Sport Diver Archaeology Management Program
Maritime Research Division
South Carolina Institute of Archaeology and Anthropology
University of South Carolina

Quarterly Reporter

"Helping to preserve and protect South Carolina's maritime heritage through research, education, and public outreach."

April 2013
Volume 4, Issue 1

Things You Need to Know:

- 2013 Quarter 1 Reports Due by April 10, 2013
- Wing Night April 24th
- Columbia Wing Night May 29th
- Field Training Course Part I June 22-23
- Field Training Course Part II July 18-21

Articles:

UNIVERSITY OF SOUTH CAROLINA
College of Arts and Sciences

The Search for the *Gallatin*

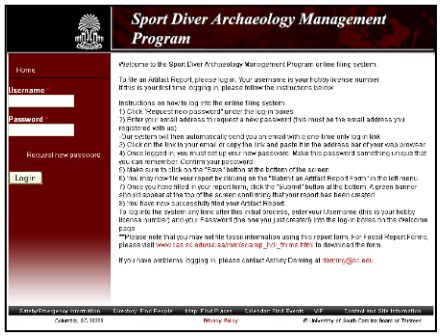
By SDAMP

On the morning of April 1, 1813, there was a massive explosion on board the deck of the United States Coast Guard Revenue cutter the *Gallatin*. The fire quickly spread across the ship and it quickly slipped beneath the waters of Charleston Harbor. The *Gallatin* had only arrived the previous day after a brief cruise to Savannah. While anchored "off the town," Captain John H. Silliman gave the order to 10 crewmen aboard to inspect and clean the muskets on the deck.

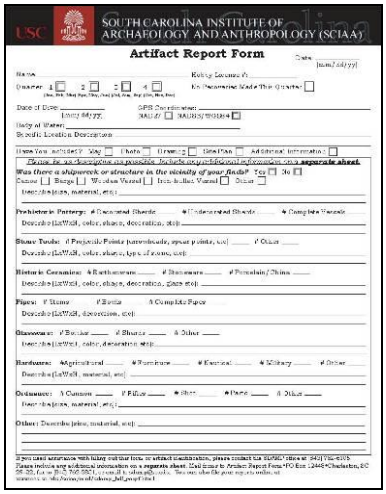
The following is an excerpt from the *Charleston Courier* on April 2, 1813, "Thus situated the dreadful explosion took place, and in an instant the whole quarter-deck of the vessel, with all those upon it, were hurled into the air. Some of the bodies were thrown nearly as high as the masthead of the vessel; others were driven through the cabin and lodged upon the main deck. The whole stern of the vessel was torn down to a level with the water; the mainsail, which had been hoisted to dry, was torn to rags, and the fragments of broken spars were scattered in all directions. As soon as the accident had happened, boats put off from the wharves and from the vessels nearby to the relief of the crew. An attempt was immediately made to slip the cables and run her into one of the docks to prevent her from sinking, but before this could be fully accomplished the fire in the cabin had communicated to the mainsail and main rigging, at the same time the vessel was found to be filling very fast. In this extremity the wounded men were hastened into the boats alongside, and by the time the persons on board could leave her she went down sternforemost, a few yards from the head of Blake's Wharf. The bodies of three of the unfortunate sufferers were never seen; and happier would it have been for some of those who were brought on shore if they had shared their fate, as they cannot, in all human probability, survive the dreadful wounds and bruises which they have received. It has been found impossible, after the most diligent inquiries, to ascertain the manner in which fire was communicated to the magazine; the persons immediately adjoining the cabin steps where the door opened from the cabin to the magazine were either entirely destroyed, or so much maimed as to be unable, at yet, to give any account of the immediate cause of the disaster…The first lieutenant (Mr. Phillips) had left the vessel but a few minutes before the accident took place, at which time, the magazine was locked and the key left in a drawer in the cabin. The gunner, the only person on board, who had any business in the magazine, was on deck… An attempt will be made this day to raise the schooner"

Attempts were made to raise the vessel, but all failed. Later newspaper articles suggest that a diving bell was constructed to raise the guns and other salvageable materials, but there is no record found, as yet, that indicates this was accomplished.

The Maritime Research Division will be working with the United States Coast Guard, Charleston County Sheriff's Office, City of Charleston Police Department, and the College of Charleston attempting to relocate the *Gallatin* during a weeklong survey project from April 1-5. The project marks the 200th year anniversary of the sinking of the *Gallatin*. The next issue of the *Quarterly Reporter* will discuss the project and its findings.■



Quarterly Reports due by April 10, 2013



January Quarterly Reports

This is a reminder that your 1st quarter 2013 reports are due by April 10, 2013. These reports should cover all of the collecting you have done between January 1st and March 31th of 2013.

Please file your artifact reports using our online system. You can submit forms online at: src6.cas.sc.edu/sdamp (Note: If this is the first time you are filing on this system, you will need to activate your account by following the directions on the home page).

All report forms can be found on our website at: artsandsciences.sc.edu/sciaa/mrd/sdamp_hdl_forms.html Please use the newest versions of the forms. We will no longer be accepting outdated versions.

Artifact Reports

Your *artifact* reports should be filed online or may be sent to:

Artifact Report Forms
PO Box 12448
Charleston, SC 29422

You may also fax forms to: (843) 762-5831
Email forms to us at: sdamp@sc.edu

Fossil Reports

Your *fossil* report forms should be emailed to Dave Cicimurri at: dave.cicimurri@scmuseum.org

Or mailed to:

Curator of Natural History
301 Gervais St.
Columbia, SC 29201

Make sure that you file reports with both agencies even if you have not done any collecting. If you have not done any collecting, just tick the box that reads "*No Recoveries Made This Quarter*" and send it to the appropriate agency.

If you have any questions regarding reports, please visit our website at: artsandsciences.sc.edu/sciaa/mrd/sdamp_hdl_forms.html

Or give us a call at: (843) 762-6105.■

The Archaeology Society of South Carolina

By ASSC & SDAMP

The Archaeological Society of South Carolina, Inc. (ASSC) is an association of professional and avocational archaeologists and concerned citizens uniting in a cooperative effort to understand the prehistory and history of South Carolina.
It is a society of dedicated members exerting their combined efforts toward the interpretation and preservation of South Carolina's rich cultural heritage

The Maritime Research Division (MRD) is a proud supporter of the Archaeology Society of South Carolina. Each year MRD participates in the annual conference and Fall Field Day, both highlighting the great work conducted by professional and avocational archaeologists in the state.

The 2013 ASSC Annual Conference was held in Columbia, SC on March 2nd. It was a superb conference with exceptional speakers. In addition to SDAMP presenting about the 2012 Field Training Course on Hilton Head Island, maritime archaeology was represented by hobby diver Bob Costello presenting about his current research on Paleo points in and around Lake Marion and Owen Osborne, USC student, presenting on his undergraduate research of a submerged Mississippian settlement in the Congaree River.

There were a number of other great presentations on a variety of archaeological topics. The conference highlights avocational archaeologists and the exceptional work they do in South Carolina.

We hope you will consider joining this great organization in helping to protect and preserve SC cultural heritage! ASSC is a great way to get involved in the archaeology around the state.

For more information on how to become a member with ASSC, visit www.assc.net■

Upcoming Events

CPR/First Aid/O2
The MRD is renewing their CPR/First Aid/O2 certifications in April. A big thanks to hobby diver Greg Kent at Charleston CPR for recertifying us! We are also now requiring that all of our volunteer divers be certified in these categories as well. If you haven't been certified and want to volunteer with us in 2013, make sure to get that done as soon as possible. You will not be able to volunteer, even if you have been on previous projects before, without these certifications.

Wing Night
April Wing Night will be on the 24th from 6:30-9:00pm at Kickin' Chicken on Folly Rd. Please feel free to bring family, friends, and finds!

Also, join us in Columbia on May 29th for our joint Wing Night with Wateree Dive Center and the SC State Museum.

Hampton Plantation Project
SDAMP will be working with SC State Parks, the College of Charleston, and the Charleston Museum to conduct an underwater survey at Hampton Plantation June 4-6. We will be looking for volunteers for this project. More details to come.

Field Training Course
The FTC Part I will be held June 22-23 to teach basic underwater archaeology skills and techniques. After Part I, students are eligible for Part II. During Part II, we will continue our excavation of the shipwreck on Hilton Head Island July 18-21.

Please continue to read the *Quarterly Reporter*, emails, our website, and follow us on Facebook for information about upcoming events and volunteering opportunities.■

SDAMP News

It is important to us that our Hobby Divers are aware of the education and outreach we do throughout the year. We hope to keep you updated on all that we are involved in so that you too will get involved.

Remember that SDAMP is on Facebook! Leave a message on our wall!

January

▪SDAMP conducted a site assessment on Folly Beach of a metal object reported to us. See page 11 for the story.
▪Wing Night was held on January 30th.

February

▪The artifacts from the Hilton Head Island project were given to the *Hunley* lab for conservation and analysis.
▪Ashley Deming and Carl Naylor showed USC graduate student Liz Wakefield around Ft. Johnson as part of her Masters' research.
▪SDAMP attended the Lowcountry Scuba dive club meeting where former SCIAA staffer Ralph Wilbanks presented his work on the *H.L. Hunley*.
▪Ashley Deming attended the South Carolina ARC GIS conference in Columbia, SC February 11-12.
▪SDAMP exhibited at the Charles Towne Landing Archaeology Conference on February 16th. The conference theme this year was public archaeology.
▪Throughout February, SDAMP worked with the Charleston Museum, Colonial Dorchester State Historic Site, and hobby diver Drew Ruddy to identify and catalogue artifacts donated to the museum in the 60's. To read more about this project see page 6.
▪SDAMP taught around 100 James Island Middle School 6th graders about maritime archaeology on February 19th.
▪SDAMP visited the Isle of Palms to assess a historic canoe. See more info on page 11.
▪Columbia Wing Night was held February 27th and was attended by about 60 people.

March

▪SDAMP presented about their work on a Hilton Head Island wreck at the ASSC Conference on March 2nd. More info about the conference on page 2.
▪Ashley Deming went out with the Charleston City Police Department Dive Team to assess a potential wreck off of Morris Island. More info on page 11.
▪ SDAMP taught the Artifact Identification Workshop to five students on March 16th.
▪ Wing Night was March 27th at Kickin' Chicken on James Island.

Upcoming…

April

▪MRD will be conducting a search for the Coast Guard Cutter USS *Gallatin* April 1-5. See page 1 for details.
▪MRD will be recertifying for CPR/First Aid/O2 on April 17th.
▪Charleston Wing Night will be on April 24th from 6:30-9:00pm at Kickin' Chicken on James Island.

May

▪Ashley Deming will be presenting at the North American Society for Oceanic History conference May 15-19.
▪Columbia Wing Night will be held on May 29th.

June

▪SDAMP will be working with SC State Parks, the Charleston Museum, and the College of Charleston to conduct underwater survey at Hampton Plantation June 4-6.
▪FTC Part I will be held the weekend of June 22-23. Please see page 4 for details on how to sign up.
▪Wing Night will be held on June 26th at Kickin' Chicken on James Island.■

2013 Field Training Course

SDAMP is offering our field training course in underwater archaeology in June and July of this year. This course is designed mainly for hobby divers, but is great for any diver who wants to get involved with underwater archaeology.

Part I
Part I consists of teaching basic techniques that can be used in the field to observe, report, and record underwater sites. This course will be a mixture of hands-on activities and lectures designed to teach the average diver how to be first responders to sites that they may come across while diving. Think of it as a kind of Field Underwater Archaeology 101.
The class will be on Saturday and Sunday, June 22 & 23.

Saturday will consist of classroom lectures and dry land hands-on sessions, while Sunday will be underwater sessions using the skills developed on Saturday. Part I is available to 10 students. The cost is $175 per person. This includes both days, a handbook, all materials involved, and air tanks. Divers will need to provide their own dive gear, lunches (food and drink for all day), and transportation. The Saturday session will run from 9am-5pm at the Fort Johnson Marine Resource Center in Charleston. The Sunday session will be located at a training pond in Awendaw and run from 10am-4pm.

When: Saturday and Sunday, June 22 & 23
From: Saturday 9am-5pm, Sunday 10am-4pm
Where: Saturday- Fort Johnson Marine Resource Center, Charleston & Sunday-Awendaw
Cost: $175- make checks payable to USC and send them to:
FTC Part I
PO Box 12448
Charleston, SC 29422

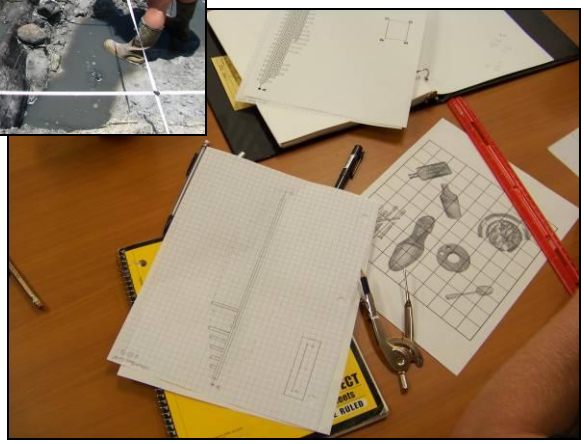
Please email Ashley Deming at: deming@sc.edu or call 843-762-6105 if you are interested. Checks must be received by June 7th if you would like to attend Part I.

Part II
Once you have completed Part I, you are eligible to participate in Part II. This course is a 3 ½ -day course taking place on Hilton Head Island where we will be continuing our excavation and recording of a beached shipwreck. We will be using all the techniques of Part I to accurately record this site. You will be working alongside maritime archaeologists to record a site that has never been recorded before.
This course is designed for a maximum of six students.

When: July 18-21, 2012
From: 3pm July 18th -5pm July 21st
Where: Hilton Head Island
Cost: TBD

Please contact SDAMP if you are interested in attending one or both parts of the Field Training Course. You may sign up for both at the same time.

This is a great opportunity to get down and dirty with real maritime archaeology, so sign up now!■



Hobby Diver of the Quarter

This section of the newsletter is devoted to the hobby diver(s) who go above and beyond the call of duty. He/she has submitted excellent reports, been an exceptional volunteer, has gone out of their way to preserve cultural and/or natural heritage in the state, or has been a general inspiration to other licensees, the public, or us.

Each quarter we will pick a licensee that resembles one or more of these noteworthy traits. Hopefully, it will be you! If you know of someone who fits some or all of these categories and would like to nominate them, please send us a brief email of who and why you think they should be Hobby Diver of the Quarter.

The honor of Hobby Diver of the Quarter for Quarter 1 2013 goes to diver Bruce Orr (#5246).

Bruce got involved with us after attending one of our Wing Nights in Charleston. As a retired

(Continued on page 5)

Hobby Diver (Continued from page 5)

police detective, diver, and local historian/author, Bruce was interested in the archaeology we do and how we do it. He attended and excelled at both Field Training Course Part I and II. He also presented on his research of the local lore surrounding John and Lavina Fisher for the SDAMP War of 1812 Lecture Series in October 2012.

In addition to all of this, Bruce has submitted an article to the *Quarterly Reporter* and volunteered for 2012 Fall Field Day where he demonstrated how scuba diving worked to attendees.

We look forward to working more with Bruce on future projects and to him volunteering at events.

Thank you, Bruce! You are truly an inspiration to us all!■

Bruce Orr during the 2012 FTC Part I

Archaeologist of the Year Award

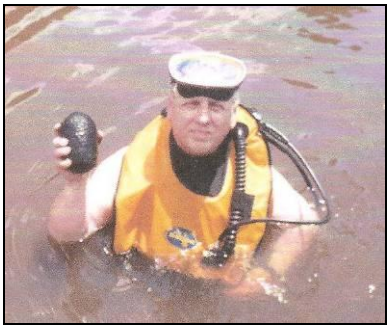
By Ashley Deming

Each year, the Office of the State Archaeologist grants an award to one avocational archaeologist for conducting exemplary work in South Carolina archaeology. This year, we were very excited to see the award given to one of our hobby divers. The honor of the 2013 Archaeologist of the Year Award goes to Mr. Drew Ruddy (Hobby License #0246).

Drew has been participating with SCIAA's underwater division since the early 70s by volunteering and taking on his own projects to further the study of underwater archaeology and maritime history in the state of South Carolina. He has participated in archaeological research on the Allendale Expedition, Willtown Bluff, and at Fort Dorchester. Currently, Drew is working on a photographic catalogue of various diver collections around the state and conducting an oral history project to record the history of diving in South Carolina (The South Carolina Artifact Documentation Project). Additionally, Drew is working in conjunction with the Sport Diver Archaeology Management Program, the Charleston Museum, and Colonial Dorchester State Historic Site to identify and catalogue artifacts that came from an early surface collection survey in the Ashley River at Fort Dorchester. Drew has much of his own collection in various museums around the state and is pursuing a hobby diver artifact travelling exhibit project.

Drew is an exceptional volunteer and researcher who is continually furthering the understanding of South Carolina history. His work is instrumental in this endeavor and he strives to make all acquired information available for other researchers and the public. He is an asset to the state and archaeology.

Congrats, Drew! You deserve it!■



2013 Archaeologist of the Year Award Winner Drew Ruddy

Feature Hobby Diver Article

Each quarter we would love to feature one or two articles by you, the hobby diver. Your article can be about an artifact or fossil you found, your collection, your research, your experience with the program, a humorous diving anecdote, or just something interesting that relates to South Carolina's past. Feel free to include images that can be used with your article.

You should submit your articles to SDAMP for review and editing. Once we have approved your article, we will do our best to get it into the next issue of the *Quarterly Reporter*. If your article is accepted, we will contact you to let you know.

We want to hear from you, so get writing! Submit your articles to: sdamp@sc.edu ■

March 2013 Artifact Workshop students Bucky Carson (left) and Scot McLauchlin (right)

Recording the Beginnings of South Carolina River Diving

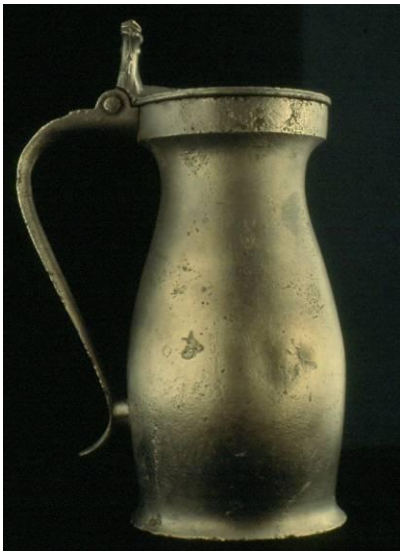
By Drew Ruddy, SCIAA Research Associate, Hobby Diver #0246

The sudden starting of a Navy diving compressor disrupted the serenity along the rural banks of the Ashley River. Nine divers on a 50-foot vessel were members of the Explosive Ordnance Disposal Unit 2 stationed at the Charleston Naval Mine Force Command. It was April 1960 and the State of South Carolina had recently acquired the lands on which sat the 18th century Fort Dorchester and the site of the colonial town established there in the late 1690s. The divers stretched a line across the river and ran a search pattern in the tannic stained waters. They hoped to find pilings from the 18th century bridge as well as cannon which had been reportedly jettisoned during the American Revolution.

Dr. Lawrence Lee, history professor at the Citadel, supervised a work force on the banks comprised of inmates from the South Carolina State Penitentiary. They worked on clearing land and performing some excavation work as directed by Dr. Lee. The State had aspirations of establishing a new state park.

Reports of the outcome of the two-week diving expedition are sketchy but newspaper articles suggest that no cannon were discovered but a wheel, which may have come from a gun carriage, was salvaged. A possible cannon ramrod is reported.

By the mid-sixties, Dorchester was a newly established state park and SCUBA diving was becoming an endeavor embraced by a bold few. The earliest report of any divers searching for submerged antiquities was at Dorchester. An article in the Charleston newspaper dated September 1966, describes the recoveries of 18th century artifacts by the Amberjacks, a ten-member SCUBA club. Perhaps the most significant find of the era was made by Jim Batey of the Charleston Aqua Raiders SCUBA club when he recovered an intact 18th century pewter tankard. It had a hole in the side that naturally sparked imaginations to create a tale of a drunken tavern patron shooting the tankard with a flintlock pistol. The tankard was restored by Colonial Williamsburg where it is on display.



Pewter tankard recovered by Jim Batey

18th century onion bottle recovered by Drew Ruddy

My lifelong diving partner, Steve Howard, and I met in our SCUBA certification course at the Charleston YMCA in 1967. We spent many hours of our earliest artifact hunting expeditions scouring the bottom of the Ashley River at Dorchester. Still one of my most exciting finds was the recovery of my first early 18th century onion bottle at this site about a year after my certification.

In 1973, the first SC State underwater archaeologist, Alan Albright, came onboard and it was decided that the Dorchester waterfront should be closed to diving until an assessment could be made of the site's archaeological potential. In 1976, SCIAA conducted an underwater survey under the direction of Alan Albright and Ralph Wilbanks. It was decided that although a great deal of archaeological potential probably lay buried in the sediments of the Ashley, the site could be reopened to diving by the hobby diver.

Over the ensuing 45 years of friendship and diving, Steve Howard and I have recognized that hobby divers have made important discoveries that deserve to be recorded for the sake of future archaeologists, researchers and persons interested in the preservation of South Carolina heritage. For several years we have been

(Continued on page 7)

Recording the Beginnings (Continued from page 6)

working on the South Carolina Artifact Documentation Project. To date we have photographed about 30 collections of divers' recoveries ranging from fossils, Native American and historic materials.

In the past year, the South Carolina Artifact Documentation Project has worked with Dorchester State Historic Site archaeologist Larry James to try to recover information about the early diving and finds of this site where South Carolina artifact diving began. Having learned of a collection of 12 boxes of artifacts donated to the Charleston Museum by 1960's diver John Berg, we enlisted the help of SCIAA archaeologist Ashley Deming and archaeological technician Carl Naylor. With the oversight of Charleston Museum archaeologist, Martha Zierden, we photographed and typed the artifact collection.

Steve and I also recognize that the personalities and stories of the divers themselves are an important part of South Carolina heritage. We have been conducting video interviews as an oral history documentation project. In the past months, archaeologist Larry James has interviewed Steve and me as early Dorchester divers. Ralph Wilbanks and Jim Reed were interviewed discussing the 1976 SCIAA underwater project. Larry also did an interview on the river with Billy Judd regarding the construction and usage of the crib docks of colonial Dorchester.

The South Carolina Artifact Documentation Project wishes to assist the archaeologists in preserving the underwater heritage of the Dorchester Colonial Historic Site and in doing so, preserve stories of South Carolina's first artifact divers.

The South Carolina Artifact Documentation Project welcomes the opportunity to photograph artifact collections and to conduct video interviews to record the stories of South Carolina heritage diving. If you are interested in participating in this project, please contact us.

Drew Ruddy
drewruddy@aol.com
Steve Howard
sh7seas@aol.com ■

Colonial dock at Fort Dorchester

Wyboo Chert and Its Fossil Content: A Preliminary Note

By Robert C. Costello, USC Sumter, Hobby Diver #4563

It has become increasingly apparent over the past several years that a previously unrecognized, indigenous variety of chert was being utilized by ancient peoples of the Lake Marion area of SC. An initial report on this material was presented by the author and Ken Steffy in 2011, who named the material Wyboo chert based upon a concentration and possible source (Cooke, 1936) in the Wyboo Creek area of Clarendon County, SC. This chert differs in several aspects from Black Mingo chert.

Figure 1
Two flakes and a denticulated core scraper of Wyboo chert

Black Mingo chert is briefly described as a highly silicified shell hash that was formed in "a mosaic of restricted shallow water fluvio-deltaic environments" (Nystrom & Willoughby, 1992) of the Late Paleocene Lang Syne Formation. Its quality varies from a silicified coquina to gem quality agate. A nearby source on Lake Marion is Sparkleberry Quarry (South Carolina State Site 38SU42) in Sumter County.

Wyboo chert also varies markedly in quality from a highly- eroded, low-density material to gem quality agate. Wyboo chert is distinguished by the presence of a variety of marine deep-water Bryozoan fossils. It often has a mottled appearance due to regions of lesser-consolidated ground mass interspersed within the chert. Figure 1 shows two flakes and a denticulated core scraper of Wyboo chert collected near Hickory Top Landing on Lake Marion. Most currently documented Wyboo chert artifacts are of Middle Archaic age.

Efforts to classify and date Wyboo chert included a search for

(Continued on page 8)

Wyboo Chert (Continued from page 7)

possible index fossils. One promising lead is represented by the fossil illustrated in Figure 2, a scanning electron micrograph of a bryozoan in a Wyboo chert flake found by the author. The fossil has been tentatively identified as *Metracolposa robusta*, an index fossil unique to the Jacksonian Stage of the Upper Eocene in NC and SC. *M. robusta* was found and identified in the Upper Cooper Marls at Eutaw Springs, SC by Canu & Bassler (1917 & 1920). The Cooper Marls are stratigraphically placed above Santee Limestone in SC, thus making Wyboo chert more than ten million years younger than the youngest Black Mingo chert.

It is to be hoped that this note will encourage hobby divers to identify Wyboo chert in artifacts they report.

Acknowledgements:

The author wishes to thank Kenn Steffy for his continuing collaboration on studies of the archaeology of Lake Marion, Dr. Kajal Ghoshroy for preparing the scanning electron microscope photo (Figure 2), and David Wielicki for his assistance in exploring a probable Wyboo chert source.

References:

Canu, Ferdinand and Bassler, Ray S. (1917). *A Synopsis of American Early Tertiary Cheilostome Bryozoa.* Smithsonian Institution, United States National Museum, Washington, DC, Bulletin 96: p 35; pl 3, Fig 6, pdf format.

Canu, Ferdinand and Bassler, Ray S. (1920). *North American Early Tertiary Bryozoa.* Smithsonian Institution, United States National Museum, Washington, DC, Bulletin 106; p 306 – 307; pl 43, figs 1 – 7,

Cooke, C. W. (1936). *Geology of the Coastal Plain of South Carolina.* U. S. Geological Survey Bulletin p 867, 196.

Costello, Robert C. and Kenneth Steffy. (April 2011). *Insights into Lithic Raw Material Utilization in the Hickory Top Area of Northeastern Lake Marion.* Unpublished paper presented at the 38th Annual Conference on South Carolina Archaeology, Archaeological Society of South Carolina, Columbia, SC.

Nystrom Paul G., Jr. and Willoughby, Ralph H. (1992). *Cretaceous and Tertiary Stratigraphy of the High Hills of Santee, Western Sumter and Lee Counties, South Carolina.* S. C. Budget and Control Board, Div. of Research and Statistical Services, S. C. Geological Survey, p 64.■

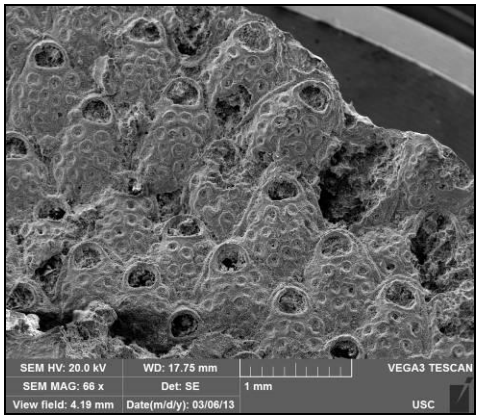


Figure 2 *Scanning electron micrograph image of Wyboo Chert fossil*

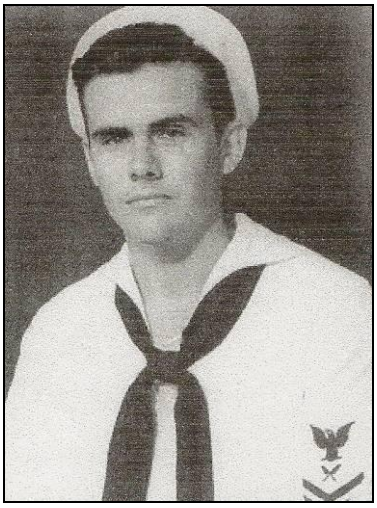
The *Betsy Ross*

By SeaJay Bayne, Deep South Divers, Hobby Diver #5050

Diving the *Betsy Ross* is an amazing treat. Her deck begins at an unexpectedly clear 65 feet or so, with a maximum depth of 112 feet at high tide. Her long, wide, flat deck is a kaleidoscope of colored corals and sponges, with marine life of every description swarming every inch of the vessel. Her deck is split amidships, and is the popular place to find lost anchors of every kind, placed there accidentally by cursing fishermen. Her five giant, open holds are literally cradles of life, and if you're lucky, you'll meet Herman, the giant Loggerhead Sea Turtle, who measures more than five feet from bowling-ball-sized head to tapered tail. The hole in the sand under her bow is often littered with giant conch shells, for this is the favorite food of the animal that makes the hole his home – the North Atlantic Octopus. Diving the "wreck" at night is even more thrilling, and this author's favorite dive, for it is literally teeming with swarms of crystal-like squid, who talk to your lights with amazing flashes of color and bioluminescence.

What really makes the *'Ross* special is her history. Leland Earl Bergfeld, one of a few surviving souls that had served on the *Betsy Ross* during World War II, wrote to Deep South Divers to share his experiences on the *Betsy Ross*. He explained that the ship had once shot down a Japanese bomber

(Continued on page 8)



Leland Earl Bergfeld

Betsey Ross (Continued from page 8)

and had taken fire in more than one battle with enemy Japanese in the Pacific theater during the War. He explained her importance during the Battle of Bougainville, her role in the Solomon Islands, and how one of his shipmates had lost a hand during a docking exercise. Lee explained that not many people who had served on the *'Ross* (he called her *Coca-Cola* because of her "CC" designation as the *Cor Caroli* during wartime) were still alive, and sent a copy of the ship's log as well as other fascinating historical documents that tell her story. He asked us to share her history. He asked us to not forget. He asked us to know what she was and what she meant to people as we hovered through her passageways on the bottom of the Atlantic.

For their bravery during the Battle of Bougainville, the ship's crew earned a battle star for World War II service. Lee Bergfeld was awarded the American Defense Service Medal, the Asiatic-Pacific Campaign Medal with a Star, and the World War II Victory Medal. He is one of only six sailors who served on the *Cor Caroli* still alive today.

"Coca-Cola" was originally christened the *Betsy Ross* and was renamed less than a month after she hit the water, when she was acquired by the US Navy for wartime support in the Pacific Theater. The 442-foot long Liberty Ship, known to military higher-ups as *AK-91,* had a crew of 167 men. She began life in California, but spent her entire life supporting the US Navy and Marine Corps in the Solomon Islands, becoming a regular landmark on the horizon in places like Noumea, Eniwetok, Guam, Pearl Harbor, Guadalcanal, New Zealand, and the Philippines.

Her single steam engine literally took her all over the world in support of the military with goods, stores, ammunition, fuel, water and hospital supplies. Without her or her Liberty Ship sisters, World War II could not have been won in the Pacific Theater.

Cor Caroli was decommissioned when World War II ended abruptly after the United States unleashed two nuclear bombs on Japan, leading to a complete and utter surrender. In 1945, she arrived in Norfolk, Virginia, where she sat at anchorage for more than thirty years. She was only 31 months old when she was retired, never to sail under her own power again.

The final voyage of the* Besty Ross *before becoming an artificial reef

In 1978, the South Carolina Department of Natural Resources acquired her – returning her to her original name *Betsy Ross* – for the creation of our best-known artificial reef. She was stripped of her superstructure and sunk that winter, and is now home to king mackerel, black sea bass, flounder, summer trout, sheepshead, gray triggerfish, cobia, amberjack, and dozens of other species of marine life. To a Lowcountry fisherman, the *Betsy Ross* is one of the most valuable underwater resources in the area.

There are no longer any traces of Lee Bergfeld and his deadly anti-aircraft guns, or for that matter, the ship's even more potent 5-inch, 38 caliber or 3-inch, 50 caliber weapons. No longer do the ship's walls reverberate with the sound of hundreds of men hoping to survive one more day of war… But there are places where you can still taste a hint of the ship's 500,000 gallons of fuel oil, right through your regulator.

…So the next time you drop a line on the *'Ross* ("Coca-Cola"), say a silent word of thanks for the fact that today, you get to fish while speaking to your fishing buddy in English… and not Japanese.■

Slowing Down for the Little Guys

By Jason Thompson, Hobby Diver #4997

It seems like yesterday that my parents, twin brother, and I would spend hours walking one of the local dredge spoil areas in Mount Pleasant looking for fossil shark teeth. My brother and I must have been about 6 years old or so when we first went on such an excursion. I can remember the excitement of finding any tooth at all, let alone a 1-inch tooth. After all, we rarely found anything bigger and we really didn't expect to. Looking back, the species we most often found were tiger, lemon, bull, sand tiger, or even a hemipristis (snaggletooth), all common even today along some of our river

(Continued on page 10)

Slowing Down (Continued from page 9)

banks. Even if the finds on any given trip were underwhelming, we all enjoyed the time together. My father has long passed, but my memories of the times like this that he spent with me will be with me forever.

How time has changed and I would have never guessed that 20 some odd years later I would be diving the nearby waters occasionally pulling C. Megalodon shark teeth out of the river 5 inches in length and even bigger. Certainly, the words Charleston and Scuba are synonymous with big shark teeth. I sometimes wonder just how many tourists frequent our waters every year with the hope of surfacing with a big meg tooth. And who wouldn't want one of the behemoth Miocene shark teeth in their collection. But as I have matured a little in my fossil shark tooth collection hobby, I have grown to appreciate some of more rare shark species that yielded much smaller teeth. Several species of thresher come to mind, as well as the benedeni, both of which can be found with side cusps on even rarer occasions. And then there is the angustidens, less rare, but interesting in that it is thought to have swam during the Oligocene Epoch and eventually led to the better known megalodon; once it lost its side cusps.

The irony of some of these species is that they are much rarer than the famous megalodon and are more prized by collectors. The large, hand filling megalodon will always instill awe and curiosity in both young and old alike, but the next time you are hunting those river bottoms, don't forget to keep an eye out for the smaller teeth of some of these less infamous species.■

What Is It?

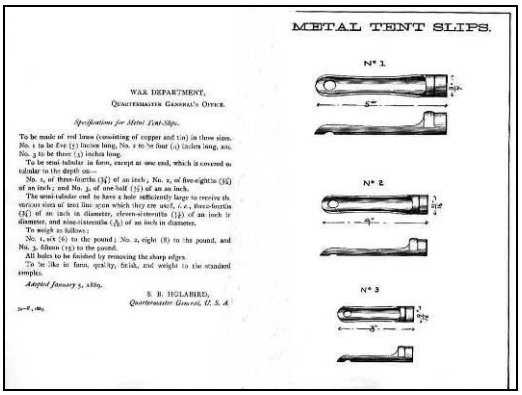
By Carl Naylor, SDAMP

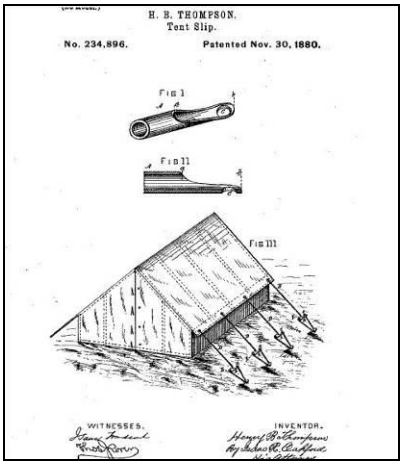
Seldom do photos of objects sent to us by divers for identification solicit as much speculation as the photo sent to us by Ben Miller (hobby diver license #4047). Ben's suggestion, and a good one, was that it was some part of a musket or rifle, perhaps something to do with a bayonet attachment. Nope. Another suggestion was that it was part of an old tripod leg. Nope. Someone else thought it might be something to do with surveying equipment. Wrong, again. The speculation degenerated from there.

What Ben found is a metal tent slip or, more descriptively, a tent rope adjuster. This type of tent rope adjuster was patented in 1880 by H. B. Thompson. The U. S. Army adopted the design in 1889 and standardized it in three sizes: five inch long, four inch long, and three inch long. The three sizes corresponded with the three diameters of rope the Army used as tent rope, i.e., three-quarters of an inch, eleven-sixteenths of an inch, and one-half inch. The Army stipulated that the tent slips were to be made of red brass, an alloy of copper and tin, whereas regular brass is an alloy of copper and zinc.

Thanks, Ben, for the "What is it?"■

Metal tent slip recovered by hobby diver Ben Miller





Site Assessments

By Ashley Deming, SDAMP

This year has certainly been the year of the site assessment! Already this year, we have responded to four reports of unidentified cultural heritage in South Carolina. When we are notified about a possible site, we try to respond as quickly as we can, especially when those sites are not too far from our Charleston office.

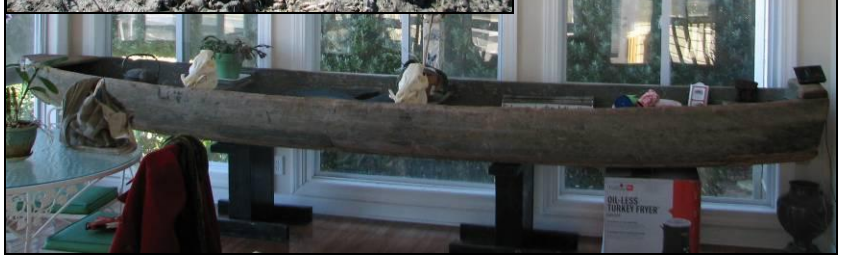
Our first site assessment was reported to us by no less than four people within one month. Each had been walking out on Folly Beach and noticed a large metal object in the sand. Sometimes it was covered, sometimes less so. After so many reports, we knew we needed to get out there and check it out. Informant Paul Heddon met us out there twice to show us the site. The first time, it was completely covered with sediment, but the second time we were in luck. The iron plate was roughly 4ft x 10ft and appeared to have multiple projectile holes in it. There was nothing else on the beach to give us a clue to where it may have come from, so we recorded what we could and gathered some archaeologists together to make some sense of it. As this plate was lacking any indication of coming from a ship (no rivets, clean edges, etc.) and there was no other vessel pieces found in the area, we ruled out shipwreck. After consulting with SCIAA archaeologists who have conducted archaeological work on Folly Beach, it was determined the iron plate was most likely used as target practice during WWII when Folly Beach was being used for various military activity. Maybe not a shipwreck, but still an interesting piece of history. Thank you to James and Stefan Clark, Paul Heddon, Gary Mulvey, and Mr. Cain for all of your information and pictures of the site.

Carl Naylor and I headed out to Isle of Palms in February to meet with the Stone Family about a historic canoe they had acquired. The canoe was a dugout and probably dates to the early 20th century. We don't know where the canoe came from, but it was a beautiful example of a historic South Carolina dugout.

On March 7, SDAMP teamed up with Martha Zierden and Ron Anthony of the Charleston Museum to check out a potential shipwreck on the Stono River near Dill Sanctuary. The site was a little confusing as it certainly resembled what could have been a wreck, but upon closer investigation, we were able to determine that is was the remains of an old pier. About 100 yards of the waterfront in that area contain brick and wooden pilings that were the remains of landing structures, probably associated with the early plantation at that site.

Our final site assessment was of a possible wreck site off Morris Island. Charleston City Police diver and hobby diver, Chad Womack notified us of the site and invited us to accompany the police dive team to check it out. We did some remote sensing to find the site and police divers went down to take a look. It was definitely a metal wreck. After some research done by the city and county police as well as the US Coast Guard, we learned that the vessel was a 42ft steel shrimper known as the Michael that sank in 2002. Not archaeology yet, but a great day spent with our local law enforcement. Thanks guys!■

Folly Beach iron plate with projectile holes



Stono River landing site (left) and historic dugout (below)

Diver Safety

Are You REALLY Prepared to Dive?

By Dan Orr, President Emeritus, DAN Foundation

Many years ago, when I started the diving program at Wright State University in Dayton, Ohio, we would use a variety of meeting rooms on the campus since the university was new and growing rapidly. The most unique was the Gross Anatomy Lab where the student desks were interspersed between bins containing cadavers and various body parts. I remember the nervous looks on the student's faces as they anticipated the Zombie Apocalypse to begin at any moment! Eventually, our classroom sessions were moved to a meeting room in the new athletic complex. Scrawled on the walls were various phrases to instill spirit in the athletes. There is one particular phrase that I will always remember and one that I incorporated into my personal diving philosophy: "Failing to prepare is preparing to fail." This is valuable in the world of competitive athletics where failure to prepare could result in the loss of a critical game or match but in diving, failing to prepare can have catastrophic and deadly consequences.

Preparation should begin long before you arrive at the dive site. First of all, you must make sure that you are fit to dive. Fitness to dive should include making sure that you are in good health with exercise tolerance allowing you to be able to physically cope with the potential demands of the dive you are likely to make. DAN recommends that all divers over the age of 35 have an annual physical examination, preferably from a physician familiar with diving medicine. If you don't have a physician familiar with diving medicine, you can always call the DAN Medical Information Line (M-F 9:00 AM-5:00 PM) for the name of a DAN referral physician in your area. DAN also recommends a physical examination any time there is a noticeable change in your health. If you are going to be diving in conditions with the potential for demanding currents or wave action, it might be good to begin an exercise regimen to make sure you are prepared for these conditions.

It is also important to take a good look at the dive you are going to make so that your collective diving experience is equal to the demands of the dive. Your diving experience and not your certification card (C-card) should be your guide to deciding what dives you should make. Your C-card gives you the right to go diving. Your experience gives you the tools and skills to help you dive safely. Just because you are a certified diver doesn't mean that you can dive under all diving conditions. If you have the opportunity to dive where you have little or no previous experience, it would be a very good idea to seek some assistance. Probably one of the most important things to know is that you always have the right to say "No." If you feel that the dive you would like to make is beyond your ability, it is far better to say "No" than to put yourself or your diving companions at risk.

Once you are confident that you are, indeed, fit to make the dive you'd like to make, you need to make sure that your equipment is also ready for the dive. Your equipment needs to be overhauled annually by a trained and qualified equipment technician or, like your health, any time there is a noticeable change in performance. A professional should certainly look at your equipment, but pre-dive preparation should include a thorough inspection of all external rubber parts (mouthpiece, hoses, fin straps) by you and your diving companions before every dive. Any evidence of cracking or splitting should result in immediate replacement from your personal "Save-A-Dive Kit." If you remember a previous article regarding 'triggering events' in diving fatalities, over 60% of the triggering events were either directly or indirectly related to 'problems with equipment'. 'Problems with equipment' does not mean equipment failure but a failure on the part of the diver to use the equipment properly during a dive. This leads us to the next, and probably most important, area of pre-dive preparation and that is practice of basic diving and emergency skills. If you have been out of the water for some time, you should get some practice of basic diving skills (buoyancy control and basic equipment familiarity) before venturing out into open water. If that is not possible or practical, the first dive or two you make in open water should be in a shallow, benign site with plenty of clear water with bottom reference. As part of the preparation for open water, you and your diving companions should practice emergency skills such as how to manage out-of-air emergencies including emergency ascents and how to jettison weights in an emergency. These and many others are complex

(Continued on page 13)

Diver Safety (Continued from page 12)

psychomotor skills requiring regular practice and reinforcement to be able to be used in a crisis. If you don't have recent familiarity with critical emergency skills, you cannot hope to successfully manage an emergency situation allowing an otherwise enjoyable diving experience to initiate a series of events that could cost you or your diving companions dearly.

When packing for your dive trip, a checklist is important to reduce the likelihood that you will forget something essential. The checklist will also help prevent something from being left behind on your return home. A checklist should also include a reminder of all essential steps in thorough preparation for diving. In conjunction with a checklist, a pre-dive ritual is important to make sure you are thoroughly prepared for the dive. If you choose to take medications prior to diving, it might be good to get advice from the DAN medical team to make sure the medication is compatible with diving. If it is, it might be wise to have some non-diving experience with the medication to make sure it does not make you drowsy or have other side effects incompatible with safe diving.

It is also good advice to be well hydrated and rested before diving. Hydration is an important component of diving safety allowing you body to function well under diving conditions. A well-hydrated diver will have clear and copious urine.

If boat diving, it is advised to configure your equipment while the boat is still at the dock and in calm water. Waiting until you are at the dive site and subject to wave action and boat movement may cause you to make mistakes that could have serious consequences later. It is also important that you and your diving companion prepare at a pace. Never allow circumstances to prevent you from being thoroughly prepared for the dive. The same thing applies to the dive itself. You should always move at a pace that is comfortable for you and your buddy. You should never be forced to 'keep up' with others. Once in the water, I will make a 'safety stop' at 10'-15' underwater just make sure that everything is 'OK'. Once I have given and received an 'OK', the dive continues always being aware of what's going on so that we can modify our dive to accommodate for anything that could increase our risk and compromise our safety. This 'situational awareness' is essential in safe diving. If anything occurs to increase our risk (such as swimming against stronger currents or wave action) more than anticipated, we can mitigate those risks by making some alterations in our dive plan including diving shallower than planned, reducing our planned bottom time, and/or increasing our safety stop on the ascent.

Remember, "Failure to prepare is preparing to fail" but proper and complete preparation prepares you to thoroughly enjoy one of the greatest sports our planet has to offer. And, for those that are involved in mission-oriented diving, thorough preparation allows you to focus on the tasks at hand maximizing your productivity.■

Conservation Corner

Scientists Uncover Evidence of Explosion

By Raegan Quinn, Friends of the Hunley, *Inc.*

The *Hunley* was less than twenty feet away from her torpedo when it exploded, according to new evidence uncovered by experts working to preserve the world's first successful combat submarine. This is one of the most important clues found to date for archaeologists trying to discover why the *Hunley* vanished.

Remnants of the torpedo that sank the USS *Housatonic* in 1864 were found securely bolted to the tip of the spar, a large pole that served as the *Hunley*'s weapon delivery system. The metal is jagged and peeled away from the aftermath of the explosion. It would have clearly created a risky situation for the *Hunley*'s crew if the torpedo stayed attached to the spar when it exploded.

Plan of Attack: The new find is turning upside down the traditional

(Continued on page 14)

3D modeling of the spar's tip. The torpedo was bolted to the tip of the spar and was not designed to slide off. This means the* Hunley *and her crew were a little less than twenty feet away from it when it exploded, a potentially dangerous proximity.

Conservation Corner (Continued from page 13)

understanding of how the *Hunley*'s weapon system functioned. Travelling to the target in a 19th century, hand cranked submarine was challenging enough. But how do you actually get the torpedo in the right spot and then trigger it once you are there? The answer has been sitting quietly in the *Hunley* lab underneath a brittle layer of concretion coating the spar.

Until now, the conventional wisdom has been the *Hunley* would ram the spar torpedo into her target and then back away, causing the torpedo to slip off the spar. A rope from the torpedo to the submarine would spool out and detonate once the submarine was at a safe distance. This theory has always had difficulty under scrutiny since it would be very hard to actually lodge the torpedo into the hull of the enemy ship.

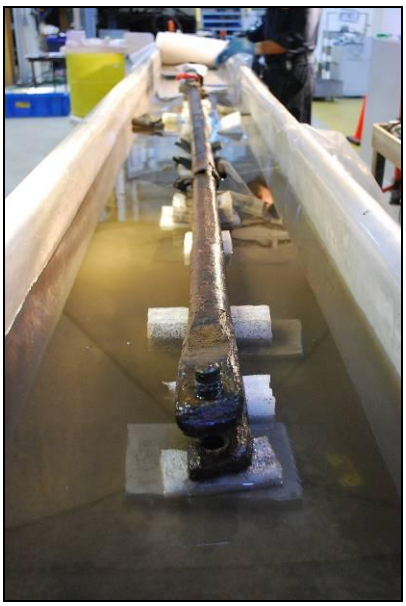
Finding a portion of the original torpedo casing has enabled the team to confirm a long held suspicion that it was built and designed by a group associated with Edgar Singer (cousin of the famous sewing machine entrepreneur Isaac Singer). A period diagram housed at the National Archives indicates that this Singer torpedo held 135 pounds of gunpowder and was detonated by a trigger mechanism. This means the Captain had to position the torpedo while still attached to the spar and trigger it when the time was right. The *Hunley*'s crew was very strategic in their placement of the torpedo. It was detonated right under the stern to maximize the impact of the explosion and ensure destruction of the large Union ship. The explosion was not an accident. It was the result of careful planning.

Reconstructing the Past: There are dozens of possible theories to explain why the *Hunley* disappeared after sinking one of the mightiest ships in the Union's fleet. Scientists have long wanted to digitally test the different scenarios using computer modeling. Until now, they have been missing key pieces of information such as the torpedo strength and the approximate location of the *Hunley* during the deadly explosion.

With the torpedo charge and size now known from the diagram, understanding where the *Hunley* was in relation to the *Housatonic* and the blast that dragged her down to the bottom of the sea becomes a matter of arithmetic. The spar measures approximately 16 feet in length and the torpedo 2 feet, meaning the *Hunley* was at least 18 feet away from the bomb when it went off.

Now, scientists have the information they need to move forward with computer simulations of the attack, which could prove vital in solving the lingering mystery of why the *Hunley* did not come home on the fateful night of February 17, 1864.■

Senior conservator Paul Mardikian deconcreting the spar's tip.
Copyright FOTH



General view of the spar during deconcretion. The spar was a large pole that served as the delivery system for the Hunley's powerful torpedo.
Copyright FOTH

This image shows how the spar was connected to the submarine. A period diagram housed at the National Archives indicates that this Singer torpedo held 135 pounds of gunpowder.
Image courtesy Dan Dowdy.

Paleontologist's Panel

Hobby Diver Spring 2013

By Dave Cicimurri, Curator of Natural History, South Carolina State Museum

Technically, it's spring, but temperature-wise winter is still hanging on. At least we're not getting all of the snow that's been falling farther north, and those of you who braved the colder waters over the last few months didn't have to break through any ice to dive. Well, it probably won't be too long before things start heating up – supposedly it's going to be a warmer than usual spring. Hopefully, you're all eager to get out and make some new discoveries.

Speaking of diver's discoveries, I'm remembering some of the things I mentioned in the very first newsletter article I wrote more than a year ago, and with the new dive season I think it's appropriate to bring those points up again. One of the great perks of being licensed to dive in South Carolina is the potential to make some pretty awesome discoveries, some fossil and some man-made. How many other states can boast having rivers that you can dive in and find the fossilized remains of a giant shark or woolly mammoth, or Revolutionary War-era cannonballs? And how many of those states have provisions that allow you to keep the things you find?

Keeping the things you find is more of a privilege than a right, and one of the obligations of being licensed to dive in SC is to submit quarterly reports that accurately document what, if anything, has been found while diving. The obligation to report applies even if nothing is ever found, and even if no dives are made within a quarter. As far as fossil reports go, I'm looking for maps and/or GPS coordinates of where your discoveries were made, and photographs of what was found. No, I'm not going to get certified to dive and go drop down onto a site you've reported, but I will add the locations to my database of fossil localities. This information is also kept confidential and isn't shared with anyone other than my colleagues at SCIAA. Yes, photographing your finds is an extra step in the reporting process, but being able to see that the tooth is from *Equus simplicidens* or *Nanippus peninsulatus* is much more informative than just reading a description of "horse tooth." If I can't tell what it is that you've found from a photo, I'll contact you to make arrangements to see the fossil(s) in person. And no, I'm not going to confiscate something that you bring in, and I'm not going to come to your house looking for any of the specimens you report.

Why am I interested in what divers find, and where fossils are found? Well, my job as a paleontologist in SC is to study rocks and fossils in order to reconstruct the ancient ecosystems that have come and gone over the past 500+ million years. I'd love to be able to examine every road cut, river bank, and quarry to look at the rocks and find fossils, but alone it might be an unachievable goal. However, detailed hobby diver reports can be the next best thing to me actually being at a site. Every specimen has a story to tell, but there are fossils out there that are truly important because they represent: a new species, the only record of a species anywhere in the world, the oldest record of a species, the youngest record of a species, and/or the best example of a fossil species. If a particularly interesting find is made, I will be in touch to encourage the donation of the fossil(s), or at the very least to allow us to take detailed photographs and make a cast of the specimen(s).

Another thing to remember is that SC State laws preclude the removal of fossils that are embedded in the river bottom. As you probably know partial and even complete skeletons of whales, turtles, fish, and mammoths can be encountered on a river bottom. If associated skeletal parts are found, please be sure to check that box on the dive report, and contact me ASAP. SCIAA and the South Carolina State Museum will gladly work with you in order to ensure that the specimen is safely collected and all associated geological and paleontological data are recovered. Working together, we can ensure that South Carolina's fossil resources are well documented, and the knowledge gained from their discovery passed on to a global audience. Looking forward to seeing your dive reports. Happy hunting!■

Paleontologist Dave Cicimurri (photo courtesy of the SC State Museum)

The Sport Diver Archaeology Management Program

The *Quarterly Reporter* is a quarterly newsletter from the Sport Diver Archaeology Management Program (SDAMP), part of the Maritime Research Division of the South Carolina Institute of Archaeology and Anthropology at the University of South Carolina.

Ashley Deming- Chief Editor

Carl Naylor- Editor

SDAMP
PO Box 12448
Charleston, SC 29422

PHONE:
(843) 762-6105

FAX:
(843) 762-5831

E-MAIL:
sdamp@sc.edu

Letters to the Editors

If you have something that you would like to say about the program or have questions that you think others like yourself would like to have answered, look no further. This section of the newsletter is just for you. Send in your questions, comments, and concerns and we will post them here. You can also send in comments responding to letters from other hobby divers. Ashley and Carl will respond to your comments and answer your questions for all to read.

Just like your artifact report forms, you can email, fax, or send your letters to SDAMP. We look forward to hearing from all of you.■

Notes from the Editor

I hope everyone is ready to get back in the water this season. I'm itching to get out there myself! We are going to be very busy this year and will be looking for help from volunteers on quite a few of our projects.

This year, we are really striving to make sure we follow all of our updated Dive Safety and Control Board mandates as well as USC safety guidelines and procedures for our diving season. What that means for our volunteers is that we will be asking more of you if you wish to be eligible to volunteer with us.

Updated information that applies to you if you want to be eligible to dive with us in 2013: 1) you will need to make sure that a doctor has cleared you for diving within the last two years, 2) that you are up to date with your CPR/First Aid/O2 training requirements.

You will also be required to fill out a medical form. Some conditions prohibit you from diving with us. We require a current diving resume. There will be a minimum number of dives requirement that will be based on the specific project needs. This is generally at least 25 dives and black water experience. You must supply us with a copy of your diving certification and diving insurance cards.

In addition to these requirements, you must be completely up to date with all of your artifact *and* fossil reports. I will be coordinating with Dave Cicimurri at the State Museum to make sure all fossil reports are in. This is a non-negotiable requirement. We will help you with any filing issues you may have, but the reports must be submitted on time for you to be eligible to volunteer.

We are really looking forward to a busy field season and we hope that you will consider joining us!■

Ashley Deming
&
Carl Naylor

Useful Website Information

For more information on

SDAMP: http://artsandsciences.sc.edu/sciaa/mrd/sdamp.html

MRD: http://artsandsciences.sc.edu/sciaa/mrd/mrd_index.html

SCIAA: http://artsandsciences.sc.edu/sciaa/

SCIAA publication *Legacy*: http://artsandsciences.sc.edu/sciaa/legacy.html