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Hidden Times: The Archaeology of the Tortolita Phase

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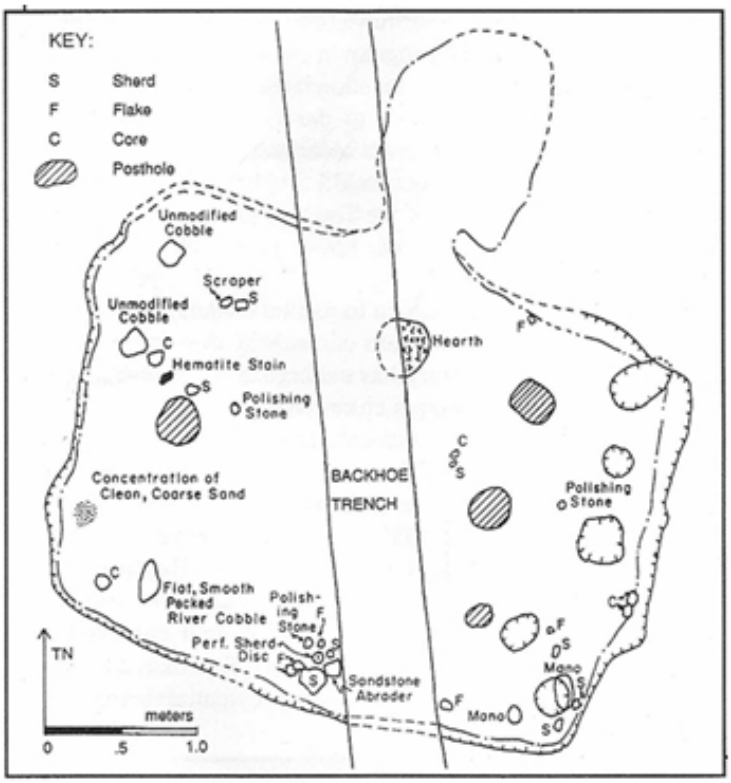
In the public imagination, archaeology tends to be a search for special "finds"—things so significant that they inspire headlines about a "lost civilization" or a "vast treasure." Reality is usually so much more mundane. But sometimes gems emerge from the patient gathering of data. Tortolita Red is one such gem. It's a name that could pass as today's special at a Tucson microbrewery, though it's really just a pottery type. It's one of the few clues that a site dates to one of the earliest phases of the Ceramic period in the Tucson area, between A.D. 550 to 650.

The Tortolita phase was defined in 1989, whereas most of the local archaeological phases date to the 1930s. The story that follows tells how this phase came to be and outlines what has been learned since then. Our main goal is to present the facts, but in the process we also hope to show some of the human side of archaeology.

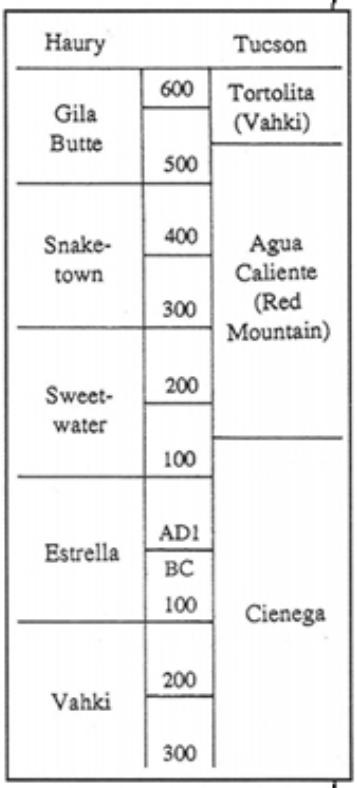


This is also the story of a critical time period in Hohokam prehistory. Farming had been important as a way of life for more than a thousand years by A.D. 550, but the pace of change seems to have accelerated dramatically during the Tortolita phase and the equivalent period of time in the Phoenix area, the Vahki phase.

The Hodges Ruin

If archaeologists were to create a list of analogies, prominent on the list would be one that read "Snaketown:Phoenix Basin::Hodges:Tucson Basin." Gila Pueblo, the private research foundation created by Harold and Winifred Gladwin in 1929, undertook large-scale excavations at the site of Snaketown on the Gila River in 1935. That work was published two years later and still provides the general framework for Hohokam archaeology in the Phoenix Basin.

Also in 1935, there was a small-scale project in the Tucson Basin that was initiated at the Hodges Ruin. In 1936, Harold Gladwin sent Isabel Kelly to Tucson to take over that work. The goal was to evaluate the nature of the Hohokam presence there. It led Kelly to define for the Tucson Basin a pottery sequence that was parallel to, but distinct from, the sequence for the Phoenix Basin. Although Kelly's work was not published until 1978, even in manuscript form it strongly influenced the way archaeology was thought about in the Tucson Basin.



A History of the Tortolita Phase

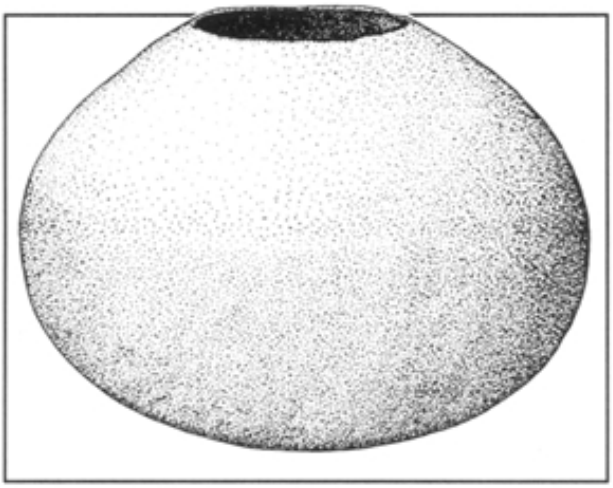
Pottery has been the essential archaeological tool for building a sequence of temporal units called phases. Especially important are the decorated and red ware ceramics from excavated sites.

At Snaketown, Emil Haury identified a pottery type called Vahki Red as occurring throughout the Pioneer period. Similarly, Isabel Kelly noted a

Left: Tortolita phase pithouse at site AZ BB:13:223 (ASM). This house had a floor assemblage indicative of pottery manufacture, especially the hematite, sand (possible temper), and 3 polishing stones. Above: Early portion of Emil Haury's chronology compared with current Tucson (and Phoenix) Basin chronology.

few red wares at the Hodges Ruin during the early phases of occupation. Kelly did not name a pottery type, and little attention was paid to early red wares in the Tucson Basin until the late 1980s.

The first strong hints of the importance of early red ware came from a pair of projects by the Arizona State Museum. Paul and Suzanne Fish's work at the Dairy Site recovered sherd samples and obtained radiocarbon dates for houses with only plain ware and others with redware contexts. Bruce Huckell's excavations at El Arbolito, a small seasonally occupied site on the bajada southeast of Tucson, yielded mostly plainwares. However, 12 red wares from EI Arbolito suggested that the site was in use into later times when red ware was made.



Pre-Tortolita phase artifact. Plain ware seed jars, such as this one from the Stone Pipe site, were the almost exclusive vessel shape during the earliest ceramic phase, the Agua Caliente phase.

Then, in 1987, Desert Archaeology excavated the site of Lonetree near the north end of the Tucson Mountains. The site yielded Middle and Late Rincon pottery, and was expected to date in the A.D. 1000 to 1150 time range. In addition, there were deposits that contained a few Tanque Verde Red-on-brown sherds, and there were numerous red wares that were clearly not from the Rincon phase. We believed, therefore, that the Late Rincon occupation had probably continued into the early Classic period (AD. 1150-1300), a time when red wares occur at low frequencies in Tucson area sites.

Radiocarbon samples were submitted, but the results were very surprising. They ranged from 1240 to 1510 years B.P., meaning that they dated sometime in the AD. 400 to 700 range. When there is one date in a series that is out of the expected range, it can sometimes be dismissed as an anomaly, but here were six dates that were quite consistent.

We therefore took a very close second look at the data. It soon became clear that there were a number of features that had only plain wares and red wares, and the Classic period sherds had been only in the uppermost stratigraphic layers. Also, both the architecture and some of the other artifacts suggested there was an assemblage that was distinctive and separate from the Rincon phase assemblage.

When Doug Craig reviewed the draft report on the Lonetree site, he strongly recommended that Mary Bernard Shaw go the final step and define a separate phase for this early red ware occupation. This was debated further and a consensus was reached. So the final version included a definition of the Tortolita phase in its concluding chapter. Fortunately, this decision has held up quite well to subsequent research.

Tortolita phase artifacts. Two flare-rim red ware bowls.

The Flowing Wells Fire Station

Even with the awareness of the new phase, it is not always easy to identify. The following example occurred in 1995, when the flowing Wells Fire District was looking forward to construction of a new fire station. The lot had been obtained, an area immediately east of the trailer court that sits atop the portion of the Hodges site that was excavated in the 1930s.

A survey of the parcel by Dave Stephen of P.A.S.T. was the first step in the process of complying with Pima County's archaeological regulations. Soon afterward, Desert Archaeology placed a series of trenches in areas where construction of buildings and pipelines was to occur. In the testing process, 14 pithouses, 5 pits, 2 trash concentrations, and 3 cremation burials were encountered. The majority of the decorated pottery was from the Rincon phase, roughly AD. 950 to 1150. This information served to establish a portion of the eastern boundary of the Hodges site, but it also meant that the Fire District had a potentially costly data recovery excavation to fund before it could proceed with construction.

Fortunately, the Fire District was able to redesign their facility layout so that most impacts to the archaeology were avoided. That left a small program of excavation to address the remaining impacts. The excavation area contained two pithouses-- both probably dating to the Tortolita phase. These structures are roughly 500 years older than the ceramics from testing led us to expect. How could this be? That is both the beauty and the frustration of the Tortolita phase.

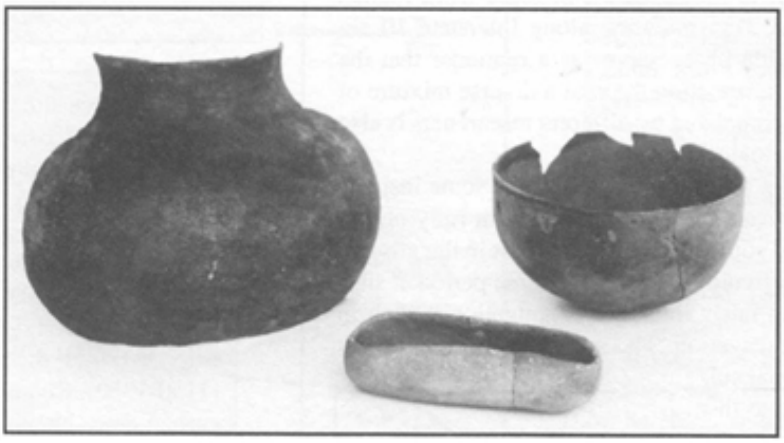
Tortolita Phase Update

At the outset it is important to remind readers that over the past two decades the Hohokam chronology developed at the site of Snaketown by Haury has undergone revision. There is broad consensus that Haury's chronology was much too long. His initial phase at Snaketown was the Vahki phase which is equivalent to the Tortolita phase (AD. 550 to 650). One of the important assumptions that Haury made about the Hohokam was that the development of their culture was gradual. Haury felt that 200-year phases were essential lengths of

time for the observed changes in material culture, subsistence practices, and social organization to have taken place. His dates for the Vahki phase, 300 B.C. to A.D. 1, have now been pushed forward substantially (see chronology on page 1). When the time frame is shortened by so much, it means that the pace of culture change must have been much faster. So one of the important elements of the Tortolita phase is that it marks the initiation of much more rapid change among the prehistoric residents of southern Arizona.

The next issue of the *AIT Newsletter* will report on the arrival of agriculture and ceramics into southern Arizona. So for now we will merely note that farming along the Santa Cruz dates back at least 3,000 years and the first pottery containers were manufactured during the first century A.D. Those initial pottery vessels were almost all of a single shape, so-called seed jars, that are believed to have served primarily a storage function. They are the ceramic indicator for the Agua Caliente phase (A.D. 150-550).

By the time of the Tortolita phase, there was a diversity of vessel forms being made. This suggests that pottery had developed into an important part of the technology for cooking, serving, transporting, and storing both liquid and dry materials. The increased importance of pottery is of particular value for archaeologists due to the great deal of information that can be derived from the study of pottery.



Tortolita phase artifacts. Diversity in plain ware vessel forms. Necked jar and special elongated form from the northern locus of the Valencia site, hemispherical bowl from the Hodges Ruin. (Arizona State Museum, University of Arizona, accession numbers 96-199 and 93-91)

The diversity of the Tortolita phase is also underscored by the substantial variability that is seen in the red ware pottery. Jim Heidke has found the red ware to be highly variable in color, placement of slip, and degree of polishing. Stephanie Whittlesey noted diversity in the Houghton Road assemblage also.

Thus far it looks like red ware pottery was being produced locally in most, if not all, of the sites located along major drainages. Jim Heidke has examined the sand temper added to Tortolita Red ceramics and in general there is evidence that most pottery contains sand that occurs within 3 km of the site where it was found. Pottery with sand temper from more distant areas within the Tucson Basin is suggestive of exchange or possibly seasonal movement.

During the Agua Caliente and Tortolita phases people built houses that were more substantial than had been the case in previous times. This suggests an increased reliance on agriculture and a greater degree of sedentism than had been the case earlier.

There are hints that population size was increasing, for there is greater diversity in the material items that people are using, particularly special items that may have been involved in ritual activities or in showing wealth differences. Turquoise jewelry was found at the Rabid Ruin, for example, and evidence for manufacture of turquoise items was found at the Lonetree site. In other areas of the Southwest, Jonathan Mabry has noted that the first appearance of turquoise artifacts also occurs at this same time.

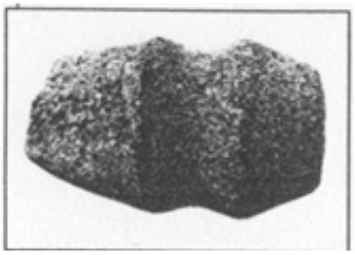
The possibility that cotton was being cultivated during the Tortolita phase is suggested by the recovery of sherd disk spindle whorls at the Houghton Road site by Statistical Research and by Desert Archaeology's dating of actual cotton seeds to roughly A.D. 130-430 in the Tonto Basin.

There are some very intriguing aspects of the settlement pattern of the Tortolita phase that deserve some consideration. There is now information from three sites-Romero, Hodges, and Valencia-that occupations initiated in the Tortolita phase continued on and subsequently developed into ballcourt villages. Test excavations conducted by Desert Archaeology at the Valencia site in 1992 suggest that this may have been a slightly more complex process. Testing revealed a large area at least 200 m by 200 m that was intensively occupied during the Tortolita phase. At the end of the phase, or soon thereafter, this area was abandoned and the focus of settlement moved some 500 m to the south. It is in this latter area that the ball court was subsequently built.

The Rabid Ruin also appears to have had an intensive Tortolita phase occupation, with a drop in population in subsequent time periods. Only a limited amount of work has been accomplished at the Rabid Ruin, and more intensive excavation could change that perspective. But just being aware of this early occupation is providing a more realistic view of where people were living and how long they stayed there.

Lessons Learned

The experience of multiple archaeologists with the Tortolita phase and the difficulties that have been experienced simply in finding material from this time period underscore the tremendous importance of recognizing mixing in our excavations. Getting clean contexts with which to work is one of the most effective ways of minimizing the kinds of confusion that have come out of Tortolita phase sites. Sites like the Triangle Road site (see article on pages 6-7) and the northern locus of



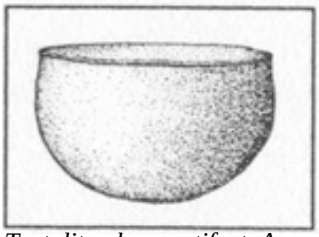
Tortolita phase artifact. An ax from the northern locus of the Valencia site. Raised ridges along the groove indicate an early dale for this artifact. (Arizona State Museum. University of Arizona, accession number 93-91)

the Valencia site are of particular value because they represent occupations that are confined almost exclusively to the Tortolita phase.

The Importance of "Small Archaeology"

So much of what gets reported to the public is "Big Archaeology." The many sites that were excavated prior to construction of the Bureau of Reclamation's Central Arizona Project or the ongoing work funded by the Arizona Department of Transportation along Interstate 10 are clear examples. But the Tortolita phase serves as a reminder that the gradual accumulation of new information through a diverse mixture of projects of different sizes and completed by different researchers is also an important aspect of archaeological research.

The Tortolita phase is still a moving target. We have some insights into its diversity and its significance, but we are far from fully understanding it. We have developed some tools to recognize it in the ground, but it will almost always be difficult to identify this time period at sites with later occupations without fairly intensive examination, which in most cases will mean some excavation. The greatest difficulty is that there are so few items of material culture that firmly identify a site to this phase.



Tortolita phase artifact. A hemispherical red ware bowl.

Tortolita Red pottery is the most useful, and very rare items like Axes have a distinctive raised ridge at this early time. However, such artifacts also occur in the immediately following lime periods. So often, too, pottery from later time periods overlies or has become mixed with deposits from this early time period.

A great deal of archaeology has been carried out in southern Arizona, particularly over the past 20 years. This often leads to the question: "Why do you need to excavate another site? What can you expect to learn?" The Tortolita phase presents a fairly dramatic answer to this question, for it shows that we can discover a new time period that had previously been nearly invisible to us. Such discoveries lead to re-examination of what has gone before, and often lead to major new insights into the past.

Discoveries like the Tortolita phase keep us humble and remind us that an open mind is essential in this discipline.

CORRECTION: The Salt River irrigation map in the last Archaeology in Tucson Newsletter (vol. 11, no.1) should have acknowledged Dr. Jerry Howard, who assembled the information. Our apologies.

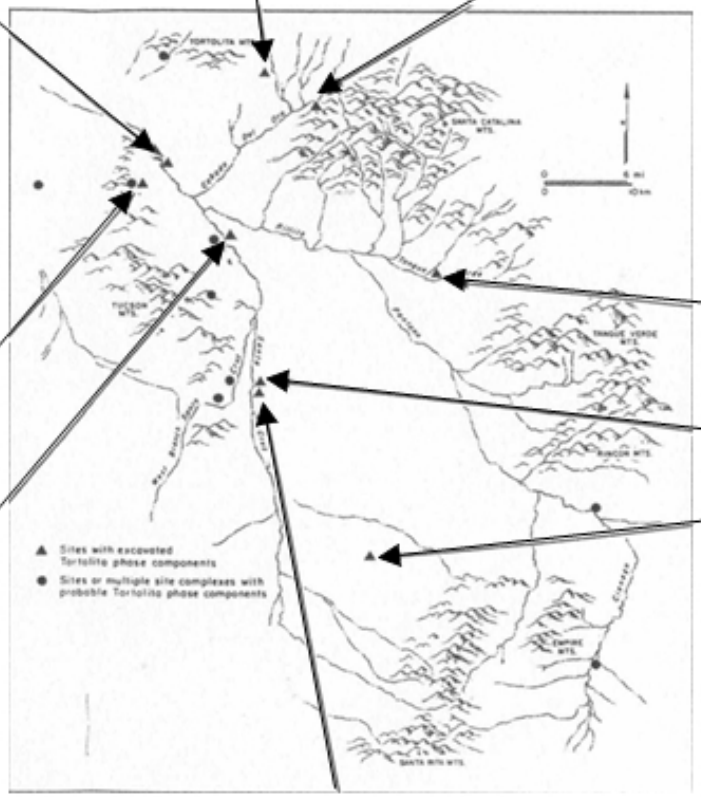
A Tortolita Phase Atlas

The **Dairy** site is located on the lower bajada of the Tortolita Mountains in the northern Tucson Basin. The site setting on an alluvial fan provided floodwater fanning opportunities. Information was collected by the Arizona State Museum from a profile exposure created by the owners of the dairy, Features dating from the Late Archaic period to the Colonial period (800 B.C.-A.D, 950), including the Tortolita phase, were identified and some were tested. More recently, Classic period deposits were excavated by Statistical Research, Inc.

The **Triangle Road** site was first recorded in 1978 by Pima Community College. It is located on a ridge west of Honey Bee Wash on the southeastern side of the Tortolita mountains. A surface collection was conducted by Desert Archaeology, Inc. during the survey of the Rancho Vistoso parcel in 1986, and the site has recently been excavated by SWCA (see accompanying article).

Romero Ruin has seen three short field seasons by Desert Archaeology in the past ten years. During the first season an intensive surface collection determined that the site was occupied from the Pioneer period through the Classic period (A.D. 650-1450). The two other field seasons were small testing projects following the course of a recently constructed interpretive trail. The Tortolita phase remains were found during the first of these two seasons in the bottom layer of an excavation unit into a trash mound. This is one of the few occurrences of Tortolita Red in a stratified context.

The **Lonetree** site was excavated in 1987 prior to the construction of Continental Ranch on the northwest side of town, west of the Santa Cruz River. The site contained 32 pithouses among the 256 prehistoric features. When it was excavated, it was thought that the site dated to the Sedentary period (950-1150) and possibly extended into the early Classic period (1150-1350), Ceramic analysis and radiocarbon dates identified an earlier occupation between A.D. 550 and 650. This was named the Tortolita phase and is defined in the report for this site.



The **Houghton Road** site is a medium-sized occupation site. In 1990, Statistical Research, Inc. excavated 14 pithouses and several other features at the site. Bill Deaver and Richard Ciolek-Torrello reported one pithouse that was a large communal structure with stratified deposits. Only plain ware ceramics were found below a burned roof fall layer, and plain wares and red wares were found above the roof fall. This site's primary occupation was during the Agua Caliente phase and extended into the Tortolita phase (A.D. 150-650).

AZ BB:13:223 (ASM), a small field house site on the east side of the Santa Cruz River, was investigated in 1985, The site was excavated before the Tortolita phase was defined. It is only in retrospect that the Tortolita phase occupation was identified.

The **Hodges** site is a large ballcourt village ideally situated for farming along the Rillito and Santa Cruz rivers. The first excavations in the late 1930. by Carl Miller and Isabel Kelly showed occupation at the site to extend from the Sweetwater or Snaketown phase through the Tanque Verde phase (A,D, 675-1350), Subsequent excavations by the Arizona State Museum in the 1980. focused on pithouses primarily from the Rillito and Rincon phases (A,D, 850-1150), Although red wares were noted during the initial excavations, the first Tortolita phase pithouse at the site was not identified until a small excavation project in 1995 by Desert Archaeology.

E1 Arbolito is a farmstead or small hamlet located on the end of a low ridge on the bajada of the Santa Rita Mountains. Excavations at the site were conducted in 1985 by the Arizona State Museum. They found 20 cultural features that included two pithouse floor remnants and numerous clusters of fire-cracked rocks. The ceramics were mostly plain wares and a few red wares. The excavator, Bruce Huckell, recognized the site to be "unusual" for what was known of Tucson Basin prehistory at that time. Today, based on the presence or red wares and the radiocarbon dates, it is felt the site dates primarily to the Agua Caliente phase, with a brief Tortolita phase occupation.

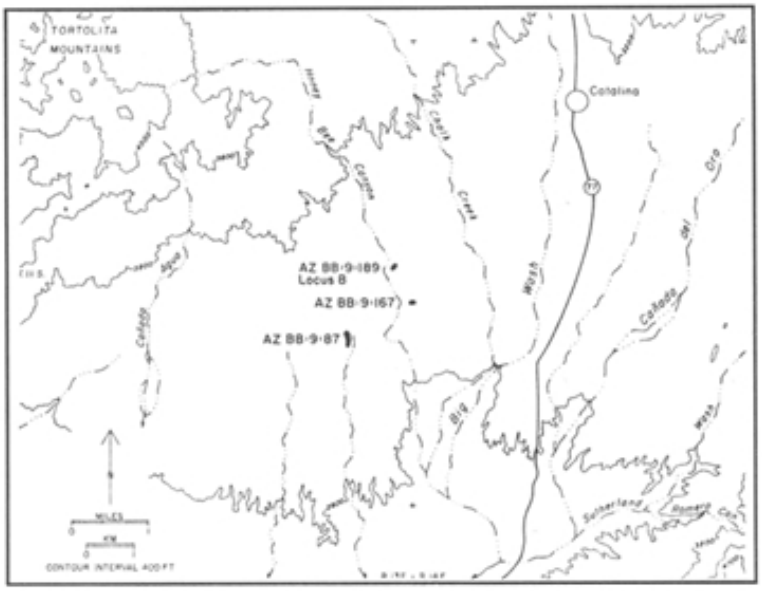
The **Valencia** site is a large ballcourt village on the eastern side of the Santa Cruz River. It was occupied first in Archaic times and was abandoned at the start of the Classic period (800 B.C.A.D. 1150). Testing by Desert Archaeology at the north end of the site in 1992 discovered a Tortolita phase occupation, somewhat separated from the later Hohokam village.

Early Ceramic Period Sites in the Tortolita Foothills

Kevin D. Wellman, SWCA, Inc., Environmental Consultants

In the spring of 1996, development of a portion of the bajada southeast of the Tortolita Mountains prompted excavations by SWCA, Inc. Three sites were found to date to the poorly understood Early Ceramic period, and one of those, the Triangle Road site, dated to the Tortolita phase. The Triangle Road site was so named because three roads converge at the site.

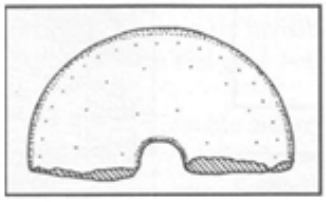
It is an important site because it represents a relatively "pure" Tortolita phase occupation. Unlike sites of similar age, there was no mixing of deposits with later occupations and therefore the archaeologists have a clearer view of what was happening at the site.



Three Early Ceramic period sites were investigated by SWCA, Inc. The Triangle Road (BB:9:87), Honeybee Ridge (BB:9:I89), and Dog Bone (BB:9:167) sites are all located near the Tortolita Mountains. (drafted by Chuck Sternberg).

On the surface, the site appeared as a scatter of artifacts lying along a ridge west of Honeybee Wash. From surface indications, it was estimated that several pithouses might be present. In fact, excavators found eight pithouses and a ramada. A backhoe was used to strip large portions of the site and 114 features were found outside of the structures. Many were small storage or roasting pits. A dog burial was also found.

Archaeologists use many methods to date sites (see *Archaeology In Tucson* July 1993). Several techniques were used to date this Tortolita foothills site to the Tortolita phase of the Early Ceramic period. The period lasts from about A.D. 150 to A.D. 650 to 700 and is divided into two parts or phases in Ṫucson Basin. The earlier phase, known as the Agua Caliente phase, dates from about AD. 150 to AD. 550. Plain ware ceramics were the only type of pottery made at this time. The Tortolita phase dates from. about AD. 555 to 650 and saw the first production of red ware ceramics, although plain ware ceramics continued to be made.



A perforated sherd from the Triangle Road site (drawing by Ron Beckwith).

Both plain ware and red ware ceramics were found at the Triangle Road site. Charcoal samples from a roasting pit and a pit house were radiocarbon dated to A.D. 370 to 615 and A.D. 590 to 695. Five burned areas in the excavated pithouse were sampled for archaeomagnetic dating. One sample was sufficiently magnetized and returned three possible dates with the earliest at AD. 580 to 720. All evidence points toward a Tortolita phase date for this site.

The eight pithouses showed great variability in shape. They were formally constructed, but oval, roughly circular, sub-square, and sub-rectangular pit structures were present. Two had slightly incurving front walls, similar to others found in the southern Southwest. The upper portions of the houses were probably built from posts, matting, and mud daub. Between one and four main support posts held up their roofs. Secondary posts were found either inside the house or around the exterior edge and supported beams.

Soil samples were collected from the site and were examined for plant materials used as food, fuel, or for other purposes. Analysts identified pollen grains or burned plant stems and seeds. Site residents hunted animals, and their discarded bones were found by the careful screening of dirt.

Corn pollen was found at the site, although no charred kernels or cob fragments were recovered. Other plants found at this site were agricultural weedy species. These plants are often found in places where the ground has been disturbed as fields are cleared and planted. This suggests that corn was an important food item for site residents.

Gathering wild foods was also important. Cactus remains indicate the site residents processed cholla, fish-hook, saguaro, hedgehog, and prickly pear cacti. Other plants,

Cortaro (a) and San Pedro (b) projectile points from the Triangle Road site (drawing by Ron Beckwith).

including wolfberry, mesquite, globe mallow, and barley grass, were also found. Acacia wood was used for fuel at both sites.

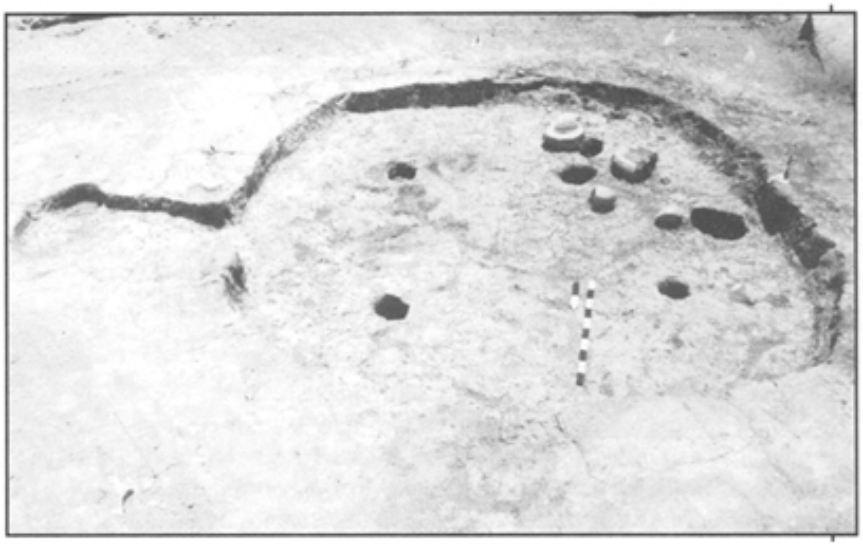
Animal bones indicate that rabbits were the primary source of meat, similar to many sites throughout the Southwest. Deer, antelope, and rodents were also eaten by site residents.

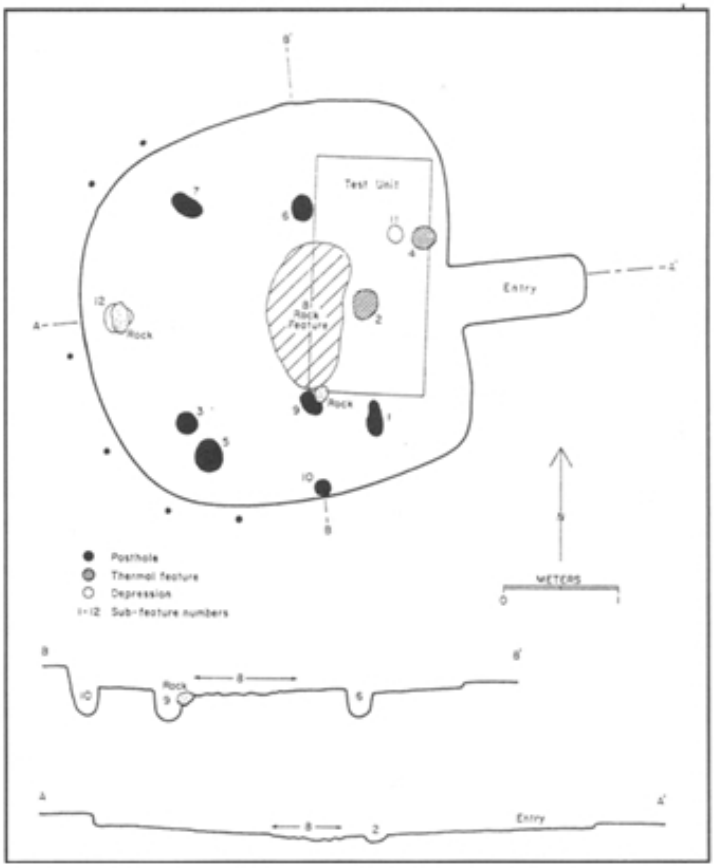
The artifacts are very diverse and suggest that multiple activities took place including chipped stone toolmaking, resource collection, and resource processing.

The ceramic assemblage consisted of 2,525 sherds with 96 percent of them plain ware. In addition, a small number of Tortolita Red sherds was found. The assemblage included six partially reconstructible vessels as well as 16 worked sherds, two figurines, and a Tortolita Red pinch pot. Seed jars and small- to medium-sized bowls were the only forms identified. The chipped stone assemblage was transitional between the Early Agricultural and Early Ceramic periods. The projectile points included one Cortaro and one San Pedro. The large ground stone assemblage was also transitional. Most tools related to food processing and were primarily manos, metates, and pestles.

Excavations at this site, in conjunction with two neighboring sites from the Agua Caliente phase, have increased our understanding of the Early Ceramic period in the uplands of the Tucson Basin. We now know that the Tortolita foothills were occupied during the end of the Early Agricultural period and during the Agua Caliente and Tortolita phases of the Early Ceramic period. Residents established villages and grew crops nearby. Gathering and hunting supplied much of the food. People were using traditional methods for manufacturing tools, while experimenting with new ideas. Some of these ideas would lead to the later culture known as the Hohokam.

Acknowledgments: The archaeological work at the Triangle Road site was supported by Monterey Homes. Work at the two Agua Caliente phase sites, Honeybee Ridge and Dog Bone, was supported by Stellar Homes. Chipped stone and ground stone were analyzed by Dawn Greenwald and Laural Myers. Linda M. Gregonis studied the ceramics.





Early Ceramic pithouses from the Triangle Road site. Above: four large posts once supported the roof; two metates were found lying on the floor (photo by Kevin Wellman). Below: small pits were found in many of the houses, perhaps used for storage (drafted by Chuck Sternberg).

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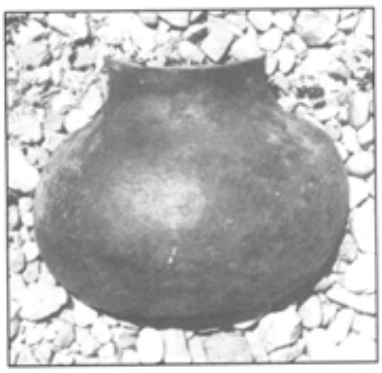

New vessel forms, like this plain ware jar, marked the onset of the Tortolita phase (A.D. 550-650). (Arizona State Museum, University of Arizona, accession number 93-91)

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