



## Pre-Columbian Chocolate Discovered at Chaco



*Dr. Patricia Crown examining a cylinder jar, photo courtesy of UNM Today.*

Though the National Park Service rarely sponsors archaeological excavations today, archaeologists and other researchers are still learning new things from the material remains of ancestral Puebloan culture all the time. Technologies like LiDAR photography (an optical remote sensing technology) and ground penetrating radar give us new eyes on the resources at Chaco. Very recently evidence of cacao (chocolate!) was discovered in cylinder jars, a pottery style found almost exclusively in Pueblo Bonito, using a tiny sample of ground pottery sherd. The process is called organic residue analysis.



*Roasted cacao bean, photo courtesy of Sifu Renka.*

In the late 1800s Richard Wetherill and his assistant George Pepper, the first archaeologists to work in Chaco, excavated 111 cylinder jars from one particular room at Pueblo Bonito. These men knew they had found something special, though they could not have imagined what we would learn from the jars more than 100 years later. Over the course of subsequent excavations, archaeologists have gained a deeper understanding of just how unique these vessels are. Fewer than 200 have been found in the entire American Southwest, including those in Room 28 at Pueblo Bonito.

Scholars have long known that a drink made from cacao was consumed in ancient Mesoamerica. Some Maya cylinder jars even incorporate paintings of the precious liquid being poured for rulers and gods, though average people

sometimes consumed it as well. The Maya ground the beans; mixed them with spices, chilies, and water; and frothed the drink for consumption either hot or cold.

Most of the jars found in the famous cache at Pueblo Bonito are more than twice as tall as they are wide and painted with black designs on a white background. Because of their distinct shape and exclusive locations, archaeologists have typically agreed that they were used ritually. Ideas about their use include that they were storage for turquoise or prayer sticks, or that animal skins were stretched over them to create drums. Almost all of these jars are housed today in the American Museum of Natural History in New York City, making prolonged study logistically difficult.



*Cylinder jars from Pueblo Bonito, photo courtesy of the American Museum of Natural History.*

From 2004-2007 a University of New Mexico (UNM) research project re-excavated the trenches first dug in Pueblo Bonito's middens under Neil Judd in the 1920s. Of the hundreds of thousands of pot sherds that were recovered, archaeologist Patricia Crown selected five for her research. She is a ceramics specialist at UNM's Department of Anthropology. She designed the project, and W. Jeffrey Hurst from The Hershey Center for Health and Nutrition performed the research. They chose five pot sherds for organic residue analysis, three of which were likely from cylinder jars. The pieces date to between 1000 and 1125 AD based on their decorative styles.

Only the three sherds most likely from cylinder jars exhibited trace theobromine, a conclusive indicator of cacao or chocolate. The implications of this find are extraordinary. The cacao plant grows only in certain tropical climates, and the nearest possibility for Chaco is Central Mexico. We already know the Chacoan people traded with Mesoamerican cultures for exotics like copper bells and Scarlet Macaws, but cacao suggests a more ritual connection than other Mesoamerican goods. In some Maya ceremonies a cacao beverage was frothed by pouring the liquid from one vessel to another. Likewise, the cacao found at Chaco was probably in liquid form because the residue had absorbed into the clay itself. Further, the limited distribution of the cylinder jars could be evidence that only an elite or small segment of the population consumed the beverage.



*Jar from Central Maya area with cacao glyph, photo courtesy of Mary Harrsch.*



*Excavations at Pueblo Bonito in 2007, NPS photo*

Today nearly every visitor to Chaco leaves the park remembering Pueblo Bonito because of its size and level of preservation and excavation. Perhaps the building had special importance in the Chacoan world as well. So far, all indication of precious chocolate has been associated with that site.

In a few years we may have yet another picture of trade and ritual activity in the ancient Southwest. Crown and Hurst recently received a National Science Foundation (NSF) grant to test 300 more pieces of pottery for theobromine. Not only are they expanding the sample size of cylinder jars to include those in the American Museum, but they are broadening their geographic scope. The researchers are testing distinctive pottery representing the Mogollon and Hohokam cultures as well.

Research today looks very different than it did under Wetherill and the early pioneers of archaeological inquiry, and no one knows what future, less-destructive technologies will allow us to discover. Crown's research is a dramatic example of a lesson most visitors to Chaco already grasp: one artifact, left in place, can tell us volumes about the people who made it.

*Reference: Crown, Patricia and W. Jeffrey Hurst (2009) "Evidence of cacao use in the Prehispanic American Southwest" from Proceedings of the National Academy of the Sciences of the United States of America (Department of Anthropology, University of New Mexico and The Hershey Center for Health and Nutrition, Hershey, PA).*