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Porta Incensario Restoration at Palenque, Chiapas



Research Year: 1998
Culture: Maya
Chronology: Classic
Location: Chiapas, México
Site: Palenque

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Background Information

In 1998, the Proyecto Grupo de las Cruces undertook a program of conservation and restoration of six porta incensarios excavated from the north and west sides of the Temple of the Cross, Palenque. This program was supported by a generous grant from the Foundation for the Advancement of Mesoamerican Studies, Inc. (grant 97081). This program was designed not only to restore best-preserved porta incensarios excavated in 1997 and 1998 but also to train residents of the town of Palenque, Chiapas in restoration techniques to provide them with new job skills and to create a base of skilled support for future archaeological projects in Palenque.

The restoration of the porta incensarios was supervised by Juan Alfonso Cruz Becerril, a ceramic restoration specialist recommended by both the National School of Conservation of the INAH and Martha Cuevas G., the researcher studying the porta incensarios of Palenque. Cruz had previous restoration experience with the porta incensarios of Palenque as a member of the Proyecto Especial Palenque (directed by Arnoldo Gonzalez Cruz) and had supervised the restoration of several of the porta incensarios now on display in the Alberto Ruz Museo del Sitio de Palenque. During the five months of restoration (April-August 1998), six people – Francisco Guzman, Carlos Barrios, Eva Nahol, Fernando Morales, Amalia Jimenez, and Hilda de La Cruz – were trained in ceramic restoration techniques.

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Selection of pieces for restoration

The Proyecto Grupo de las Cruces excavated a total of 15 porta incensarios, highly decorated ceramic cylinders which supported ceramic containers used to burn incense, during the 1997 and 1998 field seasons. These were evaluated by Juan Alfonso Cruz Becerril and Martha Cuevas G. to determine which were the best candidates for restoration. Of the 15, two porta incensarios were too badly preserved to be restored, three appeared to be incomplete, and ten were judged to be good candidates for restoration. The six best-preserved porta incensarios were selected for restoration with the funds provided by the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI). The other four porta incensarios remain in storage at the site of Palenque.

The six porta incensarios selected for restoration were Elementos 1/97 (see [Figure 1](#) for this piece after restoration), 2/97 ([Figure 2](#)), 3/97 ([Figure 3](#)), 4/97 ([Figure 4](#)), 6/97 ([Figure 5](#)), 15/98 ([Figure 6](#)). All of these were recovered from the west side of the Temple of the Cross with the exception of Elemento 15/98, which was found on the north side. They were excavated from the fill behind the seventh and eighth terrace walls of the Temple of the Cross where they had been placed as offerings during the construction of the building in the seventh century A.D.



Figure 1: Elemento 1/97 after restoration.



Figure 3: Elemento 3/97 after restoration.



Figure 2: Elemento 2/97 after restoration.



Figure 4: Elemento 4/97 after restoration.



Figure 5: Elemento 6/97 after restoration.



Figure 6: Elemento 15/98 after restoration.

Restoration process

The process of restoration of the porta incensarios began when they were removed from the excavation area. Once the pieces were transported to the laboratory, they were evaluated for condition and state of preservation, cleaned, consolidated if necessary,

reassembled, and the spaces for missing fragments were filled and matched to the color of the piece. All of the conservation and restoration was performed in the laboratory at the site of Palenque which was equipped with fans to provide an appropriate level of ventilation during the use of chemicals in the cleaning process. All materials and procedures used in the restoration of the porta incensarios are reversible and do not affect the structural stability of the ceramic material.

Recovery

After the porta incensarios were exposed in excavation ([Figure 7](#)), they were removed from the soil in a way that preserved the relationship of the pieces as well as maintaining the structural stability of the fragments. This prevented further damage to the still damp and friable ceramic materials. After each porta incensario was exposed, it was covered with a layer of plastic wrap which was followed by a layer of aluminum foil to prevent contact between the ceramic fragments and the rigid cap of polyurethane foam used to maintain every piece in place during transportation. Finally, the soil below the porta incensario was removed, with additional polyurethane foam injected to complete the encasement of the fragments. The porta incensario was then transported to the laboratory to await cleaning, consolidation, and restoration.

Evaluation

Because the porta incensarios had been excavated over the course of two years, 1997 and 1998, there were two groups which were in different states of preservation. The deterioration of ceramic material depends on the conditions of the soils in which it was found during excavation as well as the cleaning and conservation procedures applied immediately after excavation.

The pieces excavated in 1997 had not been cleaned immediately after excavation since there was no restoration specialist available to direct the procedure. These pieces had several layers of mineral salts from the clay on their surfaces as a result of the drying of the soil and fragments after excavation. These salts, basically carbonates, were located over painted areas and had degraded many of them. The carbonates presented special problems in cleaning the pieces. Some of the fragments were very friable.

The porta incensarios excavated in 1998 were cleaned immediately after excavation. These pieces were still humid and the mineral salts had not turned into carbonates and thus were easily cleaned.

In general, the pieces showed fractures, perforations, exfoliation, and detachment of the applique decoration. A constant flow of water could cause the type of deterioration that was found.

Cleaning, conservation, and restoration

Surface cleaning

The initial cleaning of the fragments of the porta incensarios was conducted using a soft brush to remove the dust, dirt, and other items (including pebbles, roots, etc.) that were loosely attached to the surface of the artifact.

Chemical cleaning

Next, the fragments were cleaned with a solution of water and alcohol, in a 1:1 proportion, that was applied with a cotton swab to eliminate the soil adhering to the pores of the ceramic. In addition, warm water was occasionally used to remove all other material not a part of the artifact.



Figure 7: Christopher Powell and Martha Cuevas excavating Elemento 2/97.



Figure 8: Eva Nahol cleaning fragments.

Elimination of salts

It is important to remove soluble salts from the ceramics because in a humid environment, such as that of Palenque, they will develop crystals inside the ceramics that might cause cracks or fractures in the restored piece. Several rinses with distilled water were used to eliminate the soluble salts from the fragments. A solution of formic acid diluted with water was applied to those fragments that had a concentration of carbonates in order to remove the non-soluble salts. A final rinse with distilled water neutralized and removed the preceding solution.

Manual cleaning

Fragments with areas of non-soluble salts or adhesions of dirt and clay were cleaned manually with a scalpel and a dissection needle, using a magnifying lamp on small areas ([Figure 8](#), shown above).

Consolidation

Fragments which showed exfoliation or were friable were consolidated by injecting and dripping a solution which gave structural stability to the material. In other cases it was necessary to make a general consolidation by immersion in the solution.

Restoration

After the fragments were cleaned and consolidated, they were refitted, initially without adhesives. When the fragments had refitted, they were reassembled using a special adhesive for ceramics. The cracks and fissures visible after reassembly were filled with a paste of clay dyed to match the color of the artifact which was applied with a small, thin spatula ([Figure 9](#), [Figure 10](#), and [Figure 11](#)).

Chromatic reintegration

The joints and filled areas were painted with pigments made from soils of colors similar to those of the porta incensarios ([Figure 12](#)). These were applied with an acrylic agent that served as an adhesive. The color matching process was conducted in an area lit by blue light bulbs, replicating the light quality of daylight, in order to have most accurate match.



Figure 9: Francisco Guzman working on Elemento 3/97.



Figure 10: Juan Alfonso Cruz working on Elemento 6/97.



Figure 11: Amalia Jimenez and Fernando Morales working on Elemento 2/97.



Figure 12: Hilda de la Cruz working on Elemento 15/98.

Recommendations for maintenance

A soft brush must be used to clean ceramics. The use of water or wet cloths should be avoided under any circumstances. The environmental conditions required by ceramics are not as specific as those for other materials. The range of tolerable humidity and temperature is quite broad, but it is important to avoid sudden changes in either humidity or temperature. The restored pieces must be kept on a firm and stable surface since they can be broken and, in this case, since the porta incensarios are heavy, they can break the structures that hold them.

Training program

The six local trainees – Francisco Guzman, Carlos Barrios, Eva Nahol, Fernando Morales, Amalia Jimenez, and Hilda de La Cruz – participated in the entire process of excavation, cleaning, consolidation, and restoration described above. Although they do not have the specialized knowledge of the chemicals and solutions required in the

restoration process, they are qualified to provide skilled support in the excavation, handling, and treatment of fine ceramic pieces.

Display of the restored pieces

Three of the restored porta incensarios were selected to be displayed in the Alberto Ruz Museo del Sitio de Palenque ([Figure 13](#), shown below). These three, Elementos 1/97, 2/97, and 15/98, have been included in a display with other porta incensarios found in the Cross Group. Elemento 15/98 has also been selected to be included in a special display at the 1999 Mesa Redonda de Palenque. The other three pieces remain in secure storage at the site of Palenque.



Figure 13: Elementos 15/98 (lower left) and 1/97 (upper right).

Continuing study

The six porta incensarios restored under the grant from the Foundation for the Advancement of Mesoamerican Studies, Inc. will be included in a study of the porta incensarios of Palenque conducted by Martha Cuevas G. Her report on the iconography and artifacts associated with these six pieces will be submitted to the Foundation upon its completion. In addition, all six pieces have been sampled for neutron activation testing by Dr. Ronald Bishop.

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