LEBANON

CONSERVATION AND RESTORATION OF A VOTIVE MASK FROM JIYEH IN LEBANON

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Abstract: A terracotta mask discovered at the site of Jiyeh (ancient Porphyreon) in Lebanon, on the Mediterranean coast between Beirut and Sidon, underwent conservation and restoration in 2014. A silicone cast of the object was made as part of the process, which included reconstruction of the losses and final retouch. The state of preservation of the object was assessed during the course of the conservation. A study of the production technique permitted the mask production process to be reconstructed to a large extent.

Keywords: conservation, ceramic technology, terracotta, Hellenistic mask, reconstruction, retouch

Remains of small terracotta masks were found in Hellenistic layers excavated in Jiyeh in 2013 by a team from the Polish Centre of Mediterranean Archaeology of the University of Warsaw directed by Tomasz Waliszewski (Waliszewski et al. 2015: 471). The site, which is the ancient Porphyreon, lies on the Mediterranean coast of Lebanon between Beirut and Sidon. At the time the objects were examined, documented and secured. The following season, a makeshift conservation lab was set up at the archaeological site of Chhîm, where the mission was based in 2014 for a study season, and the masks were studied again. The unique character of the finds, coupled with their rich and interesting polychromy, led to the decision to undertake a project for the full conservation of one of these objects. The present article presents the conservation methods and procedures that were applied for the purpose.

TERRACOTTA VOTIVE MASKS

Masks were a well-known tradition in ancient Greek culture. Their presence in the form of theatrical masks was conspicuous in religious cult, sepulchral art, and everyday life. It is likely that votive offerings, which include a wide range of objects of various forms, such as heads, legs, arms and other human body parts, would have assumed this form as well (Uhlenbrock 1990: 39). Many objects of similar function and purpose were discovered on archaeological sites in the Mediterranean (Riis 1981; Kourayos et al. 2012; Cenci 2014; Uhlenbrock 1989).

While the archaeological context of the masks from Jiyeh does not support the assumption that these particular masks were votive objects, their interpretation as such is intuitive based on formal parallels with similar objects described as 'votive masks' in pertinent literature. Terracotta votive masks were discovered in large numbers on many archaeological sites in the Mediterranean; Bertesago and Garaffa (2011) identified and classified as many as 200 objects, leaving about a hundred unidentified. One reason for the proliferation of the form was the expansion of religious practices associated with votive offerings made in the temples. Their production on a large scale was due to the desire to represent the individual features of the model.

Votive terracotta offerings are on display in museums, galleries and private collections (Culican 1975–1976; Burn and Higgins 2001; Ciasca 1988), but only one votive mask can be seen in the National Museum in Beirut, the sole member of a wide and very diversified range of representations.

THE MASK FROM JIYEH

The mask under conservation is 24.5 cm high and 17.8 cm at its widest [*Fig. 1*]. It is approximately rectangular in shape with a rounded upper edge, convex in the middle section and flattened along the longer edges. The top forms a kind of flat ledge almost at right angle to the representation surface. The lower ridge is straight. In the middle section, there is a panel unfolding into a schematically treated face. The head, shaped in shallow relief, leans forward, making the eyes look downward as well.

The ornamentation combines features typical of two different cultures. A small ornamented diadem on the head above the forehead refers to the ancient Greek style, while the lines extending the corners of the eyes highlighted by stretched, raised relief point to inspiration drawn from ancient Egyptian art. The polychromy is two colored. Traces of red pigment are preserved in the central section and take the form of transversal bands on the face and on top of the hair. Two red dots are visible next to the right edge. Black pigment was used to mark the pupils of the eyes. Their shape, as well as the eyebrows and mouth were emphasized by subtle raised relief; the ears were also modeled, as was the fine ornament on the diadem.

Three orifices in the ledge near the upper edge were used probably to hang the votive object on the wall or on a beam.

Fig. 1. Terracotta votive mask from Jiyeh, state after conservation (Photo A. Oleksiak)

PRODUCTION TECHNIQUES

The object is a polychromed terracotta. It was fired a light orange. A macroscopic examination of the surface and break revealed a fine fabric with no visible temper. No larger fragments of mineral filler were observed on the surface of the cast, which is even and smooth. The technique used was pressing in a mold. The negative was produced in an integral mold, allowing the clay to be extracted in one piece. There were no traces of elements joined before or after firing, either on the face or on the reverse. The cleaned clay was placed in the mold by hand, the coroplast pressing the moist clay to the mold walls to fill the deepest recesses. Evidence of this technique is preserved in the form of fingerprints on the reverse [***Fig. 3*** top right]. Once the clay had dried enough, the object was extracted with a blunt tool, possibly a stick and the three round orifices on the ledge were made, the clay surplus being pushed out to form rims. The holes were made probably with a round stick [***Fig. 3*** bottom].

Fig. 2. Fragments of the mask before conservation; surface crusted with loamy soil (Photo A. Tomkowska)

The dried object was subsequently painted, colors being applied without any ground or slip. Pigments were brushed onto the surface. They could have been rubbed into the damp clay without any binder and fused with the substrata during firing. The pigments could not be identified without microchemical analysis, but it may be assumed that they were natural. Red was probably made with ground earths, such as red ochre, while black was obtained from ground soot or charcoal.

The object was then fired. The baking temperature for terracotta figurines was usually between 750°C and 950°C, the higher the better for the durability of the objects (Higgins 1970; Kriseleit 1994).

STATE OF PRESERVATION

The object was found broken into 13 pieces [***Fig. 2***]. Some fracture lines had no sharp edges, suggesting long deposition in the soil. The clay surface was weakened and subject to powdering in places. The baked clay did not demonstrate any resistance to water; in the presence of a solvent, the original material softened and dissolved.

Its poor state of preservation could be due to the low firing temperature, which presumably did not exceed 700°C. It could also be the result of chemical changes, leading to secondary components being created during the processes of recarbonization and rehydratation. It could also be due to salt efflorescence in the pores. All of these factors could have had an impact on the deterioration of the original properties of the fired clay.

Fig. 3. Terracotta votive mask from Jiyeh during conservation: top left, after bonding the fragments together; top right, view of the back, note finger traces next to the upper edge and central part; bottom, three round orifices on the ledge, indicated by the arrows (Photos A. Tomkowska)

The color layers were generally in poor condition, requiring immediate action. They were relatively the best preserved in the recesses of the molding, not being subject to wear during the object's use-life and deposition in the soil. The adhesion of the pigments to the substrate was not sufficient and neither was there significant cohesion. Parts colored with a thicker layer of pigment became particularly powdered. In the recesses, where the polychromy was best preserved, the dissolved binder resulted in the migration of the pigment into the structure of the sediments and soil deposits. The migration process is particularly well visible in the recesses inside the ears, where crusty mineral deposits are consolidated with the substrate and have assumed a red color. Numerous abrasions and scratching of the colored layers were noted on the flat surfaces. Tests were made to determine the resistance of colored layers to water. Both pigments (black and red) dissolved in water.

The mask was not complete; two corner fragments were missing, as was a fragment of the upper ledge, near the edge, not hindering however the legibility of the form. Bits of the right cheek and a small fragment of the forehead on the right side were missing as well, without distorting the wholeness of the representation. Minor surface losses were observed on the tip of the nose, this damage dating possibly to a time when the object was in use. Projecting parts, like the tip of the nose, are as a rule the most susceptible to damage in the first place.

CONSERVATION AND RESTORATION

The mask underwent preliminary cleaning in 2013, followed by mechanical cleaning in 2014 when delicate brushes were used first to remove the rest of the soil from the surface. Strongly adhering layers of crusted loamy soil were removed with scalpels. Additional surface cleaning with solvents was reduced to a minimum because the original substance was not water-resistant. Distilled water was applied to the cleaning of recesses without polychromy and the reverse. Cleaning was carried out with cotton wool swabs dampened with purified water and enzyme solutions. Thorough cleaning had to be performed with utmost caution.

The next step was impregnation to consolidate the surface, improve durability of the object, but also to restore the cohesion of the polychromy and its adhesion to the clay surface. Surface strengthening was carried out once the initial resistance of the layers was restored. A key factor in the impregnation process was to find the right proportions of the reinforcing compound to avoid leaving a shiny film on the surface after evaporation of the solvent. The polychromy was consolidated with a low concentration of Paraloid B-72 (ethyl methacrylate and methyl acrylate-based resin) in acetone. After cleaning, the fracture lines of particular mask fragments were impregnated, keeping in mind the need for all treatment to be reversible. Once the solvent evaporated, the fragments were bonded together [*Fig. 3* top left]. The complicated and disparate form necessitated stabilization of the object with sandbags during bonding. Highly concentrated Paraloid B-72 in acetone, a reversible adhesive recommended for archaeological artifacts, was used to bond the fragments together. Excess binder squeezed out during the work was easily removed.

The larger losses in both lower corners, on the left side of the ledge and above the

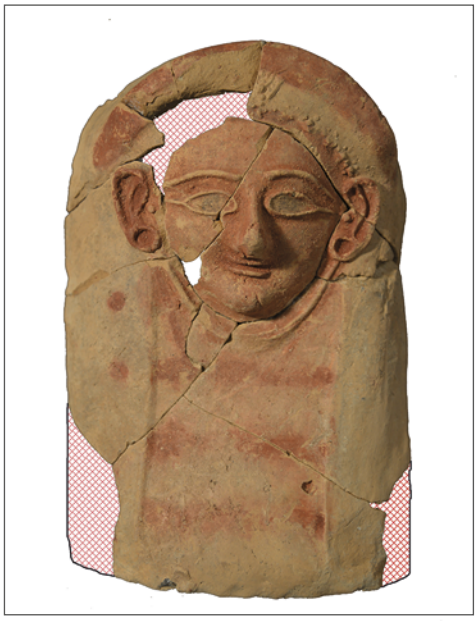

Fig. 4. Suitably sized elements made of a stainless wire mesh used for the restoration (Photo A. Tomkowska)

Fig. 5. Retouching the mineral fillings with watercolors (Photo U. Wicenciak)

forehead on the right, had reinforcements fitted before filling, aiming at greater stability of the mineral compound filler. Without this reinforcement, the mineral compound would crack and disintegrate. Suitably sized elements were cut from a small-opening stainless wire mesh and bonded in place [*Fig. 4*]. Filling compounds were tested. The resistance parameters of mineral filling compounds were chosen so as not to significantly exceed the parameters of the original material. A mineral compound of good resistance parameters was chosen, easy to apply and to process during the work. After drying it remained matt, retaining the same slight gloss as the original material. The compound was applied in places of the larger losses and on the stainless mesh. The filler was applied in small portions to avoid cracking.

Once the larger losses were filled, the surface losses and fissures were repaired. An acrylic putty (Stuccolex), usually recommended for reconstruction of layers of slip (Martusewicz 2015), was used locally. After drying, the white compound was ready for grinding and it made the color retouch much easier.

Silicone casts were taken, specifically to enable research on the shape of the mask in the future. Before the silicone layer was applied, it was necessary to protect the terracotta surface and the polychromy against mechanical damage that could occur when the negative was removed from the object surface. Silicone applied to a polychromed surface requires additional protective layer for physical insulation. The lack of a protective layer may lead to some irreversible damage, such as ripping the polychrome from the surface or violation of the original surface layer. A thin layer of temporary consolidant for artworks was used to protect the surface (Cyclododecane spray).

After the silicone was removed, the fillings were retouched with watercolors, using demineralized water and an acrylic binder (2% Primal AC-33 in demineralized water) [*Fig. 5*].

The object is now in store at the National Museum in Beirut.

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REFERENCES

Bertesago, S.M. and Garaffa, V. (2011). Greek figurines in an indigenous south Italian context: The votive terracottas from the Grotte delle Fontanelle sacred area of Garaguso (MT). *Newsletter of the Coroplastic Studies Interest Group*, 6, 6–8

Burn, L. and Higgins, R.A. (2001). *Catalogue of Greek terracottas in the British Museum*. London: British Museum Press

Cenci, C. (2014). Le terrecotte votive della collezione Gorga. *Newsletter of the Association for Coroplastic Studies*, 11, 3–4

Ciasca, A. (1988). Masks and protomes. In S. Moscati (ed.), *The Phoenicians* (pp. 354–369). Milan: Bompiani

Culican, W. (1975–1976). Some Phoenician masks and other terracottas. *Berytus*, 24, 47–87

Higgins, R.A. (1970). The polychrome decoration of Greek terracottas. *Studies in Conservation*, 15(4), 272–277

Kourayos, Y., Daifa, K., Ohnesorg, A., and Papajanni, K. (2012). The sanctuary of Despotiko in the Cyclades. Excavations 2001–2012. *AA*, 2012(2), 93–174

Kriseleit, I. (1994). Bemerkungen zur Herstellung hellenistischer Terrakotten. In I. Kriseleit and G. Zimmer (eds), *Bürgerwelten: hellenistische Tonfiguren und Nachschöpfungen im 19. Jh.* (pp. 39–42). Berlin: Staatliche Museen zu Berlin, Preussischer Kulturbesitz Antikensammlung

Martusewicz, J. (2015). Unbekannte Ofenkacheln aus Dobre Miasto: Eine Untersuchung der Sammlung aus der Sicht des Restaurators — Unknown stove tiles from Dobre Miasto. An analysis of the collection in the light of conservation and restoration work. *Restauratorenblätter — Papers in Conservation*, 33, 147–164

Riis, P.J. (1981). *Etruscan types of heads: A revised chronology of the Archaic and Classical terracottas of Etruscan Campania and Central Italy*. Copenhagen: Royal Danish Academy of Sciences and Letters

Uhlenbrock, J.P. (1989). *The terracotta protomai from Gela: A discussion of local style in Archaic Sicily*. Rome: "L'Erma" di Bretschneider

Uhlenbrock, J.P. (1990). *The coroplast's art: Greek terracottas of the Hellenistic world*. New Paltz, NY: College Art Gallery, The College at New Paltz, State University of New York

Waliszewski, T., Antos, M., Jaworski, P., Makowski, P., Romaniuk, M., Solecki, R., and Szymczak, A. (2015). Preliminary report on the 2012 and 2013 excavation seasons at Jiyeh (Porphyreon): Work in Sector D (residential quarter). *PAM*, 24/1, 453–474