

# MAMMOTH TRUMPET



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## OF APPLES AND ARCHAEOLOGY

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### PROLOGUE

Archaeologists expect to be surprised—discovery is their business. Yet, nothing in our experiences could have prepared us for artifacts unearthed in an apple orchard last April. The find, on a terrace 600 feet (200 m) above the Columbia River near East Wenatchee, Washington, went contrary to reason.

At this improbable place, clusters of Clovis spear points lay little more than two feet below the surface and a scant ten yards from a county road. The sandy soil containing the artifacts had supported sagebrush and tolerated alfalfa, wheat, and, for the last 20 years, Washington state's pride—Red Delicious apples. It had been grazed, graded, plowed, disced, ditched, and finally augered to plant thousands of apple trees. Until the spring of 1987, though, not a single stone tool—not even a flake—had surfaced at the R&R Orchards.

Natural setting and agricultural disturbance seemed to have ruled against recovering any ancient remains. Still, Clovis sites are where you find them. What is known about these early Americans has come more from accident than design. It seems fitting, however, that Washington's most important Paleoindian assemblage lies buried beneath an apple orchard; Washington State University excels in fruit tree research and in archaeology.

### THE APPLE ORCHARD DISCOVERY

My introduction to Clovis came over 25 years ago from Edward F. Lehner, on his ranch near the Mexican border in the San Pedro Valley of Southeastern Arizona (see *Mammoth Trumpet* 4(4)). Ed's report of bones protruding from an arroyo wall led to the discovery of extinct mammoth, horse, bison and tapir, with Clovis artifacts and fire hearths.

American archaeologists have traditionally recognized people such as Ed Lehner in naming sites. In Washington, this includes important places of early peoples like Marnes Rockshelter at the confluence of the Palouse and Snake rivers, Manis Mastodon site on the Olympic Peninsula, and now the Richey-Roberts Clovis Cache near East Wenatchee. Vice-provost

Robert V. Smith offered the assistance of Washington State University's Graduate School in starting this study and keeping it on track. Investigations were continued with assistance from the Washington State Historic Preservation Office and through a grant from the National Geographic Society.

The story of discovery, concern, and cooperation that eventually led to the dig last April began nearly a year earlier, and a full six months before the owners asked me to direct excavations. On May 27, 1987, orchard foreman Mark Mickles and employee Moises Aguirre encountered "rocks" while installing sprinklers at the R&R Orchards. Before the digging stopped they had recovered 19 stone tools, including six Clovis points up to 8 1/2 inches long (22 cm). Moises took the collection to the orchard manager. Rich and Joanne Roberts kept the artifacts in their home at the orchard. With time they became more and more curious; they showed the tools to their friends and sought advice. Joanne took them to school to share with her first graders. Later, these same children peered down at artifacts in our excavations. Ex-

citement turned to wonder as they recalled Joanne's lessons about ancient peoples, mammoths, and the Great Ice Age.

The significance of these unusual stone tools went unrecognized until Russell Congdon, a retired Wenatchee physician, identified them as Clovis. Congdon called Robert Mierendorf, an acquaintance and archaeologist. On August 16 they reopened Moises' diggings, finding another Clovis point and more.

They refilled the hole, and Mack Richey protected the find with concrete slabs. The site's fame spread as the Richeys and Roberts discussed their apple orchard artifacts with experts from near and far. Susan Richey and Joanne Roberts traveled all the way to the Smithsonian in Washington, D.C. They had caught the Clovis fever.

Interest was intense because several of these rare Clovis tools were large and exquisitely crafted. More importantly, more artifacts remained in place, perhaps just as they had been left 11,000 years ago. Thus they might be dated and their geologic context understood.

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Part of the Anzick Clovis Cache includes a bone foreshaft (top), several fluted projectile points (center), and a large crescent-shaped biface (bottom) that measures over 10 inches in length. (Photo courtesy of Rob Bonnicksen)

## ANZICK COLLECTION REUNITED

Twenty years of patience and persistence have finally paid off for native Montana archaeologist Larry Lahren—and for all people who care about archaeological research. Largely because of Lahren's continued interest, the owners of a unique collection of Clovis artifacts have placed the tools on permanent loan at the Montana Historical Society Museum in Helena, Montana, more than two decades after they were first discovered. Because the collection was divided among three different owners—each of whom had faced strong temptations to sell their portion—its

final reunification into the safekeeping of a public agency is all the more welcome news. The situation "was kind of tragic at the start," Lahren says now, "but it ended up pretty well."

The story of the Anzick Clovis cache began in 1968, when two construction workers were digging fill at the base of a sandstone cliff. As Calvin Sarver and Ben Hargis dumped dirt into a chuckhole in a nearby road, they saw a large bifacial knife fall out of the bucket of their front-end loader. Immediately stop-

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# C E N T E R N E W S

## CALL FOR ARCHAEOLOGICAL RESEARCH PROPOSALS

The Center for Field Research is accepting archaeological research proposals for review. Approved proposals are funded by their affiliate, Earthwatch, a private, not-for-profit research and educational organization. All funds are derived from the contributions of participating volunteers selected from Earthwatch membership. All research proposals must therefore include a significant role for volunteer fieldworkers.

Preliminary proposals may be made by telephone or by a detailed two-page letter sketching the scholarly background of the research, the goals of the proposed project, the need for volunteer fieldworkers, and an estimated budget. Upon favorable review, full proposals, to be submitted not later than one year prior to the projected start of fieldwork, will be invited. All full proposals are subject to independent peer review.

The Center for Field Research will consider proposals for prehistoric, historic, and underwater archaeology anywhere in the world and especially encourage proposals for research in the following regions: North America, Mesoamerica and the Central American Intermediate Area, Scandinavia, Central and South Asia, the Pacific Rim, and Sub-Saharan Africa.

Inquiries and applications may be directed to: James Chiarelli, Program Officer for Archaeology, The Center for Field Research, 680 Mt. Auburn St., P.O. Box 403C, Watertown, MA 02272. Tel. 617/926-8200; FAX 617/926-8532.

## EDITOR'S COLUMN

Although Paleoindian fluted points lie in a thin veneer across much of North America, we actually know surprisingly little about the makers of these implements. The distinctive and beautifully fashioned artifacts these people left behind attest to their expertise in stone work; the recovery of these points with horse, bison, caribou, and mammoth remains bespeaks their skill in the hunt. Yet, what of their ceremonies and beliefs, their rituals and lifeways?

This issue of the **Mammoth Trumpet** features three Paleoindian sites which may help to answer these questions. Crowfield, a late Paleoindian site located in southwestern Ontario, contains evidence of what researchers Dr. D. Brian Deller and Dr. Chris Ellis believe may be a fluted point cremation. There, within a single feature, excavators have discovered over 5,000 lithic fragments which have thus far been reassembled into some 200 stone tools. These tools were neither defective or worn out, but seem instead to have been deliberately broken and placed in a fire.

Twenty years ago, two construction workers unearthed a rare Clovis cache containing several complete Clovis projectile points and deliberately broken bone foreshafts, covered by a layer of red ochre. Now, thanks to the generosity of Dr. Melvin Anzick, Mrs. Fay Case, and Mr. Calvin Sarver—the three owners of the collection—and the tireless efforts of Dr. Larry Lahren, the Anzick artifacts have been permanently reunited in the Montana Historical Society Museum.

In a special contribution to this issue's **Mammoth Trumpet**, Dr. Peter Mehringer writes of a much more recently discovered Clovis cache. The Richey-Roberts

Clovis Cache has attracted world-wide attention as speculation about its contents escalates. The site, which remains intact in a quiet Washington apple orchard, may hold the key to many unanswered questions surrounding the Clovis culture.

These sites are but a few examples of America's archaeological heritage. The owners of the Anzick collection have ensured that these artifacts, at least, will remain available to us, and for our children and our children's children in perpetuity. Yet, what of the many other archaeological sites in this country? As the human population continues to grow and natural resources become ever more in demand, the material record of human history in the Americas is increasingly placed in jeopardy. Known sites of all kinds are being vandalized and looted at an alarming rate. More and more, lands that were maintained and controlled by Federal agencies are passing into private hands. At present, precious little privately-owned land has any regulation regarding the preservation of cultural resources.

We now stand at the brink. In response to the immediate need for clear-minded action, a public symposium entitled "The Public Trust and the First Americans" is being held Sunday, May 28 as the conclusion of **Summit '89**. It will be a sharing of ideas and interests, a chance to imaginatively explore the possibilities and opportunities before us. Please join us—at the symposium or by taking action at the local, state, or federal level—to help develop positive steps for the conservation of the fragile fragments of our past. As the public trust moves into private hands, let's do all we can to ensure our common heritage is handled with care.

## EARTHWATCH RETURNS TO MONTANA

Few questions about human prehistory are more controversial than that of when humans arrived in the New World. Conventional figures claim that humans first entered the Americas via the Bering land bridge about 11,000 years ago. Many archaeologists now believe that figure is far too recent.

This summer, Center Director Rob Bonnicksen will again lead Earthwatch teams at a Montana site that may provide accurately dated evidence of the earliest inhabitants of the United States. The Mammoth Meadow site is located in the South Everson Creek and Black Canyon drainage system at the base of the Beaverhead Mountains, approximately 50 miles southwest of Dillon, Montana. The site appears to have been a stone tool workshop of early humans, and has yielded evidence of a long Holocene and late Pleistocene archaeological

sequence, including Desert Side-Notched, Avonlea, Pelican Lake, Bitter Root, Cody, Intermountain Lanceolate, and Goshen or Plainview points. Even more intriguing, last years excavations unearthed tools located on upper terraces of the site that appear, on typological grounds, to predate the 11,000-year-old finds.

This year marks the third season that Earthwatch teams will assist in the Everson Creek excavations. While at the site, volunteers camp by beautiful Everson Creek at the base of the Beaverhead Mountains, only four miles from the Continental Divide. Meals are prepared by a professional outfitter and cook.

Earthwatchers can participate in "The First Americans" project as a member of one of four teams:

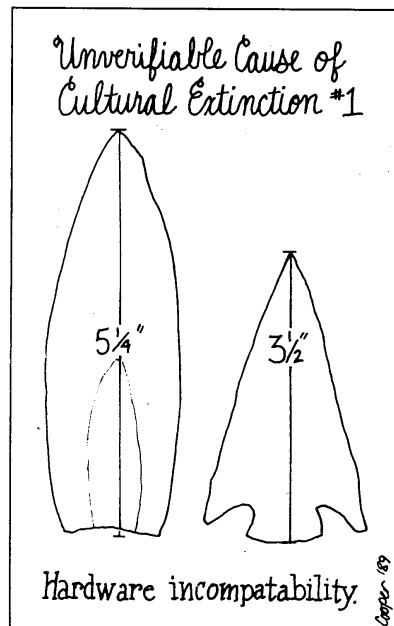
Team I: June 29-July 12

Team II: July 15-28

Team III: July 31-August 13

Team IV: August 16-29

The staging area is Dillon, Montana; Each Earthwatch participant's share of expedition costs are \$995.



## SUGGESTED READINGS

### On Possible Cremation at Crowfield

Deller, D.B. and C.J. Ellis 1988 Early Paleo-Indian Complexes in Southwestern Ontario. In *Late Pleistocene and Early Holocene Paleoecology and Archaeology of the Eastern Great Lakes Region*. Edited by N.G. Miller and D.W. Steadman, pp. 251-263. Bulletin of the Buffalo Society of Natural Sciences, no. 33.

Deller, D.B. and C.J. Ellis 1984 Crowfield: A Preliminary Report on a Probably Paleo-Indian Cremation in Southwestern Ontario. *Archaeology of Eastern North America* 12:41-71.

### On SUMMIT '89: The Public Trust and the First Americans

Knudson, R. 1989 Crisis of the Past: Preserving the Archaeological Record. North America's Threatened Heritage. *Archaeology* 42:72-73, 106.

Knudson, R. 1986 Contemporary Cultural Resource Management. In *American Archaeology Past and Present*. Edited by D.J. Melzer, D.D. Fowler, and J.B. Sabloff, pp. 395-413. Smithsonian Institution Press, Washington, D.C.

Meyers, K.E. 1973 *The Plundered Past*. Atheneum Publishers, New York.

### On Of Apples and Archaeology

Mehringer, P.J. 1988 Weapons of Ancient Americans. *National Geographic* 174:500-503.

### On Anzick Collection Reunited

Lahren, L. and R. Bonnicksen 1974 Bone Foreshafts from a Clovis Burial in Southwestern Montana. *Science* 186:147-150.

### Additional Information on Clovis Caches

Butler, B.R. 1963 An Early Man Site at Big Camas Prairie. South-Central Idaho. *Tribuna* 6:22-23.

Stanford, D.J. and M.A. Jodry 1988 The Drake Clovis Cache. *Current Research in the Pleistocene* 5:21-22.



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## POSSIBLE CREMATION AT CROWFIELD

...the communication of the dead  
is tongued with fire  
beyond the language of the living.  
—T.S. Eliot, *Four Quartets*

In a plowed field about 24 km southwest of London, Ontario lies what may be one of the earliest cremation sites in the New World. The Crowfield Paleoindian site was discovered and excavated by Dr. D. Brian Deller, presently associated with the Department of Anthropology, McGill University, Quebec, and Dr. Christopher J. Ellis, Department of Anthropology, University of Waterloo, Ontario. Within the Crowfield site is a roughly circular area, about 1.5 m in diameter, bearing the nondescript title of Feature 1. What belies the matter-of-factness of its name, however, is that Feature 1 contains over 5,000 lithic fragments which have so far been reassembled into some 200 stone artifacts, including fluted points. These tools are neither defective nor worn out, but seem instead to have been deliberately broken and placed in a fire. Although the excavators recovered no bone or charcoal, doubtless because of the acidic soil conditions in southwestern Ontario, the most logical inference is that Feature 1 is a cremation burial, and the artifacts a stone "tool kit" for the afterlife.

Brian Deller began searching areas of southwestern Ontario for Paleoindian sites in 1968. "When I first started seriously looking, there were no early Paleoindian sites known in the province of Ontario. My initial survey work was based on speculative models used to predict the location of sites. The more sites we found, the more we developed the models."

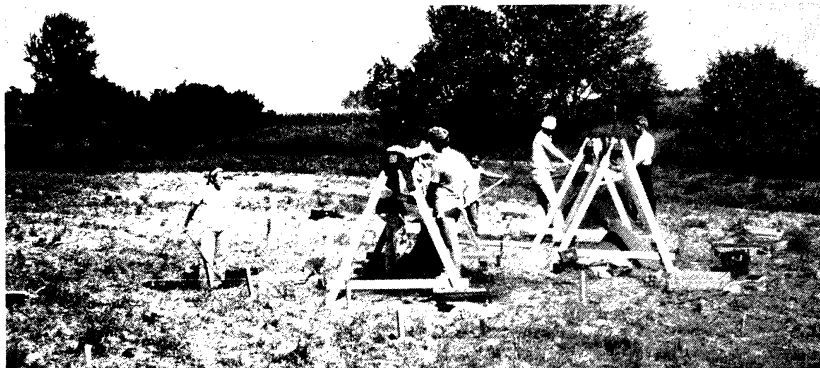
The site is located on a landform known as the Caradoc Sand Plain. "During the glacial retreat from this area, a series of lakes formed about 13,000 years ago, one of which was Lake Whittlesey," Deller explains. "A proglacial river emptied into the lake and discharged a lot of debris." Following the disappearance of the lake, sand which had settled to the lake bottom became the Caradoc sand plain.

The archaeologists discovered the Crowfield site during a survey for Paleoindian sites in the spring of 1981. "We found two small fragments of artifacts manufactured from Collingwood chert," Deller recalls. "In the area of the site, the Paleoindians were the only prehistoric group who used this raw material, so we were quite certain that we had found a fluted point site. We searched more carefully the plowed field in which we had found these two fragments, and found 15-20 heat-shattered fragments of Collingwood chert within a small area."

"We ended up spending about two weeks in the field in 1981," Deller says. He then returned for the entire summer of 1982. Excavation commenced following the mapping of a two-meter grid system onto the site. Feature 1 was discovered within the second square to be excavated. Of the nearly 5,000 tool fragments recovered from the feature, 80% were of Onondaga chert, a chert commonly used by people of many different time periods in southwestern Ontario. Onondaga chert comes from the north shore of Lake Erie, about 100 km east of the site. The remaining 20% of the tools were made of Collingwood (Fossil Hill) chert, whose source is about 200 km to the northeast. Its presence at the Crowfield site established not only the existence of a Paleoindian component, but also indicated the inhabitants of the site followed a pattern common in the Great Lakes region of frequently transporting their raw materials great distances.

This pattern is particularly significant in light of the fact that the artifact inventory includes about 50 tool blanks and 40 preforms: lithic materials in partially-shaped states somewhere between unshaped stone cores and fully finished tools. People who transport their raw materials 100-200 km are going to want them as trimmed of wastage as possible; at the same time, they will not wish to remain stuck at the quarry shaping them into final form. Blanks and preforms are an obvious solution, as they can be worked into any of several possible tools, and so provide a margin of flexibility.

The remainder of the artifact inventory recovered so far from Feature 1 (the process of assembling is still going on) consists of 15 backed knives (tools modified along one edge to facilitate hafting or ease in hand-



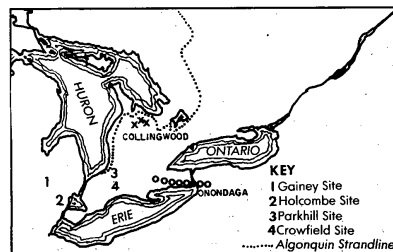
Excavation underway at the Crowfield site. (Photo courtesy of D.B. Deller)

Map (right) shows the location of the Crowfield site in relation to other Paleoindian type sites in the area.

ling), 2 drills, 24-25 side scrapers, 2 beaked scrapers (long-nosed implements, with the working edge along the nose margins), 3-4 graters (spurred tools), about 5 channel flakes, 3 large alternately-beveled bifaces, approximately 30 fluted bifaces (Crowfield points), and about 7 distinctive diamond shaped bifaces.

The 30 Crowfield points have both a morphological and chronological significance. "Before I found the Crowfield site, I was aware that there was that point type in existence in southwestern Ontario and in New York State; often they have been called "pumpkin seed" points. But previous examples had all been isolated surface finds; there wasn't a type site for them. A few base camps have now been located, including one by myself. But at the moment, the understanding of the complex derives mainly from the Crowfield feature itself," Deller explains. Crowfield points are probably the widest and thinnest ever reported in eastern North America. Expanding from a narrow base, they reach maximum width at or beyond the midpoint, with flute scars extending to the tip.

Although hampered by the lack of an absolute radiocarbon record, Deller and Ellis have tried to fit the Crowfield cultural complex into a total



points probably inhabited the area until the draining of Lake Algonquin. "Around 20 significant Paleoindian encampments have been discovered along a 15 km stretch of the former shoreline. It appears that the lake played an important role in determining settlement patterns. I believe the Parkhill complex people simply went on a seasonal round intercepting the animals in that area; along that corridor we have located 15-16 fairly large base camps."

Crowfield points are radically different from the two earlier types. Deller theorizes that the warming trend which caused Lake Algonquin to drain probably introduced new flora and fauna into the region. Then, "Perhaps the earlier people moved elsewhere, for I see a definite break between Barnes and Crowfield. Now, they might be the same population that simply adopted ideas from elsewhere, or Crowfield might represent a new penetration into the area." At any rate, "I think it's safe to say that the Crowfield points represent a different adaptive strategy than the earlier fluted point complexes." Crowfield peoples are thought by Deller to slightly postdate the draining of Lake Algonquin, around 10,500 yrs B.P. Points are extremely thin, have pentagonal outlines, and tend to have planar cross-sections and multiple flute scars.

A fourth point type in the temporal sequence, Holcombe points, named after the Holcombe site in Michigan, strongly resemble Crowfield points, but are unfluted. Evidence suggests that these tools, which are also common in southwestern Ontario, are slightly later than Crowfield.

Continuing with the subject of the contents of Crowfield Feature 1, Deller remarks on one tool category that is conspicuous by its absence. "I think it's quite significant that in this wide range of tools we found no end scrapers, nor did we recover any blanks that were suitable for manufacture into end scrapers. End scrapers are one of the most commonly occurring Paleoindian implements. It could just have been a season of the year when they weren't using them, but if the feature is a cremation, I would perhaps interpret the burial as that of a male. The dominant tool types are those that we would generally associate with male behavior—especially the fluted points and fluted knives. It could have been that end scrapers were female-associated elements."

The fire damage to the artifacts is one of the few clues remaining that there was, in fact, a cremation pit; no fire-reddening or other discoloration was present in the soil. "But the soils of the Caradoc Sand Plain are very acidic," Deller notes, "and most organic materials simply deteriorate or dissolve over the years. I know of many Archaic and Woodland features that were definitely hearths, but where there's no bone or

(Continued on page 8)

### For what reason other than ritual would these artifacts have been smashed and burned?

Paleoindian picture. It includes three other cultural complexes frequently found in southwestern Ontario: the Gainey, Parkhill, and Holcombe. "We've created a temporal model whereby the oldest complex that we have good data for in southwestern Ontario, and indeed adjacent Michigan and northern Ohio, would be the Gainey complex, named after the Gainey site in Michigan," Deller says. Gainey points are the largest of the three point types, with parallel lower lateral edges, and fluting which is often shorter than that of the later Barnes points (which are diagnostic of the Parkhill complex). Deller continues, "I would speculate that the Gainey complex in our area dates to ca. 10,800 years ago, and was probably contemporaneous with Lake Algonquin, which was in existence 11,000-10,500 years ago."

Although Barnes and Gainey points differ, they integrate one into the other. Deller says, "I suspect that they were closely related in time and represent a continuous habitation of the area." Barnes points are slightly smaller and a lot thinner than Gainey points; their ears are knobber and their fluting longer. Their lower lateral edges taper towards the base, and the widest point is at the mid-section. The users of Barnes

# OF APPLES

(Continued from page 1)

Events attending their final disposition and their function might yet be revealed by associations, or by direct evidence for their uses. Ultimately, the discovery promised new revelations of a time long past, when people pursued Pleistocene beasts by the banks of the cold Columbia.

## THE EXCAVATION

Hopes of revealing secrets of the past like these keep us alive, keep us guessing, and keep us searching. It would require a remarkable and dedicated team effort to match such a potentially extraordinary site. Faculty and students from Washington State University's Anthropology Department responded to the call. My colleagues, Drs. Bob Ackerman, Dick Daugherty, Carl Gustafson, Ken Reid, and Allen Smith, have collectively well over a century of excavation experience in Alaska, on the Great Plains, and especially in the Pacific Northwest. As field foremen responsible for everyday details, Matthew Root and James Gallison, advanced doctoral students, had the most essential job of all. Marilyn Wyss, with help from Anita Hansen and Linda Switzer, kept samples moving through the makeshift laboratory she had organized in the shop of the R&R Orchards.

Other archaeologists with special expertise also volunteered. Drs. Jerry Galm and Pete Rice came from Eastern Washington University, and Dr. Mel Aikens from the University of Oregon. Former students Peter Van de Water and Scott Williams arrived from Reno and Honolulu. Adelin Fredin, Katherine Womer, and John Dick of the Colville Confederated Tribes joined

us briefly as the dig began. Adelin and I talked many times before and after the excavations about the importance of such finds to Native Americans, and the respectful but thorough scientific treatment that the site deserves.

The Pacific Northwest team was drawn up for action, but still without benefit of leading authorities on Paleoindian archaeology from other areas of North America. After all, Clovis is a continent-wide conundrum. Whatever we were about to uncover should be witnessed by those most likely to understand it from experience—or at least recognize that they didn't. So, leading Paleoindian authorities from the Southwest, Plains, and the East came to see and to help, and ended up doing much of the digging. The Clovis crew was completed with Drs. Vance Haynes, University of Arizona; George Frison, University of Wyoming; Dennis Stanford and Margaret Jodry, Smithsonian Institution; and Michael Gramly, Buffalo Museum of Science.

We went prepared to appraise the extent and importance of the site with a week-long excavation. The Richey-Roberts Clovis Cache had remarkable potential for revealing the ways of the ancient mammoth hunters. On the other hand, the few objects recovered months before could have been about all that survived the vagaries of nature and agriculture. Though these tools were spectacular, they lacked association. We knew that their importance should increase exponentially as their context became clearer.

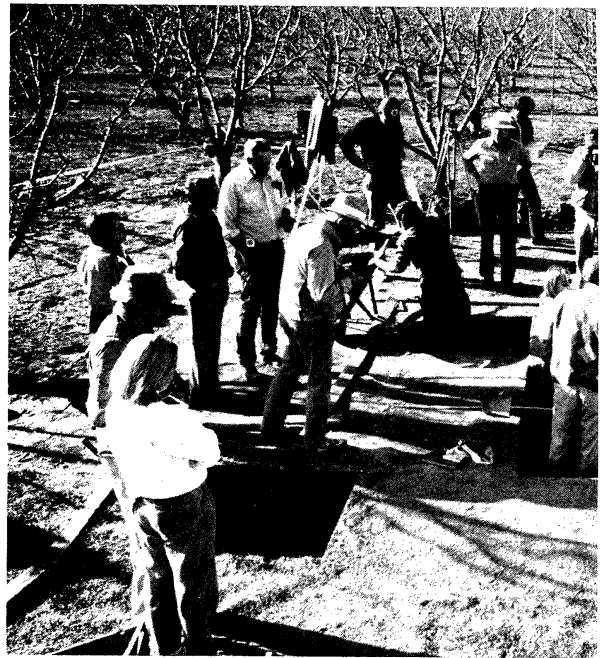
On Friday, April 8, 1988, a crane removed the concrete slabs. Field foremen Matt Root and Jim Gallison began the mapping. For the next week they would sleep on the site to guard it through the night. The rest of us camped out in the orchard near the shop-turned-laboratory; dignitaries from afar shared the Roberts' home.

The next morning, after ice left the apple trees, I assisted John Musser and Kirk O'Donnell, geophysicists from Seattle, in their ground-penetrating radar survey of the site area in the orchard and in Leonard Batterman's wheat field across the road. This recent addition to the archaeologist's bag of tricks allowed us to quickly prospect for buried objects which had different densities than the surrounding sandy matrix, and to preclude large areas from further consideration.

The day warmed, the ground dried, and the radar readings became more reliable. They foretold of additional artifact concentrations nearby. By Sunday afternoon, testing confirmed this prediction when Mel Aikens found a very large Clovis point that nearly matched one recovered by Moises the year before. But this artifact was in place! It seemed more and more likely that the Richey-Roberts Clovis Cache would indeed produce the first such assemblage in the Northwest to be seen in situ by archaeologists with the knowledge to decipher its meaning.

Our Paleoindian specialists arrived from Denver early Monday afternoon in time to see Dick Daugherty find a cluster of three Clovis points. Two of these points were about 9 inches long (23 cm)—among the largest ever recovered. Dick insisted we trade places; I agreed and was stunned speechless in a special moment by a mute "matched" pair of translucent chalcodony spear points.

If these tools were to speak as the Sphinx to Tuthmosis, what would they say of magic, ceremony, hunts, and happiness, or the Clovis perception of a peaceful earth and life eternal? At the very least we had uncovered Paleoindian art as finely fashioned and awe-inspiring as any known from the Western Hemisphere. Like the Upper Paleolithic cave paint-



ings of the Old World, the translucent Clovis points whisper the wonder of humanity—to everyone, everywhere.

It was time for a conference. The Richeys and Roberts offered their home and refreshments. We sat in dusty clothes on plush white divans to contemplate the past and discuss the future. It had happened; we had found marvelous undisturbed remains, and the ground-penetrating radar promised more yet. The site was incredible.

We were not, however, prepared for major excavations, only to learn if they might be needed. Therefore, wasn't it time to consider completing only the excavation units started and to shift efforts away from expected artifact concentrations? We decided to

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***"If these tools were to speak,  
what would they say of magic,  
ceremony, hunts, and happiness,  
or the Clovis perception of a  
peaceful earth and life eternal?"***

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explore the limits of the site and unusual radar readings (one of these turned out to be a rubber boot). We could return for a major excavation another day. Agreement was nearly unanimous. After only three days of digging, we prepared to expose and photograph what was already found, and then begin back-filling.

The Richey-Roberts Clovis Cache had become something beyond imagination. It was too important to disturb without additional time and planning. Dennis Stanford called it the most important Paleoindian discovery of the century. Vance Haynes was more conservative, ranking the site with the discoveries near Clovis, New Mexico in the 1920s and 30s. George Frison just shook his head; said he had never seen anything comparable. Work was finally halted altogether when we encountered more bone fragments.

There was so much to be learned and so little information, but that didn't stop the speculation. The bone or antler tools with decorations and beveled ends became, in the minds of the beholders, bone points or foreshafts, chisels, antler wedges for splitting wood, or pressure flakers for finishing Clovis points. Because of their size and perfection, the outlandish stone tools were proclaimed ceremonial—never intended for everyday uses. Never mind that some may have been broken in use, others showed wear, and edges had been ground to prepare the spear points





for hafting. Dim markings and organic residues on several Clovis points also proclaimed their practical purposes.

The site was called a simple tool cache, a habitation, the last resting place of a Clovis "chief," a flintknapper's hut, a hunting shrine, a shaman's tent frozen in time, or even a hoax. I espouse the shaman's tent notion, and suspect that he left, with great white bear as guardian spirit, to follow the caribou home.

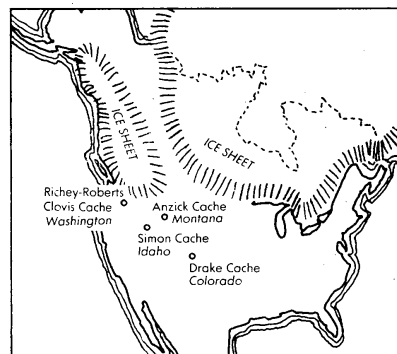
On Friday, April 15, we removed the last of only five stone artifacts collected during the excavation, and took sediment samples and latex peels from excavation walls. These peels hold a permanent record of the site's sediments and stratigraphic sequences that can be studied later under ideal laboratory conditions.

Mack Richey manned the tractor with the front-end loader as we back-filled the excavated squares. With that completed, everyone left. The orchard was quiet except for the buzz of bees exploring spring's first apple blossoms.

The few days' testing had revealed several stone and bone tools, in addition to those previously recovered by the orchard workers. The largest Clovis points came as "matched" pairs in translucent chalcidony and banded chert. At the very least, these are spectacular examples of Paleoindian art, inspiration for reverent contemplation, and eternal testament to the incomparable skill of a Clovis flintknapper.

## POSTLUDE

Near the end of the last ice age catastrophic floods, glacial outwash, ice-rafted debris, and landslides choked the canyon of the cold Columbia, while volcanoes in the Cascades occasionally spewed out ash that



Map locates the four reported caches of Clovis artifacts and their relation to the edge of the glacier at the approximate time of their burial.

# AND ARCHAEOLOGY

Archaeologists and other experts from around the country gathered in a Washington Apple orchard last April to assist with the excavation of an amazing cache of Clovis artifacts. The few tantalizing traces thus far unearthed suggest that further excavations could reveal much larger deposit. A few of the large stone points can be seen in the center pit, as they were found. (Photo by Pete Rice.)

The two drawings (lower right and lower left) show the actual size of a pair of fluted points recovered during the excavation. (Drawings by Sarah Moore.)

cloaked sagebrush in the vast frigid steppe to the east. Soon after, Clovis people trod the Great Terrace, left high and dry by the down-cutting Columbia. They paused on the gentle slope, near the present Panghorn Memorial Airport, and looked northward to the high basalt rim beyond a small valley. We don't know why or how many times they stopped here. What they left, however, gives reason to ask what drew them to this particular place.

The Richey-Roberts Clovis Cache is remarkable in the large number and size of its Clovis spear points. Though we yet don't know what the site represents, it is clearly more than a simple tool cache. More importantly, these artifacts are in place; their age and context will surely be known. The site is also a sign that much remains to be learned about the fluted point makers of the Pacific Northwest. It has unparalleled potential for revealing their lifeways, and something of their beliefs as well. This improbable discovery, and excavations in an apple orchard last April, have perhaps brought us closer to the core of Clovis cosmology.

*Editor's Note: The preceding is adapted from an article which appeared in the Winter, 1989 issue of Universe (vol. 2 no. 1 pp. 2-8), published by the Washington State University Graduate School.*

## UPDATE

In a recent interview with the Mammoth Trumpet, Dr. Mehringer discussed developments at the Richey-Roberts Clovis Cache and possibilities for the future of the site. Thus far, the cache has yielded 10 bifaces, 2 ovate knives, 1 small flaked tool, 2 end scrapers/fleshers, and 14 complete Clovis points—all within two square meters. The 14 projectile points range in length from 4 3/4 inches (12 cm) to an astonishing 9 1/16 inches (33 cm).

"The question foremost in many peoples' minds," Mehringer says, "is 'When are you going back?'" Although an excellent team was committed to completing excavations at the Richey-Roberts Clovis Cache during 1989, future investigations now await clear agreements with the landowners on such matters as final disposition of the artifacts, ready availability of casts, and arrangements for study of whatever is found—in short, predictability. "There can be no mistakes or misunderstandings—from start to finish," Mehringer hastens to add, "we've had great cooperation with the landowners thus far. However, our understandings have tended to be somewhat *laissez-faire*."

"If, or when, the site is reopened," Mehringer speculates, "the Richey-Roberts Clovis Cache will reveal important evidence about the Clovis culture. Despite the prevalence of Clovis artifacts, we really know very little about their makers. It may well be that the Richey-Roberts Clovis Cache will bring us closer to an understanding of these early peoples."

Several WSU colleagues are cooperating in this study. Carl Gustafson is describing the decorated bone tools, and Steve Samuels is preparing computer maps. Nick Foit, chairman of WSU's Geology Department, is investigating mineral crusts on the artifacts, which may tell something of how the artifacts were deposited and of their environmental setting over the last 11,000 years.

Bruce Huckell, of the Arizona State Museum, and Bruce Bradley, from Crow Canyon Archaeological Center, visited Washington State University recently with George Frison to complete descriptions of the stone artifacts from the cache. In addition, organic residues recognized on the artifacts, when analyzed by Margaret Newman, University of Calgary, may tell which animals, if any, were dispatched or butchered. (See "Blood will Tell", Mammoth Trumpet 4(3) for more on blood residue analysis.)

"Right now, the five artifacts removed during testing can be replaced in the ground in their original positions, because very little of the site has been disturbed. We can't, however, open up a larger area without completing the excavations. If we start the job," Mehringer continued, "we'll have to finish it. Otherwise too much information would be lost forever." Although the site is small, maybe 10 by 20 meters, such an excavation will take both considerable organization and good will. In addition, it will require a strong team effort, with all the expertise and knowledge that can be mustered. "I'm not certain about the landowners' plans or where we go from here," Mehringer mused, "but I'm confident it will be in a good direction."

—Karen L. Turumire



# ANZICK COLLECTION REUNITED

(Continued from page 1)

ping work, the two men closely examined the knife, as well as the rock and dirt surrounding it. Returning to the site at the base of the cliff with a shovel, they uncovered a small, compact cache containing close to 100 stone and bone artifacts.

For a while, they kept the knowledge of their discovery to themselves. Eventually, however, Sarver and Hargis reported their find to an amateur archaeologist, named Jeff Skillman, in the nearby town of Wilsall. Skillman reported the find to Lahren, who was then a graduate student at Montana State University. Lahren looked the collection over. "They wouldn't tell me where they'd found the tools," Lahren recalls. "They showed me the materials and I explained to them the importance of it and the age."

At about the same time, Sarver and Hargis met with the landowner, Dr. Melvyn Anzick and told him what they had found. The three men agreed to split the collection three ways. The men also consulted a university archaeologist. "He pretty much washed his hands of the site," Lahren says now. The archaeologist maintained that because the tools had not been excavated by professionals keeping appropriate records, the context, and therefore the value of the findings, had been lost. He believed that the tools, now all mixed together, were no more than a jumble of artifacts from different periods. Disappointed, Anzick and his partners did nothing further until 1971, when Anzick invited Lahren to look at the collection again.

"That's when I contacted Robson Bonnichsen, who was a graduate student at the University of Alberta in Edmonton," Lahren says. Lahren was by then a graduate student at the University of Calgary and had met Bonnichsen at a meeting on stone tool technology. Lahren wanted to apply Bonnichsen's expertise in lithic technology to the collection. On seeing some of the artifacts, Bonnichsen became very interested in the tools, because he could see that they shared similar flaking patterns. Like Lahren, he believed the artifacts were a unified collection of tools from one time period and not a random assemblage of tools from different periods.

The two graduate students returned to Wilsall, where Anzick and his partners pointed out the site. Lahren and Bonnichsen began excavating the original site, as well as new test pits. Perhaps the most notable discovery was a zone of red ochre, revealed by the wall of a test pit. The ochre was about one centimeter deep and covered an area about one and a half meters by one and a half meters. This same ochre had been found on the tools themselves.

In addition to working on the excavations, Lahren and Bonnichsen examined the collection, Bonnichsen concentrating on the tool manufacturing process. The collection was extraordinary, not only in the number of tools it contained, but in the range of variation in lithic technology that it revealed. The complete set of tools contained 7 projectile points, about 80 bifaces, 4 bone foreshafts, scrapers and flakes that had been used as tools, partial bifaces, 1 end scraper, and a spurred end-scraper. All of the tools were complete, ranging in size from small hand-held scrapers to hefty bifaces that were up to 10 inches (25 cm) long, 3 inches (7.5 cm) wide, and 1/2 inch (1.25 cm) thick.

Another intriguing aspect of the collection was the fact that some of the bone foreshafts had been deliberately snapped before they were placed in the cache. These foreshafts, the layer of red ochre, and the discovery of a few pieces of human bone, suggested that the cache may have had ceremonial significance.

The completeness of the collection also made it unusual. Lahren explains: "Previously all our data from Clovis normally came from mammoth kills where you just have waste products and broken points, but this was a complete Clovis assemblage."

As their knowledge of the collection grew, the two students tried to interest other archaeologists in the Anzick site. They soon found, however, that the academic community's attitude towards the site was one of stiff skepticism. As Lahren puts it, "The academic community, being somewhat conservative, said, 'Well, nothing like this has ever been found before, therefore it can't exist.'" Some scholars echoed the objection that the site had no value because it had been improperly excavated by the construction workers. Furthermore, Lahren and Bonnichsen were regarded as inexperienced graduate students who had not yet "made a name" for themselves.

The two archaeologists were not about to give up, however. The turning point finally came at a meeting of the Society of American Archaeologists in Norman, Oklahoma, in 1971. After presenting a paper, the two graduate students showed some of the artifacts which Anzick had lent them to others at the conference. Upon examining the collection, the senior scholars concluded that the tools were indeed all Clovis, and not a mixture of tools from different time periods.

Lahren and Bonnichsen were encouraged by knowing that other scholars were finally taking the Anzick site seriously. However, this did not materially make their work any easier. The artifacts continued to be split among three different owners in three different locations. The possibility also remained that the collection would be further broken up, and sold to

**Some of the bone foreshafts  
had been deliberately snapped  
before they were placed  
in the cache.**

new owners who might not allow their acquisitions to be studied. Lahren and Bonnichsen received no funding for their research. Study of the Anzick material was done during spare time, and when they could gain access to the collection. In the early 1970s, Dennis Stanford of the Smithsonian Institution created plastic casts of the artifacts which are now housed in the Smithsonian Institution and at the University of Maine.

Since 1971, however, the importance of the site has been clearly established. It is now recognized that the Anzick site produced the most complete collection of Clovis artifacts in the New World. At the time of its discovery, no other evidence of Clovis occupation had been found in that region. The site also provided the earliest evidence of religious belief and practice in North America.

The exact purpose of the site is unclear. Some scholars have concluded that the tools were never intended for ordinary use, but for some sort of ceremonial function. Lahren disagrees. He believes that these are ordinary tools, employed to hunt and butcher a large animal like a mammoth. As evidence, Lahren points out that some of the large tools show wear. However, he also believes that these tools were placed in the cache in a religious ritual of some sort.

In the twenty years since he first became involved with the site, Lahren never gave up hope that the owners of the tools might someday place the collection into safekeeping. During that time, many institutions and private collectors offered to buy the tools from their owners. Perhaps because of Lahren's persistence, the owners never did sell.

Finally the situation changed. Lahren describes the events: "Last winter I taught a course down at the McLeod school, a little rural school, at their K-8 class. I also gave Saturday lectures, and I asked Dr. Anzick if I could borrow the artifacts to show . . . because they're important. After I showed them in class, I asked the people to thank him for letting them see the artifacts, and the kids all wrote him thank you notes."

"He called me and said 'Larry if the collection belonged to you, what would you do with it?' And I said, 'Well, if it was up to me, I'd take it to the State Historical Society.'" Lahren gave his reasons for choosing a state-owned institution, and somehow, "that's what convinced him." Lahren and others then got in touch with the two other owners, Calvin Sarver and Fay Case (widow of Ben Hargis), who ultimately decided to place their part of the collection in the museum as well.

While pleased with the outcome of his twenty years of patience and persistence, Lahren notes that there is much work remaining to preserve archaeological finds. Although laws protect sites located on Federal land, there are no laws in Montana which protect sites found on private property. Sometimes even the best intentions of landowners cannot preserve a site. Lahren gives an example: "Right now, here in Montana, the latest thing is using archaeological sites to sell land for real estate developments. The site that I did my dissertation on was supposed to be set aside by the landowner for future research, but the landowner passed away and it ended up in a subdivision. They used the site to advertise the property and took quotes out of my dissertation about the age of the site. It makes you feel pretty sad," he says quietly. "It's a real loss."

Lahren, who presently runs an archaeological contract firm, frequently teaches classes on archaeology to schoolchildren and community groups. It is clear that he believes in educating people about the importance of the archaeological richness around them. He puts particular emphasis on teaching children. Maybe someday, he says, "they'll be legislators and they'll know that you shouldn't use archaeological sites to sell land."

—Nancy Allison

## ANZICK COLLECTION ON DISPLAY

Thanks to the generosity of Dr. and Mrs. Melvyn Anzick, Mrs. Fay Case, and Mr. Calvin Sarver, owners of the Anzick Clovis Cache, the Anzick collection is now available for public viewing at the Montana Historical Society Museum. The Anzick tool assemblage forms part of a larger exhibit entitled "Montana Homeland." This display covers the time span of the earliest evidence of prehistoric activity in Montana to life today. The exhibit, which opened last fall, culminates a three and one-half year planning period, and marks Montana's 100th year of statehood.

The permanent prehistoric collection represents close cooperation between State Historic Preservation Office staff and museum planners. In addition to the remarkable Anzick artifacts, museum visitors can also view casts of tools from the 11,300-year-old Mill Iron site. A realistic portrait by Blackfoot artist Gary Schildt, depicting a prehistoric family band moving across Montana's landscape, allows visitors to better make the connection between the exhibit's ancient stone tools and the people who used them.

The Anzick collection and other reminders of Montana's past can be viewed from 9:00-5:00, Monday through Saturday (summer hours include Sunday 9:00-5:00). The Montana Historical Society Museum is located at 225 North Roberts St., Helena, Montana 59620.

### CURRENT RESEARCH IN THE PLEISTOCENE

#### Volume 6, 1989

Volume 6 of this annual journal contains 45 summaries from around the globe reporting ongoing research from the several interdisciplinary sciences as they relate to the question of the earliest peopling of the Americas. Topics covered include: Archaeology, Lithic Studies, Taphonomy, Physical Anthropology, and Paleoenvironments—Plants, Invertebrates, Vertebrates, and Geosciences. Articles are cross-referenced in subject author, and geographical indices. Volume 6, 1989 due out July, 1989

Subscription price—\$20.00, good through June 30, 1989.

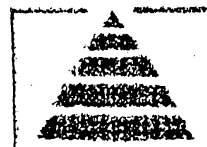
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# SUMMIT '89

THE FIRST WORLD SUMMIT CONFERENCE ON THE PEOPLING OF THE AMERICAS



Dear Members and Friends of the Center,

Eight years ago, we invited you to join us on a new and exciting venture. Our goal: to find and follow back into time the faint traces of the first people to inhabit the Americas. You joined us, supporting us with your membership and enthusiasm.

And where are we today? We are on the threshold of the First World Summit Conference on the Peopling of the Americas. Forty scholars from around the globe will present new and potentially revolutionary information to our understanding of the first peopling of the Western Hemisphere. All who attend **SUMMIT '89** will have the opportunity to gain a global perspective—a perspective that will better allow us to plan a coherent and realistic strategy for conducting research and preserving the archaeological record that documents our heritage.

Who is the conference for? It is for you. Scholars, teachers, students, public policymakers, avocational archaeologists, and interested citizens will soon be coming to Orono, Maine. **SUMMIT '89** will have something for all. The conference opens Wednesday evening, May 24, with a public talk by popular author Jean Auel, focusing on the public and prehistory. Three days of illustrated presentations will follow.

An Awards Banquet Friday evening will honor several avocational archaeologists who have made significant contributions to the understanding and preservation of America's earliest archaeological record. A Patrons' and Presenters' Dinner Saturday evening features a buffalo barbecued over a mesquite fire. Special friends and supporters of the Center and **SUMMIT '89** will have an opportunity to meet each other and the invited conference speakers in a congenial social setting.

Sunday, May 28, is devoted to an all-day symposium entitled "The Public Trust and the First Americans." This session will focus on the current status of public policy and private sentiment about the archaeological record. It is an open forum in which to express the need for planning research, conservation, and education policy to insure the protection that this irreplaceable resource deserves.

Additionally, **SUMMIT '89** features a poster session illustrating important sites and new developments. And, for the first time ever, some of the oldest and most important artifacts bearing on the question of the peopling of the Americas will be on display. This combined artifact exhibit includes collections from Asia and South and North America. It is a once-in-a-lifetime opportunity to see the evidence for yourself.

The schedule of events for both for the General Session and the Symposium, as well as program highlights, travel information, and a registration form are to be found in the following special section.

The Center's mission is to "stimulate and organize research into the earliest peopling of the Americas and to tell that story to the public." **SUMMIT '89** promises to help fulfill that mission. We couldn't do it without your continued support. As thanks, we offer you a special Members' Discount on conference registration fees, if you act right away. Please join us for what promises to be an exciting and rewarding step forward into the past.

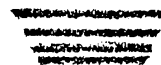
I look forward to seeing you in May,

*Robson Bonnicksen*

Robson Bonnicksen  
Director

# SUMMIT '89

THE FIRST WORLD SUMMIT CONFERENCE ON THE PEOPLING OF THE AMERICAS



WEDNESDAY-SATURDAY MAY 24-27

## PROGRAM-GENERAL SESSION

### I. Wednesday May 24

Registration in Hilltop Commons Lobby, Orono campus  
3:00-7:00

#### EVENING

Welcoming address by Chancellor Robert L. Woodbury,  
Hutchins Auditorium, Maine Center for the Arts

Message from the office of the Governor of the State of Maine

Jean Auel "The Public and Prehistory"

Reception at the Bodwell Lounge, Maine Center for the Arts

### Thursday May 25

Registration in Hilltop Commons Lobby  
7:30-12:00

#### MORNING

Welcoming Comments

#### Presentations I. METHODS AND THEORIES

David C. Hyland et al. "An Application of Nitrocellulose Membrane for the Identification of Blood Residues on Artifactual Material"

David E. Young et al. "Exploring the Usefulness and Validity of the Cognitive Approach to Lithic Analysis"

Thomas W. Stafford "Accelerator C-14 Dating of Human Fossil Skeletons: Assessing Measurement Accuracy and Experimental Results"

R.E. Taylor "Frameworks for AMS C-14 Dating of Bone"

Merritt Ruhlen "Linguistic Evidence for the Peopling of the Americas"

Emöke Szathmari "Modelling Ancient Population Relationships from Modern Population Genetics"

Christy G. Turner II "Relating Eurasian and American Populations Through Dental Morphology"

#### AFTERNOON

DISCUSSANTS:

Jane Kelley  
Svante Paabo  
Roelf P. Beukens

#### Presentations II. ASIA

Xinzh Wu "Pleistocene Peoples of China and the Peopling of the Americas"

Takeru Akazawa "Pleistocene Peoples of Japan and the Peopling of the Americas"

Yung-Jo Lee "Report on the Upper Paleolithic Culture of Suyanggae Site, Korea"

Anatoli Derevianko "The Mousterian and Early Palaeolithic of the Altai"

Nikolay I. Drozdov "The Projectile Point Tradition of the Late Paleolithic of Northern Asia and Its Coming to Northern America"

Chen Chun "A Preliminary Comparison of Microblade Cores between North China and North America"

Reception at Bodwell Lounge

Dinner at Hilltop Commons

#### EVENING

Participant Workshop in Memorial Union:

Exhibit and discussion of key artifact collections

### Friday May 26

#### MORNING

Thomas D. Hamilton "Late Pleistocene Environments and Peopling of Eastern Beringia"

DISCUSSANTS:

Fumiko Ikawa-Smith  
Richard Davis

#### Presentations III. NORTH AMERICA

Richard Morlan "The Peopling of the Americas as seen from Northern Yukon Territory"

Ruth Gruhn "The Pacific Coastal Route of Initial Entry: An Overview"

Michael Wilson "Early People in Canada: An Overview"

J.M. Adovasio et al. "Meadowcroft Rockshelter Radiocarbon Chronology: 1975-1989"

George C. Frison "Pleistocene Prehistory of the Northwestern Plains"

#### AFTERNOON

Bradley T. Lepper "Pleistocene Peoples of the Midcontinental North America"

R. Michael Gramly et al. "What is Known and Not Known about the Human Occupation of the Northeastern United States until 10,000 B.P."

Alan L. Bryan and Donald R. Tuohy "Final Pleistocene/Early Holocene Cultural Adaptations to the Great Basin and the Snake River Plain"

Albert C. Goodyear "Pleistocene Peoples of the Southeastern United States"

Dennis Stanford "Humans and Late Pleistocene Environments in the Central Plains and Southwestern United States"

David J. Meltzer "The Discovery of Deep Time: A History of Views on the Peopling of the Americas"

DISCUSSANTS:

George C. Frison  
Charles Schweger  
Mixer at Bodwell Lounge

#### AWARDS BANQUET

### Saturday May 27

#### Presentations IV. CENTRAL AND SOUTH AMERICA

##### MORNING

Jose Lorenzo and Lorena Mirambell "The Peopling of the Americas and the Inhabitants of Mexico during the Upper Pleistocene Period"

Gonzalo Correal Urrego "Early Man in Colombia"

Gerardo I. Ardila-Calderón "Pleistocene Peoples of Northwestern South America"

Ernesto Salazar "The Early Peopling of Ecuador"

Augusto Cardich "Pleistocene Peoples of Peru"

Pedro Ignacio Schmitz "Pleistocene Peoples of Eastern South America"

Lautaro Nuñez and Calogero M. Santoro "Early Peoples of Chile"

##### AFTERNOON

Niède Guidon et al. "The Site Toca do Boqueirão do Sitio da Pedra Furada"

Calogero M. Santoro and Lautaro Nuñez "Early Human Occupation of the South Central Andes"

Wesley R. Hurt "The Paleoindian Cultures of Uruguay"

Gustavo G. Politis et al. "The Late Pleistocene-Early Holocene Peopling of Argentina"

Thomas D. Dillehay "Pleistocene Peoples of Monte Verde, Chile"

DISCUSSANTS:

Thomas F. Lynch  
Thomas D. Dillehay

"Mammoth Mixer" and Dinner at Hilltop Commons

or

PATRONS' AND PRESENTERS' DINNER

## SPECIAL EXHIBITS OF ARTIFACTS

Presenters at SUMMIT '89 have been asked to bring important artifacts from their collections for a special display which will be mounted for the Conference. This is a unique opportunity to view and compare some of the significant artifacts that have led scholars to the current understanding of the early peopling of the Americas.

Additionally, SUMMIT '89 welcomes the participation of avocational archaeologists, and invites them to share their collections of Paleoindian artifacts with other amateurs as well as with professionals from around the world. This is a rare opportunity to exchange valuable information about early prehistoric sites. Exhibit abstract forms and additional information are available by writing directly to the Conference Developer, 495 College Ave, Orono, ME 04473, or telephone 207/581-2197.



If you have only one day to spend at **SUMMIT '89**, this is it! Following a synthesis of current investigations into the peopling of the Americas, as reported in the General Session, moderators will guide panel discussions, with time for questions and comments from the floor. The objective: to define gaps in current research and to establish research priorities for the next decade.

In the afternoon, we will look at the legal environment for addressing archaeological resource management, the need for better public education, and the availability of funding in the 1990s. Finally, we will hear from each of the day's panelists a brief,

impromptu commentary which focuses on recommendations for action to protect the public trust.

This Symposium is open to everyone—archaeologists, teachers at every grade level, public policymakers, authors, publishers, and taxpayers—all of whom have important roles to play in sharing the stewardship of America's archaeological record.

One-day only registration fee (for people not attending all of **SUMMIT '89**) is \$15. Enclose check with Registration Form (below) and mark the appropriate box.

### SYMPOSIUM PROGRAM

Opening remarks by Robson Bonnichsen

Ruthann Knudson "The Public Trust and Archaeological Stewardship"

#### 1. Long-term multidisciplinary research needs and key issues; scientific perspective.

##### A. FINAL SYNTHESSES: SECTION OVERVIEWS

Moderator: Robson Bonnichsen

Panelists: Jane Kelley Svante Paabo  
Roelf Beukens Fumiko Ikawa-Smith  
Richard Davis George C. Frison  
Charles Schweger Thomas F. Lynch  
Tom Dillehay R.E. Taylor

##### B. PALEOENVIRONMENTAL/ PAEOCLIMATIC CONSIDERATIONS

Moderator: George H. Denton

Eric Grimm Paleoclimatology  
George L. Jacobson Jr. Paleoclimatology  
Cathy W. Barnosky Paleoclimatology  
William Farrand Pleistocene geomorphology  
Russell W. Graham Vertebrate paleontology

#### 2. Public Trust and Societal Obligations

##### A. LEGAL ENVIRONMENT FOR ADDRESSING ARCHAEOLOGICAL RESOURCE MANAGEMENT NEEDS

Moderator: Bennie Keel

John Fowler North America  
Charles McGimsey III Asia, Central America, and South America  
Dennis LeMaster Natural resource management in the Americas

##### B. PUBLIC EDUCATION AND THE FIRST AMERICANS

Moderator: Leslie Hart

Judith Bense Public-private partnerships  
Heather Devine School curriculum and archaeology  
Roy A. Gallant Public education through public media  
George S. Smith Public information from government sources

##### C. PRIORITIZATION AND FUNDING: GLOBAL RESEARCH SUPPORT OVER THE NEXT DECADE

Moderator: Harold W. Borns, Jr.

Patty Jo Watson Federal U.S. funding, scientific research  
Bennie Keel Federal U.S. funding, government resource and land management support  
Martin Magne Government support in Canada  
Margaret MacLean Avocational support  
Stephen Williams Private financial support

#### 3. Action Needed to Meet Public Trust Objectives to the Year 2000

Moderator: Ruthann Knudson

Panelists: Judith Bense Robson Bonnichsen  
Harold Borns Jr. Leslie Hart  
George H. Denton Heather Devine  
John Fowler Roy A. Gallant  
Bennie Keel Dennis LeMaster  
Charles McGimsey III Stephen Williams

#### 4. Closing remarks by Robson Bonnichsen "The First Americans: Challenges into the Twenty-First Century"

### SUMMIT '89 REGISTRATION FORM

Use this form to register for Conference attendance, Symposium attendance, special events and/or Center membership. Check the box(es) to the left of the events and room packages you are requesting. Please total your Conference fees separately from your Membership fee. (Conference record-keeping is being handled by a separate office). Note the additional cost of the Awards Banquet and the Patrons' and Presenters' Dinner. Use this form to reserve on-campus (dormitory-style) housing ONLY. Registrants are

responsible for making their own off-campus housing and meal arrangements.

Spouses and other guests are welcome whether registered for **SUMMIT '89** or not, however they must pay to attend conference events and for on-campus accommodations and meals. Our recordkeeping requires a separate form for each person using the University's facilities; please use photocopies for spouse or additional registrants.

To order any of the publications or merchandise advertised in the **Mammoth Trumpet**, send a check for the advertised price, your name and shipping address, and a note telling us what you are ordering to: Center for the Study of the First Americans, 495 College Ave., Orono, ME 04473 (Maine residents—add 5% sales tax on all books and merchandise).

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Social Security # (for Conference recordkeeping only) \_\_\_\_\_

#### REGISTRATION FEES

☐ All Sessions, Wednesday-Sunday May 24-28  
☐ Received by May 1, 1989 \$150.00  
☐ Center Member \$140.00  
☐ Student \$100.00  
☐ All categories after May 1 \$165.00  
☐ Sunday Symposium only \$15.00  
☐ Daily rate-General \$45.00  
☐ Daily rate-Student \$25.00

#### MEAL PACKAGES

☐ A. Complete Package (all meals Thu-Sun, excluding Patron's and Presenters' Dinner) \$60.00  
☐ Awards Banquet choice: Lobster Steak  
☐ B. Commuter Package (lunches only, Thu-Sun) \$17.40  
☐ C. Awards Banquet Only Lobster Steak \$21.00

#### PATRONS' AND PRESENTERS' DINNER

☐ A special evening for Center and **SUMMIT '89** supporters, \$100.00  
featuring buffalo barbecued over a mesquite fire. minimum donation

#### SUMMIT '89 DONATION

☐ Yes, I wish to make a tax-deductible gift for general support of **SUMMIT '89** and the published proceedings in the amount of \$ \_\_\_\_\_

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☐ Bar Harbor Coastal Bus Tour (Saturday) \$15.00

#### TOTAL CONFERENCE FEES ENCLOSED \$ \_\_\_\_\_

Make check for conference fees payable to University of Maine. Send this form and your check to: CID, 206 Chadbourne Hall, University of Maine, Orono, ME 04469.

## SUMMIT '89: THE PUBLIC TRUST AND THE FIRST AMERICANS

Anticipation is mounting at the Center for the Study of the First Americans as the date for **SUMMIT '89** draws ever nearer. The conference marks the first time that specialists from the world over will gather to present their findings on the First Americans. The entire conference will be an exciting summary of recent discoveries, new methods, and emerging theories regarding the peopling of the Americas.

Even more important than the current state of scientific knowledge, however, are questions concerning the direction of future archaeological research, education, and resource conservation. To this end, a working symposium entitled "The Public Trust and the First Americans," to be held on the final day of the conference, will focus on the concept of archaeological resources as part of the world's public trust.

The fundamental issue of who owns the archaeological record has not been resolved, either in the United States or in many other nations. Approximately two-thirds of the United States is open to unregulated collecting, site destruction, or both. Looting of archaeological sites within the United States is increasing at an alarming rate. Prehistoric ceramic vessels from the southwest bring \$2,000 to \$20,000 on the international market. Montana real estate developers advertise the presence of archaeological sites as an enticement to potential purchasers (see "Anzick Collection Reunited," this issue).

Mindless vandalism of archaeological sites is a problem of equal, if not greater, magnitude. A priceless standing Anasazi structure in Chaco Canyon bears the words "Led Zeppelin" scrawled across its walls. In Colorado, the U.S. Forest Service estimates that 80 percent of its identified archaeological sites have been casually or commercially vandalized.

Professional and avocational archaeologists, themselves, are not above reproach. Too often, sites are improperly excavated or inadequately reported; collections lie forgotten in museum back rooms or state storage facilities. Even under the best of circumstances, only selected remnants of an excavated site are stored for the future.

Archaeological sites are excavated on a piecemeal basis according to local and state concerns. At present, no national plan exists for evaluating the importance of each site. Sites affected by developments on private land usually fall through the regulatory net entirely. Dr. Ruthann Knudson, organizer of the public trust symposium, estimates that 98 percent of all archaeological deposits from before the year 2000 A.D. will be destroyed by the year 2050!

Why should we be concerned about this possible loss of our national heritage? A primary goal of archaeology is, of course, the reconstruction of the past. The Western hemisphere encompasses a broad geographic diversity, a diversity that gave shape to an equally heterogeneous collection of native cultures. Archaeology charts the paths taken by these different peoples—their adaptations and innovations, their successes and failures—recovering information that would otherwise be forever lost. If archaeology provides us with a glimpse into the past, however, it also holds the potential to act as a window into the future.

It can provide baseline data for understanding human adaptation to the world's natural resources, from which guidelines can be developed for modern environmental management. Archaeology can also be used to derive information on the packaging of "waste" materials that society has decided to dispose of in earthen or water media. Indeed, archaeology possesses the only well-established set of scientific theories, methods, and techniques to address the investigation, evaluation, and remediation of contemporary solid wastes, especially landfills. Finally, archaeology can provide recreational benefits and local income from cultural tourism developments or wilderness experiences.

Archaeology, though, is a non-renewable resource. Once a site is destroyed, whether by looters, vandals, or trained excavators, it cannot be put back. It is therefore imperative, that a comprehensive plan be formulated to conserve and develop our national heritage for the maximum benefit of all.

The concept of the public trust maintains that human history and the archaeological record belong to all people for all time, and that this record shall be used for the benefit of humankind. At present, the idea of a public trust includes a range of natural resources held to be necessary to human welfare. Yet no national legislation or policy statement exists to ensure that our archaeological heritage is among these national resources. "The Public Trust and the First Americans" marks the beginning of a long-awaited initiative that seeks to identify priorities of research, conservation, and education in the field of early American prehistory. This working symposium is co-sponsored by the National Park Service and the Center for the Study of the First Americans.

The symposium will open with panel discussions designed to define gaps in current research and to establish research priorities for the next decade. In the afternoon, session participants will look at the legal environment for addressing archaeological resource management, the need for better public education, and the availability of funding in the 1990s. The session will close with a brief commentary by each of the panel discussants for recommendations of actions to protect the archaeological aspect of the public trust. Following the Conference, a White Paper will be published. It will include a series of research, management, and educational objectives that will be drafted and reviewed by specialists and other interested parties.

The "Public Trust and the First Americans" is open to professionals and laypersons, alike. All are encouraged to attend. Together, we have the opportunity and the responsibility to ensure the protection and continuation of America's fragile archaeological record.

Once a site is destroyed, whether by looters, vandals, or trained excavators, it cannot be put back.

Human history and the archaeological record belong to all people for all time.

## PROGRAM HIGHLIGHTS

### JEAN AUÉL

An address by popular author Jean Auel (*Clan of the Cave Bear*) opens the conference on Wednesday evening. The talk and reception following are free and open to the public.

### AWARDS BANQUET

A memorable night is planned for Friday as **SUMMIT '89** honors some outstanding men and women whose contributions to the field of early American prehistory have guided us to the present day. Both professional and avocational archaeologists will be featured. Indicate your choice of lobster or steak dinner on the Registration Form (inside).

If you would like to nominate someone for inclusion on a special Honor Roll, submit a letter outlining your candidate's contributions to early American prehistory. In preparing your letter, consider your candidate's contributions to research, public education, and efforts to conserve the archaeological record. Send all such nominating letters to: Rob Bonnicksen, CSFA, 495 College Ave., Orono, ME 04473.

### PATRONS' AND PRESENTERS' DINNER

All **SUMMIT '89** registrants are invited to reserve a place at the table for this evening of good food, good fun, and good company. Meet Conference presenters and other special guests over a barbecued buffalo dinner. Just enclose the \$100 reservation fee and check the appropriate box on the Registration Form (inside), and we'll send you an official invitation and more details.

### OTHER EXCURSIONS

The University of Maine is situated on a wildlife refuge along a beautiful stretch of the Stillwater River, where it rejoins the mighty Penobscot River. The salmon season will be in full swing and fishing or canoe trips are available locally. Excursions to Acadia National Park on the Maine coast and shopping trips to Bangor and the famous outdoor outfitter, L.L. Bean, in Freeport will be organized if enough interest is expressed. See Registration Form (inside) for details.

## OFF-CAMPUS HOTEL/MOTEL ACCOMMODATIONS

Savings at some off-campus hotels and motels are available to all **SUMMIT '89** registrants between May 22 and May 29, 1989 providing they identify themselves as **SUMMIT '89** registrants. Blocks of rooms have been reserved at the following:

- 1) Bangor Hilton—Single (\$53.00 + 7% tax); Double (\$53.00 + 7% tax)  
Telephone: Local 207/947-6721
- 2) Comfort Inn—Single (\$37.00 + 7% tax); Double (\$37.00 + 7% tax)  
Telephone: Local 207/942-7899 or Toll Free 1-800-228-5150
- 3) University Motor Inn—Single (\$32.00 + 7% tax); Double (\$42.00 + 7% tax)  
Telephone: Local 207/866-4921
- 4) Bangor Motor Inn—Single (\$32.00 + 7% tax); Double (\$42.00 + 7% tax)  
Telephone: Local 207/947-0355 or Toll Free 1-800-525-4321

Only the University Motor Inn is located within walking distance of the Conference site.

A limited number of reserved rooms are still available. While we may be able to reserve additional rooms for conference attendees, you should book your room as soon as possible. Late May is the beginning of "the Season" in Maine and accommodations are in demand.

Shuttle service will pick up once in the morning and return once at the end of the day. Taxi service is available 24 hours a day for \$10-\$15, one way.

## NOTICE TO AIR TRAVELERS

You are advised to book reservations to/from Bangor International Airport as early as possible due to heavy air travel during late May. Direct flights to all major U.S. and Canadian cities connect through Boston.

All incoming flights on Wednesday, May 24 and Thursday, May 25 and outgoing flights Sunday, May 28 and Monday, May 29 will be serviced by shuttles to/from the Conference site.

Orono is immediately accessible from Interstate Route 95. It is four hours north of Boston by car, and only one and one-half hours from the Canadian border.

## CHILD CARE

Neither **SUMMIT '89** nor the University of Maine can accept any responsibility for or endorse any child care providers, but a list of providers is available by writing to Conferences and Institutes Division, University of Maine, Orono, ME 04469.

## THE FLUTED POINT PEOPLE

### A RECONSTRUCTION

We call them "Clovis" because, in the mid 1930s, their large and beautifully fashioned spear points were recovered with the remains of animals at Blackwater Draw near Clovis, New Mexico. They could just as well have been named for Dent, Colorado, where similar artifacts appeared with mammoth bone a few years earlier, or even for Fort Lapwai, Idaho, where a Clovis point was among Nez Perce "ethnographic" items forwarded to the Smithsonian Institution in 1869.

Clovis people descended from immigrants who packed their cultural and technological baggage westward across ice age steppes onto Beringia. As abundance permitted, these Upper Paleolithic Eurasians came together to renew traditions and to join in ceremonies that guided them through each year and through their universe. They expressed their values and visions in art, and, no doubt, in songs and legends. They knew well the migratory ways of the ice age mammals—wooly mammoth, horse, bison and reindeer. They excelled in working stone, bone, ivory, wood and skins. Their warm, tailored clothing and hide-covered houses were a match for northern winters.

These hardy hunters eventually trailed herds over the land bridge to Alaska. By 12,000 years ago, when glaciers of the Canadian Rockies diminished and rising seas drowned the Bering Land Bridge, pioneers continued south to wherever receding ice exposed expanding green vistas and uncontested territory. New opportunities and curiosity lured them through Canada to a world beyond the ice; destiny drew them on to Mexico.

By 11,200 years ago, Clovis peoples held dominion on the plains. They left distinctive signatures in stone by removing flakes from the bases of lanceolate spear points. The resulting broad shallow grooves, or flutes, cradled foreshafts and enhanced their ease and strength of attachment.

These fluted points exhibit the unsurpassed skills of the New World's most accomplished flintknapper-artisans. They show variation with time and region, and are known by many names—"Clovis" followed by "Folsom" in the West, "Debert" from Nova Scotia, and "Cumberland" points from Tennessee. Between 11,500 and 10,500 years ago, people who produced fluted points shared in North America's first distinctive and most widespread technological tradition.

The Clovis people were probably opportunistic foragers; still, remains from kill sites show their inclinations toward taking horse, bison, and especially mammoth. It is even likely that success of these fluted point hunters contributed to the rapid demise of North America's giant ice age mammals.

The most intriguing aspect of America's fluted point cultures is the rapidity with which they filled the continent—west, east and south to the shores of its southern seas—then north behind retreating glaciers. Whether this expansion occurred through a new or indigenous population, the marvel of this wide distribution is only compounded by evidence of a significant Clovis presence in eastern Washington. Perhaps fluted point peoples were more abundant in the Northwest than their few recorded leavings might suggest.

Unusual concentrations of Clovis artifacts, exposed and mixed by earth-moving machines, come from the Simon and Anzick sites in south-central Idaho and southwestern Montana. Artifacts, exposed around the playa of Alkali Lake, in eastern Oregon, suggest an important Clovis camp there as well. In fact, much of the western U.S. seems covered by a thin veneer of Clovis points—mostly out of place, without context, or in the clutches of casual collectors. In the Pacific Northwest, artifacts discovered at the Richey-Roberts Clovis Cache last April remain the only such finds with potential for revealing what can come from artifacts carefully excavated from undisturbed contexts.

—Peter J. Mehrlinger, Jr.

## UPCOMING CONFERENCES

**April 22, 1989 Third Annual North East Faunal Analysis Conference.** The University Museum of the University of Pennsylvania, Philadelphia, Pennsylvania

Sponsored by the Museum Applied Science Center  
Contact: Pam Crabtree, Dept of Anth, 100 Aaron Burr Hall, Princeton U, Princeton, NJ 08544; tel. 609/452-4556

**April 28-30, 1989 Annual Meeting of the Florida Anthropological Society Omni Hotel, Jacksonville, Florida**  
Contact: Jerry Hyde, 4233 Oristano Rd., Jacksonville, FL 32244

**May 10-13, 1989 Canadian Archaeological Association Annual Meeting Lord Beaverbrook Hotel, Fredericton, New Brunswick**

11 sessions, many including papers relevant to the early peopling of the Americas.

Contact: Archaeological Services, P.O. Box 6000, Fredericton, NB E3B 5H1, Canada; tel. 506/453-2756

**May 24-28, 1989 First World Summit Conference on the Peopling of the Americas.** University of Maine, Orono, Maine.

Contact: Conferences and Institutes Division, 206 Chadbourne Hall, U of Maine, Orono, ME 04469; tel. 207/581-4092.

**June 13-16, 1989 "The Use of the Past," Management of Resources and Handling of Cultural, Archaeological and Paleontological Materials.** La Plata Museum, La Plata, Argentina

Management of resources and handling of cultural, archaeological and paleontological materials.

Contact: Irina Podgorny, División Arqueología, Museo de la Plata, Paseo del Bosque s/n, 1900 La Plata, Argentina

**July 9-19, 1989 28th International Geological Congress.** Washington, D.C.

Contact: Dr. Bruce R. Hanshaw, Secretary General, 28th IGC, P.O. Box 1001, Herndon, VA 22070-1001; tel. 703/248-6053

**July 23-29, 1989 13th International Congress for Caribbean Archaeology.** Willemstad, Curacao, Netherlands Antilles

**August 2-6, 1989 (followed by tour August 7-12) Circumpacific Prehistory Conference.** Seattle Center, Northwest Conference Rooms, Seattle, Washington.

Contact: Dale R. Croes, WSU, c/o Pacific Celebration '89, 1001 4th Ave. Plaza, Seattle, WA 98154-1101; tel. 206/622-2536

**September 8-10, 1989 Megafauna and Man: Discovery in the American Heartland.** Community Building, Hot Springs, South Dakota

Theme: The paleoenvironment of the "Ice-Free Corridor" region through the Late Pleistocene, culminating with the arrival of humans.

Contact: Larry Agenbroad, Dept of Geology, NAU, Flagstaff, AZ 86011

**October 1-8, 1989 Lubbock Lake Landmark: 50 Years of Discovery.** Lubbock, Texas

The week-long series of public events will include a symposium focusing on the integration of the geological and biological sciences as a driving force behind the current era of Quaternary research

Contact: Eileen Johnson, Museum of Texas Tech U, Lubbock, TX 79409 Tel. 806/742-2481

**November 8-11, 1989 Southeastern Archaeological Conference.** Harbour Island Hotel, Tampa, Florida

Abstracts for symposia and papers due August 31, 1989  
Contact: Nancy White, Dept of Anth, U of South Florida, Tampa, FL 33620; tel. 813/974-2209 or 974-3231

**November 9-12, 1989 22nd Annual Chacmool Conference.** University of Calgary, Calgary, Alberta, Canada

Topic: "The Archaeology of Gender." Discussions will focus on recognition of gender roles and their identification in the archaeological record; theoretical approaches; and the sociology of archaeology

Contact: Dept of Arch, Univ of Calgary, Calgary, Alberta T2N 1N4

**November 11-15, 1989 40th Annual Meeting of the American Society of Human Genetics.** Baltimore, Maryland

Contact: Ms Peggy Gardiner, ASHG Administrative Office, 9650 Rockville Pike, Bethesda, MD 20814

**November 15-19, 1989 American Anthropological Association. Annual Meeting, Washington, D.C.**

Contact: AAA, 1703 New Hampshire Ave NW, Washington, D.C.

**May 21-25, 1990 International Council for Archaeozoology, 6th International Conference.** Smithsonian Institution, Washington, D.C.

Special session: "Approaches to Faunal Analysis: Past, Present, and Future," also regular sessions; one- and two-day workshops.

Contact: ICAZ, Dept of Anth, MMNH, Smithsonian Institution, Washington, D.C. 20560

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Special pre-publication prices are good only through June 30, 1989. *BONE MODIFICATION* is expected to be shipped by mid-July, 1989. *TAPHONOMY* is expected to be shipped by early May. Prices include shipping and handling inside North America. All orders must be prepaid in U.S. funds.

Make check or money order payable to Center for the Study of the First Americans.

Send to: CSFA, 495 College Ave., Orono, ME 04473. Allow 6-8 weeks for delivery after expected shipping date. Prices subject to change without notice.

# 1989 FIELD OPPORTUNITIES FOR YOUNG PEOPLE

Although adult archaeological field schools abound, our readers may be unaware that several organizations also provide archaeological instruction for younger individuals. Following is a partial listing of field schools for children and teenagers that are planned for the coming months. This list is by no means complete, but is intended only as a sample of the archaeological field schools which are out there.

The Crow Canyon Archaeological Center provides opportunities for children of all ages to learn about their archaeological heritage. School groups, grades 4-8, participate in three and five-day simulated digs set up in Crow Canyon's laboratory. Sessions are available spring, summer, and fall. During the dig, the children and their chaperones are housed in dormitories located on the grounds. Session costs range from \$60 to \$70 per day per student.

More intensive field experience is available for high school students, grades 9-12. This year, Crow Canyon offers a four-week field school from June 18-July 15. Students receive instruction in archaeological field techniques, while excavating at nearby Sand Canyon Pueblo. Dormitory housing is provided. Students may also enroll in one-week courses, given from the end of May to the second week of October (one-week sessions are unavailable June 18-July 15). Cost of the four-week field school is \$1600; one-week sessions are \$350. For more information contact: Cheryl Swartzlander, Crow Canyon Archaeological Center, 23390 County Road K, Cortez, CO 81321; tel. 1-800/422-8975 or 303/565-8975.

This summer, the Lakewood's Historical Belmar Village, in conjunction with the Denver Chapter of the Colorado Archaeological Society offers three one-week day sessions for children, grades 5-9, which combine laboratory and hands-on experience. Each session opens with two days of classroom instruction, archaeological films, and flintknapping and bone workshops. Students then move to the field where, for two days, they gain actual excavation experience at the Swallow site, a multi-component site containing Archaic, Middle Woodland, and Historic elements. Children spend the last day of the session conducting a site survey and composing an archaeological report on the week's activities. Members of the Denver Chapter of the Colorado Archaeological Society act as on-site supervisors and instructors.

Following completion of the course, some students are invited to return the following year as instructors. In this capacity, the First Federal Savings Bank

of Lakewood sponsors paid one and one-half week intern positions for those students showing particular interest in archaeology.

This year's session dates are: July 17-July 21, July 31-August 4, and August 7-August 11. Sessions are limited to eight children, and are \$60 for Lakewood residents, \$70 for non-residents. For more information, contact: Rita Alter, Lakewood's Historical Belmar Village, 797 South Wadsworth Boulevard, Lakewood, CO 80226; tel. 303/987-7850.

The Center for American Archaeology was one of the first organizations in the country to conduct field schools for children. Today, it offers a wide variety of programs for young people. School groups from the third grade on up can participate in non-digging sessions which look at archaeological sites as ecological niches. Children construct prehistoric-type dwellings, make pottery, and study the local environment during one-week courses. Sessions are available April, May, September, and October. Housing is provided; costs are \$275.

High school age students may sign up for one-week, five-week, or eleven-week field schools conducted at a nearby archaeological site. Students design their own research proposals and projects, while gaining excavation experience at the Twin Ditch site, a very early Archaic site preserved intact under alluvial deposits of the Illinois River. Both groups and individuals are welcome. Dormitory housing is provided. The five-week field school will be held June 14-July 19; one-week workshops are offered June 7-August 20. Cost of the five-week session is \$1,350; one-week sessions are \$350. For more information, contact: Tony Schwinghamer, Director of Education, Center for American Archaeology, Kampsville Archaeological Center, P.O. Box 366, Kampsville, IL 62053; tel. 618/653-4316.

This year, Earthwatch is sponsoring 30 different archaeological excavations taking place over a broad geographic range. Individuals of age 16 and over can



Student archaeologists Nicole and Sarah excavate the Swallow site while participating in Lakewood's Historical Belmar Village field school in Colorado. (Photo courtesy of Lakewood's Historical Belmar Village field school.)

sign up for projects literally ranging from A (Argentina) to Z (Zaire). Excavate 2.3-million-year-old stone tools in Africa. Too old? Then aid in unearthing 100-year-old historic artifacts from the Cheyenne Indian Wars at Fort Robinson, Nebraska. In the coming months, Earthwatch volunteers will travel to Australia, Korea, Ireland, the Polynesian Cook Islands, Scotland, Sardinia, and Tunisia—to name but a few. Projects in Arizona, Hawaii, Montana, New Mexico, South Dakota and Utah provide opportunities for "homebodies".

More paleontology or paleobotany oriented? Hunt mammoths in South Dakota, dinosaur-age mammals in Utah, or 320 million year old sharks in Montana. Trace the extinction of dinosaurs in Montana; sprout 10,000 year old seeds in Alaska.

These projects and many more are yours for the asking. Volunteer contributions from \$600 to \$1,500 per session cover all field costs, excluding travel. Scholarships may be available for high school students and teachers. For two weeks, volunteers share the lives of the researchers as they would normally live it. Housing is therefore variable, ranging from tent camps, rented houses, university dormitories, and even castles! For more information, or a catalog of expeditions, contact: Earthwatch, Box 403 N, Watertown, MA 02272; tel. 617/926-8200.

## POSSIBLE CREMATION AT CROWFIELD (Continued from page 3)

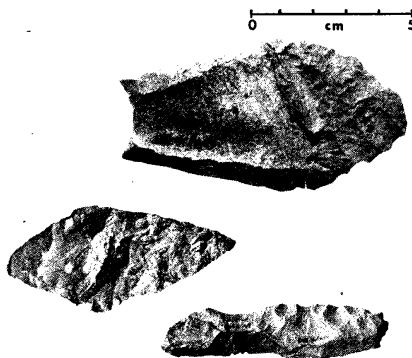
charcoal remaining. But Feature 1 contained such a concentration of artifacts that the outline of the pit was very abrupt."

Excavators unearthed 26 unheated tools from the surrounding field, but uncovered little chipping debris or other evidence to suggest tools were manufactured at the site. Interestingly enough, fragments of a planoconvex preform were found both within and outside of Feature 1. "This tool," Deller observes, "had been intentionally smashed outside the feature and then all but some fragments of it gathered up and placed in the feature," perhaps in the sort of ritual "killing" of artifacts evident at other sites. The 30-some fluted points from Feature 1 are complete, finely made points, not discards. Research suggests these tools were deliberately shattered prior to their placement in the feature, rather than broken as a result of exposure to heat. For what reason other than ritual would these artifacts have been smashed and burned? Although conjecture, given the situation, the cremation theory seems a fairly solid hypothesis to Deller and Ellis.

Because analyses of the site is still in the early stages, mention has not yet been made of a second feature at the Crowfield site. As Deller describes it, "Feature 2 appears to be a ghost image of Feature 1. It is about 7-8 m northwest, and similar in that it contained a concentration of shattered artifacts, mostly of the same type. We did recover one end scraper from the second feature."

Deller also announces: "I have located another Paleoindian site, which seems to be a sister site to

Crowfield. This is the Bolton site, about 6 km north-east of Crowfield. We have recovered three complete Crowfield points from the site's surface that have heat shatters on them. We also found some heat-shattered oval bifaces. Again, these tools are from a small area, about 2-3 m in diameter. We haven't done any subsurface investigation yet, but I'm sure that when we do, it will answer a lot of the questions that the Crowfield site has raised."



Some of the artifacts recovered from the Crowfield site are shown above. The fluted point exhibits a pentagonal outline characteristic of the Crowfield complex. (Photo courtesy of D.B. Deller.)

In addition, "We have found what I surmise is a habitation site of the Crowfield people approximately 8-9 km east. At the moment it's unnamed, but we do have Crowfield-type points from it, a fairly wide range of implements, including end scrapers, and a considerable amount of debitage."

Returning to the significance of the Crowfield site, Deller says, "It's unique because most Paleoindian sites consist of base camps where tools have been accidentally broken or discarded, or kill sites involving a lot of projectile points and butchering implements. The Crowfield site has a wide range of tools in all stages of manufacture, from flake blanks to finished artifacts; hardly any of them discarded because they were exhausted implements, yet intentionally smashed and burned. The tools are also unique in being related to a single event in time—the fire. Archaeologists can examine these implements and see what the range of variability in a single tool kit is. And finally, it is one of the few known Paleoindian sites that gives us indication of ritual behavior."

There is, in short, much work to be done and too few hands to do it. Deller, who holds a master's degree from Wayne State, Ohio, and a doctorate in anthropology from McGill University, also has a master's degree in education and teaches elementary school. For Deller, archaeological survey and excavation are largely restricted to the summer. Deller can think of any number of projects to be done on the Crowfield complex, and, in fact, extends an invitation to anyone interested in getting involved in the research.

—Michael Dolzani