Queen Anne's Revenge

Conservation Laboratory Report, December 2009

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Another year has passed and even though the project did not receive funding to continue major excavations, we are pleased to have received support for basic lab operations from the Office of the National Marine Sanctuary thanks to the efforts of Dave Alberg, Sanctuary Superintendent for the *Monitor* National Marine Sanctuary. This vital assistance, which was supplemented by additional funds from Friends of *Queen Anne's Revenge*, Lauren Hermley, Executive Director, enabled conservators to continue making exciting discoveries in the lab. Since laboratory staff did not have to process artifacts coming in from the field, they were able to focus on learning more about artifacts already recovered from the site and gather additional information through different types of analysis. We were fortunate to have some crew members return, however we have also had some members of the team move on.

Crew Member Moving On…..

On May 8th the *QAR* project said goodbye to a top-notch employee as Franklin H. Price began a new chapter in his life by accepting a permanent position with the State of Florida underwater archaeology division. Franklin first started on the *QAR* project as a volunteer at the lab in February 2004 and was a tremendous asset through his contributions both in the lab with the processing of the sluice sediment, as well as with all aspects in the field. It has been a pleasure to work alongside Franklin and we wish him well in his new position as senior archaeologist.

Volunteers

Volunteers are vital to any archaeological project and the *QAR* lab has always welcomed the help. During the summer we had three volunteers and one early this fall; two high school seniors and two graduate students in ECU's Maritime Studies Program. Laura Brown worked at the lab last summer and returned in August as a volunteer for more work experience before returning to the NC School of Math and Science in Raleigh. Sandra Edwards is a senior at Page High School in Greensboro, NC and she volunteered at the lab in late June/early July for her senior project. Both were given a chance to see the daily operations of the lab and were introduced to the different processes artifacts undergo for conservation. They helped with database documentation, solution testing, tank top-ups and weighing artifacts such as ceramic sherds, copper alloy objects and

clinker during the dehydration process.

Matt Thompson, who recently completed ECU's Maritime Studies Program, volunteered at the lab for 2 weeks at the end of June. Matt is no stranger to the NC Underwater Archaeology Branch as he has worked with state archaeologists at Fort Fisher on many occasions. At the lab, Matt helped with solution testing, data entry of corrosion potential data, the weighing of Cannon 2 and also removed a ceramic from concretion.

Jeff O'Neill, a first year graduate student in ECU's Maritime Studies Program, volunteered his time at the *QAR* lab early in the fall semester. Jeff helped Lauren McMillan with ballast sample processing by recording weights and counts. The *QAR* staff appreciates the work of all volunteers and hopes to see the interest in the *QAR* project grow among ECU's graduate students in all areas of study.

QAR Lab Crew Fall 2009

In September, we were pleased to welcome back three of our contract staff, Jon Schleier, Myron Rolston, & Lauren McMillan who were all featured in our last conservation report. Since the project did not have funding for a field season this fall, the lab's priorities have shifted from processing new finds from the site to artifact conservation activities. Staff members have been concentrating on completing the lead shot processing, desalination solutions testing, digital image processing, artifact documentation and x-radiography. Concretions have also been getting more attention as we have started x-raying them on a regular basis and removing ceramic sherds, glass shards and pipe stems found on the exterior of the concretions. Crew members have also been instrumental in cannon cleaning, ballast stone sample processing, providing tours, monitoring C2 and wood in PEG solutions.

Myron and Lauren are rejoining the crew until May 2010 but Jon Schleier who has been with us since September 2007 will be moving on at the end of the year as he completes his master's degree course work. Jon has been a tremendous help and we will miss his assistance and sense of humor around the lab.

Hair/Fabric Conservation

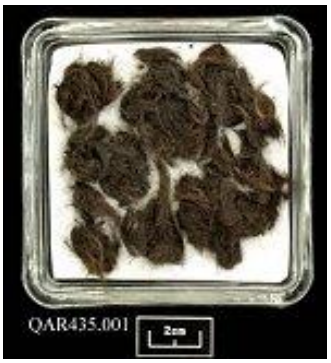
Hair Conservation

Hair is the cylindrical and often colored strands growing from the outer layer of a mammal's skin. Hair recovered from the *QAR* site has been found on hull planks, sacrificial sheathing and lead strips. Hair was often mixed with tar and placed between the hull planks and sacrificial sheathing as a means to prevent the wood boring

organisms from attacking the main hull structure. Hair found on lead strips could indicate they were used along seams or over gaps between timbers situated below the waterline. Preliminary identification of some of the hair by Linda Scott Cummings suggests the hair was either bovine (cow) or equine (horse).

Before any *QAR* hair could be conserved, various conservation procedures were tested to ensure the best conservation method was chosen. Several small samples of hair were used to test the following possible methods for drying and consolidation:

1. Air dry (Control)
2. Sublimation through freezing in freezer
3. 5% Polyethylene Glycol (PEG) 400 in RO water topically applied + Sublimation in Freezer
4. 5% PEG 400 immersion + Sublimation in Freezer
5. 5% PEG 400 topically applied + Air dry
6. 5% PEG 400 immersion + Air dry



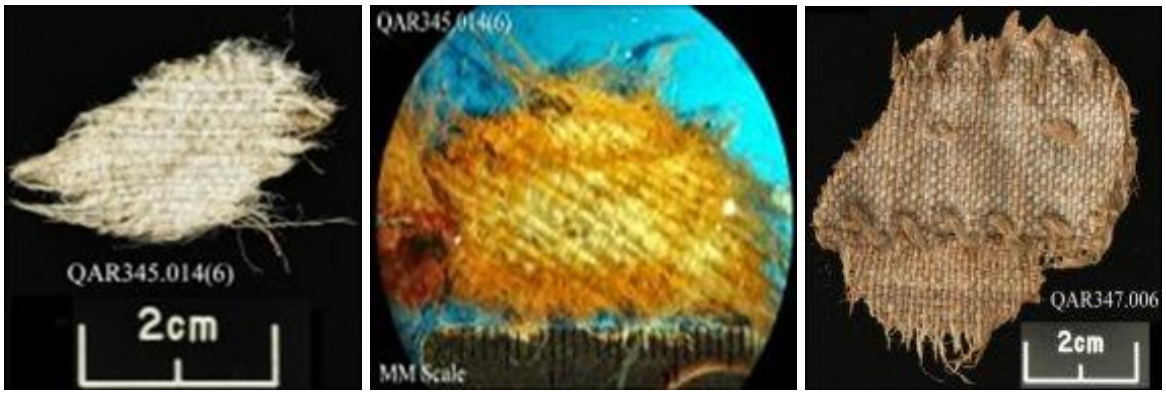
Each sample was photographed, weighed, measured, and its visual appearance was noted both before and after conservation. The best method for conserving *QAR* hair was found to be, topically applying, or misting with a spray bottle, 5% PEG 400 in RO water and then placing the treated piece in the freezer at a temperature between 8 to 10 degrees Fahrenheit until hair was dry to the touch. This particular conservation method provided stability with little to no breakage to its structure, as well as giving it a natural appearance.

With a conservation method chosen, nine hair fragments were conserved, as well as any tar associated with the hair fragments. This method has proved successful in conserving *QAR* hair for future viewing and study.

Fabric Conservation

Adria Focht former *QAR* graduate assistant and ECU Graduate student undertook an independent study through the ECU Anthropology Department at our lab in 2008, on the *QAR* textile fragments. Her main goal in this study was to determine the most effective conservation method for cleaning and conserving the *QAR* textiles.

Having identified fibers and recorded textile information, and after various experiments using different chemical cleaning agents, consolidants, and drying methods, she concluded the most appropriate method for the *QAR* textiles was to immerse the textile fragments in a 5% PEG 400 in reverse osmosis (RO) water solution for one week and then place the fragments in a freezer to undergo sublimation. Also, if there were any iron staining within the textiles, she suggested immersing the textiles in a 2.5% oxalic acid in RO water for no more than 2 hours to remove any iron stains before continuing the conservation process.



Our goal this past summer was to finish what Adria started back in 2008. Adria analyzed and took meticulous notes on textiles QAR345.014 and QAR347.006, so these textile fragments were ready to move forward in the conservation process. QAR345.014 textile fragments appeared to have iron staining on the surface, so they were treated with 2.5% oxalic acid first. Both QAR345.014 and QAR347.006 were cleaned with a continuous wash of RO water to remove any loose sediment from the surface. Each textile fragment was immersed in a 5% PEG 400 solution for one week and then moved to the freezer at a temperature between 8 and 10 degrees Fahrenheit for about one week. When the textile fragment was dry to the touch, it was removed from the refrigerator freezer and analyzed for any shrinkage or distortion.

Using this conservation method, a total of 18 textile fragments have been conserved. This conservation method for conserving *QAR* textiles will allow for future viewing and study.

Cannon 15

Cannon 15 (C15), a four pounder, was recovered in May of 2005 from the midship section of the vessel, west of the main ballast pile. In June, we started to clean artifacts from the surface and removed the larger concretions, drawing and photographing each object before removed. After large objects were removed we began by cleaning the surface on the bottom side. The muzzle of C15 appears to have a wooden tampion in the mouth of the bore which could be a blessing because other *QAR* cannon that have retained their tampion have had concretion-free bores. This situation would eliminate having to clean concretion out of the bore and would make the job of unloading the cannon easier if that is the case for C15. Conservators will finish cleaning the topside of the cannon in the New Year, after which it will begin the electrolytic process. We will continue to keep you updated on cannon conservation.

Top image before cleaning began - Bottom image at current state

X-Radiography Update

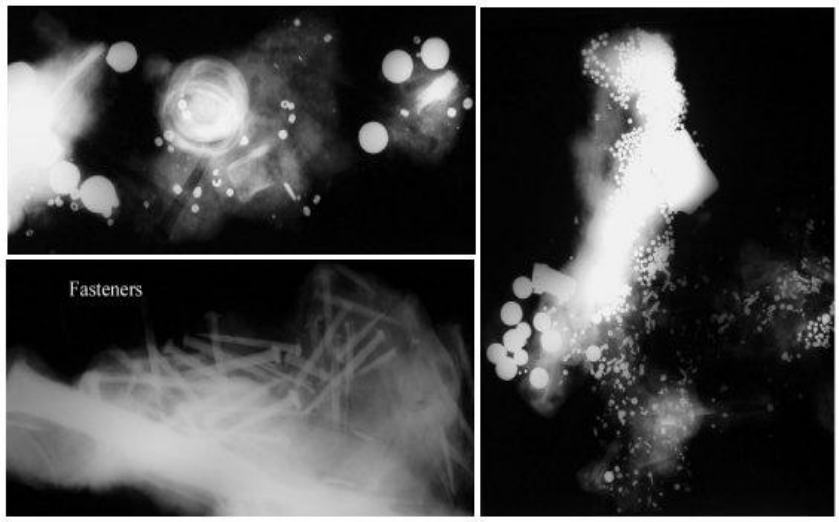
The July 2008 conservation report described the new industrial x-radiography system purchased for the lab and the April 2009 conservation report reported on three interesting artifacts from the 2008 field season. Over the past 18 months we have tried to concentrate on capturing images of artifacts recovered during the 2007 and 2008 field seasons. The system was decommissioned for several months this year as we worked out some of the bugs and had additional shielding installed around the room that houses the unit. Despite the different obstacles we have managed to x-ray 562 objects and have some interesting finds to report.

What's first?

Prioritizing artifacts for x-radiography is difficult when there are thousands of artifacts to examine. Conservators wanted the archaeologists' input so together we devised a way to assign priority numbers (one to four) to the artifacts as they were processed on the dockside after recovery. The highest priority artifacts are metallic objects recovered with little to no concretion and having the possibility of possessing identification marks, such as, pewter plates, copper alloy weights, buckles and silver

artifacts. The remaining three categories are used to sort the concreted objects. Any concretion with a ceramic sherd, glass shard, copper alloy object, or unique object protruding from the concretion is assigned the second highest priority. Priority three is assigned to concretions with an interesting appearance or shape. All remaining concretions are given the lowest priority and will be x-rayed as we work through the artifacts in wet storage. Conservators have found this system very useful to guide us in the process of selecting which objects to x-ray first.

All of our priority one artifacts have been x-rayed and we are presently working our way through the priority two concretions. At the lab we have currently x-rayed whole pewter plates, pewter plate fragments, the clyster syringe (see below), spoons, copper alloy objects, 1 wooden handle inlayed with pewter and 1 silver coin. Markings on some of the objects were visible but not discernible without radiography, however, the x-ray images helped to clarify these marks allowing them to be identified. This was the case for a maker's mark found on a pewter plate that will be described in a comprehensive report about the pewter artifacts to be posted on our website soon.



So what are we finding in concretion?

Iron artifacts that we consistently see in concretions include; different types of wrought iron fasteners from nails and spikes to large eyebolts and drift pins, rigging hooks, cask hoops and cast iron cannon shot, all of which vary in condition. Other non-ferrous objects commonly seen in x-ray images of concretions include lead shot and glass beads. Some artifacts appear in x-ray images but their identity and function remain a mystery. We welcome any opinions as to the identity of our mystery objects.

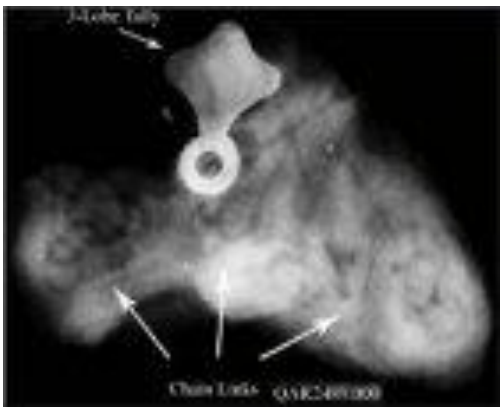
Survey Chain Tallies or Markers

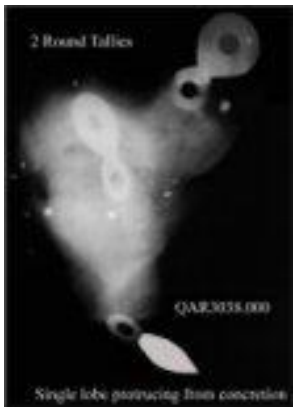
In 1997, one survey chain tally or marker (QAR217.000) was recovered from the site and it remained the lone tally for ten years. X-radiography of concretions recovered in 2007 and 2008 field investigations have yielded six more survey chain tallies; two are the same shape as the first and three other tally shapes have emerged.

The Surveyor's Historical Society describes a surveyor's chain as sixty-six feet in length or 4 poles; it contained 100 links (each 7.92 inches long) connected each to each by two rings with a tally mark at the end of every ten links. The markers or tallies would have one, two, three or four notches (in our case lobes) as they marked ten, twenty, thirty and forty

links from either end. The fiftieth link was the center of the chain and was marked with a round tally which meant that one chain had a total of nine markers with five different tally shapes.

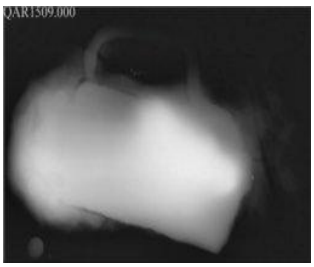
We have currently identified seven survey chain link markers with four different tally shapes that were found in the stern and midship area of the vessel. The tally recovered in 1997 has two lobes, which most likely was used to mark the second ten-link increment; we have discovered two more tallies that are the exact same size and shape as QAR217.000. Concretion QAR2489.000 contains one marker that has three lobes and concretion QAR3038.0000 holds three chain link markers, one with one lobe and two round tallies. In every concretion containing a survey chain link marker, we have had evidence of the iron links and rings however these items are totally corroded and will be good candidates for casting to preserve their form.





From the information gathered from x-rays and what has been learned from the Surveyor's Historical Society, we can speculate that we have more than one surveyor's chain because of the presence of the three two-lobed markers and two round tallies; each chain would have two two-lobed and one round tally. It is possible, however, that we could have half of a chain. Chains such as these were most likely to be used for terrestrial survey not navigating the ship and thus must have been someone's personal possession.

Breech Blocks or Swivel Gun Chambers




X-radiography has also revealed two very intriguing concretions shaped like large beer tankards or steins. The major objects within concretions QAR1445.000 & QAR1509.000 were identified as breech blocks or powder chambers for breech loading cannon. After consulting with James Levy, Florida's historic conservator, Ruth Brown, Historical Artillery Consultant and Robert D. Smith, Former Head of Conservation at the Royal Armouries, Tower of London, and their consensus confirmed the artifacts as wrought iron breech blocks or swivel gun chambers.

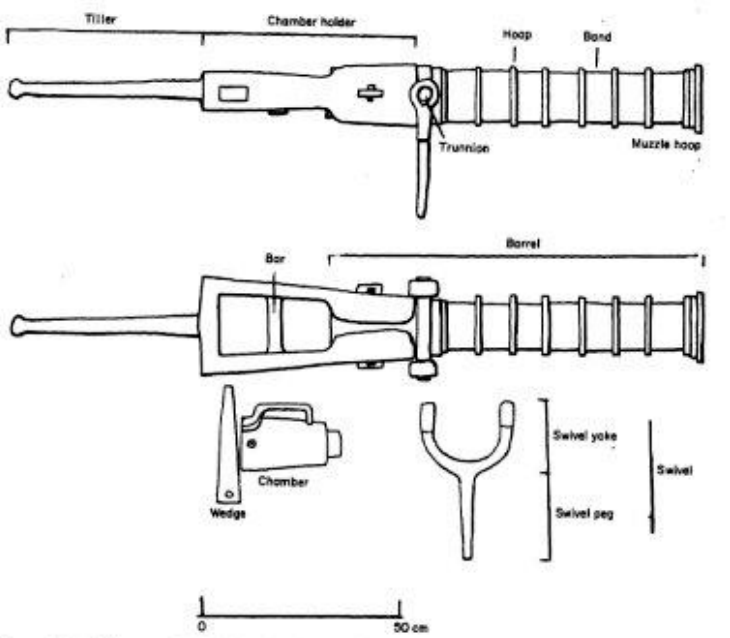


Figure 2. A swivel gun, type SW1-6, showing the names of the various parts and associated items (based on Royal Armouries XIX 3).

(Smith, 1988)

Breech-loading cannon were utilized throughout most of the 15th through the 17th centuries. Robert Smith describes wrought-iron swivel guns used up to the early 18th century with the most well-known examples from the Bronze Bell wreck off Tal-y-Bont in North Wales, which dates from c1710 (Smith, 2004). To date, all of the cannon observed, recorded, and/or recovered from the *QAR* wreck site are of the muzzle-loading variety, in which the powder charge and projectile(s) of choice were loaded from the muzzle end of the gun. Breech loaders were loaded just the opposite, through the open end of the breech. The ammunition in these guns might be a number of different projectiles including hail shot, fragments of iron or stone contained in a small cloth, leather bag or wooden lantern. The breech loaders from the Tal-y-Bont wreck were loaded with small fabric bags full of lead shot. Once the ammunition was in the barrel, the breech block would be inserted into its holder and a wedge hammered into place at the rear (Brown, 2009). The cannon would have been discharged by firing the vent or touch hole in the breech block much like the muzzle-loading versions.

A single gun could have had several chambers ready for use and the ability to fire rapidly made the "weapon *par excellence* for close range, anti-personnel fire in much the same way that the machine gun has been used since the beginning of the 20th century" (Brown, 2009).

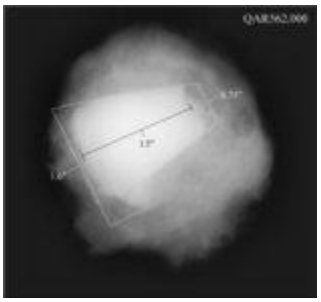
The 'stepped neck' of a breech block would have been the portion of the chamber that would fit into the rear of the bore. A wrought iron wedge would lock the chamber in place. Concretions QAR1445.000 & QAR1509.000 were found adjacent to the cannon at the south end of the site and were about five feet apart. The distinct handles and 'stepped necks' of the chambers are evident in the x-rays. Ten feet away was concretion QAR1937.000, which holds what appears to be a wedge used with the breech blocks. The presence of two breech blocks in concretions suggests that this type of weapon was aboard *Queen Anne's Revenge* when the ship ran aground, however their being there begs the question, where are the breech-loading cannon? Being that these were lighter swivel guns and situated on the upper works of the ship, it's likely they were salvaged when *QAR* was abandoned (Brown, 2009).

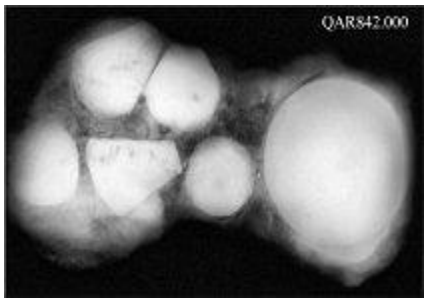
*Smith, Robert D. 'The wrought-iron swivel guns from the Bronze Bell wreck site'. *Maritime Wales*, 25 (2004), 21-26
*Smith, R.D. 'Towards a new typology in wrought iron ordinance' IJNA, 17.1 (1988)
*Brown, Ruth. Report No. 122- *QAR* Breechblocks-2009

Mystery Artifacts

The more concretions we investigate, the more questions arise. One artifact type keeps reappearing in concretions from the stern to the bow and its identity continues to elude us. The object is cone-like in shape and the wide end often appears to have a flange or protrusion. The diameter at the widest end and the length measure approximately 1.5-1.8" (3.81-4.57cm); the smaller diameters range from 0.7-0.76" (1.78-1.93cm).

Click to Enlarge

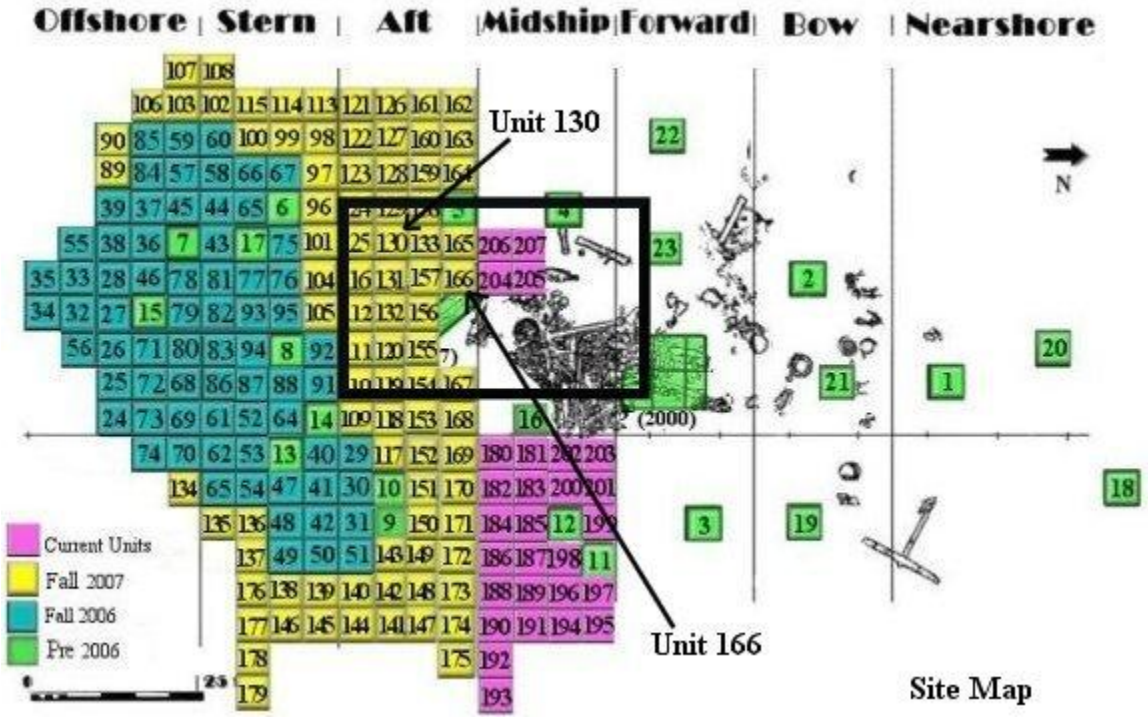




QAR0097.000 is a cast iron object that highly resembles the size and shape of the mystery objects in concretion however we are still not sure of this object's identity. It has been speculated that these are a type of projectile, or weights for trading goods. These objects were presented to the public in a presentation about the current x-radiography status at SHA in 2007 however no one offered any explanation as to the identity. So here's another call for help - if any readers have a suggestion then we would love to hear from you.

Clyster Syringe

In the fall of 2007, two pewter objects (QAR1904.000 and QAR2517.000) were recovered from the aft area (Unit #130 E70 N50 and Unit #166 E70 N50) of the wreck site. QAR1904.000 has been identified as the top part of a clyster syringe and QAR2517.000 as been identified as possible a bottom part of a clyster syringe.



Clyster syringes were used to administer enemas, a liquid remedy, usually water, into the colon to help with symptoms of constipation and other stomach aches or ailments. These particular syringes were in common use during the 17th and 18th century due in part to its popularity

with the French King Louis XIV (Gallici: 2006). Clyster syringes have been discovered on shipwrecks such as the*Natiere 1 (1704)*, *The Amsterdam (1749),* and *Conde de Tolosa (1724).*

Two marks became visible on the top part of clyster syringe (QAR1904.000) after cleaning was complete. Both marks were hard to interpret due to damage or wear, probably due to the post-wrecking environment. *Philippe Boucaud,* a leading expert in antique pewter, was contacted to help interpret the markings. With his knowledge of pewter marks, he was able to identify both marks as French, with one being a town mark and the other a maker's mark. The analysis of our clyster syringe and its marks will result in an upcoming Technical Bulletin. We want to thank Philippe Boucaud for his invaluable assistance with these clyster syringe marks.

**Gallici, Vin, The Enema – Heir to the Clyster.* Pharmacy History Australia, *Vol. 3:30 2006, p.12-14.*

Nesting Weights Update

Conservation of the QAR2590.000 set of weights has been completed and conservators have contacted researchers to try to gain insight into their identity. Diana Crawforth-Hitchins, who assisted the archaeologists of Mary Rose Trust to interpret their finds has offered comments about the weights and also referred us to Aimé Pommier, the editor of '*Le Système métrique*' who also provided some interesting observations.

As expected, when QAR2590.006 was removed, there was an '8' in the bottom of the master cup QAR2590.007. As luck would have it, the master cup also possesses a mark, 'N' dot 'C' with a *fleur de lys* over the letters. The '8' appears to be stamped over another mark (which is the same "N" dot "C"). Opposite the '8' is another lone *fleur de lys* and there is also a "<" symbol in the bottom of the cup.

Our consultants are puzzled over our weights but agree that the weights were most likely manufactured in Nuremberg and adjusted in France.The particular weighing system to which these weights belonged is still up for debate and we hope to have a more comprehensive write up about all of the *QAR* weights compiled soon.

We would like to thank all of the individuals who contributed opinions and helped us along this path. We thank Diana Crawforth-Hitchins and Aimé Pommier for their input and look forward to working with them in the future.

Condition Assessment of *QAR* Collection at NCMM

Following an agreement between NCMM curators and *QAR* conservation staff that called for annual condition inspections of *QAR* artifacts held at the museum, the first assessment was made last summer. Since 1997, a total of 8,382 individual artifacts have been transferred to NCMM (excluding ballast). This includes 3,222 gold grains, 3,674 lead shot of various sizes, 771 wrought iron rose-head spoon tip nails, 4 cast-iron cannon and a variety of other artifacts. Although all have been through conservation treatment at the *QAR* Conservation Lab, this does not render them immune to continuing deterioration once transferred to a museum. Materials that have been in the sea for nearly 300 years remain vulnerable to continued deterioration even after conservation; some materials, especially iron, will always remain chemically unstable and at high risk to continue corroding, even in a generally good museum environment.

On May 29th, June 3rd and June 8th conservation staff, assisted by ECU Physics professor John Kenney, checked artifacts with NCMM curator Darlene Perry and curator Wanda Stiles from the Museum of the Albemarle. On August 13th, *QAR* artifacts on loan to the Museum of History in Raleigh were examined with the assistance of MOH staff Matt Neal. Altogether about 62% of transferred artifacts were examined including all 4 cannon.

Artifacts were visually inspected and assigned one of the following condition categories:

A - Excellent = no work needed - safe to handle and condition suitable for study,
exhibition, and loan.

B - Good = Some work needed - e.g. cleaning, small repairs, safe to handle and study but not suitable for exhibition or loan before work done.

C - Fair = spots of active corrosion (metals), mold (organics), salt activity (inorganic materials) - safe to handle but not stable so not suitable for exhibit or loan.

D - Poor = Fragile, friable, extensive active corrosion. Not safe to handle, study, exhibit or loan.

DD - Very Bad = Disintegrated, possibly beyond conservation.

Over 90% of artifacts seen were in condition category A – which was good news! Of concern, however, was the active corrosion seen in all cannon bores, some (c. 6%) of the wrought iron nails and a few other wrought iron artifacts. These artifacts will either be retreated or, following discussion with museum staff, be subjected to a rigorous, localized control of the environment, particularly maintaining a relative humidity less than 20%, as a strategy for minimizing further corrosion. Providing a drier environment diminishes the rate iron corrodes.

Artifact Transfer to NCMM

The public's response to the 'Knights of the Black Flag' exhibit, which opened in March 2009 and runs to the end of the year, has been overwhelmingly positive. Since the majority of the objects on exhibit at the Museum of History came from the North Carolina Maritime Museum in Beaufort, which is the primary exhibition facility for the *QAR* artifact collection, we transferred 22 recently conserved artifacts to the NCMM to restock their lobby display. These artifacts included nesting weights, a 3-pennyweight, a gunlock, a disk-style bar shot fragment, glass beads, rope fragments, a sheathing plank fragment, gunflints, a lead game piece, lead net weights and a lead strip. A concretion containing a grenade and gunlock was also transferred for wet display in an aquarium side by side with an x-ray showing what is inside the concretion. You can learn more about all these intriguing artifacts by visiting the museum.

XRF Analysis

New technologies are allowing archaeologist and conservators to investigate and examine archaeological artifacts without destroying their structural integrity. One such instrument that

can provide elemental analysis without harming the artifact is a Portable X-Ray Fluorescence (XRF) Spectrometer.

So, what is this portable XRF? It is an instrument used to identify base elements in a substance and calculate the amount of those elements present in the artifact. Each element has specific characteristic x-ray emission, which can be measured by its intensity of its characteristic line. This can only be measured when high-energy X-ray photons are emitted from an X-ray tube and strike the sample being analyzed.For example, if a piece of lead (Pb) shot with a little iron (Fe) staining on the surface is tested the XRF results would show 98.885% Pb and 1.115% Fe as the elemental composition for that particular surface spot of the lead shot.

In October, the *QAR* conservation lab applied for and was awarded an academic research grant through Innov-X Systems, Inc to obtain a portable XRF. This resulted in the use of an Innov-X Systems Alpha Series Handheld XRF Analyzer for two months to conduct qualitative and quantitative elemental analysis on *QAR* artifacts. In return, we will submit our findings at a conference of our choice. Right now, we are in the process of testing artifacts and analyzing the data obtained from the XRF. We will up-date you on this project at a later date.

Public & Professional Outreach

In the past eight months we have had many students (from elementary to college) tour the lab with different educational groups. Professional conservators and researchers have also visited the facility to discuss conservation techniques and analyze artifacts. The staff has also been to various venues speaking to the public about the project.

Lab Visitors

All visitors are given a brief history of the project and then escorted around the lab by staff members, who explain the different conservation processes taking place at that time. Tours are tailored to fit the group depending on their interest. A small group of students from the O'Neal School in Pinehurst visited the lab on June 12th. On June 16th ECU's Tech Math Summer School program, a National Science Foundation (NSF) grant funded program aimed to improve public school interest in STEM (Science, Technology, Engineering and Math) careers, brought 31 students and teachers for a morning at the lab. With show and tell demonstrations, as well as the usual lab tour, lab staff tried to demonstrate how we apply science and math in our field

of study. Coordinators Beth Eckstein & Katherine Clyde commented that this created interest among the students that was talked about for the entire summer institute. During another tour, nine students taking a conservation course in ECU's Maritime History program were brought to the lab on November 24th by instructor Susanne Grieve. This was an opportunity for students in the maritime program to see a working conservation lab and ask questions about our processes. There were a few inquiries about volunteering so we encourage these students to come on out!

As mentioned in the April conservation report, Sarah and Emily Williams of the Colonial Williamsburg Foundation (CWF) have been organizing the 11th ICOM-CC WOAM working group conference that will be held May 24-28th 2010 in Greenville, NC.August 5th, Emily and colleague Chris Wilkins visited the lab. Emily and Sarah continued planning the upcoming event while Chris was given a tour of the facility during which different electrolytic techniques were discussed and the method used to record corrosion potential on iron artifacts was demonstrated.

On November 6th conservators from the *USS Monitor* Project based at the Mariner's Museum in Newport News, VA visited. Former *QAR* lab staff, David Krop and Eric Nordgren brought their colleagues, Tina Gutshall, Elsa Sangouard, Will Hoffmann, Karen Heaton, Laura Reid, and Josiah Wagener for a tour of the facility just after lunch. Conservators compared notes on corrosion potential monitoring as well as wood and fabric conservation. We are fortunate to be able to consult with the *Monitor* conservators because they are dealing with many of the same conservation issues as the *QAR* lab.

Researcher visit

Dr. Linda Carnes-McNaughton has had a long career in North Carolina archaeology and is very knowledgeable about cultural material. Linda has contributed a wealth of knowledge to the *QAR* project through artifact analysis and many of her reports can be found in our on-line Technical Series publications. On August 19th and 20th, she came to the lab to evaluate copper alloy objects, glass beads, ceramic sherds, glass shards and anything else we could find for her. Linda is quite amazing at identifying fragments of objects and can place almost everything into a functional context. The project is fortunate to have such a talented individual as part of the team.

Public Displays

On June 6th, the Museum of History held its annual Family Day, which is a free half-day festival based on an event, culture, or theme from North Carolina History; the theme this year was 'Pirates in Colonial Carolina.' The aim of this event was to draw people of all ages into NC history using hands-on crafts, food, music, dance, storytelling, and other activities, to help them discover their own links to the past. Wendy was stationed in the Knights of the Black Flag exhibit to talk about the *QAR* artifacts and answer questions. Coordinator Nancy Pennington estimated that approximately 5,000 people attended this event. Cub Twilight Camp is a summertime adventure camp for Cub Scouts and Boy Scout troops in the Pitt county area and this year's theme was pirates. Organizer Troy Baugher contacted the lab to set up a program for the camper so on July 14th. Shanna and Wendy gave a presentation to approximately 65 kids, ranging from 1st to 5th graders at the Boys and Girls Home in Greenville.



The North Carolina Maritime History Council held its annual meeting at the North Carolina Maritime Museum Sept 10th-12th. During the first afternoon of the conference, Friends of *QAR* director, Lauren Hermley organized a session where both archaeologists and conservators set up displays and were on hand to answer questions from the public.


Silk Hope Elementary School in Siler City was invaded by pirates on October 30th. Ms. Heather Rutherford and Mrs. Holly North's fourth grade students dressed in pirate costumes as they enjoyed a day full of activities related to pirates in their study of North Carolina's pirate history. Wendy started the day off by giving the fourth graders a presentation about the *QAR* project. Eighth graders were also given a presentation and their teacher, Mr. Durso, was so concerned about our lack of funding that his students wrote and mailed 48 letters to Speaker Hackney and Senator Atwater. Thank you for the support!!


On November 5th, Myron Rolston spoke to 24 students in Mrs. Larkin's fourth grade class at Stokes Elementary in Pitt County. He discussed the significance of piracy to North Carolina, the history of Blackbeard, and the current work going on at the *QAR* Lab.

ASK magazine is an arts and science magazine for children ages 7-10 issued by the same publishers of Cricket magazine. The November/December ASK issue is titled, "Searching for Pirate" and features an article about the occupation of an underwater archaeologist from the *QAR* project.