Every Time We Put a Shovel in the Ground We Hit the Tortolita Phase!

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From the earliest days of cultural resource management (CRM), one of the criticisms leveled by academic archaeologists was that true research was extremely difficult, if not impossible. This was perhaps best reflected in one of the early terms for the practice—salvage archaeology. As the name implies, early efforts in CRM were on occasion last-minute scrambles to gather as much information as possible before the bulldozers passed through. The focus was more on documenting the archaeological record before it was destroyed rather than developing and contributing to long-term research programs.
While it remains true that CRM archaeologists generally do not have the luxury of selecting the sites they would like to investigate, it is also the case that CRM archaeology is responsible for generating vast amounts of new data every year. By one recent estimate, as much as 90 percent of the archaeology carried out in the United States today is done by CRM archaeologists. And unlike the early days of CRM, fieldwork for most projects is usually scheduled well ahead of construction, not at the last minute. Projects are also now guided by research designs that often include comparisons with other sites and other data sets. As with more traditional, academic archaeology, questions are posed and research programs are developed to fill in the gaps in our knowledge, building on the data that have been generated before. It is a challenge and responsibility faced by every archaeologist working in CRM to contribute to our understanding of the past in meaningful ways.

Because CRM decisions about where to work are usually not based on archaeological considerations, there is a bit of luck involved in most CRM work. Sometimes development projects can actually direct our attention to areas that otherwise may have been neglected by more traditional archaeological endeavors. Perhaps the best local example of this can be seen in the work sponsored by the Arizona Department of Transportation (ADOT) as part of improvements to Interstate 10 through Tucson. A long segment of the project was located on the floodplain immediately east of the Santa Cruz River. Fortunately, archaeologists had the opportunity to investigate cultural deposits deeply buried by centuries of alluvial deposits. Because of the depth of these deposits, the age and extent of these sites were not apparent from the surface, and it is likely that in the absence of the current laws protecting cultural resources, the extent and nature of these early cultural deposits would have remained unknown. Importantly, some of the earliest and best evidence for maize agriculture in the southwestern United States has been found at these sites, along with some of the earliest canals in North America.

In the remainder of this article, I will discuss three recent CRM projects conducted by Tierra Right of Way Services that have provided important new information about early Hohokam settlements in the northern Tucson Basin. Two of these projects focused on different parts of the Dairy site, a large multicomponent site located along the eastern margin of the Santa Cruz River floodplain. The third project involved data recovery at the Richter site, a large habitation site on an alluvial fan above the floodplain of the Santa Cruz River. Although the projects were part of completely unrelated endeavors, all encountered considerable deposits dating to the Tortolita phase (ca. A.D. 500–700), a period that witnessed a transformation the cultural landscape of the region, including the first appearance of fully sedentary villages. Our work at the Dairy and Richter sites adds important new data on agricultural technology and social organization during this transitional period. The projects also give a good indication of the resourcefulness of Arizona’s earliest farmers and how they were able to successfully adapt to a harsh desert environment.
The Tortolita Phase

The Tortolita phase in the Tucson Basin was a period when human population began aggregating into villages, and when the culture of the Tucson Basin people (whom I consider to be “Hohokam” by this time) was becoming more distinct from that of Phoenix Basin peoples to the north. Sedentism and aggregation seem to have arisen together during Tortolita times, rather than sedentism being a prerequisite for aggregation as many of us had thought previously. During the Pioneer period, the decorated ceramics were virtually identical between the Tucson and Phoenix basins, but by the Colonial period distinctive red-on-brown ceramics were being produced in the Tucson Basin. These wares differ primarily in paste color – the Tucson Basin decorative motifs remained similar to those of the contemporary ceramics in the Phoenix Basin. Other elements of Hohokam culture, such as ballcourts, cremation burials, and the widespread use of shell jewelry, remain. This suggests that while the Tucson Basin may have been developing, or continuing as a distinctly separate identity, many elements of the Hohokam culture remained in place here.

The Dairy Site

Over the last two years, Tierra has conducted data recovery projects at two discrete portions of the Dairy site, along the eastern margin of the Santa Cruz river floodplain. In spite of periodic investigations at the site over the last three decades or more, the exact boundaries of the site have not been fully established. Previous work at the site has demonstrated that it was occupied from the Archaic period through the Tucson phase of the late Classic period, ca.

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Excavations at the Dairy site, AZ AA:12:285(ASM)
1500 B.C. to A.D. 1450. These components include both intermittently occupied, limited-activity loci and permanent year-round settlements.

Tierra’s two projects at this site covered areas at the margin between the floodplain and the piedmont to the east. The two areas, nearly a kilometer apart, both contained what are interpreted as seasonally occupied components including field houses and storage and roasting pits. Based on ceramic and radiocarbon data, both components investigated by Tierra appear to date to the Tortolita phase. It is unclear at present if the two components were occupied simultaneously or sequentially, though given their seasonal nature a sequential occupation seems most likely.

Perhaps the most significant discovery made during Tierra’s investigations of the Dairy site were two segments of what we interpret to have been a single prehistoric canal system extending approximately 1 kilometer in length. The canal runs parallel to the edge of the piedmont on the Santa Cruz river floodplain. The westernmost of the two areas encompassed a point along the system where the main canal split into several smaller channels, distributing the water to individual fields (see photograph at beginning of article).

Although canal irrigation was well established in the Tucson Basin long before the Tortolita phase, the Tortolita phase canal system at the Dairy site differed from earlier canal systems along the Santa Cruz and Rillito rivers in that it collected seasonal runoff from the piedmont and directed it to fields established on the more fertile floodplain. It further appears that the runoff was collected from ephemeral rills and channels as well as simple “sheet” runoff along the ground surface. The canals, although relatively extensive, appear to have had only a short-term use, perhaps one or two seasons at most, although there is evidence in the form of built-up banks suggesting that the canals were actively maintained during their use.
The Richter Site

The Richter site is a large habitation site located on an alluvial fan of the Tortolita Mountains above the floodplain of the Santa Cruz River. The site contained several discrete clusters of trash mounds and artifact concentrations that suggest that the settlement shifted location slightly through time, a process commonly referred to as settlement (or village) drift. Each of the separate clusters of trash mounds were assumed to reflect separate clusters of houses and associated features. Based on an assessment of the surface artifacts, we believe the site was intermittently occupied from the Early Ceramic period through the Colonial period, ca. A.D. 150 to 950.

Our investigations focused on three spatially discrete clusters of trash mounds. Our initial assessment of surface artifacts led to the selection of three areas that we believed represented separate occupations dating to different time periods. Based on this belief, we hoped to be able to document changes in the layout and organization of the site over a relatively long period of time. Our initial assessment also suggested that there would be minimal mixing of these periods at any one of the areas. If this held true, it would have made our study of changes in settlement through time much easier.

As is often the case, however, as our excavations progressed it became clear that the areas we selected represented a much narrower slice of time than we had hoped. While there was a degree of temporal variability, the dominant occupation at each of these areas dated to the Tortolita phase. Each was characterized by a variety of house types, including true pit houses where the pit walls themselves served as the lower portion of the walls of the house, as well as the more typical Hohokam “house-in-a-pit” where a pole and brush structure was built within a shallow pit. A variety of storage pits and roasting features were also identified.
Based on the plant and animal remains collected during the project, the residents of the Richter site during the Tortolita phase engaged in a mixed economy that exploited a diverse selection of animal species, including rabbits, deer, and antelope, and a wide range of both wild and domestic plants, including maize, beans, mesquite, and a variety of cactus species. The species identified suggest that the site was occupied year-round, similar to contemporaneous villages along the floodplain.

One interesting development of our investigations of the Richter site was the identification of large cemetery areas associated with each of the selected excavation areas. In the three areas, a total of 240 cremation and 9 inhumation burials were identified. All were secondary cremations; no evidence of the place where the cremation itself took place was identified. The burials were clustered in what appear to be true “cemeteries” in that the location and function of the space was maintained for an extended period of time. As a way to identify the locations of the cremation graves, several large, flat pottery sherds were placed in the fill of the pit. That way, the sherds would be encountered before the burials themselves were disturbed.

The cemetery areas were bounded on all sides by domestic features such as houses, roasters, pits, and trash mounds. The cemetery areas themselves contained few non-mortuary features. These...
arrangements of domestic and ritual features suggest that the clusters represent separate and distinct social groups, perhaps linked through kinship.

Summary

The projects I briefly described here have contributed to our growing understanding of the Tortolita phase in the Tucson Basin. The data that were collected have provided important insight on several aspects of life during this time. But perhaps the most interesting, and somewhat unexpected development that has come out of the recent investigations of the Tortolita phase sites discussed here, is our expanding understanding of the range and sophistication of their water control technology. The harvesting and diversion of seasonal runoff with the aid of a canal system likely reflects an agricultural system that minimized risk through technological flexibility. The early farmers of the Tucson Basin moved water to their fields in a variety of ways, taking advantage of unpredictable, often transient sources as well as the more dependable seasonal streams. This, combined with the continuing exploitation of wild resources, something that continued throughout prehistory, demonstrates the intimate understanding that these people had of the Sonoran Desert, its limitations and its possibilities.
Mesa Verde Elementary School Fourth Grade Class Reports on their OPEN3 Archaeological Dig Experience

In April 2010 Mrs. Jayne Villasenor, a teacher at Tucson’s Mesa Verde Elementary School, brought her 29 fourth grade students to Old Pueblo Archaeology Center to learn about archaeology (and the importance of learning about science and mathematics in addition to social studies) by participating in the OPEN3 (Old Pueblo Educational Neighborhood Site 3) simulated archaeological site excavation.

As a follow-up assignment for their visit, her class wrote a report on their experience and what they had learned, which qualifies Mrs. Villasenor for a discount toward her next year’s OPEN3 program fees provided that Old Pueblo will have funding available for discounts at that time. For additional information see the information box on page 9.

By the Students of Mrs. Jayne Villasenor, Mesa Verde Elementary School, Tucson

We are Mrs. Villasenor's fourth grade class from Mesa Verde Elementary School.

We were at your location on Monday, April 26, 2010. The following is the write-up we made from the work we did as archaeologists that day.

In the fill dirt of group A, we located a water canteen, seed holder pot with corn, jaw animal bone, firewood in a fireplace, grinding stones, and animal skull. One of the items was firewood in a fireplace. The top part of the antlers was cut off. We think the Hohokam used the antlers as a tool. They used it to chip away at the chipping stones to create a weapon for hunting. A part of it was worn down so we think that a wooden handle must have been attached to it. We think that it was used as a pick to help with farming. From what we discovered, we can conclude that they made tools for farming in that unit.

In the fill dirt for group B, we located pottery, deer head, pot, wood, chip stone, seashell, and water jug. One of the items was burnt wood. We would describe it as old, dirty, and crackly. We think they used the fire for warmth because it was positioned a little ways in from the front door. In addition, the seashell and water jug caught our interest because it looks like the canteens we use today. From what we discovered, we can conclude that they made different tools from different things like broken off antler parts. The broken off parts were used for chipping rocks.

In the fill dirt for group C, we found antlers, seashells, chip stone, ground stone, pottery, obsidian, and bones. One of the items was a metate. It was a big rock with a man made smooth dent made from another rock. I think they used it for grinding corn and other food because there was a big dent in the rock (not like regular). In addition, there was a seashell necklace we found interesting because we didn't think they had string a long time ago. From what we discovered, we can conclude that they made stuff by using rocks and seashells.

In the fill dirt for group D, we found seed holder, animal skull, bone, chipped rock, almost formed ax, mica, lava rock, and three rocks that when placed together hold a hot pot when it comes out of the fire. One of the items was an animal skull. It was dirty white and had a pointed jaw. Its eye sockets were big. I think they used it to make different items from the skull because it is chipped. In addition, we found a seed holder which has a tiny hole at the tip so no bugs could get in and eat what's inside. From what we discovered, we can conclude that this was most likely a tool making place because an ax about to be formed was there.

In the fill dirt for group E, pottery, shells, a bowl, grinding stone, figurines, obsidian, and wood. One of the items was a grinding stone. It was smooth and flat. We think it eroded over the years because
they used it. I think they used it for grinding corn because it was flat and smooth. In addition we also found many pieces of pottery. From what we discovered, we can conclude that it was a kitchen because we found a grinding stone in the room and we found pots that we think they used for storing food.

In the fill dirt for group F, 2 antlers, 3 bones, 1 metate, obsidian, 8 tool rocks, and 1 mortar. One of the items was a mortar, It was a stone bowl that was very big and chunky. I think they used it for grinding because there was a round long rock next to it. In addition, there was a metate to put food on and cut with the obsidian. From what we discovered, we can conclude that this was an outdoor kitchen and the Hohokam used rocks for a lot of tools.

In the fill dirt for Group G, we found two seashells, one seed storage pot, two bones, one piece of pottery, one pestle, one mortar, and one grinding stone. One of the items was a seed storage pot. It was about the size of your hand, white in color, and there was a hole on the top. The hole was the size of your pinky. We think they used it for storing the best seeds to plant next season. They did this because it kept the bugs from eating the seeds. In addition, the pestle was next to the mortar and the mortar had a big hole or dip in the top. From what we discovered, we can conclude that it is outside because they would usually cook outside under the ramada.

Old Pueblo Archaeology Center offers a hands-on simulated archaeological excavation program field trip (the OPEN3 program) in which students apply social studies, science, and math skills in a practical, real-life situation, as well as in-classroom archaeology outreach presentations (the OPENOUT program).

Old Pueblo often has funding available to provide classroom scholarships to classes whose students would not otherwise be able to participate in the OPEN3 experience, as indicated by the percentage of the school’s students who qualify for free and reduced cost meals from the State of Arizona (and as verified by the Arizona Department of Education).

To further assist teachers, Old Pueblo offers two additional incentives for program fee discounts:

- When we have funds available, Old Pueblo Archaeology Center offers an additional 15% toward a teacher’s next OPEN3 program expenses if that teacher has had his or her students complete a research paper (the Capstone Lesson for the 5-hour OPEN2 program) about their OPEN3 dig.

- A teacher who is a member of Old Pueblo Archaeology Center at the Friend ($25/year) level or higher is offered a $25.00 discount on one OPEN3 simulated archaeological dig program for his or her classes during each membership year.

RESERVE NOW FOR THIS YEAR’S PROGRAMS – Dates are filled on a first-reserved/first-served basis! For more information on the various programs offered please visit the following web pages:

OPEN3 Simulated Archaeological Excavation Program: http://www.oldpueblo.org/open3.html

Ancient People of Arizona Outreach Presentation http://www.oldpueblo.org/azplp.html

Lifestyle of the Hohokam Outreach Presentation http://www.oldpueblo.org/lifestyles.html

What is an Archaeologist? Outreach Presentation http://www.oldpueblo.org/whatarch.html

. . . or contact Old Pueblo Archaeology Center in Tucson at 520-798-1201 or info@oldpueblo.org
Previews of Our June 2010 Issue
Old Pueblo Archaeology Center’s
Archaeology Opportunities Membership and Discounts Program

Archaeology Opportunities is a membership program for persons who wish to support Old Pueblo Archaeology Center’s education efforts and perhaps even to experience for themselves the thrill of discovery by participating in research. Membership is also a means of getting discounts on the fees Old Pueblo normally charges for publications, education programs, and tours. Members of Archaeology Opportunities at the Individual membership level and above are allowed to participate in certain of Old Pueblo’s archaeological excavation, survey, and other field research projects, and can assist with studies and reconstruction of pottery and other artifacts in the archaeology laboratory.

Membership benefits include a 1-year subscription to the Old Pueblo Archaeology electronic quarterly bulletin, opportunities to participate in Old Pueblo’s member-assisted field research programs, discounts on publications and archaeology-related items, and invitations and discounts for field trips and other events.

Time to renew? Or to give a gift membership to the archaeology fans in your life!

Annual Membership & Subscription Rates

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Membership categories at left provide annual subscription to the Old Pueblo Archaeology electronic bulletin (4 issues), discounts on publications and classes, and opportunities to participate in Old Pueblo Archaeology Center’s member-assisted field research programs (such as archaeological excavations and surveys).

Friend $25: Provides 1-year subscription to the Old Pueblo Archaeology electronic bulletin (4 issues) and discounts on publications and classes but does not provide free participation in member-assisted field research programs.

Subscriber $10: Provides 1-year subscription to the Old Pueblo Archaeology electronic bulletin (4 issues) but no discounts, and does not provide free participation in member-assisted field research programs.

Whichever membership level you choose, your membership fees support Old Pueblo Archaeology Center’s educational programs.

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Thank you for helping teach and protect the Southwest’s heritage!

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For more information about Old Pueblo Archaeology Center please visit our web site: www.oldpueblo.org

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