PRE-CLOVIS BARRIER BROKEN IN NEW MEXICO?

Another hot sleepy July afternoon was drawing to a close when the telephone rang.

"Scoty MacNeish here," came a gruff voice at the end of the line. "I just wanted to let you know the results of that cale I was telling you about."

Earlier in the month I had spoken with Dr. Richard S. ("Scoty") MacNeish about his recent work at Pendejo Cave, a multicomponent site located in New Mexico's Chihuahua desert. Although the stratigraphy and associated faunal remains of the cave suggested that some of the archaeological materials were of great antiquity, MacNeish and his team were anxiously awaiting the first of the new C-14 dates that were being run on samples from the site.

"Now the date is not from the lowest level," cautioned MacNeish, "but from Zone L. There are at least four levels below L—Zones M, M1, N, and O."

"Oh, oh," I thought, "Scratch off another hopeful." I braced myself for an ensuing explanation of contamination, bioturbation, or the like.

"The radiocarbon date," MacNeish announced, "is 24,420 ±560 UCR-3499A."

Pendejo Cave (F69366) is located on the Fort Bliss military base, approximately 13 miles east of Orocopia, New Mexico, and 30 miles north of El Paso, Texas. The site itself lies about 50 m above an arroyo in a small basin that rises to a low mesa. Pendejo Cave is a relatively small limestone cavern, measuring about 5 m wide and 12 m deep, with a maximum height of 3 m. A talus slope drops off steeply in front of the cave's mouth.

Although the site was first discovered in 1978, its situation on the McGregor fire range of the Fort Bliss military reservation precluded further investigation until 1989, when firing activities were discontinued.

Later that same year, the cave was brought to the attention of MacNeish, who visited the site.

MacNeish has high praise for the archaeological facility at Fort Bliss, which, he says, "gave us ultimate cooperation." In addition to providing the Pendejo Cave team with living quarters on the base, the Department of Defense allocated a stipend for some of the cataloguing.

A NEW CLOVIS DISCOVERY IN NORTH-CENTRAL TEXAS

A recently excavated Clovis site in north-central Texas may be instrumental in changing a number of common perceptions on what the Clovis culture was like. The Aubrey site, a deeply buried site located about 10 miles north of Denton on the Elm Fork Trinity flood plain, has produced evidence suggesting that Clovis peoples practiced a much more opportunistic hunting strategy than is generally believed. In contrast to the popular conception of Clovis peoples as specialized big-game hunters, preliminary analysis of faunal remains recovered from the site indicates that the Aubrey inhabitants exploited a wide variety of small-game animals. "It's not," says principal investigator Dr. C. Reid Ferring, University of North Texas, "the classic one-antelope/one Clovis point site."

The Aubrey site has yielded a wealth of other information seldom seen in Clovis sites, including well-preserved living surfaces that indicate discrete activity areas. The University of North Texas excavation team also recovered extensive paleoenvironmental data that will enable researchers to reconstruct past climates in this area from about 15,000 years ago to the late Holocene.

The site promises to provide insights not only on what Clovis life was like, but where Clovis sites may be found. The location of the site, 8-10 m beneath the surface of the Elm Fork Trinity River flood plain, suggests that intact Clovis sites on the eastern Flains may simply be rarely exposed. "If anything," says Ferring, "what the site could do is help us redefine our survey strategy."

Ferring discovered the site in December of 1988.
UPCOMING CONFERENCES

September 4-8, 1990 Second World Archaeological Congress, Cartagena, Colombia.
Contact: Dr. Paul Reilly, IBM UK Scientific Centre, St. Clement St., Winchester SO23 9DR, United Kingdom.
Contact: Arkeologiska Forskningslaboratoriet, Greens Villa, Stockholms Universitet, 106 91 Stockholm, Sweden.
October 14-21, 1990 Lubbock Lake 50th Anniversary Celebration, Lubbock, TX.
Dedication of new facilities; Public lecture series; and Symposium focusing on the integration of the geological and biological sciences in archaeology as a driving force behind the current era of Quaternary research.
Contact: 50th Anniversary Celebration, Lubbock Lake Landmark, Museum of Texas Tech University, Lubbock, Texas 79409-1191; Tel. (806) 742-2479.
Contact: SSA 675 S. Segoe Road, Madison, Wisconsin, 53711; tel. (608) 237-8290.
October 25-November 1, 1990 Geological Society of America Annual Meeting, Dallas, TX.
Contact: GSA Meeting Department, PO Box 9140, Boulder, Colorado 80301; Tel. (303) 447-2020.
October 31-November 4, 1990 48th Plains Anthropological Conference, Sheraton Century Hotel, Oklahoma City, OK.
Contact: Morris Foster, Susan Vehil, or Jack Hoffman, Department of Anthropology, University of Oklahoma, Norman, OK 73019.

FIFTY YEARS OF DISCOVERY: THE LUBBOCK LAKE LANDMARK

November 7-10, 1990 Southeastern Archaeological Conference, Mobile, AL.
Contact: Edwin Jackson, Department of Sociology and Anthropology, University of Southern Mississippi, Hattiesburg, MS 39406.
November 14-17, 1990 The Evolution and Dispersal of Modern Humans in Asia, Tokyo, Japan.
Contact: The University Museum, University of Tokyo, Hongo 7-3-1, Bunkyo-Ku, Tokyo 113, Japan.
November 14-18, 1990 American Anthropological Association Annual Meeting, New Orleans, LA,
Contact: AAA 1703 New Hampshire Ave. NW, Washington, DC 20009; Tel. (202) 232-8600.
Symposium will consist of paper sessions and local field excursions in the surrounding area of Mar del Plata.
Contact: International Symposium on Loess - Marcelo Zarate, Centre de Geologia de Costas y del Cuaternario - UNMMP, Casilla 722, Correo Central, 7600 Mar del Plata, Argentina.
December 27-30, 1990 Annual Meeting of the American Society of Zoologists, the American Microscopical Society, San Antonio, TX.
January 9-13, 1991 Society for Historical and Underwater Archaeology, Richmond, VA.
Theme: World System/World Views.
Contact: L. Daniel Moursi, Program Chair, SHA '91, Archaeological Research Center, Virginia Commonwealth University, Richmond, VA 23284.
August 2-9, 1991 13th INQUA International Congress on Quaternary Research, Beijing, China.
Contact: Secretariat, 13th INQUA Conference, Chinese Academy of Sciences, 52 Sanhe, Beijing 100084, People's Republic of China.

SUGGESTED READINGS

On Linguistics and Prehistory

On Pre-Clovis Barrier Broken in New Mexico?

On A New Clovis Discovery in North-Central Texas

The Hudson-Meng Site: An Alberta Bison Kill in the Nebraska High Plains.
This book details the excavation and interpretation of a large Pleistocene bison kill in the paleohabitat of Nebraska. This site, situated in a dry area, provides evidence of a relatively large number of bison that foraged in the area. The kill was made by a group of people, and their activities are described in detail. The book is a valuable resource for researchers interested in the paleoecology of the area and the behavior of early humans.

That in addition to our own publications, several other fine volumes are available through the Center for the Study of the First Americans? We are pleased to announce that The Hudson-Meng Site: An Alberta Bison Kill in the Nebraska High Plains can now be purchased through the Center for the Study of the First Americans. To order, send $17.50 cash or money order ($22.00 if ordering outside of the United States) to the Center for the Study of the First Americans, 495 College Ave., University of Maine, Orono, ME 04473. (U.S. dollars only please.) To obtain a listing of other titles, contact the Center for the Study of the First Americans.

MAMMOTH TRUMPET

The Mammoth Trumpet (ISSN 8755-6898) is published quarterly by the Center for the Study of the First Americans, University of Maine, 495 College Ave., Orono, ME 04473, and additional mailing offices.
POSTMASTER: Send address changes to: Mammoth Trumpet 495 College Ave. Orono, ME 04473.
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The Center for the Study of the First Americans is a nonprofit organization. Subscriptions to the Mammoth Trumpet is by membership in the Center. Membership: Regular and Institutional $12 worldwide; Contributing $25; Sustaining $50; Patron $100; Lifetime $1,500.
A New Consensus on the Peopling of the Americas

In May of 1999 the Center for the Study of the First Americans convened the First Workshop on the Peopling of the Americas. Although the primary focus of the event was to develop a synthesis of archaeological information important to understanding the peopling of the Americas, the conference included presentations by linguists, the primary purpose of this event was to develop a synthesis of archaeological information important to understanding the peopling of the Americas.

At a recent conference that built from results of the Orono meeting, Professor Allan Taylor, Director of the University of Colorado’s Center for the Study of the Native American Peopling of the Pains and Southwest, presented controversial geneticists to examine the hypothesis that the Americas were peopled by three migration waves. This conference, entitled “Language and Prehistory: A Conference on the Greenberg Classification,” was held March 22–25, 1990, in Boulder, Colorado.

Science writer Virginia Morell reports the results of this historic meeting in the April 17, 1999, issue of Science. “Confusion,” she writes, “had been the impact of this conference; she concludes the emerging consensus—that the Americas were inhabited either than had been thought—has ‘undone a neat synthesis’ of linguistic, dental, and arterial evidence.”

Professor Taylor’s contribution to the Mammoth Trumpet, “Linguistics and Prehistory,” provides a detailed understanding of the circumstances leading to the historic Boulder conference, as well as a literature review of the scientific and the scientific consequences of this important meeting.

Linguistics and Prehistory

by Allan R. Taylor, Ph.D.
Department of Linguistics
University of Colorado, Boulder

The origin of the native peoples of the Americas, and the nature and relationships of their many languages, have been topics of interest to Europeans and—eventually—in science since the sixteenth century. Speculation about this earliest period was constrained by the need to conform to the Biblical account and of little but antiquarian interest today. By the early years of the nineteenth century, however, speculation had become respectable. As the century wore on, the probable Asiatic origin of the native American origins and their relationships to each other based on cultural resemblances (including language) became increasingly apparent. By the end of the nineteenth century, no one seriously doubted that the main source of the American population was Siberia via the Bering Strait, and philologists and other scientists had a reasonably clear understanding of the low-level relationships of most of the American languages and dialects.

The twentieth century has seen considerably more skilled technical descriptions of the languages, providing a data base for further research that far exceeds anything which preceding centuries could produce or even dream of.

Study of the taxonomy of the American peoples has not been prominent in North American science during the past forty years. The great American anthropologist Edward Sapir (1884–1939), and some of his students (e.g., Morris Swadesh, Mary Haas) were the last of a very distinguished series of linguists and anthropologists who devoted themselves almost exclusively to elucidating the relationships of the American peoples. To the point that we wish to imply that American scholars were the only ones who were active in American taxonomy; for example some contemporary researchers such as the Frenchman Paul Rivet and the Czech Cestmir Loska (also equally dedicated and productive.)

The point is that these issues ceased to interest more than a very small number of American and European linguists. Probably a major factor in this loss of interest was the shift—first in North America and later elsewhere—from the social aspects of language toward its psychological and cognitive aspects. This is usually termed the Chomsky Revolution, a paradigm with radically different philosophical bases, research methodologies, and biases.

Among the extremely small number of linguists and anthropologists who have worked on language classification since the 1950s is Joseph Greenberg, now a distinguished professor emeritus in anthropology and linguistics at Stanford University. Professor Greenberg has carved an enduring niche for himself in American social science of the last half of the twentieth century for his widely-cited universal and language classification.

Greenberg has produced a number of language classifications of the languages of Africa, which appeared in 1963. His classification of the languages of the Americas was based on the published work of the African classification, and he was occupied, off and on, with the question from at least 1955, the date of his first paper on the relationships of some of the American languages, until 1967, when his definitive study of these languages—Language in the Americas—was published. In addition to these two he has produced original classifications of the languages of Australia and the Pacific, and he is currently working on a classification of the languages of the northern half of the Eurasian continent.

A final tentative suggestion of this chapter is that the three migrations can be associated with particular archeological cultures: Amerind with Clovis (11,000 yr B.P.), Na-Dene with Beringian (also called Paleo-Arctic; 7,000–10,000 yr B.P.), and Eskimo-Altai with Anapag (5,800–10,000 yr B.P.). This suggestion is particularly daring, because of its attempt to assign the families in real time and to tie them to archeological cultures. I will return to this point below.

Most of the criticism of the Greenberg classification stems from the suggestion that virtually all of the languages of the Western Hemisphere are part of a single, enormous Amerind family. No previous classifier had come close to such a reduction of the complexity of the hemisphere; moreover, many would question the feasibility of a single protolanguage which may have been spoken by a single ancient source.

But this lumping—strongly against the sinistrorsitic character of the classification—is only one of the sins that Greenberg’s critics accuse him of, a point to which we turn in the following chapter.

Language in the Americas presents Greenberg’s classification of all of the native languages of the Western Hemisphere, together with some of the supporting evidence, into a large three groups. The smallest of these is Eskimo-Altai, a long-recognized entity that is restricted entirely to the Arctic region of North America. In Greenberg’s opinion, this family belongs in a large Eurasian phylum which he calls Eurasiatic.

The other two groups are purely American in the sense that they can not yet be connected absolutely to any larger Old World grouping. These are the Na-Dene family (the name is Sapir’s), which includes the closely-related Athabaskan family, Eyak, Tlingit, and Haida. All of these languages are spoken in the far north of North America, in the Arctic and sub-Arctic region. This particular grouping had been suggested previously by several scholars, and there is large agreement that the languages are a genetic unit; only the inclusion of Haida is questioned by some. Most scholars of American Indian languages are not willing to take the position that these languages are not related to other Native American languages, or that they are any more different than many other American languages.

The last group which Greenberg postulates includes all of the remaining languages of the Western Hemisphere. This suggestion is entirely new in research in the North American tradition, and it is by far the most controversial part of the classification, mostly because it includes hundreds of languages with distinct and/or otherwise poorly known, and covers almost the entire hemisphere. More conservative classifications place these languages in more than 200 families, only some of which are accepted generally as belonging to larger groupings (e.g., Azteca-Tanoan).

It should be noted that contemporary Soviet scholars who have worked extensively on the classification of the languages of Eurasia and the Americas concur with Greenberg in establishing only three families for the Americas; although they do not necessarily agree with all of his assignments of the languages.

Besides presenting the classification outlined above, Language in the Americas briefly considers the problem of assigning the peoples of the Americas. In chapter 7, called “Conclusions and Overview,” Greenberg suggests that his three distinct language taxae represent three separate and independent immigrations into the Americas.

The first wave, Greenberg points to the ancestors of the Amerind group, followed by those of the Na-Dene group. Last to arrive were the speakers of Eskimo-Altai. If there were indeed three separate migrations, this chronology is quite plausable in terms of the numbers and distribution of the speakers of these languages, as well as in terms of the size of the territories which they covered.

The three-migration hypothesis is said, moreover, to match very well with recent findings in physical anthropology (dentine, blood groupings) and in genetics (family trees based on study of genetic markers of various kinds).

Science writer Virginia Morell reports the results of this historic meeting in the April 17, 1999, issue of Science. “Confusion,” she writes, “had been the impact of this conference; she concludes the emerging consensus—that the Americas were inhabited either than had been thought—has ‘undone a neat synthesis’ of linguistic, dental, and arterial evidence.”

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To do many comparison, charts are prepared on which horizontal lines are labeled with core semantic notions such as terms for body parts, natural phenomena, and basic actions, while in vertical columns are placed the terms from particular languages that are equivalent to the semantic notion given in the left-most column.

Charts are not prepared in this way displays simultaneously all the words with a given meaning in as many languages as are being compared. In theory, words which are historically related should show resemblances in form, and should be evident as the scholar reads across the chart on the same line.

Resemblances are regarded as significant when the same languages show resemblances in the grammatical forms of different lines, that is, when a number of the semantic lines break down into groups according to recurrent resemblances. This is regarded as prima facie evidence of common descent, although coincidence, incorrect transcriptions of various kinds, convergent development, or borrowing of terms between languages could account for at least some of the resemblances.

The theory of the methodology is clear; in general: the difficulty comes in the application, where errors in judgement (subjectivity) are always a danger.

First and foremost, what constitutes resemblance? Although identity is not demanded and would indeed be vacuous, how much phonetic resemblance is required in order for words to be considered as putative cognates? This issue is the core of the paper label as toponymic items (known to have differentiated from a single earlier source). And after putative cognates have somehow been identified on phonetic grounds, how many must there be in order to consider the source languages as cognate (that is, differentiated forms of a single, earlier language)?

It is clear that each of these questions might be answered differently by different scholars. But the difficulties do not stop there: at least two additional problems plague any comparist, Greenberg or otherwise. One of these has to do with the meanings of items to be compared, the other with the Greenbergian methods of comparing.
A New Clovis Discovery (continued from page 1)

When he took his young son to look for fossils near an artificial cut along the Elm Fork Trinity River. At this location, the Army Corps of Engineers had excavated a 30-foot-deep (10 m), 3,000-foot-long channel to serve as an outlet for the newly created Lake Roy Roberts. Because a University of North Texas team headed by Ferring had done extensive work in this area evaluating and excavating the archaeological resources that would be affected by the Lake Roy Roberts project, Ferring was familiar with this locale. He had not studied the channel because it had been "surveyed" before the North Texas team began working on the project. While Ferring's son searched for fossils in a nearby bedrock area, Ferring went to look at the alluvial and lacustrine sections exposed by the channel being cut. That was on that visit, he recalls, "that I saw geologic exposures indicating the presence of ponds and also found bison and deer bones and snails, which strongly suggested a late Pleistocene age for the locality."

Although the evidence had not yet come to light, Ferring had just discovered the first Clovis camp site to be found in Texas in 50 years.

With another archaeologist from the Corps, Ferring later returned to the site and found a Clovis spear point eroding from the channel walls, along with several flakes of exotic raw material (stone that is not native to the region). This discovery, says Ferring, "begun the whole process of serious archaeological investigation."

In response to this new evidence, the Corps provided funding for limited emergency testing. Ferring and his associates soon located two clusters of sites in a cluster of sites, and excavated them. The second concentration, in a slightly higher stratigraphic position, proved to be a buried Clovis camp where people had made and reworked their stone tools. "The artificial channel," Ferring explains, "cuts a cross-section right across the paleolandscape of Clovis time."

Following these initial discoveries, the Corps once again expanded the scope of work. Further testing revealed yet another Clovis camp site, considered, though far from the first camp area and right next to what would have been the active river channel during Clovis times. "We were able to see," says Ferring, "that we were dealing with a very complex and extensive record of Clovis occupation."

At this time, the Fort Worth District of the Corps of Engineers launched an excavation by the University of North Texas. The archaeologists brought in heavy equipment to remove the overburden that lay above the previously identified artifact concentrations before beginning the painstaking process of excavating the Clovis surfaces. The project was a large one, lasting nine months and employing a full excavation team. Ultimately, about 200 m² of the two Clovis camp surfaces and 50 m² of the bison kill locality were revealed. In addition to the archaeology, explains Ferring, "we studied the geology and stratigraphy of the site and collected samples for the analysis of pollen, mollusks, diatoms, insects, and other kinds of data that will help us reconstruct the paleoenvironments of this area from the late Pleistocene through the entire Holocene."

For those who can read them, the channel walls of the outlet tell the story of a late Pleistocene landscape that was dramatically different from the flat floodplain that exists today. "The Escarpment of Clovis time, Ferring observes, "was really quite ideal for occupation."

Near the western edge of the river valley, the Aubrey Clovis inhabitants established a camping area on a sandy terrace that was later covered by a late Pleistocene channel of the Elm Fork Trinity River.

Immediately adjacent to, but about 1.5 m below this occupation surface, a spring and a large pond occurred. The pond, which Ferring says existed "from about 15,000 years ago through Clovis time," would have attracted animals as well as humans. Butchered bison bones and those of smaller animals recovered from the clay sediments of the pond indicate that it served as a focal point for Clovis hunters.

About 125 m towards the modern river, on yet another eroded remnant of the same sandy terrace, a second camp area lay adjacent to the river channel of Clovis times. Here, the archaeologists recovered Clovis artifacts from what would have been the banks of the river. "The Clovis people," Ferring observes, "were obviously camped as close to the pond as they could get."

Ironically, the water that had been so attractive to the Clovis peoples was a major hindrance to the excavation team. Adding to the difficulty of working at levels close to the water table were major spring floods, which inundated the areas the researchers were working in. "In addition to the very fine texture of the soil," Ferring relates, "which made excavation and screening go slowly, the flooding and water table problems slowed us down. It's hard to work on many good sites," he adds thoughtfully, "they're not easy to dig."

Despite the difficulties, Ferring and his team recovered a wealth of Clovis cultural materials from the site. "We actually recovered a large number of Clovis artifacts," he notes, "yielded Clovis-age artifacts. Additionally, the excellent preservation of the site enabled the researchers to collect a wide variety of rock and environmental data."

While the pond area had few lithic artifacts, it yielded a large number of animal bones, about a thousand of which are identifiable. "The bones," explains Ferring, "include both those with evidence of human modification, as well as bones that were probably deposited naturally and provide good evidence of the past environments of the locality."

Preliminary identification of taxa recovered from the pond area included bison (Bison antiquus), deer (Odocoileus), two species of rabbit (Sylvilagus), pocket gopher (Thomomys), three species of vole (Microtus), and squirrel, birds, turtle, and snake. Thus far, over 40 species of land and aquatic snails has also been identified, of which at least 12 are locally extant (extinct in this region).

The site, Ferring observes, "is really the classic case where you can do interdisciplinary research. We've all excited because in the past, if you were lucky, you got one bone. Or, if you were lucky, you got snails. But here we have independent records of environments that include geology, snails, pollen, diatoms, and stable isotopes, so we're really going to have a chance from a methodological point of view to see how well these data bases support one another."

Ferring has assembled a large team of specialists who is currently studying the various samples collected from the site. The individuals involved in the Aubrey project includes: Dr. Ernest Lunde- lius, University of Texas—paleontology and taxonomy; Bonnie Yates, University of Texas, and Peggy Jodry, Smithsonian Institution—taphonomy; Dr. Raymond Neck, University of Texas—mollusks; Dr. Steven Hall, University of Texas—pollen; Dr. Scott Elias, INSTAR, Colorado—mites; Dr. Herb Haas, Southern Methodist University—radiocarbon dating; University of Arizona accelerator radiocarbon dating.

The two Clovis camp areas produced over 10,000 pieces of stone debitage and an extensive array of bone fragments. Although the camp areas contained fewer than thirty formal artifacts, including scrapers, gravers, retouched flakes, and knives, the large number of chert and quartzite flakes indicated that these areas had served as tool manufacturing and reclamation locales. "It's a very interesting camp assemblage," says Ferring. "And even though it's a very small assemblage of tools, this may be representative of what a short-term occupation looks like."

The researchers also found "quite distinct concentrations of charcoal and burned bone, which are very suggestive of hearth areas. These burst areas, Ferring believes, may indicate surface cooking fires. In addition to bison-sized elements, the burned bones in the camp area include squirrel, rabbit, deer, and turtle. Although a few mammoth tooth fragments have also been recovered from the site, "we can't really say that they have any evidence of cultural association."

"But the interesting thing," Ferring continues, "is that if we make the gross, and perhaps unjustified, assumption that everything burned is being exploited, what we see here is a faunal assemblage that shows essentially a Holocene spectrum of animals. All we have evidence for really is an opportunistic bison kill and then exploitation of a lot of small animals. . . . The evidence of faunal procurement and processing (at the Aubrey site) points toward a very broad pattern of exploitation of aquatic and terrestrial animals, as opposed to perhaps the classic Clovis model of megafaunal exploitation."

The wide variety of taxa recovered from the Aubrey site supports those who question the long-held assumption that Clovis peoples subsisted almost exclusively on
Ferring stresses that because there are so few known Clovis sites, each new find has a significant impact on our ideas about Clovis culture. "We're not dealing with very good coverage of the Clovis territories. So if we start talking about Clovis mobility, settlement patterns, and raw material procurement, our sample size is so dismal small that almost any interpretation is possible."

"All kind of points out how much we don't know about the Clovis sites that are out there," he continues thoughtfully. "Instead of our old impressions of the Clovis sites are rare, I think maybe now... our impressions should shift toward the fact that Clovis sites are very rarely exposed. We don't really know how rare they are."

The Aubrey site, for instance, was discovered only because a deep channel was cut by modern machinery. Many intact western Clovis sites, Ferring believes, are simply too deeply buried by flood deposits to be accessible by traditional excavation techniques.

"I've been doing geology on the Trinity River since late '85... So I paid particular attention to where we might expect to see Paleoindian sites. One of my basic research questions was: Where is the Pleistocene/Holocene boundary? From bore holes and other research, Ferring concluded that this boundary lies about 18-18 m beneath ground surface in the Dallas area. Upstream, where the Aubrey site was found, the boundary is much less deeply buried and is about 8-10 m below the flood plain.

Ferring proposes that investigators go further up into the drainages and tributaries where Clovis sites will be closer to the surface. "I think that if the stratigraphy holds up as I've broadly outlined it, it will be virtually impossible to find Paleoindian sites downstream because they're going to be so deeply buried."

"We really need to take the approach that... Kirk Bryan and Vince Haynes have espoused for decades and that is know your stratigraphy first and then you'll know where to look for sites! We've got to get out of the pattern of walking flood plains," Ferring emphasizes. "We know that if you walk flood plains, you're gonna find spark plugs and beer cans," he says, with a flash of humor. "You're not going to find Clovis sites."

"My hope is that this discovery will redline some enthusiasm and confidence that if we pay attention to what we're looking at, we can substantially increase our chances of finding new data. We're dealing with such a unique time in human history and such a unique set of climatic and environmental conditions for human adaptations. It really requires us to redouble our efforts to find more early Paleoindian sites all over this continent."

--- Nancy Allison

Archaeologists excavate at the Aubrey site in December of 1990. (Photo courtesy of Dan Santens, University of North Texas.)
animal remains, among them giant and medium-sized horse (*Equus stenonis* and *E. conocephalus*), and large palaeolama (*Hemiauchenia macrocephala*), as well as deer, rodent, and bird bones. Associated with the faunal remains was a small artifact assemblage that included three obsidian-tipped bone scrapers, a prismatic blade, and a graver—implements that MacNeish describes as, "With a little pushing and shoving might be Clovis. But," he adds, "the artifacts down below are very different." Because of the fragile stratigraphy of the cave, MacNeish and his team decided to expand the test trench to

MacNeish adds, "have scratch, chew, and cut marks." The rich faunal record of Pendejo Cave promises to shed light on a question of long puzzled researchers—that of the late Pleistocene megafauna extinction. "There is," MacNeish points out, "considerable difference between the oldest and the youngest layers of Pendejo Cave and those in the upper layers. In terms of the stratigraphy, it doesn’t look like all these animals became extinct at the same time." The apparent differential extinction indicated by the levels of Pendejo Cave, MacNeish suggests, "argues strongly against the overkill theory where everything happened in one brief moment due to hunters."

"Now Zone K," continues MacNeish, "is quite distinctive. This zone contains long-tailed weasel, giant ground squirrel, tawny owl, tarsier, and even a tooth."

The Zone K fauna strongly imply the occurrence of a wetter forested environment during this period in the site’s history. Although much more research is needed, it is possible that Zone K corresponds to the late glacial maxima of 18,000–25,000 years ago. Below Zone K, Zones L, M1, M2, and O are dominated by small and medium-sized mammals, the browser and browser species. Some prominent in the levels overlying Zone K. Preliminary identification of other faunal remains in this block includes extinct antelope, extinct goat, and giant turtle, as well as a large number of rodent and bird bones. Overall, the fauna suggest a probable desert-like environment, although the assemblage characterized by the presence of large numbers of burrowing species. The remains of Zone M1 and O are the remains of the extinct *Arauractes*, a recently identified species known only in the Oaxaca region, is a seemingly characteristic of early to middle Rancholabrean times (30,000–40,000 yr B.P.). And the cultural materials, "We have some artifacts," says MacNeish, "but they don’t look much like what I’ve seen from the Southwest, except for maybe the top layer of fossil animal bones [Zone G]. All told, we recovered about 89 chipped stone tools from the lower cave levels, of which there are 12 in Level G and about 10 in each of the layers beneath."

Again, the materials beneath Zone G seem to fall naturally into three stratigraphic groupings. Although the associated faunal remains in these zones [H] are similar to those in Zone G, culturally there is a change to a more generalized flake-tool assemblage. Stone tools from these zones include unifacial side scrapers, large spokeshave-like implements, utilized flakes, and large ovoid cores. Spokeshaves and utilized flakes continue into Zone K, with the addition of a bifacially worked stone tool made from a rib bone. The occurrence of these tools, along with this horizon’s distinctive faunal assemblage, leads MacNeish to suggest that Zone K may represent a period of cultural, as well as environmental, change.

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JOIN AN ARCHAEOLOGICAL EXPEDITION TO THE SOUTHWEST

The Andover Foundation for Archaeological Research (AFAR) is a nonprofit research organization dedicated to undertaking scientific archaeological investigations, training, and supporting archaeological studies, and conducting field research. The foundation’s main goal is to provide educational and research opportunities for students and professionals in the field. AFAR’s mission is to promote the study of past cultures and their environments, and to make this information accessible to the public.

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They have a unique archaeological record that promises to provide insight into one of the most intriguing questions of archaeological research: How did human immigrants first enter the New World? Next winter, AFAR Director of Research Dr. Robert Harris will return to Pendejo Cave with a small team to continue work at the site. You can be a part of this extraordinary project by becoming a friend of the Foundation or by making a tax-deductible contribution to AFAR, contact: Andover Foundation for Archaeological Research, 1 Woodland Road, Box 83; Andover, MA 01810.

The excavators had a complex stratigraphic sequence containing a minimum of 21 m in width before proceeding downwards in the central 1-m trench. "With the cave alternating 1 m squares," he explains, "so we had very good control. We were always stripping strata from a vertical profile." When Zone G and its underlying layers were again exposed, the 30-cm-thick white ash horizon, contained brown pottery sherds and chipping debris that probably dates between 1000 and 1700 years ago. From Zone B to Zone F, says MacNeish, "We were mainly getting Articarchaic materials, which is what I was interested in." Zones C1–C5, alternating vegetation and ashy layers, provided Pendejo sand, silt, sand, silt, sand, silt, sand, and other materials characteristic of the Late Archaic period. Zone D, a 20-cm-thick ash horizon, overlain by Zone D1, a thin localized charcoal floor. Beneath them, Zone E, a layer of gray ash, covered Zone E1. Although artifacts in these zones were rare, Zone E1, a 20-cm-thick white ash layer, is noteworthy in that it had been heavily cemented by water, thus preventing the up and down movement of materials. Zone F, a 20-cm-thick charcoal floor, contained blades and a denticulate that are probably Early Archaic (6000–8000 yr B.P.) in age.

What MacNeish could not have predicted, however, were the artifactual and faunal materials that lay beneath the upper 80 cm of cave sediment. Although Zones E1 and F1 contained a few extinct mammal bones, thought to be intrusions from earlier (lower) levels the upper layers of Pendejo Cave yielded a profusion of Holocene animal bones. These included deer, anteater, cactus, mastodon, jackrabbits, rabbits, and other species typical of a modern desert-like environment. With Zone G, however, a 20-cm-thick ash horizon the "whole picture changed." One day, recalls MacNeish, "One of the supervisors came running over and showed me a toe bone about four inches long that was from a giant horse. We knew then that the cave was going to be site early." Zone G, which proved to be at the junction of the fossil animal bones, produced a large number of extinct distinct horizons extending about 2 m beneath the cave’s floor. From Zone G, the strata are: Zone H: 5–10-cm-thick charcoal floor. Zone I: 15–20-cm-thick gray-brown ash. Zone J: 5–10-cm-thick charcoal floor. Zone K: 20-cm-thick cemented white ash. Zone L: 10–30-cm-thick internized charcoal and sediment. Zone M: Thin gray ash. Zone M1: Thin charcoal floor. Zone N: 10–30-cm-thick orange sand. Zone O: 10–30-cm-thick ash horizons. (This level may be further subdivided.) Although study of the faunal remains is still in a preliminary stage of analysis, paleontological expert Dr. Arthur Harris of the University of Texas at El Paso has thus far identified at least 20 different extinct animal species from the site. Many of the larger bones, continued on page 8
form of the items under comparison. Both bear heavily on the appropriateness of specific comparisons.

With respect to meaning, it is by now clear from the historical study of languages with a long written tradition such as Greek that meanings change through time. *Know*, for example, is not the commonest term for *boy*, and *knowed* is not the commonest term for *dog* although both of these terms did have those meanings. Both words now have a larger, religious meaning; its everyday meaning in Old English has been replaced by *sky*, a loan word from Danish. (In modern Danish *sky* means *cloud*.) And *know* has changed its meaning entirely from its earlier meaning of *prayer*, which presumably originated with the use of the rosary in acts of prayer. In the first three centuries, peripheral modern meanings still tie these words to their Old English ancestor; but with even more semantic evolution, as in the case of *bead*, and without a knowledge of the history of English permitted by written records, what would, what could, a comparatist do?

Because of the universal tendency for semantic evolution, a scholar doing comparative work must therefore consider not only the same items as members of semantic groups—*finger*, *point*, *show*, *sky*, *cloud*, *sun*, *give*, *take*, *sleep*, *faint*, *die*, *black*, *dark*, *dirty*, *excrement*—but there is no guarantee that all scholars will agree on the plausibility of the members of the semantic groups, and the worth of the comparisons will be questionable to some as a consequence.

An even thornier problem concerns the global form of items to be compared. Ideally, grammatically equivalent items ought to be compared, e.g., English *heart*, German *Hert*. But suppose that the only available German terms were *Heron* or *Herzlich*, which are grammatically different from *heart* and *Hert*. What about the additional material in these New German words? Can it be regarded as a grammatical suffix of some kind, or as a meaningful variant of the same root? (In both of the above cases, the additional material is suffixal.) Experienced comparatists know that it is often necessary to work with the representative items, and that the differences may or may not be significant; but the decision on inclusion of such items usually requires rather detailed additional knowledge of the languages from which the data come. This is obviously very difficult, if not impossible, when hundreds of languages are undergoing comparison, and the cautious comparatist usually does not count such items until their difficulties can be accounted for, which may not be feasible in a great many cases.

In classification by inspection, as Greenberg does, there are no admissions, and no discrediting of the assumption that the mass of data is largely self-correcting. Snare numbers of reunions are taken as an indication of relationship, without the need for defining the linguistic differences involved, and without the need to establish the consistent, recurring agreements of one or another kind that constitute proof.

Although Greenberg believes that his classification does represent a truth, he nevertheless readily agrees that it remains to be proved. He argues that his work is no different than that performed by a large number of his predecessors in the eighteenth and early nineteenth centuries, when historical linguistics was first conceived, and the immediate relationships of many of the world’s languages were first recognized. He argues that comparison of languages rests on a hypothesis of genetic relationship, whether this hypothesis is overt or implicit, and that sound comparative work has to follow linguistic classification, not precede it.

Greenberg’s interest in doing classification—especially subgrouping—is thus to provide a plausible framework within which to do standard comparison. Too little work has been done on the world, he feels, essentially at random. Languages are chosen because a scholar knows them, or has a hunch about them, and not because there are good reasons to believe that they are a relationship of some sort. Moreover, he insists that comparison of a limited number of languages is equally random and unjustified, since it is comparison itself which shows which languages and which etyma (words) are the more useful at particular levels.

All of these issues loom very large in doing historical linguistics, and they are cause for genuine concern about the validity of all comparison. They are usually resolved by consensus among scholars working in the same area, familiarity with the data and the languages is usually adequate to make broad agreement possible. Unfortunately, consensus is not easy to achieve when the scope is hemispheric and hundreds of languages and scholars are involved. No one can encompass competence in every small number of the languages. Yet, there must be a way that consensus can be achieved—certainly there is now broad acceptance of the African classification, and the same obstacles to its acceptance were present when it was first presented.

An initiative to promote the interest of Americanist scholars in remote comparison of Native American languages was taken this past March, using the Greenberg classification as a point of departure. A panel of over twenty prominent scholars in American Indian archaeological field met in Boulder, Colorado, to examine and discuss American diversity, with special reference to Greenberg’s two largest groupings, Amerind and Na-Dene. The conference, which was entitled “Language and Prehistory in the Americas: A Conference on the Greenberg Classification,” met from March 22 to March 25. It was sponsored by the University of Colorado and the Center for the Study of the Native Languages of the Plains and Southwest. A number of interested professionals attended in addition to the invited speakers and discussants.

The following are the titles and authors of the invited papers:

- “The peopling of the Americas: the classical view” of Dennis Stanford, Smithsonian Institution.
- “The Pacific Coast as a possible route of initial entry into the Americas” by Ruth Gruen, University of Alberta.
- “Linguistic diversity and its implications for the settlement of the New World” by Johanna Nichols, University of California, Berkeley.
- “Dental and archeological evidence for the peopling of the Americas: an intercontinental perspective” by Christy Turner II, Arizona State University.
- “Genetic evidence from mitochondrial DNA for the peopling of the Americas” by Rebecca Cann, University of Hawaii, Honolulu.
- “The classification of American Indian languages and the peopling of the Americas” by Lyle Campbell, Louisiana State University, Baton Rouge.
- “Reexamination of the family tree model of linguistic classification, with special reference to North America” by Sidney Lamb, Rice University.
- “Sapir’s revised model of linguistic classification” by Victor Golla, Humboldt State University.
- “Hypothesis generation vs. hypothesis testing: a comparison between Greenberg’s classifications in Africa and the Americas” by Sarah Gray Thompson, University of Pittsburgh.

“On being right: Greenberg’s African linguistic classification and the methodological principles which underlie it” by Paul Newman, Indiana University.
- “Small-European practice and Americanist theory on language classification” by Joseph Greenberg, Stanford University.

“Which constitutes grammatical evidence and how do we evaluate it?” by Scott DeLancey, University of Oregon.
- “The Amerind family, an overview” by Merritt Ruhlen, Palo Alto.
- “Tsapano-Sülabia, Otomangue, and Hokan” by Terence Kaufman, University of Pittsburgh.

“Structural comparison of Araw and Tzacapanacac: do these languages belong in the same subgroup?” by David Everett, University of Pittsburgh.

“Sapir’s revised model of linguistic classification” by Victor Golla, Humboldt State University.

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Song of the Mammoth Hunters: A Bit of Ice Age Doggerel

Translation and annotations by Bradley T. Lepper
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Gripping wooden spear shafts with painted, sweet-soaked hands:
Slinking through the verdant gloom—
the last of the hunting bands.

Spurning the wild asparagus;
eschewing the pomme de terre—
Questing for Big-game mammals
to stab and rend and . . .

We are the red-handed butchers,
Martin’s Paleolithic Blitzkreig;
Relentlessly lusty for protein,
for blood and for higher prestige.

Heeding the call of the wild,
Following Romer’s rule—
Maintaining our adaptation,
as stubbornly as a mule.

Don’t ask us what will happen—
we haven’t a clue to our course—
When we’ve eaten the last of the Pleistocene herds
of mammoth, sloth, and horse.

Perhaps we’ll eat some shellfish,
or maybe we’ll plant some maize—
But we needn’t worry, they’re not extinct yet.
And they probably won’t be for days!

(Disclaimer: We at the Mammoth Trumpet wish to express our appreciation to Dr. Lepper for news of this recent discovery. However, we must emphasize that Lepper’s interpretations do not necessarily reflect those of the Center for Prehistory. Although Lepper’s hypothesis that the inscription was freely translated from an Ogam1 inscription on a mammoth ivory pseudoeslabolized thungnymbadhy recovered from an unspecified locality in Licking County, Ohio, it is believed to date to very near the Pleistocene/Holocene transition. If confirmed this poem may represent the oldest historical text in the world.

NOTES
1 The discovery of an Ogam inscription in an undated late Pleistocene context suggests that many of the Ogam inscriptions documented by Barry-Joy, e.g., 1980, 1983, 1986, are too late or too late.

Perhaps Irish Ogham were the original discoverers of America and the New World was initially peopled by small proto-Celtic bands who crossed the North Atlantic on floating icebergs as Greenman (1963) originally suggested. On the other hand, the parallel scratchings and grooves observed on the surface of the artifact (?) might be butchering marks, carnivore tooth marks, or trapping marks. Various sophisticated taphonomic analyses will proceed along with the standard unreplicated epigraphic woolgathering.

2 The use of the French expression in this context suggests the author was a cultural individual schooled in the literatures of both linguist and art. Such an individual undoubtedly could pronounce as well as make and use tools equines.

3 The use of this apparent Germanic expression is further evidence for a European connection (see notes 1 and 2 above). The reference to hunting is interesting. Perhaps this may be an ancestor of the modern paleoecologist whose theories find strong support in this early iconographic document (see, for example, Diamond 1987).

4 Romer’s Rule (or, possibly, Romer’s [?] Rule) appears to relate to a concept such as “No matter how far you roam from home, don’t change anything about your way of life.” Or “If it is good enough for Grandad on the Beringia tundra, it’s good enough for me in the American midwest.”

5 “The Clovis Complex” (not “The Clovis Culture”) to which several researchers refer—for their notions of extreme cultural conservatism have little, if any, validity, as can be seen from the work of the noted paleoecologist A.S. Romer (Pee, 1958–68).

6 What you call “corn.”

REFERENCES CITED

Pre-Clovis Barrier Broken?

Zones L–N are dominated by unilacitral points, bifacial choppers, utilized flakes, and possible worked bone. "Is this," MacNeish asked at a recent presentation, "the bone-t00led-stone uniface horizon" that occurs under Clovis in so many parts of the New World?

Finally, Zone O, the lowest artifact block, "is heavy on choppers and pebble tools. These are mainly," MacNeish reflects, "split pebble, side-scraped chopper, flaked chopper, pebble tools, and flakes," he adds, "a bone awl made from the scapula of a horse." "There’s no way," he adds, "you can make a horse scapula point without whittling it. And this has a lot of whittle marks on it!"

Most of the stone tools from the cave are made of chert or on quartzite pebbles. Because many of these tools have been heavily burnished, sourcing will be difficult. Although the artifacts, MacNeish says warily, "have not been enhanced by being burned, flaked, and scarred . . . there’s no doubt in my mind that they are tools.

MacNeish seems confident that Pendejo Cave may prove to be the turning point for a universally accepted pre-Clovis occupation in the Americas. Referring to the "chopper-peekle" tools of Zone O, he stresses, "We’re a long way up from the area where these tools appear in this layer, well, they’re not being brought into the cave by rabbits." Also, "the roof is limestone and these are quartzite pebbles so there’s no way these can be dismissed as taphonomic.

MacNeish is presently planning to return to the site next winter. At that time and in the interim, a number of specialists will bring their expertise to bear on the Pendejo Cave materials. In addition to Dr. Harris, who...