San Gemini Preservation Studies
International Institute for Restoration and Preservation Studies
203 Seventh Ave Brooklyn, NY 11215, USA

Archaeological Ceramics Restoration Project, San Gemini, Italy 2013

Course: SG203B - Introduction to Conservation of Archaeological Ceramics – Part 2, Workshop

Instructors:
Prof. Elena Raimondi (Project Conservator / Restorer)
Prof. Elena Lorenzetti (Archaeologist)

Student Restorer	Chelsea Conway
Student's Home University:	Ohio State University

FINAL CONSERVATION REPORT

Reference data	SMJC7
Description (shape and decoration)	Globular, closed form ewer with two small opposite handles (one missing), distinguished flat rim and lip, simple small base, no slip or decoration present except possibly a raised band at the rim. Entire shells were found within the edges of the ceramic and appear to have been used as tempers. Additional tempers appear to be small rocks, mica, and black mica among others. On the surface the pot appears to have been misfired, and although the clay body is primarily orange, the body is black at these places. The rim appears to have been misshapen or unclean during firing leaving an uneven surface. Places along the pot also seem to have inconsistent shape. According to an archaeologist from the excavation, the pot was used as an urn and contained ashes.
Provenance	Norcia/Coranoni;
Period/ Date	330-290 BC.
Owner	Italian State/ Museo Archeologico Nazionale dell'Umbria
Condition report	The pot was in 19 pieces with an additional 6 pieces presents which were found to not be part of the object. The entire rim was present, and a single piece contained most of the base. However, large sections of the body were not present. The body of the ceramic was incredibly coarse and tough. The vessel was covered in large soil/calcareous encrustations on the interior, exterior and edges of the fragments. Smaller calcite deposits could be found in holes covered by some of the encrustations as well. Bits of the fragments seem to have been chipped off or eroded, making a number of the connections imperfect.
	## Restoration Notes
1. Documentation	Documented by digital photographs and written record
2. Cleaning Method	Before cleaning the pieces were mapped to note the connects and preserve the shapes of the

	fragments. From tests along the edges, ethanol and cotton swabs were found to be ineffective at removing the encrustations; deionized water was later found to be ineffective on removing encrustations along the edges as well. A scalpel and probe were used to mechanically remove the larger soil deposits within the edges of the fragments. The probe was primarily used inside small holes and crevasses to remove calcite deposits. Because the porosity of the ceramic was so great, smaller encrustations were left to prevent further damage to the edges, so long as these encrustations did not obstruct the new connections. A small test was made on the interior of the fragment containing the base, with a Ion exchanger High Cationic Resin (**Amberlite IR 120 H**) resin, to remove a small soil encrustation. The resin was applied for 5 minutes on the encrustation and was found to remove much of the soil, however, a small deposit deep within the pores of the ceramic still remained and had to be removed mechanically with the scalpel. Because the ceramic was incredibly coarse, and tough, and there is no decoration present on most of the surface, a scalpel was used to mechanically remove move of the encrustations on the exterior of every piece. Time did not allow for the removal of encrustations on the interior. The resin was then applied on the exterior of every piece for five minutes. Fragments with larger encrustations, particularly those along the rim, received two applications. The scalpel was then used again to remove the larger remaining deposits on the surface,
3. Bonding	The pot was temporary reconstructed using masking tape. During this process 6 pieces of the total 25 present were found to be part of a different object because of their size, texture and clay body. These 6 pieces were placed again with the reference bag. Masking tape was again used to mark where connections were present and the edges needed to be conserved, the pot was then taken apart again. The edges were preserved with Mowital B60HH 3% in ethanol and then again with Mowital B60HH 5% in ethanol. Bonding was attempted with Mowital B60HH 20% in ethanol, however, this was unsuccessful and did not hold the ceramic in place. Paraloid B72 20% in acetone, was used to bond the fragments.
4. Filling	Polyfilla Interior (cellulose plaster filler) was selected to fill the holes of the ceramic. A test sample was made using 20 grams of polyfilla. Because the ceramic changes color across the surface of the pot, a neutral tone was selected to be a suitable match for as much of the pot as possibly. The piece required a chromatic integration to color in the correct shades across the entire pot. A combination of raw umber (4 scopes) and terra d'ombra (burnt or natural?) (5 scopes) pigments were used to create this tone. The sample was then tested with a 2.5% Paraloid in acetone solution, then a 1.5% Paraloid in acetone solution and then a 1.5% Mowital in ethanol solution. The 1.5% Paraloid was found to be the best match to conserve the polyfilla. The edges of the ceramic along the holes were then taped. Smaller holes were backed with tape from the interior of the pot. Dental wax was molded to the interior and then pressed against the largest of the holes, as the gap was too large to be supported with tape. Using a mixture of 180 grams of Polyfilla matched in pigment to the sample, this required 42 scopes of raw umber and 53 scopes of terra d'ombra, the holes in the ceramic were filled with a spatula. The excess was then removed with a scalpel. A small lower level was created on the Polyfilla, just below the body of the ceramic. The shape was the pot was created on this lower level with the scalpel as well. The tape

	and the wax were then removed. The piece was then cleaned with a water and ethanol solution with cotton swabs, and sanded to smooth the surface. Than protection than color
5. Other notes	

Photographic documentation	
Photo (before)  	Photo (Before) 
Photo (during) 	Photo (during) 
Photo (after) 	Photo (after)