THE CONSERVANCY TURNS 30 · PROOF OF PRE-CLOVIS PEOPLE? · RECONSTRUCTING AN ANCIENT MOUND

WINTER 2009-10

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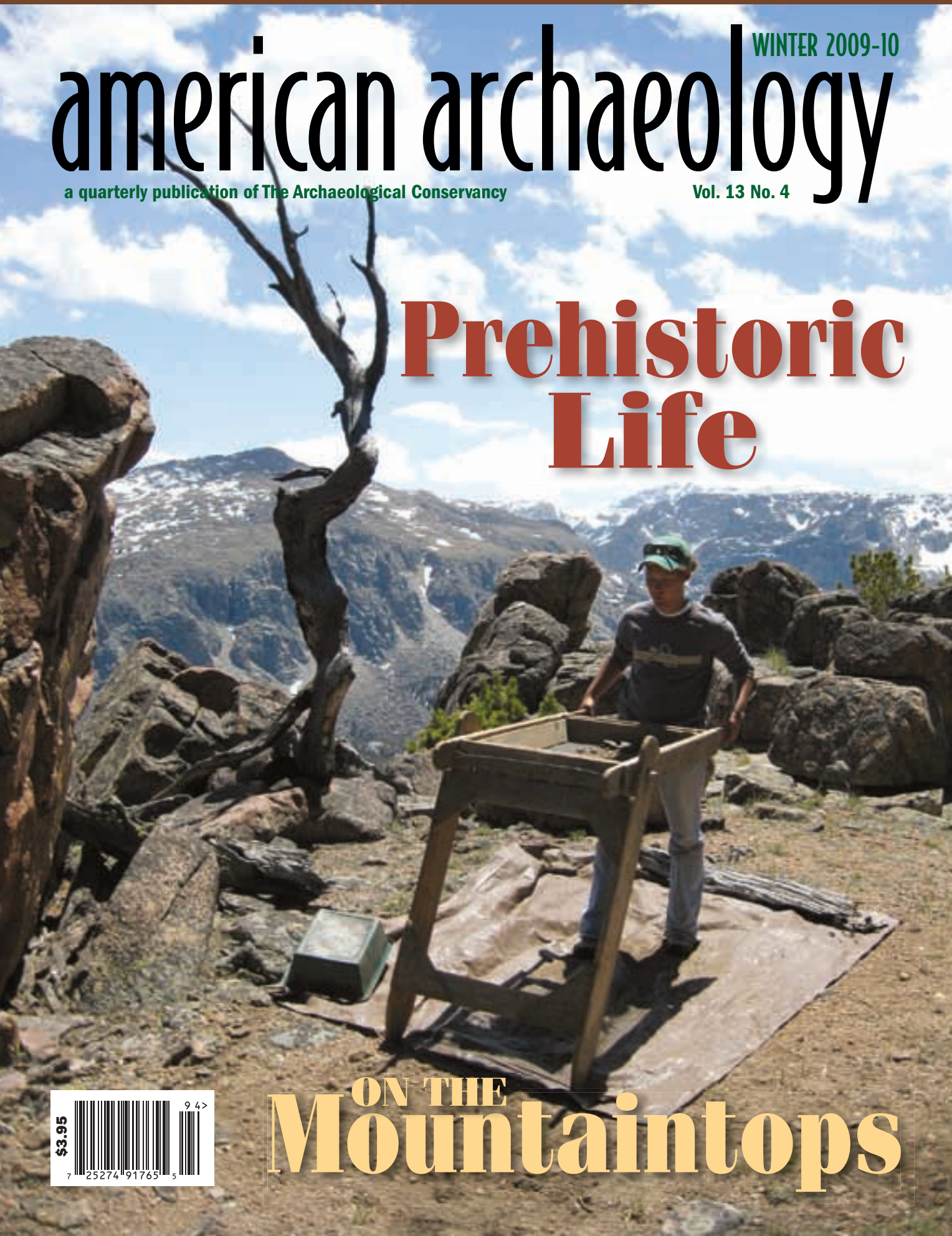
Vol. 13 No. 4



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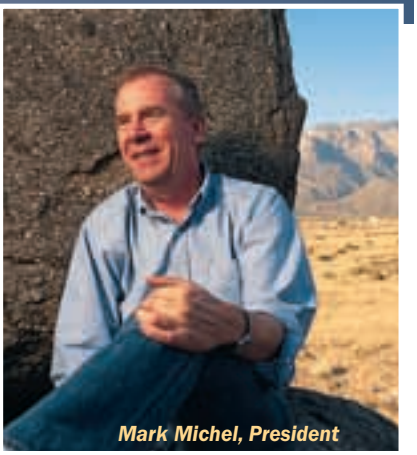
RICHARD ADAMS

BRASS EL PILAR PROJECT

COVER: *A researcher screens excavated dirt in search of tiny artifacts at High Mountain Village.*
***Photograph by** Richard Adams*

Privatizing Preservation


Mark Michel, President

DARREN POORE

Thirty years ago, The Archaeological Conservancy began operations (see "Thirty Years of Preservation," p. 32) with high expectations to preserve the nation's most endangered archaeological sites on private land. Most countries—Italy, Mexico, Israel, for example—have laws that protect their ancient cultural resources. A site may be on private property, but, because it's part of the national heritage, it's controlled by the government for the benefit of the public. That's not the case in the United States. Due to our strong private property traditions, archaeological sites on private land are the property of the landowners, and that includes all of the artifacts, burials, and structures.

Our idea in starting the Conservancy was to use the private property traditions to protect our archaeological legacy. We simply buy the sites. As the owners, we have almost complete control over them. That means we can protect the sites from most any threat, except possibly the building of a new highway—and even then we've managed to get officials to move highways to keep from disturbing our preserves.

Our program has worked well over the past 30 years, and we continue to acquire more and more of the nation's premier sites. There is still much to do, but we have already made a significant dent in the problem. Several hundred of the largest and most important sites are now permanent Conservancy preserves.

Mark Michel

Letters

Coming To America

Imagine my surprise when I read your article "Uncovering Early Colonial Life." It mentions the expedition in 1634 of two ships, the *Ark* and the *Dove*, that settled Maryland's' first capital, St. Mary's city. A relative on my mother's side was on that expedition. His name was John Briscoe and he was born in 1590. I suppose he did very well because there are still Briscoes in America.

Dixie T. Barber
Bountiful, Utah

Spiritual Water

It was interesting, but not surprising, to read about the discovery of carved panels along the aqueduct in El Mirador ("Panels Depicting Popul Vuh Discovered," Summer 2009). Water and its delivery system had tremendous spiritual importance to the Olmec and Maya, as evidenced by the aqueduct

stone monuments at La Venta, as well as offerings placed along the aqueducts at Chocola and Takalik Abaj. Perhaps we could learn something from the ancients about the value of water.

Kathleen Rollins
Davisburg, Michigan

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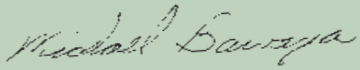
Editor's Corner

Who were the first Americans? For some time the answers to that question served as fodder for one of American archaeology's livelier debates. It used to be that almost everyone thought it was the Clovis people, who arrived in the New World roughly 13,500 years ago. But over the last several decades a number of allegedly pre-Clovis sites have been discovered, and consequently a settled issue became very unsettled.

Some pre-Clovis sites have produced more convincing evidence than others, and the data from Monte Verde, in southern Chile, is often said to have made the most compelling case for a pre-Clovis people in the Americas. But even that data isn't so compelling that it silenced the Clovis First adherents.

Now along comes the Paisley Caves site in southern Oregon. (See "Proof Of A Pre-Clovis People?" p. 38.) Archaeologist Dennis Jenkins has uncovered what he believes are human coprolites that have been radiocarbon dated to more than 14,000 years ago. If Jenkins' conclusions are correct—and as our article notes, he has his skeptics—Paisley Caves has yielded the first biological evidence of pre-Clovis people.

A few years ago a noted Paleo-Indian specialist told me that, to his mind, Monte Verde had nearly ended the Clovis-pre-Clovis debate. Perhaps Paisley Caves will finish the job.



WELCOME TO THE ARCHAEOLOGICAL CONSERVANCY!

The Archaeological Conservancy is the only national nonprofit organization that identifies, acquires, and preserves the most significant archaeological sites in the United States. Since its beginning in 1980, the Conservancy has preserved more than 385 sites across the nation, ranging in age from the earliest habitation sites in North America to a 19th-century frontier army post. We are building a national system of archaeological preserves to ensure the survival of our irreplaceable cultural heritage.

Why Save Archaeological Sites?

The ancient people of North America left virtually no written records of their cultures. Clues that might someday solve the mysteries of prehistoric America are still missing, and when a ruin is destroyed by looters, or leveled for a shopping center, precious information is lost. By permanently preserving endangered ruins, we make sure they will be here for future generations to study and enjoy.

How We Raise Funds:

Funds for the Conservancy come from membership dues, individual contributions, corporations, and foundations. Gifts and bequests of money, land, and securities are fully tax deductible under section 501(c)(3) of the Internal Revenue Code. Planned giving provides donors with substantial tax deductions and a variety of beneficiary possibilities. For more information, call Mark Michel at (505) 266-1540.

The Role of the Magazine:

American Archaeology is the only popular magazine devoted to presenting the rich diversity of archaeology in the Americas. The purpose of the magazine is to help readers appreciate and understand the archaeological wonders available to them, and to raise their awareness of the destruction of our cultural heritage. By sharing new discoveries, research, and activities in an enjoyable and informative way, we hope we can make learning about ancient America as exciting as it is essential.

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■ NEW EXHIBITS

Ohio Historical Center

Columbus, Ohio—"Windows to Our Collection: Ohio's Ancient Past" invites visitors to explore over 15,000 years of Ohio's ancient Native American heritage. Two informational media programs and some of the Ohio Historical Society's most significant artifacts, such as an Adena Pipe, a mica hand, and many animal effigy pipes from Tremper Mound, are featured. Various artifacts reveal the daily lives of ancient peoples as well as their special events. (614) 297-2300, www.ohiohistory.org/etcetera/exhibits (Long-term exhibit)

Marin Museum of the American Indian

Novato, Calif. —In nine display cases, the exhibit "A Thousand Years of Southwestern Pottery" shows ancient and modern examples of ceramics, emphasizing the connections between the two and demonstrating that traditions born centuries ago still live in this vital art form. (415) 897-4064, www.marinindian.com (Through February 2010)

The Field Museum

Chicago, Ill.—A variety of beautiful objects such as a woman's superbly beaded horse regalia, a dramatic headdress of bison fleece and eagle feathers, and shields with powerful symbols are featured in the exhibition "Travels of the Crow: Journey of an Indian Nation," which portrays the lives of hunters, warriors, and nomads of the American Northern Plains. The Crow people tell the story of a search for the sacred tobacco plant that eventually led them to the Bighorn Mountains of Montana. This quest accomplished, the Crow transformed themselves into highly skilled equestrians, bison-hunters, and warriors. (312) 922-9410, www.fieldmuseum.org/exhibits (Through July 2010)

■ CONFERENCES, LECTURES & FESTIVALS

Crow Canyon Archaeological Center's Distinguished Lecturers Series

November through May, Friday evenings, Crow Canyon Campus, Cortez, Colo. For a schedule of speakers and topics, contact Amy at (970) 564-4341, askaggs@crowcanyon.org, or www.crowcanyon.org

NATIONAL MUSEUM OF THE AMERICAN INDIAN

National Museum of the American Indian

George Gustav Heye Center, New York, N.Y.—Drawing upon a treasure trove of stunning historical objects—including ledger drawings, hoof ornaments, beaded bags, hide robes, and paintings—the new exhibition "A Song for the Horse Nation" presents the epic story of the horse's influence on American Indian tribes from the 1600s to the present, revealing how horses shaped the social, economic, cultural, and spiritual foundations of native life, particularly on the Great Plains. (212) 514-3700, www.americanindian.si.edu (New long-term exhibit)

NM HISTORY MUSEUM

New Mexico History Museum/Palace of the Governors

Santa Fe, N.M.—"Santa Fe Found: Fragments of Time" explores the archaeological and historical roots of America's oldest capital city and early Hispanic life in North America. From the first Spanish colony in San Gabriel del Yungue, to the founding of Santa Fe and its first 100 years as New Mexico's capital, the exhibition shows how the founders lived and the hardships they faced. More than 160 artifacts from four historic sites will be on display, along with maps, documents, household goods, weaponry, and religious objects. These items tell the story of cultural encounters between early colonists and the Native Americans who had long called this place home. An accompanying monthly lecture series runs from November through May in the New Mexico History Museum Auditorium. (505) 476-5200, www.nmhistorymuseum.org (Through November 2010)

Events

33rd Annual Pueblo Grande Museum Indian Market

December 12-13, Pueblo Grande Museum and Archaeological Park, Phoenix, Ariz. The museum's annual market will feature the works of more than 300 top Native American artists, ranging from paintings to jewelry to basketry. There will also be music, dancing, artist demonstrations, and native foods. (602) 495-0901, www.pueblogrande.com

PUEBLO GRANDE MUSEUM

Canadian Museum of Civilization

Gatineau, Quebec, Canada—The new exhibit "Profit and Ambition: The Canadian Fur Trade, 1779-1821" retraces the rise and fall of the Montreal-based North West Company, a commercial enterprise that pushed fur trade routes all the way to the Pacific Ocean, laying the foundation for the Canada we know today. Led by ambitious and ruthless partners, this extraordinary company brought together Scottish explorers and businessmen, French-Canadian voyageurs, Métis bison hunters, as well as Aboriginal trappers and "country wives." Featuring a collection of birchbark canoes, and 250 other artifacts and works of art, the exhibition looks at the accomplishments of the explorers and paints a vivid portrait of the living and working conditions of the people of the fur trade. (819) 776-7000, www.civilization.ca (Through September 2010)

CANADIAN MUSEUM OF CIVILIZATION

Society for Historical Archaeology 43rd Annual Conference on Historical and Underwater Archaeology

January 6–9, Amelia Island Plantation, Jacksonville, Fla. This year's theme is "Coastal Connections: Integrating Terrestrial and Underwater Archaeology." The conference will include presentations, symposia, panel discussions, and posters regarding current research and theoretical approaches to the coast, as well as archaeological responsibilities. (301) 990-2454, hq@sha.org, www.sha.org

XI Biennial Southwest Symposium

January 8–9, University of Sonora, Hermosillo, Sonora, Mexico. The symposium provides a forum for archaeologists and other scholars to discuss innovative ideas and to develop networks for anthropological research in the U.S. Southwest and Mexican Northwest. This year's theme, "Building Transnational Archaeologies," will feature discussions on how to transform national archaeologies into transnational archaeologies that are not artificially limited by political, cultural, or linguistic borders. Presentations and poster sessions will be followed by two field trips. Contact Randall McGuire at rmcguire@binghamton.edu, or http://sw-symposium.binghamton.edu/index.html

American Indian Music Fest: Evoking Prehistory through Music

January 30–31, Casa Grande Ruins National Monument, Coolidge, Ariz. This festive event celebrates the connection and continuity of pre-Columbian and current American Indian cultures. Experience a blend of pre-Columbian and modern native instrumentation, music, dance, storytelling, and poetry. Watch native artists engaged in the production of traditional and contemporary arts and crafts, taste authentic native foods, and dance to the rhythms of the past and present. (520) 723-3172, www.nps.gov/cagr

Miami International Map Fair

February 6–7, Historical Museum of Southern Florida, Miami, Fla. Map dealers, collectors, and aficionados from around the world will have an opportunity to browse and buy antique maps of every size, shape and color. The fair includes workshops, lectures, and sales by top international dealers. Visitors can have the historical value of their own maps assessed by a professional map dealer. Proceeds go toward maintaining and improving the museum's exhibitions, educational programming, and community outreach. (305) 375-1492, mapfair@hmsf.org, www.hmsf.org/programs.htm

7th Annual Tulane Maya Symposium & Workshop

February 26–28, Tulane University, New Orleans, La. This year's symposium will focus on how and why the great river cities of the ancient lowland Maya represent some of the most intriguing, opulent, and important segments of the civilization. (504) 865-5164, http://stonecenter.tulane.edu

Clovis Site Discovered In Northwest Mexico

El Fin del Mundo site includes remains of Ice Age animals.

Researchers have discovered an intact site dating to the Clovis period around 13,000 years ago in the northwestern Mexican state of Sonora. The site, known as El Fin del Mundo, contains the most extensive evidence found so far in Mexico for the Clovis, the oldest generally accepted New World culture. The research team, co-directed by archaeologists Guadalupe Sanchez-Miranda of the National Institute of Anthropology and History (INAH), Vance Holliday and Edmund (Ned) Gaines of the University of Arizona, has been excavating the site since 2007. The site was discovered by a rancher who noticed large bones protruding out of an arroyo there.

In addition to a camp and other Clovis activity areas, the site also has a bone bed that contains the remains of two juvenile gomphotheres buried under deposits that have been carbon dated to more than 12,000 years ago. The gomphothere is an elephant-like animal that roamed the Americas millions of years ago before gradually going extinct. Two Clovis projectile points, one fragmentary fluted point, one large cutting tool, and debris from stone tool making were found near the eroded margins of the bed.

At the camp, located on uplands about 700 yards from the excavation areas, a wide range of tools were found, including fragmentary Clovis points, end scrapers, blades, and stone flakes scattered over a large area.

VANCE HOLLIDAY

A researcher stands above the excavation area where the remains of the gomphotheres were found.

"The site is significant for several reasons," said Holliday. "It is the first archaeological association of a gomphothere in North America and likely the youngest reported gomphothere in North America. It is almost certainly Clovis, and we can now add gomphothere to the list of animals with which Clovis people had some sort of interaction. Additionally, the site extends the range of in-place Clovis sites in North America; this one is the southwestern-most and is also the first intact Clovis site found outside of the U.S. and the first found in northwestern Mexico. The project is also important because of the close cooperation of Mexican and U.S. archaeologists and agencies." The project is a collaboration between INAH and the University of Arizona.

Over the past 10 years, archaeologists have discovered numerous Clovis artifacts at various sites in northern Mexico, but none of those sites are intact, and that has limited the amount of information they have yielded. The archaeologists recently received funding from the National Geographic Society to support a third season of investigations at El Fin del Mundo, where work will focus on further exposing the ancient bone bed, and survey and testing of the nearby Clovis camp site.

—Tamara Stewart

Utah Looters Get Probation

Prison time unusual for antiquities thieves.

The first of the 26 defendants to be sentenced in the federal undercover investigation of antiquities thieves received probation. Blanding, Utah residents Jeanne Redd, 59, received three years' probation and a $2,000 fine and her daughter Jerrica, 37, got two years' probation and a $300 fine. Jeanne was charged with seven felonies and Jerrica with three, each of which carries a potential fine of $250,000 and up to 10 years in prison. Both entered a guilty plea in July.

Following sentencing guidelines, federal prosecutors had recommended probation for Jerrica and 18 months prison time for Jeanne, a repeat offender, but U.S. District Judge Clark Waddoups stated that, given the fact that the women live in Blanding where there is a long history of site looting and artifact collecting, he would ignore the guidelines, a decision U.S. Attorney for Utah Brett Tolman said was within Waddoups' discretion. Additionally, Waddoups alluded to "other consequences" suffered by the Redds, referring to the suicide of Jeanne's husband James Redd, a prominent Blanding physician, the day after he was indicted for illegally excavating ancient artifacts on federal and tribal lands.

"The public needs to understand that looting artifacts, many considered sacred by Native Americans, from public and tribal lands is simply not going to be tolerated," said Tolman. "It is clear that there is a continued need for education on the serious nature of these crimes." But probation in the first two cases has many concerned about the lack of seriousness of the sentencing.

"The sentence is disappointing," said Mark Michel, president of The Archaeological Conservancy. "And I'm afraid it sends a message that this is not serious criminal activity." An analysis of prosecutions under the Archaeological Resources Protection Act (ARPA) of 1979 revealed that probation was fairly typical for most people convicted of illegally digging and selling artifacts on federal or tribal lands in the U.S. For those few that get prison time, the sentences are generally one year or less.

Included in the Redds' sentences was a ban on firearms, artifacts possession, and entering federal and Indian lands, as well as the forfeiture of 812 artifacts, including Ancestral Puebloan ceramic bowls, tribal ceremonial items, hundreds of stone tools, finger bones, teeth, and other human remains obtained illegally from federal and tribal lands in the Four Corners region. Larry EchoHawk, assistant Interior Secretary for Indian Affairs, said that American Indian tribes should be given the first priority to reclaim artifacts seized by the government.

TAMI A. HEILEMANN, DOI

Interior Secretary Ken Salazar speaks at a news conference about the investigation.

Twenty-two others in the case have entered not guilty pleas and face federal trials. The two-year undercover investigation is the nation's largest attempt to stop looting and illegal artifact trafficking. —*Tamara Stewart*

Studies Refute Extraterrestrial Impact Theory

Researchers question the purported explosion and its effects.

Recent scientific studies have dismissed the theory that an extraterrestrial impact occurred over the earth around 12,900 years ago. In 2007, Richard Firestone, a nuclear chemist at Lawrence Berkeley National Laboratory, and other researchers proposed that an extraterrestrial object exploded above the Great Lakes region, causing catastrophic fires resulting in a 1,300-year long reversal of a warming trend following the last Ice Age, as well as the extinction of megafauna and a possible reduction in the population of the Clovis people.

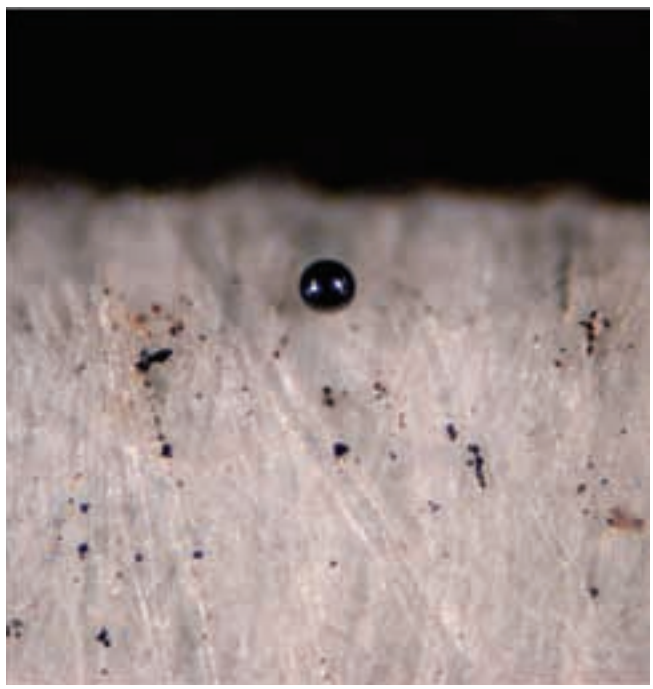
As evidence of the impact, Firestone's team cites an organic-rich layer, called a "black mat," that covers a thin "impact layer" consisting of extraterrestrial particles such as magnetic grains, carbon spherules, and nanodiamonds. These layers have been found at a number of deeply stratified sites dating to this time period.

Southern Illinois University geologists Nicholas Pinter and Scott Ishman analyzed samples from sites in California and Arizona, concluding that the black mat layers were formed from ancient wetland soils, and that the sites contain similar layers that date to the present. The geologists say that the presence of extraterrestrial particles is expected given that they continually fall to Earth from space. "It's well known that there's a constant rain of sand-sized meteoritic grains falling to Earth, which has been documented over decades of research," said Pinter.

In another study published this fall in the *Proceedings of the National Academy of Sciences*, archaeologists Todd Surovell of the University of Wyoming, Vance Holliday of the University of Arizona, and other researchers analyzed magnetic grains and other particles from seven North American sites dating to around 12,900 years ago, including two of the sites examined by Firestone's team.

"My colleagues and I collected samples from seven sites," Surovell said. "We did our best to replicate (the Firestone's team's) methods, but we failed to replicate any of their results. If there was an impact, we could find no evidence for it."

Holliday and David Melzter, a Paleo-Indian expert at Southern Methodist University, examined archaeological, geochronological, and stratigraphic evidence, and failed to find any indication of this event. "An Extraterrestrial Impact is an unnecessary 'solution' for an archaeological problem that doesn't exist," they write in an upcoming article in the journal *Current Anthropology*.



TODD SUROVELL

Tiny extraterrestrial particles, such as this one found at a site in New Mexico, are said to be proof of the impact theory.

Responding to the studies, Firestone said that Pinter and Ishman's conclusion is "completely disproved" by the fact that the majority of the extraterrestrial particles have been found in a narrow sediment layer dated to 12,900 years ago. He also said that the compositions of these particles are unlike the debris that routinely falls from space.

Firestone also said that Surovell and his colleagues' work is flawed because the samples they tested, which should have consisted of only the impact layer, also included the older and younger layers that surrounded it, and those surrounding layers distorted their results. —*Tamara Stewart*

Evidence of de Soto Found in South Georgia

Hernando de Soto's 1540 route through the Southeast may have been different than previously thought.

While searching for a remote 17th-century Spanish mission settlement along the Lower Ocmulgee River in south-central Georgia, archaeologist Dennis Blanton of the Fernbank Museum of Natural History has found the remains of a Native American settlement with early 16th-century artifacts that points to the presence of Spanish explorer Hernando de Soto.

In 2006, the Fernbank Museum embarked on a public archaeology program in a partnership with the Georgia Department of Natural Resources to locate Santa Isabel de Utinahica, the 17th –century mission. The research team was investigating the Glass site, a former native village, when they uncovered a glass bead and an iron tool, the styles of which indicated the site dated to the 16th century.

As the excavation continued, the researchers uncovered the footprint of a very large native building that appears to be a council house where special meetings, ceremonies, or rituals took place. The style of the ceramics they recovered suggests the site was occupied from at least the end of the 15th through the first decades of the 16th century. The researchers also found hundreds of elaborate smoking pipe fragments, objects made of marine shell, and a large assemblage of early 16th-century European artifacts, including six metal artifacts and numerous glass beads. Two varieties of beads had never been found outside Florida.

"This is the largest and best documented assemblage of early 16th-century Spanish material in the Southeast, hands down," said Blanton. "Many of the objects have been found in situ in undisturbed deposits. They all point to a site of real stature and give us our first concrete anchor of de Soto's passage through this vast area where none existed before." Prior to the discovery, there was no concrete evidence in Georgia of de Soto's path from the Florida panhandle to North Carolina, and many scholars expected his path to veer farther northwest, toward Macon. Blanton and his team have meticulously recorded the context of the artifacts, something missing from most other Georgia finds.

A 16th-century Spanish iron tool is removed from the council house floor.

A silver pendant from the Glass site. This pendant is the only piece of early Spanish silver that's been found outside of Florida.

"This brings a new degree of precision to the de Soto story, which is important because it was at that point that the New World changed, both for natives and for the Spanish. We've got to get the de Soto story right to fully understand this."

Blanton and colleague Frankie Snow of South Georgia College presented their findings at the 2009 Southeastern Archaeological Conference this fall. They plan to return to the site and complete excavations of the council house, and to use remote sensing to explore the rest of the site.

—Tamara Stewart

DAN SCHULTZ/FERNBANK MUSEUM

Remains of Historic Fort Accidentally Revealed

Beams discovered during Superfund cleanup.

Crews dredging the Hudson River accidentally pulled up wooden beams associated with Fort Edward, which was built by the British in the 1750s during the French and Indian War. The dredging, which took place on a stretch of the river from Albany north to the Town of Fort Edward, is part of a Superfund cleanup project directed by the Environmental Protection Agency (EPA).

The dredging is being done to remove sediments contaminated by polychlorinated biphenyls, a toxic compound better known as PCBs, that the General Electric Company released into the river for decades.

"This river has served as a navigational body of water for a long time, so the project is complicated," said John Vetter, an archaeologist with the EPA. Just before the dredging ended for the season, the workers pulled up a number of the fort's hand-hewn timbers from the river bottom that were entangled with timbers on the river bank. The dredging stopped and specialists from the Lake Champlain Maritime Museum in Vergennes, Vermont were called in to analyze the timbers.

The museum's underwater diving team, which had to undergo hazardous materials training prior to working on the project, was able to reconstruct some of the original timber alignments. They think the timbers served as footings to stabilize the adjacent fort. The underwater and terrestrial archaeological teams will submit a joint report of their findings.

"The recent archaeological discoveries in Fort Edward provide an interesting, if somewhat unexpected, window into the construction of a sizable fortification in the wilderness of New York during the French and Indian War," said Adam Kane, nautical archaeologist with the museum. "Recent excavations have shown the specific building techniques used to support the fort's southwest or 'water' bastion. The bastion wall was built by laying short perpendicular "sleeper" timbers at the very bottom, and stacking large hand-hewn timbers on top. These sleeper timbers still showed hash marks that the builders used to ensure their proper placement. These kinds of details about fortification construction are rarely, if ever, preserved anywhere outside the archaeological record."

LEONID SHMOOKLER, ECOLOGY & ENVIRONMENT, INC.

Archaeologists excavate the bank of the Hudson River.

"It's really nice to bring immediate understanding of Fort Edward to the town, its namesake, which is very excited to learn more and hopes to locally display the materials that have been uncovered," Vetter said, adding that the materials will first be tested for PCB contamination. Previous research has uncovered buried remains of the fort on both banks of the river, and evidence of barracks and other structures have been found on neighboring Rogers Island.

The dredging began last May and will continue for at least five years. It was preceded by two years of archaeological survey along the riverbanks and remote sensing in the river bottom.

—Tamara Stewart

High Life IN THE High Mountains?

University of Wyoming students map one of the lodges at the High Rise Village in Wyoming's Wind River Range.

RICHARD ADAMS

Newfound high-altitude prehistoric villages in Wyoming challenge old assumptions about the Shoshone.

By Lois Wingerson

Archaeologist Richard Adams never expected to find an ancient village straddling the tree line at an altitude of 10,700 feet in northwest Wyoming. But it was there that he found the remains of dozens of lodges cut into a steep mountainside. Single dwellings and hunters' blinds were found that high, but it has been decades since anyone found a whole prehistoric village in North America at such a height. In 1979, David Hurst Thomas of the American Museum of Natural History found Alta Toquima, a village of about 20 prehistoric houses situated above 11,000 feet in Nevada. A few years later, Robert Bettinger of the University of California-Davis began excavating the first of about 12 prehistoric villages above 10,000 feet in the White Mountains of east-central California.

Their work established that some prehistoric Native Americans had done much more in the high Western mountains than just hunt. These alpine village sites show signs of long-term occupation by entire families, beginning about a thousand years ago. The Wyoming site that Adams, a senior archaeologist with the State of Wyoming, calls High Rise Village, is roughly similar to the other sites in altitude and age. Two samples recovered from the site were radiocarbon dated to about A.D. 1140 and A.D. 1535.

Never before has a whole prehistoric village been found at a very high altitude as far north as Wyoming, points out David Hurst Thomas. "To find one that high at that latitude is really surprising," he says. High Rise Village is also remarkably large, with evidence of at least 60 lodges. The largest culturally-related village found at a lower altitude in Wyoming, the Shirley Basin site found in the 1960s by archaeologists with the University of Wyoming, had evidence of 24 dwellings. With that in mind, Adams began naming the lodge sites alphabetically, never dreaming he would have more than 26. When he found the 27th, he named it Lodge AA, and so on.

The discovery of High Rise Village prompts a number of questions. Why did these ancient people establish a large village where there is snow on the ground for nine months of the year? Why did they choose a slope with a 20 to 30 percent grade (as steep as a moderate ski run), using bone shovels to level the ground on which their lodges were

ORRIN KOENIG

Volunteers excavate a lodge in 2007. Archaeologist Richard Adams believes that the location of the village, though remote, offered the Mountain Shoshone many benefits.

built, when there's a meadow a few hundred yards downhill? Why carry tools made from stone that was quarried as far as 100 miles away, when there was a fine chert quarry only five miles distant? These questions remain, but after four seasons at the site, Adams and his team are confident they have answered their initial research questions: when did people live there, who were they, and what were they doing?

Virtually everything found at the site—the types of projectile points, the big bifacial knives, the stone grinding tools used for processing food—all point to the people known as the Mountain Shoshone, or Sheepeaters, one of many different bands of Shoshone who once roamed from California to Montana. The reclusive Sheepeaters, best known as hunters of the bighorn sheep that migrated through high mountains, were among the last Native Americans in the area to be moved onto a reservation, in part because they vanished uphill to avoid contact and conflict with other people.

Informed in part by the ethnographic record, Adams believes the Shoshone migrated to the high mountains in early summer to escape the heat of the valleys, and then they returned to the lowlands in autumn when the mountains began to turn Arctic. The high mountains are often considered a difficult place to live, but Adams and his coworkers believe the residents of High Rise Village were lured there by a wealth of resources—bighorn sheep, pine nuts, scores of other edible and medicinal plants, water from nearby springs, plenty of firewood—as well as the sheer beauty of the setting. "You look at it on a map and say, 'Why go all the way up there?'" says Orrin Koenig, a crewmember and graduate student at the University of Wyoming. "But you come up here a couple of times and you say, 'Why not?'"

Adams' central research question is how prehistoric peoples utilized the mountains through time. It has been assumed that they did not use the Rocky Mountains intensively because so few sites have been found there. But then the mountains haven't been extensively surveyed.

Adams grew up in Chicago, but he spent summers at a family cabin in Wyoming. He likes to say that he returned to Wyoming 90 minutes after graduating from high school to take a job washing dishes until starting college there in the fall. He says he "needed to see mountains." After college, Adams landed a job surveying the landscape for Wyoming's state archaeology department. To determine the seasonal migrations of the Mountain Shoshone, he mapped the locations where their steatite bowls had been found and the sources from which the steatite was quarried. He teamed up with outfitter Tory Taylor, who shared his interest in the Mountain Shoshone, to conduct surveys in the Wind River Mountains, a range of the Rockies in western Wyoming. Together, they have investigated more than 200 Mountain Shoshone sites.

During one outing in August 2006, accompanied by avocational archaeologist Joyce Evans, they stopped for lunch in a high meadow near a grove of whitebark pines that had been scorched by a fire about 25 years ago. They noticed many flakes of chert and quartzite, castoffs from the manufacture of projectile points. Then Adams found a flat, round, sandstone slab showing signs of repeated impact from another, smaller stone. It was a metate used by the early Shoshone as a grinding surface. "This is museum quality!" he remarked to Taylor.

Taylor and Evans spotted a stone circle, cleared of rocks

ORRIN KOENIG

Graduate student Bryon Schroeder holds a slab metate from Lodge CC that was probably used to process whitebark pine nuts.

RICHARD ADAMS

The weather is one of numerous challenges the researchers face. In 2008 a deep snow made excavation virtually impossible.

The researchers built an experimental wickiup and then, at the behest of the U.S. Forest Service, burned it down.

BRYON SCHROEDER

RICHARD ADAMS

and evidently cut and filled to level its surface. A few yards uphill, Adams found another. The next day, they located about two dozen more of what they call lodge pads. Even before any serious surveying began, the evidence of human occupation was unmistakable. The ground at the site was, and still is, littered with signs of projectile point manufacture. By last summer, Adams and his team—Koenig, Bryon Schroeder of the Natural Resources Conservation Service, and two students, Sarah Kennedy of the University of Wyoming and Matt Stirn of Davidson College, in North Carolina—had recorded 60 presumed lodge pads and thousands of artifacts.

A lodge pad, by their definition, is a visible ring of rocks enclosing an area about nine feet across that is clear of boulders, flatter than the surrounding slope, and also has a retaining wall on the downhill side. At the edges of a few lodge pads, they have found large, ancient branches interlocked horizontally. This suggests the remnants of a cribbed wickiup, a low-walled structure found at other Mountain Shoshone sites.

It's thought that the Mountain Shoshone were hunting sheep, and possibly elk and antelope. Though the researchers have only found a few sheep bones that survived in the acidic soil, they have recovered dozens of flakes and projectile points, as well as evidence of concealed hunting pits, near a migration corridor that bighorn sheep use to this day.

Lodge S contained more than 7,000 artifacts, including four dozen projectile points that appear to be Late Prehistoric. Inside that lodge pad, the team unearthed a slab-lined hearth—a "pit lined with five beautiful petals of sandstone," says Taylor—containing charcoal. This was radiocarbon dated to A.D. 1140.

Lodge D had large amounts of debitage from projectile point manufacture. Lodge CC, adjacent to Lodge D, yielded mostly what Schroeder calls "women's stuff:" pottery, bone awls, needles, scraping tools, and a worn sandstone hoe that was likely used to level the foundation. Analysis of the manos (grinding tools) indicate the obsidian from which they were fashioned was quarried roughly six to 20 miles from the village. "Nobody was prepared for how much we were going to find here," says Schroeder as he excavates just outside the weathered branches thought to be the wall of Lodge CC. "Tons of manos, tons of metates, scraping tools." The lodge also contained a cache of large bifaces.

Much of Shoshone archaeology in Wyoming has focused on hunting, but the researchers are intrigued by the possibility that the Shoshone could have acquired more of their food by gathering. At the tree line in High Rise Village, women could probably reach the pine cones and harvest their nuts, which could have provided nutrition for the entire winter. If the women worked 20 hours each week gathering and processing nuts to be carried downhill at the end of the summer, Adams calculates, they would have supplied up to 2,000 calories each day for about 50 people throughout the entire winter. That's about half the estimated population of the

RICHARD ADAMS

These replicated Sheepeater tools and prehistoric foods are resting on a big horn sheep hide. (From left to right) Peeled biscuitroot on a moose antler; a soapstone pipe; a bowl made from a deer bladder; a digging stick; a soapstone bowl containing chokecherry gravy; a basket with biscuitroot plants; a sheep horn; a large soapstone bowl containing trout bouillabaisse and a sheep horn spoon.

village, and more than the size of the usual Shoshone band.

In June 2008, Adams and his crew arrived to find High Rise Village covered with deep snow and impossible to excavate. So Adams put everyone to work building a model wickiup, using dead and downed timber on the hillside. If they couldn't dig, he reasoned, at least they could estimate how many lodges could have been built at one time using wood found within reasonable walking distance. (According to Adams, climatic studies suggest that the High Rise Village site was even more forested in prehistoric times than it is today.)

LYNN CUNNINGHAM

Richard Adams enjoys a piece of grilled big horn sheep.

Building a solid wickiup required eight hours of labor and 130 poles that were found over an area of approximately an acre. Given this, Adams reasoned that constructing 60 wickiups would have required collecting wood far from the village, and also using smaller pieces that would have been needed as firewood. Therefore, he assumes High Rise Village was built gradually.

The site is on land owned by the U.S. Forest Service, which stipulated that all evidence of the model wickiup be removed. So last June, Adams burned it. Two men from the Forest Service arrived at the site on horseback, carrying small tanks of accelerant. They doused the wickiup with the liquid, ignited it, and stood back as the dry wood exploded. Beforehand, the researchers had filled the wickiup with various items such as a soapstone bowl purchased in a garage sale, an arrowhead found inside a box of tools in a dumpster, some broken replicas of projectile points, a few animal bones. Some of these faux artifacts were buried, others were left on the surface. The wickiup smoldered for two days, and then a steady rain turned the ash to mud. Before leaving the site, the researchers excavated and recorded the items they had planted inside it.

There could have been a number of fires here over the centuries, so Adams conducted this experiment to gauge the effect of fire on the faux artifacts and wickiup. The researchers had wondered if a fire could have caused the demise

ORRIN KOENIG

These Late Prehistoric arrowheads were recovered from the site. They are made of chert and obsidian.

of the village, but the experiment suggested otherwise. "Artifacts that we left on the surface of our experimental lodge were much more heavily fire-altered than those we recovered from the prehistoric lodges at the site," he explains.

Though the recent fire laid it bare, Adams believes that High Rise Village was once covered with a carpet of pine needles that were soft and springy underfoot. A thick, undisturbed carpet, however, would suggest the Shoshone had moved elsewhere. He concluded the genuine artifacts recovered from the lodge pads weren't as badly scorched as the faux artifacts because the site had been covered with up to a foot of pine duff; consequently Adams thinks "the site burned long after abandonment."

"Some people think: Why live up there, because it's so costly? I think just the opposite," Adams says, citing the area's abundant resources. "The living was easy." His conclusion defies what some people who study high-altitude villages take for granted: that people were driven uphill to a marginal environment because of some calamity such as war or drought. If the summit was such a great place, argues Bettinger, "people would have started there and built downhill." Breathing is difficult there, it's easy to get dehydrated, and water is scarce. "The weather can turn on you in a heartbeat," he adds.

Adams is working on his Ph.D. at the University of Wyoming, and his dissertation adviser, Todd Surovell, who has visited High Rise Village twice; remains unconvinced that people would have preferred to live there. Wherever high mountain sites have been found, from California to the Himalayas, they always emerged late in prehistory, Surovell observes. These areas remained wilderness, he maintains, because nobody wanted to live there until, for some reason, they were compelled to.

Another University of Wyoming archaeologist, Robert Kelly, who has worked at Alta Toquima and is also familiar with High Rise Village, is more interested in knowing how it relates to the Shoshone villages in California and Nevada. If it was occupied at exactly the same time as the other villages, this would contradict the Numic expansion theory, which holds that the Shoshone originated in the Southwest and migrated gradually northeastward. Resolving this question will require more radiocarbon dates from High Rise Village. Adams has submitted more samples for dating, and he expects to get the results soon.

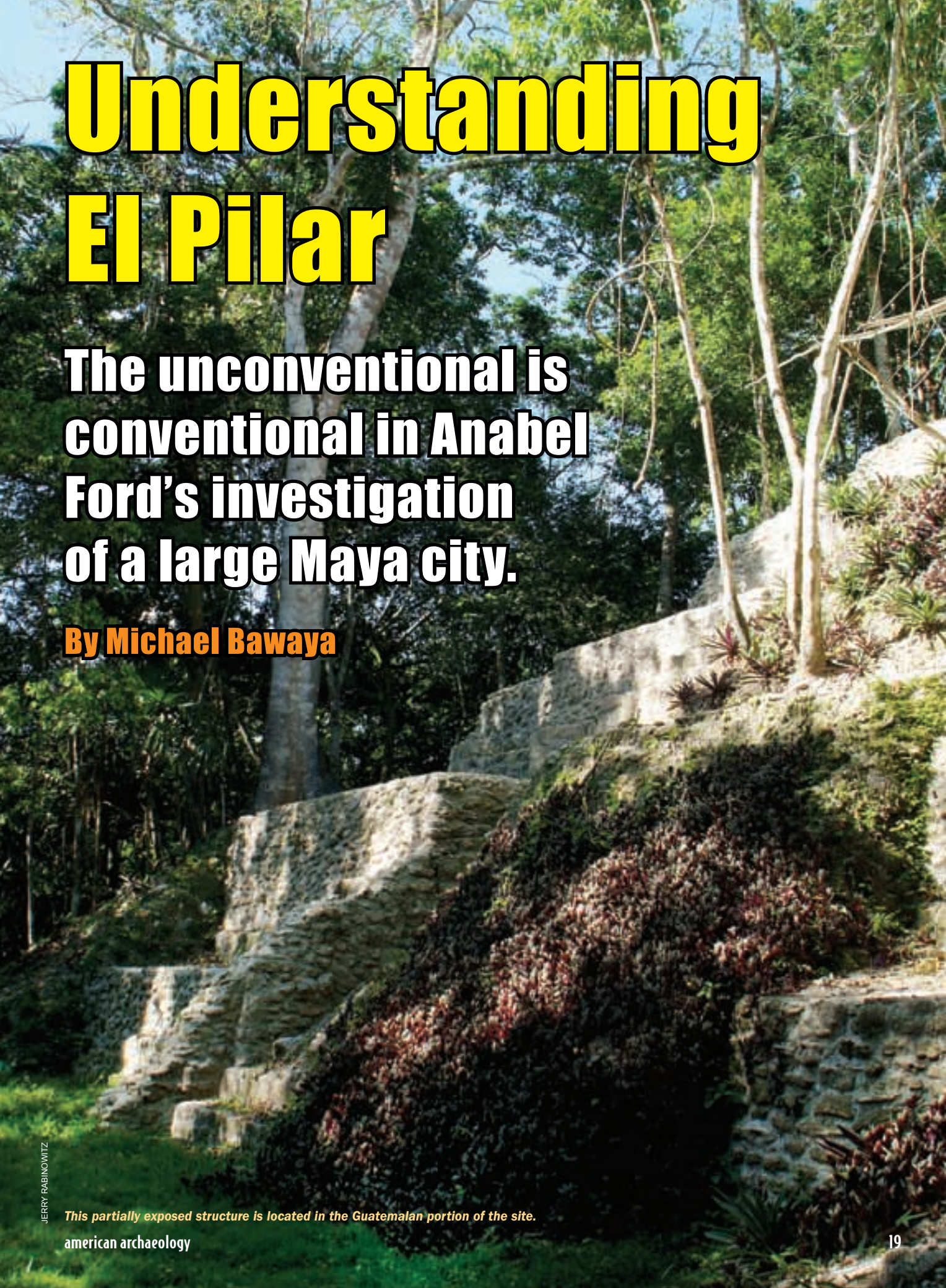
After finishing work at High Rise Village last summer, Adams and Koenig returned to three other sites nearby that were identified in 2003 but never surveyed for lodge pads. They found 17 lodges at one, five lodges and the same number of manos at the second, and four lodges at the third. How many more prehistoric mountain villages wait to be found? "There may be high rise sites all over Yellowstone," says Tory Taylor. "There's so much left to do."

LOIS WINGERSON, *author of two books about the human genome project, writes about biomedicine and archaeology.*

Understanding El Pilar

The unconventional is conventional in Anabel Ford's investigation of a large Maya city.

By Michael Bawaya



JERRY RABINOWITZ

This partially exposed structure is located in the Guatemalan portion of the site.

BRASS EL PILAR PROJECT, UCSB

Annabel Ford has been investigating El Pilar for more than 25 years. The photo above shows her digging in 1983, and the picture below was taken last summer.

To Anabel Ford, it's all very simple. To understand the great Maya cities, you must understand their settlement patterns. By this she means knowing their neighborhoods, their suburbs, and the activities that took place there. This knowledge is essential to drawing reasonable conclusions about what transpired in those magnificent metropolises.

When Ford, an archaeologist with the MesoAmerican Research Center at the University of California, Santa Barbara, started working in the Maya region in the mid 1970s, virtually all archaeologists focused on the city centers. That, to her way of thinking, is backwards. "It's very difficult to understand the city centers without understanding what contributes to their prosperity," she explains.

Things have changed over the years and, according to Ford, more Maya archaeologists are investigating the residential areas, but few of them concentrate on settlement patterns to the extent that she does. She's convinced that knowing where people settled and what they did is not only crucial to understanding the ancient city of El Pilar, but also the entire Maya world.

In 1983, while working on the Belize River Archaeological Settlement Survey (BRASS) project in west-central Belize, Ford found evidence of El Pilar, which was once the largest Maya city in this region and more than five times the size of its well-known neighbors Xunantunich and Baking Pot. (The name "El Pilar" is Spanish for "the watering basin," reflecting the abundance of water in the area, which is rare in the Maya world.) El Pilar covers roughly 125 acres and spans the Belize-Guatemala border. Ford and her colleagues have identified more than 25 plazas there, as well as a dozen large pyramids and many smaller structures. The city was first occupied around 1000 B.C., during what's known as the Middle Preclassic period, and some 200 years later the residents began the construction of their downtown.

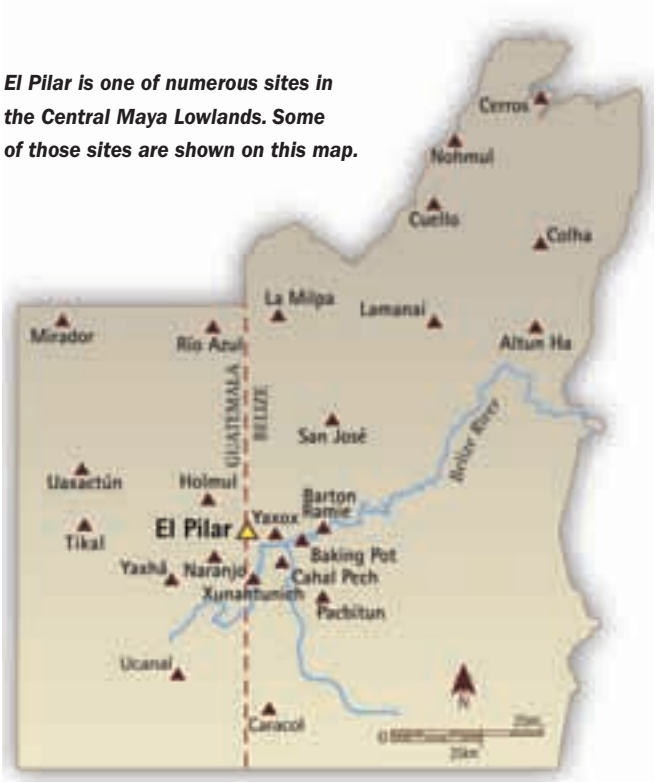
Ford loads an aged Chevy Suburban with a handful of students and begins the drive from the rental house in the town of Santa Elena that serves as the base of her project, to El Pilar. About a mile from the house the Chevy, which was just in the shop for repairs, breaks down, and a chagrined Ford radios the house and requests that they be picked up in one of the BRASS project's other vehicles. Ford operates on a shoestring budget and her

JERRY RABINOWITZ

equipment, as well as her small crews, reflect that austerity. A staff member in old pickup comes to the rescue, and everyone resettles themselves—several in the truck bed—and the 10-mile drive to El Pilar resumes. The dirt road leading to the site takes its toll on her vehicles. Swerving to avoid rocks, Ford hits numerous deep ruts, jolting her passengers as she creeps along.

Having reached El Pilar, she leads the group around its main plaza, known as Copal. "This is a great public plaza," she says. "Clearly it was a congregating place for the local community." Her excavations have revealed that Copal was built during the Late Preclassic period. She's also identified several construction episodes, indicating the buildings were renovated many times during the ensuing centuries. "There were four major rebuildings of EP7 in the Late Classic alone," she says, referring to one of Copal's structures. Though some of the city's structures were built earlier, the Late Preclassic was the time when the design and shape of the plazas became more sophisticated, what she refers to as urban planning. "In terms of exactly what was going on here, I would say pomp and circumstance," says Ford.

With the passing of the centuries, pomp and circumstance have given way to serenity as the plaza has been reclaimed by the forest, its buildings disappeared under a blanket of greenery. Ford excavated the stairways of the buildings to learn about their construction, then subsequently backfilled them for protection. She wants to expose more of El Pilar's structures, but she wants to do it in a way that shades them from the harsh sun by the trees, a practice that she calls "archaeology under the canopy."



El Pilar is one of numerous sites in the Central Maya Lowlands. Some of those sites are shown on this map.

EVOLUTION GRAPHICS

Not all archaeologists working in the Maya region are preoccupied with the culture's fabled collapse; nonetheless it's hard to ignore this calamitous occurrence. Though Ford has focused on settlement at El Pilar and other sites (she's

JERRY RABINOWITZ

Trees and other vegetation now cover the ruins of a structure adjacent to Plaza Copal.

Archaeologists excavate in a tunnel in a structure known as EP 7.

also worked at Tikal and at small sites near El Pilar), her conclusions have drawn her into the collapse debate. Archaeologists have attributed the Maya's fall to several factors, one of which, in the minds of many researchers, was environmental degradation.

Their argument goes something like this: As they ascended to their pinnacle during the Classic period (A.D. 250-900), the Maya voraciously, sometimes wantonly, consumed resources. For example, in some cases they used huge quantities of plaster to coat their structures. They produced the plaster by burning lime, and the fires were fueled by wood. This, compounded by their practice of slash-and-burn agriculture, resulted in deforestation, which in turn led to soil erosion and diminishing crop production. (Some Mayanists believe that drought exacerbated this scenario.) Food became so scarce that the common people couldn't eat. Meanwhile, warfare was raging in many parts of the Maya world, contributing to an overstrained social-political order that eventually shattered, hence the collapse.

However plausible this argument may be, Ford doesn't buy it. "The assumption is that the only way to make plaster is the way the Romans made plaster—you calcinate lime, you burn limestone," she says. "There's plenty of limestone here." But when she found that the buildings at El Pilar's Plaza Axcanan have no calcinated lime, she began to question the argument. Then she met Maria Teresa Uriarte, director of the Institute of Esthetic Investigations at the National Autonomous University of Mexico and an expert on Mesoamerican mural art, who told Ford the Mesoamericans had a variety of methods for making plaster that didn't require burning limestone.

A number of Maya scholars believe that pollen data taken from lake sediments in the Petén, the huge rainforest in northern Guatemala, corroborate the deforestation scenario. That data shows a decline in the botanical family that includes the ramon tree during the Classic period. This tree is one of the 20 dominant species of the Maya forest, and it's thought that the ramon's decline represented the decline of the forest in general. There is also a corresponding rise in the presence of grasses and herbs that suggests deforestation. "That's the reigning hypothesis that's become almost doctrine," says Ford.

She responds that the pollen data is incomplete and therefore misleading. Given the forest's diversity, it's far from certain that a decline in ramon is evidence of deforestation. Furthermore, the data only consist of wind-borne pollen, according to Ford, which is a small fraction of the rain forest's pollen. Most of the pollen is transported by insects and animals. Mahogany, another prominent rain forest species, is

BRASS EL PILAR PROJECT, UCSB

HENRI DUNSTER

A model of some of the structures in the northern section of El Pilar. These structures were difficult to access, which could mean that they were reserved for the city's elite.

The exposed remains of this residential structure are shaded by a canopy of trees that helps to protect them from the sun.

pollinated in this manner. "How could (the Maya) prosper if they're destroying their habitat," she says.

She adds that isotopic analysis of Maya remains, which reveals information about diet, indicates they ate plenty of meat, including monkeys, various birds, and other animals that utilize trees. "If you're talking about a destroyed Maya forest," Ford says, "how could they be eating meat three times a week?"

And then there's the matter of settlement patterns. Ford has taken what she calls a unique approach, collaborating with a geologist, geographer, and engineer, to develop a predictive model of Maya settlements. The model takes into account such factors as soil fertility, proximity to rivers, drainage, and slope to identify particular areas where the Maya were likely to settle and farm. Ford tested the model's conclusions in a 500-square-mile area in and around El Pilar and found them to be accurate. From this she extrapolates that her model can identify settlement patterns throughout the Maya world and she's estimating there were roughly 385 people per square mile on average and 1010 people in the most densely populated areas. Her total population count for the greater El Pilar area is 182,600.

Ford contends that Maya population estimates in general, and those of neighboring Tikal and Caracol in particular, are inflated. One estimate of Tikal has an average per-square-mile population density of 1,295 people, while Caracol is thought to have had roughly 1,700 people, if not more. These estimates are often based on the number of structures that have been identified and the assumption that each structure is a house that, on average, accommodated at least five people. (Some population estimates assume as many as 5.6.) But these assumptions are incorrect, Ford says, because they're based on generalizing settlement distribution that, according to her predictive model, the land could not have supported. Her model indicates that 82 percent of the settlement was located on just 24 percent of the land, and she suspects that most of the other population estimates are based on

JERRY RABINOWITZ

It was common for structures to be remodeled at El Pilar. This corbeled arch passageway was sealed during remodeling in the Late Classic period.

far greater settlement density. She adds that studies of Maya agricultural production suggest a yield that corresponds with her estimated population.

Determining how the Maya used their land requires accurate population estimates. Ford's lower estimate also buttresses her contention that the Maya didn't ravage their environment, given that fewer people were likely to consume fewer resources. Maya archaeologists who arrive at higher population estimates "are exaggerating," she says. "I don't know why they're exaggerating." Then she hastens to explain why: "maybe they want their site to be the most important," and to their minds being the biggest, the oldest, the grandest makes it so.

David Webster, a Maya archaeologist at Penn State University, agrees. "It's because Mayanists have a kind of chip on their shoulders," he says. They think the Maya were "exceptional," a culture like no other, and the archaeologists want that exceptionalness to be borne out in the archaeological record. Webster also agrees that many archaeologists overestimate the Maya population, "probably by a factor of 200 to 300 percent." He thinks the error results from the per-house population assumptions being too high.

The Caracol estimate comes from University of Central Florida archaeologist Arlen Chase, who, along with his wife Diane, has been investigating the site for 25 years. He insists there is no exaggeration in their population estimate. Based on a count of the houses, the Chases arrived at a figure of at least 115,000 people and possibly as many as 140,000 in an area of roughly 68 square miles. These estimates result in a density of about 1,690 to 2,060 people per square mile, which is significantly higher than Ford's estimate.

Though they disagree on population density, Arlen Chase, to some extent, supports Ford's view that the Maya were good stewards of their lands. "They very tightly managed their environment" in pursuit of sustainability, Chase says. But that's not to say they were Sierra Club-caliber environmentalists. "They clearly denuded the environment at Caracol," he adds. Chase thinks many archaeologists believe the Maya understood the need for sustainability despite the fact that they clearly left their mark on the land.

Webster, however, isn't one of them. Though he acknowledges the pollen data is unconvincing, Webster is convinced the abundant evidence of erosion, deforestation, and abandonment shows the Maya had little regard for sustainability. Ford's argument that the Maya didn't overtax their landscape is accepted by "a very tiny minority" of archaeologists, he says.

Extracurricular Activities

Anabel Ford's investigation of El Pilar has spun off several other related endeavors. El Pilar was designated a protected park in 1998, and it's now known as the El Pilar Archaeological Reserve for Maya Flora and Fauna. To achieve this, Ford had to work with the governments of Belize and Guatemala, who have a history of adversity. The name reflects Ford's desire to preserve not only the archaeological resources, but also this large swath of the rain forest and its inhabitants.

That would seem challenge enough, what with tight budgets and small crews, but her ambitions far exceed that. Ford wants to save the world from itself. Her El Pilar Web site states: "The Maya sustainable practices that demonstrate the mutual benefits of culture and nature are unknown to the world. Collaborative research on the culture and nature of the Maya forest promises to open new paths to knowledge and understanding that will create a conservation model for the future of our civilization."

It might seem contradictory to turn to an ancient culture remembered as much for its failure as its glories for a solution to our 21st-century ecological dilemma, but not to Ford. She's been working with a group known as the Forest Gardeners that consists of living Maya farmers who believe in sustainable agriculture and maintaining the biodiversity of the forest. They also educate the public about the importance of their practices, which they say date back to their ancient ancestors. Their work has influenced Ford's thinking about how the ancient Maya treated their environment.

Ford is also involved in the activities of Amigos de El Pilar, an organization dedicated to improving the local economy by developing opportunities related to ecotourism at El Pilar and the surrounding area.

Attracting tourists to El Pilar is another responsibility Ford has assumed. A study concluded that the carrying capacity of the reserve is less than 150 people a day, and she estimates they're drawing roughly that many visitors a month. (According to a United Nations estimate, nearby Tikal averages over 200,000 visitors annually.) El Pilar is hard to reach and few of its structures are exposed. Ford would like to uncover more of the buildings, but she wants to do it under the canopy to provide "an adventure experience" while preserving the buildings. If I had $200,000 to $300,000 a year for five years, I could really make this something, " she says.

JERRY RABINOWITZ

Maya forest gardener Narciso Torres cuts a cacao pod. The ancient Maya made chocolate from cacao.

The tourism industry is convinced that visitors insist on exposed ruins, Ford says, however she thinks it's a matter of how a site is marketed. "If you say, this is like the archaeologists found it," tourists will come for that experience.

Though she hasn't won over the tourists, she has convinced the judges of the Rolex Awards for Enterprise, who cited her in 2004 for developing El Pilar "into a model for conservation, sustainable development, and cooperation." According to its web site, the awards, which are associated with the famous watch manufacturer, "recognize pioneering projects that demonstrate innovative thought and contribute to the betterment of humankind." *—Michael Bawaya*

Obsidian prismatic blades have been found throughout El Pilar. The blades were used for cutting. The obsidian was imported from as far as roughly 250 miles away.

JERRY RABINOWITZ

Regardless of how its residents treated their environment, El Pilar, having stood for some 2,000 years, fell sometime after A.D. 1000. Ford is trying to understand why. "We know things are going gangbusters in the Late Preclassic," she says, and another construction boom occurred around A.D. 600 to 900 in the Late Classic period. During these times, the city and its leaders were thriving.

Ford has also surveyed and excavated several small agriculture settlements south and east of El Pilar along the Belize River. She discovered that the households in these settlements had more land than El Pilar's households, and that some of the houses, presumably those of the settlements' leaders, were fairly large. A number of the houses contained luxury items made of jade, obsidian, and chert.

These agricultural settlements were essential to El Pilar's success, Ford hypothesizes, and consequently the city exerted control over the settlements. "There's a centrifugal force for agriculture," she says, noting that the settlements tended to be dispersed. Centralization of these settlements, however, better suited the wants and needs of El Pilar's elites. This could have caused some tension, but in any case the parties engaged in trade: the settlements sent maize, cacao, tobacco, and cotton to El Pilar in exchange for fine goods. The settlements were located on very fertile land, and more people would have likely moved there, building their houses and growing crops for themselves, but Ford suspects the city's elites prevented this, as it would have required some of the land dedicated to satisfying their appetites.

It went on like this, Ford surmises, until El Pilar was victimized by its own success, growing to the point that it lacked the means to maintain itself. The city declined because "they couldn't afford the infrastructure," she says, drawing a parallel between El Pilar and her home state of California, where services have been reduced because of a huge budget deficit. The growth of the structures in number and size meant more labor was required to maintain them, labor that wasn't available.

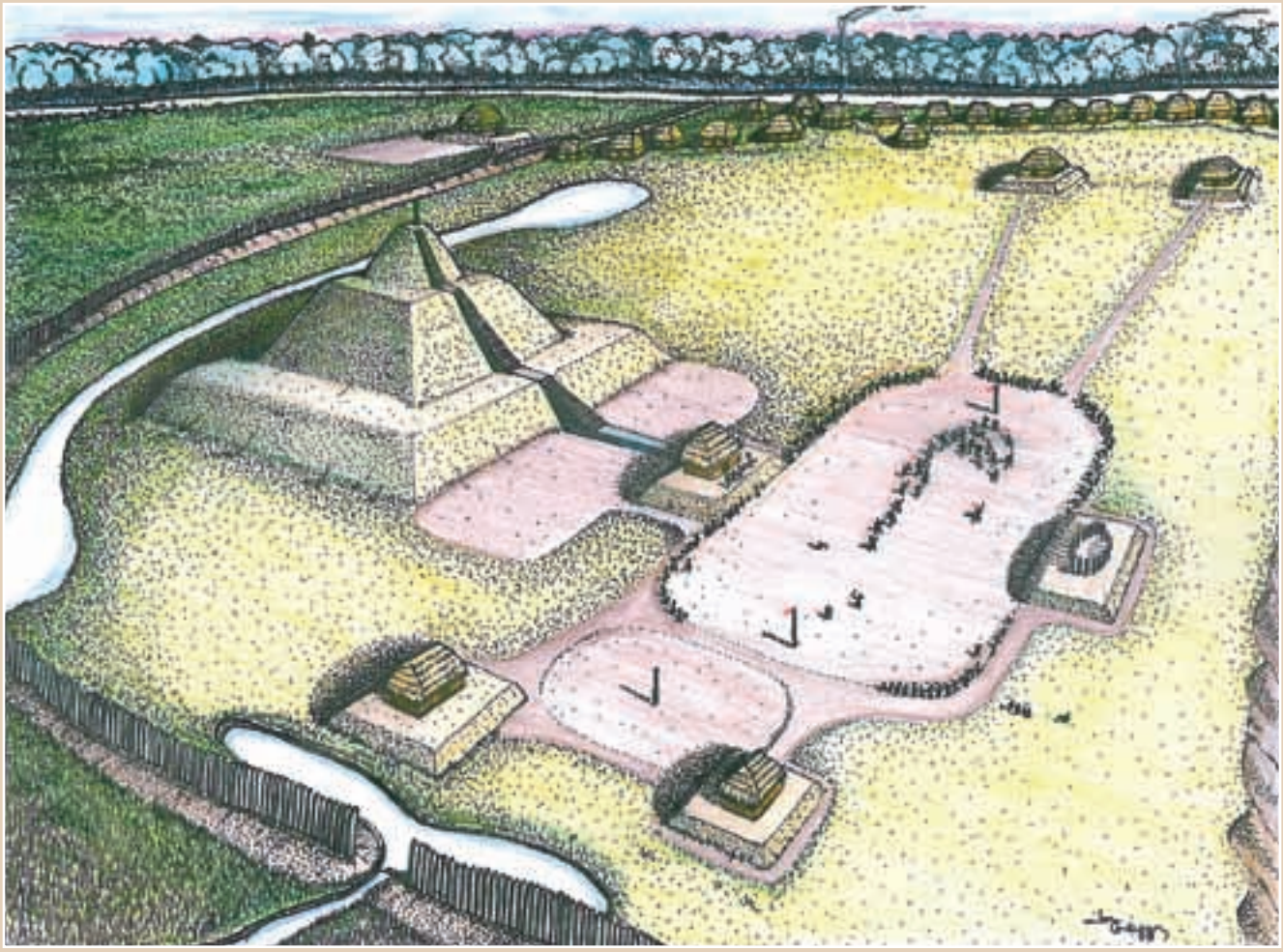
"It was the political economy that imploded," says Ford, "not the subsistence economy." By this she means that, though their lands were still sufficiently productive to sustain them, their leaders overreached, causing El Pilar's slow but certain downfall. Besides providing produce, it's likely that the agricultural settlements also supplied the labor to build and maintain the structures, and that their leaders may have refused, or simply been unable, to meet El Pilar's increasing demands. So the structures gradually became dilapidated and the city was eventually abandoned. Resorting to another modern parallel, she compares El Pilar's abandoned structures to vacant buildings in Detroit, which has suffered from the decline of the automotive industry. Ford throws in other recent events, like the subprime mortgage fiasco, as examples of overreach preceding implosion.

Exactly what caused El Pilar's demise a thousand years ago is hard to know, but Ford continues to search for evidence that could yield fresh insights. To her mind, El Pilar offers lessons that resonate beyond archaeology. Having made yet another comparison between then and now, she states the obvious: "I think there are analogies."

MICHAEL BAWAYA *is the editor of* American Archaeology.

For more information about the El Pilar investigation, visit the web sites www.marc.ucsb.edu/elpilar and www.espmaya.org.

Reconstructing the Great Mound



JON GIBSON

An artist's depiction of the 1,400-year-old city of Troyville.

Beneath the town of Jonesville lie the remains of Troyville, one of prehistoric America's biggest mound complexes. Over the years, the people of Jonesville watched as the mounds were leveled. Now they are working to preserve and rebuild its most impressive mound.

By Stanley Nelson

ESTELLE GRIFFIN RUSSELL

It's not certain when this photograph of the Great Mound was taken, but it was probably in the late 1920s or not long after.

"I've been thinking about it all my adult life," says Bill Atkins. The "it" that preoccupies Atkins is the Great Mound of Troyville. Two years ago Atkins, of Jonesville, Louisiana, was driving his mother to her weekly bridge game. Now 94, she played on Troyville's Great Mound as a child. "I was talking about building a replica and telling her that I didn't know where to get the dirt from and figured it would be expensive," says Atkins. "She said, why don't you use the bridge fill." The thought had never occurred to him. Thus began an unusual preservation project.

The remnants of the ancient city of Troyville are buried under the town of Jonesville. Troyville, which dates to approximately A.D. 600, was "one of the largest mound complexes in America, and the Great Mound was one of the tallest structures ever built in pre-Columbian America, which proves its local and regional importance in the sweep of history in the Lower Mississippi Valley," says Jon Gibson, a Louisiana archaeologist who excavated part of Troyville's embankment, a levee-type structure that surrounded the Great Mound and the village's smaller ones, in 1966. Troyville is also one of the type-sites of the Troyville culture (A.D. 400-700).

The Great Mound once stood 80-feet high, the second highest prehistoric mound in North America behind the 100-foot tall Monk's Mound at the Cahokia Mounds site in Illinois. A two-tiered, pyramid-shaped structure with a conical top, the Great Mound towered over at least nine other mounds, eight of which were contained within the embankment that ran to the Little River on the northwest and the Black River on the southeast. Jonesville sits at the convergence of four rivers—the Little, Black, Ouachita, and Tensas.

Two explorers—William Dunbar and George Hunter—provided an eyewitness description of Troyville some 200 years ago. Dunbar was a scientist, surveyor, and naturalist from nearby Natchez, Mississippi. He was also a pen pal of President Thomas Jefferson, who asked Dunbar and Hunter, a Philadelphia druggist, to explore the Ouachita River Valley up to the hot springs of Arkansas. The Ouachita River Expedition of 1804-05 was one of four organized by Jefferson, including Lewis and Clark's, to explore the reaches of the Louisiana Purchase.

STANLEY NELSON

Butch Lee, Joe Saunders, and Bill Atkins stand in front of the replica of the Great Mound that's being constructed.

NPS / HOT SPRINGS NATIONAL PARK COLLECTIONS

Artist Bert Hanor's conception of the expedition led by William Dunbar and George Hunter that landed at Troyville in 1804.

The expedition landed at Troyville in a vessel designed by Hunter in late 1804. Onboard were the two leaders, 12 U.S. soldiers, their sergeant, two of Dunbar's slaves, one of his servants and a runaway slave named Harry. Here, the expedition found one settler, a Frenchman named John "Caddy" Hebrard, known as a great hunter and explorer in his own right, who ferried travelers across Black River. Dunbar and Hunter walked the mound complex and climbed to the top of the Great Mound, which was covered with thick cane.

The expedition report contained this description of the Troyville site: "There is an embankment running from the Catahoola (Little) to Black river (about two hundred acres of rich land), at present about ten feet high, and ten feet broad. This surrounds four large mounts of earth at the distance of a bow-shot from each other; each of which may be twenty feet high one hundred feet broad, and three hundred feet long at the top, besides a stupendous turret situate on the back part of the whole, or farthest from the water, whose base covers about an acre of ground, rising by two steps or stories tapering in the ascent, the whole surmounted by a great cone with its top cut off. This tower of earth on admeasurement was found to be eighty feet perpendicular."

In 1852, Andrew Robert Kilpatrick, a Black River planter and prolific writer, observed that the Great Mound was now "not much over 50 feet." Construction of a Confederate rifle pit during the Civil War cut a chunk out of the mound, while farming and construction projects reduced the smaller mounds.

The Great Mound's fate was sealed during the Great Depression when Louisiana Governor Huey Long embarked on a massive public works program. Among the 100-plus bridges he constructed in the state, one was built at Jonesville. The contractor building the bridge across Black River saw the Great Mound as a source of fill dirt for the approach. No one in town objected because it meant construction jobs for the locals and the bridge would replace the 140-year-old ferry service.

Archaeologist Winslow Walker of the Smithsonian Institution was in the area, and when he learned of the destruction of the Great Mound he raced to Jonesville. According to Walker's account, the demolition began early in the summer of 1931 and continued for a month, with work crews, steam shovels, horses, and scrapers working continuously. A steam shovel tore up huge strips of cane and scooped up clay. For days the people of Jonesville choked on heavy clouds of dust.

After the work stopped, Walker excavated the site, including the base of the Great Mound, for 10 weeks, during which time he had to deal with several landowners who were convinced he would unearth buried treasure left by the Natchez Indians when they fled the French during a war in 1730. In November 1932, he discovered a burial site along the Little River. That night it was vandalized by locals who were certain that the remains were proof that treasure was below. The next day the landowner put an end to the excavation and, disgusted by the constant interference, Walker left town. Jim Barnett, author of the book, *The Natchez Indians: A History to 1735*, says "vague stories about the Natchez Indians and buried treasure" still circulate. But he said there's no evidence the Natchez had even an ounce of treasure or that they ever encamped at Troyville during the war with the French.

UNDERSTANDING TROYVILLE

"One reason Walker went to Jonesville was to determine the purpose and function of the split cane found on the Great Mound," says Joe Saunders, regional archaeologist at the University of Louisiana Monroe. Saunders has been mapping Troyville and taking core samples of the site since 2002. "The Troyville culture shares many stylistic traits with the earlier Marksville culture (100 B.C.–A.D. 400)," Saunders says. "But very little is known about the Troyville culture."

Describing Walker's findings as "truly astounding," Saunders notes the exceptional preservation of the cane as well as the sophisticated construction that incorporated "clay-cane domes, the log palisade, wooden planks, and the cane matting secured with wooden stakes in the Great Mound." The domes, fashioned from alternate layers of dirt and cane, were particularly remarkable. Cane was employed in the construction of at least three other mound sites in the region, though not as extensively, or as imaginatively, as it was at Troyville.

Several years ago Earth Search Inc., a cultural resources management firm, was hired by the state to do archaeological mitigation during the widening of U.S. 84, which goes through Troyville. Aubra "Butch" Lee, vice president of Earth Search and director of the project, says that data from previous investigations suggested that Troyville was a ceremonial center with only a few people living there. The complex was possibly filled to capacity, however, when villagers from throughout the region "assembled here for annual or seasonal rituals, for mound construction work, communal feasting, and events. The embankment with the mounds inside denotes that this was a sacred place."

As Earth Search's work continued, however, Lee began to view Troyville in a different light. In 2005, Earth Search archaeologists found 31 pit features, posts from four circular structures, animal bones, pottery sherds, and stone tools while excavating a section of the embankment just south of where Walker worked in 1930s. "Two of the circular structures were large and we think that they were used by people coming in for annual ceremonies," says Lee. The other two structures were smaller, and likely served as households. It appears that over time, Troyville became more residential. "My presumption is that people were beginning to live on the embankment and this may be the beginning of a permanent population at the site," he adds.

In 2006, while excavating another part of the site along the Black River, Earth Search archaeologists found evidence of two more structures, one a house with a hearth and two

WINSLOW WALKER

This 1931 photo by Winslow Walker shows myriad strips of cane that once formed a dome. The top of the dome had been scraped away by this time.

bell-shaped pits. The second structure was a multi-purpose building where pigment was produced. They also uncovered an intact midden. "We found evidence of raw pigment and Catahoula sandstone, which is white," Lee says. "This sandstone was encrusted with pigment and a very small mortar found had traces of pigment. It appears they (inhabitants) were producing and refining pigments."

This is further evidence of a growing population. "The domestic refuse in the midden suggests people were beginning to live here on a more permanent basis," he says. "We are seeing refuse deposits around the mounds and away from them."

In the course of the highway project, the 1930s bridge was torn down and replaced by a new bridge. The project also called for the excavation of the old bridge ramp fill. Prior to the excavation, which took place this fall, Saunders expressed his hope that data from the bridge ramp excavation would "help archaeologists study the continuity of the Troyville culture with the earlier Marksville culture. And if we are really lucky, perhaps sections of the cane matting, wood planks, and logs will have survived."

The archaeologists were lucky indeed. With each pass of their trackhoe, Earth Search researchers carefully stripped four inches of fill dirt from the ramp. They found pieces of cane, some of which were about six feet long and nearly three feet wide. They also discovered pieces of wood used to hold sections of cane in place, all indications of "a sophistication in construction," Lee says, echoing Saunders. "The Great Mound was not just dirt heaped up. There were layers of clay, silt, and cane staked in." Building the mound required intensive labor. "They used tens of thousands of linear feet of cane," he says. "The entire complex was well-coordinated. There was an organized effort to cut cane, prepare posts and stakes."

EARTH SEARCH, INC.

This length of cane is one of eight large sections uncovered in the ramp fill dirt. It's approximately six-feet long and three-feet wide.

Saunders was stunned by the artifacts Lee recovered. "It exceeded our expectations. He collected bundles and patches of split cane matting, wooden stakes that secured the matting, fragments of wood boards, large pieces of wood, ceramics, and lithic artifacts," says Saunders. "Small sections of layered-cane and mound fill may be from the split cane domes described by Walker. It is just magnificent that this has survived."

During the fall, Saunders and retired soil scientist

JOE SAUNDERS

A nine-foot-long core sample taken from the Great Mound.

The Conservancy Helps To Preserve Troyville

The Conservancy recently acquired Mound 4, one of Troyville's smaller mounds. The acquisition "energized the community," says Bill Atkins. "This told us that preserving Troyville is important."

Archaeologist Joe Saunders did a test excavation of Mound 4, uncovering a pit with over 1,100 pottery sherds. He also discovered that more of the mound is intact that was previously thought. Archaeologists are trying to understand the relationship between Mound 4 and the Great Mound, which were connected by a causeway. Palisades protected the Great Mound. "The palisades seem to indicate an attitude of 'stay away.' Symbolically the Great Mound was an important place, so access was limited," says archaeologist Butch Lee.

The Conservancy hopes to acquire the remains of some of Troyville's other mounds. "There are five more tracts in the town that I'd like to get," Jessica Crawford, the Conservancy's Southeast regional director, says.

BILL ATKINS

Archaeologists Butch Lee and Stuart Nolan remove a small section of cane uncovered in the ramp fill.

Thurman Allen collected four soil cores from the Great Mound base, and they were surprised how much of the mound is still intact. One section, says Saunders, "was composed of four or five feet of stratified in situ deposits." The others were disturbed or very shallow. Allen discerned that the Great Mound was built on red levee deposits from the Arkansas River, thus making it easy to tell where the bottom of the mound began.

The archaeologists are trying to determine how long it took to build the Great Mound. "That's the question staring us in the face," Lee says. He thinks the mound could have been built in a short period of time because there do not seem to be signs of erosion, but he needs more information to arrive at a conclusion.

RECONSTRUCTING THE GREAT MOUND

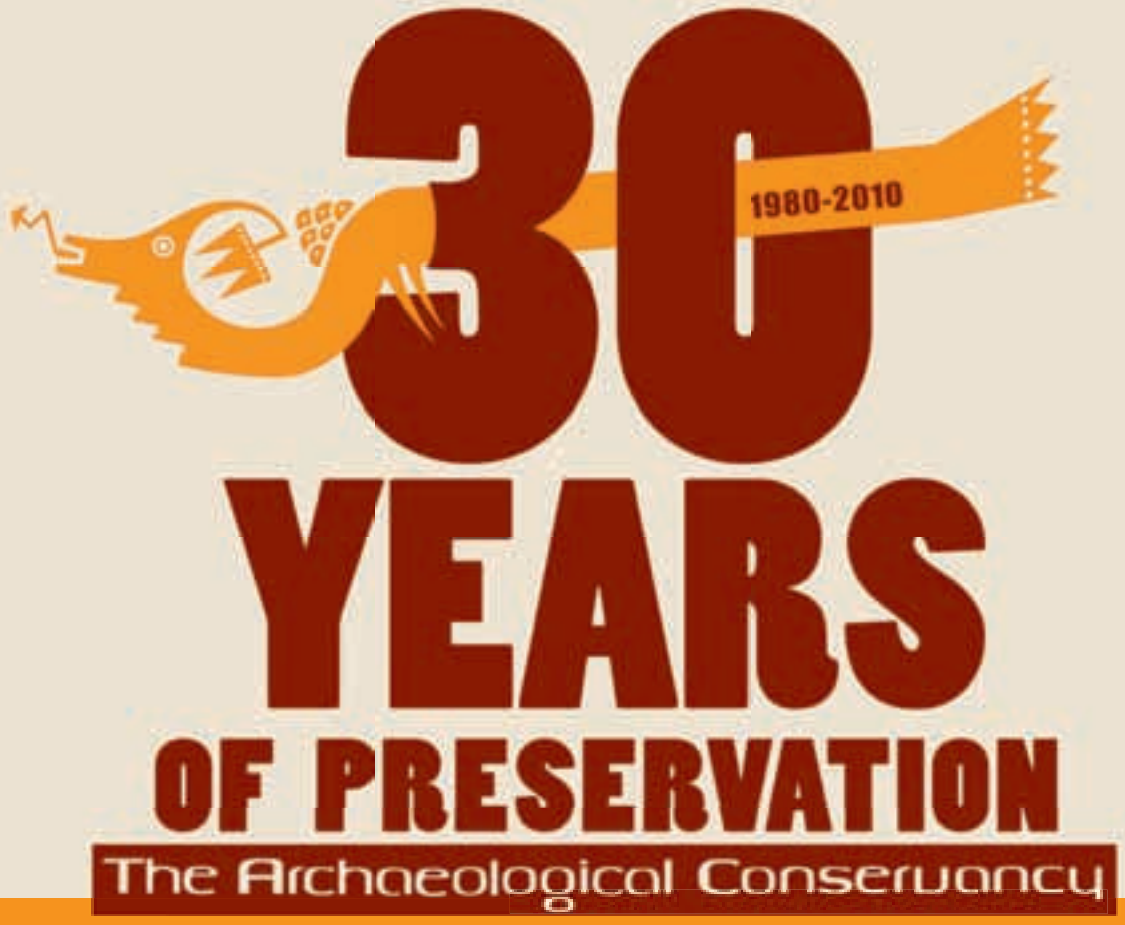
Bill Atkins learned of Troyville's history when he took a college archaeology course. Many people in Jonesville feel guilty about the destruction of the Great Mound in the 1930s, according to Atkins. "Everybody I talk to says it's a shame they tore down the Indian mound," he says. "Talking to some of the old timers, they just weren't aware of what (the Great Mound) was at the time."

Once the old bridge was destroyed, he began consulting with Saunders about his idea to reconstruct the mound with the original dirt. Atkins, a former state legislator, got the support of local, district, and state public officials, including Jonesville Mayor Hiram Evans and state Senator Francis Themposn, as well as the Louisiana Department of Transportation and Development. The local school board provided a site for the reconstructed mound on school property bordering Highway 84. The tribal council of the Jena Band of the Choctaw Indians, who reside nearby, has been apprised of the work.

The Town of Jonesville's engineering firm is designing the replica and the contractor that demolished the old bridge agreed to load and haul the fill to the reconstruction site. The Louisiana National Guard committed to providing two bulldozers to shape the reconstructed mound. There's only enough to build the first two stages of the mound, according to Atkins, and those stages will be about half the size of the original. He also hopes to rebuild the conical top, but that will require raising money.

Troyville is "a crown jewel of American archaeology," says Jon Gibson, and the Great Mound was its centerpiece. Atkins and his allies hope to make it a centerpiece of Jonesville.

STANLEY NELSON *is editor of* The Concordia Sentinel *in Ferriday, Louisiana, and he writes a weekly column on the colonial and frontier history of the Natchez, Mississippi region.*



THE ARCHAEOLOGICAL CONSERVANCY CELEBRATES ITS 30TH ANNIVERSARY.

By Tamara Stewart

The founding of The Archaeological Conservancy 30 years ago was a response to the increasing destruction of archaeological sites across the country and the particular vulnerability of sites on private land. A federal court had just struck down the 1906 Antiquities Act, exposing the inadequacies of the nation's first federal law enacted to protect archaeological sites on public lands and prompting Mark Michel, then a private lobbyist, to help write and pass the Archaeological Resources Protection Act (ARPA) in the late 1970s.

"Back then I was able to get good bipartisan support, something I wouldn't be able to get today," says Michel. The court's decision to strike down the Antiquities Act indicated it clearly was no deterrent against looting. In 1979, the Society for American Archaeology hired Michel to put together legislation to fix the problem. ARPA was passed that same year, with more detailed descriptions of prohibited activities and more substantial penalties for convicted violators than those called for by the Antiquities Act.

"The idea for The Archaeological Conservancy came out of this," says Michel. "ARPA protected sites on public and Indian lands, but how could we protect them on private lands?" Michel saw potential legislation in this area as a waste of time. "We needed a protection strategy that fit the U.S.," he says. Purchasing property containing important archaeological sites was a uniquely American approach to preservation, where there is such a strong private property ethic. "This was the only feasible approach. It was an idea whose time had come."

So in 1979, using the Nature Conservancy's model for

CHRISTINE PRESTON

Mark Michel, Stewart Udall, and Jim Walker

land acquisition and boasting $300,000 in start-up funds from the Rockefeller Brothers Fund and the Ford Foundation, Michel, California inventor and businessman Jay Last, and Southwest archaeologist Steven LeBlanc founded the Conservancy to acquire important archaeological sites on private land. During its first year, the Conservancy acquired the famous Hopewell Mounds Group near Chillicothe in southern Ohio, which faced the threat of being subdivided into suburban housing tracts. This cluster of massive pre-Columbian burial mounds and earthworks is thought to have served as the civic-ceremonial center of the Hopewell civilization that thrived between 200 B.C. and A.D. 500.

In its second year, the Conservancy acquired a portion of San Marcos Pueblo, one of the largest pre-Columbian villages in North America. This 2,000-room pueblo in the Galisteo Basin of north-central New Mexico was occupied from the mid-13th century through the Pueblo Revolt of 1680 and contains a Spanish mission church and convento. Research has been undertaken at the preserve by various institutions nearly every year since its acquisition, including the American Museum of Natural History, the University of New Mexico, and Los Alamos National Laboratory. This acquisition required the Conservancy to engage in delicate negotiations with private landowners and developers and to establish partnerships with tribal and state entities. The remainder of the site was acquired 18 years later with a grant from the State of New Mexico and financial donations from several sources, including nearby Cochiti Pueblo, whose people claim ancestry to San Marcos.

Despite the generous start-up grants and the acquisition of two world-class archaeological preserves, the little-known Conservancy struggled to develop a national following during its early years. Then former Secretary of the Interior Stewart Udall, a nationally known conservationist, became chairman of the Conservancy's board in 1982, giving the organization greater credibility and bringing in more funds. The Conservancy slowly built its membership, initially offering members a quarterly newsletter, and then in 1997 launching *American Archaeology,* an award-winning quarterly magazine that focused on news, research, and issues in North American archaeology, as well as the Conservancy's preservation work.

ARKANSAS ARCHEOLOGICAL SURVEY

Visitors observe archaeologists excavating at Parkin Archeological State Park.

The hard work and careful planning has paid off. The Conservancy now has five offices—it's headquartered in Albuquerque, New Mexico and has regional offices in Sacramento, California, Columbus, Ohio, Frederick, Maryland, and Marks, Mississippi—and over 22,000 members. It has also established more than 385 archaeological preserves in 40 states.

"I think it's incredible that the Conservancy has become a national organization, the only one of its kind in the country, and the popularly-written magazine *American Archaeology* is really invaluable for public outreach," says Udall, who is nearly 90 and still serves on the board, though no longer as chairman. "The Conservancy is a remarkable organization and every few years it breaks new ground. The recent looting busts made in Utah were due to federal laws against looting, laws that were passed in the late 1970s, pushed through by my brother [Morris Udall] and Mark Michel. Preservation law has great value, but it still doesn't help protect sites on private land.

MARK MICHEL

The Zunis celebrate the transfer of the Box S site to their tribe.

JAY JOHNSON

Archaeologists have used remote sensing to guide their excavations at Parchman Place Mounds.

Therefore, acquiring important sites on private property, the Conservancy's mission, remains critical."

The Conservancy's preserves range from Paleo-Indian sites to pre-Columbian mounds and villages to historical missions and forts. They're open to the public for tours and other educational opportunities, to Native Americans for traditional purposes, and to qualified professionals for research under controlled conditions. Many of the Conservancy's preserves have been acquired through years of negotiations with landowners and developers.

"We've been able to help a number of developers with their archaeological problems through the creation of permanent preserves," says the Conservancy's Southwest regional director Jim Walker. "Usually the developer is faced with either very costly excavation or preservation in place, which not only saves money, but saves time and the archaeological site. This is really the preferred mitigation alternative, and tomorrow's excavations will yield higher quality data through the application of new theories and excavation techniques."

Partnerships with landowners, developers, archaeologists, organizations, agencies, and tribes have been critical to the Conservancy's success. The Cedarscape site in northeast Mississippi, inhabited until 1735 and reoccupied after 1772, is one of the few historical Chickasaw villages to escape destruction by development. In 2005, the Chickasaw Nation gave the Conservancy a grant to purchase the 35-acre site, which contains a rare Chickasaw fort. In order to preserve it, the landowners John Ray and Lottie Betts Beasley sold 30 acres containing the site and donated an additional five acres to the Conservancy. A cooperative agreement was signed with the Chickasaw Nation whereby they will lease and manage Cedarscape as an educational preserve.

"It's one of the projects I'm most proud of because it brought together so many people who felt preserving the site was extremely important," says Jessica Crawford, the Conservancy's Southeast regional director. "It has been a pleasure to work with representatives of the nation. We share the same vision in which Cedarscape will educate and enlighten both present and future generations."

In 1989 Zuni Governor Robert Lewis asked the Conservancy to help protect the late 13th-century ancestral Zuni site of Box S, known to the Zuni as Heshodan Im'oskwi'a, or Emerging Village. The 1,100-room masonry village site in western New Mexico had suffered repeated looting. In 1999, after 10 years of negotiations with the site's landowners, the Conservancy acquired Box S. Two years later, after mapping, stabilizing, and backfilling the exposed rooms, the Conservancy sold the property to the Zuni Tribe, who received a Lannan Foundation grant to buy the 160-acre site. At a celebration of the transfer, Zuni Governor Malcolm Bowekaty addressed the attendees: "For you, this place represents the past. But for us, it is still living. Many important people are buried here, and we still turn to them when we need them." The Zuni Tribe maintains the site for tribal and spiritual purposes, allowing the public to visit in hopes that they will appreciate the importance of preserving ancestral sites.

RICHARD GREEN

Jessica Crawford (second from right), Chickasaw Nation officials, and the former landowners at the Cedarscape site.

A management committee of community members, government representatives, Native Americans, and archaeologists is assembled to design a long-term plan for each site's preservation and interpretation. Area residents can serve as site stewards and docents, and they also participate in fieldwork, such as the mapping and stabilization undertaken at Galisteo Pueblo, a Conservancy preserve in the Galisteo Basin in north-central New Mexico. Working in collaboration with like-minded agencies and individuals, the Conservancy succeeded in getting Congress to pass the Galisteo Basin Archaeological Sites Protection Act in 2004 to protect other important sites in the basin.

CROW CANYON

An aerial view of Yellowjacket Pueblo, a huge site in southwest Colorado's Montezuma Valley.

Several of the Conservancy's most significant preserves have been incorporated into state and national parks such as Chaco Culture National Historical Park in New Mexico, Petrified Forest National Park in Arizona, Hopewell Culture National Historical Park in Ohio, and Parkin Archeological State Park in Arkansas. Parkin, in eastern Arkansas, is one of the largest and best-preserved Mississippian culture complexes in the Mississippi Valley, most large sites in the area having been destroyed by looters or by agriculture. The State of Arkansas approved converting the site into a state park in 1967; however, numerous people owned portions of the land it sat on, and the state government failed to provide the necessary funds to purchase their properties, some of which contained homes and other buildings.

In 1983 the state government asked the Conservancy to acquire the various parcels of land and protect them until state funding for the park became available, and, beginning in 1986, the Conservancy obtained dozens of parcels, in some cases purchasing homes that were torn down or relocated. The state eventually purchased these parcels from the Conservancy, and in 1994 Parkin Archeological State Park opened, complete with a visitor's center and research station.

"Mark's calm demeanor and non-government status meant that he was able to negotiate fairly with the residents and landowners, many of whom were elderly," says Jeffrey Mitchem, the station archaeologist at the park. Mitchem believes the site, which includes a 17-acre village surrounded by a man-made moat and a 20-foot high temple mound, is the native village of Casqui, occupied from A.D. 1000 to at least 1550 and visited by the Hernando de Soto Expedition in 1541.

Cahokia Mounds State Historic Site in Collinsville, Illinois, a World Heritage Site, will soon incorporate several Conservancy acquisitions. One of the greatest pre-Columbian cities of the world and the largest north of Mexico, Cahokia was the political, economic, and cultural center of the Mississippian culture. While the central portion of the site is preserved within the park, Cahokia's outlying areas are still endangered by the industrial, commercial, and residential development of nearby East St. Louis.

"Working closely with Cahokia Mounds State Historic Site and the Powell Archaeological Research Center, the Conservancy has been successful in acquiring important parts of the Cahokia site as they come onto the real estate market," says Paul Gardner, the Conservancy's Midwest regional director. The Conservancy is currently under contract to purchase Mound 1, which marks Cahokia's eastern boundary.

Innovative research projects have been undertaken at many Conservancy preserves, greatly contributing to our knowledge of past cultures. In order to preserve sites for future advances in research, the Conservancy practices "conservation archaeology," making only a small portion of a site available for research. Non-invasive strategies such as

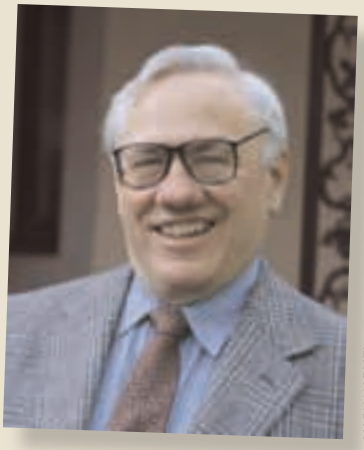
Andy Stout and former landowners Raymond and Nancy Dickerson at the Pamplin Pipe Factory.

WILL SHEPPARD

the remote sensing techniques employed at Parchman Place Mounds in Mississippi, are encouraged. The University of Mississippi spent several years conducting detailed tests at this Mississippian mound preserve. "Parchman Place has provided an excellent testing ground for cutting edge remote sensing and geophysical techniques and equipment," Crawford says.

At the Barton site in western Maryland, excavations led by Bob Wall of Towson University over the past 20 years have yielded evidence of occupation spanning some 12,000 years. This past spring, researchers with the University of Michigan's Museum of Anthropology conducted a magnetometer survey of the site, discovering three new palisade-enclosed villages.

In southwest Colorado, the Conservancy has acquired a variety of Mesa Verde Anasazi settlements, many of which have been the focus of years of research by Crow Canyon Archaeological Center in Cortez, Colorado. Yellowjacket and Mud Springs pueblos are two such preserves, both huge residential complexes in the Montezuma Valley that date from the 10th through the 13th centuries, just before the entire region was depopulated. Research at these sites has generated detailed maps and a better understanding of the villages' chronological history of occupation. A Crow Canyon investigation of the Conservancy's Albert Porter Pueblo in southwest Colorado yielded new information about the relationship between the Mesa Verde and the Chaco Canyon Anasazi peoples.



Jay Last co-founded the Conservancy.

MARK HARMEL

"Over the past 15 years, my organization has collaborated with the Conservancy on major excavation projects, stabilization-preservation projects, and mapping-survey projects at numerous preserves in southwest Colorado, southeast Utah, and northern New Mexico," says Scott Ortman, director of research at Crow Canyon. "The U.S. Southwest is one of the world's foremost outdoor archaeological laboratories, and the Conservancy is making a huge contribution to Southwestern archaeology by acquiring and preserving significant sites and by supporting research within these preserves, making an impact not only on our understanding of Pueblo Indian history, but on archaeological method and theory in general."

Despite tough economic times, the Conservancy continues to expand its acquisitions, recently adding new preserves in Oregon, California, Illinois, and its first in Montana. One of the few intact sites in California's central San Joaquin Valley, Lathrop Mound was recently leased from the Union Pacific Railroad to protect it from future development. Believed to have been inhabited by the Chulamni Tribe of the Yokuts after A.D. 1500, the site is a rare midden deposit with stone and bone tools and ornaments. "The lease we obtained from Union Pacific is just one example of the many creative solutions we use to preserve important sites," says the Conservancy's Western region field representative Julie Clark. "The strategies we use to acquire and protect

Launching POINT-4

The Conservancy's POINT-4 Program—an effort to Protect Our Irreplaceable National Treasures—is a $2 million emergency acquisition program designed to ensure that virtually no nationally significant archaeological site is destroyed by development, looting, or the effects of the environment. The program will focus primarily on sites in five geographical regions representing particular cultures that are in great danger of destruction, and on one national culture. Those regions and cultures are the Algonquians and Iroquois villages of the Northeast; the monumental sites of the Mississippi Delta; the mound builders of the Ohio Valley; the Anasazi of the Four Corners; and the prehistoric and historic sites in California's Central Valley. It will also focus on the Paleo-Indian culture that spanned the country.

By taking this thematic approach, the Conservancy will ensure that some of these precious sites are preserved. The Conservancy may also use POINT-4 funds to purchase significant sites unrelated to these cultures and regions. Three earlier POINT campaigns raised more than $6 million to acquire highly endangered sites.

The POINT-4 Program will provide the Conservancy with the funds to continue the emergency effort to protect threatened archaeological sites nationwide. Board members, staff, and a member have made financial donations to the project. The goal is to have $1 million that will be matched by another $1 million.

each site are as unique as the sites themselves."

Last year the Conservancy acquired the original Pamplin Pipe Factory site in Pamplin City, Virginia from Raymond "Pipeman" Dickerson and his wife Nancy, who had maintained the site for decades, waiting to place it in the right hands for permanent preservation. Listed on the National Register of Historic Places, the site was once the world's largest clay tobacco pipe factory, producing a million pipes per month at its peak in 1935. The Conservancy is in the process of transferring the property to Pamplin City so that the site can be turned into a public museum. "Thanks to the Dickersons and local Appomattox historical organizations, the site will be preserved and interpreted to the public as an important piece of Virginia's, as well as the nation's, early industrial history," says Andy Stout, the Conservancy's Eastern regional director.

Lamoka Lake, a recently established Conservancy preserve in the Finger Lakes region of central New York, was the first site to be labeled "Archaic" in the U.S., referring to its occupation prior to the advent of pottery. Since then the term Archaic has been further defined and used to refer to the developmental stage that preceded horticulture and widespread pottery use by prehistoric cultures. In western Virginia, the Conservancy recently acquired the legendary Ely Mound, one of only two intact Mississippian platform mounds in the state.

ANDY STOUT

Researchers work at the Barton site.

Archaeological sites are often in imminent danger of destruction. Nine years ago, founding board member Jay Last responded to this dilemma by initiating the Conservancy's POINT (Protect Our Irreplaceable National Treasures) Program. "Archaeological sites are among the world's resources being most rapidly depleted," he says. Last offered the Conservancy a $1-million challenge grant to be used for emergency acquisitions, so that with matching funds raised from foundations, corporations, and the Conservancy's members, threatened sites could be purchased quickly. The success of the initial POINT Program has resulted in three subsequent phases of the project.

NATALIE GREEN, APERTURES, INC.

Mark Michel (center) was recently given the Louise du Pont Crowninshield Award by Richard Moe (left) and Cliff Hudson of the National Trust for Historic Preservation.

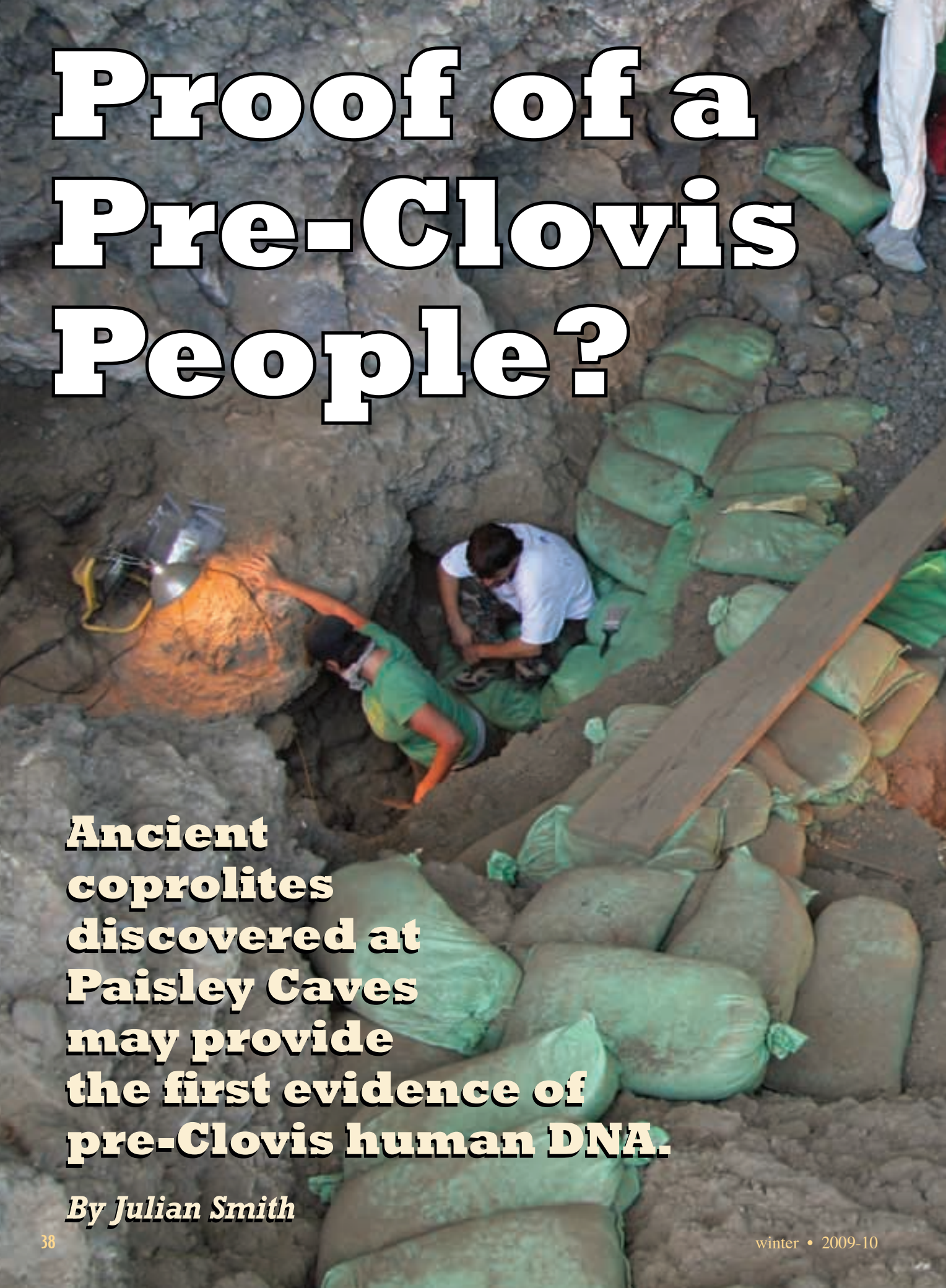
"As I look back over the past 30 years, I'm impressed with how many individuals have contributed to the Conservancy's success—the dedicated staff and board of directors, combined with the loyal membership, have built up an organization with an impressive record of accomplishments, well positioned for the future," says Last, who still serves on the Conservancy's board. "The Conservancy is the most effective organization I've ever seen," says Gord on Wilson, who now chairs the board.

The Conservancy has received numerous awards for its preservation efforts and last winter Mark Michel received the National Trust for Historic Preservation's highest accolade, the prestigious Louise DuPont Crowninshield Award. At the award ceremony, Michel was cited for his "energetic leadership [that] has built the Conservancy into a national organization with a strong and supportive constituency of more than 23,000 members."

"We cover the country, but still have sites in only 40 states, so there is much work yet to do," Michel says. "In any one day, we're probably working on a hundred projects, but these things take years and years to accomplish." The spark that ignited the organization 30 years ago still burns, and the race to protect America's invaluable archaeological sites continues.

TAMARA STEWART *is the assistant editor of* American Archaeology *and the Conservancy's Southwest region projects coordinator.*

Proof of a Pre-Clovis People?



Ancient coprolites discovered at Paisley Caves may provide the first evidence of pre-Clovis human DNA.

By Julian Smith

Excavators work in Paisley Cave 2. The green bags that surround them are filled with excavated dirt.

JULIAN SMITH

BRIAN LANKER

A length of tightly twisted grass thread was found at the site. The thread is displayed on a finger tip.

Jennifer Barnard, an archaeology student at the University of Oregon, pulled on a white Tyvek bodysuit and two pairs of rubber gloves. She stood in a dry, dusty cave near the tiny town of Paisley in southern Oregon, where it was about 90 degrees in the shade. Looking like a character from the television show *CSI*, she took a pair of disposable plastic tweezers and bent carefully to pick up something from the ground about the size of a small finger. She put it in a sterile specimen cup and, using a trowel cleaned in bleach, collected the dirt it sat on and put that in a separate cup.

The finger-like item was a coprolite, a piece of dried human feces. It could also be a key to redefining one of American archaeology's most hallowed dates: the first arrival of people in the New World. Evidence from this handful of shallow basalt caves, overlooking a dry lakebed 220 miles southeast of Eugene, could add over 1,000 years to the timeline of human occupation in North America.

Wearing a dusty leather hat, University of Oregon archaeologist Dennis Jenkins walked to the mouth of a cave and sat on one of the hundreds of lime-green sandbags that line the units. "This is not a normal site," he said, as the falling chirp of a canyon wren carried over the hum of a generator. Last year, the first set of published results from the Paisley Caves excavations stirred up a heated debate, and he has collected even more exciting data since then. "We're changing an American paradigm here."

This was a more appealing place to live during the Pleistocene, when waves from Lake Chewaucan carved these caves along its shoreline. The lake rose and fell, but there was usually water within a mile of the site, and grasses and shrubs along the shore. The water level fell for good around 13,000 to 14,000 years ago, and about 7,600 years ago the massive eruption of Mount Mazama to the northwest covered the landscape in a layer of ash. (The event created Crater Lake, now a national park).

Luther Cressman, an archaeologist at the University of Oregon, led the first digs at Paisley Caves in 1938 and 1939. Cressman's team dug trenches from the mouth to the back wall of three of the caves. They found artifacts such as dart point fragments and scrapers, as well as the bones of late Pleistocene megafauna, including extinct horses and camels. Cressman claimed this proved that people interacted with the animals over 10,000 years ago. But since he didn't document the finds carefully, his conclusions were widely ignored.

At about the same time, a number of distinctive bifacial stone points and other prehistoric artifacts were being unearthed at sites near Clovis, New Mexico. The artifacts came to define a culture—which was named after the city—that began in North America more than 13,000 years ago. Archaeologists believed that the Clovis people were the first to occupy the New World, and possibly the ancestors of all its indigenous cultures.

The "Clovis-first" idea held for much of the 20th century, but in recent decades, archaeologists have started to wonder if people might have arrived even earlier. Artifacts and animal remains with radiocarbon dates a thousand or more years older than the Clovis period have been uncovered at sites throughout North and South America, including Monte Verde in southern Chile.

While Monte Verde's pre-Clovis dates have been generally accepted, skeptics have been unconvinced by the evidence from other pre-Clovis sites for one reason or another. In some cases the skeptics question the validity of the radiocarbon dates, in others they contend the putative artifacts were in fact fashioned by nature, or that somehow the evidence has been compromised.

In 2002 and 2003, Jenkins led students with the University of Oregon's Northern Great Basin Archaeological Field School (started by Cressman in 1937) in a series of digs at the caves. "We came to see if Luther Cressman was right," he said. They excavated four caves to a maximum depth of almost 13 feet, focusing on recovering bones and cultural materials.

Like Cressman, they found the bones of extinct camels and horses, and also bison and goats in deposits with artifacts. Cultural items included strands of processed sinew and grass fiber thread, fragments of netting, stone flakes, a pumice abrader, and a wooden peg. In Cave 2, a small piece of charcoal appeared to be a hearth, surrounded with artiodactyl (deer, pronghorn, mountain sheep) bones that had been split to remove the marrow. Several artifacts from the hearth were radiocarbon dated to around 12,000 years ago.

In Cave 5, horse bones were dated to roughly 13,150, and camel bones to 14,300 years ago, respectively. The most surprising data, though, came from 14 coprolites that Jenkins sent to Eske Willerslev at the University of Copenhagen. Willerslev's team found six of these contained indisputably human DNA. Genetic tests also showed they were left by Native Americans whose ancestors most likely came from Siberia or Asia.

Human proteins were found in two of the coprolites with human DNA, which also contained pieces of human hair. Three of the six also tested positive for DNA from wolves, coyotes, or foxes. This could mean that humans ate these animals, the animals ate humans, or that the animals' DNA infused the human coprolites at some point after they were produced.

To make sure the human DNA didn't come from one of the researchers, Jenkins had to compare it with the DNA of everyone who came in contact with the coprolites from the moment they were unearthed. "I began a process of running down all my students and getting hair samples," he said. "It took about five months—they had scattered all over world—but we tracked them down." In all, the coprolite DNA was compared against hair samples from 67 students, site visitors, and researchers. They found no matches. "As far as I know, it is the most extensive and cautious genetic work done to date" in an archaeological context, Jenkins said.

Meanwhile, Willerslev had the six coprolites radiocarbon dated at laboratories in Florida and Oxford using accelerator mass spectrometry. The results from the two labs were the same, and they were astonishing. Three of the coprolites had mean ages of 14,300 years, indicating they were produced roughly 1,000 years before Clovis people were thought to have arrived in North America.

JULIAN SMITH

A researcher in a Tyvek bodysuit collects coprolites for DNA testing.

A Western stemmed point recovered from the deepest deposits at Paisley Cave 5.

NORTHERN GREAT BASIN FIELD SCHOOL ARCHIVES

The results of the 2002 and 2003 seasons garnered lots of attention when they were published in Science in April 2008. Some researchers accepted the evidence immediately. "Paisley Caves is totally convincing," said Don Grayson of the University of Washington. "It's the first site in North America, and the second site in the New World [after Monte Verde] that is securely pre-Clovis in age. Jenkins has established that people were around at the same time the (extinct megafauna) were here, there's no question about that."

Mike Waters of Texas A&M University said he wondered at first about the lack of artifacts and the potential for modern DNA contamination. (Waters coauthored a 2007 *Science* article that re-evaluated existing Clovis dates using more modern techniques, revising and narrowing the Clovis period to 13,250 to 12,800 years ago.) He also had doubts about the dig's stratigraphy. "Caves are notorious for being bioturbated—mixed up—and it was hard to tell what was going on in the rock shelter." But since visiting the site and seeing the stratigraphy, Waters has become convinced. "The work Jenkins is doing shows that people were in the Western U.S. before Clovis," he said. Jenkins is doing "excellent archaeology. You can't get much better than that."

But other archaeologists expressed their doubts. Gary Haynes of the University of Nevada at Reno thought the radiocarbon dates could have been influenced by carbon reservoir effects, whereby "old carbon" is recycled through younger organisms in closed systems like lake basins. He also wondered why so few artifacts were found.

Jenkins and his co-authors had presented dates, ranging from approximately 12,000 to 17,000 years ago, from obsidian tools and flakes obtained through obsidian hydration (OH) dating. While the OH dates generally support the radiocarbon dates, Haynes said the former are "rough estimates" at best without more associated radiocarbon dates to confirm them.

Sediment in the caves had clearly been disturbed by burrowing animals such as squirrels and badgers, and this could have disturbed the contexts of the objects, including the obsidian pieces, and tainted the DNA results. "Contamination could happen very readily even with stringent measures to protect against it," he said.

In a rebuttal of Jenkins' conclusions that was also published in *Science*, Hendrik Poinar of McMaster University and Stuart Fiedel of the Louis Berger Group in Richmond, Virginia wrote that the DNA evidence was "ambiguous" and added that OH dates are "notoriously unreliable." The lack of artifacts and questionable stratigraphy made the results even more suspect.

In another rebuttal that appeared in *Science*, Paul Goldberg of Boston University, who analyzed samples of one of the coprolites, said that that coprolite was so rich in plant material and so low in phosphates that it was most likely produced by an herbivore. "It's far from being a slam dunk," Goldberg said. "It looks just like every other herbivore coprolite we've ever seen."

"The fact that you find human DNA on something doesn't make it human," said Francesco Berna of Boston University, one of Goldberg's co-authors. Grayson said he was very surprised by Goldberg's and Berna's assertions. "I didn't see any flaw in the arguments as published. There's no reason to think the coprolites are not human or to doubt the dates."

Jenkins's team pointed out there were 161 species of edible plants in the Great Basin at the time, and that a plant-rich diet could make human feces look like an herbivore's. In addition, the coprolites tested positive for plant and human DNA, but not herbivore DNA. They defended their OH dating and DNA sampling controls, but acknowledged that perhaps only new, sterile excavations would resolve the debate. They were confident they had established an association between artifacts and megafauna bones, but so had researchers at

JULIAN SMITH

Dennis Jenkins leads the Paisley Caves investigation.

THOMAS STAFFORD

A number of Paleo-Indian specialists attended Jenkins' mini-conference and toured the caves last September.

other supposedly pre-Clovis sites in North America. They needed more evidence. It's not easy to overturn a 70-year-old theory, Jenkins said. "People have made their entire career on this issue. If you're going to change it, you're going to have to do it better than everybody who has tried before."

Jenkins brought a team back to the caves in 2007, but that was primarily to lay the groundwork for digs in the summer of 2009. "It has been a very good year, by far the best," he said, looking around at all the activity. Students carried buckets full of soil that were poured through screens that captured small artifacts. The season began in late May with a professional crew funded by a grant from the National Science Foundation (NSF) and assisted by volunteers. It was careful, methodical work. "We had a row of screeners taking an hour for every bucketful," Jenkins said. Then the artifacts started appearing. "We lived on adrenaline."

The charcoal deposit in Cave Two that Jenkins believes to be a hearth was uncovered again. Artiodactyls bone chips turned up in the hearth, and a large number of obsidian and chert flakes with a few stone tools were found nearby.

Among the half dozen bone tools recovered from Cave 5 was a flat oval bone about the size of an iPhone, ground down along the sides, that looked like part of a huge rib but which is most likely a bison horn core ground down for use as a spatula. On the last day of the NSF dig, they found a palm-sized bone tool with teeth carved along one edge that was subsequently dated to about 14,000 years ago. "We were so excited," said Jenkins. He thinks the bone could have come from a mammoth or mastodon. "It's clearly megafauna."

The tool may have been used to remove fat from hides or to chop up roots to eat. Regardless, this and the other bone tools seem to answer the lingering question of whether or not humans actually interacted with late Pleistocene animals at Paisley Caves. "Here you're not looking at an association of stone artifacts with megafaunal bones," Jenkins said. "You're looking at human remains that have been directly radiocarbon dated by multiple labs, and they're coming out with the same dates [as the bones]. That's what makes Paisley unique."

In Cave 5, they found a piece of a willow dart shaft near the large bone spatula. A tiny piece of bark removed from the artifact was dated to approximately 11,500 years ago. Here geochronologist Tom Stafford, of Stafford Research Laboratories, Inc., stood chest-deep in a closet-sized pit working on a carefully labeled series of stratigraphic layers. (Stafford was Waters' coauthor on the 2007 *Science* article on Clovis dates.) He took samples of everything he found for radiocarbon dating: bone artifacts, pyramids of deer pellets, pack rat

JULIAN SMITH

A researcher carries buckets of excavated dirt from Cave 2 while another worker screens dirt for small artifacts.

midden debris, plant remains, a mummified lizard. The resulting dates gave a solid top-to-bottom chronology of the site's stratigraphy, and revealed little mixing of layers.

"It's like getting a newer microscope: the more you look, the more you see," Stafford said. This was his first season at Paisley, but he already counts it among the most interesting cave projects of his career. "Now that the barrier has been broken in people's minds, they're realizing how much pre-Clovis evidence is really out there. You start seeing things you hadn't before. In the past, people would have excavated to (the Clovis level) and stopped digging."

Cave 1, where Barnard climbed out her suit with a sigh of relief, has been a coprolite gold mine. Jenkins called them "the ultimate artifacts," since each can tell so much about the person who produced it. In all, they have found about 200 coprolites this year, bringing the total to over 900. "Twenty-seven in a day is our record," Barnard said.

The new dates also suggest that people may not have arrived in North America from Asia by way of the Bering Strait. After the last glacial period, an ice-free corridor opened across western Canada more than 13,000 years ago, connecting Alaska with the Lower 48. "But here we have people south of the ice almost 1,000 years before that," Jenkins said. "You have to wonder how they could have gotten south of the ice if the corridor was closed."

One possibility is that the first Americans came down the Pacific Coast and then quickly spread across the continent. "There seems to be a small constellation of sites emerging across North America that seem concurrent to Paisley," said Waters. Dates around 14,000 to 14,500 years ago have been reported in Wisconsin, Florida, and Pennsylvania. "Maybe there's a pattern." Regardless of how they got there, he says the data from Paisley speaks for itself. "With the evidence from Paisley Caves and the other sites, it is clear that there is a pre-Clovis presence in the Americas."

After the dig concluded, Jenkins invited a number of noted Paleo-Indian specialists to the site for what he called a "mini-conference." He presented his evidence to them and entertained their suggestions on how to proceed with his investigation and to protect the site from looters. He plans a final field season in 2010.

In the meantime he's awaiting the results of another 50 coprolite samples he has submitted to the Ancient DNA Laboratory at the University of Copenhagen for testing. He's gotten the result from the first samples to be tested, and they indicated human DNA. He also recently received the dates of 28 samples he submitted for radiocarbon testing. One of the samples, a twig of sagebrush associated with artifacts, dated to approximately 14,500 years ago.

Jenkins didn't know if these results will convince the skeptics that pre-Clovis people occupied the caves, but he said he's convinced. "I think we've got the evidence."

JULIAN SMITH's *book* Chasing the Leopard *will be published in the summer of 2010. His article "A Tale of Two Trails" appeared in the Spring 2009 issue of* American Archaeology.

Saving A Mississippian Village

The Lyon's Bluff site has tremendous research potential.

Lyon's Bluff is a Mississippian mound and village situated in Oktibbeha County, in east-central Mississippi, that was occupied around A.D. 1000-1650.

The site was first excavated in the 1930s by archaeologist Moreau Chambers, with the Mississippi Department of Archives and History, who uncovered several house floors. A series of excavations took place in the 1960s and 1970s under the direction of Richard Marshall of Mississippi State University. Evan Peacock, with the Cobb Institute of Archaeology at Mississippi State University, tested the site in 2001 and 2003.

GEORGE LOWRY

Archaeologist Evan Peacock, Jessica Crawford, the Conservancy's Southeast regional director, and landowner Larry Tabor stand on the mound at Lyon's Bluff.

Peacock discovered that the mound had been constructed in several stages over a short amount of time in the 13th century. There was "at least one wattle and daub structure on the mound summit each time it was rebuilt," he said. While conducting a remote sensing survey, he found five structures, and two deep wall trenches from prehistoric bastioned palisades, which enclosed the mound and the main portion of the site.

Peacock also discovered two distinct midden zones, separated by an area of lower artifact density, where deposits were over six feet deep in places. Although the site seems to have been occupied continuously for at least 450 years, variability in the accumulation of artifacts may relate to differences in site use and village population levels over time. "Also, although direct evidence of contact is lacking, there is no doubt that the site was occupied at the time of the first European incursion in the area."

While they have not yet been fully analyzed, enormous amounts of extremely well preserved animal bone have been recovered from the site. This includes large bones, such as deer forelimbs, that show minimal processing, which is often taken as a sign of feasting. Changes in the density and species of animal remains could suggest that Mississippian maize farmers resorted to hunting around A.D. 1200 when the Little Ice Age reduced their crop.

Many other smaller sites have been found in this area, suggesting "that the role of Lyon's Bluff as a central place for an entire settlement system can be explored," said Peacock.

The Conservancy has an option to purchase approximately 20 acres, including the mound and palisades, which is about half the site. "All of the factors combine to make Lyon's Bluff an exceptionally important site, and a real jewel for the Conservancy to obtain," said Peacock. "The research potential of the site is enormous." —*Iris Picat*

Conservancy Plan of Action

SITE: Lyon's Bluff

CULTURE AND TIME PERIOD: Mississippian through Protohistoric (A.D. 1000-1650)

STATUS: The site is threatened by residential development.

ACQUISITION: The Conservancy needs to raise $79,000 to preserve more than half the site.

HOW YOU CAN HELP: Please send contributions to The Archaeological Conservancy, Attn: Lyon's Bluff Archaeological Site, 5301 Central Avenue, Suite 902, Albuquerque, NM 87108-1530.

The Conservancy Expands the Royal Blockhouse Preserve

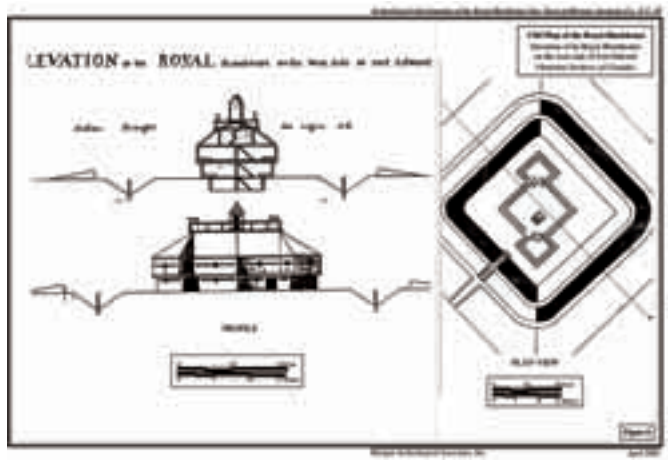
The site was part of one of the largest British military complexes in North America.

In the Fall of 2001 the Conservancy acquired a five-acre parcel of land overlooking the Hudson River in the Town of Moreau, New York that contains a portion of the Royal Blockhouse site. The Conservancy now has an opportunity to acquire the remainder of the site and expand the Royal Blockhouse preserve to over 17 acres.

Built in 1758, the Royal Blockhouse was manned with a garrison of British Colonial troops and was also used by Rogers' Rangers. The site was a key part of one of the largest British military complexes in North America at the beginning of the French and Indian War. In addition to the Royal Blockhouse, this complex included Fort Edward, on the eastern side of the Hudson River, and Rogers Island, a 50-acre island in the river. The island is named after Major Robert Rogers, leader of Rogers' Rangers, a group known for their commando tactics and fierce fighting against the French and their Native American allies. The island is considered the birthplace of the U.S. Army Rangers.

Rogers' Rangers maintained a base camp on the island, as the Royal Blockhouse provided control over the river from the high ground above. The strategically located complex comprised an important British stronghold and supply base that contained military fortifications, barracks, camps, hospitals, and a host of secondary enterprises related to supply and trade.

Historical maps and diagrams suggest that the Royal Blockhouse was a three and one-half story wooden structure with a full cellar. An assessment of the site conducted by Hartgen Archaeological Associates in 2002 verified and documented various features associated with the Royal Blockhouse, including the cellar feature, an 18th-century military road, several earthworks, and other intact cultural deposits. While the site has been impacted in the past by undocumented digging and professional excavations, it still has a tremendous amount of research potential. The site's association with the historic events surrounding the French and Indian War and the military complex at Ft. Edward, as well as the distinctive design and landscape characteristics associated with the construction of the Royal Blockhouse, can provide important information to future researchers.



NATIONAL ARCHIVES OF CANADA

The 1765 plan of the Royal Blockhouse.

The Royal Blockhouse site is currently being considered for listing on the National Register of Historic Places. The Franklin D. Nastasi Trust is offering the Conservancy an 18-month option to purchase the remaining 12 acres of the site as a bargain sale to charity for $90,000. —*Andy Stout*

Conservancy Plan of Action

SITE: The Royal Blockhouse

CULTURE AND TIME PERIOD: French and Indian War, 1758

STATUS: The site is threatened by looters and development.

ACQUISITION: The Conservancy needs to raise $90,000 to purchase the remaining 12 acres of the site.

HOW YOU CAN HELP: Please send contributions to The Archaeological Conservancy, Attn.: The Royal Blockhouse Project, 5301 Central Ave. NE, Suite 902, Albuquerque, NM 81708-1517

Changing Old Assumptions

Archaeologists have learned that the Lower Jackson Mound is older than its well known neighbor, Poverty Point. Lower Jackson could offer new insights into Archaic period mound building.

The state of Louisiana is known for having more confirmed Archaic period mounds than any other state. One of the best documented of these mounds is the Conservancy's recent acquisition, the Lower Jackson Mound, located in the northeast part of the state. Lower Jackson sits on Bayou Macon and is near Poverty Point, a large, complex site with mounds and a network of raised ridges that date to the Late Archaic period, approximately 1700 B.C.

For many years archaeologists assumed that the Lower Jackson Mound was related to Poverty Point because of their proximity and the fact that the same types of artifacts have been found at both sites.

But archaeologists discovered that Lower Jackson also has older artifacts. Evans points, a type of projectile point associated with several Middle Archaic mounds in various parts of Louisiana, were found around Lower Jackson's base. Small red jasper beads, shaped in the form of an animal and sometimes referred to as frog effigies, were also uncovered. The Poverty Point culture is known for polished red jasper beads, but the bead from Lower Jackson has the same stylistic elements of effigy beads found at other Middle Archaic mound sites.

This evidence led Louisiana Regional Archaeologist Joe Saunders, United States Department of Agriculture soil scientist Thurman Allen, and Poverty Point State Historic Site manager Dennis LaBatt to reassess the age of Lower Jackson. They extracted soil cores from the mound in order to date it and to learn more about its construction. By radiocarbon dating the soil cores, they determined that Lower Jackson is approximately 6,000 years old, confirming their suspicions that it preceded Poverty Point.

JOE SAUNDERS

This Evans Point was found around the base of the Lower Jackson Mound. This style of point has been dated to the Middle Archaic Period in Louisiana.

The revelation that Lower Jackson Mound is significantly older than Poverty Point raises several questions. Was Poverty Point built nearby with the idea of incorporating Lower Jackson into it? And what was taking place in the time period between the construction of Lower Jackson Mound and the Poverty Point site? As is often the case in archaeology, the answer to one question prompts other questions. Future research at Lower Jackson could answer some of these questions.

—Jessica Crawford

Conservancy Plan of Action

SITE: Lower Jackson Mound
CULTURE AND TIME PERIOD: Middle Archaic to Poverty Point (3000–1700 B.C.)
STATUS: The owners are selling the farm on which the Lower Jackson Mound is located and the site is threatened by destructive agricultural practices.
PLAN OF ACTION: The Conservancy needs to raise $37,000 for the purchase of the Lower Jackson Mound.

Preserving a Piece of Cahokia

The Conservancy obtains another of the noted site's mounds.

PAUL GARDNER

Though Cahokia Mound 1 was first noted in 1876, it wasn't investigated by archaeologists until 1989.

The Conservancy has entered into a contract with a St. Louis real estate developer to purchase a two-acre parcel of land that contains Cahokia Mound 1, the easternmost mound of the great Cahokia ceremonial complex near East St. Louis, Illinois. Cahokia Mounds, a United Nations World Heritage Site, is the largest prehistoric site in North America. It once consisted of about 120 earthen mounds that occupied a six square-mile area.

While Monks Mound, the largest prehistoric mound north of Mexico, and its surrounding plazas form the core of Cahokia, the boundaries of what's known as the greater Cahokia complex are delimited by four mound groups. The Kunneman Group marks the northern boundary, the Rattlesnake Group the southern, the Powell Group, another Conservancy preserve, marks the western boundary, and Cahokia Mounds 1 and 2 the eastern. The first three groups have been extensively excavated in the past, while Cahokia mounds 1 and 2 have seen little investigation. The acquisition of Cahokia Mound 1 will expand the portion of Cahokia that's protected.

Mound 1 was first noted in an 1876 map of Cahokia produced by John Patrick, a local dentist who, following the Civil War, commissioned a survey of the area's archaeological sites. On Patrick's map, Mound 1 appears as a small circular construction, which some archaeologists have assumed was a conical mound, a common type at Cahokia. In

1950 a researcher working at Cahokia noted that Mound 1 was "capped by a fairly new white framed house. The mound is rather low, grassed and covered with numerous trees."

No formal investigation of the Mound 1 was undertaken by archaeologists until 1989, when the house atop the mound was demolished. Following this, a consortium of local archaeologists, including a crew from Washington University, began an excavation to determine the form, function, and age of Mound 1.

The archaeologists found a roughly rectangular mound, 140 feet by 120 feet, that stood five feet high in an overgrown tangle of trees and bramble. During the course of what must have been a particularly trying excavation, the archaeologists learned that the house noted in 1950 was in fact the second house to occupy the mound. The earlier house had burned and its remnants were removed. Following this, the mound area was capped with a bed of fill-dirt about three-feet thick and the later house built, only to be demolished itself nearly 50 years later.

Eventually the archaeologists dug through the fill and uncovered the original mound. They found it was constructed of a gray clayey soil brought in by the basket-loads. They also discovered it was built on a surface that had been prepared by hoeing or scraping. The archaeologists concluded that Mound 1 had most likely been a low platform mound situated on a natural clay ridge. Perched on the elevated ridge, the mound's summit stood approximately 10 feet about the surrounding landscape.

Dating the mound proved to be difficult, as few temporally diagnostic artifacts were recovered. Some evidence points to a possible construction fairly early in Cahokia's history, perhaps A.D. 1050-1150, while there is also evidence that the mound was in use around 1200-1275, during Cahokia's decline.

John Kelly, a Washington University archaeologist, has suggested Mound 1 along with Mound 2 may comprise the center of a small community enclave that could have been separate from Cahokia proper. Noting that the land surrounding Mound 1 was buried under several feet of historic period flood deposits, Kelly said "We really don't know anything about what's around the mound. It will be great to have the opportunity to learn what's out there." —*Paul Gardner*

Conservancy Plan of Action

SITE: Cahokia Mound 1

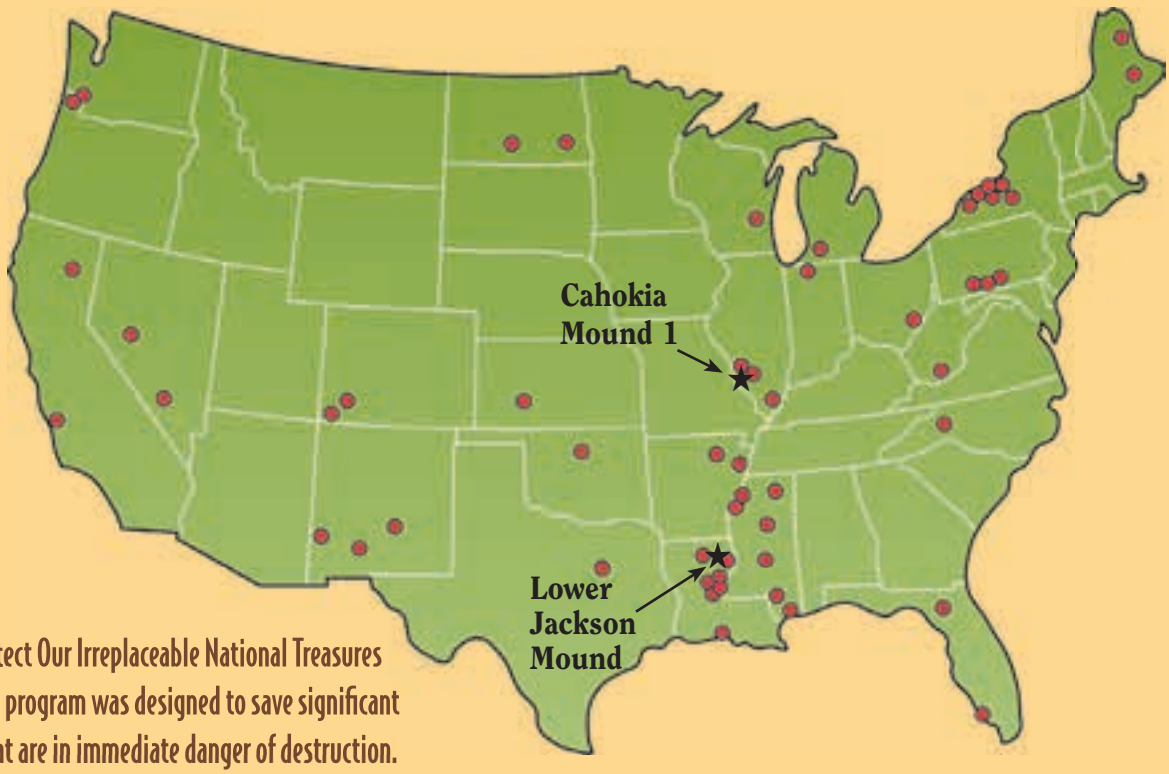
CULTURE AND TIME PERIOD: Mississippian, A.D. 1050-1275

STATUS: Endangered by proposed mixed residential and commercial development.

ACQUISITION: Conservancy is in contract to purchase two acres including the mound. The cost to purchase, stabilization, and fence the site is $35,000.

HOW YOU CAN HELP: Please send contributions to The Archaeological Conservancy, Attn: Cahokia Mound 1, 5301 Central Ave. NE, Suite 902, Albuquerque, NM 87108-1530.

POINT Acquisitions



The Protect Our Irreplaceable National Treasures (POINT) program was designed to save significant sites that are in immediate danger of destruction.

CONSERVANCY

Field Notes

University of Vermont student James Allen exposes the floor of a room at Fourmile Ruin.

SCOTT VAN KEUREN

Work Continues at Fourmile Ruin

SOUTHWEST—The 2009 University of Vermont archaeological field school traveled to east-central Arizona to continue excavations at the Conservancy's Fourmile Ruin preserve. Fourmile was the largest and perhaps most diverse village in the region, a central location that attracted groups who migrated to the area in the 14th century. The presence of exotic items such as yellow ware pottery and obsidian demonstrate that it had ties to other areas of the Pueblo Southwest.

The researchers focused on middens at the site that could yield information about the production and circulation of iconographic-style pottery during the early Pueblo IV period (A.D. 1300-1400). In addition to examining middens, the researchers excavated portions of two rooms and a kiva. In the latter they found perfectly preserved plastered walls, floor features, and an unusual incision in the paved floor.

The excavations yielded abundant varieties of painted pottery, but little evidence of ceramic manufacture. Project director Scott Van Keuren said that red ware pottery was produced by specialists living at one or more villages in the region, and he thinks it's possible that one village was the exclusive manufacturer of Fourmile Polychrome.

The artifacts recovered this summer will undergo a battery of tests, including instrumental neutron activation analysis, which should provide information about where they were produced and how they circulated among the Pueblo villages in this region. Van Keuren also intends to clarify the economic organization of pottery production and exchange in the region in the 1300s, a period leading up to the end of permanent Pueblo occupation of the area.

Coming Home

SOUTHEAST—In 2005, the Chickasaw Nation of Oklahoma gave the Conservancy a grant to purchase one of their ancestral village sites, referred to locally as Cedarscape, in Tupelo, Mississippi. During the height of Cedarscape's occupation, in the early to mid 1700s, the Chickasaws were under almost constant attack from the French and their Indian allies, and they eventually abandoned the village for many years. It is believed the village was reoccupied later in the 1800s shortly before the

JESSICA CRAWFORD

Chickasaw dancers in traditional costumes performed at Cedarscape last June.

Chickasaws were forced to move to Oklahoma.

After acquiring Cedarscape, the Conservancy leased it to the Chickasaw Nation, who assumed the primary management of the site. The two parties agreed the site should serve to educate people about the beliefs and traditions of the Chickasaws as well as their role in America's past. So far, mapping, remote sensing, and some excavating has been done.

Since the Chickasaw Nation took over management of the site, many of its citizens have made the journey back to their former homeland in Mississippi to visit the site of one of the villages in which they lived.

A special visit took place in early June when a large delegation of Chickasaws traveled to Tupelo to place a monument at the home site of Chief Tishomingo, one of their most revered leaders. After the dedication, the delegation, which included Chickasaw Nation Lieutenant Governor Jefferson Keel, and local guests spent the afternoon visiting Cedarscape. The group also included members of the Chickasaw dance troops, who performed traditional dances. Traditional hymns were also sung. Thanks to the efforts of the Chickasaw Nation and the Conservancy, Chickasaws danced and sang in their old village for the first time in almost 170 years.

Luminescence Testing at MacHaffie

SOUTHWEST—Last summer four dosimeters were inserted in excavation units at the McHaffie site south of Helena, Montana. The dosimeters will measure the amount of light absorbed by alluvial sands on, and below, occupation layers in order to date them.

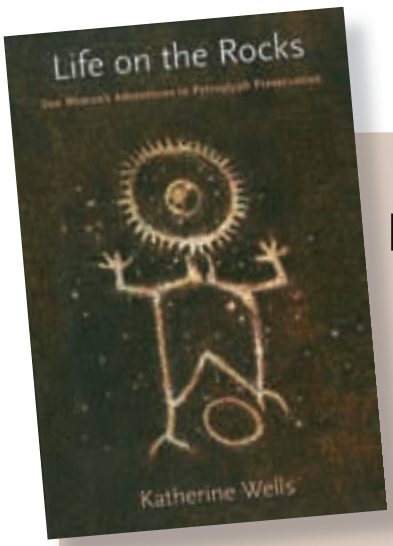
The sands under the occupation layers are thought to reflect late Pleistocene to early Holocene braided stream deposits. These have never been dated. The occupation layers relate to Folsom and Scottsbluff occupations and have been radiocarbon dated to approximately 10,000 to 11,000 years ago. The purpose of the luminescence dating is to provide dates for the sands as well as to corroborate the radiocarbon dates.

Luminescence is light emitted from crystalline materials, such as quartz or feldspar, that have accumulated energy through time due to natural radioactivity. Sunlight releases this stored energy. Therefore the intensity of the luminescence signal is proportional to the time since it was last exposed to sunlight, and this event is what is dated.

JIM WALKER

A tube-like measuring device, known as a dosimeter, is inserted into the wall of an excavation unit. It will take approximately a year for the dosimeter to take a luminescence reading of these deposits.

Reviews

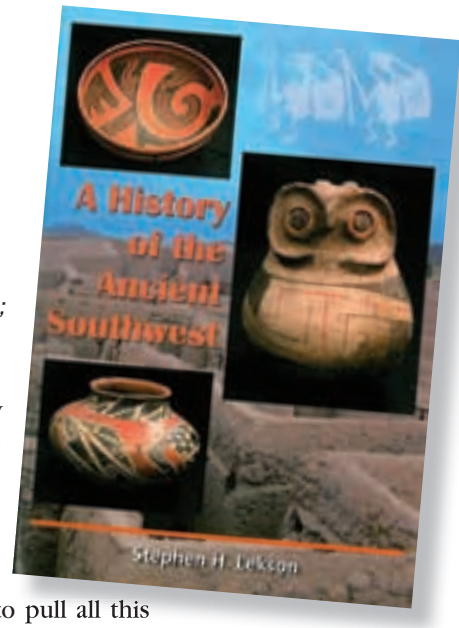


Life on the Rocks: One Woman's Adventures in Petroglyph Preservation

By Katherine Wells
(University of New Mexico Press, 2009; 211 pgs., illus., $22 paper; unmpress.com)

In 1992, a Southern California artist and her partner purchased 188 acres near Española in northern New Mexico on which to build a new home and a new life. The land is covered with countless large, black, basalt boulders, and the boulders, as she soon learned, are covered with countless petroglyphs. Chiseled or pecked into the rock by Native Americans over hundreds of years, petroglyphs are important sacred images.

This book is Katherine Wells' memoir of life in rural New Mexico and her struggle to preserve the sacred images on her land and, eventually, the entire region. She and her partner, the late Lloyd Dennis, built their dream home and studio while doing battle with looters and developers who would exploit or destroy the petroglyphs she came to treasure. She became a local expert on ancient rock art and founded the Vecinos del Rio Mesa Prieta Petroglyph Project to record, study, and protect the glyphs. To date, more than 6,000 images have been recorded on her land and many more on the lands of neighbors. She involves the local Hispanic community as well as Native Americans whose ancestors carved the images. *Life on the Rocks* is the real life story of a magnificent journey to understand and preserve a great national treasure. In 2005, Wells donated most of her land and the petroglyphs to The Archaeological Conservancy so that they would be preserved forever.



A History of the Ancient Southwest

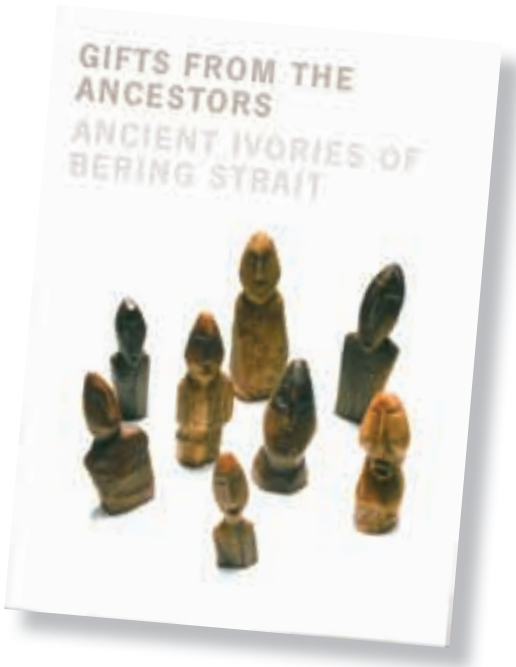
By Stephen H. Lekson
(School of Advanced Research Press, 2009; 452 pgs., illus., $40 paper; www.sarpress.sarweb.org)

Traditional archaeology in the American Southwest has produced many linear feet of scientific reports, hundreds of monographs, dozens of textbooks, but nothing to pull all this information together into a historical narrative. That's what University of Colorado archaeologist Steve Lekson has done in this unprecedented volume. In the first seven chapters of this highly readable, often humorous book, Lekson constructs a political history of the people of the Southwest from "time immemorial" to the Spanish conquest.

One of the nation's leading scholars of the Chaco culture, Lekson concentrates his story on the rise and fall of the Chaco Canyon civilization, its contemporaries (Hohokam and Mimbres) and its successors (the peoples of Aztec ruins and Paquimé) from about A.D. 950 to 1450. From the vast. but woefully incomplete, mountain of archaeological data, Lekson builds a narrative around rulers (kings and princes) and farmers, not unlike those more commonly accepted hierarchical societies of Mesoamerica (Aztec, Toltec, and Teotihuacán) and Cahokia in Illinois that influenced them. In Lekson's view, nothing happened in isolation, as the people of the Southwest were very aware of what was going on in the rest of North America.

Lekson's history is really two histories interwoven. This first is the story of ancient people. The second is the story of archaeologists and other scientists in the modern era who try to unravel the former. He skillfully connects the dots produced by the scholars in writing the history of each era as no other archaeologist has. Picking and choosing from various important sites and events, Lekson makes the history hold together, even if, as he readily admits, some of the details may be open to question.

Most of the archaeological establishment will be highly critical of this work, but Lekson is the most provocative and innovative pre-colonial scholar of our time. In this *History of the Ancient Southwest* he has thrown down a challenge that other scholars must take up and advance. It is a book that everyone interested in the ancient Southwest must study and enjoy.



Gifts from the Ancestors: Ancient Ivories of Bering Strait

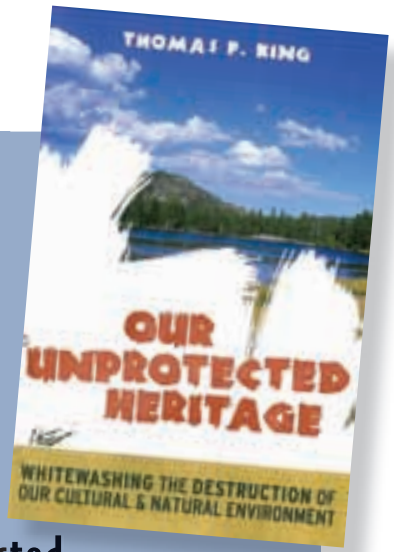
Edited by William W. Fitzhugh, Julie Hollowell, and Aron L. Crowell

(Yale University Press, 2009; 328 pgs., illus., $55 paper; www.yalebooks.com)

Produced to accompany an exhibit by the same name at the Princeton University Art Museum (running through January 10, 2010), this volume is an outstanding collection of recent information about the people of the Bering Strait and their art. Carved from walrus ivory in the first millennium A.D. the nearly 200 small objects represent animals, mythical beasts, masks, and human figures. First discovered in the 1920s, these objects of technological complexity and aesthetic beauty were produced by the Arctic hunting cultures. They include hunting implement tools, ornaments, and ritual objects.

Twenty-four essays by an international team of archaeologists, ethnographers, art historians, and Native people examine the objects and the people and cultures that made them. Bill Fitzhugh, Director of the Smithsonian Institution's Arctic Studies Center, leads the authors that also include Russian scholars and their reports on recent excavations on their side of the Bering Sea, appearing here for the first time in English. The section on the archaeology of the region, which describes excavations on both sides of the strait, lays the groundwork for the origins of the culture and objects. During the last Ice Age, lower sea levels produced a land bridge between Asia and North America that nomadic hunters traveled into the New World. Rising sea levels flooded the Bering Sea around 10,000 B.C., but much of this art reflects the common traditions of both continents

Most of the objects in the exhibit come from old settlements and cemeteries on the banks of the sea. More often than not, settlements are built upon older settlements over a very long period of time. Many of the objects were legally excavated by impoverished Eskimos and sold on the antiquities market, thus the term "Gifts from the Ancestors." Sadly, much information about the past is thus lost. Increasingly, archaeologists are working with the Native leaders to conduct scientific research to better understand their heritage.



Our Unprotected Heritage: Whitewashing the Destruction of our Cultural and Natural Environment

By Thomas F. King

(Left Coast Press, 2009; 200 pgs., illus., $79 cloth, $25 paper; www.LCoastPress.com)

In this compelling book, Tom King examines the state of cultural and natural preservation in the United States and finds it sorely lacking. Despite strong sounding laws like the National Historic Preservation Act and the Environmental Policy Act, King finds developers and their governmental allies to be firmly in the driver's seat. King should know. He has spent 40 years in preservation including a stint at the Advisory Council on Historic Preservation.

King's conclusions are disturbing. He finds the existing laws to be inadequate and many of those charged with enforcing them more concerned with mollifying powerful interests than in carrying out their responsibilities. He urgently calls for reforms that would put teeth into existing preservation laws.

Our Unprotected Heritage is a must read for all those concerned with preservation of our national cultural and natural resources. *—Mark Michel*

Maya of Yucatán and Calakmul

When: February 11–21, 2010
Where: Mexico
How Much: $2,695 per person ($325 single supplement)

From A.D. 300 to 900, a brilliant culture flourished in the Yucatán Peninsula of Mexico—the Classic Maya. We'll visit some of their most splendid sites, including Dzibilchaltún, Balankanche Cave, Mayapán, and Chichén Itzá. We'll also drive deep into the forest to visit Calakmul, which has been undergoing significant excavations in recent years. Calakmul is believed to be the largest of all the Maya cities. More than 100 stelaes and 6,500 structures have been discovered there so far. During the Late Classic period it dominated the entire southern Yucatán. Accompanying us will be John Henderson, one of the nation's leading Maya scholars.

VICKI MARIE SINGER

Chichén Itzá, in southern Mexico, was occupied until the 13th century.

Yampa River Trip

When: May 22–30, 2010
Where: Colorado and Utah

Join us for a downriver adventure through the spectacular scenery of Dinosaur National Monument, including Whirlpool Canyon, which was first described by the explorer John Wesley Powell. In addition to the beautiful scenery, this 70-mile journey down the Yampa and Green rivers offers an opportunity to visit remote archaeological sites, including Freemont culture rock art panels and prehistoric rock shelters.

DAVID NOBLE

The Yampa River offers breathtaking scenery.

UPCOMING TOURS

Spring 2010

Peoples of the Mississippi Valley

Beginning in Memphis and following the Mississippi River south to Natchez, our week-long journey covers more than 5,000 years of history, ranging from ancient earthen mounds to Civil War battlefields. The trip offers an exciting opportunity to learn more about the rich and complex mound builder cultures that flourished along the Mississippi River Valley until the arrival of the Europeans.

While taking in the charms of the Old South, we'll visit important sites, including Emerald Mound, the third largest Mississippian mound in the United States. We'll also visit sites from historical times, including the Grand Village of the Natchez and the Civil War battlefield at Vicksburg. Several of the Conservancy's preserves, such as Watson Brake Mounds, which may be the oldest mound site in North America, are also featured on the tour.

ALAN GRUBER

Mound A at Winterville, in Mississippi, is the fifth-largest in North America.

Summer 2010

Highlights of the Northern Plains

Beginning and ending in Bismarck, North Dakota, this new tour will explore some of the unique and fascinating historical places of the Northern Plains. We'll visit Knife River Indian Villages National Historic Site, which preserves the remains of five historical period Mandan/Hidatsa villages, including the "hometown" of Sakakawea, the guide for Lewis and Clark.

We'll also visit the North Dakota Lewis and Clark Interpretive Center and the replica of Fort Mandan, where Lewis and Clark spent the winter of 1804-05. Other highlights include Fort Union, a 19th-century fur-trading center at the confluence of the Yellowstone and Missouri Rivers, and the nearby Fort Buford, the site of Sitting Bull and his Sioux followers' surrender in 1881.

The tour also features a number of prehistoric Native American sites including Double Ditch and Huff Indian Village State Historic Sites, well-preserved Plains Village Tradition villages, and the Knife River Chert Quarries, one of the largest prehistoric quarry sites in North America. Archaeological experts will join us throughout the trip.

NPS

The Mandan and Hidatsa peoples lived in villages consisting of earthlodges.

Patrons of Preservation

The Archaeological Conservancy would like to thank the following individuals, foundations, and corporations for their generous support during the period of August through October 2009. Their generosity, along with the generosity of the Conservancy's other members, makes our work possible.

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The Lacy Foundation, Inc., *Georgia*
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Bequest

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Living Spirit Circle

The Archaeological Conservancy

Since the inception of the Conservancy's Living Spirit Circle in 2002, participation has grown to nearly 100 members. These dedicated members have included the Conservancy in their long-term planning to ensure that America's past will always have a future.

This elite group is open to those who wish to make a lasting contribution by including the Conservancy in their will or estate plans, or by making a life-income gift such as a charitable gift annuity. The Conservancy would like to thank the following Living Spirit Circle members for their thoughtfulness and generosity.

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Parkin Archeological State Park

parkin, arkansas

Began as a Conservancy Preserve in 1985

Make your mark in time.

Some Conservancy members think the only way to help save archaeological sites is through membership dues. While dues are a constant lifeline, there are many ways you can support the Conservancy's work, both today and well into the future. And by supporting the Conservancy, you not only safeguard our past for your children and grandchildren, you also may save some money.

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Evaluate your investments. Some members choose to make a difference by donating stock. Such gifts offer a charitable deduction for the full value instead of paying capital gains tax.

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Leave a lasting legacy.

Many people consider protecting our cultural heritage by remembering the Conservancy in their will. While providing us with a dependable source of income, bequests may qualify you for an estate tax deduction.

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