



Queen Anne's Revenge

Conservation Laboratory Report, November/December 2005

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ECU Joyner Library Event



Friends of Joyner Library held their Annual Banquet November 4th, and the NC *QAR* Archaeological Conservation Lab was invited to exhibit artifacts recovered from the *QAR* site. Ceramics, glass, pewter plates, rope, nails, concretions, and lead shot were taken to illustrate the different types of artifacts recovered from this shipwreck. Conservators were on hand to discuss the artifacts, the different conservation processes they go through at the lab and to answer general questions about the project. The event's guest speaker was Margaret Hoffman author of *Blackbeard: A tale of Villainy and Murder in Colonial America*. Many people attended the

function and expressed much interest in the *QAR* project. The staff was pleased to see the positive response to the project from other ECU supporters.



Lab Improvements... "More Elbow Room"

When the NC *QAR* Lab relocated to ECU's West Research Campus in March 2003 (following a Memorandum of Agreement between NC Department of Cultural Resources and ECU) we were originally allocated a 4,000 square foot warehouse and c. 600 square feet inside the main building. The latter space was divided to provide some office space, a wet dirty lab and a dry clean lab. Activities at the *QAR* Lab not only include treatment of artifacts but also detailed documentation and study (of treatments and artifact details - descriptions, dimensions, photography) all recorded on both lab sheets and an artifact database. Since 2003 as the number of artifacts



moving into the documentation and study phase has increased and as the number of people working on them has increased (staff, graduate assistants, archaeologists, researchers) the space available for this work became increasingly cramped and inadequate. The lab enquired about the possibility of being allocated more space in the main building. In November, after a year of negotiations and refurbishment, we finally expanded into another room alongside our original space and we are very pleased to now have "more elbow room!" We would like to thank all those at ECU who supported our need for additional space and helped to make acquiring it possible.

The new room is dedicated to documentation and artifact study with good desk space and computers (3 so far) designated for graduate assistants. Wendy and Eric have also relocated their desk space to the new room. We have also rationalized the use of the 'old space' and now have room to treat larger objects (e.g cannon) and some of the old office space is now used for photography and viewing x-radiographs.

More 'elbow room' and more computers are enabling us to increase the number of ECU Graduate Assistants working with us at any one time. In our first year we could just accommodate two students a semester; this year we have four (plus a volunteer) and hope to increase this number eventually to eight per semester - although this would be funding dependent. Since 2003 funding for c. half the Graduate Assistants has been provided from *QAR* Project Grants and the other half have been funded through ECU's Anthropology Department or Coastal Resource Management Program.

Since moving into the new space productivity also seems to have increased noticeably! For example student Jim Parker completed measuring (diameters and weights) of approximately 750 lead shot (cast in two part moulds) individually and entered every bit of data into the database. This information has already provided archaeologist Nathan Henry with data from which he has determined likely bore sizes of firearms used as indicated from the lead shot weights and diameters. Student Valerie Grussing has completed setting up database 'reports' which will provide the catalogue of artifacts to be included in the forthcoming Interim Report (1996-2004). This work also involved checking and entering missing data relating to the artifacts such as dimensions, weights and conservation steps.



Williamsburg Conference

A conference entitled *The Conservation of Archaeological Materials: Current Trends and Future Directions* was held November 13-17, at Colonial Williamsburg, Virginia. Emily Williams and Deborah Chapman of the Colonial Williamsburg Foundation organized this forum where at least 100 professionals in the fields of archaeological conservation, collections care, archaeology, and museology gathered together to present and discuss recent work on many aspects of archaeological conservation.

Sarah, Eric, and Wendy provided their own funding to attend all 4 days of the conference and represent the NC Department of Cultural Resources and the *QAR* Project. Sarah presented a paper entitled 'Getting the Job Done: A Study of the Challenges

Presented by Continuity, Change, and Controversy in Relation to the Conservation of Artifacts in Shipwreck Archaeology'. Sarah's paper gave an informative overview of the challenges of conserving material excavated from shipwreck sites with reference to the *QAR* Project. Eric presented a paper entitled 'Renovation of the Conservation Facilities at the Egyptian Museum, Cairo, Egypt: A Collaborative Effort', in which he looked back at a project he once worked on that involved collaboration between American research organizations and the Egyptian Supreme Council of Antiquities. Question and answer sessions after each paper session allowed for topics to be explored more fully and the *QAR* staff had many opportunities to discuss conservation issues with colleagues while gaining valuable insight and suggestions for future research. The conference was a very informative and productive experience for the participants. As the subtitle indicates, the emphasis was on taking stock of the current situation 'where we are now', with a view towards future directions 'where we are going'. There was much debate on these points, which was enriched by the participation of attendees. All agreed that there is much work to be done to make the field of archaeological conservation as effective as it can be to preserve archaeological material in partnership with other stakeholders and colleagues in the archaeological, curatorial and collections management fields.

X-Radiography Expedition



Concretions (c.150) recovered during the [May 2005 field](#) season are in stable wet storage at the lab; immersed in solutions of sodium carbonate in tap water to inhibit post excavation deterioration. The next step is to determine what artifacts are encased within the concretions and in what condition is the material. Knowing this can help prioritize which concretions to `excavate'. For example if a concretion could contain artifacts that may provide new and important insight into activities aboard the ship or positive identity of the *QAR* site these could be selected for cleaning first.

The shape, texture, and weight of a concretion can provide some clues as to its contents but besides apparent artifacts on the outer surface, it can be difficult to determine what may be inside a concretions just looking at its exterior. X-radiography is a non-destructive process used by conservators to see the interior of concretions. The *QAR* Lab does not have its own x-ray machine and over the years has been helped to obtain x-radiographs of artifacts by various organizations from hospitals to the [Marine Corps](#). Some useful images have been obtained but generally these x-ray systems are not designed to penetrate the density and thickness of items such as *QAR* concretions or to cope with the number of items needing to be x-rayed.

[Last March](#) we had the opportunity to use an industrial strength x-ray system at the Maryland Archaeological Conservation Lab, to obtain excellent images of three concretions recovered in 2004. This prompted us to seek similar equipment closer to home within the state of North Carolina and we found that opportunely the [NC Museum of Art](#) (NCMA) in Raleigh had recently purchased just such equipment.

The NCMA obtained funding for their new industrial x-ray machine on the basis that it would be available to help other state cultural resource organizations. The lab contacted Noelle Ocon, the

Associate Paintings Conservator at NCMA, who has responsibility for operating the machine, about the possibility of bringing the *QAR* artifacts to their facility and the museum was most receptive. The *QAR* project applied for a grant with National Geographic Expeditions Council and was awarded \$12,914.00 for "Peering into a pirate's trove: a proposal to conduct high definition x-radiography on artifact concretions from the *Queen Anne's Revenge* shipwreck site. This money has been used to purchase materials (such as film, cassettes to contain the film, film processing chemicals and a light box on which to view x-radiographs). We also plan to have all developed films digitally scanned so that they will be readily available for viewing and images can be enhanced for better clarity. The National Geographic Expedition Council grant will be used to get the films scanned and to purchase the software for image enhancement.

November 22nd, December 1st and December 13th were three days allocated for x-radiography at NCMA in 2005. Of the concretions recovered in May 05, 86 have now been x-rayed. Most of the smaller concretions have been done (i.e. those 6-12 inches in length). The larger objects will be x-rayed in the New Year. So far 47 (14x17") films have been exposed and developed and a total of 64 different exposures made; to reveal the contents of a concretion it may be necessary to take several exposures - varying its orientation on the film, the strength of the x-ray through altering voltage and current, and time of exposure. Exposure times have ranged between 30 seconds and 2 minutes, and x-ray strength between 120 KV and 156 KV (the maximum setting for the NCMA machine) at current ranging from 5-19 mA.



December 8th and 14th, two x-ray viewing sessions were held, attended by *QAR* conservators, archaeologist - Project Director Mark Wilde-Ramsing and Dr. Charles Ewen of ECU. Artifacts that have been visible in the x-radiographs so far include large and small nails, lead shot, cask hoops, barshot, cannonballs, glass beads, eyebolts, and a variety of other interesting objects. More x-raying sessions are scheduled in January 2006 and will continue into February with the larger concretions.



Volunteer Corner

Myron Rolston is a new face around the lab and he began volunteering a couple days a week in mid-December. Myron has recently moved to the Greenville area from St. Marys, WV on the Ohio River. He obtained his BS in Biology from Marietta College, in Marietta Ohio and an MS from Ohio University in Environmental Science. Myron has been involved in several archaeological projects mainly dealing with pre-historic Native American cultures. The 18th century has always been a time period of personal

interest and he has been following the progress of the *QAR* Project for several years. Myron is also a hobbyist Blacksmith and a charter member of The Central Virginia Blacksmith Guild. We have been breaking Myron in with physical labor to help out with our lab improvements. He has proven to be most helpful and we look forward to working with him in the future. The staff appreciates the time invested and is happy to have him onboard!