



## ***Queen Anne's Revenge***

Conservation Laboratory Report, July/August/September 2006

UAB Conservation Laboratory, Greenville

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### **Cannon Conservation -progress summary and update**

To date, the project has recovered 9 of the 24 cannon found on the site so far. Of the 6 cannon (C2, C3, C4, C19, C21 and C22) raised between 1997 and 2001, 4 have completed the desalination process and 3 of these, have completed conservation treatment and are now at the NC Maritime Museum in Beaufort.

Cannons C19 and C21 (from the concretion nicknamed `Baby Ruth' by the archaeologists) were transferred to the Museum in April 2005 and are now on display. Cannon C4 was transferred on September 28, 2006 and will be on display soon - when the Museum has

completed construction of a replica gun carriage to support it.



The fourth cannon to complete the desalination process is Cannon C3. You can follow previous stages of the conservation of C3 at the *QAR* Lab in Greenville in the [August 2004](#) and [July/August 2005](#) conservation reports. In July 2006 desalination of C3 was judged to be complete, as no more [chlorides](#) were being extracted. On July 19th conservators removed C3 from its desalination tank. After a final rinse inside and out with RO water (water purified by reverse osmosis) the surface was allowed to dry a little and then two protective coatings of 10% tannic acid in RO water were applied to all surfaces, including inside the bore.

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Cannon C3 was then moved from our warehouse lab (no HVAC) to the lab in the main building (with HVAC) to begin its drying process. Weighing 1913 lbs (wet weight) C3 is the largest cannon we have completed desalination of so far; maneuvering the gun and moving it to the inside lab was quite a task in itself. C3 will be closely monitored over several months, as it dries, to ensure that it is in a stable condition before being transferred to the Museum. Cannons C19 (175lbs), C21 (325lbs) & C4 (718lbs) underwent the same process but C3 being the largest so far will probably take the longest time to complete drying due to the greater thickness of iron. We have found that while the outside of the cannon may seem dry, inside the bore remains damp for much longer. To progress drying the inside of the cannon a tube of desiccant is placed up the bore and regularly changed as it absorbs water from the cannon. Once the cannon is judged to be completely dry (bore remains dry and no further weight loss occurs) a final protective coating of acrylic lacquer and then microcrystalline wax will be applied to the outside surfaces. A tube of dry desiccant will be placed in the bore and the cannon transported to the Museum. We hope to have C3 to the Museum early next year.

Cannon C2 is approaching the end of its desalination process and should start its drying phase by the end of the year.

Cannon C22 (nickname `Bertha') is perhaps our most famous cannon so far as it was recently featured in National Geographic Magazine's July 2006 issue. You can read the full story and see a 360 degree view of the C22 [online](#). Cleaning of C22 can be followed through 2005 conservation reports, for example July/August 2005 and September/October 2005. The cannon was half cleaned in section for the NG photographs and cleaning of the lower half will be completed over the next several months. C22 is currently undergoing electrolytic reduction treatment to begin desalination through the so far cleaned surfaces.

Three cannon (C5, C15 & C24) were recovered from site in the Spring 2005 (C15 and C24) and 2006 (C5) field seasons. Cannon C15 & C5 were publicly displayed after their recovery in the Fort Macon parking lot. All three are now in wet storage at the QAR Lab waiting to be cleaned free of concretion - this stage is planned to start in the New Year, after which they will begin their desalination treatment.

The 4 cannon (C4, C19, C21 and C3) progressing through the desalination process not only shows the progress the conservation lab has made, but also creates more room for the next four cannon planned for recovery this fall field season. We will keep cannon progress posted!!

## **Molding & Casting Workshop at Maryland Archaeological Conservation Laboratory (MAC Lab)**

Molding and Casting are used to make replicas of artifacts, which can be used as a conservation record of the object's state and intricate detail. Many of the *QAR* wrought iron artifacts, such as nails and cask hoops, within concretions have corroded away completely leaving just a void where there was once a solid object. The form of the artifact can be saved, however, by casting epoxy resin into the void before cleaning away the surrounding concretion. Thus molding and casting are two important techniques conservators can use when treating archaeological iron recovered from under the sea.



On August 11th and 12th, *QAR* Assistant Conservator, Wendy Welsh, attended a Molding and Casting workshop at The Maryland Archaeological Conservation Laboratory (MAC Lab). Howard Wellman, Lead Conservator of the MAC Lab, arranged the workshop for conservators interested in exchanging experience and information and furthering their knowledge of casting and molding techniques. The workshop was also attended by Betty Seifert of the MAC Lab, Lisa Young a private conservator of St. Mary's, Emily Williams from Williamsburg, Eric Nordgren from The Mariner's Museum, Melba Meyers and Dee DeRoche with the State of Virginia, and Claire Peachey with the Navy.

Conservators were able to experiment with silicone pour molds and polyurethane brush-on molds. Once the molds were set, conservators cast the molds with different curing mediums often applying pigments to create different effects. Ms. Melba brought some donated 'CSI' molding material to experiment with and we were successful in obtaining basket impressions in soil. Eric Nordgren gave a presentation on the molding material alginate and a casting resin Forton used to mold nut guards on the turret of *The Monitor*. Claire Peachey gave a presentation on casting concretions from marine environments using Hysol epoxy and touched on uses of polysulfide resins, like casting wood objects and molding underwater objects in situ that cannot be removed immediately. Workshops such as this make it possible for conservators to come together and share the knowledge of what one another has learned from their own experience. This workshop was very informative and hopefully more of this nature will be organized in the future.

### **Visitors**

Visitors to the *QAR* Lab in July, August and September have ranged from high school students to ECU Foundation Directors. July 11th Dolores Hall, State Archaeologist, brought Lynn Flora, Renee Shearin, Dr. Jerry Cashion, and Kim Schaeffer to the lab for a tour of the facilities. In the

spring, Hannah Piner, a high school junior, was part of the Dive Down Program and followed up with a visit to the lab on August 22nd along with Representative Edith Warren's husband, Billy Warren and grandchild Caroline Owens. On September 18th Dr. Jerry Prokopowicz (ECU History Department) brought his Public Archaeology class out to the lab to view artifacts and discuss the project and on September 23rd ECU Foundation Board members and staff were given a tour. All visitors were enthusiastic about the project and we are always happy to see the interest.

### **ECU Graduate Assistants**



With ECU's Fall Semester getting under way we are pleased to see our returning Graduate Assistants, Valerie Grussing (PhD student, Coastal Resource Management) and Jim Parker (second year Masters Student Anthropology) and to welcome three new ones to the conservation team. On September 19th, Chelsea Quinn, Adria Focht and Molley Brisendine (all first year Masters student in Anthropology) started work at the *QAR* Lab. We particularly thank the CRM program and Anthropology Department for funding Valerie and Jim and for their ongoing support of the *QAR* Lab. The *QAR* Project funds Chelsea, Adria and Molley. With the Fall Field season beginning on

October 2nd and the expectation of hundreds of artifacts being recovered we are all going to have a very busy but exciting fall. The contribution made by ECU Graduate Assistants to ensuring that all artifacts are properly and efficiently processed, documented and conserved is much appreciated.