural Heritage group, for his support of Virazon II’s operations and his outstanding logistic arrangements. The project is also honored to have Dr. Nestani Coba as the project’s Albanian archaeological liaison; he is one of the pioneers of Albanian underwater archaeology, as well as the former Albanian Minister of Internal Affairs and a former Ambassador to Italy. Outstanding support of Virazon II was provided by Our Own Expeditions; particularly Nancy Tow and Lola Brooks. The survey targets were generously shared by George Robb and Jim Goold of RPM Nautical. Lastly, a hearty “thank you” to the INA Bodrum Research Center staff for their rapid preparation of Virazon II for international operations, including Ozlem Dogan, Tuba Ekmekci, Orkan Köyğaçaoğlu, John Littlefield, and Zaffer Galiz.

AUTHORS

DAVID RUFF
Co-Director, Albania Survey Project, INA Research Associate
STACI WILLIS
Co-Director, Albania Survey Project
In 2015, during the construction of the CityPlace neighborhood in downtown Toronto, the remains of a 19th-century schooner were discovered near the intersection of Bathurst Street and Fort York Boulevard. The wreck was excavated by Archaeological Services, Inc. and was relocated to the Fort York National Historic Site, also in downtown Toronto. In the spring of 2018, a small team from Texas A&M University (TAMU), including Nautical Archaeology Program graduate students Carolyn Kennedy, Robin Galloso, and myself, as well as undergraduate Nicole Deere, travelled to Canada to record the remains of the vessel.

**HISTORICAL CONTEXT**

The ship, which was found alongside the remains of the Queen’s Wharf (constructed in the early 1830s) and within a shore wall built during the 1870s, was very likely built in the late 1820s or early 1830s. A United States Coronet Head cent found in the aft mast step during the 2015 excavation also supports this proposed time period. The date on the coin is illegible due to wear, however, a preliminary analysis of its design suggests that it dates to 1828. This means the vessel was constructed at the start of a period of rapid growth in the Lake Ontario region. During the 19th century, Toronto was
THE FORGOTTEN TREASURE OF FORT YORK

THE CITYPLACE SCHOONER has a unique centreline construction which suggests that the vessel was originally constructed in a straight line. The vessel was initially built with either a centerboard or daggerboard, which was later removed and its absence offset by the addition of the lower keel and patch.

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with either a daggerboard or centerboard that was subsequently removed and the vessel modified. The upper keel, which is carved from a single timber, increases in molded dimension just aft of the 11th frame to form a trunk. This trunk, which is 4 m (13.3 ft) long, would have served as the watertight compartment that housed the vessel’s daggerboard or centerboard prior to its removal. Instead of crossing over the keel, all of the floors along the length of the trunk are notched into it. Directly over the trunk, a patch is visible in each of the lower keelsons, protruding out approximately 3.8 cm from underneath the upper keelson on both sides of the vessel. This patch was likely inserted when the schooner was modified in order to seal the space previously occupied by the daggerboard or centerboard. The lower keel has a much larger molded dimension than the upper keel. Its forward end terminates in a smooth cut that matches the lower end of the outer stem; however, there is no indication that these two pieces were ever fastened together, suggesting that the lower keel did not play an integral role in the vessel’s initial structure. Instead, the upper keel likely served as the schooner’s original keel, while the lower keel was probably added when the daggerboard was removed in order to increase the vessel’s lateral resistance.

The majority of artifacts discovered during the 2018 season were materials that would have been used in the construction of the vessel, including iron fasteners, caulk, and shaped pieces of wood, likely used as wedges. The team also recovered ceramic sherds and pieces of charcoal. Our most exciting find was an intact sheave, discovered when removing sediment from between the frames. This piece, which formed part of the vessel’s rigging, measures approximately 15.2 cm in diameter and appears to be made of *Sagam fir*; a very dense and durable hardwood. A smaller sheave recovered during the 2015 excavation had a British Ordnance broad arrow carved into its face; the 2018 sheave, however, was unmarked.

**PRELIMINARY ANALYSIS OF DATA AND ONGOING WORK**

Preliminary analysis of the data collected in 2018 suggests that the vessel was a merchant schooner dating to the early 19th century. Its two layers of ceiling planking with evidence of caulk suggest that the vessel carried grain or other cargo that required waterproofing of the hull. Based on the schooner’s centerline construction, the vessel was initially built with either a centerboard or daggerboard, which was later removed and its absence offset by the addition of the lower keel and patch. The reason for the vessel’s modification is unknown. It is possible that the owners found the original design too leaky or that they determined the daggerboard/centerboard was no longer needed as the century progressed and harbors along the Great Lakes were improved and deepened. The CityPlace Schooner was probably scuttled or abandoned at the end of its working life and was then used as fill to expand Toronto’s waterfront. A full analysis of the construction of the CityPlace Schooner will be the subject of my TAMU Master’s thesis, which will include a complete description of the recorded remains, along with conjectural lines drawings and construction drawings of the vessel. Additional insight regarding the date and location of the vessel’s construction is anticipated through further analysis of both the mast-step coin and the vessel’s timbers. I intend to continue ongoing historical research in an attempt to identify this enigmatic and historically significant vessel.

**ACKNOWLEDGMENTS**

The team would like to thank the INA Archaeological Committee, the Friends of Fort York, and Texas A&M University for their generous support of the project. We would also like to thank the City of Toronto and the Fort York National Historic Site, for allowing us access to the remains and for all of their assistance during the 2018 field season.
The ancient poets tell us it was Helen’s face that launched a thousand ships toward Troy. Three millennia later, another woman’s countenance launched the first of many expeditions of underwater exploration along the Turkish coast. The bronze bust of a mourning lady netted by a sponge dragger south of Marmaris, near the southwestern tip of Turkey, caught the attention of Peter Throckmorton, a photojournalist and adventurier, fascinated by sponge divers, wrecks and the sea. As he tells it (and it’s a riveting read, _The Lost Ships: An Adventure in Undersea Archaeology_), one night in a bar…. The upshot was the expedition with George Bass to Cape Gelidonya in the summer of 1960 (described in an equally difficult-to-put-down account, _Archaeology Beneath the Sea_).

That summer’s adventure established underwater excavation as a scientific discipline, conducted according to the same principles and standards used on land. But one way in which the excavation of shipwrecks differs from terrestrial meth-
A CLOSER LOOK AT THE CERAMICS FROM THE CAPE GELIDONYA SHIPWRECK

Nicolle Hirschfeld

...methods (in addition to the purely technical constraints of working in an underwater environment) is that there is the possibility of excavating a site in its entirety. The best terrestrial parallel is a tomb. And just as the partial excavation of a tomb would result in a mistaken understanding of its occupants or burial rites, so, too, the partial excavation or documentation of a shipwreck provides a skewed picture. “Representative sampling,” leaves out the idiosyncratic objects that might make all the difference in interpretation. Bass’ objective at Cape Gelidonya, to excavate the Late Bronze Age shipwreck in its entirety, set the standard for subsequent INA projects. And although excavation necessitates the expense of conservation and logistics of long-term storage, it also means that the objects raised from the sea are available for study when more sophisticated techniques of analysis are developed or more material is discovered.

When autumn storms forced Bass and his team to leave the beach that was their base of operations in 1960, they thought that they had recovered most of the wreck. But a nostalgic return visit to the wreck site in 1987 revealed that there was still material on the seabed and follow-up visits in 1988-90 and 1994 exposed a trail of objects from the initial point of impact to where the ship finally settled on the seabed. These returns to Cape Gelidonya and a second season of excavation, undertaken 50 years after the first, have been briefly described in previous issues of the INA Newsletter and The INA Quarterly. “Now the work is on dry land, collating the records and studying the objects from the various expeditions. Thus far we — the team of conservators and specialists — have concentrated on the ingot cargo and the ceramics. We will report on the ongoing metallurgical studies of the ingots in a future issue; here, I present a summary of what I am learning from the ceramics, old and new.”

J.B. Hennessy and J. du Plat Taylor listed a total of 35 ceramic finds from the shipwreck in Bass’ original academic publication (1967). But there are now many more. At least 100 sherds bearing the inked labels characteristic of the 1960 excavation have been discovered in the storerooms of the Bodrum Museum of Underwater Archaeology, mixed in with ingot fragments from the shipwreck. The four survey seasons and the 2010 excavation yielded another 200. Collecting these sherds from various storage depots, conserving, labeling, sorting, and looking for joins among all of the pieces has been a focus of my efforts over the past two years. It turns out that a substantial number of the sherds collected from the wreck site have nothing to do with the Late Bronze Age shipwreck. They were dropped or thrown overboard by sailors plying these same waters in later eras. Intrusive materials is, in fact, a regular feature of ancient shipwreck sites. This is rarely acknowledged in publications because they focus on the single-period aspect of shipwrecks. This is one of the special features of shipwrecks generally: they represent deliberate collections of artifacts assembled at specific points in time, i.e. they are “time capsules” with an additional functional dimension. But the ideal is not completely fulfilled. Organics disintegrate. Objects foreign to the original time and purpose are carried in by animals, natural processes, or human activity. Octopods can introduce confusion similar to burrowing rodents on land. Shoreline processes or deep-water trawlers can scatter a site. And until the introduction of motorized propulsion, sailing ships followed the same winds and currents and topography and were often wrecked at the same places, over and over.

Therefore, the first task in assessing the ceramic assemblage has been to sort out which sherds actually belong to the Late Bronze Age ship. Pieces of pottery with distinctive decoration or shapes or fabric are easy. But it can be a challenge to date the featureless coarse-ware fragments of the two-handled transport jars known as amphoras in Classical times. Unfortunately (and of course!) these sherds also happen to form the majority of the ceramic assemblage. For this reason it is difficult to arrive at a definitive count for the number of transport jars in the cargo of the Late Bronze Age ship. My best estimate at present is that the several hundred amphora sherds found at the site represent about 21 different containers but I continue to...
Since this is the single excavated example of a ship transporting an itinerant bronze-worker in the age named for this very metal, every detail we can deduce about his lifestyle is unique information.

mull over how to define this number more reliably. What I can say certainly is that the variety of fabrics indicates that this was not a shipment that originated in a single place, whatever its quantity.

In addition to the jars, the ship carried more storage and transport containers than previously recognized: at least two pithoi, a smaller pithoid container, and half a dozen transport stirrup jars. The stirrup jars all differ from one another and four are particularly odd. The form of these four is by definition a Mycenaean shape but they must have been made on the geographical or chronological edges of the Mycenaean world, in imitation of the ‘real thing’. Only a small fine-ware stirrup jar and a single errant body sherd can be characterized as conventional Mycenaean, both already noted in 1967.

The catalogue of Cypriot pottery has both expanded and shrunk. One of the pithoi has been identified as Cypriot by means of petrographic analysis (the other has yet to be analyzed), and a fragmentary White Shaved juglet certainly comes from the island. The marks incised into two handles may be traces of a Cypriot tracking system. On the other hand, one of the three jugs identified in 1967 as Cypriot is definitely not, and the Cypriot identity of the other two cannot be confirmed. Finally, it remains the case that only a handful of ceramics might have been used by the ship’s crew: a single cooking pot, a couple of coarse-ware bowls, and two lamps.

Even though the catalogue is much expanded since the 1967 publication, the number of ceramics found at Cape Gelidonya is paltry. This fact and their diversity suggest that they were acquired piecemeal, many or even all of them for personal use rather than as items for trade.

Restudying the ceramics raised in 1960 for the purposes of integrating the finds excavated since 1987 has not essentially changed Bass’ revised interpretation of the shipwreck as Cypriot, based on laboratory analyses of stone and pottery from the wreck (and not Syrian as he opined in his 1967 publication). But we now have a fuller and more accurate understanding of the ceramics that were on board, for use, for provisioning, perhaps for a modicum of trade. Since this is the single excavated example of a ship transporting an itinerant bronze-worker in the age named for this very metal, every detail we can deduce about his lifestyle is unique information.

We strive to draw a picture that takes full account of the potential of the underwater discoveries now available to us in the storerooms of INA’s Bodrum Research Center and the Bodrum Museum of Underwater Archaeology.

This page, clockwise: Gernolf Martana (?) and Peter Throckmorton pry apart a casting and sherd; Nicolle Hirschfeld catalogue a transport stirrup jar. Opposite page: Conservator Güneş Yaşar chisels sherds free from concretion.
2018 INA BOARD MEETING

Directors and Officers gather in Vancouver to celebrate another outstanding year

Every autumn, INA’s Board of Directors comes together to discuss the results of ongoing INA surveys, excavations, research, and publications. The 2018 meeting took place in breathtaking Vancouver, British Columbia. Local highlights of the three-day itinerary included the Vancouver Maritime Museum, the Bloedel Floral Conservatory and Aviary in Queen Elizabeth Park, the Museum of Vancouver, and the stunning collections of the Museum of Anthropology on the UBC campus. Special thanks to Vancouverites John and Nina Cassils and Robyn Woodward for arranging an INA public lecture series at the MacMillan Space Center featuring presentations by Cemal Pulak and Chris Dostal. Sincere thanks to all those who participated and especially to the INA Board for your continued commitment to supporting the very best in the field of nautical archaeology!

1. View of the harbor of Vancouver
2. Tuba Ekmecki, Debbie Carlson, and Nina Cassils
3. Kenan Yilmaz, Ozgu Aydemir, and Lucija Ratkovic Aydemir
4. Cemal Pulak discusses the Uluburun shipwreck
5. Chris Dostal and Sheila Matthews
6. Debbie Carlson, Judy Sturgis, and Jason Sturgis
7. The York Room inside the Hotel Georgia
2018 BOARD MEETING HIGHLIGHTS

8. Charlie and Ellen Steinmetz
9. Shelley Wachsmann, Tuba Ekmekci, John De Lapa, and Justin Leidwanger
10. Hector Williams gives an orientation to the stunning Museum of Anthropology at UBC
11. Bridges Restaurant on Granville Island
12. Dana McGinnis and Dave Ruff
13. Georgia Hotel facade
14. Terry and Laurie Ray
15. John Cassils checks in with the Darden dames
16. Grace Darden, Kate Darden, Shelley Wachsmann, and Lucy Darden
As the book’s authors explain, the discovery of the invasive zebra mussel in the lake calls into question the beneficial qualities of in situ preservation.

“preserve” and monitor them. In addition, the Smithsonian’s conservation efforts today revolve around the application of GENTAL 101 (liquid nylon) in the 1960s, which hinders further conservation. Yet, one of the most instrumental issues, as seen in both Philadelphia and Vasa (as well as in others) but not mentioned in this publication, is acid wood hydrolysis. Since neither vessels’ iron fasteners were removed before the application of polyethylene glycol (PEG), hydrogen sulfide (introduced during the PEG treatment) reacted with the iron to create sulfuric acid, causing the timbers and fasteners to undergo further deterioration. One way to avoid this problem is to disassemble a vessel, conserve each component individually, and then reassemble the vessel. This is a difficult and costly but manageable task.

The problems that methods of archaeological recording and conservation were lacking. However, the authors also examine case studies outside of Lake Champlain (e.g., the War of 1812 schooners Hamilton and Scourge in Lake Ontario; the 19th-century schooner Alvin Clark in Lake Michigan; the 1866 French ship La Belle in Matagorda Bay, TX; and even the 17th-century warship Vasa at Stockholm, Sweden) as cautionary tales or favorable examples to inform decisions regarding Spifire. One shortfall of this book is the lack of discussion regarding how conservation of Spifire can be improved over methodologies used to conserve Philadelphia and Vasa. Indeed, the annotated bibliography does not include any source that specifically focuses on conservation. The problems that
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