

ADVANCES IN THE STUDY OF PREHISTORIC YUMAN CERAMICS OF THE LOWER COLORADO RIVER DELTA

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Beginning in 2006, I have led a project for the National Institute of Anthropology and History entitled “Recording and Rescue of Archaeological Sites in the Municipality of Mexicali, Baja California” (Figure 1). This project addresses archaeological sites throughout the Municipality of Mexicali, and to date we have recorded hundreds of different archaeological sites in danger of being destroyed by impacts from development and other modern land use.

One of the most characteristic materials of archaeological evidence that we have recorded is, of course, pottery. Almost all the pottery we have found is represented by fragmentary sherds; one complete olla was recorded and collected in the Guadalupe Canyon region.

A literature review indicates no previous research conducted by Mexican archaeologists focusing on indigenous ceramics of the lower Colorado River delta. Within the framework of the larger recording and rescue project, the ceramic analysis being conducted includes:

- 1) macroscopic study of the pastes;
- 2) a study of vessel forms;
- 3) a study of the vessels’ principal attributes;
- 4) a study of the functional use of the vessels;
- 5) a study of the chronology of the vessel forms associated with radiocarbon dates obtained from other associated materials recovered with ceramics in excavations;
- 6) a study of the techniques of ceramic manufacture using ethnoarchaeological data; and, finally,
- 7) experimentation in creating complete vessels using all the archaeological data, and searching to identify the most similar clays and tempers, with the goals of learning directly the kinds of problems that faced indigenous prehistoric pottery makers, and of understanding the important role that available raw material has in the manufacture of ceramics.

This paper focuses only on the techniques of manufacture, using the ethnoarchaeological data and the archaeological evidence at hand. The goal is to share the current advances in the study of the ceramic sherd collections recovered in this recording and rescue project.

METHODS

This study examines existing ethnoarchaeological data in comparison with the archaeological evidence recovered in the current project. Three previous studies were identified that were based on ceramic industries of the lower Colorado River delta and the Colorado Desert—lands that today correspond to the Municipality of Mexicali in Baja California:

- C. Daryll Forde’s “Ethnography of the Yuma Indians” was published in 1931, based on research conducted between 1928 and 1929.
- Malcolm Rogers’ *Yuman Pottery Making* was published in 1936, based on research begun in 1928.

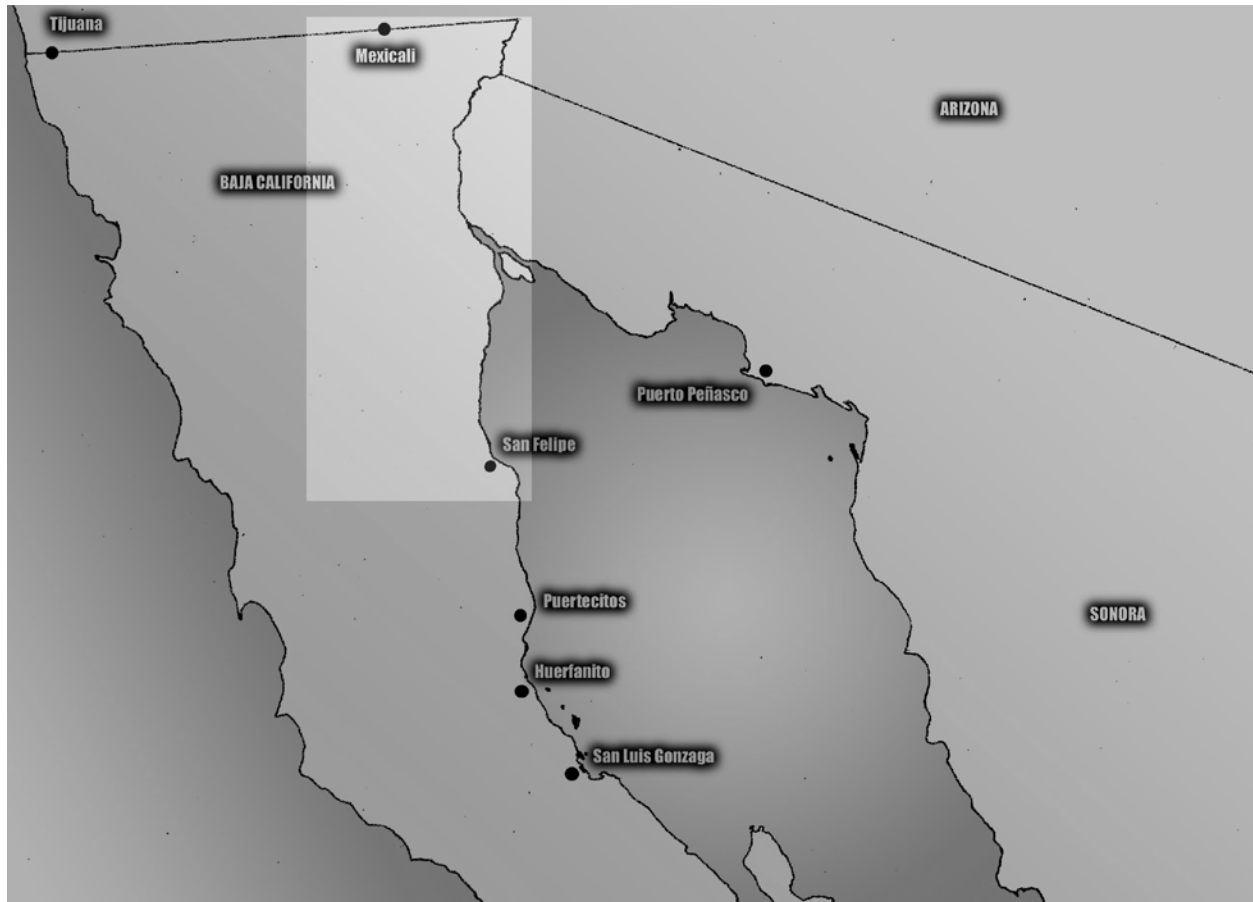


Figure 1. Project location.

- William Kelly's *Cocopa Ethnography* was published in 1977, based on research conducted between 1940 and 1952.

These studies were selected for the following reasons:

- 1) The researchers directly studied the Baja California Indians of the study area (Quechan or Yuma, Kamia, Kiliwa, Paipai, and Cocopa).
- 2) They were involved with the Indians during all the steps of the pottery manufacturing process and documented their observations. In the case of Malcolm Rogers, he further advanced his research with knowledge from the archaeological pottery that he found in the area.
- 3) Their research was conducted with native ceramicists before the latter's traditions were extinguished.
- 4) Up to the present, no one researching Baja California pottery has made much use of the archaeological data and information that Malcolm Rogers took from the study area (Laylander and Schaefer 2006).

The Study Area

The study area is delineated into three distinct zones: the south, at San Felipe Bay and the upper Gulf of California; the northeast, on Mesa de Andrade and the Algodones area; and the northwest, in the northern and eastern lowlands of the Sierra de Juárez and the Sierra Cucapá and in the northern part of the Laguna Macuata or Laguna Salada basin. If we compare this area with the map of the distribution of the

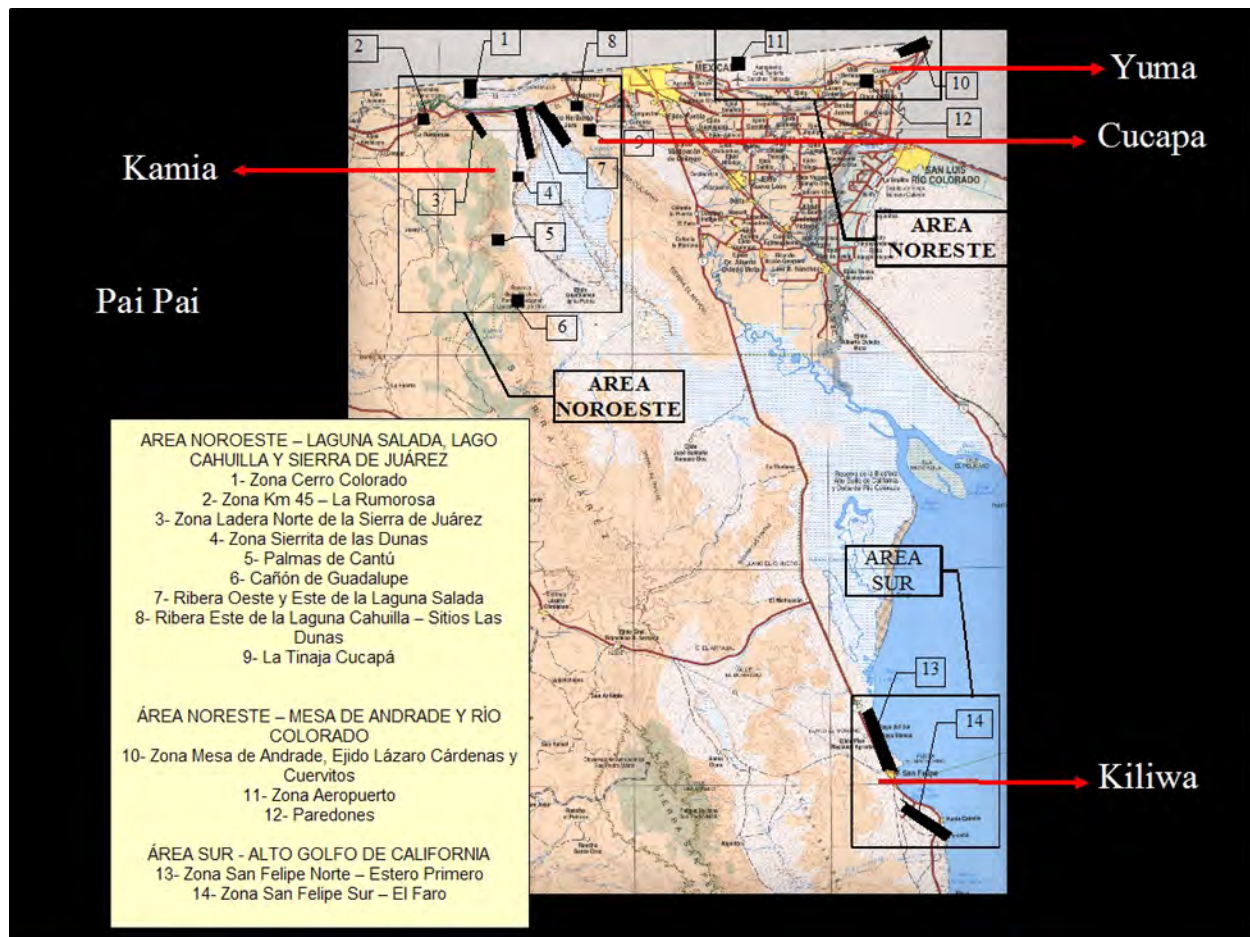


Figure 2. Study areas.

Baja California Indians in the nineteenth century that Malcolm Rogers presented in his work on Yuman pottery making (Rogers 1936), the northeast study area is territory once held by the Yuma, Cocopa, and Kamia. The northwestern area was in Kamia and Paipai territory, and the southern area was in Paipai and Kiliwa territory (Figure 2).

Attributes

The attributes considered in this study were:

- 1) Types of clays (residual or sedimentary).
- 2) Reduction of the clay and temper.
- 3) Kinds of tempers.
- 4) Forming the base. (Is there some evidence in the collection sherds?)
- 5) Method of shaping. (Can we observe the use of paddle and anvil in the sherds?)
- 6) Coiling. (Do we have evidence in the sherds?)
- 7) Drying. (Do we have evidence in the archaeological record?)
- 8) Surface modifications before firing.

- 9) Decoration before firing.
- 10) Types of wood used in firing. (Do we have evidence in the archaeological record?)
- 11) Preliminary firing?
- 12) Kinds of kilns.
- 13) Post-firing modifications.
- 14) Vessels forms most characteristic in each area.

Results

Types of Clay

The coastal sites in the San Felipe area and the archaeological sites located in the lower and northeastern canyons from the Sierra de Juárez in Kiliwa and Paipai territories have pottery made from residual and sedimentary clays in equal proportions, while from Laguna Salada to Algodones, in Yuma, Cocopa, and Kamia territories, the preferred clay used were sedimentary. It is important to note that Malcolm Rogers (1936:17) only reported the use of residual clays in pottery at San Felipe, in Kiliwa territory, but as I said before, we have an equal proportion of sherds made with sedimentary clays. In the future, it is going to be very important to understand how these sherds appeared here.

Reduction of the Clay and Temper

In the sherds from the northeastern canyons of the Sierra de Juárez in Kamia territory, reduction was not a constant, because sherds with both small and large inclusions were founded. The only different case was, again, at San Felipe and in the Guadalupe Canyon area, in Kiliwa and Paipai territories, where all the clays (residual and sedimentary) and the temper were reduced, as is visible in the fine grain in the sherds.

It is interesting to note, in the Algodones case, that Malcolm Rogers (1936:30) said that Yuma reduced the clay in wooden mortars. At all the sites recorded in this project, we did not find any mortars or metates made from rock, so maybe this is the reason. Among the Algodones sherds, we also found flat sherds from plates that may have been used as a *sawil* in order to eliminate all the big inclusions from the clays, in sorting.

Types of Temper (Figure 3)

The temper used in the residual clay sherds came from the Sierra. In the sedimentary clays used in the desert far from the Sierra, temper had to be added. They preferred to use potsherds or grog, and to a lesser degree, sand. An interesting sherd was found in Palmas de Cantú Canyon. In this sherd, the Indians added mica as temper, but this is the only case.

Shell was not used as temper even in the San Felipe sherds in Kiliwa territory. Only one sherd found in Guadalupe Canyon in Paipai territory shows fragments of shells, but it is interesting to note that it is not seashell, but rather *Anodonta* shell from ancient Lake Cahuilla, which was very far from the canyon.

In the cooking ware from Algodones, and contrary to what Rogers (1936:31) wrote, pulverized and burnt granite is never present.

Forming the Base (Is there evidence in the sherd collection?)

It is interesting to note that the use of bases in forming the vessels is clear in only three cases: in a complete vessel from Guadalupe Canyon in Paipai territory, in a sherd at the Laguna Salada, and in a



Figure 3. Types of temper (above); forming the base (below).

sherd from the Las Dunas site located in northeastern part of the Sierra Cucapá. In the case of the vessel from Guadalupe Canyon, the use of some vegetable fibers inside of the olla is clear (Figure 3). In the other two sherds, we can observe the use of some kind of basket to start the base.

Method of Shaping (Can we observe the use of paddle and anvil in the sherds?)

In the three areas, we have evidence of paddle and anvil use. However, it is interesting to note that in all the collections of more than 3,000 sherds studied, we did not find a single sherd that belonged to a ceramic anvil. This suggests that in the three areas, rock anvils were used.

At the time when Malcolm Rogers (1936:18, 36) and C. Daryll Forde did their work in this area, the use of the paddle and anvil was less extensive in Yuma territory.

Coiling (Do we have evidence in the sherds?)

The use of coiling to form the vessels is evident in the archaeological sherds from the three areas. In some cases we can even see the use of the paddle and anvil in order to merge the coils (Figure 4).

Drying (Do we have evidence in the archaeological record?)

We do not know yet whether the fact that some sherds from Guadalupe Canyon were very fragile is because the vessels were poorly dried. However, in the experimental study that we are making, we may be able to understand this better, if it has not been documented yet in studies made in southern California (Figure 4).

Surface Modifications before Firing

Exterior smoothing before firing is common in the three areas. A stucco coat on cooking sherds is also common, although not in the San Felipe area in Kiliwa territory, where, up to the present, no stucco sherds have been found. The stucco coat is only found on sedimentary sherds (Figure 5).

Decoration before Firing

The main decoration used in the northeastern and northwestern areas in Kamia, Cocopa, and Yuma territories was red painting (Figure 5) and, much less commonly, black painting, as Malcolm Rogers (1936) previously reported. A common decoration in the three areas was rim incising (Figure 6). It is important to mention that Rogers said decorated prehistoric ceramics were absent in Kiliwa and Paipai territories, but as I mentioned, we also found them in the San Felipe area within Kiliwa territory.

Also interesting is the use of incising on a vessel wall sherd at the Las Dunas site in Kamia-Cocopa territory. This decoration was not documented before the present project.

Types of Wood Used in Firing (Do we have evidence in the archaeological record?)

Up to the present, we do not know exactly what kinds of wood were used in kilns. However, we may find out in future excavations. For now, we have only the information given to Rogers (1936) and Forde (1931). Using this information in our experimental work, we have been very successful in using cottonwood bark to fire our replicas.

Preliminary Firing?

Apart from a poorly fired vessel from the San Felipe area that was probably broken in the preliminary fire, we do not have any additional archaeological evidence. Again we have only the ethnoarchaeological data from Rogers (1936) and Forde (1931).



Figure 4. Coiling (above); drying (below).



Figure 5. Surface modifications before firing (above); decorations before firing (below).

Kinds of Kilns

The buff and reddish pink surface color of the sherds was the only evidence of a good supply of oxygen during the firing. This means that open kilns were used. In Guadalupe Canyon, a granitic hole may have been used as a closed kiln.

Post-firing Modifications

In the northeastern and northwestern areas, in Yuma, Kamia, and Cocopa territories, the most characteristic post-firing modification is tie holes for mending (Figure 6). The purposes of some other sherd modifications are not clear. On two sherds, some striations are visible that may suggest that the sherds were used as scrapers (Figure 7).

In Kiliwa and Paipai territories in the south, we have not yet found these two types of post-firing modification. Post-firing incision in the vessel wall is visible on only in one sherd from Guadalupe Canyon.

Vessels Forms Most Characteristic in Each Area

This will be a topic for another paper. However, it is clear in the sherds from the project, and as a Malcolm Rogers (1936:25) previously reported, that the most varied forms were in Kamia territory.

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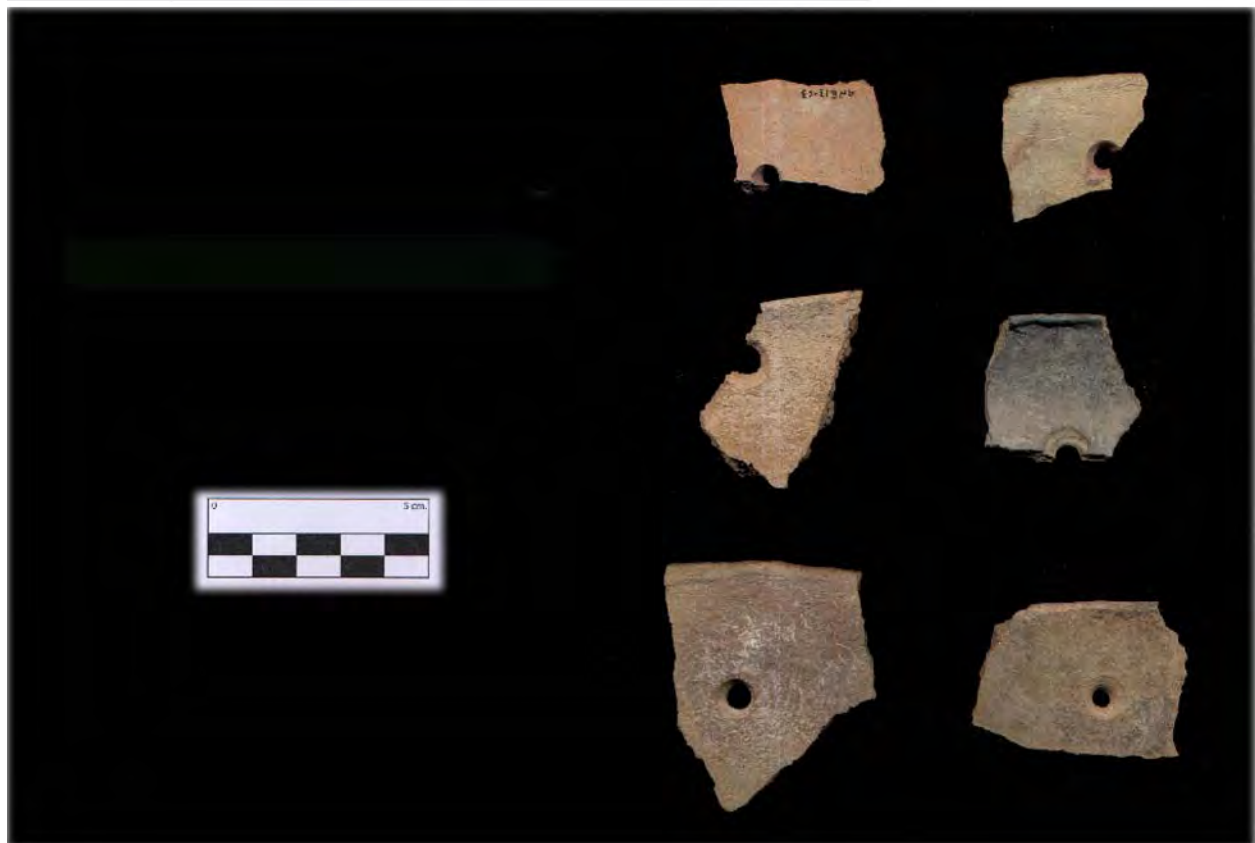
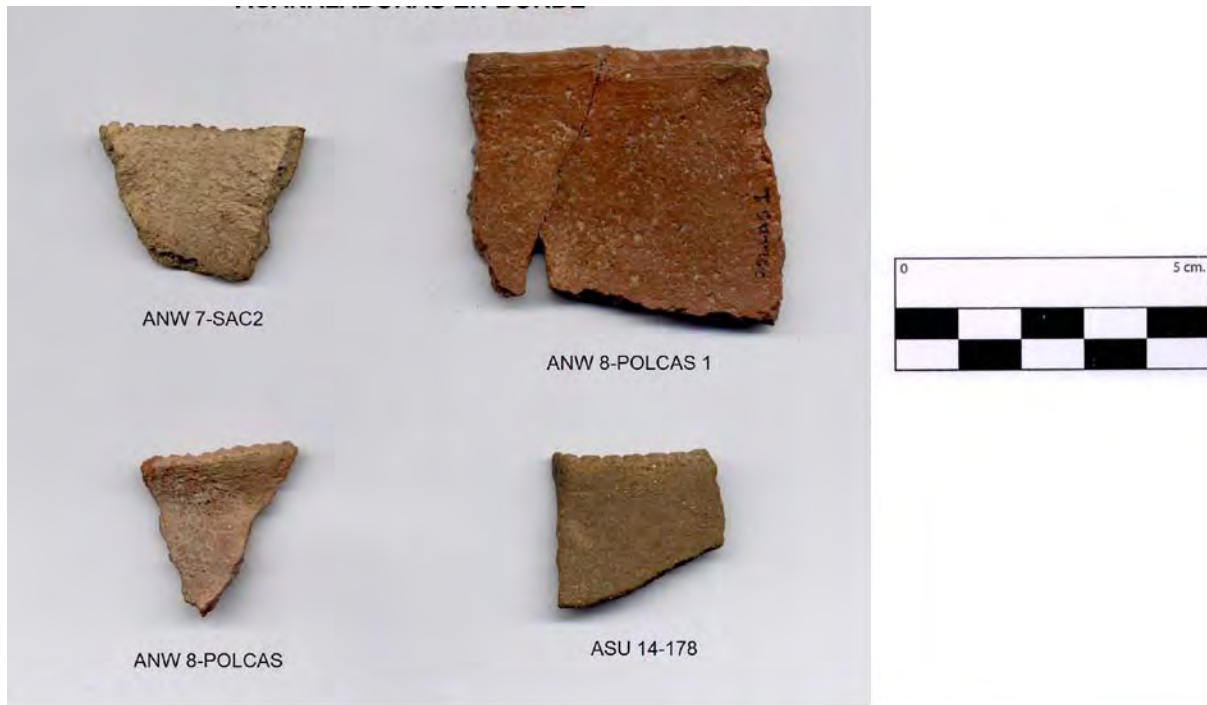


Figure 6. Rim incising (above); post-firing modifications (below).



Figure 7. Sherds with striations.