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The Tonto Basin Revisited: The Tonto Creek Archaeological Project

Jeffery J. Clark, *Desert Archaeology, Inc.*

The Tonto Basin in east-central Arizona has demanded considerable attention among Southwestern archaeologists, past and present. This well-watered region, defined by the Salt River and Tonto Creek drainages, lies near the boundaries of the Hohokam, Mogollon, and Anasazi areas as they have traditionally been defined. The Tonto Basin is also pivotal in understanding the Salado horizon, a poorly understood phenomenon that extended over much of the greater Southwest during the Classic period (A.D. 1250-1450).

Archaeologists working in each of these culture areas have long cast wistful glances at the rich and diverse archaeological sites in the region. However, until the Cultural Resource Management (CRM) mega-projects of the past two decades in the Tonto National Forest, little excavation had been undertaken in the region. Prior to the 1970s, investigation had been largely restricted to the efforts of Gila Pueblo during the 1930s. Despite substantial pothunting and the inundation of the Salt River floodplain by Theodore Roosevelt Lake, many sites in the region have survived to the present day.

Rye Creek and Roosevelt Community Development Projects

The Cholla Project and the Arizona Department of Transportation's (ADOT) Miami Wash Project, both conducted by the Arizona State Museum, were at the vanguard of this effort in the 1970s. ADOT's Rye Creek Project in the upper basin was Desert Archaeology's initial foray into the region. Ceramic temper sourcing studies, which contributed immensely to later research efforts, began with this project.

In the early 1990s, Desert Archaeology's Roosevelt Community Development (RCD) Study investigated the eastern end of the Tonto Basin (see *Archaeology in Tucson* newsletter, Summer 1995). This project was part of a larger effort funded by the Bureau of Reclamation that included Arizona State University's Roosevelt Platform Mound Study (RPMS) and Statistical Research's Rural Sites Study. RPMS, by far the largest project, focused on Classic period Salado communities during the A.D. 1250-1400 interval. Both Desert Archaeology projects traced the development of Salado communities across the pre-Classic and early

Classic periods (A.D. 750-1325). The early Ceramic period Eagle Ridge site (A.D. 100-600) was also investigated in the RCD project area.

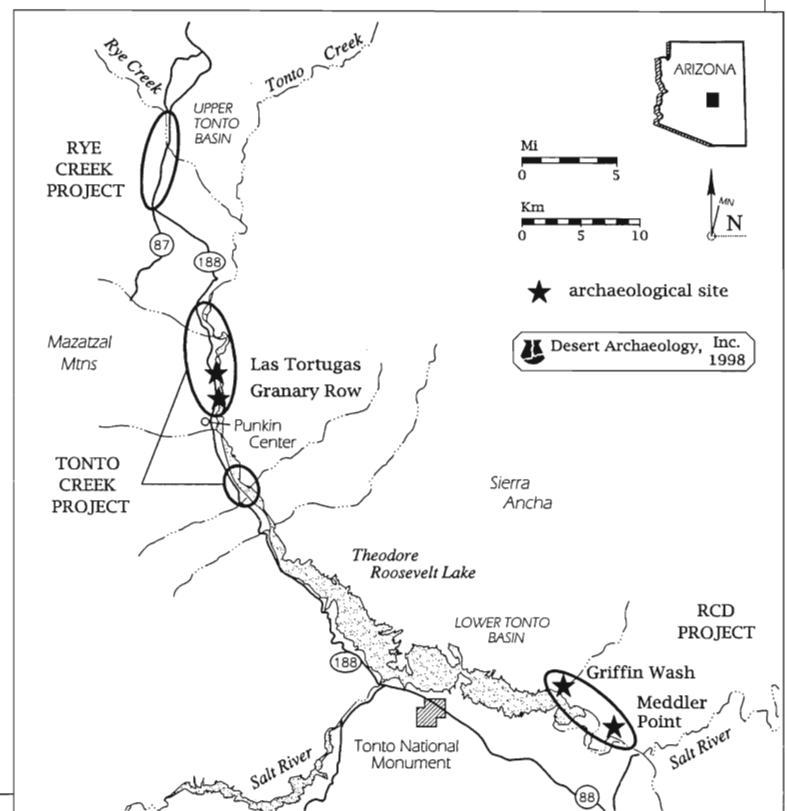
Capping it Off with TCAP

Desert Archaeology returned to the basin in the mid-1990s to conduct fieldwork in advance of highway construction as part of the ADOT-funded Tonto Creek Archaeological Project (TCAP). Fortunately, this project area was situated between the previous two Desert Archaeology project areas, providing a better spatial balance. The 27 investigated sites in the TCAP area ranged in date from the Middle Archaic period (ca. 2600 B.C.) to the twentieth century. The majority of sites dated from A.D. 750 to 1325, allowing comparison of this 575-year interval across all three areas.

Over 100 structures and 300 burials from this period were excavated during the course of TCAP fieldwork. Excavated structures were split almost evenly between pre-Classic pit-

Continued on page 3

Desert Archaeology project areas and selected sites in the Tonto Basin.



From Pithouse to Compound in Three Easy Steps

Jeffery J. Clark, *Desert Archaeology, Inc.*

The transition from the pre-Classic to the Classic period (ca. A.D. 1100-1200/1250) in the Tonto Basin coincided with dramatic changes in architecture, burial customs, and pottery. Pre-Classic groups in this region lived in pithouses made with wooden poles, brush, and packed earth. Groupings of two to five of these structures were commonly arranged around a central courtyard. These *courtyard groups*, a term defined by David Wilcox, were probably occupied by groups of closely related families.

By the beginning of the Classic period most Tonto Basin inhabitants resided in above-ground dwellings that contained multiple rooms. These units were typically built with masonry and adobe. The tempo of this architectural change was rapid in archaeological time and establishing links between groups on either side of this transition has proven difficult.

Previous work in the basin has established the coexistence of two remarkably different types of residential units during the early Classic period (A.D. 1200-1325), one occupied by local groups and the other by puebloan immigrants. Past work has focused on immigrant settlements that resembled contemporaneous pueblos built to the north and east of the basin. However, here we will focus on local architectural tradition.

Local Housing Developments

The other form of residence in the early Classic period was the compound. Units of this type were usually dispersed arrangements of rooms that were linked together by walls. A considerable area of the enclosed space in these units was unroofed. Compounds far outnumbered room blocks during the early Classic period and previous researchers stressed the link between this form of residence and earlier pithouse court-

yard groups. However, until TCAP, this connection had not been clearly demonstrated in the basin.

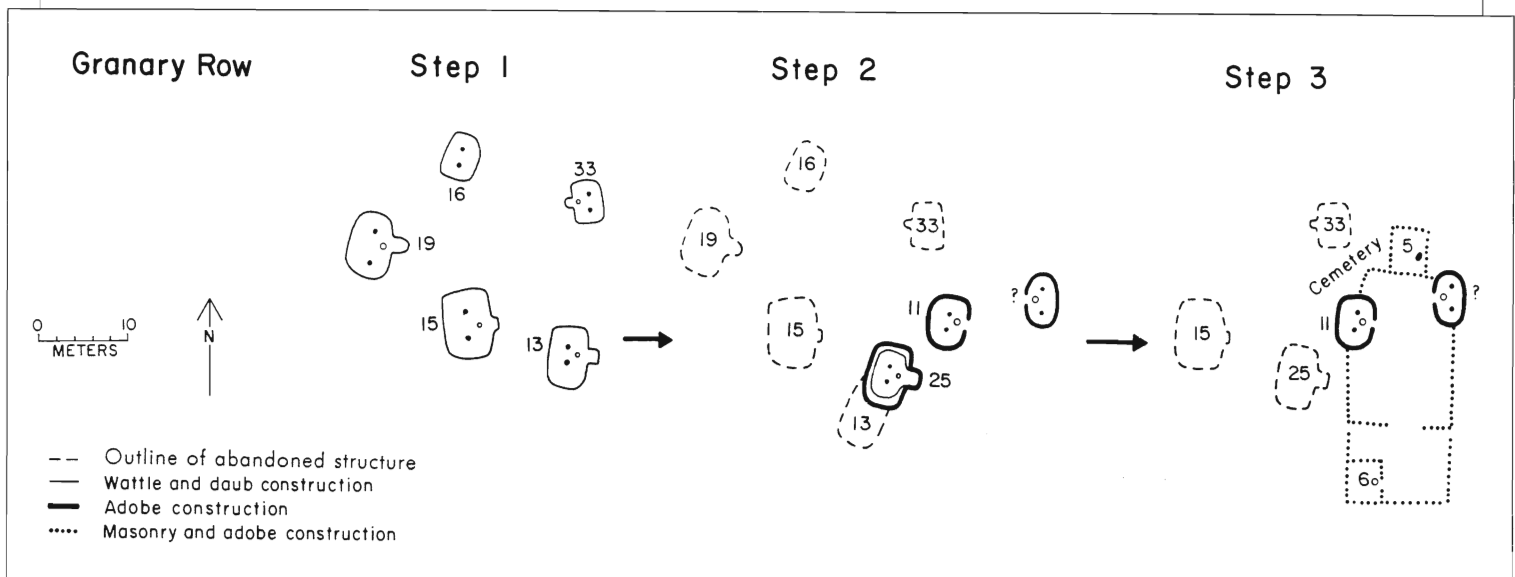
Nearly all of the investigated early Classic period compounds in the project area overlay pithouse occupations that date to the late pre-Classic period. At two sites, Granary Row and Las Tortugas, continuous sequences from pithouse settlement to compound were traced. Transitions at both sites date to roughly the same interval (A.D. 1150-1250). The two sites are located half a mile apart, just north of Punkin Center.

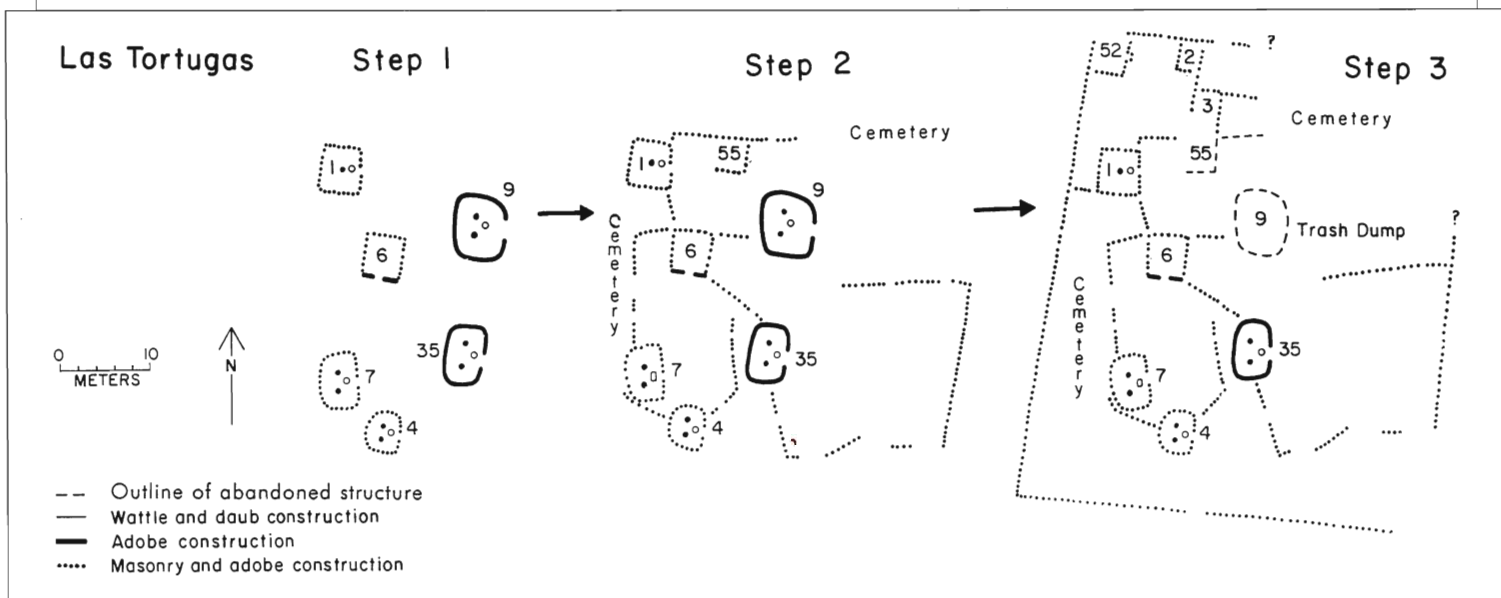
Granary Row

At Granary Row, a late pre-Classic period pithouse settlement was excavated that may have been seasonally occupied (Step 1). Pithouses associated with this settlement were large earthen and post constructions typical of this period. In the late stages of this settlement, adobe replaced earth as the basic material used in wall construction (Step 2). One of these late structures (Feature 25) was initially built as an earthen pithouse. In a remodeling episode, earlier wall postholes were sealed and the expanded structure was lined with adobe. The walls of this structure were built with adobe and small cobbles. The latter were utilized more as filler than support. Ceramics, archaeomagnetic dates, and radiocarbon dates place this structure in the late 1100s or early 1200s.

Feature 11 was an adobe pithouse that was probably built slightly later than Feature 25. The structural pit of Feature 11 was considerably shallower than Feature 25 and lacked a protruding entry. These modifications place the form of this structure between earlier pithouses and later surface rooms. At some point in the thirteenth century, Feature 11 and another possible structure were connected by masonry walls to form a rectangular enclosure (Step 3). Apparently the earlier adobe pithouse (Feature 25) was abandoned by this time because it was not incorporated into the compound. Subsequent additions to the compound included a southern courtyard and two rectangular masonry surface rooms. By this time, if not earlier, the compound was occupied permanently and a formal cemetery was established to the northwest.

Pithouse-to-compound transition at Granary Row.





Pithouse-to-compound transition at Las Tortugas.

Las Tortugas

At Las Tortugas, a pre-compound settlement of detached structures was also isolated (Step 1). A variety of construction techniques were employed. House types included adobe pithouses, masonry and adobe pithouses, and masonry and adobe surface structures that may have been built sequentially. During the next stage, walls were built between the existing structures to restrict access to courtyard areas (Step 2). These additions resulted in a very eclectic "compound" with cemeteries placed outside the settlement walls.

In the final stage, a rectangular courtyard with surface masonry rooms was added to the north, and the entire residential area and associated cemeteries were encompassed by a rectangular outer wall (Step 3). This construction represented

an attempt to impose order on the earlier haphazard arrangement. One of the original adobe pithouses (Feature 9) had fallen out of use by this time, with the house depression serving as a trash dump. Unfinished segments of the outer wall suggest that the settlement may have been abandoned suddenly in the midst of this construction project.

Continuity in Architecture, Continuity in Household

Seamless construction sequences from pithouse to compound are indicated in both examples. Given this continuity, socially and perhaps genetically related households occupied both settlements throughout their histories. Many other Tonto Basin compounds probably developed along similar lines.

The Tonto Basin Revisited *Continued from page 1*

house settlements (A.D. 750-1200) and early Classic compounds (A.D. 1200-1325). The vast majority of burials were extended inhumations associated with the latter.

Immigrants and Locals

The RCD study established two pivotal points in Tonto Basin prehistory when immigrants from surrounding areas probably entered the region. During the early Colonial period (A.D. 750-800), Hohokam immigrants from the Phoenix Basin established a settlement at Meddler Point. Although contact with the Hohokam region diminished through time, the eastern Tonto Basin community that developed from this settlement endured for more than 500 years. RCD and RPMS also identified several puebloan enclaves that were established in the region prior to the collapse of this community in the early 1300s. Griffin Wash was one of the larger immigrant settlements, situated on the edge of the community and away from the best agricultural land. Temper sourcing of pottery from

sites in the eastern Tonto Basin (see page 4) permits detailed reconstruction of ceramic production and exchange between local groups and newly arrived immigrants.

In contrast to the RCD study's focus on migration, TCAP has provided a detailed view of local households that comprised the majority of the population at least until A.D. 1300. The period from A.D. 1100-1325, the prelude to the Salado, was particularly well represented in the TCAP area. As discussed in the article beginning on page 2, a continuous transition from pithouse to compound, from A.D. 1150-1250, was documented at several sites. Compounds were permanent settlements associated with large cemeteries. Burials recovered from these cemeteries have yielded important information concerning the health and appearance of the local inhabitants (see Hall and Clark, page 6). In addition, the large and diverse mortuary assemblage provided a rare opportunity to view the inhabitants and surrounding environment through their own creative expressions (see Vint, page 5).

Coloring the Past with Plain Ceramics

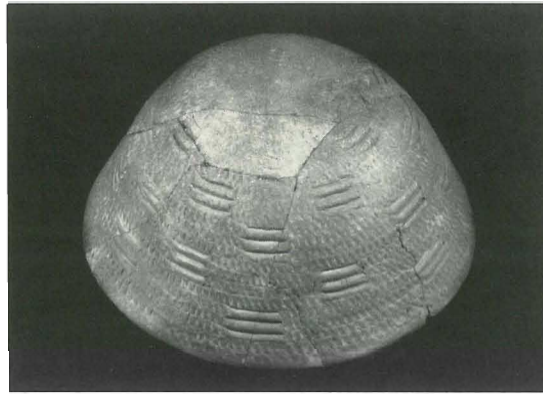
Jeffery J. Clark and James M. Heidke,
Desert Archaeology, Inc.

Southwest archaeologists have traditionally focused on rare and aesthetically pleasing painted ceramics at the expense of the plain, utilitarian pottery typically strewn over archaeological sites. In the Tonto Basin, new sourcing techniques have been particularly productive with the utility wares.

Since 1987, an integral part of Desert Archaeology's research effort in the Tonto Basin has been to determine where pottery vessels were made. The basic approach, developed by James Heidke and Elizabeth Miksa, was based on earlier work by James Lombard, a geoarchaeologist who worked in the Tucson Basin. This technique identifies the source of sand added to pottery clay as temper to improve the clay's working and firing properties. After collecting and analyzing more than 200 sand samples from major washes in the Tonto Basin, the region was divided into 18 zones or *petrofacies* distinguishable by the mineral composition of the samples. Once an accurate petrofacies map of the basin was developed, the sand-tempered pots made in the region could frequently be matched with a specific zone.

Until quite recently, archaeologists tended to assume that prehistoric village-dwellers in the Southwest obtained their own food, built their own houses, and manufactured most of the tools and pots they used on a regular basis. Heidke and Miksa's research has "tempered" our view of the self-sufficient village in the Tonto Basin, at least in terms of pottery manufacture. The early Classic period (A.D. 1150-1350) is of particular interest. During this time, platform mounds were first constructed, puebloan immigrants arrived from the north and east, and the population reached its peak level. Although some pottery was probably made at all settlements, most of the plain and red ware vessels produced in the basin during this period contained sand from the Ash Petrofacies, suggesting that potters in one or more settlements in this zone made vessels not only for themselves and their neighbors, but for villages throughout the region.

The sands added to corrugated pottery also revealed a fascinating story. Corrugated pottery first appears in the Tonto Basin around A.D. 1150, but was made considerably earlier in puebloan settlements to the north and



Above, Salado Red Corrugated bowl; Below, petrofacies map of the Tonto Basin.

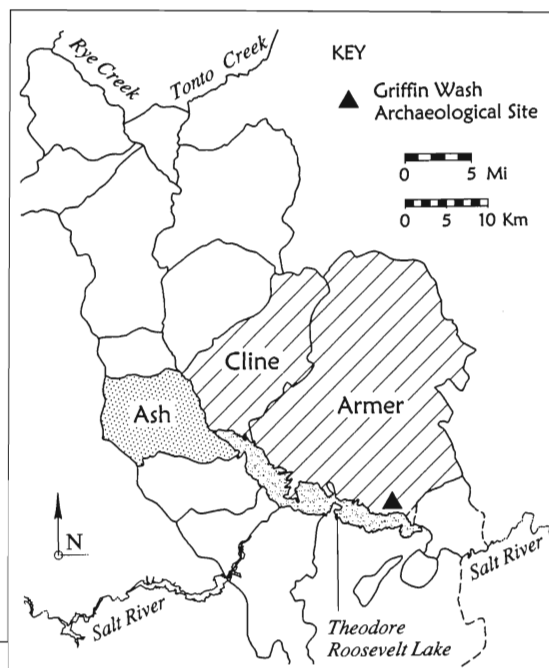
east. Salado Red Corrugated was a red-slipped corrugated ware that was exchanged throughout the lower and central Tonto Basin. Much of this pottery was produced in the Armer/Cline Petrofacies. Griffin Wash, the largest enclave of puebloan immigrants in the eastern Tonto Basin during this period, also lies within this zone. The new arrivals probably had difficulty acquiring prime farm land along the Salt River because this land was already claimed by local families. As an alternative to farming, they may

have specialized in making crafts, including Salado Red Corrugated pots, for the locals in exchange for some of their annual harvest. A considerable number of ceramic production tools were found in a group of rooms set apart from the main room block at Griffin Wash. This area may have been where Salado Red Corrugated vessels were manufactured specifically for this type of trade.

There are literally hundreds of early Classic period sites in the Tonto Basin; many contain abundant quantities of red ware and Salado Red Corrugated sherds. The casual observer might conclude that ceramic production in the Ash and Armer/Cline petrofacies and distribution throughout the basin were large, complex operations. However, the early Classic period lasted at least a century. When the number of total vessels estimated to be present in the archaeological record is spread across this interval, the number of Salado Red Corrugated vessels that needed to be produced each year is greatly reduced. Based on ethnographic data, families making pots on a part-time basis can produce up to 350 vessels per year. At that rate, fewer than 15 families in the Armer/Cline Petrofacies (roughly the population of Griffin Wash) could have kept up with the annual

demand. In the Ash Petrofacies, it appears that fewer than 35 families could have made all the plain and red ware vessels attributed to this area in a given year. Together, these families represented no more than 10 percent of the total population of the basin. Thus, a small segment of the population could have kept pace with the overall demand even though they worked at the craft part-time.

These studies provide new insight into the scale and organization of a key economic activity in the Tonto Basin. In addition, they have opened the door for studies of specialization in other craft and food production tasks in the prehistory of the region.



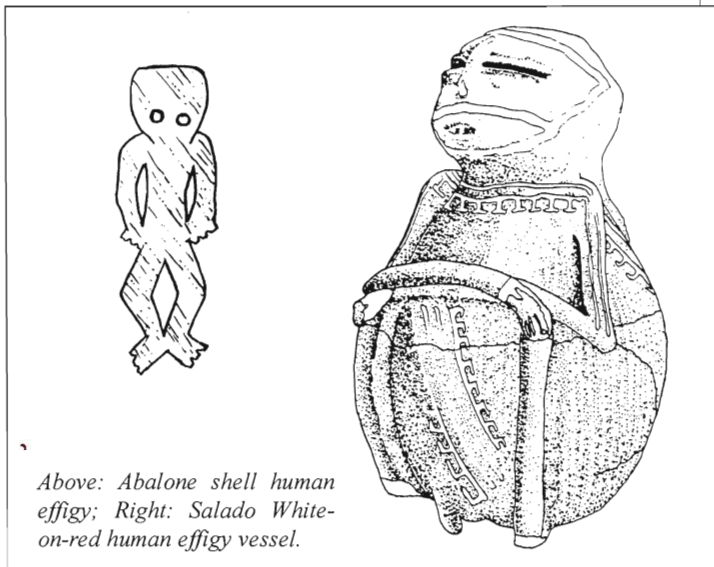
Beyond Naturalism in Prehistoric Tonto Basin Artistic Traditions

James M. Vint, Desert Archaeology, Inc.

Archaeological studies of prehistoric Southwestern ceramics traditionally view pottery as containers used to prepare, cook, serve, and store food. But pottery served many other purposes, ranging from the strictly functional to that of art and ritual. Beyond simple bowls and jars, the many shapes in which pottery was made were derived from the world around the people who made and used these artifacts. In the Tonto Basin, this imagery cross-cut many different kinds of crafts. This essay illustrates some of these forms using examples found in pottery, stone, and shell artifacts recovered from the TCAP excavations. When looking at prehistoric crafts, we should keep in mind the question of when representational craft art ends and culturally significant imagery begins.

Common themes found in pottery and shell and stone jewelry focused on the natural world. Forms included humans, and animals such as birds and dogs. Beyond depicting the everyday world, however, the imagery found in Tonto Basin pottery and jewelry is also found in important ritual roles of

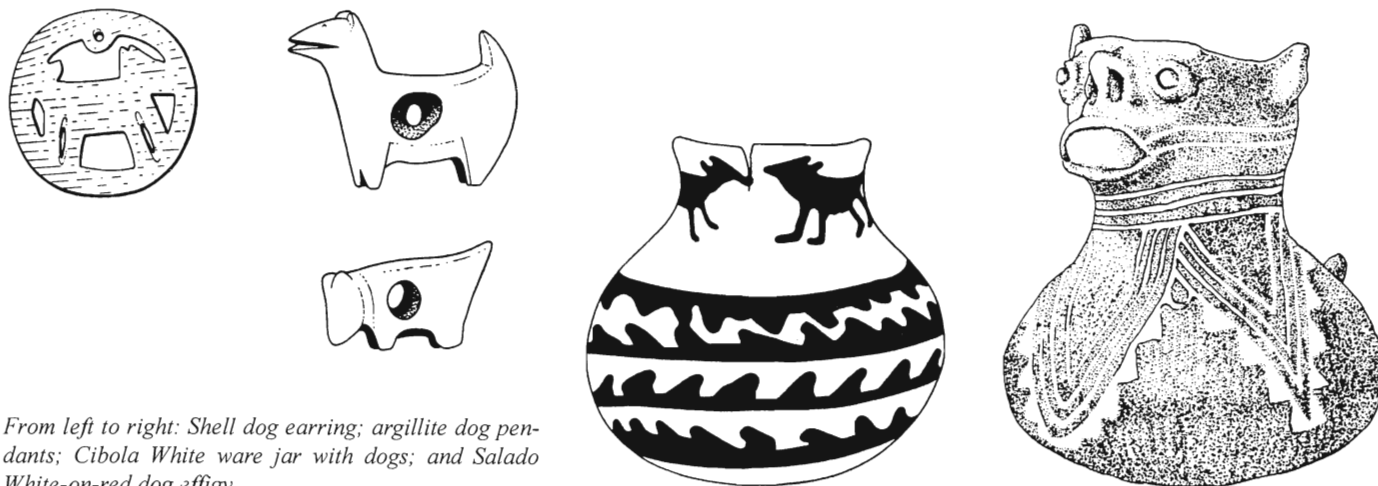
(Above) Human effigy vessels may have been portraits or representations of individuals, and often had unique facial features and statures, while shell jewelry pendants were more abstract. Some of these items may have been made for specific ritual purposes, such as human pottery effigies, and were rarely found outside of burial contexts; (Below) Shell jewelry depicting animal forms, on the other hand, was probably a daily ornament (drawings by Rob Ciaccio). Dogs were found on carved shell earrings, carved stone pendants, in painted designs on pottery, and as effigy vessels. They were ubiquitous animals at prehistoric sites, and probably were pets, pests, and sources of food (drawings by Ron Beckwith and Rob Ciaccio).



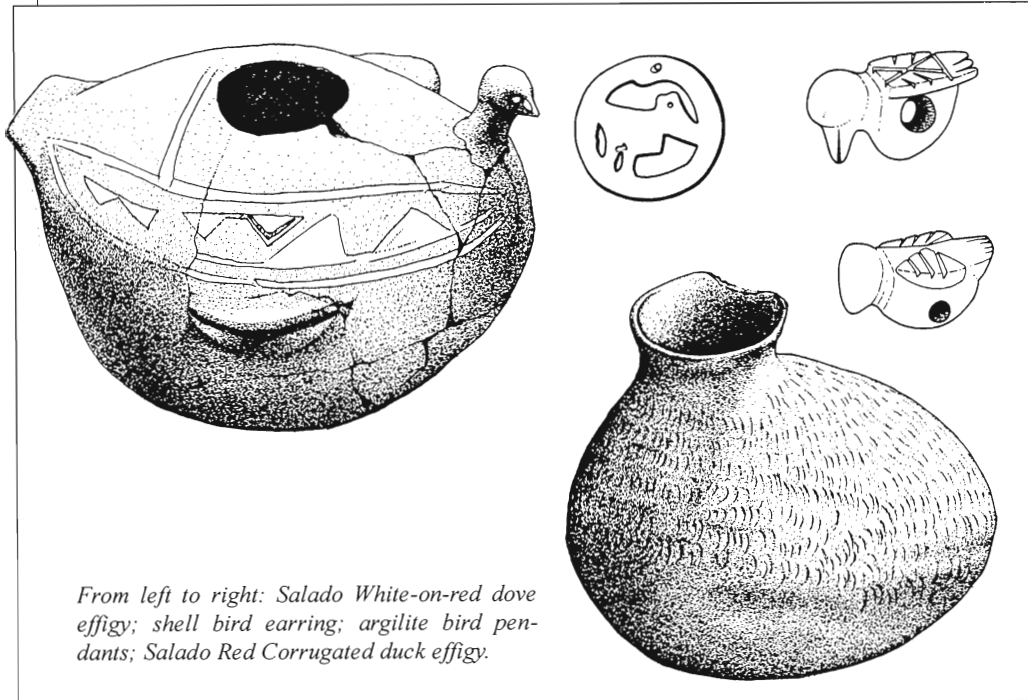
Above: Abalone shell human effigy; Right: Salado White-on-red human effigy vessel.

ethnographically documented indigenous populations. These include northern puebloan groups, people of the southern deserts, and of Mesoamerica. Throughout the history of the Tonto Basin, outside cultural influences shaped the face of the local social fabric. Major sources of these influences changed through time, coming from the Hohokam region prior to A.D. 1100 and shifting to northern puebloan influences after about A.D. 1150. These cultural influences were inspired indirectly by trade and social contacts as well as directly by the arrival of immigrant groups settling the Tonto Basin and bringing their ways of life with them. For example, Patricia Crown notes that birds (especially ducks) play a significant role in puebloan ritual and are common forms represented in pottery. Ducks or representations thereof were used in ceremonies to initiate boys into the rituals that allowed them to pass to the land of the dead. She also cites the importance of ducks in Pima mythology, and the role of birds, shells, lizards, toads, and snakes in Mesoamerican sacrifice ritual.

It is not surprising to find animals and imagery that were pervasive in the natural and cultural environments eloquently



From left to right: Shell dog earring; argillite dog pendants; Cibola White ware jar with dogs; and Salado White-on-red dog effigy.



From left to right: Salado White-on-red dove effigy; shell bird earring; argilite bird pendants; Salado Red Corrugated duck effigy.

Bird imagery ranged from realistic portrayals to abstract forms. They were the most common effigy vessel forms found in the TCAP collections. Ducks and doves have been positively identified, and other species may be represented as well. Stone and shell pendants may represent sandhill cranes, heron, or other shore birds (drawings by Ron Beckwith, Rob Ciaccio, and Amelia Natoli).

expressed in prehistoric crafts. It is a common human desire to have nice things to look at and wear. But imagery often goes beyond simply representing the world around us, as we know from studying the art history of Europe, and the TCAP examples prove no exception. It is easy to appreciate the aesthetic value of prehistoric Tonto Basin arts when simply looking at them as objects. Interpreting their exact meanings in cultural contexts is a much more intriguing and difficult task, and remains an ongoing challenge for archaeologists.

Further Reading

Crown, Patricia L.

1994 *Ceramics and Ideology: Salado Polychrome Pottery*. University of New Mexico Press, Albuquerque.

Moulard, Barbara L.

1984 *Within the Underworld Sky: Mimbres Ceramic Art in Context*. Twelvetree Press, Pasadena.

Life and Death along Tonto Creek

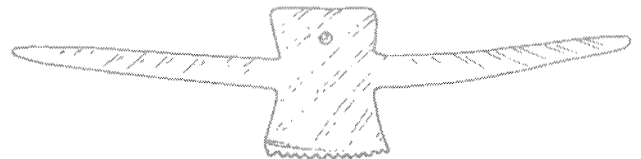
Susan D. Hall and Jeffery J. Clark, *Desert Archaeology, Inc.*

Over 300 inhumations were excavated along Tonto Creek in advance of road construction. These burials and associated grave goods will be returned to Native American groups who claim affiliation with the prehistoric inhabitants of this region. These groups permitted us to undertake nondestructive analyses of the human remains and burial offerings. The majority of inhumations were associated with four early Classic period compounds (A.D. 1200-1325) that were typical of residences dispersed throughout the Tonto Basin during this interval.

A Healthy Life (If You Made it Past Childhood)

Osteological and dental analyses provide considerable insight into the health, diet, age, and sex of the residents of these compounds. Of adults whose sex could be determined, 97 were female and 87 were male, yielding a nearly even ratio. Adult females were on average 5 feet tall and the average height for adult males was 5 feet and 4 inches. Short by today's standards, but within the normal range of preindustrial societies.

Life expectancy at birth was only 26.5 years. This low figure can be largely attributed to a high infant and child mortality rate. Children are particularly susceptible to disease and parasitic infections that were rife in permanent settlements of the



past. Indeed, slightly over one-third of the inhumations were infants and children under 12. A high fertility rate compensated for this loss and maintained the population level.

However, if you made it past five years you could expect to live until nearly 40, a ripe old age in most traditional societies. A number of individuals lived into their fifties, sixties, and even seventies. Observations of bone and teeth showed that the inhabitants were relatively well nourished. Growth during childhood and adolescence was seldom interrupted by inadequate nutrition. Dietary stress was only common in the two-to-four year range, the age bracket when children are typically weaned. Thus, growth arrestment in these individuals probably reflects difficulties in making the transition from mother's milk to solid food, rather than actual food shortages.

Although the inhabitants were well fed, the diet may have been monotonous. Tooth wear and cavity rates indicate that the bulk of the diet was comprised of processed starchy plants. Botanical remains from the compounds support this finding with cultivated maize and agave the dominant foods. Meat played a minor role in the diet and cooked animal remains were largely restricted to rabbits and an occasional deer.

Personal ornamentation and other items associated with men, women, and children who lived along Tonto Creek from A.D. 1200-1325.

A Colorful Life, an Elaborate Death

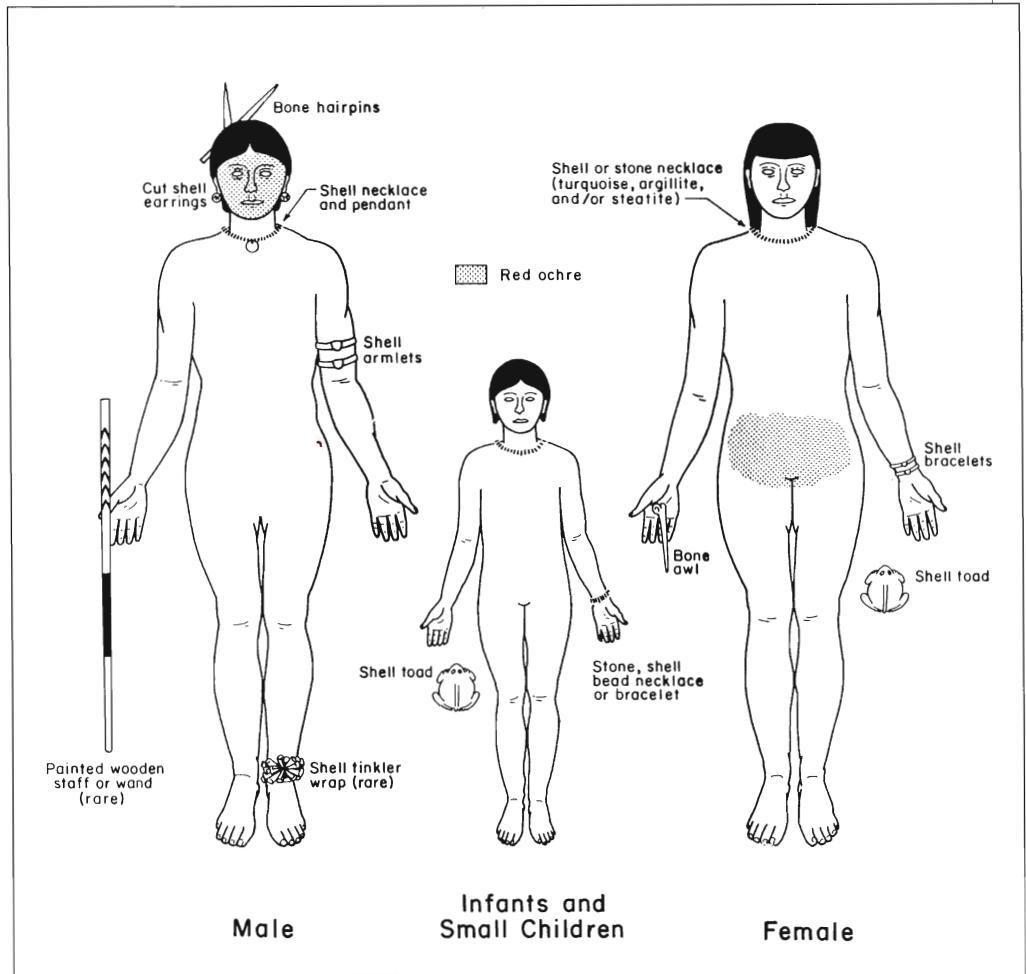
In traditional agricultural societies where inequalities in wealth and power between families are not extreme, social differences are often based on age and sex. These differences can be expressed in personal appearance both in ritual and everyday life.

Among the inhabitants of Tonto Creek, items of personal adornment that were almost exclusively associated with males included hairpins made from the long bones and ribs of deer, elk, and possibly bison. In addition, large pendants and earrings made from marine shell obtained from the Pacific Coast and Baja California were also typically associated with males. Forms include flying birds and dog medallion shapes (see page 5). Thick armlets made from *Glycymeris* shell also were worn above the left elbow by males. Painted wooden staffs or wands (rare) were also associated with males.

Personal ornamentation most often associated with females included thin *Glycymeris* shell bracelets worn below the left elbow, and necklaces made of shell or stone beads. Turquoise, argillite (a reddish-purple stone), and steatite (gray soapstone) were the most common forms of stone used to make beads. Infants and small children also wore shell and stone beads both as necklaces and bracelets. Two bracelets found with infants included small stone animal effigies.

Shell pendants were rarely found with women and children. Shell toads were the exception to this pattern. Examples of these were only associated with young women of childbearing age and infants. One toad pendant was found with a young woman who was pregnant at the time of death, perhaps suggesting this particular form was connected with fertility.

Painted wood staffs or wands were rare occurrences and associated almost entirely with males. Painted wands and staffs varied in length from a foot to well over a yard. They were typically painted with bands of azure, blue-green, and red pigments, but one was decorated with a chevron design that included white pigment. These items were associated with individuals who were buried within some of the richest assemblages, and may have symbolized a high status or leadership position held by the owner. Conus shell tinklers were also rare and associated with males. One individual had a wrap of 48 tinklers around his left ankle that would have served as an impres-



sive dancing rattle. Another may have worn a shirt with a number of tinklers sewn on it.

The presence of red ochre pigment was also patterned by gender. The pelvic area was most commonly stained in females. For males, the red ochre placement was more variable, but most often found on the face and hair. The presence of red ochre was uncommon for infants and small children, but where it occurred, often covered the entire skeleton. It cannot be determined whether ochre was placed on the individual before death or as part of the mortuary ritual.

In contrast to the domestic trash typically lying in and around residential sites, burials often contain items that have considerable economic or symbolic value to the inhabitants. The ability to link items to specific individuals provides a rare opportunity to view the person instead of the group. The Tonto Creek burials paint a colorful portrait of the rich and creative lives led by ancient Native Americans inhabiting the region.

This article summarizes results of the following project analyses: Osteology, Penny Dufoe Minturn; Dental Analysis, Lorrie Lincoln-Babb; Bone Artifacts, J. Homer Thiel; Shell and Ground Stone Jewelry, Arthur W. Vokes; Wooden Objects, Alan Ferg.

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Red ware effigy from the Tonto Creek Archaeological Project (TCAP).

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Archaeology Southwest

is the new name for our expanded quarterly publication. The first issue under this title will review evidence for the arrival of maize, initially domesticated in central Mexico, to the Greater Southwest. It will be mailed in January of 1999.

Archaeology in Tucson will continue as the name for the Center's public involvement program. Activities in 1999 will include excavations along the San Pedro River and at the Tucson Presidio.

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