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Corn Varieties Grown by Native American Groups Today: Relevance to Archaeology 
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A red variety of Zia Pueblo corn being grown in Farmington, NM
Photo by Ryan Howell and courtesy of MAIS Southwest

General Meeting: June 20th, 2005
http://www.statemuseum.arizona.edu/aahs/aahs.shtml
The U.S. Forest Service is not normally thought by the general public to be a federal agency whose mission includes the development of prehistoric and historic properties for public visitation and enjoyment. Increasingly, over the past number of years, several sites have been rehabilitated, usually with the help of volunteers, to everyone’s benefit. The Coronado National Forest is currently in the process of preserving and developing a very interesting, but short-lived, mining camp called Kentucky Camp. On approaching the five-building camp, one is struck by the integrity of this small, turn-of-the-century mining headquarters. In National Register terms, “integrity” includes a sense of feeling and association. These qualities are not always easily articulated at many sites, but here they seem so obvious.

The camp is located on the east slope of the Santa Rita Mountains, west of State Highway 83, between I-10 and Sonoita, Arizona. To access the site, go west on the unpaved Gardner Canyon Road (Forest Road 92, then 162), which is about four miles north of Sonoita, and follow the signs.

Kentucky Camp contains one of seven U.S. Forest Service historic buildings in Arizona where overnight lodging is available to the public. The camp is also on the increasingly popular Arizona Trail, a nonmotorized, long-distance link between Mexico and Utah.

Mining activity in the area took place within the Greaterville Mining District, the location of intensive gold placer mining activities beginning about 1874. Placer gold was found along 13 dry drainages or gulches, including Boston and Gardner. Except during the rainy season, little or no water was available for sluicing, so selected deposits had to be carried to water by burro, or burros had to bring water to the deposits. Both systems were inefficient, but they served to extract 60,000 to 80,000 dollars worth of gold within two years of discovery. By 1886, the placer deposits were considered depleted, however both lode and placer types of mining continued well after the mid-1880s. Even today, an occasional small nugget is found.

Prior to 1902, all mining in the Greaterville District’s placer fields was performed strictly by hand. A different mining technology, hydraulic mining, was introduced by the Santa Rita Water and Mining Company in 1902. Relatively sophisticated and expensive, this new technology required dams to impound water; a system of canals and pipes to carry water to the gold-bearing gravels; lots of equipment, including a headbox and penstock, a sluice; and a monitor or “giant” nozzle to control and direct the flow of water. The sluice served to trap the gold that was washed through it.

The development of the Kentucky Camp complex began in the fall of 1902, with financial resources provided by George B. McAneny and with engineering under the control of James B. Stetson. By January 1903, construction of the system was well underway. Despite litigation and problems with shipments of equipment, a test run was held in the fall of 1904. Newspaper articles and other sources are unclear, but apparently the firm was never successful in developing a system that would work on a continuous basis. The death of Stetson further set back operations.

By January 1906, the company had recovered only 3,000 dollars in gold after

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Corn (also known as maize) is undoubtedly one of the most important food crops of the pre-Hispanic Americas. Its abundance in the archaeological record of the Southwest testifies to this fact. Of the numerous varieties of Native American corn (*Zea mays*) grown today, there can be no doubt that many of these were here before the arrival of the Spanish. Unfortunately, none of these types of corn can be easily identified from archaeological contexts because no good comparative descriptions exist of modern Native American corn in the Southwestern U.S. Such knowledge can open the doors to understanding the transmission and adoption of corn types in the ancient Southwest.

To rectify this, a team of archaeobotanists (archaeologists who specialize in plants) has formed to undertake the single largest study of indigenous Native American maize to date. Our project, “MAÍS Southwest: Maize of American Indigenous Societies of the Southwest” aims to describe existing Native American varieties of corn, based on quantitative and descriptive morphological characteristics of a great diversity of modern types. Once this is completed, archaeobotanists can then use that information to help determine what varieties of corn were being grown and shared in the past. Fortunately, “MAÍS Southwest” has collaborated with researchers from Iowa State University, who, in conjunction with the New Mexico State University Agricultural Experiment Station, grew 157 varieties of Native American corn in Farmington, New Mexico in 2004. These varieties represent all the New Mexico Pueblo and non-Puebloan groups, Southern and Northern Arizona groups, Lower Colorado River groups, and northern Mexico groups. Corn gathered from this grow-out will be analyzed by the archaeobotanists and will eventually aid in understanding the history and development of corn in the Southwest. This presentation will discuss the current status of “MAÍS Southwest” and we will bring examples of many of the varieties of Native American corn included in this project for people to see the outstanding diversity of Native American corn kernel colors, ear shapes and sizes, and kernel textures.

(Continued on page 4)
President’s Message

construction costs of as much as 175,000 dollars. At this time, McAneny was being sued for divorce, and his ability to inject money into the business ceased. The death of Stetson, and McAneny’s problems, brought the company to an end. McAneny died in 1909, and family members acquired the property, which was sold to their attorney, L. G. Hummel, in 1911. Hummel converted the family’s holdings into a cattle ranch and retreat. The U.S. Forest Service acquired the property in 1989.

Kentucky Camp, built in Kentucky Gulch as the Santa Rita company headquarters, was not added to when it served as the base of operations for the ranch, so it remained much as it was under McAneny’s tenure. No mining was conducted in the camp.

Since about 1989, the Forest Service has been engaged in a stabilization program to preserve the buildings. Much of the work has been done by volunteers, primarily the Friends of Kentucky Camp and the Forest Service’s Passport in Time volunteers. A system of marked trails guides interested individuals to many of the remains of the hydraulic system west and south of the camp.

In a way, Kentucky Camp and the Santa Rita Water and Mining Company are metaphors for Arizona mining in general. The patterns observed here of large investments in technology and the physical plant, overly optimistic predictions about what would be found, failure to produce, and finally bankruptcy, have been repeated over and over in Arizona in the last 150 years.

For an overview of the hydraulic mining process and information about other hydraulic mining systems in nineteenth- and early twentieth-century Arizona, see: James E. Ayres et al., *Humbug: The Historical Archaeology of Placer Mining on Humbug Creek in Central Arizona*, 1992. This report was prepared by Dames and Moore for the Bureau of Reclamation. Copies are available at the Arizona Historical Society and other historical repositories.

I would like to thank Mary Farrell, Forest Service Archaeologist, for generously providing me with a great deal of useful information about Kentucky Camp.

James E. Ayres (Jim), President

(Continued from page 3)

Corn...

Karen R. Adams has been an archaeobotanist in the American Southwest for over 30 years, working in all the major culture areas. She has summarized the history of corn in the Southwest, and has studied the effects of moisture and charring on corn parts commonly recovered in archaeological sites.

R. Emerson Howell is a third year graduate student at the University of Arizona, who just completed a Master’s Degree. His research focuses on the role of food production in prehistoric societies throughout the Southwest.

For further reading:

Adams, Karen R.


Adams, Karen R, Deborah A. Muenchrath and Dylan M. Schwindt

Between 1930 and 1931, the Natural History Museum of Los Angeles County (then the Los Angeles Museum) fielded an early archaeological expedition to the Grewe site, Arizona. Following on the heels of Harold S. Gladwin’s definition of the “red-on-buff culture” in 1929, this expedition was one of the earliest that contributed to the definition of the Hohokam concept.

Work at Grewe was conducted under the auspices of the Van Bergen-Los Angeles Museum Expeditions (VB-LAM), and funded by Dr. Charles Van Bergen, a retired doctor from the east coast. Accompanied by Van Bergen, Arthur Woodward (Curator of History) embarked on surveys and excavations in the Gila River valley between 1929 and 1932.

In addition to working at Case Grande and Gila Butte, the expedition worked at the Grewe site, known previously from Gladwin’s work there in 1927. Both Woodward and Van Bergen supervised excavations along with crew chiefs Irwin Hayden (father of Julian Hayden), Richard Van Valkenburg, Milton Snow, and Ben Wetherill. Work at Grewe began in 1930 and extended through the fall of 1931, ending prematurely the next year when a reversal of personal fortune during the Great Depression spelled the end of Van Bergen’s support.

The research goals of the VB-LAM expedition, its methods of excavation and data recovery reflect a concern with systematic documentation and historical reconstruction characteristic of Southwestern archaeology by the 1920s. Woodward corresponded with key figures in early Hohokam research, and he, Van Bergen, and Hayden took their cue from researchers at Gila Pueblo in Globe, Arizona. At Grewe, survey and excavation were not simply designed to augment the museum’s collections, but focused on tracing the extent and timing of “red-on-buff culture” in the Gila River valley and establishing its connection to ancient Mesoamerica. The expedition investigated features across a 30-acre expanse, either testing or entirely excavating approximately 50 house structures, six trash mounds, three cremation areas, an offer- tory area, and numerous extramural pits. Based on ceramic evidence, we now know that many of these features date to the Colonial and Sedentary periods. The field methods they employed were both innovative and rigorous. Using techniques that foreshadowed contract archaeology, subsurface features were located and exposed with mule-drawn plows and a Fresno scraper (or earthmoving blade).

Woodward utilized a unique system of test pits and trenches to define stratigraphic layers within trash mounds and to calculate the percentage of ceramic groups within each layer, again adopting methods used by Gladwin and others.
Excavated features were mapped with a plane table, alidade, and measuring tapes, and carefully recorded through extensive field notes and photographs (Figure 1). Although not all artifact types were brought back to the museum (for example, most plain ware sherds were discarded at the site), the fill of select features and trenches was screened. The VB-LAM excavations recovered whole or partial ceramics, figurines, stone censors, palettes, and shell ornaments. Among the most remarkable objects collected are the dozen or so mosaic and painted mirror backs, the best preserved of which shows a costumed figure or deity with a feather headdress.

Although he never formally published his Arizona excavations, Woodward’s work came at a time when the concept of the Hohokam culture was being formulated by researchers at the Gila Pueblo. Both Woodward and Van Bergen presented their expedition results at the 1931 Pecos Conference. Earlier that same year, Woodward joined other southwestern scholars at a Gila Pueblo meeting, using hand-colored lantern slides to report on the Grewe excavations. The importance of this early research was later emphasized by Emil Haury, who noted that “the results were gratifying in helping confirm our work of 1927 and 1928, and gave us all our first comprehensive view of the culture of the Hohokam....” (Gladwin et al. 1937:16). Early work at Grewe also provided the key evidence for the temporal assignment of Hohokam sites based on the presence of intrusive Ancestral Pueblo black-on-white pottery. Even though some field documentation was lost or destroyed following the expedition, the collection remains both an important part of the Natural History Museum’s research collections from the American Southwest and a key comparative database to more recent work at Grewe.

Gladwin, Harold S., Emil W. Haury, E. B. Sayles, and Nora Gladwin
1937 Excavations at Snaketown: Ma-
MOVING IN WITH THE NEIGHBORS?
EVIDENCE OF SETTLEMENT GROWTH
AT A POST-CONTACT PIRO PUEBLO

By Michael P. Bletzer, Southern Methodist University

Over the last four years, archaeological research at a 300-room Piro pueblo south of Socorro, New Mexico has increasingly revealed evidence of post-contact settlement growth. Surface observations and a few limited excavations at other Piro sites, by contrast, generally suggest a contraction of occupied space in 17th-century Piro pueblos. That native population levels fell off dramatically in post-contact New Mexico is a long established fact. Timing and scale of this decline, however, are not well understood, and the structural (re)organization of local and regional settlement remains little known.

Spanish references to the Piros and their pueblos are both scarce and ambiguous. Between the early 1580s, when the Piros were first described, and 1630, the number of pueblos seems to have been around 12 to 16. During the late 1620s and early '30s Franciscans established four missions at the pueblos of Pilabó (Socorro), Senecú, Selocú (Sevilleta), and Alamillo. From that point forward, these four pueblos are, with a few vague exceptions, the only Piro settlements to appear in the historical record. What happened to the other eight to 12 pueblos is nowhere recorded.

It was with this in mind that we began work at Plaza Montoya Pueblo (LA 31744) in the summer of 2001. Unlike most other Piro sites, the pueblo has an overwhelming proportion of late (E and F) glazeware types in its ceramic surface assemblage – a distribution which points to a substantial colonial-period occupation. By tracing construction sequences and identifying occupation patterns we aimed at placing the surface data into a wider chronological context and, ultimately, to throw some light on pre- to post-contact population dynamics in the Piro area.

Construction of the pueblo was entirely of adobe. There are no above-ground remains other than a few rock wall foundations. In places – especially along room-block edges – wall alignments are badly preserved. Even so, bond/abut patterns reveal some basic building patterns. In the west, east, and north roomblocks construction started with several “core” rooms, to which were then appended new structures. Rooms toward the plaza were generally built over the uppermost of two plaza surfaces and a variety of plaza features, some of them cremation burials. Toward the south, the plaza remained open until after contact, for part of the south roomblock sits atop an extensive trash layer which contained several metal ring fragments.

About a dozen metal artifacts have been found so far, most of them in subfloor and lower-level contexts. Other indicators of Spanish influence are fragments of a ring-based vessel and possibly majolica, as well as a few low-threshold doorways. In addition, the foundations of one room in (Continued on page 10)
Arson Investigators Aid Archaeologists

Burning is a common occurrence in the archaeological record of the Southwest but seldom has a systematic study of the role of fire been initiated. Arizona State Museum archaeologists and arson experts will initiate a systematic study this summer at the ancestral Hopi site of Chevelon Pueblo — a 13th and 14th century village located at the confluence of the Little Colorado River and Chevelon Creek near Winslow, AZ.

During the course of mapping and testing structures at the Chevelon site last year, archaeologists noted widespread burning. With the assistance of former FBI arson investigator Timothy Huff, two contiguous burned rooms were excavated and the source and spread of the fire were investigated and determined. Clues were gleaned from burn patterns on wall plaster, surviving charred artifacts, and the extent and depth to which wooden roof beams were burned. Suggesting the fire's point of origin were soot patterns on the walls of both structures and extensive plaster damage in convergent corners. It was determined that the fire was set intentionally in the roof and left to spread along grass and small cottonwood beams of the roof. Probably the earthen part of the roof was removed to enable the fire to sustain itself.

Continuing their research this summer, the ASM crew has again engaged the services of arson investigators to further study the structural fires at Chevelon. "Our goal is to develop a better understanding and interpretation of ancient fires, which are so prevalent in the archaeological record," explains program director and archaeologist E. Charles Adams. "Better science will result from our collaboration with arson investigators."

Chuck Adams and UA anthropology graduate student A. J. Vonarx lead the team that will construct and intentionally burn structures faithfully modeled after those excavated at Chevelon. Several fire investigators and other archaeologists will be present to assist in the construction and destruction. "We will be constructing up to three rooms using the same materials as have been excavated at Chevelon - stone walls, mud mortar, and wooden roofs covered with dirt," says Vonarx. "The rooms will have the same dimensions and openings as found in typical Chevelon rooms and artifacts will also be placed on the floor similar to ones recovered. The only modern additions to the architecture will be thermocouples built into the walls to measure heat. The fires, scheduled to be lit on July 11 and 12, will be set according to the evidence gleaned from last year's studies.

Video cameras will record the burning and fire-modeling software will analyze the results. The physical remains from the reconstructed burns will then be compared to the archaeological remains. "We hope to learn when, where, how, why, and who started the fires that burned more than 100 of the 500 rooms at the village," says Adams. "Did the Chevelon occupants burn the rooms themselves, did outsiders set the fires, or is there an environmental explanation such as grass fire or spontaneous
combustion? By better understanding the origin and spread of structural fires we will be able to reconstruct the events causing ancient fires."

**Homol'ovi Research Program's Schedule of 2005 events:**

**June 6** - excavations begin at Chevelon Pueblo.

**July 9** - Homol'ovi Ruins State Park's annual Open House. Park Rangers and ASM archaeologists will be on hand to give guided tours.

**July 11-12** - controlled burning of mock structures at Chevelon as described above.

**July 23** - field season ends

For tours of Chevelon Pueblo during the field season, contact Chuck Adams at 520-982-4108 or ecadams@email.arizona.edu or Rich Lange at 520-904-4869 or langer@u.arizona.edu.

**UPCOMING EVENTS AT ARIZONA STATE MUSEUM**

**June**

**3-D SALES IN NATIVE GOODS**
Consecutive weekend sales on select items in the museum store - each category 30% off for 3 days only!

- **June 3-5**, Carvings
- **June 10-12**, Pots
- **June 17-19**, Textiles
- **June 24-26**, Posters.

**Saturday, June 18**

**MARKING THE SOLTICE: A MULTICULTURAL CELEBRATION!**
4:30-8:30 p.m. (stay after for star gazing!)

Enjoy hands-on activities, songs, stories, dances, and presentations relating to the sun and moon, stars and rain, planting and harvesting from a variety of cultures. Bring a picnic basket.

**PREVIEW OF AAHS UPCOMING GENERAL MEETING LECTURES**

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<td>Jesse Ballenger on evidence of paleoindian occupation in the San Pedro area</td>
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<td>August</td>
<td>The Pecos Conference — no meeting so you can attend!</td>
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<td>October 17</td>
<td>Ray Thompson (and Lex Lindsay) on Point of Pines</td>
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**GLYPHS**
Submission of information and articles to be included in *Glyphs* must be received by the 10th of each month for the next month’s issue. Write to me, Lynne Attardi, c/o AAHS, ASM, University of Arizona, Tucson, AZ 85737, or e-mail me at <LTAGlyphs@aol.com>.

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the west roomblock consisted entirely of small rectangular adobe bricks. As for glazewares, late types (D-F) and what may best be called transitional forms (D/E, E/F) dominate all areas and levels. There are no early (A) glazes or white- wares. All this correlates quite nicely with a suite of radiocarbon dates, which place the pueblo’s occupation between c. 1500 and 1650.

Based on these observations, it is clear that the entire south roomblock, and probably much of the southern half of the west and the eastern half of the north roomblock were built after contact, as were the peripheral rooms in the east roomblock. All told, at least one-third of the pueblo (~100 rooms) may thus date to the post-contact period. What drove this expansion can at present only be surmised. Given the scale and time, a relocation of Piros from surrounding sites seems the most likely explanation, and one that is also supported by the very different – if very sketchy – archaeological evidence from these sites. Then, too, Plaza Montoya’s compact layout suggests a need for defense, even if the locale hardly qualifies for this purpose. And there is the possibility of direct Spanish involvement in this process as a measure to consolidate control over the Piros.

For all the information uncovered so far, the sequence and nature of contact at Plaza Montoya are still unclear; nor can we say when and how the pueblo was abandoned. Neither metal artifacts, nor ceramics, nor radiocarbon dates come with the precision necessary to isolate processes that may have played out over only a handful of years. Architectural influences and Spanish pottery suggest sustained contact well into the colonial period, but little else. Perhaps future work at the site will allow us to address
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