

ARCHAEOLOGY IN TUCSON

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First Results from Recent Excavations Near the I-10/Miracle Mile Interchange

Early Village Life on the Santa Cruz River

By Jonathan B. Mabry and Jeffery J. Clark
Desert Archaeology, Inc.

Buried Villages of the First Tucsonans. Last summer, drivers hurtling through Tucson on Interstate 10 may not have noticed the teams of archaeologists working on both sides of the highway near the Miracle Mile interchange. Meanwhile, the archaeologists, accustomed to digging in more remote settings, could never escape the constant noise of cars and trucks zooming by. But their attention was focused on the remnants of two prehistoric villages they had found in the path of a highway improvement project.

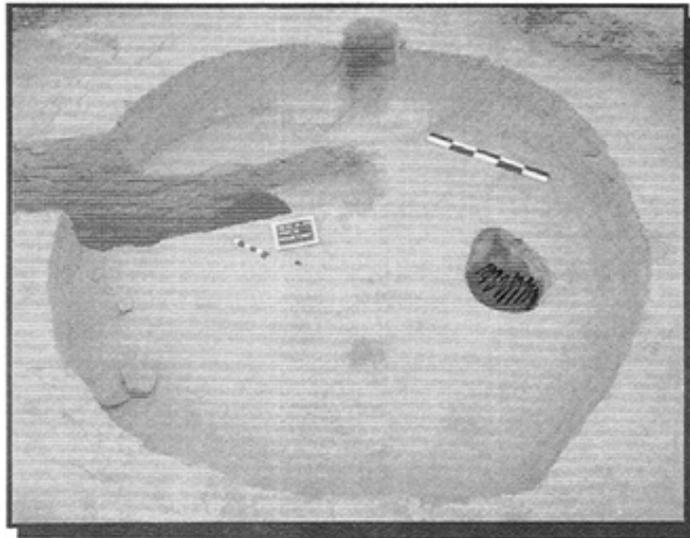
The Arizona Department of Transportation, complying with federal and state laws protecting important cultural resources impacted by construction, funded the work by Desert Archaeology in advance of construction. But the work was pressured both by the approaching construction crews and by the unusual significance of the sites. After being buried for centuries, evidence of important cultural changes during the prehistory of the Southwest was being brought to light.

Few traces of these sites were on the surface along the Santa Cruz River, but their presence below was suspected on the basis of previous discoveries in the vicinity. Therefore, it was no surprise when backhoe trenches exposed ancient cultural materials more than three feet deep. The archaeologists knew that the largest concentration of known prehistoric sites in the Tucson Basin was on ancient terraces above the Santa Cruz, and that many more sites lay buried, out of sight, in this lowest terrace. What they did not anticipate was the discovery of two of the earliest prehistoric settlements along the river.

Occupied between about 400 B.C. and AD. 200, according to the first radiocarbon and archaeomagnetic dates obtained, these sites shed new light on a period of revolutionary cultural transformations that included the adoption of agriculture, the establishment of permanent villages, and the first use of pottery—centuries before the Hohokam culture developed. Living here through most or all of the year, the residents of

these villages can be considered some of the first Tucsonans.

On the west side of the I-10/Miracle Mile interchange is the Vacas Muertas site, AA:12:746 (ASM), which includes at least 13 oval pithouses, numerous storage pits, several rockfilled roasting pits, and a few trash piles. Artifacts that were recovered include shaped as well as unshaped grinding stones, small corner-notched projectile points, and abundant animal bones



A circular pithouse at the early ceramic period Square Hearth site, with interior pits and grinding slabs on the floor. A plastered square hearth is just inside the entrance, on the edge of the backhoe trench.

and charred maize (corn) remains. This site appears to be a typical pithouse village of the Late Archaic period, called the "San Pedro stage" of the Cochise culture in southeastern Arizona. In the Tucson Basin, these early villages were established along the Santa Cruz River and its major tributaries between about 1000 B.C. and AD. 200. The first radiocarbon dates of charred maize from Vacas Muertas, along with a single archaeomagnetic assay of a pithouse floor of fire-hardened mud, indicate that the site was occupied during the middle of this period, between 400 and 225 B.C.

Two later occupations, one dating to the earliest period of pottery-making in southern Arizona and the other to a later Hohokam period, are represented at the Square Hearth site, AA:12:745 (ASM), located just across the highway from Vacas Muertas, on the east side of the Miracle Mile interchange. The earliest phase of occupation at Square Hearth is represented by three to four circular pithouses with columned entries and square, plastered hearths, plus storage pits, roasting pits, flexed burials, a cremated burial, and plainware pottery. The first two radiocarbon dates indicate the early pottery was in use at Square Hearth between AD. 50 and 200, a time when most other nearby settlements did not yet use ceramic vessels.

The Prehistoric Floodplain Environment. The buried contexts of these early village sites indicate that when they were occupied, both the river and the riparian zone were very different from the way they are now. When we look at its



A plastered hearth in a pithouse at the Square Hearth site.

deep, dry channel today, it is hard to imagine that the Santa Cruz River once flowed year-round through the Tucson Basin. Only when the runoff from a seasonal storm briefly surges between its banks are we able to believe 100-year-old photographs, written descriptions, and elders' memories of a tree-lined river snaking across a wide, unincised floodplain lined with irrigated fields of wheat, alfalfa, cotton, and vegetables.

These same sources tell us that at the turn of the last century, a combination of poorly designed irrigation ditches, a falling water table, and a series of large floods resulted in the occasionally flooded, gravel-bottomed trench that is the Santa Cruz River today. Geologists, on the other hand, tell us that this late 1800s-early 1900s downcutting episode was only the most recent of many that occurred during the life of the river.

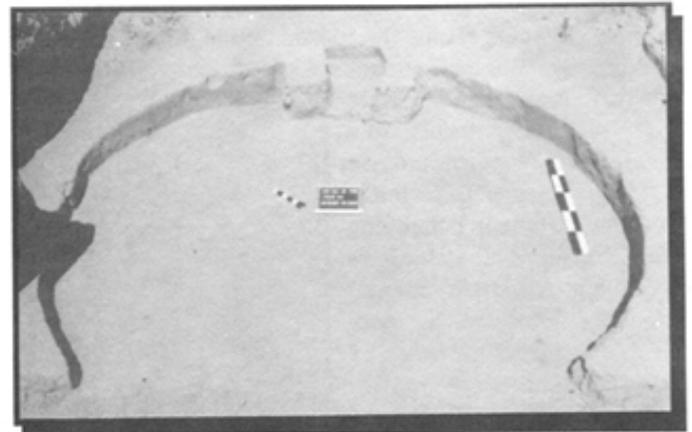
A series of four terraces representing former floodplains rises like a staircase above the present bed of the Santa Cruz River in the Tucson area. A thick, hard crust of caliche on the highest one suggests it was formed up to two million years ago, while the degree of development of a caliche horizon 8 feet below the surface of the third-highest one indicates that it was at floodplain level at the peak of the last Ice Age, 18,000 years ago. Prehistoric and historical artifacts and occupation sites contained in the layered sediments of the fourth, lowest terrace show that it was formed between about 5,500 and 100 years ago. This represents the historical floodplain of the river. Yet, its alternating layers of sand, silt, and clay record at

"When we look at its deep, dry channel today, it is hard to imagine that the Santa Cruz River once flowed year-round through the Tucson Basin."

least five major phases of deposition during that span, separated by four erosional events. The timespan of each depositional phase is bracketed by a combination of buried archaeological materials, the lengths of time necessary to form soils and carbonate horizons, and almost 100 radiocarbon dates on charcoal, caliche horizons, and other organic materials.

Buried within this lowest terrace of the Santa Cruz River and its major tributaries have been found the traces of some of the earliest agricultural settlements in the Southwest, occupied between 3,000 and 1,800 years ago. In the Tucson Basin, sites

of the same age have also been found buried in alluvial fans deposited by minor tributaries draining mountain canyons. Geological evidence from these sites within alluvial sediments indicate that floodplains and fans were actively flooding and building up during that period. This has recently led some archaeologists to argue (in contradiction to an older theory) that agriculture spread from Mexico into the Southwest along the valleys of the Sonoran Desert, where rivers and streams reliably flooded, rather than along the mountain ranges, where rainfall alone was adequate for farming. The moist, finegrained soils of lowland floodplains and fans were the optimal places for plant cultivation, explaining why the earliest agricultural villages were established in those settings during a regional cycle of deposition.



A circular pithouse at the Square Hearth site, showing plastered columns flanking the entry and a plastered square hearth just inside.

Most of these early agricultural village sites are buried within silts deposited by overbank floods, while the thick, clayey soils that underlie or cover other sites of this period resemble soils in the few surviving *ciénegas* in southern Arizona—grassy meadows with thick stands of mesquite trees that are found along stretches of rivers with permanent flows or high water tables. In addition to their topographic locations and the characteristics of their geological contexts, the floral and faunal remains preserved at these sites also point to a wetter riverine environment than today. Preserved pollen and charred seeds of moisture-loving weeds; charcoal of riparian plants such as reed, cattail, willow, cottonwood, and mesquite; and shells of snails and freshwater clams show that the wellwatered floodplain was a resource-rich oasis during that time.

Mixed Farming and Foraging Strategies. The subsistence evidence found at the early village sites near the Miracle Mile interchange reflect diverse, nutritious diets based on a combination of farming, collecting, and hunting. The food scraps and byproducts recovered from the Vacas Muertas site included shells of river mollusks; bones of rabbits and deer; charred maize kernels; and burned seeds of edible weeds, mesquite, and cactuses such as hedgehog, prickly pear, cholla, and

saguaro. Charred maize kernels and mesquite seeds were also identified in an initial scan of samples from the Square Hearth site, while rabbit bones predominate in the collection of animal bones.

"With the shift to sedentary settlement, people were bringing resources to their permanent location, rather than moving to them as they became seasonally available . . . archaeologists have identified this as a critical step in the direction of more complex social organization."

Based on these initial findings, and evidence from other recently excavated sites in southern Arizona, a picture of subsistence strategies during the late preceramic and early ceramic periods is beginning to come into focus. Maize (and possibly beans and squash) was cultivated on floodplains and alluvial fans during the summer months. Amaranth, goosefoot, purslane, tomatillo, and a variety of other weeds with edible seeds and/or greens were tolerated or encouraged in and around fields, and collected from other parts of the floodplain.

During the late summer and early fall, grass seeds and mesquite pods were gathered from thick stands growing along watercourses, and cactus fruits were collected from the terraces and bajadas above the floodplains to supplement their diet. In the spring, tansy mustard seeds (probably used as a spice) were also gathered from washes, terraces, and bajadas. Throughout the year, animals were hunted and trapped in their different habitat zones: jack rabbits and cottontails in the desert, deer and antelope in the valley grasslands, and bighorn sheep in the scrub-covered foothills of the mountains.

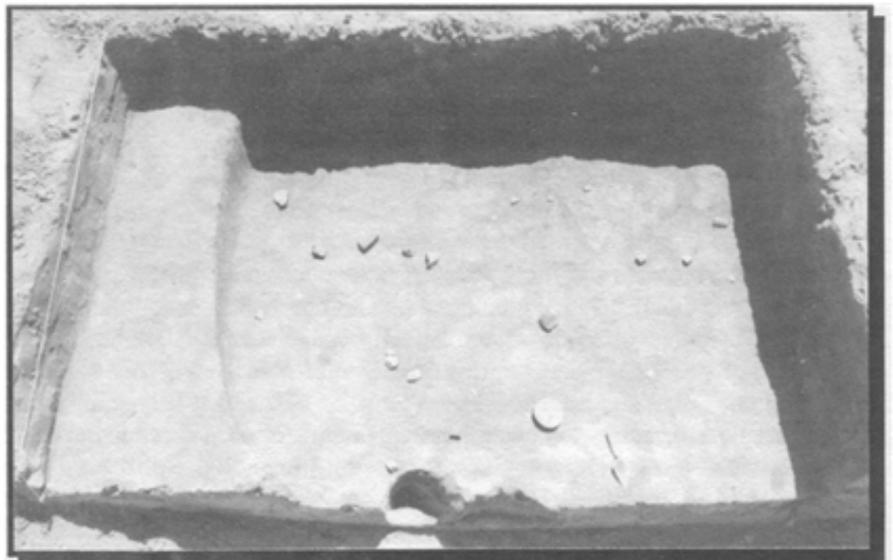
Maize remains are often found in sediment samples from sites dating to these periods, suggesting that people became dependent on cultivated plant foods soon after the arrival of agriculture in the region. Maize ears and seeds of other plants were stored in large pits, both inside and outside pithouses, to last through the lean winter months. Storage of food surpluses may have allowed at least portions of communities to stay in their riverside villages year-round. With the shift to sedentary settlement, people were bringing resources to their permanent location, rather than moving to them as they became seasonally available. In the Southwest and in other regions of the world, archaeologists have identified this as a critical step in the direction of more complex social organization.

Early House Styles and Village Layouts. Most of the oval pithouses at Vacas Muertas have interior storage pits, and at least one has a plastered floor. In southern Arizona, the few excavated Late Archaic village sites in riverine settings typically have clusters of between 5 and 15 pithouses, each circular to oval in shape, between 8 and 12 feet in diameter, and 10 to 14 inches deep. Many have interior storage pits with bellshaped cross sections, and a few have mud floors that were hardened by fire. Interior hearths are also common but are not plastered. In some houses, fragments of burned mud used in construction and inward-angling postholes have been found near the walls, suggesting these structures had dome-like roofs made of frameworks of poles covered with brush and mud.

At these Late Archaic sites, the spatial patterns of houses, pits, use-surfaces, burials, and other features indicate relatively long-term occupations and regular village layouts. Usually associated with the clusters of pithouses are outdoor storage pits, rock-filled roasting pits, and, at some sites, discrete cemetery areas. Most burials are found in tightly flexed positions, usually on their side, although a few bodies were interred on their backs or in sitting positions. Extended skeletons, cremations, and multiple graves are less common. Extensive trash lenses, rather than localized trash piles, suggest trash was not disposed in the same places over time.

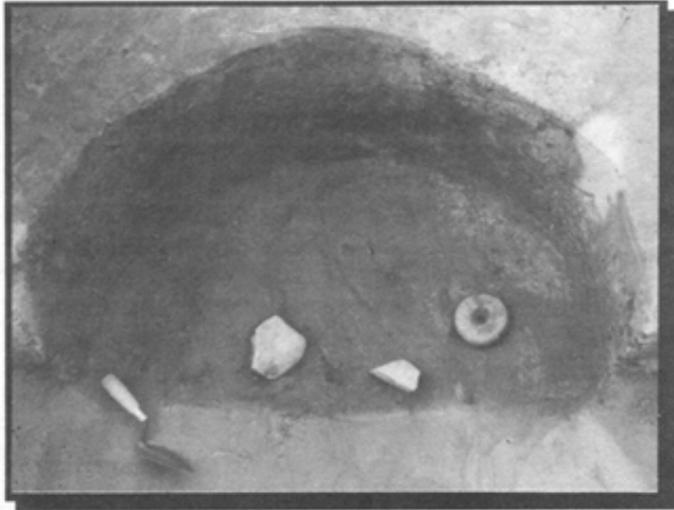
The pithouses found at the Square Hearth site are distinctly different from earlier houses of the Late Archaic period, and from those of the later Hohokam architectural tradition. At this site, three to four circular pithouses and one rectangular one were found, all with square, plastered hearths and adobe pillars just inside east-facing entrances (or ventilation shafts). The circular pithouses averaged about 12 feet in diameter and 2 feet deep, while the rectangular house measured about 12 feet wide by 14 feet long, and 2 feet deep.

A large circular structure and rectangular pithouses with rounded comers, all dating to the later part of the early ceramic



Part of a Late Archaic pithouse at the Vacas Muertas site, showing ground stone manos, chipped stone cores and flakes, and a shell bead on the floor.

period, were recently found at the Houghton Road archaeological site in the eastern Tucson Basin, at the confluence of the Agua Caliente and Tanque Verde washes. However, discovery of several circular pithouses with square-shaped fire



Half of a pit in the floor of a pithouse at the Vacas Muertas site, showing two chipped stone cores, a ground stone "donut stone," and an obsidian projectile point in the bottom.

places makes the Square Hearth site different from any site local archaeologists have dug before. A number of roasting pits—including a large one lined with flat river cobbles—were found in open areas near the pithouses. A small cemetery discovered at Square Hearth contained two burials and a skeleton that had been cremated in place.

Tools of Stone and Bone. The tools of these early villagers were adapted to meet the needs of their mixed foraging and fanning economy. Rabbits, deer, and other game were hunted with long darts that were probably propelled by spear-throwers. At both sites near Miracle Mile were found small, triangular, comer-notched projectile points made from chipped stone, examples of the "Cienega" point type that has been found at other late preceramic and early ceramic period sites in southern Arizona. A Cienega point recovered from the Vacas Muertas site was made of obsidian—a black volcanic glass normally found in only a few distant places in Arizona, New Mexico, and Mexico. In addition to the projectile points made by bifacial (two-sided) flaking, at both sites were found unifacially flaked scrapers, bifacially flaked knives, hammers, tones, small flakes of stone tool manufacturing debris, and rock cores from which the flakes had been struck.

A variety of grinding and pounding implements found at these two sites, mostly river cobbles shaped by use or by grinding against other stones, indicate that maize kernels and wild plant seeds were processed into flours or pastes for easier cooking and eating. Unshaped grinding slabs ("metates") and handstones ("manos") and rectangular and disk-shaped handstones were found on pithouse floors and in indoor storage

pits. Stone pestles and palettes with red-colored stains evidently were used to prepare pigments from hematite and other minerals. At the Vacas Muertas site, an unusual ground stone disk, drilled through after shaping, was found in a floor pit next to the obsidian projectile point. Only a few other examples of these "donut stones" have been found at other Late Archaic sites in southern Arizona, and their function is still unknown. The considerable amount of time required to make them must have made them highly prized, however.

In addition to chipped and ground stone tools, sharply pointed awls made from deer leg bones were also found at both sites. Shaped by grinding and polishing, these awls were probably used to pierce animal hides so they could be stitched together with sinew or plant fibers, or in basketmaking. It is likely that other tools were made of wood, but, like the baskets of woven grasses and plant fibers that were probably used, they have long since decayed.

The First Pottery? The Vacas Muertas and Square Hearth sites appear to span the transition from the preceramic to ceramic periods of Southwestern prehistory. Familiarity with clay-firing technology in late preceramic time is represented by some fired-clay figurines that were found at a few other Late Archaic sites in southern Arizona. They have not yet been recovered from the Vacas Muertas site, but three fragments of fired-clay human figurines were found at the Square Hearth site. Plainware pottery was also found in undisturbed contexts in the pithouses and other features at the latter site. These are fragments of thin-walled, undecorated, neckless "seed jars" and outcurved bowls made from a brown clay with fine granite temper (probably from the southern foothills of the Santa Catalina Mountains), formed by coiling and finished by either the pinching or paddle-and-anvil technique.

". . . discovery of several circular pithouses with square-shaped fireplaces makes the Square Hearth site different from any site local archaeologists have dug before."

The pottery sherds found at the Square Hearth site are associated with two radiocarbon dates of A.D. 40 and 190. If further radiocarbon dates fall within the same range, then the pottery used at this site was among the earliest in southern Arizona and the entire Southwest. Perhaps the earliest is a crude type of "proto-pottery" tempered with organic fibers, found recently at the Coffee Camp site in the Santa Cruz Flats north of the Tucson Basin. These are associated with two radiocarbon dates of about 100 and 50 B.C., which fall between the late preceramic occupation at the Vacas Muertas site and the early ceramic occupation at the Square Hearth site.

Sherds of well-made plainwares similar to pottery at the Square Hearth site have been found at several other Arizona

sites: at Pueblo Patricio in downtown Phoenix, where a pit-house was radiocarbon-dated to about 60 B.C.; at La Escuela Cuba, a site in the lower Verde River valley that yielded three radiocarbon dates ranging between A.D. 50 and 170; at the site of El Arbolito in the Tucson Basin, with four associated radiocarbon dates ranging between A.D. 250 and 560; and at the Eagle Ridge site in the Tonto Basin, from which were obtained nine radiocarbon dates that range from A.D. 150 to 550.

"We now know that sedentary or semisedentary villages, whose subsistence was largely based on agriculture, flourished in the valleys of the Sonoran Desert by about 1000 B.C., and that pottery was manufactured here before the first century A.D."

Two new ideas about the beginning of pottery use in southern Arizona emerge from these recent discoveries at the Square Hearth site and other sites with early pottery. First, experiments with pottery-making may have been conducted in this region during the last centuries B.C. Fiber-tempered pottery was the first type made in many parts of the world, so discovery of this kind of ware just north of Tucson shows pottery was an indigenous invention, not a well-developed technology introduced to southern Arizona from Mexico (where pottery was made as early as 2000 B.C.). Second, it appears that a plainware ceramic tradition developed in southern Arizona by the first century A.D., before redware was made here. Accordingly, pottery decorated with a red slip—once thought to be the first kind made in the Tucson area—may in fact be the hallmark of the second phase of the early ceramic period—the recently recognized "Tortolita phase" that is thought to date between about A.D. 450 and 650.

Craft Production and Trade Networks. A variety of exotic artifacts found at the sites near the Miracle Mile interchange imply the development of long-distance networks of exchange centuries before the famous Hohokam trading system developed. The obsidian and other nonlocal types of stone used for chipped stone tools at the Miracle Mile sites could only have been obtained through special expeditions or "down-the-line" exchange from one village to another.

Along with the obsidian artifacts, an unfinished turquoise bead from the Square Hearth site may represent early ceramic period trade links with places as far away as northern New Mexico or Nevada. Shells brought from the Pacific Ocean and the Gulf of California to both the Vacas Muertas and Square Hearth sites were shaped and drilled to make beads and bracelets. The manufacture of turquoise and shell jewelry was one of the first recognizable craft industries in southern Arizona.

A New View of Prehistory. With a number of discoveries during the last decade, archaeologists' understanding of the timing and circumstances of the adoption of agriculture, the establishment of permanent villages, and the beginning of pottery use in the Southwest have changed dramatically. Ten years ago, all three of these important cultural developments were thought to have occurred between about A.D. 200 and 450, the first two in the mountain highlands. We now know that sedentary or semisedentary villages, whose subsistence was largely based on agriculture, flourished in the valleys of the Sonoran Desert by about 1000 B.C., and that pottery was manufactured here before the first century A.D.

The links between the preceramic and early ceramic cultures of southern Arizona are not yet well understood, however. Many aspects of material culture, such as chipped and ground stone tools, bone implements, shell jewelry, fired-clay figurines, storage pits, subsistence remains, and rock art, suggest uninterrupted cultural development between the two periods. But the very different architectural traditions, the new burial practices, and the apparently sudden appearance of well-made pottery during the early ceramic period suggest instead that there were sudden local cultural changes or perhaps even the arrival of a new cultural group. The recent discovery near Tucson of circular pithouses, fiber-tempered "protoceramics," and cremations at the Coffee Camp site, which dates between the occupation of the Vacas Muertas site and the Square Hearth site, supports the former interpretation.

This spring, archaeologists will return to the Late Archaic site of Vacas Muertas on the west side of the Miracle Mile interchange to excavate the pithouses and other features. They will expose the plan of the settlement and recover larger samples of artifacts, plant and animal remains, and organic materials for more radiocarbon dates. The analyses of artifacts, architecture, and food remains from both the Vacas Muertas site and from last summer's excavation at the Square Hearth site will be carried out together, and the results summarized in a single report. The new information gained from these first large-scale excavations of early village sites on the Santa Cruz River may significantly sharpen our picture of this critical period in the prehistory of southern Arizona and the Southwest, and should allow us to reconstruct some details of the everyday life of the first Tucsonans.

Acknowledgments. The archaeological work at the sites near the Miracle Mile interchange is sponsored by the Arizona Department of Transportation and is coordinated by Larry Maucher of ADOT's Tucson office, by ADOT archaeologists Bettina Rosenberg and C. Marshall Hoffman, and by Priscilla Cornelio and Jay Van Echo of Parsons Brinckerhoff Quade & Douglas, Inc. Contacts with the news media are managed by Nanette Kaneen of Kaneen Advertising and Public Relations. During the preparation of this manuscript, the authors benefitted from comments by, and conversations with, some of the leading researchers of this period of prehistory in southern Arizona: Suzanne Fish, Jim Heidke, Bruce Huckell, Lisa Huckell, and Barb Roth.

Southern Arizona Archaeology Current Events on the Archaeology Scene

Cultural & Environmental Systems, Inc. (Tucson) recently completed a 4,500-acre survey for ASARCO, Inc. in the Gila River valley west of Winkelman on federal land that the Bureau of Land Management is considering for exchange to ASARCO near the Ray Mine. This survey has resulted in identification of 20 archaeological sites. C&ES anticipates doing excavations at some of these sites early this year. ASARCO is also expected to sponsor archaeological excavations and other data recovery by C&ES at four Hohokam sites and two historical sites on Arizona State Trust land in the same vicinity later this year.

The Hohokam sites include a chipped stone quarry and agricultural rock-pile field area of more than 24 acres, another rock-pile field area, a pictograph locality associated with a midden, and a small cave with very few cultural materials apparent. The historical sites are a ranch or homestead and a smaller site probably associated with the ranch site.

Desert Archaeology, Inc. (Tucson) conducted an emergency excavation program for the City of Tucson water department in December after excavation of a new water main trench exposed buried prehistoric cultural features within AZ AA:16:3 (ASM), a large prehistoric Hohokam village known as the "West Branch" site. Within a 970-foot segment of the trench northwest of

the Irvington/Mission roads intersection, 8 Hohokam pithouses and 16 other features of the early through late Rincon phase were recorded and at least partly excavated by the archaeologists before the trench was refilled. A study of the cultural materials found during this effort is now under way.

Much of the archaeological research by **Statistical Research, Inc.** (Tucson) during the past year has concentrated on the middle San Pedro River valley/Fort Huachuca area in south-eastern Arizona. In a survey of over 30,000 acres at Fort Huachuca, SRI has recorded some 300 archaeological sites. The company's work for the U.S.

Army there includes preparation of a historic preservation plan for the base; a historical archaeology and archival study of the Apache scouts who were posted there from 1880 to 1948; analysis of archaeological materials the Arizona State Museum collected in 1964 and 1991, respectively, from the Garden Canyon site, a PreclassicClassic period settlement; and coming up soon, archaeological test excavations at the early twentieth century "Slash Z" Ranch on the East Range of the post. Along the middle San Pedro Valley just east of Fort Huachuca, SRI is also conducting a separate multiyear archaeological survey that includes re-examination of sites recorded by the Arizona State Museum in the 1960s, with assistance from avocational archaeologists.

SWCA, Inc. Environmental Consultants (Tucson) recently completed a seven-week archaeological excavation supported by the Perini Land Development Company at the Gibbon Springs site in the northeastern Tucson Basin. Excavat-

Explore the Past During Arizona Archaeology Month!

You're invited to *Explore the Past!* during Arizona Archaeology Month: March 1994. Arizona's multicultural heritage and unique ancient cultures are the focus of this celebration, and over 100 events and activities are planned across the state (most of them free). Proclaimed by the Governor, this 12th annual celebration features plenty of archaeological site tours, exhibits, open houses, lectures, and other activities in every area of Arizona.

The feature event for Arizona Archaeology Month is the state's annual *Archaeology Fair* at the Clemenceau museum, located at the corner of Mingus and Willard streets in Cottonwood (between Phoenix and Flagstaff; from I-17, take the State Route 279 exit to Cottonwood and follow the signs to the Museum). The Fair will be held from 9 to 4 on Saturday and Sunday, March 19 and 20. Admission to the Fair and Museum is free that weekend. The Archaeology Fair offers many attractions for archaeology buffs, including:

- guided tours of Verde Valley archaeological sites;
- special booths and displays by archaeological organizations, museums, Native American Tribes, and others; and
- demonstrations of prehistoric crafts such as pottery-making, basketry, stone tool manufacture, shell jewelry production, and prehistoric plant use.

Many exhibits will include hands-on activities for children (and for grown-up kids). Guided tours of the Museum and special lectures will give visitors new insights into Arizona's many prehistoric and historic cultures.

For a free *Arizona Archaeology Month Calendar of Events*, write or call Ann Howard at the State Historic Preservation Office, 1300 W. Washington, Phoenix AZ 85007 (602-542-7138 or 542-4009), or call Christine Beard with the Coconino National Forest in Flagstaff (602-527-3475).

ed features of the site's early Tanque Verde phase (prehistoric) occupation included four structures (both pithouses and semi-subterranean adobe-walled houses) inside a large compound, as well as four other house clusters. Of the 25 total structures, even the obviously pot-hunted ones yielded scientifically valuable

architectural data and artifact assemblages. In some features were found charred beans, maize, and seeds that may be from amaranth plants. An abundance of corrugated pottery suggests ties with areas to the east of the Tucson Basin, where that kind of ceramic ware is more common. In addition to the prehistoric archaeological materials, two historical house ruins were identified during the Gibbon Springs project.

SWCA also has completed a survey for the Salt River Project along 257 miles of existing transmission lines that traverse central Arizona's middle Gila and Salt rivers, the Pinal and Queen Creek drainages, and parts of the Tonto Basin. Archaeological site record-searches of two-mile-wide swaths centered on each power line revealed that more than 500 sites were known in and near the project area previously. However, another 79 sites were identified during SWCA's survey, and a number of the already-known sites were re-evaluated. The sites include Archaic period stone artifact scatters; Hohokam sites ranging from field houses to pithouse villages to a canal; Salado settlements including small pueblos inside compound walls; and field houses, agricultural loci, rockshelters, and historical Euro-American sites including mining camps, the historic Apache Trail, and a townsite.

The Center for Desert Archaeology's Lower San Pedro Volunteer Survey

As our faithful readers know, since 1990, the Center for Desert Archaeology has been sponsoring a continuing search for previously unrecorded archaeological sites in the lower San Pedro River valley, which is east of Tucson. This effort not only gives us new information about the prehistory of a Southwestern region that has not received much attention from archaeologists previously, but it also provides fieldwork opportunities for members of the *Archaeology in Tucson* program.

This past fall, under the direction of archaeologist Jim Bayman, the "Lower San Pedro" survey ranged south from the modern village of Cascabel toward the well-known archaeological site called Tres Alamos, where excavations were done in 1940-42 by Carr Tuthill of the Amerind Foundation in Dragoon, Arizona. Prehistoric archaeological sites discovered this fall included 1 probable pithouse site; 4 "field house" sites where traces of small structures were indicated by straight alignments of stone that formed corners; 18 ancient agricultural fields identifiable by the presence of numerous rock piles and stone alignments; 4 locations with apparently prehistoric rock circles; and 19 sites where prehistoric pottery, chipped stone, and ground stone artifacts were scattered on the ground with no associated cultural features visible. Also found were two archaeological sites of the historical period: an adobe building and its associated artifacts that date between ca. 1890 and 1950, and a cemetery that apparently is no longer in use.

(continued on page 8)



Desert Archaeology TOURS



--Spirits of the Past--
A Glimpse at Arizona's Prehistoric Societies

Romero Ruin Tour

Within the confines of Catalina State Park, this large ruin lies at the crossroads of four great cultures beginning with Archaic hunters, through 900 years of Hohokam farmers, to rough-and-ready Mexican cattle ranchers struggling for their lives against raiding Apache warriors. **Half Day**

Rock Art Tour

Visit fascinating petroglyph sites near Tucson and view ancient works of art pecked long ago into rock outcroppings and canyon walls by Indian artists. Learn some theories on their meaning. **Half Day**

Full-Day Ruins & Rock Art Tour

The Romero Ruin Tour and the Rock Art Tour can be combined for a full-day tour that includes a box lunch.

Tour Guide

Most tours are led by Connie Allen-Bacon, archaeologist and tour director for the Center for Desert Archaeology. Connie has 25 years of active involvement in public archaeology in Arizona, Arkansas, and Kansas, ranging from digging to recording rock art to protecting ancient sites from vandalism. For your comfort and safety, wear long sleeves and a hat. Also wear shoes with ankle support and good traction. Some climbing is involved. Water will be provided. Guide is trained in first aid only—if you have medical problems, consult us first.

Cost per person: Half day: \$35* Full day: \$60*

Special group rates available for 3 to 45 people.

* Includes required membership in Center for Desert Archaeology

Call for more information or reservations

(602) 881-2244



Center for Desert Archaeology

Archaeology in Tucson
3975 North Tucson Blvd.
Tucson, AZ 85716

ADDRESS CORRECTION REQUESTED



Tonka truck toy tire? No, it's a carved stone censer found on the floor of a Hohokam pithouse at the West Branch site in December (photo by Deborah Swartz).

If your address label indicates that your *Archaeology in Tucson* membership has expired, please renew promptly to remain eligible for all activities, newsletters, and discounts on T-shirts and Center for Desert Archaeology publications.

Continued from page 7

Lower San Pedro Volunteer Survey

During the upcoming Winter-Spring field season of the LSP survey, we expect to continue surveying the lands on both sides of the river southward to the town of Benson (beside Interstate 10). Our scheduled dates for the upcoming season of survey are shown below. If you'd like to volunteer for the Lower San Pedro project, please call 881-2244 to make reservations with Jim Bayman, as we can only take a limited number of people out on survey at a time!

LSP Survey Project Schedule for Winter-Spring 1994

January 22, Saturday	March 6, Sunday
February 6, Sunday	April 3, Sunday
February 19, Saturday	April 6, Saturday
May 1, Sunday	

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The Center for Desert Archaeology

is a nonprofit research and educational organization that specializes in the archaeology and history of desert regions. Our primary research focus is southern Arizona.

Archaeology in Tucson

is the Center for Desert Archaeology's membership program. Members receive the *Archaeology in Tucson* quarterly newsletter, discounts on the Center's publications and opportunities to participate in its archaeological projects, attend site tours, and come to archaeology lectures. Membership runs for one year from when dues are received.

For further information about the Center for Desert Archaeology or about the *Archaeology in Tucson* program, call us at 602-881-2244. For information on the *Archaeology in Tucson* newsletter specifically, please contact the editor, Allen Dart.

Archaeology in Tucson Annual Membership Categories and Rates

Individual.....	\$10	Contributing.....	\$50
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Archaeology in Tucson Membership Application

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