Middle East Galleries: Conserving the Ubaid Standing Bull

Though Leonard Woolley’s excavations at Ur are his most famous, this is not the only site he explored during his expeditions to Iraq. In 1923–24, Woolley excavated the nearby site of Tell al-Ubaid, where he uncovered the remains of an Early Dynastic IIIIB temple (2400–2350 BCE) dedicated to the goddess Ninhursag. It was adorned with polychrome pillars inlaid with stone and shell, and some of the earliest free-standing copper-based sculptures in the world. Four of these sculptures represented standing bulls. Woolley found the bulls crushed flat and badly degraded, as the thin copper sheet used to coat their wood and bitumen cores was highly susceptible to corrosion. Nevertheless, Woolley was able to recover two of the bull sculptures by pouring paraffin around them, laying cotton bandages over the wax coating, and lifting them out of the ground as whole objects. One was sent to the British Museum, and one, after initial reconstruction in London, came to the Penn Museum.

The Penn Museum’s bull, though fragmentary, was recognized as a treasure from the beginning and was part of the Museum’s first display of the Ur and Ubaid materials in 1926. A Museum postcard from this exhibition features a photograph of the bull as Woolley had reconstructed it—with its hind foot extended back and its head held high and turned sharply to the side.

When the bull was removed from display in the early 2000s for inclusion in an exhibition in New York, Museum conservators noticed some problems with the way it was reconstructed. For one thing, the materials Woolley used—plaster and paraffin wax—were not stable. This had caused the bull to sag as the wax had softened in the heat of the gallery. The conservators stabilized the artifact for transportation and temporary display at the Metropolitan Museum of Art’s exhibition Art of the First Cities, and when it returned to the Museum, it was held for conservation. The bull would need intensive reconstruction work to replace the old materials and adjust its posture.

Above: The Museum created a postcard ca. 1926 of the popular Ubaid Standing Bull. PM image B15886.

Above: X-rays revealed that the 1920s conservation of the Bull, supervised by Leonard Woolley in London, included metal screws, bolts, and wire. The tacks on the legs were original.

Above: After careful study, a new head for the Bull was made on a 3D printer. When it is attached to the body, the Bull will be facing in the correct direction.
Conservators x-rayed the bull to better understand how it was made and how it had been reconstructed. The x-ray revealed Woolley’s assorted reconstruction materials, such as large screws and wire, and showed that a number of large metal nails had been used to hold the copper sheet in place on its original core. The conservators then de-constructed the bull, removing the plaster, wood, and paraffin that had held it together for more than 80 years. They replaced this material with a stable epoxy putty, fitting the fragments of metal back into the shape of a bull. They corrected the position of the hind leg, which was originally planted flat on the ground, and refitted the left front leg, which Woolley had taken from one of the two disintegrated bulls. They also addressed the inaccuracy of the bull’s head: Unable to recover the head of this particular bull and not finding any replacements amidst the disintegrated bull fragments, Woolley had made a cast of the head of the British Museum’s bull, painted it to match, and attached it when he did the original reconstruction. But there was one problem: the bulls were apparently originally aligned in confronting pairs, and thus faced opposite directions; the new head didn’t fit! Woolley compensated by applying extra plaster to the neck, but this altered the bull’s appearance. Thanks to innovative technologies, conservators were able to correct this error. They made a digital model of the cast of the bull’s head, flipped the model, and printed it on a 3D printer. The Ubaid bull, returned as far as possible to its original state and preserved for years to come, will go on display once again in the new Middle East Galleries.