

BURIED TREASURE



Betsy Baker

Volunteer Terry Nowka of Hydro joins the painstaking work at the Burnham site.

By MICHAEL WATERS

An Oklahoma rancher's chance discovery has touched off an archaeological treasure hunt for clues to the origin of human habitation in North America.

Photos by
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continued

The steady chug of gas-powered motors. The insistent click of scrapers and picks. The back-and-forth of archaeological shop talk. The blare of OU football from portable radios.

Such a strange din likely perplexed the coyotes, porcupines, rabbits and the like who populate northwest Oklahoma's badlands. Yet fortunately for those four-footed inhabitants, the "invaders" were friendly. They were staff members and volunteers laboring on behalf of the Oklahoma Archaeological Survey, more than a dozen of them camped in this wild country some 200 miles from home base on the University of Oklahoma's Norman campus.

Scientific sleuths on a strange quest sift the red clay of the Burnham site.

Their activities on this October Saturday centered on the Burnham site, so named for the rancher whose accidental discovery three years ago touched off a scientific treasure hunt. For almost a month last fall, Survey members and volunteers pored over this 15-foot hill tucked among the canyons and red clay of Woods County. Working in unison eight hours a day, these visitors sleuthed a mystery whose clues are older than civilization.

The mystery is this: if humans first came into North America some 12,000 years ago, as many archaeologists believe, how is it possible for signs of human habitation to turn up in Burnham site deposits dating back more than 26,000 years?

Attempts by the OAS to solve that riddle so far have garnered a \$12,000 grant from the National Geographic Society for the October expedition, \$2,000 from the Oklahoma Museum of Natural History for dating work, and numerous private donations. The answer will be worth much more in terms of knowledge.

"This site has the potential of destroying an idea that's received a lot

of credit in archaeological circles," says OAS Director Don Wyckoff. "This theory is that the first American Indians came into North America 12,000 years ago. They were very good hunters, and they exterminated elephants, camels, horses and other large game animals that haven't been present for 10,000 years."

As Wyckoff spoke, some 35 volunteers labored in the Indian summer sunshine. The workers, most of whom are affiliated with the Oklahoma Anthropological Society, were digging meticulous one-meter squares on the slope of the hill, while mapping and measuring every detail of the site. Buckets of soil were carried downslope to a row of wire mesh screens with two-millimeter openings. Here, the dirt was "waterscreened" so that the residue could be searched for treasures, such as small bones and flakes from tools.

The September 30-October 27 expedition to Burnham did not definitively settle the issue of the first human habitation of the region. However, it did turn up a number of "finds." One was a bone from a bear which might carry marks of butchering. At least three flakes from ancient tool sharpening joined the pile previously collected from the site by Survey members. Jaw, leg and rib fragments from an ancient horse were discovered in an L-shaped backhoe trench dug to trace the path of the old stream bed. Residues from the site are being examined minutely in search of more clues.

The discovery process at Burnham has been deliberate and painstaking. Wyckoff, who has spent more than three years collecting the pieces of this puzzle, recalls when the first piece—the biggest one—fell into place. In June 1986, rancher Keith Burnham was bulldozing a 20-foot bank while digging a pond. Finding what proved to be the skull of a *Bison alleni*, an extinct species of eight-foot-tall bison, Burnham contacted Wyckoff, who traveled to the ranch to examine the partially-unearthed fossil.

"We went back in October of '86—the lab manager, two volunteers from the Anthropological Society, and I," Wyckoff remembers. "We spent a week uncovering the skull and getting it in shape to bring back to Norman."

Through that fall and winter, staff and volunteers working with the Archaeological Survey went through the arduous task of sifting the water-screened debris taken from the vicinity of the skull. Five months into the project, some small but startling pieces turned up: small stone flakes from resharpened tools, indisputably the work of human hands.

"We wondered, 'What the heck's going on?'" Wyckoff says. "We knew the kind of bison we had was at least 20,000 years old. We also knew people weren't supposed to be here until 12,000 years ago."

The first step in solving this mystery was obtaining reliable radiocarbon dates for the Burnham deposit. Wyckoff and his colleagues found the bison bone did not have enough carbon for dating, so they tried to date the "darkest-looking dirt." Again, not enough carbon. They settled on using snail shells to obtain a date, since thousands of shells were embedded in the sediments.

"Snails absorb carbon dissolved in the groundwater," Wyckoff explains. "They aren't the best thing to date, but that's what we had the most of." The dissolved carbon is derived from rocks millions of years old, and thus could cause a radiocarbon dating to misread the age of the snail shells. This "contamination" might date the shells hundreds or even thousands of years older than they really are.

The radiocarbon dating was completed in October 1987. The snail shells were estimated to be 31,000 years old.

The Survey members were startled. Even if the dissolved carbon had skewed this estimate by 20 percent—an unheard-of level of contamination—it still would place the tool flakes in 25,000-year-old soil. Two possible explanations came to the fore: either the tool flakes were mixed into the older deposit from 4,000 to 5,000-year-old soil, or human beings were alive and well in North America at least 13,000 years before scientists previously had believed.

Clearly more research was needed, as was outside funding. In February 1988, the Survey submitted a grant request to the National Geographic Society to further excavate the Burnham site. Five months later, the request

was denied. Not enough evidence of human habitation, the NGS said.

However, while the NGS was considering the initial grant request for work at Burnham, more evidence was being discovered. Survey workers located four more tool flakes in the sifted material. Possessing in determination what they lacked in funding, Wyckoff and 25 volunteers spent a week at the site in September 1988. Wyckoff recalls that the hard-working group expanded the digs in the immediate area where the bison bones first were found.

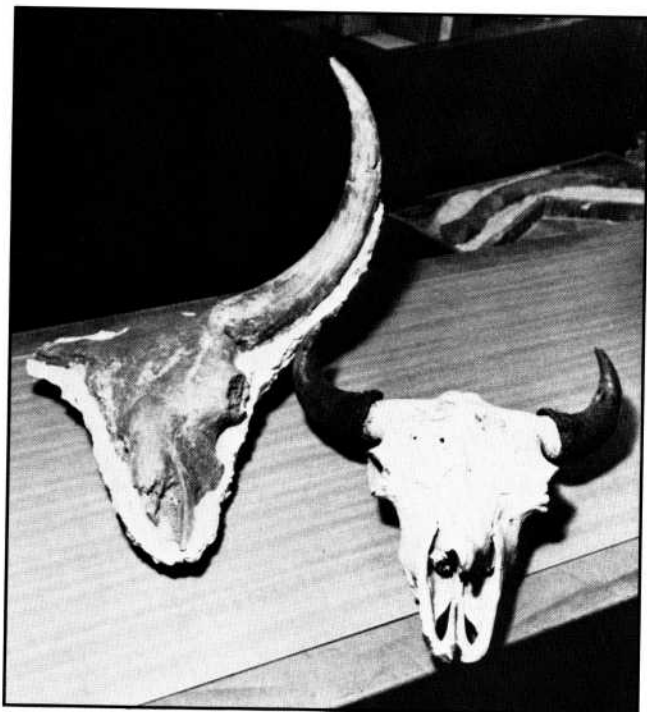
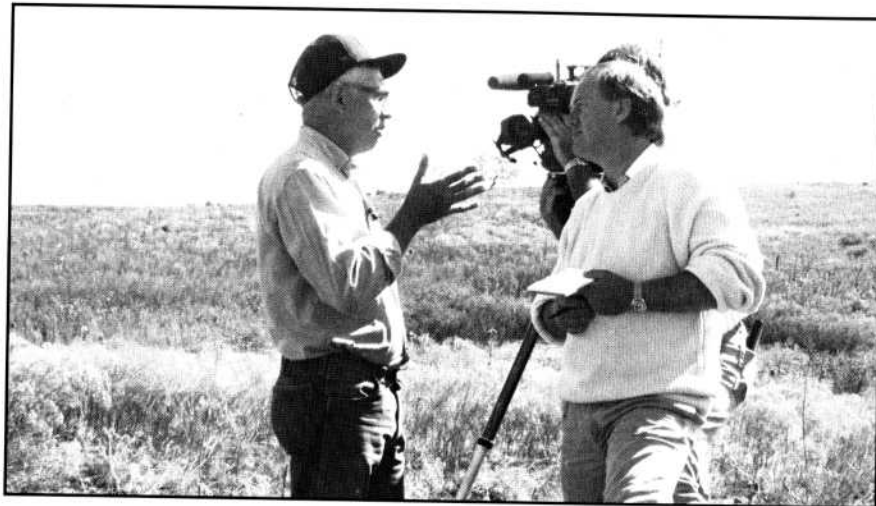
"We found two broken tools — a scraper and a knife — and more flakes," Wyckoff says. "We now had 22 flakes from resharpened tools—plus, half a dozen of the flakes were from flint deposits in southwest Texas. It's not possible for that flint to get here unless people carry it."

At the same time, the Survey used a \$2,000 grant from the Oklahoma Museum of Natural History to obtain dates on small amounts of charcoal found in the deposits. Four dates were obtained, all between 26,000 and 40,000 years old.

As 1989 began, the Survey prepared another proposal to the National Geo-

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Don Wyckoff, director of OU's Archaeology Survey, takes a break from the trenches to answer a few questions for Ron Stahl's "Assignment Oklahoma" series that aired on Oklahoma City television station KOCO.



*Rancher Keith Burnham touched off an adventure when he accidentally discovered the skull of a *Bison alleni*, on the left, compared here with a modern-day bison. Radiocarbon dating suggests the skull could be almost 40,000 years old.*

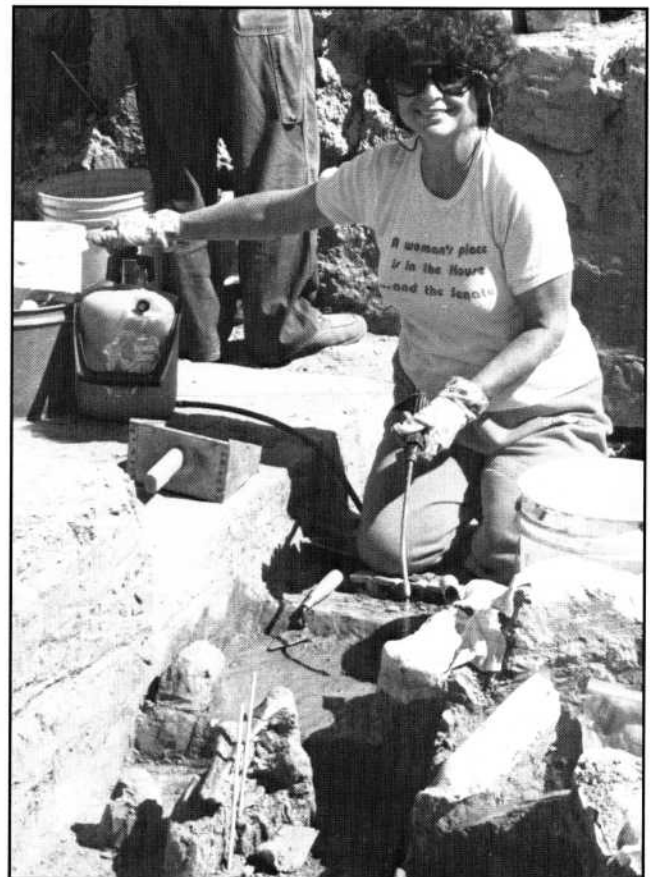
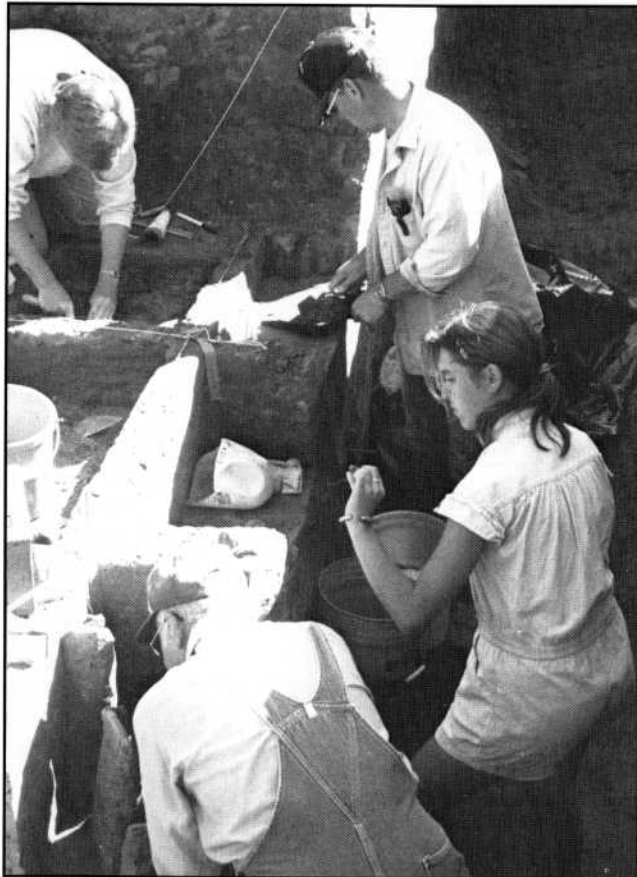


Volunteers hope another piece of the puzzle will be uncovered when buckets of soil are waterscreened. Shirley Finfrock, Los Catos, California, and Gary Carney, Sapulpa, perform the tedious process to search for tiny fragments of a past life.



ABOVE: A local convenience store greeted arrivals at the dig with an invitation for those curious enough to stop for a face-to-face encounter with Oklahoma rattlesnakes — safely contained, of course.

LEFT: Ania Nowicka, exchange student from the University of Warsaw, Poland, and budding archaeology scholar Dustin Carter from nearby Perkins, examine ancient horse bone fragments unearthed in the trench.



Volunteers, whose number often exceeded 50, dug precise one-meter squares and mapped and measured the 15-foot hill. Their work force included folks from local communities, students of all ages and members of the Oklahoma Anthropological Society.

The Indian summer sun couldn't daunt the spirit at the digs for volunteers like Eileen Johnson of Comanche. When money ran short, enthusiasm and elbow grease took up the slack. Some waterscreened residue will be examined under magnifying lamps, then scrutinized by paleontologists.

graphic Society, this one for \$18,000. In August, the NGS responded with a \$12,000 grant. With an additional \$4,000 in private donations, last fall's four-week expedition was financed.

Some of the private funding for work at Burnham has come through unanticipated acts of generosity. Wyckoff cites the couple who spoke to him briefly during a break in a presentation he made at the University of Maine and on the basis of that chance meeting donated \$500. Another surprise gift came when Chamber of Commerce members from Freedom, a town near the Burnham site, traveled to the site with a \$500 check in hand.

Yet while the OAS struggles to make the best of every dollar of grant and donation money, last fall's expedition proved the organization is wealthy in helping hands. In addition to the 15 workers permanently camped at the site, as many as 15 additional volunteers came out on weekdays for a full day's work. On weekends, the total at the site sometimes approached 50.

These dedicated workers are drawn to barren settings such as the Burnham site by an emotional attachment to the buried secrets of the earth, along with an enjoyment of the Sherlock Holmes-ian nature of this science. Leslie Anderson, an OU sophomore majoring in anthropology, devoted several days last October to such tasks as digging, measuring, bucket-carrying and "whatever needed to be done."

She calls the experience an invaluable learning tool. "You can't become an archaeologist just by going to school. You've got to come out and *do* it. Also, this could be a very important site, so it's an exciting experience that way, too."

Francie Gettys, a staff archaeologist with the Survey, notes that "the people who enjoy this sort of work are outdoorsy people. As for me, I like the 'physical-ness' of it . . . I also like trying to fit it all back together when we get back into the lab."

Gettys and other staff members went to work in November trying to do just that. When the site work at Burnham ended on October 27, bags of residue were organized for the long sorting process. This continuing effort takes patience. Working with excruciating care, the helpers sit at tables examining the debris through



Dedication and emotional attachment draws some volunteers to this mammoth effort, while others report the "detective" nature of the science attracts them. Director Wyckoff himself says simply, "We almost have to go back."

magnifying lamps. Bones found in the material have been separated to be sent to Larry Martin, a paleontologist at the University of Kansas. Other bone studies were slated by Larry Todd, a bone specialist connected with the Zuni Indian Nation.

By November, scientists were only beginning to see the full value of the latest Burnham expedition. Wyckoff notes that soil tests at the site helped establish the geologic sequence of layers. The Survey further established a lack of evidence that any 12,000-year-old soils had mixed with the older deposits where the bison skull was found.

Wyckoff adds, "We've dug enough to know that the bison bones and the flakes we've found don't represent a primary context"—meaning that the discoveries have drifted as much as three or four yards from their original location. Initially Wyckoff suspected a buried soil 10 feet below the present surface to be the source of the bones and flakes.

However, one radiocarbon date in early January placed the age of the buried soil to be more than 38,000 years old, almost surely too ancient for human remains to have originated in. Further dating work on this soil,

including three samples sent by the OAS to a New Zealand research agency, will help determine if that soil really is close to 40,000 years old.

Survey members plan a return to Burnham this spring to further pinpoint the primary source of the Burnham site discoveries. "We almost have to go back," Wyckoff says. "The only thing that could stop us would be a total lack of money." In hopes of obtaining new funding, Wyckoff submitted a new grant request to the Geographic Society in late January.

As Wyckoff drafted that funding request, the Burnham site stood empty, isolated from its surroundings by a quarter-mile of barbed wire fence. The sounds of humans scouring through dirt for clues had been replaced by the more typical noises of nature—the whoosh of midwinter winds and the nighttime howls of coyotes.

Here, on a 15-foot hill on the edge of a small canyon, centuries have elevated the residues of ancient lives to the status of eagerly-sought treasures. Thanks to sweat and dedication, some of those treasures have been brought to light. Soon—perhaps next spring—a precious fragment which might rewrite history will lie untouched no longer. 