EXPLORING USS H-1
A WORLD WAR I SUBMARINE

HIGHLIGHTS OF 2019 BOARD MEETING
BOATS AND COFFINS IN ANCIENT EGYPT
The George and Ann Bass Endowment for Nautical Archaeology Publications, established in 2018, honors two of INA’s founders and supports a cause very close to their hearts: the final publication of archaeological material excavated by INA.

The 2020 Bass Publication Grant was awarded to INA Affiliated Scholar Wendy van Duivenvoorde, Associate Professor at Flinders University, in support of her publication on the hull remains of the early third-century BC shipwreck at Kyrenia, Cyprus. This publication comes 50 years after the 1968-69 excavation of this well-preserved ancient Greek ship and relies on the earlier work of the late J. Richard “Dick” Steffy, who reconstructed the hull in the 1970s.

“I am so honored to receive an award from the George and Ann Bass Endowment for Nautical Archaeology Publications and I am incredibly proud of having the support to work with the original excavators of the Kyrenia shipwreck on the ship’s monograph. It not only acknowledges the tireless efforts of Susan Katz, Laina Swiny, and Robin Piency who have advanced the project since the ship’s excavation in the late 1960s but also the late Mt. Richard Steffy whose lifework features largely in this volume.” - WENDY VAN DUIVENVOORDE

“In 2014, INA established the $25,000 Claude Duthuit Archaeology Grant, which is awarded annually to the underwater archaeological project that best captures the innovative, bold, and dedicated spirit of Claude Duthuit. An explorer, innovator, and pioneer of nautical archaeology, Claude was a loyal supporter of INA since its inception.

Since 2014 the award has grown to $30,000, and the seventh annual Claude Duthuit Archaeology Grant was awarded to INA Postdoctoral Researcher, Jose Casaban. The funds will support his ongoing excavation, with INA Affiliated Scholar Irena Radić-Rossi, of the 16th-century ship, Santo Hieronimo, in Croatia. Their work at this site will provide greater understanding of the construction and technology of the post-medieval vessels of the Adriatic Sea.

“I would like to express my deepest gratitude for being awarded the 2020 Claude Duthuit Archaeology Grant. The archaeological excavation of the remains of Santo Hieronimo will provide us with a better understanding of the shipbuilding philosophy behind the conception and construction of the Renaissance vessels that sailed the Adriatic during the 16th century, and to identify design transfers between the Adriatic and Mediterranean Seas, and the Atlantic Ocean. Irena Radić-Rossi and myself feel truly honored to have received INA’s generous support and recognition.” - JOSE CASABAN

www.nauticalarch.org/duthuit
During the summer of 2019, a small team of INA archaeologists directed by INA Vice President Cemal Pulak in partnership with Hakan Öniz, Associate Professor in the Division of Mediterranean Underwater Cultural Heritage at Akdeniz University, and under the auspices of the Antalya Museum, initiated the excavation of a Bronze Age shipwreck off the Mediterranean coast of Turkey.

The INA team departed Bodrum in late June aboard INA’s Archaeological Research Vessel Virazon II, and after 20 pleasant hours at sea, reached the site, which is not far from Cape Gelidonya where, in 1960, George Bass excavated a late Bronze Age shipwreck. Over the next week, the team established four moorings so that Virazon II could be positioned directly over the wreck, which lies on a steep rocky slope at a depth of 37-52 m (121-170 ft).

Of particular historical and archaeological interest at this site are the approximately 100 copper ingots presently visible. The 2019 team of more than a dozen divers quickly discovered that many of them are encrusted together or concreted to the rock below. Through careful chiseling, the team succeeded in freeing and raising five ingots over the next month. These include pillow-shaped oxhide ingots, stylistically earlier than the ‘eared’ oxhide ingots on the 14th-century B.C. Uluburun shipwreck and the round plano-convex ‘bun’ ingots. However, there appears to be more variety among the ingots than just these two types. The excavation and analysis of this cargo, then, will provide precious information about the origins and circulation of some of the ancient world’s earliest metal ingots. The excavation is expected to continue in 2020 pending approval from the Turkish Ministry of Culture and Tourism.
NEWS & EVENTS
Retirements, Renovations, and Upcoming Symposia

CONGRATULATIONS TO DONNY HAMILTON
All of us at INA extend our heartfelt congratulations to Professor Donny L. Hamilton as he embarks on his next big adventure - retirement! Hamilton joined the NAP faculty in 1978, just two years after INA affiliated with Texas A&M University. Donny founded the renowned Conservation Research Laboratory (CRL) and later helped establish the Center for Maritime Archaeology and Conservation (CMAC). As director of CRL and a faculty member for over four decades, Donny has pioneered many of the techniques used in field conservation today, educated generations of nautical archaeologists, and preserved thousands of artifacts. Hamilton is perhaps most famous for directing the excavation of the Sunken City of Port Royal, Jamaica, but he also participated in or co-directed numerous other archaeological projects around the globe. During his tenure, Donny has held nearly every administrative role imaginable, as Coordinator of the Nautical Archaeology Program, President of INA, and Head of the Department of Anthropology. We salute you, Donny, and wish you many happy years of tinkering at the Rock House!

SHIPRECK WEEKEND 2020
Every spring, INA and the Nautical Archaeology Program (NAP) at Texas A&M University host Shipwreck Weekend, an open house showcasing the latest in nautical archaeology, research, and artifact conservation. This year’s event will take place Saturday, April 18. Professor John Hale (University of Louisville) will deliver a lecture entitled “Tracing the Fate of Empires: Roman and Islamic Shipwrecks at Caesarea Maritima, Israel” at 10:30 in the Geren Auditorium, which is room 101 of the Architecture Building. Hale’s lecture will be followed by research presentations by NAP graduate students, hands-on demonstrations, and guided tours of the NAP laboratories. Visitors can shop discounted INA merchandise and pick up free offprints! The event, which coincides with Parents’ Weekend, is open to the public so if you plan to be in College Station, please join us at Shipwreck Weekend! For more information, visit https://nautarch.tamu.edu/shipwreck-weekend.

UPCOMING SYMPOSIA IN TURKEY
On May 29-30, the Levantine Ceramics Project (LCP) will host a two-day workshop at INA’s Bodrum Research Center (BRC). LCP is a collaborative venture designed to facilitate the study and conversation of ceramics produced in the Levant from the Neolithic through Ottoman periods. The 2020 LCP workshop will focus on “Ceramics of Western Anatolia through the Ages” with special attention on pottery production in the Troad, Ionia, Lydia, and Caria. For more information visit www.levantineceramics.org. On June 11-12, the Turkish Institute of Nautical Archaeology (TINA) generously funded new climate control units that will help minimize future problems in the lab. These critical renovations will carry the BRC conservation staff into the next decade as they continue their incredible work conserving Turkey’s underwater cultural heritage.

VON DER PORTEN BOOK DONATION
The educational legacy of the late Edward Von der Porten (1933-2018) is alive and well owing to a very generous donation from the Von der Porten estate of almost 700 books and thousands of journal articles. The material is presently being added to the holdings of the Nautical Archaeology Program library in Texas and INA’s Tooze Library in Bodrum, Turkey. Edward’s most recent book, Great Gallipoli, was published posthumously by Texas A&M University (TAMU) Press in 2019.

Mustafa Vehbi Koç (1960-2016). Keynote speakers include INA President Deborah Carlson, Vice President Cemal Pulak, and Affiliated Scholars Kroum Batchvarov, Frederick Hocke, and Irena Radić-Rossi. The symposium will be held at the ANAMED Center in Istanbul. For more information visit www.tinaturk.org.

LABORATORY RENOVATIONS IN BODRUM
Toward the end of 2019, while renovating the floors of the main conservation laboratory at INA’s Bodrum Research Center (BRC), we determined that the walls had been damaged by water leaking from the ceiling following historic rain. The most efficient and effective solution was to install metal pillars to support the ceiling, replace completely the leaking marble roof, and waterproof all related surfaces. These renovations are currently underway under the direction of Selahettin Doğan, the head of the Bodrum Chamber of Civil Engineers and Architects, with the help of YSF Isolasyon. In addition, the Turkish Institute of Nautical Archaeology (TINA) generously funded new climate control units that will help minimize future problems in the lab. These critical renovations will carry the BRC conservation staff into the next decade as they continue their incredible work conserving Turkey’s underwater cultural heritage.

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In 1999-2001 members of the Underwater Archaeological Society of British Columbia (UASBC) located the remains of four small, stern wheel steamboats in the headwaters of the Columbia River near Golden, British Columbia. The Yukon River Steamboat Survey was interested in these vessels given the Columbia River near Golden, British Columbia. The remoteness of the District’s mines allowed only a single river route south to American smelters in Montana for ore processing. In 1891, the U.S. Northern Pacific Railway extended a branch line to Montana’s section of the Upper Kootenay River, which opened up the East Kootenay District to international steamboat opportunities. The Canadians countered with a CPR southern branch line (1898) and a spur line (1901) into the District. This expansion redirected the ore to Canadian smelters, and the last steamers were removed from the Upper Kootenay River system by 1902.

North Star was the last U.S. steamer built for the North Star mine contracts. The 39.6 m x 7.9 m (130 ft x 26 ft), 380 gross tonnage, wooden hulled, stern wheel steamboat was constructed in Jennings, Montana by a well-known Oregon shipwright, Louis Pacquet, for Captain Armstrong in 1897. Initially North Star operated on the Kootenay River between Jennings and Fort Steele, British Columbia. The vessel was wrecked in Jennings Canyon in April 1898 but was raised and returned to service. After the 1901 collapse of the Upper Kootenay River route, Captain Armstrong reacquired North Star, and in 1902 took the vessel north through the derelict Baillie-Grohman Canal at Canal Flats British Columbia. Fitting a 40 m (130 ft) long vessel into the 30 m (100 ft) lock required sawing the guards off the ship, extending the lock with two cofferdams of sandbags, and then dynamiting one cofferdam. North Star surfaced into the Upper Columbia on a 3 m (10 ft) high wall of water, and the canal lock was destroyed in the process. North Star only worked one season on the Upper Columbia River before seizure by Canadian Customs for unpaid duty on the U.S. registered vessel. The vessel was beached on the riverbank in Golden in 1902. The pragmatic Armstrong salvaged its machinery and portions of the hull.
and superstructure for other steamers (i.e., Newitka) and freight barges.

2018-2019 FIELD WORK

After relocating the four UASBC sites in 2017, we concentrated on the Golden site, which lay exposed in shallow water 20 m (65.6 ft) from a road. A non-disturbance survey was conducted by combining total station mapping with an orthophotographic mosaic collected with a DJI M600 industrial drone. A unique magnetotrometer, a German SENSYS MAGDRONE R3, small enough to be carried by the M600 drone, was used to survey the site. Two targets were located. Finally, archival research by Xenius Nielsen located historic photographs confirming the wreck as North Star and identifying the second vessel, 700 m upstream, as the 1911 stern-wheel steamboat Newitka.

PRELIMINARY RESULTS

As of 2019, North Star’s hull lies in shallow water near the southern end of the Golden airport. The bow—now missing—pointed upstream. Less than 25% of the hull—aft starboard side—remains in situ. This section of the hull consists of the bottom and the lower turn of the bilge or chine. The aft portion of the wreck has been heavily damaged by ice and salvage. The surviving hull section measures 20.0 m x 4.43 m (65.6 ft x 14.5 ft) and consists of 35 frame stations with a frame spacing of 56.5 cm (22 in) forward of the transom. A keel plank displays a horizontal scarf fastened by iron pins. The keel plank is 6.0 cm (2.4 in) thick by 22.0 cm (8.7 in) wide amidships, thickenes toward the stern, and is affixed to the hull planking with two square nails per plank.

There are circular holes of unknown function at each frame station. The butt ends of either cocked hats (triangular timbers used to join floors to the side frames) or a bilge keelson/clamp reinforcement. Hence it appears the vessel was a DJI M600 industrial drone. A unique magnetotrometer, a German SENSYS MAGDRONE R3, small enough to be carried by the M600 drone, was used to survey the site. Two targets were located. Finally, archival research by Xenius Nielsen located historic photographs confirming the wreck as North Star and identifying the second vessel, 700 m upstream, as the 1911 stern-wheel steamboat Newitka.

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Conclusively, the wreck lies in 1.5 m (4.9 ft) of water near the transom. Several grates for a wood-fired firebox were located upstream of the wreck and a portion of a curved bow guard is also present. Nothing remains of rudders, sternwheels, or paddlewheel. Likewise, we found the remains of only a single side keelson (5.2 ft) of water. The dimensions do not match the North Star’s historic boiler inspections, but they closely resemble the dimensions of the Duquesne boiler.

Excavation will be required to determine if a second hull and engines lie hidden under the gravel. The disarticulated transom is partially resting in 1.6 m (5.2 ft) of water. The dimensions do not consistent with the transom, but no hog chains, braces, or kingposts remain despite historic photos showing port and starboard rows of hog posts and braces, plus a large king post. Likewise, there was no evidence of transverse bulkheads, watertight blocking between floors, machinery, engines, or the boiler. We did not find any remains of rudders, tillers, or a false transom. Hull inspection records indicate three balanced rudders mounted on circular iron rudder posts. The stern rake or apron is a simple ramp that begins to rise ten frames forward of the transom, with no evidence of skegs or bulwarks to protect the rudders. Although the forward section of the hull is missing, historic photographs show a model bow and guards.

A large magnetotrometer target 45 m (148 ft) upstream of the hull was a partially buried locomotive-style boiler in 1.6 m (5.2 ft) of water. The dimensions do not match the North Star’s historic boiler inspections, but they closely resemble the dimensions of the Duquesne boiler. Excavation will be required to determine if a second hull and engines lie hidden under the gravel. The disarticulated transom is partially resting in 1.6 m (5.2 ft) of water. The dimensions do not consistent with the transom, but no hog chains, braces, or kingposts remain despite historic photos showing port and starboard rows of hog posts and braces, plus a large king post. Likewise, there was no evidence of transverse bulkheads, watertight blocking between floors, machinery, engines, or the boiler. We did not find any remains of rudders, tillers, or a false transom. Hull inspection records indicate three balanced rudders mounted on circular iron rudder posts. The stern rake or apron is a simple ramp that begins to rise ten frames forward of the transom, with no evidence of skegs or bulwarks to protect the rudders. Although the forward section of the hull is missing, historic photographs show a model bow and guards.

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INVESTIGATING VESSELS FOR THE AFTERLIFE

Boats and Coffins in Ancient Egypt
BY DOUGLAS INGLIS AND CAROLINE ARBUCKLE MACLEOD

In 1913, William Matthew Flinders Petrie excavated a collection of wooden coffins at Tarkhan, an archaeological site some 50 miles south of Cairo. The coffins and associated wooden fragments date to the Egyptian First Dynasty (3000-2890 BC). Many of the planks had irregular marks and holes along their edges. Petrie deduced that the wooden planks had been repurposed and proposed that they had originally served as paneling for wooden houses. In 1941, Dutch archaeologist and Egyptologist Henri Frankfort suggested an intriguing alternative: that the planks had originally belonged to boats. This was an impressive stroke of insight, as little was known about Egyptian ships at the time. Frankfort’s hypothesis has been debated recently by scholars Steve Vinson and Cheryl Ward, each seeking to understand the initial function of these reused timbers and what they might teach us about Egyptian boat construction.

Establishing the original purpose of the timbers is important, as we know little about Early Dynastic boatbuilding. This unique tradition predates the famous reconstructed Fourth Dynasty royal ship of Khufu by several centuries. While some 44 boat-burials dating to the First and Second Dynasties have been discovered, the majority are unexcavated or were excavated prior to the use of proper recording techniques. Often the only information preserved on excavation maps is a schematic boat-shaped outline. One exception is a fleet of 14 First Dynasty boat-burials discovered at Abydos in 1991. Cheryl Ward was able to investigate and partially document a three-meter-long section of one boat and, for several decades, that has provided the best available information. Thanks to a series of recent discoveries at Abusir and Abu Rawash, current knowledge has changed dramatically. In 2015, the Czech Institute of Egyptology (CIE) discovered a Third Dynasty (2592-2544 BC) boat-burial in the Abusir necropolis. Jointly excavated by the Institute of Nautical Archaeology and the CIE, the Abusir Boat has revolutionized our understanding of early Egyptian boatbuilding. It is the only Egyptian boat that has been excavated and documented with intact lacing and complete edge joinery. Furthermore, it demonstrates that First Dynasty ship construction techniques persisted through the Third Dynasty and that they were drastically different than those of Khufu’s Royal Ship, built only half a century later (ca. 2483 BC).

The discovery of the Abusir boat has provided the data required to determine definitively whether the Tarkhan planks came from boats. In light of this new evidence, and with support from INA, we launched the Vessels for the Afterlife project in 2019 to reexamine the Tarkhan planks, along with other parallels. Our project seeks to identify and document as many Early Dynastic reused planks as possible, both to clarify the construction details and to determine the extent to which reuse was a common practice. Our goal is to develop a better understanding of the religious and social significance of the reuse of boat planks in early burial contexts. Because the planks belong to two worlds – boats and coffins – our project team is comprised of specialists in both artifact types. This project, therefore, is working to bridge the communication gap between nautical archaeologists, who have traditionally discussed boat construction methods and forms, and Egyptologists, who have traditionally discussed the ideology surrounding watercraft.

THE 2019 SEASON IN LONDON

Petrie discovered at least 68 complete or partially complete Early Dynastic coffins during his excavations at Tarkhan, though it is unclear how many he recovered. Planks and coffins from the site were distributed to museums around the world following Petrie’s excavations, but the locations of many remain unknown. Our project will examine and document as many coffins as possible, both to confirm the presence of reused planks and to identify patterns of reuse.
"Examination confirmed that a number of the planks had originated from Egyptian watercraft and had been subsequently trimmed for reuse in the coffin..."

first step was to travel to London in June 2019 to investigate the fragments housed in the Petrie Museum at University College London (UCL). With the permission and assistance of the dedicated Petrie Museum curators and staff, we were able to document nine planks from Petrie’s excavations and to make high-resolution 3D models of seven. The planks were far more diverse than we were expecting. We had seen illustrations and grainy photos, but they did not impart an accurate feeling for the scale and shapes of the individual timbers. No two were alike. While some fragments were quite short, one plank was so large it was needed to work quickly before the museum opened and waves of tourists descended upon us. The coffin contained human remains – therefore, images have not been reproduced for this publication. Thanks to the assistance of the museum staff, we were able to open the case, get clear photos, and make a 3D digital model to support our research. Examination confirmed that a number of the planks had originated from Egyptian watercraft and had been subsequently trimmed for reuse in the coffin, including all of the planks of the coffin lid. This aspect of the study was particularly useful, as we were able to examine the planks in context on an intact object, and not disarticulated, as was the case in the Petrie Museum. This object serves as an excellent reference for how Egyptian boat planks were repositioned for use in coffin construction.

After completing our primary objectives at the Petrie Museum and British Museum, we conducted supplementary research at the archives of the Egyptian Exploration Society (EES). We examined unpublished notes, illustrations, and photographs from Walter B. Emory’s excavations of the First Dynasty tombs at Saqqara, conducted in the 1940s and 1950s. Among these archival documents,

we found a number of photographs showing coffins with reused planks that had mortise patterns identical to those at the Petrie Museum. This is an important piece of evidence demonstrating how the Petrie planks were likely positioned, patched, and incorporated into coffin construction, by showing that the mortises along plank edges were not used in the assembly of the coffin and were, therefore, reused components. The data gathered during the 2019 season have revealed both crucial and unforeseen insights into the early practice of timber reuse, as well as ship, coffin, and tomb construction. The newly-discovered evidence from Saqqara suggests that the reuse of boat planks was more widespread than previously acknowledged. Boat planks were not just reused in coffins, but were probably also used to support tomb walls or to cover the tomb, as some of the examples we studied lacked the specific joints used for coffin construction.

BOATS AND COFFINS IN MORTUARY CONTEXT
How should we interpret the practice of reusing boat planks in coffin construction? Was it simply a case of recycling and economic reuse? We know that boats were deeply entwined with Egyptian burial practice. They were symbols of power, wealth, mobility, and access to resources. Early representations of boats are linked with the beginning of social complexity and kingship in Egypt. Boats in burial contexts could be symbols of the pilgrimage to the afterlife and travel through the watery netherworld. Boat models are some of the earliest grave goods in Egypt, with early examples dated to the Badarian period (4400–4000 BC). Boats were common motifs in Predynastic pottery and in tomb art and remained persistent symbols in Egyptian burial practice. Actual boats were buried beside the tombs of Egyptian elites, from the Early Dynastic Period through the Middle Kingdom. By the late Old Kingdom (ca. 2400 BC), as seen in religious texts inscribed on the interior of royal pyramids and tombs, the deceased king was believed to have traveled in a solar bark to join the sun god Re on his eternal journey across the sky.

In later periods, Egyptian spells identify parts of private coffins with either the port or starboard side of similar divine vessels. This association between coffins and boats has led us to wonder if the integration of ship timbers into coffin and tomb construction was more than simple opportunistic reuse – but perhaps also a means of integrating the status and significance of the ship into private burials. Were the Egyptians, at this early date, physically transforming their boats into vessels that would transport them to the afterlife? Or did the reuse of ship timbers contribute to these later interpretations? The next stage of this project will focus on exploring the religious and social connotations of boat plank reuse, so that we can add to our understanding of not only early technologies, but also of afterlife beliefs and mortuary practice during this prehistoric era.

ACKNOWLEDGMENTS
Many thanks to the curators and staff at the Petrie Museum at University College London, the British Museum, and the Egyptian Exploration Society for assistance and providing access to the objects and archives. We are also grateful to INA and INA Director Charlie Steinsen for their continued support of this project.

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WWW.NAUTICALARCH.ORG
My research focuses on the H-Class submarines built before and during the First World War. The majority of my research time is spent in archives. Thus I embraced the invitation from my friend and colleague, Dr. Roberto Junco Sanchez, to join an expedition to dive the wreck of the submarine USS H-1 (ex USS Seawolf) in the vicinity of Isla Santa Margarita, Baja California Sur. The wreck of H-1 is protected under the U.S. Sunken Military Craft Act and managed by the Naval History and Heritage Command (NHHC). Lying in Mexican territorial waters, she is protected by Mexican law with oversight provided by Mexico’s National Institute of Anthropology and History. The expedition team coordinated closely with both agencies as well as the Commander of the Naval Base at Puerto Cortes.

HISTORY
The submarine USS H-1 was built at the Union Iron Works in San Francisco. She and her sistership USS H-2 were launched in the spring of 1913. Following commissioning the boats were assigned to Submarine Division 2 in San Pedro, California. They were joined by USS H-3, the third boat of the class, which had been built in Seattle. In the years preceding World War I the boats operated on the west coast, conducting training exercises, visiting ports, and conducting maintenance at Puget Sound Naval Shipyard. In April of 1917 America entered WWI, and the following November H-1 and H-2 were transferred to the Atlantic Fleet. All three H-boats conducted coastal patrols and served as training vessels for the duration of the war. Following the armistice, H-1 and H-2 were transferred back to the Pacific Fleet. Accompanied by their escort USS Eagle 11 they worked their way down
The Mexican Navy Base

USS H-1 Wrecksite

DIVING THE WORLD WAR I SUBMARINE USS Cheyanne

Marines alongside their tender USS Magdalena Bay

This page: A diver surveys the site of the H-1 wreck. Opposite page: A 1916 photo of the submarine alongside their tender USS Cheyanne.

would provide a safe haven in which to make repairs. The Commanding Officer, LCDR. James Webb, spotted what he believed was the northern entrance to the bay and steered H-1 for the gap between the two mountains. Exercising caution, Webb directed that soundings be taken to ensure the ship was fair in the channel. Satisfied that they were in the correct position, he proceeded slowly. The ship ran hard aground on a sandy beach in the center of the island.

Heavy waves rolled the little submarine on her side, and seawater rushed down the conning tower hatch. The captain ordered the motors reversed, but the load was so great that the breakers tripped, and power was lost. H-1 was being pushed further up on the shore. The captain had no choice but to give the order to abandon ship. The crew put on their lifejackets and swam to the shore. The captain had no choice but to give the order to abandon ship. The wreck was lost.

North along the coast. They were rescued by a coast guard cutter and taken to San Pedro.

INITIAL SALVAGE ATTEMPTS

Early salvage attempts, made by the U.S. Navy, were thwarted by a lack of heavy towing gear. In response, the U.S. Navy sent the salvage ships, including the USS Vestal, to the scene. H-1 was inspected and rigged for towing. The salvage ships, anchored to seaward of the wreck, used their towing winches to haul her slowly toward deep water during high tides. A storm came in with strong winds and high seas, raising concern that the salvage vessels could drag anchor and suffer a similar fate as H-1. The decision was made to haul H-1 off the beach. H-1 was pulled seaward and began to float but water rapidly filled the engine room and she sank by the stern. While the cause of the sinking will never be known, it is likely that a seam in the riveted hull opened due to the pounding of the surf.

The U.S. Navy considered salvaging H-1, but the expense of refitting the now outdated boat was considered a poor investment. She was subsequently sold for scrap and stricken from the naval register.

THE SUNKEN MILITARY CRAFT ACT

The Sunken Military Craft Act of 2004 (SMCA) protects the sovereign ownership and immunity of sunken military craft (including spacecraft), regardless of location or national origin, by prohibiting all unauthorized activity that disturbs or in any way molestes the wreck. This protection extends to all related material found within the wreck’s debris field. Permits may be granted for archaeological investigation of sunken military craft by the Naval History and Heritage Command (NHHC). Violation of the SMCA or the terms of a permit may result in penalties of up to $100,000 per day for each violation.

The SMCA does not restrict activities that do not molest the wreck such as diving or photography; however, many of these craft are war graves and as such should be treated with the utmost respect.

“...As we neared the site where H-1 ran aground, immediately it became clear how the captain made the navigational error that cost him his life...”

The center of Isla Santa Margarita is a low-lying sand dune with higher ground on either side. Viewing it from sea at night it could easily be mistaken for the entrance. The Mexico and Central America Pilot (Pacific Coast) from the United States to Colombia Including the Gulfs of California and Panama, published in 1918 by the U.S. Hydrographic Office, notes that this low ground had, on early charts, been referred to as Pequeña (“Small”) Bay and the northwest outpost as Cape Judas. Navigation on H-1 would have been by coastal piloting, celestial navigation, and dead reckoning, with piloting being the most accurate. Looking at Pequeña Bay in daylight I could understand how easy it would have been, in the dark of night, to mistake it for the northern entrance to Magdalena Bay. With the help of locals who had been to the wreck site previously, H-1 was found after a few dive attempts. The years have not been kind to H-1; she is deteriorating rapidly. Much of her hull plating is gone, and machinery is missing. Several factors influence the site formation process and its effects on the degradation of the wreck. The area in which the wreck lies is a very active tidal zone, subject to significant wave action. The wreck has become a haven for marine life targeted by fishermen; fishing gear and lobster traps litter the site. Over the years, the wreck has been molested by people in search of scrap metal and artifacts. One of the residents of Puerto Alcatraz kindly returned part of H-1’s periscope to the team, following a presentation by INAH archaeologist Gustavo García on the submarine’s cultural and historic importance. INAH is conserving the artifact.

H-1 represents the maturation of the coastal defense submarine design and her wreck demonstrates the effects of a complex site formation process. Unfortunately, the human element of the site formation process has taken a significant toll on the condition of H-1 and will likely continue to impact her condition adversely. This wreck clearly demonstrates the need for archaeologists to educate the public in the value of preserving our cultural heritage. We can only save wrecks like H-1 if the local people value them as an artifact more than as an opportunity to salvage scraps.

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I would like to express my thanks to the members of the H-1 Expedition for inviting me and welcoming me, Dr. George Schwartz of NHHC, and Drs. Roberto Junco of INAH for their technical support, and Drs. Deborah Carlson and Kevin Crisman of Texas A&M University and the Institute of Nautical Archaeology for funding and guidance. The team and I are especially grateful to the residents of Puerto Alcatraz and the Officers and staff of Naval Base Puerto Cortés for their kindness and gracious hospitality.

PHOTOS: THIS PAGE: SAM HASKELL; OPPOSITE PAGE: KOTARO YAMAFUNE

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Ben Ford tells us a story about Lake Ontario as its inhabitants experienced it through time and space. To achieve his argument for a maritime approach on land and water across Canadian and American boundaries, the author produces evidence from the archaeological, historical, and ethnographic records. The book is divided into seven different chapters. The first chapter is a strong assessment and plea for the use of maritime landscape theories by archaeologists and historians. In it Ford proposes many interesting insights on how the landscape was perceived differently by native French, British, and ultimately Canadian and American populations.

This book transcends the current border between Canada and the United States and offers a wider vision of maritime society that includes environmental, social, political, ideological and religious components. These regions are Carleton Island, Wolfe Island, Long Carrying Place, and Storrs Harbor. The sixth chapter deals with more regional aspects of Lake Ontario like the evolution of a pan-lake identity and ephemeral landscapes. This section is really interesting as Ford attempts to understand daily life even though much of what constitutes evidence for daily life has not survived for the archaeologist to find. As Ford brilliantly summarizes, the importance of the landscape is not directly proportional to its permanence. As an example, wooden bridges over ice were important structures that kept transportation and communication networks open from mid-December to mid-March. These routes were different than in summer, and the season exercised important influence on human activities. Despite their seasonality and total disappearance from modern life, wooden bridges are important for understanding the dynamics of Lake Ontario during winter.

The seventh and final chapter is an argument for the integration of multidisciplinary heritage studies from archaeological and ecological data. It aims for a better understanding of how much the environment has been modified by past human groups and their repercussions on today’s landscape from human and ecological points of view. The Shore is a Bridge demonstrates how the application of maritime landscape theories can enhance the understanding of both land and water cultures in archaeology and history. Ford brings emphasis and importance to the perception of land by its inhabitants and to our understanding of how their behavior is influenced by interaction with their physical environment. This book transcends the current border between Canada and the United States and offers a wider vision of maritime society that includes environmental, social, political, ideological and religious components. Another strength of the book is the place of native history and culture. Even though the native settlement had a diminished presence once Europeans entered the equation, they are not overlooked. While this book is aimed at an academic audience, anyone interested in the history of Lake Ontario will find it useful, despite some heavy theoretical sections, lengthy datasets, and very few illustrations.

Overall, this book not only presents the maritime landscape of Lake Ontario as testimony of the lives of its inhabitants but it also sets a new standard for future maritime archaeology studies.

Marjo Gauthier-Biroulet is a Ph.D. candidate in the Nautical Archaeology Program at TAMU. Her research interests include communication, outreach, development of nautical archaeology, and the evolution of shipbuilding. Marjo was INA’s representative at the 2019 UNESCO meetings in France, for her report see INA Quarterly 46.1/2: 20-23.

The shore is a bridge, which is part of the Ed Rachal Nautical Archaeology Series, is one of nearly 50 nautical book titles published by Texas A&M University Press. Thematic strengths of the nautical collection include the Great Lakes, Civil War, and ancient Mediterranean. INA members can receive a 30% discount on all nautical archaeology titles by using the code INA30.
Every autumn, INA’s Board of Directors comes together to discuss the results of current INA surveys, excavations, and research. In October 2019 the Board returned to INA headquarters in College Station, Texas, for the first time since 2011. Attendees stayed at the brand-new Texas A&M Hotel and Conference Center, which is conveniently located on campus just a 10-minute walk from the classrooms and laboratories of the Nautical Archaeology Program (NAP). Highlights of the weekend included an Open House of the NAP facilities hosted by NAP faculty and graduate students, a tour of the new John D. White ’70 – Robert L. Walker ’58 Music Activities Center (led by Bob Walker himself), and an in-depth survey of all the projects taking place at the renowned Conservation Research Laboratory, where the 17th-century French ship La Belle was conserved. Attendees also had a chance to see a conserved La Belle in person during a day-trip to the Bob Bullock Museum in Austin, complete with a traditional Texas barbecue lunch! The INA Board enjoyed research presentations by Kroum Batchvarov, John Broadwater, Chris Dostal, Cemal Pulak, and Miguel San Claudio. 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!
2019 BOARD MEETING HIGHLIGHTS

8. Bob Walker leads a tour of the brand new Music Activities Center named for him
9. Dinner at Ronin Farm 10. La Belle on display at the Bob Bullock Museum 11. John De Lapa gets to know some of the NAP graduate students 12. Allan Campbell and Cemal Pulak
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