Fig. 7. Two lidded cylinder tripods with incised and painted polychrome decoration. These vessels were found in Sub-Jaguar Tomb, which may be the burial place of Copán’s seventh king. (1996)

Fig. 8 (left). Close-up of the decoration on one of the vessels in Figure 7, showing the “monster” mask which is reminiscent of pottery motifs from Central Mexico.

Fig. 9 (right). Red dish with fish motif from Sub-Jaguar Tomb. (1996)

Conservation at Copán

by Lynn Grant

One of my favorite parts of archaeological conservation is being a field conservator and working with the archaeologists on site at an excavation. There’s a special thrill in being the first one to work on an artifact, in helping to unlock the information it can reveal about the people who made and used it. Therefore, I was delighted when invited by the Early Copán Acropolis Program (ECAP) to go with them to Copán.

Fig. 1 (right). Bob Sharer and I in the entrance to the Hunal Tomb chamber. At Copán, the archaeologists and conservators cooperate closely.

Photograph by Bunny Coates, 1999

Fig. 2 (below). Paint trace left by large, circular, painted wooden object (possibly a shield). Items such as this are lifted as a block of soil and later carefully exposed and preserved by the conservator.
The archaeologists had recently uncovered some early elite burials within the Acropolis that contained fragile artifacts in need of immediate conservation. A colleague, Harry (Rae) Beaubien of the Smithsonian Institution, had been on hand to provide conservation support in the first phases of the excavation, but as the extent and condition of the finds became clearer, she suggested that they bring in a conservator from the University of Pennsylvania Museum. With the cooperation of the Museum’s Senior Conservator, Virginia Greene, and the Museum Director, I have been “lent” to the ECAP team for part of their excavation season each year since 1995.

Field conservation is quite different from conservation within a museum setting. The priority of the artifacts is in the information they provide and, due to the essentially destructive nature of excavation, the archaeological team has only one chance to excavate each area fully. The conservator works as part of a team including the archaeologists and other specialists to ensure that every artifact gives up the maximum possible amount of data. There are three main ways in which conservation contributes to this process: in retrieval (ensuring fragile artifacts survive excavation), interpretation (helping make artifacts more informative through cleaning, mending, and material studies), and preservation (extending the post-exavation life of the artifacts).

Some of the artifacts uncovered are so fragile or ephemeral that they cannot be lifted without in situ conservation. At Copán, this happens frequently enough that most of my time on site has been spent working in the tunnel excavations (Fig. 1). One sort of material requiring special retrieval techniques is what we call POOs (Painted Organic Objects). The ancient Maya used many items made of organic materials (wood, bark cloth, gourds) which were often brightly painted. Over the last 1500 years, the organic substrate has completely decayed, leaving only the paint layer, sometimes with a stucco undercoat. By the time the archaeologists uncover these items, they exist only as paint traces in a block of soil (Fig. 2) or as a pile of paint flakes, depending on the burial conditions.

In a deposit uncovered in 1999, the excavators had come across a POO of the paint-trace type. Wisely, they left the deposit unexcavated until a conservator was available to assist them. The whole block of soil containing the paint trace was removed (Fig. 3) and brought to an area of the tunnel where it could be worked on. I then carried out a micro-exhumation, uncovering the surviving paint layer using dental tools, bamboo skewers, soft brushes, and a lot of patience. Where necessary, I strengthened the paint with applications of special conservation polymers as I went. Once the surface was exposed, a temporary facing was applied to the paint surface to replace the structural stability lost with the decay of the organic substrate. The surface was then turned over, the underside excavated, and a supportive backing applied. The temporary facing was then removed to expose the full painted surface, allowing the archaeologists to study it and identify the pictorial motifs (Fig. 4).

Where the only evidence of a painted object is a pile of paint flakes, retrieval is even more challenging. The unsupported paint can disintegrate at the touch, so the archaeologists’ usual methods of digging, brushing, and scooping cannot be used. These paint flakes are lifted by touching a barely moistened artist’s paintbrush to their surface. The
Fig 6. An object of woven reeds to which jade beads in the form of shells and a human torso had been sewn. Very few materials of this type have been recovered from Maya sites, making it especially difficult to identify—hypotheses have included a hat, a plaque, or part of a mask. As archaeologists and conservators work together closely, more such ephemeral objects will be recovered, and our knowledge of the Maya will increase.

Fig 7a. The shell cirlcle that was uncovered in 1992 being restored in the lab.

Fig 7b. Inlaid with jade and shell mosaics forming a complex design, the piece testifies to a phenomenal quality of workmanship. The paper-thin jade tiles were cut to microscopic accuracy, making it possible to most detached integrate. This artifact type was unprecedented from an excavated context until this spring (1999), when a second example was found in the Hunal Tomb (see Fig 8).

Fig 8a, b. Engaging shell plaque creatures (about 10 cm long), one with anatomical details picked out in jade and mother of pearl, carved inside a shell circle similar to that found in 1992 (see Fig 7b). It was not until the Hunal burial slab was lifted in the spring of 1999 that we realized that one of the grave goods placed in the space underneath was a second shell circle.
paint clings to the damp bristles long enough to be removed to a small container. At present, we have over 40 small dishes of paint flakes awaiting study and reconstruction (Fig. 5). These represent at least seven painted organic objects from one group in the Margarita upper chamber (see Bell et al., this issue). The upper chamber of this tomb also, amazingly, contained preserved examples of basketry (Fig. 6), which we were able to excavate and lift using conservation procedures. These organic artifacts are examples of material seldom recovered from Maya excavations due to their fragility and tendency to decay, and they will provide more insight into Maya art and material culture.

Another class of Copán artifacts often requiring conservatorial intervention are mosaics.

"Because objects represent information, it is essential that they be preserved for future generations"

The Maya decorated many artifacts with tiny mosaic tiles of shell, jade, or hematite. The natural adhesives used to hold the tiles in place have usually failed and the tiles are either scattered or held only by gravity. Where the pattern is still discernible, it can be preserved by applying a facing, as above, before the mosaic is moved. Otherwise, the tiles are retrieved separately, using a micro-grid to record their relative positions, and the conservator works in the lab to restore the mosaic pattern using modern, stable adhesives. One spectacular example of this sort of work is the jade and shell inlaid disk uncovered in a disturbed burial during the 1992 season. The shell disk was broken into five fragments, four of which had fallen face-down and had most of their inlays displaced. Once the fragments had been retrieved, I worked to find the correct settings for the detached inlays, a job made easier by the extreme precision of the ancient Maya craftsman who produced this masterpiece (Fig. 7). As I worked, Field Director David Sedat was soon able to identify the subject of the design—a magical bird wearing a maize headdress. In turn, his identification made the rest of the reconstruction easier, an excellent example of the advantages of having the archaeologist and conservator working together. Given this amazing artifact, imagine our excitement when, in 1999, a second shell disk was uncovered during excavation of the floor of the Hunal Tomb, this one inlaid with jade, shell, and seed pearls, bearing a glyphic inscription, and accompanied by shell animals (Fig. 8).

Because objects represent information, it is essential that they be preserved for future generations when further study or advanced analytical techniques may reveal more about those who made or used them. The ECAP team has made great strides in preserving their excavated material, providing museum-quality steel cabinets and archival storage materials for artifacts stored in the local research center. Before this, carefully excavated objects were too often eaten by insects or mice or damaged by improper storage. Even now, Honduran termites have proved unexpectedly destructive, finding gaps in the new steel cabinets and tunneling their way up three shelves to consume the cardboard boxes holding paint fragments. Our lesson learned, we now seal all possible gaps and store materials only in "incredible" containers. Labeling is also done with non-paper-based polymers to prevent loss of essential context information to insect predation.

The cooperation between archaeologists and conservators at Copán has achieved true synergy; working together we are able to achieve more than we could separately. This productive teamwork continues as ECAP's work in the Acropolis draws to a close.

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