

Old Pueblo Archaeology

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The "Arts and Culture of the Prehistoric Hohokam Indians" Series Continues: Hohokam Textiles: Prehistoric Perishables Below the Plateau

by Lynn S. Teague

Arizona State Museum, University of Arizona

Because perishable artifacts are rarely preserved in the archaeological sites of southern Arizona, the surviving textiles of the ancient Hohokam culture are few in number. Nevertheless, those remaining few are very revealing. In their fabrics, as in other aspects of their lives, the Hohokam exhibit a fascinating combination of characteristics indigenous to the Sonoran Desert and the influence of the more sophisticated cultures of Mexico.

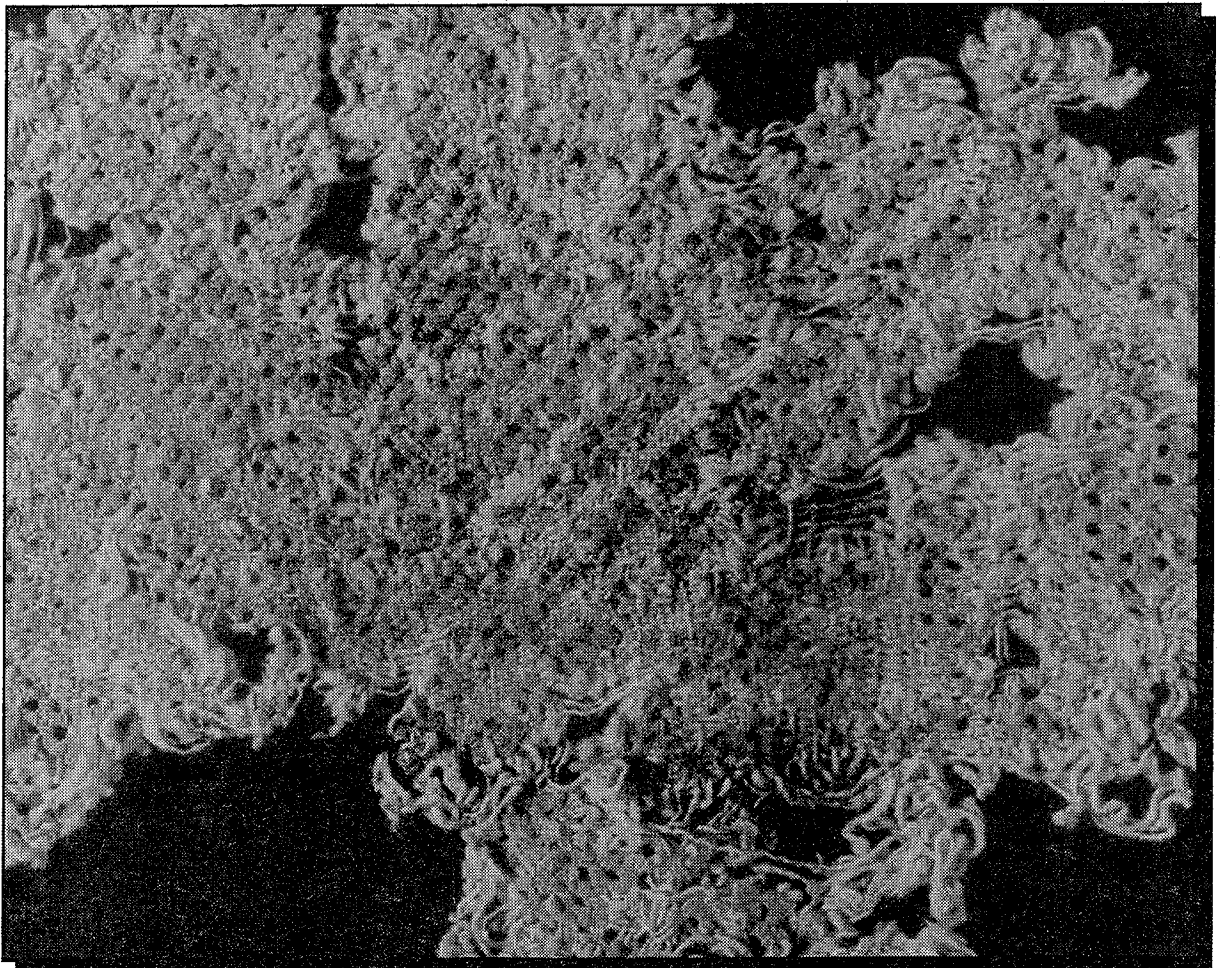
The First Fabrics.
The earliest Hohokam weavers doubtless made their fabrics from locally available wild plants such as yucca, milkweed, and Indian hemp, from their own hair or that of dogs, and from

feathers and rabbit fur, as did others in the Southwest. Many fabric types that continued in use throughout the Hohokam sequence surely date back to the Archaic period (pre-A.D. 150) and represent traditions with a long local

history.

Prehistoric southwesterners knew that by steaming or scraping the stems and leaves of local plants, long usable fibers could be isolated from the plant

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A decorative, lacy fabric well suited to the heat of the Sonoran Desert. Patterns seen on some of the few Hohokam textiles that have survived in Arizona's archaeological record exhibit patterns reminiscent of the Hohokam culture's better-known pots and petroglyphs. Photo courtesy of the Arizona State Museum, University of Arizona.

Another very rare kind of Hohokam artifact is featured in Marilen Pool's article inside -- see page 6

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Hohokam Textiles (continued from page 1)

gums and twisted into strong yarns and cordage. Knotted nets, looped fabrics, string skirts and simple braids were made from these. One of the most interesting early textiles used in clothing was the fur or feather blanket, twined from yarns that are made of yucca with rabbit fur or bird feathers on the exterior.

Cotton: The Fabric of Their Lives.

So far there is no evidence that the domesticated cotton, *Gossypium hirsutum*, made the journey north from its tropical homeland until about A.D. 700. It may have taken this long to breed a variety suited to the temperate climate of Arizona. The Hohokam were among the earliest in the Southwest to plant this most useful of tropical fibers.

Cotton has been found in Sweetwater phase (ca. A.D. 700) context at the famous Hohokam archaeological site of Snaketown, between Tucson and Phoenix. Only slightly later cotton occurrences are documented at the Grewe site (the Preclassic predecessor of Casa Grande Ruins) and at Los Guanacos on the Salt River. These finds suggest a relatively rapid transmission of the cotton plant from its tropical home in southern Mexico to the river valleys of the central Southwest.

Finished textiles that include cotton yarns have not been firmly dated to any period earlier than about A.D. 1-100 in Mesoamerica, and it is unlikely that significant levels of cotton cultivation occurred there before about 500 B.C. The plant had to undergo significant change to be grown in the temperate climate of southern and central Arizona and west-central New Mexico, losing its tropical habits in order to flower early enough to produce usable fiber and seed before frost. Once adapted to a temperate climate, however, the long growing season and abundant water of the Sonoran Desert's river valleys proved ideal for cotton cultivation, as farmers along the Santa Cruz, Gila, and Salt rivers continue to demonstrate today.

Textilemaking Tools: Spindles. With cotton came a necessary change in textile production technique. The usable fibers native to the Sonoran Desert are long and relatively coarse. Yucca, milkweed, or Indian hemp yarns could be made simply by twisting the processed fibers on the thigh, without any implements. This was not possible with the short fine fibers of the cotton plant. We can be sure that by the time the Hohokam were using cotton they were also using the hand-spindle to assist them in forming yarns. It is therefore not surprising that in the Southwest the earliest artifacts interpreted as spindle whorls are probably the perforated sherd disks (see photo below) recovered from Pioneer period (pre-A.D. 750) contexts at the site of Snaketown on the Gila River (see Emil Walter Haury's *The Hohokam: Desert Farmers and Craftsmen*, published by the University of Arizona Press, Tucson, 1976). Spindle whorls made from rounded and perforated pottery sherds would have been placed on a straight stick that was probably

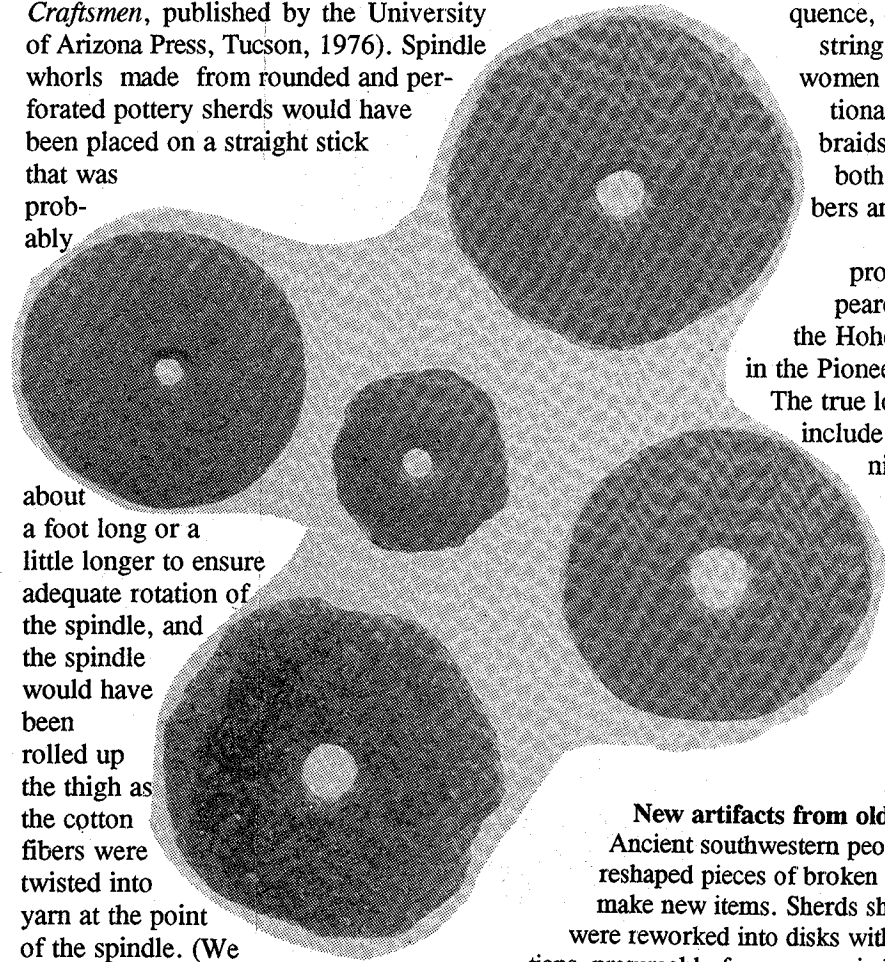
about a foot long or a little longer to ensure adequate rotation of the spindle, and the spindle would have been rolled up the thigh as the cotton fibers were twisted into yarn at the point of the spindle. (We actually do know that the Hohokam rolled the spindle up, rather than down,

the thigh because to reverse this motion reverses the twist in the yarn itself. Hohokam yarn, like other prehistoric cotton yarn throughout the Southwest, had a "Z" or counter-clockwise twist, in contrast to "S" or clockwise twist.)

Loops and Looms. Early southwestern makers of textiles used simple frames that lacked any mechanism to move threads about, or for many fabrics they simply held the yarns that they worked with or tied them to a branch. The textiles that they made were very similar to those still made today without a loom. Looped fabrics that resemble knitting or crochet, knotted netting, interlaced braids, and twined bags served a variety of purposes. Simple fabrics derived from these early antecedents are represented throughout the Hohokam se-

quence, especially string skirts for women and functional nets and braids, made in both native fibers and cotton.

The loom probably appeared among the Hohokam late in the Pioneer period. The true loom must include a mechanism to lift threads held under



New artifacts from old pottery. Ancient southwestern peoples often reshaped pieces of broken pottery to make new items. Sherds shown here were reworked into disks with perforations, presumably for use as spindle whorls -- flywheels attached to sticks used for spinning fibers into thread for textile making.

Hohokam Textiles (continued from page 2)

tension (warp threads) to permit the introduction of another groups of threads (weft threads), normally at a perpendicular angle to the first set. On very early looms the warp threads are usually held in place by nothing more elaborate than sticks at either end. Warp threads are moved up and down by a shed stick and by one or more sets of heddles on additional sticks. The loom mechanism lends itself especially well to the production of interlaced fabrics, in which the weft passes over and under warp threads at a perpendicular angle but does not link, twine, or wrap around the warp threads.

There has been considerable debate about the kind of loom that the Hohokam

used. The backstrap loom, horizontal loom, and vertical loom were all in use in various parts of the Greater Southwest at the time of Spanish contact. These loom types do not differ from one another in their thread-moving mechanism -- only in their framework. The vertical loom does not seem to have been used below the Colorado Plateau.

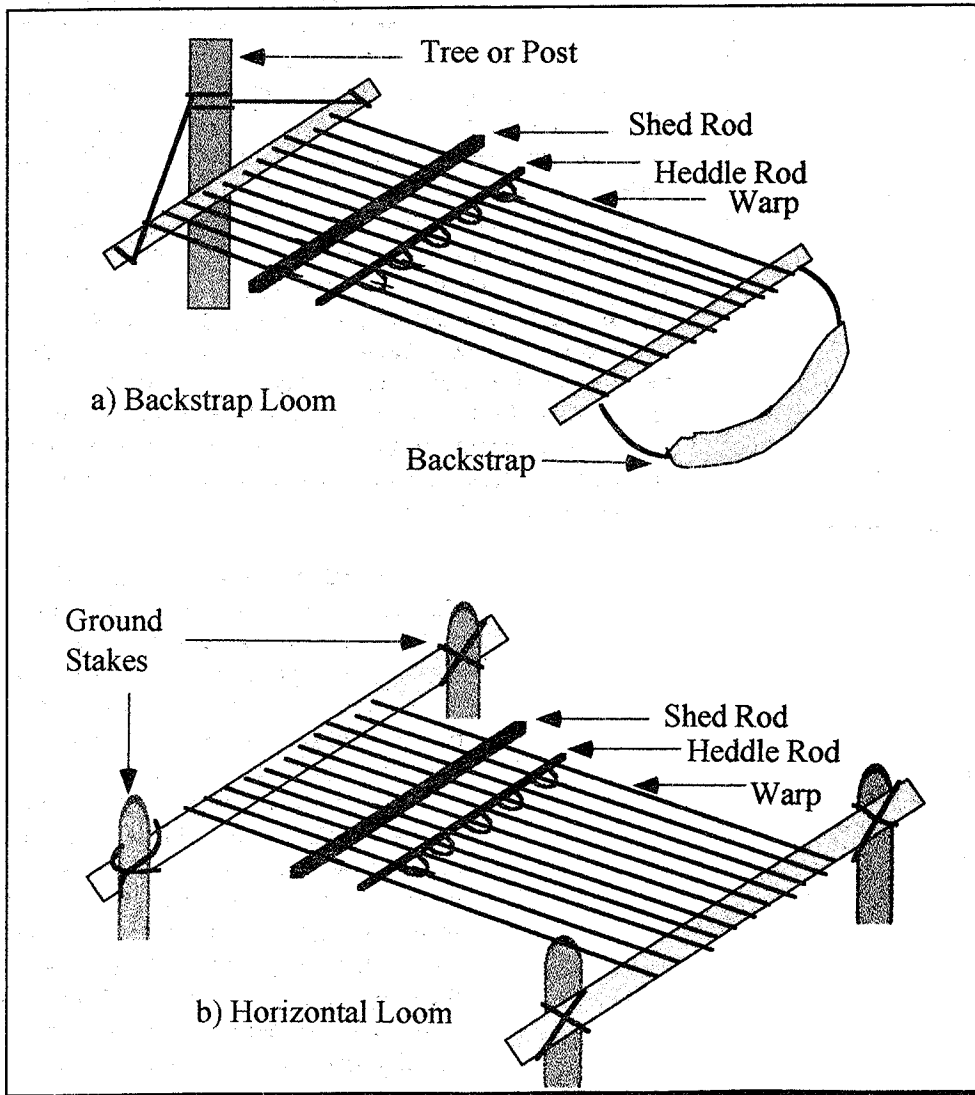
It is very likely that the backstrap loom (upper drawing, this page) was the first type introduced into the Hohokam area. In this kind of loom the warp stick farthest from the weaver is tied to a tree or post, while the stick nearest the weaver is held by a strap around the weaver's lower back. Simple movements back and

forward adjust the tension on the warp threads that are suspended between these two sticks. This is the characteristic loom of much of Mesoamerica.

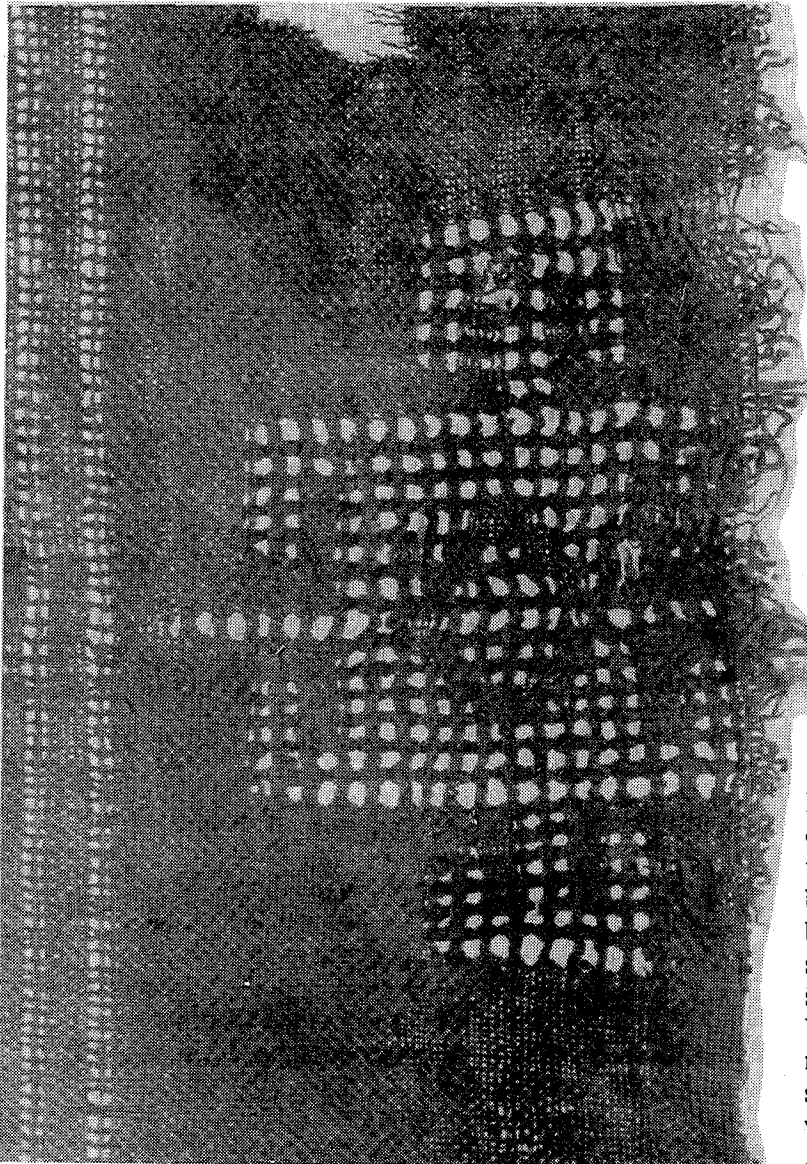
The early Hohokam probably also had another type of loom, however -- the horizontal loom (lower drawing). This would have been similar to those used by the O'odham (Pima, Tohono O'odham, and related groups) historically. A weaver using the horizontal loom has been depicted on a Mimbres Mogollon bowl illustrated on page 161 of J. J. Brody's *Mimbres Painted Pottery* book (School of American Research and University of New Mexico Press, Santa Fe and Albuquerque, 1977). It is unfortunate that the site from which this vessel was excavated is unknown, but it lends great credibility to the idea that the horizontal loom was in use in the central Southwest at least as early as the eleventh century. For the horizontal loom the two sticks or bars holding the warp threads were tied onto stakes that were pounded into the ground.

Warps and Weaves. What kinds of fabric did the Hohokam make with their looms? Many of the surviving specimens are plainweaves, interlaced textiles in which the weft thread moves in a regular progression over one and under one warp yarn across the width of the fabric. This is the simplest of interlaced textiles, and one of the most generally useful. Using this fabric structure the Hohokam produced soft white wearing blankets from their abundant cotton crops.

The Hohokam also made twills, which involve passing threads over groups of threads to produce diagonal interlacements. (Denim jeans are made from one very familiar kind of twill.) The Hohokam village site of Los Guanacos produced a very interesting twill specimen that is the earliest preserved example of this structure in the Southwest, probably dating to the eleventh century. It was woven in an irregular two-over and two-under twill, with alternating sets of two white and two brown threads in the warp but with varying numbers of wefts of each color, forming a distinctive plaid.



Ancient loom designs from Lynn S. Teague's *Textiles in Southwestern Prehistory* book.



Hohokam Textiles (continued from page 3)

It is a sophisticated and appealing fabric.

Arts in Old Lace. Some Hohokam fabrics are very decorative; lacey fabrics well-suited to the heat of the Sonoran Desert are common. Weft-wrapped open-work is especially lovely. In this structure the weft threads wrap around groups of warp threads to produce open spaces. These spaces could be arranged in vertical, horizontal or diagonal lines to produce the characteristic hooks and diamonds familiar in the Southwest's prehistoric pots and petroglyphs (see page 1 photo). The plainweave ground on which these patterns were worked was created through use of the heddles and shed stick, but the weft wrapping had to be done by hand.

The lovely cloth that was produced through this process was traded north onto the Colorado Plateau. It is likely that the Hohokam were responsible for most or even all of the specimens that have been recovered throughout the central and northern Southwest.

Another openwork structure that was made by the Hohokam was gauze, which involves crossing warp threads over one another and holding them in place with weft threads. The crossing of the warp threads could be produced by the use of an additional heddle stick or it could be done by hand. Among the Hohokam the only surviving examples show a straight line of openwork suggestive of the use of a special heddle arrangement, as in this page's example from Ventana Cave, where the gauze sets off the more complex motif worked in weft-wrapped openwork. Gauze is a rare structure in North America (although very common in the very sophisticated textile traditions of Andean South America) and like weft-wrap openwork would have been a very desirable trade item.

Above: Hohokam gauze fabric from Ventana Cave.



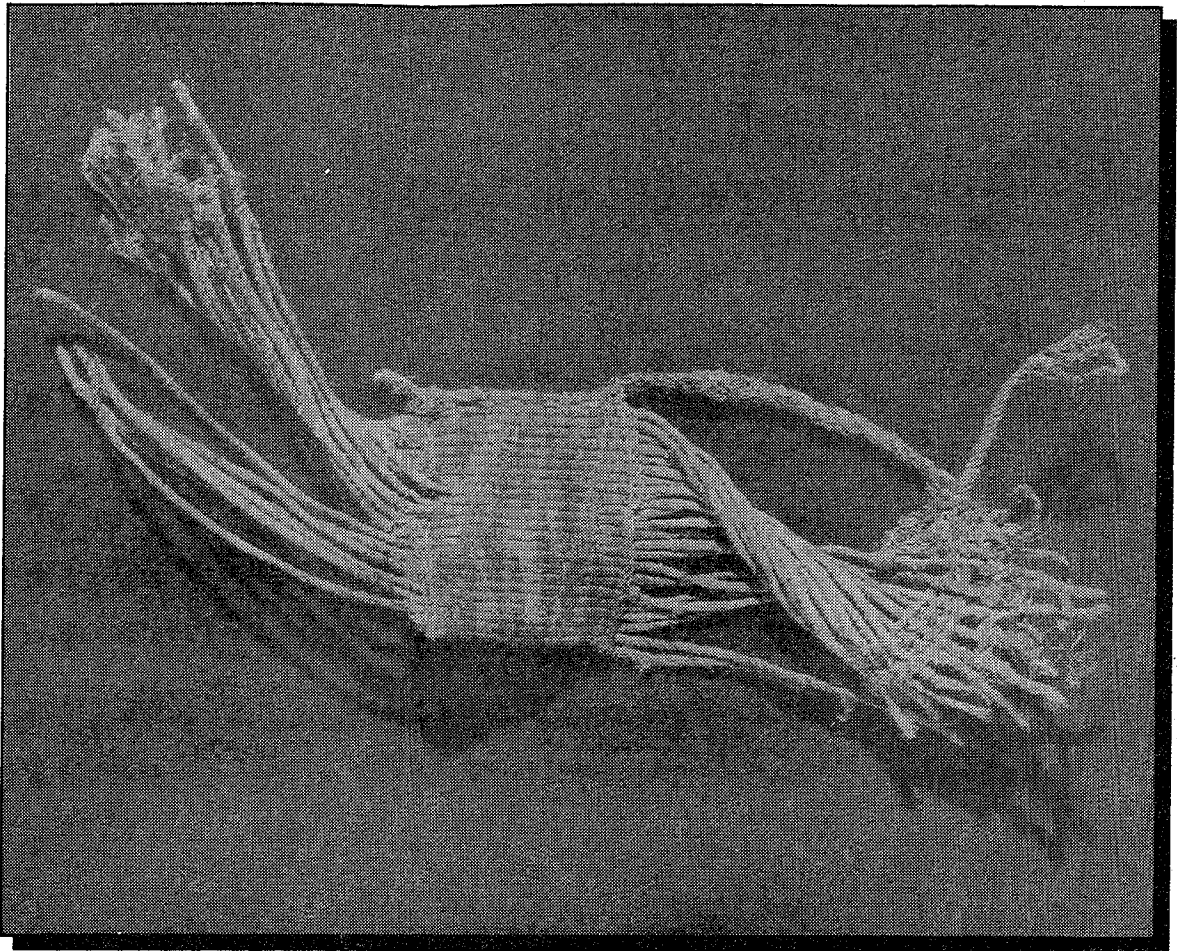
Hohokam modeled clay spindle whorls

Attractive Attire. What did the Hohokam wear? It is likely that on a daily basis Hohokam attire was very simple, perhaps loincloths for men and string skirts for women, with cotton blankets sheltering the wearer from chilly weather. However, we can also see in lacey openwork fabrics and other decorative cloth evidence that there were occasions when Hohokam dress was very lovely indeed. In combination with their shell and turquoise jewelry, accompanied by the tattooing suggested by some of their figurines, a group of Hohokam would have looked far different from the scantily clad farmers typically seen in museum exhibits.

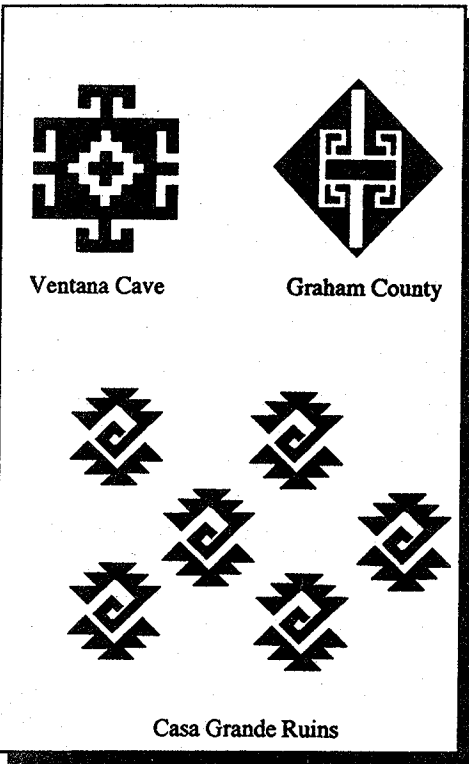
Hohokam Textiles
(continued from page 4)

Mexican Connections?

The fabrics of the Hohokam share with those from the west coast of Mexico a number of characteristics, including a tendency toward a relatively even balance in the density of warp and weft threads. In contrast, the cloth of inland Mexico typically had much greater densities of warp threads. During the eleventh century we see the appearance of modeled ceramic spindle whorls among the Hohokam (left photo). These whorls are associated with the Mexican vertically supported spinning technique rather than the southwestern thigh-supported version. The size of these modeled whorls suggests use to produce fine yarns (see *Textiles in Southwestern Prehistory* by Lynn S. Teague: University of



Miniature textile from Ventana Cave. A ceremonial fabric?



Some ancient Arizona art motifs

New Mexico Press, Albuquerque, 1998).

The use of twills, gauze and supplementary weft structures is also typical of both Hohokam and coastal Mexican fabrics. Adopting these relatively sophisticated textiles for their clothing may have permitted the Hohokam to more easily identify themselves with the powerful and wealthy people of Mesoamerican societies to their south.

Cigarette Sashes. Some of the most unusual and at the same time attractive Hohokam textiles were not made for clothing. These fabrics are tiny, only a few centimeters in each direction, but they are not fragments. Small plainweave and twill undyed cotton cloths were wrapped around reed cigarettes and have become known as "cigarette sashes."

Another cigarette sash, from a cave near Chandler, Arizona, is even more elaborate, having an extra or supple-

mentary weft thread that forms the pattern on a plainweave background. This fabric structure is technically quite different from the historical fabrics that are called "Hopi brocades," for which no prehistoric equivalents have been found. The Chandler fabric is structurally very similar to a form of embroidery, but the pattern yarn was added on the loom rather than after the fabric was woven, as is done in embroidery.

Ventana Cave, a southwestern Arizona archaeological site with evidence of human occupation dating back thousands of years, produced a more unusual fabric, twined with a design of diagonal diamonds (see photo above). This piece does not appear to be associated with reed cigarettes, but was nevertheless probably made for ceremonial uses. It is difficult to conceive of a utilitarian function for such an object.

(Concluded on page 6)

Hohokam Pseudo-Cloisonné to Mexican *Embutido* Lacquer: An Enduring Craft

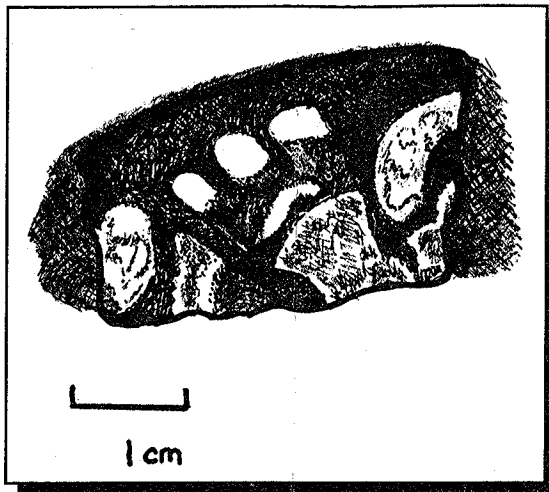
Marilen A. Pool

Arizona State Museum, University of Arizona

Discovering the Connection.

While working on the preservation of the Mexican lacquerware collection at the Arizona State Museum, University of Arizona, I made an interesting discovery. In reviewing an anthropological paper by Gordon F. Ekholm from the American Museum of Natural History, which discussed the excavation of paint or pseudo-cloisonné decorated gourds in Sinaloa, Mexico, there were references to other materials found throughout Central, South and North America. One of these included the Snaketown site of the Hohokam. With great anticipation I located the Snake-town artifacts from the Museum's collections and found several beautiful examples including one with original colors intact, illustrated on this page.

After observing the fragments closely under a stereo microscope I found that they were made with essentially the



Sandstone mosaic plaque fragment with pseudo-cloisonné decoration excavated from Snaketown circa 1934-1935. ASM Catalog No. GP45062. Drawing by Marilen A. Pool.

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same techniques as the *embutido* or inlaid style of lacquerware from Uruapan, Mexico. The waxy surface texture of the pseudo-cloisonné was also very similar to that of the Mexican lacquer.

Interestingly, the single example of this style of lacquerware in the Museum collection, a small platter with a floral pattern, shown on the next page, was purchased by Dr. Emil W. Haury on a trip to Mexico in the early 1940s. Dr. Haury very well may have noted the likeness between the lacquer plate and Hohokam pseudo-cloisonné pieces that were excavated from Snaketown in the 1930s.

The term pseudo-cloisonné has been used to define this style and technique of decoration since the 1920s, because of its similarity in appearance to enameled or cloisonné metal. The Spanish term *embutido*, which means inlaid, is perhaps a more appropriate description in terms of the technology applied.

The Craft of Pseudo-Cloisonné. The pseudo-cloisonné material began to appear in the Snaketown area from approxi-

mately A.D. 775 to 1150, and was most common during the Santa Cruz phase between AD 850 and 1000. The Snaketown pieces represent some of the earliest known examples of the technique found to date. In the 1937 report on the Snaketown excavation, Dr. Haury thought that the pseudo-cloisonné artifacts might have been made by the Hohokam, but by the second Snaketown report, published in 1976, he stated that they had to have been made in Mexico and reached Snaketown along with other Mesoamerican crafts and materials through trade.

Many of the Hohokam examples of pseudo-cloisonné occur on stone, on the decorative sides of mosaic pyrite mirrors or plaques. These plaques were most often found in burial contexts and are generally considered to be ceremonial in nature. The plaques were made from carved circular stone disks. A paste or gum was applied on one side of the disk and shaped pieces of the reflective stone pyrite were stuck into it, as one might today set ceramic tile in mastic.

On the other side of the disk the craftsman would carve channels into the stone leaving ridges that formed a basic pattern. The surface was first covered with a gray colored sizing or ground, and was then coated with a black pigment layer that was rubbed in until smooth.

The organic material that acted as a binder or glue in this layer has not been identified. Tests conducted by Ekholm on samples from the Guasave site in Sinaloa were inconclusive. However, the waxy texture indicates that oils and/or fats were present in the binder.

Once the ground layer was dry a sharp tool was used to gouge out the pattern, which would be filled in with white dolomite lime mixed with colored pigments until level with the black colored layer. The colored pseudo-cloisonné piece at the Museum has red, yellow and blue pigments in its pattern.

Hohokam Textiles

(continued from page 5)

The patterns that we find on Hohokam textiles include both discrete motifs and complex geometric patterns that were arrayed across the fabric. The delicate and lace-like weft-wrap openwork and gauze piece from Ventana Cave, shown on page 4, probably served as a loin cloth for a child and bears a characteristically Hohokam design motif that brings to mind the great impact that Hohokam culture has had on all who have followed them in the region. Similar designs like those shown on the bottom of page 5 are known from other locations where there was Hohokam influence. Whether such motifs had specific meaning or not is open to debate, but their persistence even today is testimony to the remarkable legacy of the Hohokam.



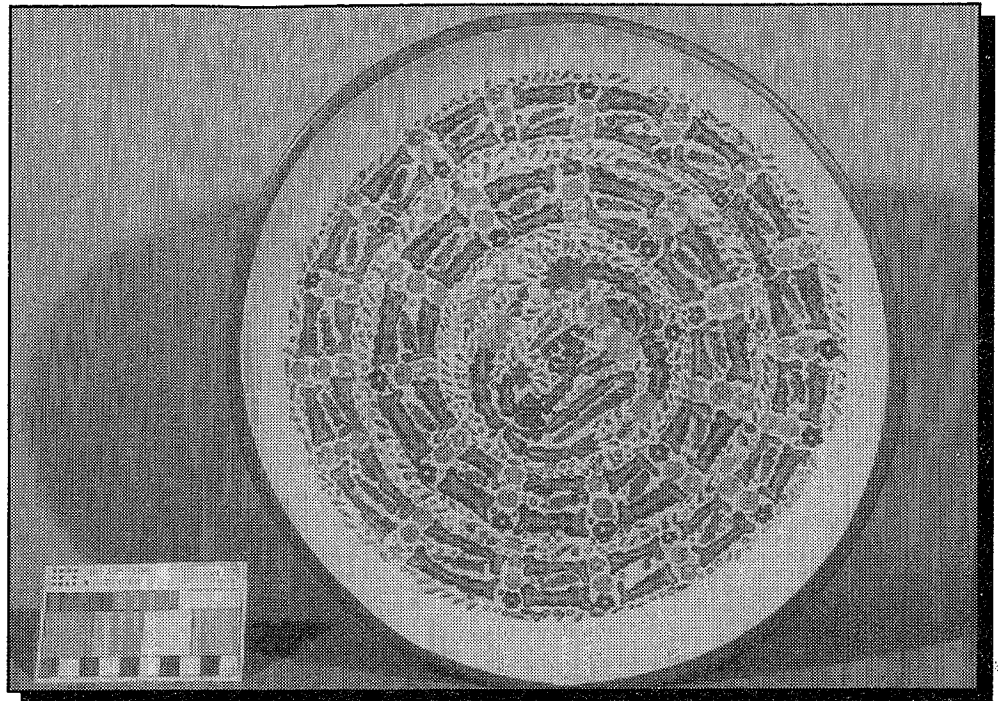
Hohokam Pseudo-Cloisonné (continued from page 6)

Distribution of Pseudo-Cloisonné Craft. Pseudo-cloisonné decorated artifacts have been discovered in an area extending from the American Southwest through Central America and into South America. Pseudo-cloisonné plaques have been found in the Southwest at the Snaketown and Grewe sites in Arizona and at Pueblo Bonito in Chaco Canyon, New Mexico. Pseudo-cloisonné plaques that are very similar to the Snaketown examples in style and technology were discovered at a site in Nebaj, Guatemala. In Mexico artifacts of pseudo-cloisonné decorated pottery, wood and gourd vessels have been excavated from sites in Sinaloa, Jalisco, Zacatecas, the Mexico City area, and from a cenote at Chichen Itza. A painted calabash or gourd was also more recently recovered from the Cerèn site in El Salvador. Numerous examples of pseudo-cloisonné wooden vessels called *keros* have been discovered in Peru originating from both the Inca and Colonial eras.

The Persistence of the Pseudo-Cloisonné Craft. The pseudo-cloisonné technique persists today in the *embutido* lacquerware made in the Uruapan area of Michoacan, Mexico. In describing how the wooden plate collected by Dr. Haury was made, the similarities in technique will be evident.

The plate was carved from a single piece of wood and then coated with a ground layer made from a heated mixture of chia plant oil, dolomite lime and a lacquer called *aje*. The *aje* was made by boiling the bodies of the female *Coccus axin* beetle, which was collected off the bark of a variety of trees. Pigment was usually added to the mixture to impart color to the base coat.

Typically red oxides were applied to the bottom sides and black pigments to the top. Dr. Haury's plate has a white colored ground on the top and a red colored base. Once the ground layers dried a sharp tool was used to incise a pattern, which was gouged out down to the wood. A fresh layer of colored lac-



Above: *Embutido* lacquered plate, Uruapan, Mexico, collected by Emil W. Haury circa 1943. ASM Catalog No. 91-75-8. Below: Detail of plate's design. Photos by Marilen A. Pool.



quer mixture was applied one color at a time up to the level of the ground layer until the pattern was complete. Because each color layer traditionally had to dry before successive colors could be applied, a multicolored piece such as Dr. Haury's plate could have taken weeks to complete.

Because the *embutido* lacquerwork is so labor intensive and the materials of *aje* and chia oil are less commonly used, the traditional craft is in danger of disappearing. Perhaps in time further analysis of the early pseudo-cloisonné artifacts could be conducted to determine whether an insect lacquer was used as a binder.



“Walk Through Time: Arizona from 800 B.C. to 1999 and Beyond!”

March is Arizona Archaeology Awareness Month -- an annual event that features archaeology activities for just about everyone, throughout the state. As usual Old Pueblo Archaeology Center and many other organizations will devote special effort toward providing opportunities for everyone to participate in and learn about our state's cultural heritage during this special month.

One of the highlights of Archaeology Month is the **Archaeology Expo**, which is held in a different community each year. This year's Expo will be held in Tucson at the Arizona State Museum, just inside the University of Arizona's old Main Gate at Park Ave. and University Blvd., from 9-4 each day on Saturday and Sunday, March 18 and 19.

Admission to the Expo is free! It offers the most extensive archaeological experiential learning opportunity for adults and kids ever held in Arizona. Nearly three dozen displays and exhibits by archaeology organizations, museums, Native American tribes, agencies, avocational archaeology groups, professional archaeologists, and others will really allow you to **Walk Through Time!**

At the Expo you can participate as an archaeologist might in research today. And, you can throw spears with atlatls, go on a mock mammoth hunt, form clay into pottery, make a pump drill, paint a pictograph, create a basket, build a brush house, chip a stone tool, weave a sandal, make a split-twig figurine, grind corn with the Hopi, see how experts do tree-ring and radiocarbon dating, participate in living history re-enactments, take in slide shows, view vintage archaeology films, and listen to Native American stories, drumming, and singing. There will also be ethnic foods and free raffles.

The State Museum will open its special Norton Allen Hohokam Indian artifact collection to the public during the Expo, along with its pottery storage rooms, perishable materials and textile rooms, ethnography exhibits, conservation and biological anthropology labs, Spanish document archives, and library.

Freebies for Archaeology Opportunities Members!

This year's Archaeology Awareness Month Poster is one of the most beautiful ones we've seen in years!

It features the full-color Michael A. Hampshire painting that is partly reproduced on the *March 2000 Arizona Archaeology Awareness Month Listing of Events* brochure (which is a free insert in this *Old Pueblo Archaeology* issue).

Archaeology Opportunities members and *Friends of Old Pueblo Archaeology* can receive a free copy of the poster from Old Pueblo Archaeology Center while our supplies last!

Also, we still have several donated copies of two books in the *Archaeology of the Grand Canyon* series -- *The Bright Angel Site* and *Unkar Delta* -- that Members and Friends are welcome to pick up for free. To claim your free copy of the poster or the books come to Old Pueblo and show your *Archaeology Opportunities* membership card, or we can mail them to those of you who are willing to pay for the postage and packaging.

For more Arizona Archaeology Awareness Month information call the State Historic Preservation Office at Arizona State Parks, (602) 542-4009, or

the Arizona State Museum, (520) 621-6302. Information about this event can be read on the Arizona State Parks web page at <http://www.pr.state.az.us>.

The Old Pueblo Archaeology Center Membership Program

Archaeology Opportunities is a membership program for persons who wish to support Old Pueblo Archaeology Center's education programs, and perhaps even experience for themselves the thrill of discovery by participating in our research.

Members get to participate in archaeological excavation and survey projects and can help study and reconstruct artifacts in the archaeology laboratory.

Membership Benefits:

- Opportunities to participate in Old Pueblo Archaeology Center's Sabino Canyon Ruin excavations up to 10 days per year, and in Old Pueblo's other archaeological digs, surveys, and research programs.
- Invitations and discounts for field trips and other archaeology events.
- A 20% discount on Old Pueblo Archaeology Center's publications, other sales items, and courses.
- A 1-year subscription to *Old Pueblo Archaeology*. Each issue contains archaeology news and ample illustrations.

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Old Pueblo Archaeology subscription only \$10

* "Friend" membership receives *Old Pueblo Archaeology* & 20% discounts but cannot participate in the Sabino Canyon Ruin excavations.



Old Pueblo Archaeology Center Events: March-June 2000

SABINO CANYON RUIN EXCAVATIONS & TOUR

The Sabino Canyon Ruin at the foot of the Santa Catalina Mountains, just outside of Tucson, was a vibrant village of the Hohokam Indians between A.D. 1000 and 1350. Old Pueblo Archaeology Center's excavations there since 1995 have recovered pottery, stone, bone, and seashell artifacts and have revealed prehistoric "pit houses, apartment-like housing compounds with adobe and rock walls, ancient canals, and a dog burial.

Archaeological field school sessions featuring excavations at the Sabino Canyon Ruin, and hands-on instruction in archaeology laboratory techniques using artifacts from the excavations, are open to public participation at the ruin on March 4 & 18, April 8 & 22, May 6 & 20, and June 3 & 17. The program runs from 8 a.m. to 4:30 p.m. on March and April Saturdays, and from 7 a.m. to 3:30 in May and June. Cost

is \$35 per person for one day or \$50 for two days. Two-day enrollment allows one to volunteer in the ruin excavations for one year. Minimum age to participate in the excavation is 12 years old.

The last public guided tour of the Sabino Canyon Ruin excavations this season will be held March 4 from 9 to 11 a.m. The tour is limited to 32 persons and costs \$10 per adult or \$2 for kids 12 and under.

Tours leaders and archaeologists directing the digs show and describe models of reconstructed Hohokam houses and samples of artifacts that have been recovered, and offer interpretations of ancient Hohokam life in the Sabino Canyon area. For either the dig or tour call for reservations and directions before 5 p.m. on the Friday before the event you want to attend.

FLINTKNAPPING WORKSHOPS, ATLATLS & SPEARS WORKSHOPS

Instructor Allen Denoyer will offer a Basic Arrowhead-Making and Flintknapping workshop on Sunday April 30 and again Saturday May 20; and an Advanced level workshop on Sunday May 21 for persons who have prior training or experience in using hammerstone and antler for removing flakes from stone cores. Fee is \$25 per person per session

As he teaches you how to make an arrowhead out of obsidian and other stone just like prehistoric Arizonans did, Mr. Denoyer helps you understand more about prehistoric people and their lifeways by studying how they made and used their artifacts. All equipment is provided.

Mr. Denoyer will also offer his Atlatl and Spear-Making Workshop on March 4 & again April 29 for \$40 per person, per session. In this ancient technology workshop he teaches how to fashion traditional atlatls and wooden spears like those utilized by prehistoric peoples worldwide, using natural Sonoran Desert woods and leather materials. He will show how to straighten spears by heat-curing over open fires and discuss the role of experimental archaeology for understanding prehistoric lifeways. Bring your own pocketknife to carve the wood, all other equipment is provided.

Participation in each flintknapping and atlatl/spear-making class is limited to 11 persons, and minimum age is 9 years old. Each class meets from 9 a.m. to noon at

Old Pueblo Archaeology Center, 1000 E. Fort Lowell Rd. Call to pre-register no later than 5 p.m. on the Friday before the class you wish to attend: 798-1201.

FAMILY ARCHAEOLOGY DAYS AT THE OPEN1 MOCK DIG SITE

On Saturdays March 11, April 15, & May 13, and Monday-Thursday June 5-8, from 9 to 11 a.m. each day, kids and family members ages 8 and up can participate in a mock archaeological dig at Old Pueblo Archaeology Center. Call 798-1201 at least a day ahead for reservations. Fee for each Saturday session is \$8; for the four June sessions, \$28 (no single-day registrations will be taken for the June class).

Old Pueblo's "OPEN1" mock dig site has been constructed by archaeologists to resemble a southern Arizona Hohokam Indian village ruin. It has full-size replicas of prehistoric pit-houses and outdoor features like those ancient people used for homes, cooking, storing things, and other (sometimes surprising) purposes. By actually excavating pottery and other artifacts buried in this realistic, shaded ruin replica one easily learns how archaeologists discover and study ancient cultures.

VOLUNTEER OPPORTUNITIES AT FORT HUACHUCA, ARIZONA

Old Pueblo Archaeology Center offers opportunities for volunteers to work on historical and prehistoric archaeological site excavations and to help prepare ancient artifacts for museum curation at Fort Huachuca, near Sierra Vista, under a U.S. Army contract issued through Tucson's Engineering and Environmental Consultants, Inc.

Excavations at the two historical sites are set for 8:30 a.m. to 2 p.m. on Saturdays March 11 & 25, April 1 & 15, and May 13 & 27. On June 6-10, June 20-24, July 11-15, and July 25-29 the Fort Huachuca field research is scheduled to shift to prehistoric archaeological sites, then testing of the historical sites will resume in September.

Through June from 2 to 4 & 6 to 9 p.m. every Thursday, and 9 a.m. to 2:30 p.m. every Friday, except holidays, volunteers can help wash, label, and catalog artifacts from both prehistoric and historical archaeological sites at Fort Huachuca. For either the excavations or the laboratory activity meet at the Fort Huachuca Archeo-

Supporters of Old Pueblo Archaeology Center: December 1-February 21

Volunteers: Our thanks again to Carol Richardson, Bess Puryear, & Ceil McPherson for mailing the December bulletin, and to the many people who worked to make Old Pueblo's January 22 fundraising events such a success! In addition to the unlogged hours those folks spent, another 239.75 recorded volunteer hours were donated to Old Pueblo during the period listed above by Peggy Bommersbach, Rebecca Bommersbach, Jose Camacho, Bridget Cashdollar, Donna Cosulich, Jane Delaney, Jami Kaminski, Jason Kordosky, Doug Lindsay, Mary Lu Moore, Margaret Nagore, Bridget Nash, Linda Marie Small. We thank these good people and apologize to anyone we may have failed to acknowledge.

Cash Donors/Grantors in this period included an anonymous foundation, Jack Bashaw, JoAnn Cowgill, Katheryn Drummond, Faith Fuller, Linda Hamer, Michael Magnan, Northern Trust Bank of Arizona, Forrest Rickard, Michael Riddle, Phyllis Smolnick, Steve Stacey, John Todd, Lyn Tornabene, James Treat, and James Walker.

Donors of Goods & Services were Arizona Lithographers, Bahti Indian Arts, Nancy & Ralph Copp, Ed Devlin, Austin Lenhart, Buck McCain, Linda Ortega, the Mountain Oyster Club, Steve Stacey, and Bert & Patty Whitley.

New & Renewing Members: Denis Boon, Rebecca & Peggy Bommersbach, Donna Cosulich, John Ehrmann, Faith K Fuller, Judy & George Gafner, Eileen Hollowell (gift membership from Marilyn Saul), Robert Mossman, Steve Stacey, & Russ Wohletz (gift from Freeda Wohletz).



THE PROJECT ARCHAEOLOGY WORKSHOP FOR EDUCATORS

Are you an educator intrigued by the past? Do you wish there were more creative ways to teach your students and meet curriculum requirements? Then "Project Archaeology" may be just what you and your students are looking for.

"Project Archaeology: Intrigue of the Past" is an interdisciplinary, 16-hour workshop to help teachers teach archaeology to grades 4 through 7. The teaching guide, "Intrigue of the Past: A Teaching Guide for Fourth Through Seventh Grades," contains 28 lessons. Each one lists and cross-references specific subjects, skills, and strategies.

The lesson plans include objectives, materials, vocabulary, background infor-

mation, procedure, closure, evaluation, and links to other lessons. The workshop also includes a supplement of Arizona cultural history. All lessons and materials have been classroom tested.

In Old Pueblo's Project Archaeology workshop teachers receive background information on the archaeology and cultures of Arizona and take a tour of an archaeological site. The program's Arizona supplement of cultural history contains essays written at the fifth grade reading level and lesson plans covering 12,000 years of Arizona's cultural history.

Teachers can receive 1 credit hour for Old Pueblo's Project Archaeology workshop through Tucson's Pima Commu-

nity College. Several southern Arizona school districts have also approved the workshop for professional development credit. The \$70/person program fee includes all material, resources, books, and the optional 1 hour Pima Community College credit.

Dr. Eric Kaldahl, Educational Project Director at Old Pueblo Archaeology Center, will teach the Project Archaeology workshop June 13-16, 2000 (Tuesday-Friday). To register call Old Pueblo Archaeology Center at (520) 798-1201. Ask about the Pima College credit when you register. For professional development credit you must also register with your school district.

Fort Huachuca (continued)

logical Laboratory and Curation Facility, located on Machol Avenue east of Brainard Road at Fort Huachuca. (Yes, the Army

spells it "Archeological"!)

Please call Old Pueblo Archaeology Center at (520) 798-1201 to let the staff know the dates on which you wish to parti-

cipate in field or lab work. For details on excavation opportunities ask to speak with Eric Kaldahl. For artifact-processing activities ask to speak with Darla Pettit.

Program dates & times are subject to change. Call Old Pueblo Archaeology Center at (520) 798-1201 for latest information & for reservations.

The New Face(s) of Old Pueblo Archaeology Center's Board of Directors

In January Dr. R. Gwinn Vivian and Mrs. Gail L. Roper retired from Old Pueblo Archaeology Center's Board of Directors after serving distinguished terms.

Gwinn Vivian, who also recently retired from his position as Associate Director of the Arizona State Museum, University of Arizona, had served as Old Pueblo's President since January 1998. He oversaw the organization's rise from a troubled financial state to a position of positive cash flow.

Gail Roper has been instrumental in promoting Old Pueblo's Sabino Canyon Ruin and other archaeology education programs during her board term. Gail also worked alongside Carolyn Davis, JoAnn Cowgill, Laurie Amado, Karen Bright, Cynthia Cobb, Carole Collins, and Jane Evans to make our January 22 "Art for Archaeology" fundraiser so successful.

Old Pueblo's board and staff salute Gwinn and Gail for their service and want them to know they will be missed from the board. Fortunately, both plan to stay involved with Old Pueblo to help strengthen our education programs in coming years.

At its January meeting, Old Pueblo's board elected as officers Jim Trimbell (President), Laurie Amado (Vice President), JoAnn Cowgill (Treasurer), and

Dr. Ronald Towner (Secretary). Ron is one of three new faces on the board, along with Deborah Jassem and Roger Yoheim.

Ronald Towner, Ph.D., is well known to Arizona's professional and avocational archaeologists alike as a strong advocate of public archaeology programs. A specialist in southwestern archaeology, tree-ring dating, and paleoclimate studies, Ron is a past president of the Arizona Archaeological and Historical Society. He oversaw research projects for several southwestern archaeological consulting firms before being hired by the University of Arizona's Laboratory of Tree-Ring Research.

A professional fundraiser for nearly 20 years, **Deborah Jassem** has worked for several educational institutions and has served on numerous nonprofit and municipal boards. She is a native of Hartford, Connecticut, whose love of the Southwest encouraged her recent move to Tucson. For many years she was an "armchair" archaeologist until she participated as a volunteer on digs in Israel and became an active member of a central Connecticut archaeological group. Deborah lives in Bear Canyon

where the Hohokam once lived -- on property that contains part of the Sabino Canyon Ruin (where Old Pueblo conducts our public archaeological field research program).

Roger Yoheim, Director of Marketing Communications for the Medical Security Card Company, brings to Old Pueblo Archaeology Center 18 years of diverse corporate communications experience, including with Tucson Electric Power Co. (TEP) and Southwest Gas. While he worked in marketing at TEP the company received the prestigious Silver Anvil Award from the Public Relations Society of America, and under his direction as president the Tucson Chapter of the American Marketing Association won national Chapter of the Year honors. Roger's personal interests include family activities with his wife Karin, an attorney, and the couple's four-year-old daughter, plus photography, and a side business called Arizona Greeting Cards.

Old Pueblo Archaeology Center's Board of Directors

James W. Trimbell (President), Laurie M. Amado (Vice President), JoAnn Cowgill (Treasurer), Ronald H. Towner (Secretary), Frances Conde, Carolyn O'Bagy Davis, Deborah Jassem, Emory Sekaquaptewa, Marc Severson, Steven Stacey, and Roger D. Yoheim

Archaeology Opportunities members are welcome to attend board meetings. Call 798-1201 for meeting times & places.

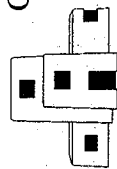
**Your March 2000
Arizona Archaeology Awareness Month
Listing of Events
is inside!**

Old Pueblo Archaeology Center invites you to join us in celebrating a whole month of archaeology activities for the public.

TIME TO RENEW?

If you received this issue in one of our mass-mailings, the 8-digit number on the top line of your address label indicates the year, month, and day your *Old Pueblo Archaeology* subscription will expire. If your label month is the same as or earlier than the month of this bulletin issue you need to renew your subscription or membership in order to receive more issues.

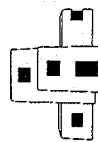
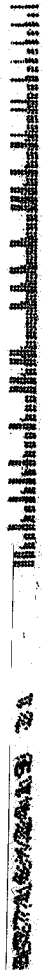
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Old Pueblo Archaeology

Bulletin of Old Pueblo Archaeology Center, Tucson, Arizona

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Old Pueblo Archaeology is the quarterly bulletin of Old Pueblo Archaeology Center, a 501(c)(3) nonprofit corporation. Questions, comments, and news items can be addressed to editor Allen Dart at Old Pueblo's address shown above, or by calling (520) 798-1201, faxing us at (520) 798-1966, or by e-mail (aldart@azstarmet.com). The Old Pueblo Archaeology Center Home Page (www.azstarmet.com/nonprofit/oldpueblo) is posted for free by The Arizona Daily Star newspaper and is maintained by volunteer J. Steven Stacey (e-mail JSStacey@aol.com).

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Please mail form with payment to Old Pueblo Archaeology Center, PO Box 40577, Tucson, AZ 85717-0577

Questions? Call Old Pueblo at (520) 798-1201