

# MAHSN News



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## **Sloop of War USS *Constellation* Undergoes Renovations at Curtis Bay**

*By Christopher Rowsom and James Smailes*

In 2011, the USS *Constellation* was dry docked at the Sparrows Point Shipyard for routine maintenance.

While in dry dock, the staff at Historic Ships of Baltimore/Living Classrooms Foundation, which serves as the vessel’s caretaker on behalf of the City of Baltimore, noticed an area of deterioration in her starboard quarter. Upon investigation, it was determined that the entire laminated hull below the waterline was deteriorating due to freshwater intrusion. The water had entered from the top of the laminate where there were voids in the repair that had been executed during renovations conducted between 1996 and 1999. The laminate had been capped in 2003-04, but it became obvious as the current inspection proceeded that the damage had already been done.

There were no funds or the time to effect total repairs

in 2011 for this National Historic Landmark, so the hull was patched and planning for a complete repair was begun. Since 2011, the Living Classrooms Foundation was able to raise \$1.25 million from the State of Maryland and \$750,000 from the City of Baltimore for the effort. Also, some private contributions were made

to support the repair. Members of Project SERVE, a Living Classrooms program, worked in various capacities (see the following story).

In October 2014, *Constellation* was towed from her berth at the Inner Harbor and placed into the floating dry dock *Oakridge* at the US Coast Guard (USCG) Yard in Curtis Bay, south of Baltimore. The *Oakridge* had served in World War II and was an excellent dry dock in which to do the work. The plan was to replace the ship's laminated hull planking from just above the waterline down to her remaining original



*USS Constellation, out of drydock following renovations at the Curtis Bay Coast Guard Station in Baltimore, Maryland, and awaiting the tugs that will take her to her berth in the Inner Harbor. The upper masts had been removed in the fall and will be replaced later this year. Photo by J. Smailes.*

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## Notes from the Prez – Steven Anthony

MAHS offered its 27<sup>th</sup> Annual Introductory Course in Underwater Archaeology in January 2015. A special note of thanks is extended to the dedicated and talented group of instructors who supported the course this year, some of whom have been volunteering their time each and every year since the commencement of the course in 1988.

Also in January of this year, MAHS Board Director, James Smailes, attended the Society for Historical Archaeology (SHA) Conference in Seattle, Washington. Jim also represented MAHS at the Annual Board meeting of the Advisory Council on Underwater Archaeology (ACUA), which is held during the conference. MAHS continues to maintain its long-standing association with ACUA as an Institutional Associate Member. In 2016, the SHA will hold its meeting in Washington, D.C., and MAHS will play a significant role in the conference both as a presenter and host. If anyone is interested in assisting with next year's conference, please be sure to contact me.

In March, MAHS supported ACUA with a letter of reference recommending renewal of ACUA's NGO status with UNESCO. Acknowledging that ACUA is an active proponent of the principles and ideals of the 2001 UNESCO Convention, MAHS pointed out that ACUA played an integral role in the successful campaign to encourage U.S. government agencies to incorporate the 2001 Convention Annex into their documents and guidelines relating to the management of cultural heritage.

On March 28, MAHS participated in the Maryland Historical Trust Workshop in Archaeology conference. One presentation of note was Austin Burkhard's talk entitled Historic Wreck Tagging Program. MAHS members Tom Berkey, Jim Smailes, and Dave Shaw manned a table in the bookroom and answered conferees' questions about MAHS and our various projects.

Perhaps the most important part of MAHS' overall mission is to promote maritime cultural heritage and resource protection throughout this country and around the world. So, we are especially pleased to note the formation of the Maritime Archaeological Society (MAS). MAS is a volunteer organization of divers based on the West Coast in the State of Oregon. It was organized by a group led by Chris Dewey, with substantial input and support from MAHS. We wish the group every success in their efforts to advance the cause of underwater historic preservation in the Pacific

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MAHSNEWS will consider articles and notices for publication which enhance public awareness and appreciation of maritime history, archaeology, and heritage preservation.

white oak planking. As the rotted laminated planking was removed, everyone was relieved to see that the historic frames and solid white oak planking had not been affected by the freshwater intrusion.

The ship's frames were treated with borate wood preservative and painted with an oil based primer. The planking system used in the current repair was similar to that implemented in 1996-99, but with subtle differences. Originally, the laminate consisted of a 2-inch thick inner layer of Douglas fir laid fore and aft and fastened to the frames with 6-inch bronze lag screws. Then two intermediate layers of ¾-inch thick plywood were installed on opposing diagonals fastened with bronze ring-shank nails. A final layer of 1½-inch thick Douglas fir was laid on the outside, fastened with bronze wood screws. Each layer was also glued with epoxy, making this repair the largest "cold-mold" project ever implemented, according to Living Classrooms. The entire hull was then coated with epoxy.

The 2015 repair consists of a 1½ -inch thick layer of Douglas fir on the inside, laid fore and aft, fastened with bronze lag screws, and bedded against the frames in roofing tar. The second and third layers are now 1-inch-thick Douglas fir, marine-grade plywood also laid fore and aft and fastened with wood screws and ring-shank nails. The outer layer is again 1½ -inch thick Douglas fir, fastened with bronze wood screws. In this repair, the layers have been glued with 3M 5200 construction adhesive instead of epoxy. When completed, the repair was coated with Devco 167 penetrating epoxy and then received two coats of Interlux "Aqua" antifouling paint over one coat of primer.

### A Volunteer's Perspective

I learned of a potential opportunity to work on the *Constellation* while talking to State Underwater Archaeologist Susan Langley at the MAHS Holiday party in early December. After a few emails and an interview, I was able to begin work just before Christmas as a Shipwright Facilitator, or in other words, a carpenter's helper. My experience with power tools renovating two houses would come in handy!

The work day was 7:00 am to 4:30 pm. I planned to work five days per week. With other volunteer work at the Smithsonian on Tuesdays, that meant a six-day work week; quite an adjustment for someone who has been retired for several years.

I was assigned to the port bow planking team. When I joined the team, they were finishing the first layer of hardwood, which involved applying roofing tar onto the framing and then installing the 2x6-inch Douglas fir boards which were secured with lag bolts and screws. Installing the boards required first clamping



*G. Steiner, R. Roa and R. Szimanski move a plank into position before securing it with lag bolts. Photo by J. Smailes.*



*R. Howard sands the bow planking. After sanding, oakum will be installed in the joint above, and the planks will be primed and painted, all to keep the ship watertight for the next 20 years. Photo by J. Smailes.*



*A detail view of the bow with a one-meter measuring rod showing bronze staples and protective covering for the cutwater. Photo by J. Smailes.*



*The planking team has just finished installing a plank. Next they will move the clamps and dry fit the next plank to prepare it for installation. Photo by D. Ehlers.*

them in position and then wedging them down onto the board below to make a tight fit.

Working in the bow required cutting long triangular ends on many boards, as the planking curved upwards following the frames, and making a tight fit against the existing planking above the waterline. We would install planks on the first 30 to 40 feet of the bow and tie into the planks installed by the mid-ships planking team.

After this, marine plywood planks 16 inches wide by 12 feet long were run fore and aft, fitted against the lower planks, then cut, trimmed, and edges ground to make a tight fit. Installation of the planks involved “buttering” with 3M 5200 construction adhesive, totally covering the back and edges, and finished by running a notched trowel along on the back of the plank, similar to doing tile work. The notched trowel has grooves, or notches, about ¼ inch high by ⅜ inches wide. This produces lines of glue that, when compressed, minimizes the glue that is squeezed out of the edges. Then the board was lifted into position, clamped to hold it, pounded and wedged into place, then secured with lag bolts, screws and copper nails. The glue cures in three days.

This procedure was followed for the second layer of marine plywood and then the final layer of hardwood. With the final layer of hardwood, countersunk bronze screws were used to secure the planks while the glue cured. All holes were filled with epoxy. The hull was then faired with planes and sanded to make it ready for painting. That would be done by the professional painting crew at the shipyard.

The construction work was finished on February 11. That day was a very long one, beginning at 7:00 am and finishing at 9:20 pm. That was it for my participation. The scaffolding and tenting would be removed after the

painting was completed, and the ship made ready for re-flooding of the dry dock.

Refloating *Constellation* was scheduled for late February but was delayed due to weather and the frozen river. By March 12, though, the ship had been refloated and moved out of the floating dry dock. The vessel was docked at the pier in the Coast Guard station waiting for the tugboats to come to move it to its berth at the Inner Harbor. The construction crews and volunteers were invited to accompany the ship on the voyage back to its berth in the Inner Harbor. Once everyone was aboard, the gangways were lifted away by crane, the tugs pulled us out from the dock, and we began to move forward very slowly. As we traveled upriver we were able to see the city from a different perspective, one that only sailors experience.

Even with the upper masts removed, the draw bridges on I-695 and a local road had to be raised. But there was a problem; one of the draw bridge units didn’t move. So we had to wait while the bridge engineers figured out what was wrong, as did all of the drivers on



*Above: C. Rowsom installs rolled cotton in the lower joint between the new planking and the original white oak planking from 1854. Below: J. Smailes removes excess glue from the top of a plank. Photos by D. Ehlers.*



*One drawbridge span (center right in the photo) did not rise with the others, delaying our trip and that of many drivers on the roads above us. Photo by J. Smailes.*

the highway. Many got out of their cars to look at us. Fifteen minutes later, the last draw bridge section moved up and we were able to proceed through the bridge. We were barely through the bridge when the sections began to lower.

We proceeded slowly towards the Inner Harbor, enjoying the beautiful weather and the scenery. After approximately two hours we arrived at the

*Constellation's* berth. The tugs could get the ship only so far into her berth, so after the bow line was secured ashore, we helped pull the vessel into position heaving on the thick ropes just as sailors did on *Constellation* more than 150 years ago. We would pull the ship forward so far, then the ropes tied to a bollard ashore would be moved to the next bollard and we'd pull the ship forward again. Finally, we were in position and the lines were tied off. Then we went ashore to secure the spring lines, which required using a block and tackle to get them to the proper tension. Once the starboard-side shore lines were secured, several crew members went to secure the lines to the dolphins on the port side. As that was being done, others on the crew moved the cannon into position, cleaned the canvas hammocks used for overnight groups, and everything was cleaned to prepare to open to the public.

The *Constellation* is now open daily for public tours as a living classroom and as the flagship of the Historic Ships in Baltimore fleet.

*Chris Rowsom is the Executive Director of Historic Ships in Baltimore and Vice President of Living Classrooms Foundation. ⚓*

## **Project SERVE Members Help Restore the *Constellation***

**P**roject SERVE (Service- Empowerment- Revitalization- Volunteerism- Employment Training) is a Living Classrooms Foundation program that provides on-the-job training for unemployed ex-offenders and disadvantaged young adults through construction and revitalization work in Baltimore's toughest neighborhoods. A lucky few were able to soak up history as they provided an important and valuable addition to the *Constellation's* labor force. Twelve Project SERVE workers have helped to demolish rotted structure and install new hull planking. The project began the first week of November and was very labor intensive. Project SERVE workers did not need prior woodworking experience for the job, but "learning by doing" gave them additional skills they can use to enter the labor force.

As Melvin Moses, a Project SERVE member stated, "Working on the *Constellation* has been a great experience. I've been able to learn a lot of history and about how the ship has been maintained.

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*Project SERVE members move a cannon to the gun port. The cannon were cleaned and the lines reinstalled, ready for the ship to be re-opened to the public. Photo by J. Smailes.*

# Pensacola's Red Snapper Fishing Industry: An Archaeological and Historical Perspective

by Nicole Grinnan

The end of the American Civil War offered almost limitless entrepreneurial possibilities for northerners looking to bring business south. Pensacola, Florida, with its mild climate, abundant timber, riverine infrastructure, and fertile saltwater shores, was one of the many southern port cities to bloom in the years following the war. While legacies of the timber industry and of the military's naval development tend to feature more prominently in local histories, the growth of a large and productive red snapper fishing industry in Pensacola contributed more, in some ways, to the city's cosmopolitan and unique nature at the turn of the century. The success of New Englanders in founding profitable fish houses and fishing fleets in the city drew fishermen, their families, and a large service industry support network from all reaches of the Atlantic. As the "Gloucester of the Gulf," Pensacola's commercial fishing promised a great deal.

Analysis of several aspects of the historical Pensacola commercial fishing industry highlights the dynamic relationship between human culture and the natural environment. Whether expressed through its vessels or the culture of its fishermen, the survival of Pensacola's red snapper commercial fishing until the mid-1960s was due substantially to its environmental context. Similarly, the marine ecology of the Gulf of Mexico influenced the means by which commercial fishermen spent their time in search of a profitable catch. By weaving these various components together into a single narrative, a more holistic perspective of Pensacola's brief venture into commercial red snapper fishing and its effects on the modern Pensacola community emerges.

Marine resources have played an important, long-term or *longue durée* role in sustaining human populations living in northwest Florida. Terrestrial prehistoric archaeological sites reveal that freshwater and saltwater resources were incorporated into daily consumption as early as the Woodland Period (1,000 B.C.–A.D. 1,000). By the 18<sup>th</sup> century, colonial Europeans similarly recognized the potential of northwest Florida's abundance of marine fauna. Industrial-scale utilization of marine resources, however, did not begin in the area until the late 19<sup>th</sup> century. During the Reconstruction of the 1870s, New England commercial fishing entrepreneurs and their crews of fishermen saw ample opportunity to develop a business that could rival the North Atlantic counterpart.

Due to its relative abundance and appealing taste, red snapper became the target fish for commercial efforts. Many of the fishing vessels utilized at this time were contract northern fishing schooners otherwise not operating from New England during the winter months. As regional demand for red snapper increased by 1885, however, the Pensacola fish houses invested in a full-time commercial fishing fleet composed of 17 schooners and four sloops, crewed by 140 fishermen of diverse backgrounds.

With commercial fish houses established in Pensacola, business in red snapper began to boom locally and regionally. Technological developments, including the introduction of artificial ice and new railway connections from Pensacola to the eastern Atlantic seaboard and the Midwest, provided for substantial growth within the industry by the early 1890s. A resulting desire for fresh red snapper drove the industry to new heights. With more vessels needed to meet demand and more men needed to crew those vessels, the Pensacola waterfront developed an large working-class community of which fishermen and their families were a significant part. With a distinctive culture influenced by both the demands of working in the Gulf and an Atlantic-wide commercial fishing culture, red snapper fishermen played an indelible role in



*The locally built Pensacola commercial fishing schooner A.F. Warren in 1924. Image from Fishing Industry vertical file, Pensacola Historical Society Resource Center, Pensacola.*

creating Pensacola's new status as a large, cosmopolitan port city in the early 20<sup>th</sup> century.

Filling a number of the wharves on the port of Pensacola waterfront, commercial fishing vessels were fine examples of what can be characterized as goal-oriented design. Selected by the fishermen who captained them, these vessels provided for all the needs of their crews while allowing for substantial economic returns to the various fish companies in Pensacola. As a purposeful reflection of many different needs, commercial fishing vessels were thus ideally suited to accomplish their task. The largest type of fishing vessel utilized by the industry was the two-masted schooner, or "smack," of approximately 30-100 feet in length. The Pensacola fleet was comprised of both commercial fishing schooners once engaged in the New England fishery and Florida-built schooners based on New England designs. The first schooners used in commercial red snapper fishing from Pensacola contained live wells designed to keep fish fresh during short trips from the relatively close northern Gulf fishing grounds. As artificial ice capabilities allowed for trips to more fertile, distant grounds in the southern Gulf, fishermen utilized tight-bottomed vessels with larger holds allowing them to carry more fish and more ice greater distances. To haul larger catches and accommodate larger crews for a longer period of time, vessels steadily grew in size throughout the lifespan of the Pensacola's historical red snapper fishing industry. By 1930, the average length of these vessels increased nearly 100 percent from 44.6 feet to 88.8 feet. Even more impressive, vessels' average gross tonnage increased nearly 400 percent, from 18.8 tons in 1881 to 96.6 tons in 1930.

Archaeological evidence largely supports the changes to Pensacola commercial fishing vessels over time as documented in historical sources. Three Florida shipwrecks in particular, the Snapper wreck (8SR1001), Hamilton's wreck (8ES2238), and the tentatively identified *Priscilla* (8FR813), exhibit characteristics of the later years of commercial fishing: tight-bottomed hulls, longer lengths, and deeper holds. The wrecks also provide insight into additional features of commercial fishing vessels working from Pensacola. The Snapper wreck has a unique architectural element, a "Great Beam" separating the vessel's main deck from the quarter deck, which historical evidence confirms as a feature only found in New England-built vessels. The large material cultural assemblage found in association with Hamilton's wreck indicates a turn-of-the-20<sup>th</sup>-century working-class vessel with significant accommodations, including areas for food preparation and serving, as well as personal hygiene. Though lacking substantial architectural or material culture remains, investigations of the *Priscilla* revealed characteristics of

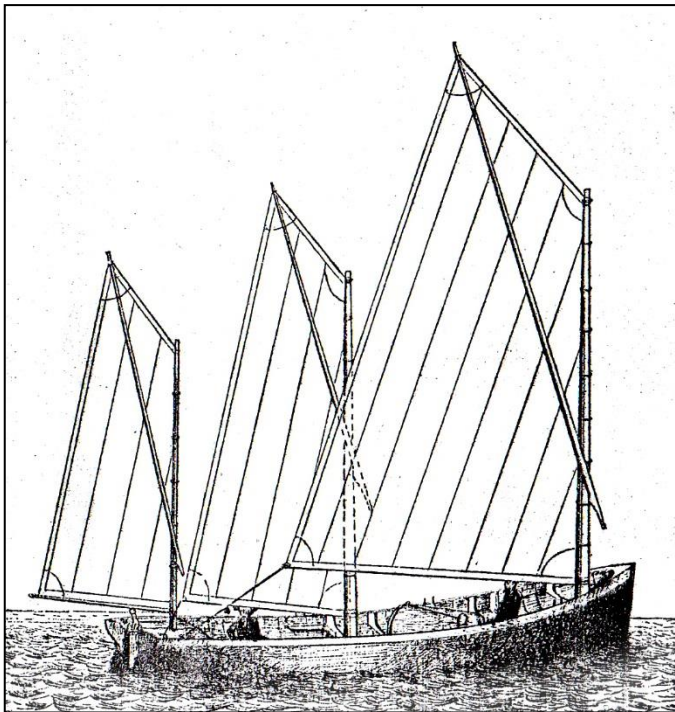


*The wreck assumed to be Priscilla. Low tide, above June 1987 and below September 1995. Images by the Program in Underwater Archaeology, Florida State University.*

most late 19<sup>th</sup>-century commercial fishing schooners that include a double-frame construction and the mixed use of treenail and iron fasteners.

The large, deep-hulled schooners owned by the fish houses slowly moved south in search of new grounds, while a smaller class of fishing vessel, the chingamaring or "ching," began to exploit the abandoned northern Gulf fishing grounds. Without substantial historical or archaeological evidence related to them, however, these vessels are difficult to characterize. Based on historical descriptions and a single illustration, chings were likely open-deck boats with three masts and a vertical, square-shaped stern. Chings carried between three and six men, traveling only as far as 150 miles offshore and returning with 3,000-5,000 pounds of red snapper on any given trip. With neither live wells nor enclosed hulls to ice down the catch, the amount of time chings could spend at sea was fairly limited and did not seem to have exceeded six days.

As the major seafaring profession in the city by 1870, fishermen serving aboard smacks and chings



*Illustration of a Pensacola fishing "ching." Unknown original source. Image from Fishing Industry vertical file, Pensacola Historical Society Resource Center.*

represented a variety of different ethnic, racial, and national backgrounds. Many of the locally born men were of Iberian ancestry, reflecting the status of Pensacola as a Spanish colony until 1821. Other local fishermen were commonly categorized as "Black" or "Mulatto" in federal census records and likely had some degree of African ancestry. Non-local fishermen hailed from areas throughout the Atlantic, particularly the northeast United States, Scandinavia, and southern European countries like Greece and Italy. Despite their diversity, commercial fishermen carried a distinct fishing culture cultivated throughout the Atlantic that included unique styles of dress, maritime-influenced manners of communicating, and an established sense of individuality.

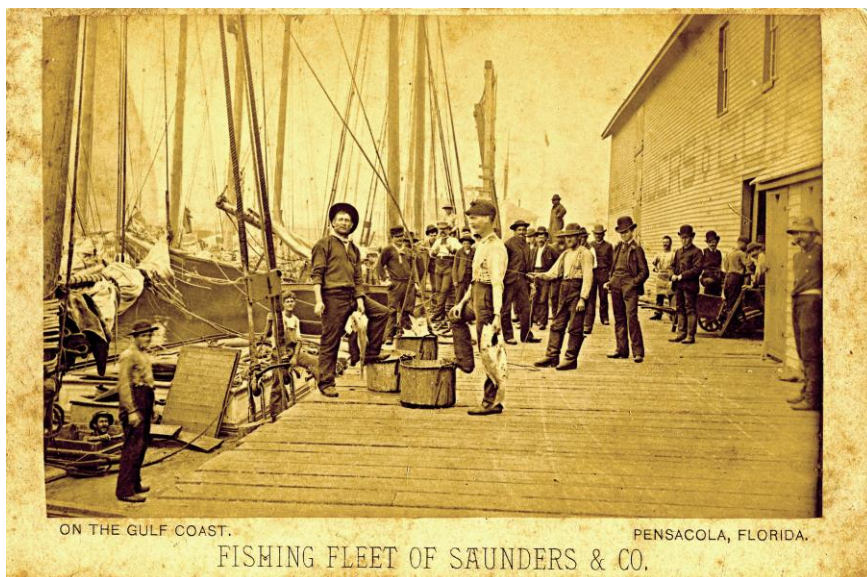
In the 30 years after the establishment of the first Pensacola fish house in 1872, the length and style of commercial fishing trips changed drastically. When offshore prior to 1890, fishermen worked in small crews of six or seven individuals on short trips within the boundaries of the continental shelf in the northern Gulf of Mexico. Following the discovery of the more fertile Campeche Banks of the Yucatan Peninsula, red snapper fishing trips after 1890 extended nearly 600 miles from Pensacola, with crews spending up to a month at sea on the larger, tight-bottomed smacks. Material culture associated with Hamilton's

wreck indicated fishermen required significantly different accommodations to survive on these long trips. Food preparation, personal comfort, and entertainment were necessities for keeping the crew in good health.

Despite the demands of spending days at sea on a fishing trip, most commercial fishermen had permanent roots in the working-class neighborhoods west of Palafox Street. Other fishermen settled in dormitory-style housing supplied by the major fisheries on the Baylen and Palafox Street wharves. The city's fishermen also had a local reputation for over-zealous drinking and spending in the saloons and brothels along South Palafox Street and West Zaragoza Street. While there is undoubtedly some truth to these tales, federal census data reveals that nearly 50 percent of fishermen lived with close relatives or with nuclear family. Though many more fishing smack captains had wives and children, some crew had similar ties to the onshore community as well.

Unlike the offshore environment, federal census records suggest that very little racial segregation existed onshore. Black and mulatto fishermen commonly lived next door to white fishermen and had similar familial and marital ties. As in the ports of New Orleans, Apalachicola, and Carrabelle during the late 19<sup>th</sup> and early 20<sup>th</sup> century, an overriding class-based sense of identity may be the reason for the lack of racial division among fishermen in the residential area of west Pensacola.

As dynamic as the vessels and the men of Pensacola's fishing industry, the Gulf of Mexico red snapper fishery of the late 19<sup>th</sup> and early 20<sup>th</sup> century underwent dramatic changes in terms of population density. While the relative abundance of the fish originally drew commercial fisherman to northwest



*Pensacola fishermen off-load their catch at E.E. Saunders & Co., ca. 1910. Image from Pensacola Historical Society Resource Center.*

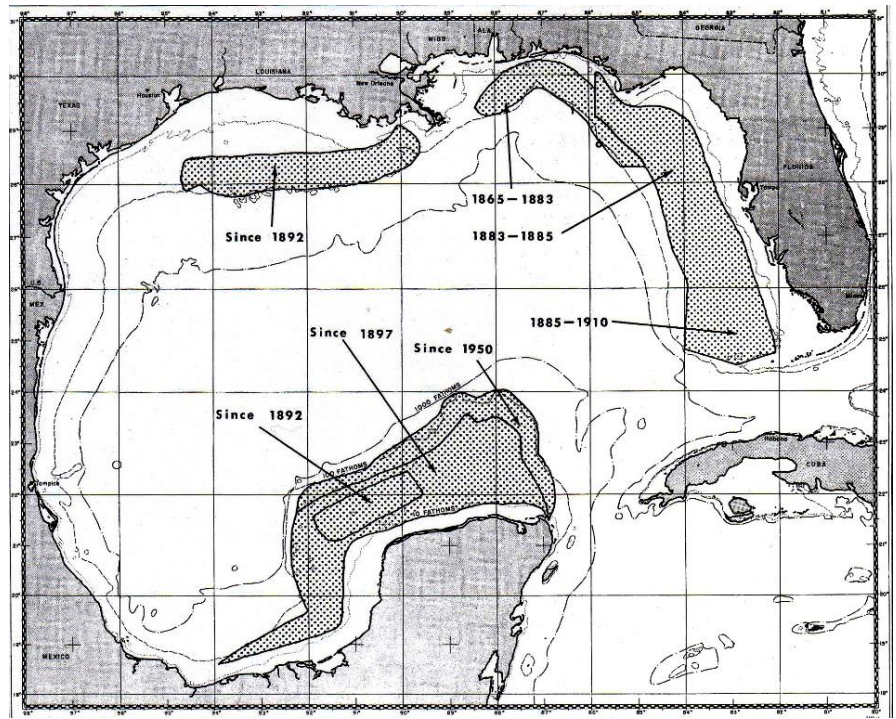


Florida, traditional fishing grounds along the continental shelf in the northern Gulf were quickly depleted in the face of industrial-scale efforts. The discovery of new grounds off Mexico's Yucatan Peninsula in the mid-1880s largely saved the business, though it placed considerably more demand on the fish houses to supply enough men, ice, and vessels to continue making a profit.

While Pensacola's red snapper fishing industry fluctuated to some degree following the devastation of hurricanes, World Wars I and II, and the Great Depression, red snapper fishing continued relatively unimpeded. Though all-sail vessels largely disappeared by 1930, newly added auxiliary engines adapted many sailing boats to the modern waterfront. Other new technologies like fathometers and hand-powered and electric reels continued to increase the efficiency of red snapper crews into the 1950s. By the 1970s, however, new political pressures to establish 200-mile exclusive economic zones throughout Central and South America led to the closure of the fertile Campeche Banks to Pensacola fishermen. Due to the heavy reliance on these grounds since the 1890s, their loss dealt a severe blow to the industry.

Additionally, the passage of the 1976 Magnuson-Stevens Fishery Conservation and Management Act and the establishment of the Gulf of Mexico Fishery Management Council targeted red snapper as a severely overfished stock. New regulations limited the size and amount of red snapper that could be caught by commercial and recreational fishermen and further debilitated the industry. Forced to return to the long-depleted grounds in the northern and eastern Gulf that were increasingly becoming regulated by the United States government, Pensacola's commercial red snapper fishing industry quickly fell apart and came to a quiet close.

Based on analysis of the relatively short historical trajectory of commercial red snapper fishing in Pensacola and northwest Florida, this industrial-era culture's relationship with the marine environment is essentially a dialectical one. As the Gulf of Mexico's red snapper fishery exhibited considerable influence on the development and expansion of commercial fishing efforts from Pensacola, so too did commercial fishing drive change upon the marine environment and, essentially, upon itself. In this particular historical case, the dynamics of change largely resulted in negative, long-term effects on both the environment and the industry. Despite the modern regulation of the fishery



*Changes in red snapper commercial fishing grounds in the Gulf of Mexico from 1865-1950. Image from U.S. Department of the Interior, Bureau of Commercial Fisheries, A Review of the Gulf of Mexico Red Snapper Fishery, by James S. Carpenter, Circular 208 (Washington, DC, 1965).*

and the disappearance of the industry from Pensacola, however, visitors and residents continue to enjoy red snapper and other Gulf marine resources through the city's sizable charter fishing and tourism industries. As it has in the past, the situation of Pensacola along the Gulf of Mexico will continue to influence cultural interaction with the marine environment.

The history and legacy of Pensacola's historical red snapper fishing industry speaks profoundly to the ongoing relationships between human societies and the natural world in which they live. In considering the many aspects of that relationship in regard to commercial fishing from Pensacola, this investigation highlights the manner by which commercial fishing vessels, commercial fishing culture, and marine ecological conditions in the Gulf of Mexico red snapper fishery entwined to influence the development of a fledgling commercial fishing enterprise in Reconstruction-era Pensacola. As with other industrial endeavors in the United States and throughout the world, Pensacola's red snapper fishing industry helped drive the development of a modern economy still heavily dependent on natural resources. The desire to sell a little-known red fish radically shaped a city that would, for a time, dominate northwest Florida.

*Nicole Grinnan is a 2014 graduate of the Master's program at University of West Florida. This article is adapted from her Master's thesis research project. The full thesis is located at: <http://gradworks.umi.com/15/53/1553976.html> 📄*

## Artifacts from *Cleopatra's Barge* are Returned to Hawaii

by James Smailes

Late in 2014, I assisted Dr. Paul Johnston, Curator of Maritime History at the Smithsonian's National Museum of American History, in assembling and packing a collection of artifacts that had been recovered, conserved and analyzed from *Cleopatra's Barge*, an early-19<sup>th</sup> century yacht that sank in Hawaii in 1824.

The ship was built in Salem, Massachusetts, in 1816 for \$100,000. It was the first oceangoing yacht in the United States, launched at a time when the concept of a ship built for pleasure was unknown on the western side of the Atlantic, where ships were built solely for trade or war. Technically a hermaphrodite brig, the vessel was square-rigged on the foremast and fore-and-aft rigged on the main.

*Cleopatra's Barge* was the extravagant dream of George Crowninshield, Jr., of the Crowninshield family of New England, famous for producing fast sailing merchant ships that made excellent privateers during the Revolutionary War and the War of 1812. The vessel was constructed using the finest materials available. It was lavishly furnished, featured the latest patent windlass, pump, and rudder technology and even plumbing. The origin of the yacht's name was never revealed, but may have been related to descriptions of the queen's barge in Shakespeare's *Anthony and Cleopatra*.

Crowninshield toured the Mediterranean in his yacht in 1816-1817. He died shortly after returning in 1817, however, and the yacht was sold to his brother, Richard, for \$15,400. After several cruises to South America, Richard sold the *Barge* to the Boston China trading company Bryant & Sturgis in 1820. Later that year the ship was purchased by King Kamehameha II, also known as Liholiho, the second king of Hawaii, from Bryant and Sturgis and their partner in this enterprise, Captain John Suter, for \$80,000 worth of sandalwood, famously noted as one million pounds of the wood, a prized China trade commodity sought after for use as incense and in cabinetry. Kamehameha renamed the vessel *Ha'aheo 'o Hawaii'i* (*Pride of Hawaii*) and used her for the next four years as his private yacht, a cargo and passenger transport, a diplomatic vehicle to aid in consolidating his power over the other chiefs in the Hawaiian archipelago, and even once as a pirate ship. The vessel sank in Hanalei Bay on the north coast of Kauai in April 1824, while the king was away on a tour of the United Kingdom.

Three books and dozens of articles have told the story of *Cleopatra's Barge* but with little mention of the years in Hawaii, a period described by Johnston as

“the ship's rich Hawaiian history.” Kamehameha ruled for only four and a half years, yet his short reign had a greater impact upon Hawaiian culture and society than any other earlier or subsequent monarch. Hawaii experienced substantial social change under the leadership of King Kamehameha II. After coming to power in 1819, the King abolished the Hawaiian kapu (taboo) system and admitted Christian missionaries, which further accelerated cultural change.



*Cleopatra's Barge, August 1818,*  
by George Ropes, Jr.  
Peabody Essex Museum (M8255).



*Portrait of King Kamehameha II of Hawaii attributed to John Hayter, 1824.*  
Bishop Museum, Hawaii.



*R. Rogers and T. Ormsby record details of bow timbers using a square measuring grid. Photo by P.F. Johnston.*

However, not a single artifact existed from his reign, apart from the contents of this shipwreck. Yet the wreck was under considerable threat, largely from natural agents. In the relatively warm waters, terebrant worms had been chewing through the wreck's wooden hull for well over 150 years. In addition, the wreck lay in shallow water, subject to powerful winter surf and unpredictable storm surge, tsunamis in the 1940s and 1950s and in September 1991, the famous hurricane Iniki which stalled over the bay. Thus the archaeological recovery of the remains of the vessel's contents was considered imperative.

Dr. Johnston led a team of researchers from the Smithsonian to Hawaii beginning in 1995, obtaining what remain the only underwater archaeological permits ever issued by the State. The team located, surveyed and excavated the shipwreck from 1995 to 2000. More than 1,200 lots of artifacts were recovered from the badly preserved underwater site, and a 40-foot section of the royal ship's stern was discovered, documented and re-buried in place. The collection was transferred to the Smithsonian for conservation and analysis. Among the artifacts were Hawaiian weapons such as "canoe breakers," which were stones tied to lines and hurled at enemy canoes, along with Western objects of warfare such as musket balls and a powder flask. Other objects included grindstones, a conch horn, glassware, bottles, and stones from a Hawaiian bowling game called ulu maika, along with a checker from a Western checkerboard. Other artifacts included copper sheathing and bolts from the ship's hull.

The artifacts are being returned to the Kauai Museum in Lihue, Kauai, designated by the State of Hawaii as the official repository for the material. For the return shipment to Hawaii, each item was carefully wrapped with bubble wrap and then packed in small cardboard boxes, keeping like objects together. The

boxes weighed between 5 and 42 pounds, depending upon the size and composition of the artifacts. Very fine objects, such as leather, glassware, and an ivory ring, were carefully wrapped in smaller boxes. Then these boxes were placed into larger wooden shipping crates that previously had been used to ship artwork. Heavy boxes were placed on the bottom, with lighter and more fragile items at the top, carefully separated and secured with foam padding. Items suitable for display were packed together. Four crates were shipped to Hawaii in March 2015, while others will eventually be packaged to complete the return of the collection.

As a collection, the artifacts recovered from the wreck of *Cleopatra's Barge* demonstrate the changes that occurred throughout the Hawaiian islands under the leadership of King Kamehameha II. They provide a unique view into the cultural transformation in the archipelago during its period of rapid and extensive westernization.

Dr. Johnston's book about the ship, its history, and the artifacts recovered from the archaeological investigations—*Shipwrecked in Paradise: Cleopatra's Barge in Hawaii*—will be published by Texas A&M Press for release this fall.



*Above, Empire-style furniture mount, depicting a cupid sharpening his arrow on a foot-operated rotating grindstone. Traces of gilding were found after conservation.*

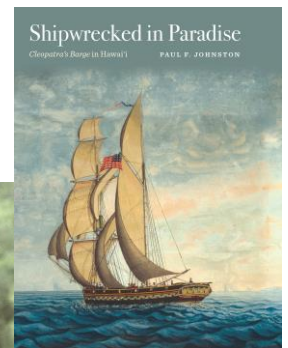
*Below, a copper powder flask, shown before conservation. Courtesy of the Smithsonian Museum of American History*



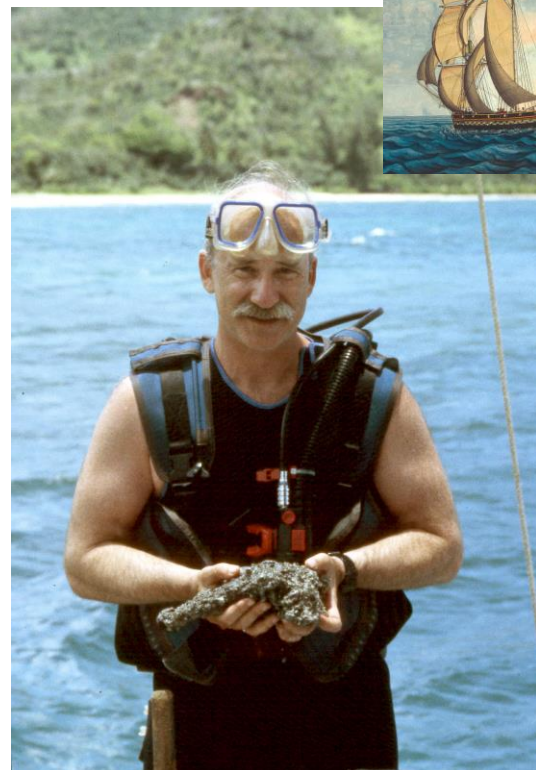
*Left: A fully packed crate. The cooler in the center contains several long copper bolts and copper sheathing from the ship's hull. Note the inventory list on top of the boxes.*

*Right: The first four crates, representing about two-thirds of the artifacts, are taken in the freight elevator to the shipping office.*

*Photos by P.F. Johnston.*



**"What was really interesting for me was that this was a time of cultures in contrast and transition," Johnston said. "The king only reigned from 1819 to 1824, but Old Hawaii changed forever and irrevocably from the changes he put into place during that short period. He was an important member of our nation's only authentic royalty."**



*Dr. Paul F. Johnston holds a concretion. In a "guess the artifact" contest, many believed it was a pistol before x-ray analysis determined it to be an iron fastener. Courtesy of the Smithsonian Museum of American History.*

*Inset: Shipwrecked in Paradise tells the story of the ship from her arrival in Hawaii in 1820 to her discovery and excavation. Image courtesy of Texas A&M University Press.*

*Material for this article was obtained from press articles from Reuters and the Daily Mail (UK), and from articles published by Dr. Johnston including:*

*A Million Pounds of Sandalwood: The History of Cleopatra's Barge in Hawaii. The American Neptune 63 (1). pp. 5–45 (Winter 2002)*

*Shipwreck: Threatened in Paradise. Underwater Cultural Heritage at Risk (International Council on Monuments and Sites). pp. 88–89 (April 2006). ⚓*

## The Life and Death of a 19<sup>th</sup>-Century Steamer, *City of Tampa*

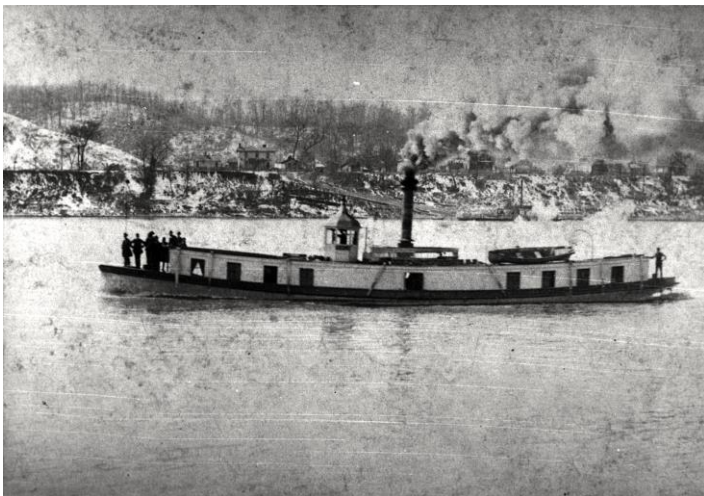
by Andrew Derlikowski

The idea for adapting the steam engine for use on watercraft gained popularity rather quickly at the end of the 18<sup>th</sup>-century. A number of inventors had the innovative idea of taking steam machinery from the factory floor and placing it on open decked wooden vessels. The steam engine allowed for less manpower shipboard and, more importantly, the winds no longer dictated the flow of goods and people.

This efficient and cost-effective new technology spawned many varieties of ships. Two of the most common in America were the Eastern-styled steamer, built for traversing the Atlantic and coastal waterways, and the Western-styled packet steamer, which was made for inland travel. This article focuses on a particular Western-styled, single-screw packet, *City of Tampa*.

*City of Tampa* started life as the single-decked packet, *Volunteer*. She was built in Mason City, West Virginia, in 1887 for the Bay Brothers, to run on a line service operating on the Ohio River. *Volunteer* was 93 feet in length, with a 12.6-foot beam and a draft of 2.6 feet. The shallow draft and light build of these boats made them the ideal method of travel on the ever-changing inland waterways, which were often unpredictable and had a tendency to shoal. *Volunteer* plied these waters until being “sold south” in 1892 to move fruit on the Manatee River in central Florida. Not much is known about the vessel’s life during these years, but at some point prior to the time the steamer moved to northwest Florida, she had grown. Her width had doubled to 24 feet and a second deck had been added.

In 1898, Captain Augustus Mason bought and renamed her *City of Tampa*, which was his homeport at the time. The newly christened *City of Tampa* was



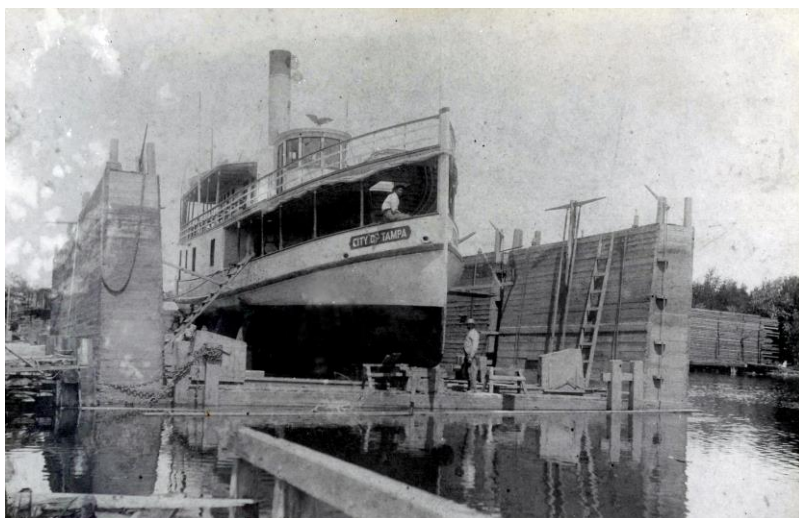
*City of Tampa was originally built as Volunteer, here shown on the Ohio River. Image courtesy of Murphy Library, University of Wisconsin-La Crosse*



*City of Tampa under steam on the Blackwater River, showing the northwest Florida lumber industry in full swing. Image courtesy of the Mason family.*

brought to Milton, Florida, where she would resume her duties as a packet steamer moving cargo and people on a fixed schedule. In northwest Florida at this time, the lumber business was booming, and Pensacola in particular was known around the world for its yellow pine industry. The popular steamer made daily stops along the Blackwater River at the town of Bagdad, at the Bay Point Mill, and in Pensacola. The vessel also provided special day trips and leisure cruises for residents, complete with a band and dancing. In the local newspapers, the *Milton Gazette* and the *Pensacola Journal*, there is an almost daily mention of the vessel’s travels, and whether or not she was running on time. *Tampa*, as she was commonly known, was highly regarded, though mostly for providing a direct link from the Port of Pensacola to Milton at a time when there were no connecting roads. *City of Tampa* worked for the community for 23 years, which was well above the average five-year lifespan for a packet steamer. This may be why the locals in northwest Florida still fondly remembered *Tampa* decades after the vessel met her spectacular, fiery end.

*City of Tampa* was purchased by R.P. Broxson and G.C. Harvell in 1919, both men having worked on the vessel in the past, Broxson as the pilot, Harvell as the engineer. The new owners continued her regular route, and in 1921 she was brought in for boiler replacement at Bay Point Shipyard. In the middle of the night with Broxson aboard, *Tampa* caught fire and burned through her hawser and went adrift. The steamer floated, engulfed in flames, southeast with the outgoing tide.



*Left, City of Tampa at the Bruce-Ollinger Dry-dock, Bagdad, Florida.  
Right, City of Tampa at Palafox Wharf, Pensacola. Images courtesy of the Mason family.*

She struck a sandbar at the mouth of the Yellow River, burnt to the waterline, and sank in seven feet of water.

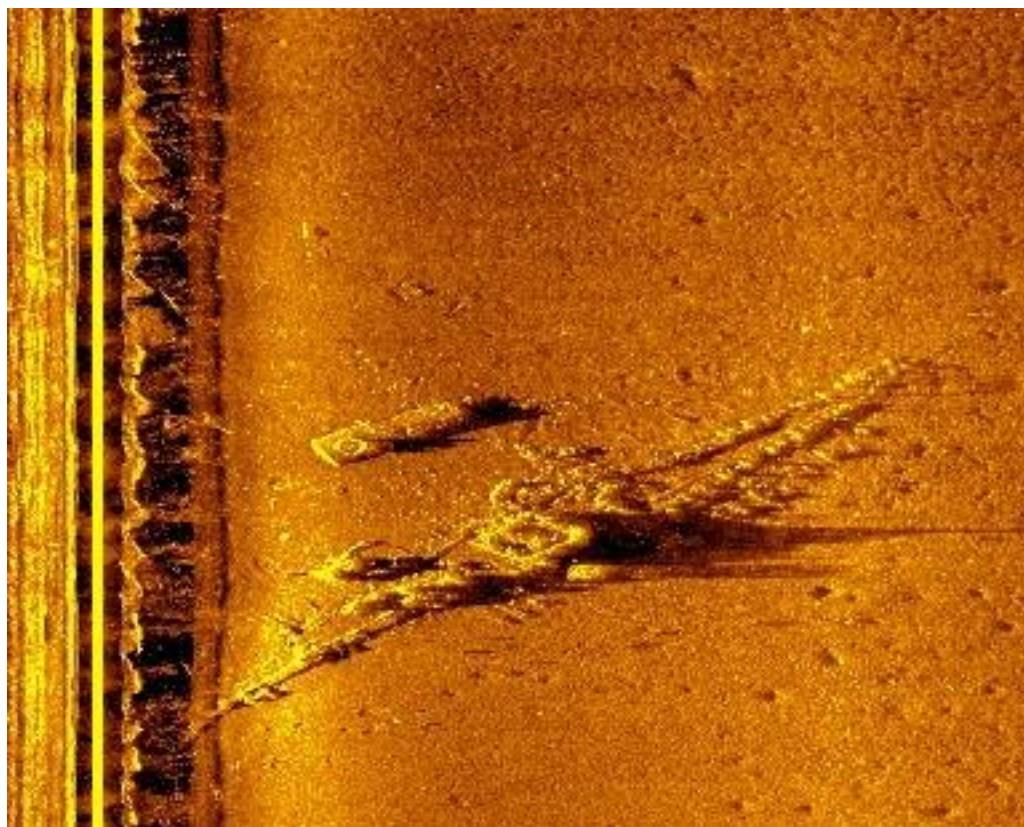
The vessel was a total loss. Until Hurricane Fredrick in 1979, the boiler and stack were still visible, making her a hazard to navigation. However, the wreck of the steamer continued to be used by locals as a popular fishing spot. Many years later, after she had long disappeared below the surface, old local fisherman still knew of her general location.

vessel that had been mostly forgotten was intriguing. After some discussion with Dr. John Bratten and Dr. Gregory Cook at the university, I was given the green light to try and find her.

I began with Dr. Smith's report of the Florida shipwreck survey from 1991/1992, which showed only the boiler remaining, and that the site was most likely *City of Tampa*. Armed with that survey, maps of the area, a 1200 kHz side-scan sonar, more existing survey

In the early 1990s, Dr. Roger C. Smith, State Underwater Archaeologist for Florida, and his team undertook the task of locating and investigating shipwrecks lying in state waters in order to protect them for future generations. During their surveys, *City of Tampa* was located and a preliminary identification was made through historical research, diver investigation, and by interviewing the local populace. At the time of the report only her boiler was noted as having been found. The decision was made that, although *Tampa* was a locally important cultural resource, no further work was needed.

In 2012, while I was looking for a thesis topic for my studies at the University of West Florida, fellow graduate student, Joe Grinnan, mentioned the name *City of Tampa*. The idea of relocating a



*Side-scan image of City of Tampa: boiler is at the top left; bow is right; and running gear travels left. Image by the author.*

data from a search for the HMS *Mentor*, a British sloop of war abandoned and burned by the British sailors to avoid Spanish capture in 1781, and two gracious volunteer graduate students, William Wilson and Eric Swanson, the plan was put into action.

A day was decided upon, and it was time to face the unpredictable winter waters of northwest Florida. In late April 2013, Will, Eric, and I took to the water and began the survey that would ultimately locate *City of Tampa*. Using Hypack software, we decided on an area that best suited the information available. After only completing half of the planned 25 survey lines, we saw a familiar shape, and it was not just a boiler. Several meters to the south lay a well-preserved 19<sup>th</sup>-century packet steamer. The next order of business was to plan an exploratory dive to assess the site's condition and determine if it was a feasible subject for a master's thesis.

The dive came two weeks after the initial find, and did not disappoint. Not only had *City of Tampa* held up well, there was quite a bit of material above the mucky-silt bottom of Blackwater Bay. As its name implies, the bay is very dark due to the abundance of tannic acid in the water. Visibility is also affected by tides coming in from Pensacola Bay, which can either help to clear up the murky working conditions or make them much worse.



City of Tampa: The running gear terminates with the intact four-bladed propeller. Photo by the author.

My research is ongoing as part of a graduate thesis focusing on modifications made to the *City of Tampa*. As mentioned earlier, the modifications were not insignificant, the vessel having been doubled in width and in height. Since no records of her alterations have been located, I hypothesized that by gathering wood samples from exposed frames, the origin of the modifications could be determined. One problem that I encountered during preliminary research, which helped to drive my thesis question, was that very few blueprints exist regarding packet construction. This could be due to the high volume of construction and short lifespan of these vessels. A detailed historical record exists of where the vessel was built, where she operated, and where and how she met her end. Hopefully by identifying the geographic location of lumber used, we will be able to tell at what point in the steamer's life she was altered.

As of this writing, *City of Tampa* has been positively identified, and 75 percent of the vessel has been mapped using trilateration, to minimize errors due to poor visibility. Diagnostic artifacts have been recovered and are in the conservation process. Wood sampling sites on both port and starboard have been chosen where futtocks are overlapped.

A detailed history has been constructed and a number of inaccuracies in the record have been corrected. For example, it was initially thought that as *Volunteer*, the vessel operated as a Coast Guard cutter. While there was a Coast Guard vessel that did sail under that name, the *Volunteer* built by the Bay Brothers did never operate in a governmental role. In addition, a significantly larger side-wheeler known as *City of Tampa*, operated in the same area at this time. That vessel, however, was originally the *Frederick DeBary*.

Although much has been done, work underwater has been slow going due to poor visibility, weather events, and availability of trained volunteers. It is hoped by conducting a thorough archaeological and historical investigation that the thesis question regarding the construction history of the vessel can be answered, and this lost chapter of *City of Tampa's* life can be added to her already fascinating story

Andrew Derlikowski is currently at the University of West Florida, pursuing his M.A. in Historical Archaeology with a Maritime focus. ⚓

Be sure to keep your MAHS Membership current. If you aren't a member, become one and join us in supporting maritime historic preservation.



# **Radiocarbon Dating: An Archaeological Perspective, 2<sup>nd</sup> Edition** by R.E. Taylor and Ofer Bar-Yosef (Left Coast Press, 2014)

reviewed by Dennis Knepper

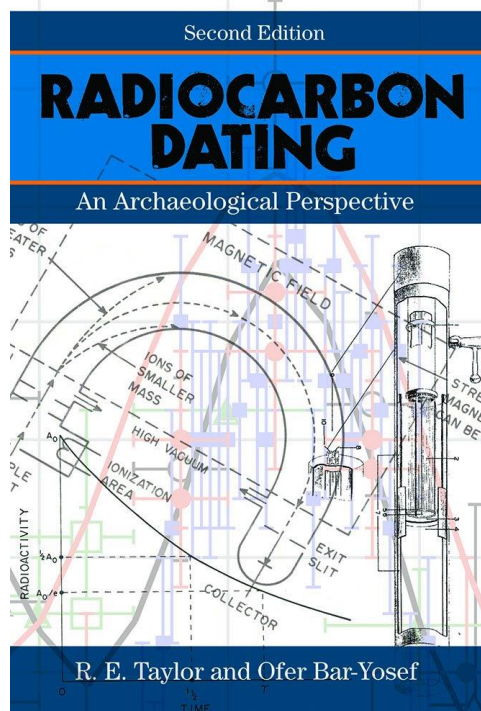
It would be somewhat of an understatement to say that radiocarbon dating revolutionized the study of archaeology. Chronology, or the dating of past events, is perhaps the most basic aspect of archaeology. It is the framework on which our understanding of prehistory and history is constructed.

Two general forms of dating are used in modern archaeology: relative and absolute. Relative dating places artifacts or features in time based on their association with other items. Things are dated relative to something else—they are either older, younger or the same age. Stratigraphic position is perhaps the most common example of this type of dating where, in undisturbed soil or other deposits, lower layers are older than upper layers.

Absolute dating, on the other hand, puts an actual date—often a calendar date—on an item. A date on a coin or manuscript would be obvious examples. Radiocarbon dating, introduced in the early 1950s by Willard Libby, a chemist at the University of Chicago, is another method of absolute dating and has become the standard laboratory process for this purpose in archaeology.

In 1987, R.E. Taylor published a book-length review of the theory and techniques involved—the original edition of *Radiocarbon Dating: An Archaeological Perspective*. The book was the first complete and authoritative treatment of technological dating in archaeology, and it immediately became a standard reference on the subject. A revised and updated edition of the work, by Taylor and co-author, Ofer Bar-Yosef, was recently published by Left Coast Press.

Radiocarbon dating uses the natural decay of radioactive carbon as a clock or timer. Carbon is present in nature in several forms, referred to as isotopes. Carbon<sup>12</sup> (sometimes written <sup>12</sup>C) is the most prevalent and stable form, while Carbon<sup>14</sup> (also <sup>14</sup>C, or radiocarbon) is a slightly radioactive form that naturally decays at a steady rate to the stable form, <sup>12</sup>C. Living organisms absorb both types of carbon throughout their lives. When the organism dies and no more carbon is



taken in, <sup>14</sup>C continues to decay but is not replaced. Since the rate of decay is known, the ratio of <sup>14</sup>C to <sup>12</sup>C can be used to determine how much time has passed since the organism died.

This sounds simple enough, but the physics and chemistry behind the process are fairly involved. Taylor describes the procedures in detail that is both technical enough to satisfy the scientist but not completely incomprehensible to the informed layman.

Originally written some 35 years after the introduction of the process, *Radiocarbon Dating* was designed to describe the technology and address some of the issues regarding the techniques and the interpretation of results that plagued archaeologists then, issues such as variations in the amount of atmospheric radio-carbon

and problematical sources of contamination.

Many of these issues still trouble us now. They, along with the laboratory and theoretical advances made in the nearly 30 additional years since the original publication of *Radiocarbon Dating*, form the heart of this updated edition.

At just over 400 pages, this revision is almost twice the length of the original work. The general format of the book has not changed, however. Several chapter titles have been revised, but the subject matter of each section is the same, if in some cases substantially updated.

Early chapters present basic theoretical principles and some of the major factors that can complicate the process, factors that the authors refer to as anomalies. An extensive discussion of laboratory techniques follows, beginning with a chapter on the types of material that can be dated, such as charcoal, bone or shell, as well as what are called non-standard materials, including carbonates and organics in soil or rock varnish, which can be used to date rock art. The ways in which samples are pretreated to extract datable material is also outlined. Measuring or counting radiocarbon samples is detailed in the following chapter, ending with a discussion of accelerator mass spectrometry, or AMS dating, in which the atomic weight of a carbon sample is directly measured, allowing very small samples to be



dated with high precision. A chapter is devoted to evaluating the dates resulting from the lab procedures, assessing accuracy, precision, and how the results are interpreted.

New chapters in this edition include reviews of the impact of radiocarbon dating on Old World and New World chronologies, using a series of case studies that illustrate some of the major advances and discoveries in these areas, along with some questions that are still unresolved. The book concludes with a history of radiocarbon dating from its discovery through the development of AMS dating. A short final chapter details bibliographies and databases that are available from a variety of sources. End matter includes endnotes, 64 pages of references cited in the book and, lastly, a sparse index.

Much of the material covered in the book has relevance for dating objects and sites much older than are typically found in underwater archaeological sites. However, an understanding of radiocarbon dating and how it is properly applied can be critical to the appropriate analysis of submerged sites.

An important issue in dealing with underwater cultural remains is the potential for contamination, particularly by more recent biological organisms, a situation that can often be addressed by careful examination, cleaning, and pretreatment of samples.

A more intractable issue is the recent date of many if not most of the sites that are investigated underwater. Radiocarbon dates, by their nature, are often too imprecise to be of interpretive value on very recent sites. The term radiocarbon date is actually a little misleading. The results of a radiocarbon assay are not reported as a single date but as a date range, referred to as probability distribution. The typical format is a date  $\pm$  a time range, where the date in the expression is merely the midpoint of the range. The actual date, however, has a statistically defined probability of falling anywhere within the time interval.

While AMS dating has decreased the range in comparison to conventional radiocarbon measurements, a variety of factors further complicate matters for recent dates. A threshold, referred to as the *routine lower dating limit*, is recognized at about 300 calendar years (250  $^{14}\text{C}$  years). For dates more recent than this limit, accuracy and precision render the results of the dating process questionable. Factors influencing the reliability of recent dates include short-term variations in atmospheric radiocarbon that are caused by solar winds and are difficult to track and account for. In addition, the increasingly prevalent burning of fossil fuels, resulting in the release of large amounts of carbon dioxide that contains no radiocarbon, affects the natural

$^{12}\text{C}/^{14}\text{C}$  balance on which the radiocarbon clock is based. And finally there is the so-called bomb effect, the detonation of nuclear weapons in the atmosphere that has had the opposite effect of burning fossil fuels, introducing a large and unnatural amount of radioactive carbon to further unbalance the isotope ratio. Thus, most determinations of less than 300 calendar years are reported as “modern” and discounted as being of little use for chronological interpretation.

In spite of the technological challenges, however, the greatest issue for terrestrial or underwater archaeologists remains the leap from lab results to chronology—establishing the context of the dated material. How does a piece of wood that has been dated relate to the rest of the archaeological material at a site? Is a disarticulated timber found on a shipwreck actually part of the wreck or is it debris from another source? These are questions that the archaeologist, not the lab technician, must address.

An early reviewer of the first edition of *Radiocarbon Dating* criticized Taylor’s prose as dry and overly technical in tone, suggesting that it was too dense and complicated in some areas, especially in the discussion of the collection and pretreatment of samples. The observation is valid to some extent; the issues are without question complex and the explanations are detailed. Technical writing is by nature rigorous and exacting, but it is not necessarily tedious or dreary. For those truly interested in what radiocarbon dating is all about, there is plenty of interest in this volume.

The reviewer also observed that with the advances in science occurring at that point in the late 1980s, a second edition of the book would probably be necessary in five or six years. In fact, the text stood the test of time a little better than predicted. However, the new edition is a valuable re-definition and re-examination of the subject.

*Both authors are renowned academic researchers.*

*R.E. Taylor is Professor Emeritus of Anthropology at the University of California, Riverside, and most recently has been involved in radiocarbon dating human skeletal remains and investigating the timing of the peopling of the Western Hemisphere.*

*Offer Bar-Yosef is Professor Emeritus of Prehistoric Archaeology at Harvard University, specializing in the study of modern humans and early farming societies in the Near East. †*

continued from page 5

My motto is there's no dumb question. So, I asked a lot of questions, learned a lot and gained helpful experience. I'm grateful for the job opportunity, the experience, and meeting and working with all of my co-workers and bosses. I am appreciative of the whole experience."

Chris Rowsom, Executive Director of Historic Ships in Baltimore and Vice President of Living

Classrooms Foundation, noted that "This has been a very challenging project, as we knew it would be from the start. But thanks to strong partnerships with both the personnel at the USCG Yard and the hard-working members of Project SERVE, as well as the generous support of the community at large, we will be successful in our mission to save the USS *Constellation*."

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### About Living Classrooms Foundation

Living Classrooms Foundation is a Baltimore-Washington based nonprofit organization that strengthens communities and inspires young people to achieve their potential through hands-on education, job training, and community service programs, using urban, natural, and maritime settings as "living classrooms." Living Classrooms Foundation has been proudly serving the community for thirty years.



### About Historic Ships in Baltimore

Historic Ships in Baltimore, a program of the Living Classrooms Foundation, is the steward of the US Sloop-of-War *Constellation*, US Submarine *Torsk*, US Coast Guard Cutter *Taney*, Lightship 116 *Chesapeake*, and Seven Foot Knoll Lighthouse. It is also the custodian of related artifacts, materials, and histories from these national treasures, celebrating over 200 years of naval and maritime history.



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continued from page 2

Northwest. Check out their website found at <http://maritimearchaeological.org>.

MAHS returned to Pickles Reef in the Florida Keys National Marine Sanctuary again this year for our spring field school, continuing our study of the wreck and barrel spill site which has been the focus of our efforts for several years. We were also invited to present the results of our work on Pickles Reef at the newly constructed facility of the Florida Keys History and Discovery Center, in Islamorada. Please see the Fall 2015 issue of *MAHSNEWS* for more details about this project.

MAHS has received several student requests for participation in this year's field school in the Chesapeake Bay. A number of sites recorded during our Bodkin Creek project have been proposed as possible candidates for the upcoming field school site.

So, please check the MAHS website at <http://www.mahsnet.org> for more information about our activities and events, and we invite you to join us at the bi-monthly membership meetings to get involved in the many activities of MAHS.

See you on the water,

Steven Anthony  
President



**MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY**

***Statement of Ethics***

The Maritime Archaeological and Historical Society is organized for the purpose of enhancing public awareness and appreciation of the significance of submerged cultural resources and the science of maritime archaeology. In pursuit of this mandate, members may come into contact with unique information and cultural material associated with terrestrial and underwater sites containing evidence of the history of humankind. To protect these sites from destruction by commercial salvors and amateur souvenir hunters, the Society seeks to encourage its members to abide by the highest ethical standards. Therefore, as a condition of membership and pursuant to Article 2, Section 1 (A) of the bylaws, the undersigned executes this statement of ethics acknowledging adherence to the standards and policies of the Society, and further agrees as follows:

- 1. To regard all archaeological sites, artifacts and related information as potentially significant resources in accordance with federal, state, and international law and the principles and standards of contemporary archaeological science.
- 2. To maintain the confidentiality of the location of archaeological sites.  
To excavate or otherwise disturb an archaeological site solely for the purpose of scientific research conducted under the supervision of a qualified archaeologist operating in accordance with the rules and regulations of federal or foreign governments. Artifacts shall not be removed until their context and provenience have been recorded
- 3. and only when the artifact and related data have been designated for research, public display or otherwise for the common good.
- 4. To conduct oneself in a manner that protects the ethical integrity of the member, the archaeological site and the Society and prevents involvement in criminal violations of applicable vandalism statutes.
- 5. To observe these standards and aid in securing observance of these standards by fellow members and non-members.
- 6. To recognize that any member who violates the standards and policies of the Society shall be subject to sanctions and possible expulsion in accordance with Article 2, Section 4 of the bylaws.

Signature \_\_\_\_\_ Date \_\_\_\_\_

**MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY  
PO Box 44382, L'Enfant Plaza, Washington, D.C. 20026**

**Application for Membership**

Membership in the Maritime Archaeological and Historical Society is open to all persons interested in maritime history or archaeology whether or not they are divers. Members of MAHS have first preference for enrollment in all courses and other activities and projects of the Society. To join MAHS, please sign the Standards of Ethics above and send it to MAHS along with your check and this application form.

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www.mahsnet.org



ADDRESS SERVICE REQUESTED

General membership meetings of the Maritime Archaeological and Historical Society (MAHS) are held at 7:30 p.m. on the second Tuesday of each month. MAHS meets at McLean High School, in McLean, Virginia, except in July, August and December. The school is located on Davidson Road, just inside the Capital Beltway (I-495) - use Exit 45, coming from Maryland, or Exit 46, coming from Virginia. Meetings in July, August and December are held at other locations for special events and holiday parties. Please join us and bring a friend.  
{Check the website [www.MAHSNet.org](http://www.MAHSNet.org) for e-mail advisories about any schedule changes.}

## Renew Now!

It's time to renew your membership in MAHS. It's easy. Just complete the application form on the inside back cover and sign the Ethics Statement, enclose a check for your dues, and mail! Thank you!

