

MAMMOTH TRUMPET



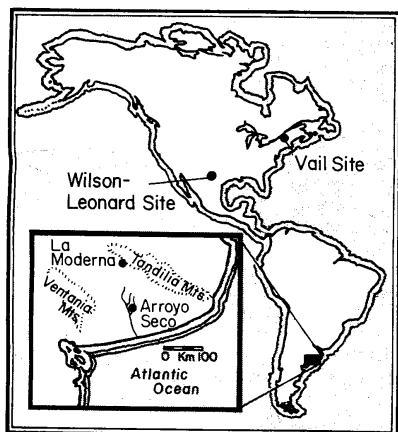
Volume 2, Number 1 1985
Single Copy \$1.50

Center for the Study of Early Man

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HUMAN BURIALS AND EXTINCT MEGAMAMMALS IN ARGENTINA

Gustavo Politis, archaeologist from CONICET-Museo de la Plata in Argentina, has been in the U.S. during the past year as a visiting scholar at the Department of Anthropology, University of Kentucky, and the Center for the Study of Early Man. His excavations at a key site in Argentina have uncovered no fewer than 16 human skeletons that may date to the Pleistocene.



Map shows selected sites and locations mentioned in the articles of this issue.

AN EARLY HOLOCENE BURIAL AT THE WILSON-LEONARD SITE IN CENTRAL TEXAS

In January 1983, the archaeological community learned of the work the archaeology section of the Texas State Department of Highways was doing at the Wilson-Leonard site on Brushy Creek, approximately 20 miles north of Austin. Actually, excavations within the right-of-way of FM 1431 road had been underway since 1981 under the supervision of Wayne C. Young. The site, 41WM235, contained excellent Late Prehistoric, Archaic, and Plano cultural components, but it was on January 3, 1983, that the crew began uncovering the skeletal remains of a human female some three meters below the present ground surface and in soils known to be more than 9,000 years old (see diagram).

(Continued on page 3)

INSIDE . . .

Center News	2
Summer Supplement	4,5
Esmée Webb	6
New Publications	7
Conferences	8

The Pampa Region of Argentina was the location of several late-nineteenth-century discoveries by F. Ameghino of sites with associated human artifacts and Pleistocene megamammals. Early in this century, physical anthropologist Ales Hrdlička disputed Ameghino's claims, asserting that people had not colonized South America until after the Pleistocene extinctions. In the 1970's, a giant armadillo (*Doedicurus clavicaudatus*) kill site named La Moderna was excavated in the Tandilia Mountains. With this research came a renewed interest in the possibility of human presence in the Pampa Region.

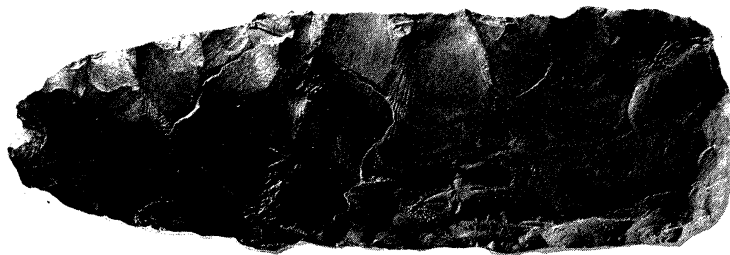
The Arroyo Seco Locality, Site 2, was discovered just 135 km south of La Moderna. It had been excavated by avocational archaeologists in 1973. In 1979, Gustavo Politis and a multidisciplinary team from the fields of paleoethnology, geology, archaeology, and isotopic geology began a thorough investigation.

To date, approximately 140 square meters have been excavated. This area covers about 20% of the total subsurface deposits using adjacent test pits, isolated test pits, and a 60 m long trench.

This is a multicomponent, open air site located on an extensive plain, halfway between the Ventania and Tandilia mountain ranges (see map, page 1). Lithic and other materials found at the site probably have been acquired from both mountain ranges, as well as from coastal areas. In fact, Arroyo Seco may have been chosen for its central location as well as the wide range of food and other resources immediately available.

Three cultural components have been identified at the site so far. The Upper Component in a highly disturbed plow zone is characterized by small, bifacially flaked triangular points and pottery; it dates to about the sixteenth century. The Middle Component is found at about 50 cm depth and contains medium-sized bifacial triangular points, abundant grinding stones, and numerous bones from the guanaco (*Lama glama guanicoe*). The Lower Component contains a diversity of Pleistocene animals in association with cultural remains, superimposed directly over the human burials.

(Continued on page 3)



Above, a fluted point preform with conjoined thinning flake, found separately, probably broken during the manufacturing process and discarded. Below, a heavily resharpened fluted point. Both were found at the Adkins site and are shown actual size. (Photos: Buffalo Museum of Science, courtesy of M. Gramly.)

GRAMLY REPORTS A PALEOINDIAN SITE COMPLEX IN NORTHERN MAINE

In 1980, Michael Gramly went to talk to Francis Vail, Jr., who had collected eighty of ninety Amerindian stone tools during low water at Azischohos Lake in the Magalloway River area of northern Maine. The artifacts turned out to be older than anyone expected. What Vail poured out for Gramly to inspect were fluted points and bifaces from the Paleoindian period. Since then, materials from what is now called the Vail site have been radiocarbon dated at about 10,600 years ago. Francis Vail has generously donated the stone tools he collected to the Maine State Museum. Recently, even more sites near Vail have been discovered, forming a Paleoindian site complex that Gramly is continuing to excavate.

The Magalloway River, along with a twenty-three-mile long dam-created lake, follows a twisting and difficult path near the intersection of Maine, New Hampshire and Quebec. At a particularly narrow and rocky S-turn, about midway up the valley, Gramly's sites are perched atop glacial-age sediments, about 25-30 feet above the present day river.

Gramly now has six Paleoindian surface and near-surface sites within a few miles of one another, which he calls the Magalloway Valley Complex. The Vail site was the first, and is the only one so far to have yielded organic materials for radiocarbon dating. In the fall of 1984, stratigraphic cuts into channel deposits

(Continued on page 7)

C E N T E R N E W S

SOMETHING NEW FOR Current Research in the Pleistocene

Popularity of the Center's journal *Current Research in the Pleistocene* (CRP) is gaining fast. Volume 2 contained approximately 150 pages of new information about the peopling of the Western Hemisphere. Each issue of the journal has been slightly different, each time an improvement, as the Center responds to the wants and needs of the profession. Volume 2 contains articles from scientists studying in northeast China and Siberia (USSR), that geographic threshold into the Americas. Although English is the language of CRP, the Center will also publish appropriate articles in Spanish, French, Portuguese, Russian, and Chinese (e.g., see Vol. 2). We feel that the study and the understanding of the peopling of the Americas is important to everyone in the world who is interested in human origins; the Center wants to make current research available to all.

Volume 3 (to be published May 1986) will have yet another requested twist. It has come to the attention of the Center that very little is widely known about late Pleistocene human prehistory in Northeast Asia. Many of the journals of China and the USSR are not readily available to a wide audience in the Western Hemisphere. Because of this, CRP volumes will start having sections: I) approximately 50 authored articles of state-of-the-art current research (as in the previous two issues of the journal), and II) a survey of recent articles concerned with the paleoenvironments and human prehistory just prior to and during the emigration across Beringia. We are planning on having Soviet and Chinese scientists (two from each country) review the recent issues of journals and books of their countries for pertinent articles. The lists will contain complete reference source data in English.

CALL FOR PAPERS

Once again the Center is asking for your contribution to *Current Research in the Pleistocene*. Approximately three typed pages of original and current research is all that is requested. Remember the deadline is January 31, 1986! For more information and guidelines contact the Publications Coordinator at the Center. Jim Mead had been the editor of CRP here at the Center for two years. He will continue his editing of Volume 3, but from his new desk at the Department of Geology (Northern Arizona University) and the Museum of Northern Arizona, Flagstaff. All manuscripts to be published in CRP should be sent directly to Jim at the address below. Administration of the journal will still be handled at the Center's headquarters in Orono, Maine.

Send CRP manuscripts to: Jim I. Mead, Editor, *Current Research in the Pleistocene*, Department of Geology, Box 6030, Northern Arizona University, Flagstaff, AZ 86011, U.S.A.

MAMMOTH JEWELRY

Red-brown and white enamel fill the golden edges of our cloisonné mammoth. Shown actual size.

Tie tack \$6
Bola tie slide \$6
Stick pin \$6

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EDITOR'S NOTE

The *Mammoth Trumpet* is now a year old, still in its infancy, as the Center for the Study of Early Man begins its fifth year. Created with a mission to stimulate and organize research on the peopling of the Americas and to bring that story to the public, the Center has struggled to define its niche. We are in the communication business, forging new lines of information flow among the disciplines of the Quaternary sciences and between scientists and the general public.

In this age of technology and sophisticated science, we of the Western hemisphere are still largely ignorant of our human heritage, of a saga that reaches back millennia and across continents, of a constant effort to survive amidst a radically changing environment. We know very little about that saga, yet we need to know much. Not only does the understanding of our "roots" give meaning to our endeavors by placing us in a longer timeframe, but it can contribute to our ultimate survival. More than 10,000 years of human and environmental history provides many lessons in adaptation and climatic change. Just how will we survive the next millennium?

Members of the Center for the Study of Early Man constitute a diverse family. Professionals from many disciplines, avocational archaeologists, students, geologists, physicians, electricians, housewives, anthropologists, botanists, chemists and many more—all seeking a better understanding of the prehistoric past. Professionals who work together to reconstruct the dim past also seek a better understanding of each other's disciplines. And the public, who has the ul-

timate say in spending money for preservation and conservation of a global heritage, wants to know about the latest research efforts, the latest success, the frontier. This is the niche the Center should fill.

We speak with many voices. The *Mammoth Trumpet* speaks to all who are interested, professional and layperson alike, and provides a public forum for information exchange. The Center's *Current Research in the Pleistocene* highlights the leading edge of Quaternary science as it focuses on the peopling of the Americas, and does so in a concise, illustrated format. The *Peopling of the Americas* book series offers a wide range of research in depth, and will soon offer more publications for the general public. Our library, currently available to visitors, is growing and we hope to extend its availability to a wider audience. We have just recently ventured into the world of videotapes, and we are working on a distribution plan.

With one foot in the humanities as we tell the story of human survival and adaptation, and the other foot in the sciences as we use the latest techniques to reconstruct the past, the Center for the Study of Early Man seeks a broad constituency. We continue to need the help of our members as we plan for the year 2000. Your intellectual and financial support are necessary as we look to the future. Please do what you can to place the Center on a solid financial footing. We welcome contributions to our endowment as well as support of specific projects. Join us in the struggle to reconstruct and preserve the Americas' earliest heritage!

ABOUT THE READER SURVEY . . .

Thank you to all who took the time (and cut up your papers!) to respond to the reader survey in the spring M.T. It was most interesting and, in some instances entertaining reading. It was a real uplift to have so many tell us they liked the *Trumpet* just the way it is, and that we're doing a fine job. It was also encouraging to have people suggest we do things we already had plans for. These include more reports about specific sites or regions, more photographs or artifacts, and more information that can be used by teachers. We have already begun plans for an expanded advertising effort with ads to appear in several major journals and magazines.

For those of you (and there are many) who objected to having to cut up the *Trumpet* in order to respond to the survey, or in order to renew, we have changed our approach. From now on, there will be

an enclosed order blank with every issue. This way, you can keep your paper intact. And, we hope, this will give members the opportunity to help us spread the word about the Center. Please give the enclosure to a friend if you won't be using it.

A number of our readers from Alaska and Hawaii said their *Trumpets* took too long to reach them. Starting immediately, we will be willing to mail the paper first class/air mail for those of you who send \$1.00 U.S. to defray the additional handling and postage. All newspapers mailed outside North America go air mail already. Along those lines, we are considering changes from third to second class mail within the U.S. This change will assure mail gets forwarded if the address is incorrect.

We will continue to be flexible in meeting the needs of our readers. Please keep in touch.

ARE YOU AN AVOCATIONAL ARCHAEOLOGIST?

If you are an avocational archaeologist, you can help the Center. We need your assistance in reaching your colleagues in local and state archaeological societies. We would like to be sure that all archaeological society members know about the Center and about the *Mammoth Trumpet*. In addition, we are interested in keeping people informed about our activities and our publications through local society newsletters. Finally, we are very interested in having an exhibit at state and local meetings. We will be writing to most of the state societies, but it will be much more difficult for us to reach the local societies. We will be needing representatives at local and state meetings. Also, in order to keep up with new discoveries across two continents, we depend in part on input from local researchers. If you know of work being done on the Paleoindian period in your area, please let us know about it, and who we should contact to learn more. Can you help?

WARM UP
TO THE
ICE AGES



The *Mammoth Trumpet* is published quarterly by the Center for the Study of Early Man, Institute for Quaternary Studies, University of Maine at Orono, 495 College Ave., Orono, ME 04473. ISSN #8755-6898

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Update on the 'Leanderthal Lady'

AN EARLY HOLOCENE BURIAL AT THE WILSON-LEONARD SITE IN CENTRAL TEXAS

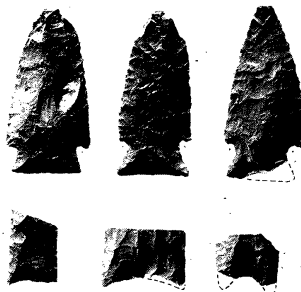
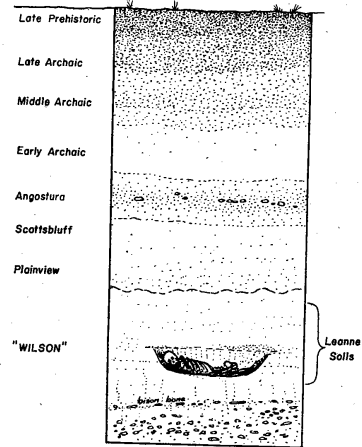
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The outline of the burial pit was recognized, including the backdirt the aboriginals could not return to the pit once the body was in place. The original depth of the grave was approximately 30 cm. The Leanderthal Lady, or "Leanne" as she became affectionately known by the crew, and for whom the soil zone was named, was on her right side in a semiflexed position facing west (see photo). Also in the grave was a fossil shark's tooth found at the proximal end of the left humerus; a granitic sandstone chopper with pigment stains; and an angular fossiliferous limestone cobble under which were found several particles of charcoal. This material was submitted to the University of Arizona for dating through their tandem accelerator. Reduced to only 1 mg of fine charcoal, a date of $13,000 \pm 3,000$ years B.P. was produced. Two other assays, using standard radiocarbon dating methods and with more acceptable standard deviations, were derived from the soil humates within the burial zone, and are probably better dates for the "Leanne" burial. These are $9,470 \pm 170$ (Tx-4787) and $9,650 \pm 120$ (Tx-4793) B.P. Soil humate dates can be equal to, but are generally younger than, the actual time of deposition.

The stratigraphy at the site is such that there is no question as to the provenience and age of the interment pit. Seven specimens of a thick and notched dart point form which we will call "Wilson" (see photo), along with three unidentified lanceolate specimens, were found in the Leanne soils, and the occupation here is interpreted to date from the earliest end of the Early Archaic period. Interestingly, the two soil zones above the Leanne soils contained, in quantity, traditional Paleoindian dart point forms identified as Midland, Plainview, Scottsbluff, "Texas Angostura" and other Plano forms. The bottom of the Leanne soils below the burial contained the earliest and most



Above, the early Holocene semiflexed burial of the Leanderthal Lady; above right, an idealized soil profile of the Wilson-Leonard site. Below Wilson points, top row, and lanceolate fragments, bottom row, from the Leanne soils, in which Wilson points occur earlier than Plainview. ("Leanne" photo: M. Bell, all photos courtesy of M. Weir.)



discrete occupation at the site. The assemblage there contained one very thin lanceolate projectile point, is truly Paleoindian, and is associated with at least one butchered bison. Dennis Stanford of the Smithsonian Institution indicated that this assemblage appeared

Folsom, although no projectile points from this culture were found at the site.

Examination of the skeletal remains in the field by Al B. Wesolowsky, of Boston University, suggested that "Leanne" was a female near the end of her third decade at time of death. She was over 5 ft. 2 in. tall, and had a fused left clavicle/first rib caused by an injury that later healed. Cause of death has not been determined; the skeleton is still under study.

The significance of the Wilson-Leonard site is that it possesses stratigraphic evidence for most of the episodes of prehistoric occupation in central Texas, one of which dates 9,500 years B.P. or older and contains an Early Archaic component from where the "Leanne" burial was made, and that is definitely earlier in time and stratigraphically lower than classical Plainview and Scottsbluff materials. Research continues, and it is hoped that a preliminary report will be available in 1986.

—Frank A. Weir, Director of Archaeological Studies
State Dept. of Highways and Public Transportation
Austin, TX 78701

HUMAN BURIALS AND EXTINCT MEGAMAMMALS IN ARGENTINA



Burial 4, containing the skeleton of a child with pendants made of over 150 canid teeth, circular shell beads and red ochre around the head. (Photo courtesy of G. Politis.)

(Continued from page 1)

The cultural materials from this "early man occupational level" are distributed fairly evenly across the entire excavated area and within the burials. The faunal remains, of both modern and extinct animals, are of selective skeletal parts, sometimes burned, cut, or showing other signs of human alteration. The bones consist primarily of the modern guanaco (*Lama glama*

guanicoe), and pampa deer (*Odocoileus bezoarticus*), but they also include many now-extinct animals: ground sloths (*Megatherium*, *Mylodon*, *Glossotherium*), camels (*Macrauchenia*, *Paleolama*), and horses (*Equus*, *Hippidion-Onohippidium*).

This level also produced some 83 stone tool artifacts, primarily of quartzite, but including some basaltic cobbles, silicified tuff, and chalcedony. The assemblage is characterized by medium-sized flakes with unifacial marginal retouch. Some artifacts with bipolar technique and narrow marginal bifacial retouch have also been found. The tool types identified include various sorts of scrapers, half a bola stone, and two pieces of grinding stone.

The human skeletal remains appear to have been buried in both single and multiple burials. The fact that the overlying "early man" level shows no sign of intrusion from above leads Politis to conclude the burials occurred no later than the deposition of the

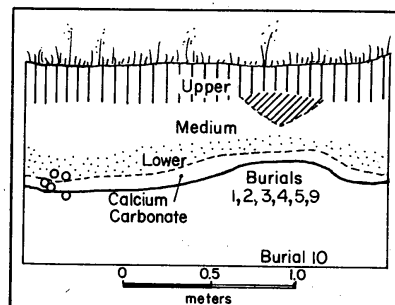
lower "early man" layer of bones and artifacts. Although radiocarbon dating has produced dates of 8390 ± 240 (sample of *Megatherium*), 8560 ± 320 (sample of Burial 2), and 5250 ± 110 (also a sample of Burial 2), Politis feels the association with extinct Pleistocene fauna and the discrepancy in dates points to the possibility of sample contamination.

Burial 1 is comprised of three articulated skeletons: an adult female with circular shell beads around her neck, an adult male with pendants made from canid canine teeth, and a child. There were two adult females and one adult male in Burial 2, none with funerary goods, but all articulated. Burial 3 was composed of two adult males, one disarticulated. Burial 4 was an articulated skeleton of a child with pendants containing more than 150 canid teeth, circular shell beads, and with red ochre around the head. A small basaltic bola stone was found displaced about 40 cm from the body. Burial 5 was an articulated, but incomplete, infant skeleton with 10 canid tooth pendants.

Burials 6, 7, and 8 were infants with red ochre around the body and rectangular shell beads. Beside the head of Burial 8 a Glyptodon scute was found in direct association with the other funerary goods.

Burial 9 was an articulated male skeleton. Part of the spinal column, ribs, and the pelvis were absent, and stones had apparently been placed in the area of the missing bones. Burial 10, containing several individuals, has not yet been studied.

If the suggested link between the human burials and the Lower Component is confirmed, Arroyo Seco will provide outstanding information about the physical characteristics of early human occupants of South America, and about the ritual activities associated with the dead in Late Pleistocene-Early Holocene times. Further bone samples are to be dated to help place the burials more securely in a chronological framework.



Schematic profile of a wall of the excavation shows locations of human burials and cultural components. Open circles (middle left) indicate radiocarbon dated soil samples.

SUMMER S



CAN THESE BONES LIVE?

Early Humanity Reflected in Modern Literature

The past is always a reconstruction, and therefore always vulnerable to the reconstructor's desires and preconceptions.

More and more, discoveries about prehistoric humans are making an impression on literature. *Mammoth Trumpet* staff felt it might be a service to its readers to provide a suggested reading list of some of the more thoughtful works of fiction that reflect an interest in early humanity.

All the books discussed at length here are both entertaining and instructive. None simply uses a prehistoric setting to add some exotic color to adventure-story formulas. On the other hand, none simply uses fictional form to dress up scientific information. All of them try to reflect what prehistoric people and their life styles might have been like as accurately as possible, and to tell a good tale at the same time. But perhaps what is most memorable in all of them is a meditation upon the traits that make us human—from the mammoth hunter's courage to the scientist's curiosity.

The review must go beyond discussing how works dealing with the nature of the "primitive"—from *Tarzan of the Apes* to *Lord of the Flies*—reflect certain attitudes that also show up in portrayals of prehistoric humanity. In fact, the word "primitive" itself reflects one common preconception often projected on non-technological peoples, and is for that reason a rather poor term. The negative value judgment lurking in it about some supposed "savagery" does indicate, however, how often speculation about early humanity gets bound up with the age-old Nature versus Culture debate. That is, the idea behind the word "primitive" is that there is an original and essential human nature before civilization gets to it and alters it, whether for better or worse. Thus, depictions of early humans may easily become either pictures of untamed bestiality struggling to survive in an existence that was "nasty, brutish and short" or, going to the other extreme, of Noble Savages still living in the Garden of Eden. For obvious reasons, the better works of fiction not only try to avoid these two extremes, but often call into question the dichotomy itself, as we shall see.

Some stories use an archaic setting, but do not really reflect very centrally on early human traits. Clifford Simak's *Mastodonia* and Julian May's four-volume *Pleistocene Saga* are examples. This is not a criticism, of course: these works simply do something else. They do bring up another matter, however. Although two of them were not published as such, these stories fall, necessarily and by definition, into the context of science fiction, a fact that may disquiet readers used to thinking of science fiction as subliterate junk. In literary criticism, nevertheless, that is rapidly becoming an obsolete notion. Many critics now regard science fiction as a central form of modern narrative because, unlike so-called realistic fiction, it is not hampered by the unexamined notion that "reality" is found only in, say, reflections of twentieth-century urban America. They also recognize that, as for literary quality, science fiction writers like Samuel Delany or Michael Bishop are often far more sophisticated than the average realistic novelist.

Some write science fiction occasionally rather than habitually. Among them is William Golding, whose credentials include the 1983 Nobel Prize for literature. His 1955 *The Inheritors*, the story of an encounter by Neanderthals with a Cro-Magnon tribe, was quite possibly the first novel ever to attempt a truly sympathetic portrait of prehistoric humans. Indeed, some historical perspective is required to understand how original it was when it initially appeared. The first early human fossil, the skull of a Neanderthal, was discovered in 1856, and was almost immediately caught up in the furious debate over Darwin's *Origin of Species*, published in 1859. T.H. Huxley, one of the most eminent spokesmen for the Darwinian theory, examined the skull in 1863 and declared unequivocally that the creature it belonged to was no mere humanlike ape but undoubtedly human. Despite that, when a Neanderthal skeleton complete enough for examination was finally turned up and given to a renowned paleontologist named Marcellin Boule in 1911, Boule spent three volumes "proving" that Neanderthal Man was a brutish creature who walked like an ape and was, at best, only a little smarter.

The stunning fact that should never be forgotten was that Boule's view was not formally refuted until 1957, when it was finally demonstrated that he had not only assembled the skeleton wrongly but had discounted evidence that its bent posture was due to arthritis. For what it established, at the very inception of early human studies, was the principle that there are no pure facts: the past is always a reconstruction, and therefore always vulnerable to the reconstructor's desires and preconceptions.

The point is that Boule's view became more or less the common one of Neanderthal people, and is recorded in H.G. Wells' 1921 sketch "The Grisly Folk." Wells' Neanderthals are given, as an indication of how much dignity they are accorded, the names of Click and Waugh, which makes them sound like a "cave man" version of Cheech and Chong, though the tale is anything but humorous. A description of these "gorilla-like monsters" also made its way into Wells' immensely popular and influential *Outline of History*. Golding quotes this passage as epigraph to *The Inheritors*, and, two years before the refutation of Boule's reconstruction, writes his novel relentlessly in the teeth of its Victorian myth of progress. He was not the first to contrast modern humanity unfavorably with Neanderthal. L. Sprague de Camp, for one, had done so in science fiction as far back as 1939 in a satiric story called "The Gnarly Man," where an anthropologist discovers a living Neanderthal in a circus side show. But "The Gnarly Man" is a lighthearted story; Golding is deadly serious. He still accepts the assumptions of a fairly apelike gait and restricted intelligence: technologically, his Neanderthals have fire and stone tools but very little else, not even clothing. When a Cro-Magnon steps out of his fur, the hero, Lok, thinks the man has taken off his skin.

But by making Lok something of a simpleton even

by Neanderthal standards (he is the tribal fool or "natural"), Golding accentuates his major theme: that the Neanderthal were probably, like the animals, relatively innocent or "unfallen" creatures. This is not just sentimentality. The calculated cruelty of distinctively human evil is probably bound up with processing a brain capable of abstraction. The first abstraction, as Descartes showed, is the concept of "I," and with self-awareness comes the possibility of egotricity, of corruption. Lok's healthy animality and natural affections are contrasted with a Cro-Magnon orgy that acquires overtones of a drunken sado-masochism; his gentle though awestruck earth-goddess religion is compared to a Cro-Magnon hunter's sacrifice of a finger to his bloodthirsty patriarchal deity. It does not matter: the race of Abel is wiped out in short order, and the race of Cain survives, in Golding's view, to become our ancestors.

The Inheritors is dark, but makes for powerful reading. The same is true of a very intense story in Harlan Ellison's 1972 landmark anthology *Again, Dangerous Visions*, i.e., David Kerr's "Epiphany for Aliens." Here, as in de Camp, living Neanderthals are discovered in modern times; as in Golding, modern people exterminate them without being able to stop themselves. The protagonist, a woman scientist, gives herself sexually to a ferocious Neanderthal (who kills her immediately afterward) because she is so utterly alienated from her own egotricism and that of technological civilization. She becomes fascinated by the Neanderthal as a sort of incarnate *id*, the ultimate macho he-man, barbarian vitality versus civilized decadence. Obviously, this is only her own self-destructive projection; but the woman has become too neurotic by that time to see through it.

No cheerful bedtime stories, these. The reason is that meditations on prehistory eventually intersect with the very old philosophical debate already mentioned: does the essence of the human lie with Nature or Culture? For if we knew this, some people argue, we would also know the origin of human evil. If humanity is by *nature* good, then we would agree with Rousseau and the get-back-to-the-Garden people that culture and civilization are only an imposition, a set of chains to be thrown off by an at least potentially Noble Savage. On the other hand, if human nature is inclined to evil, as in the older doctrine of "original sin" (or the newer one of progress up from the "primitive"), culture is our salvation from savagery. If it sounds quaint and unenlightened to say that human nature is innately evil, remember that the concept is reflected everywhere from Shakespeare's portrait of Caliban, the "natural man" in *The Tempest*, to Freud's *Civilization and Its Discontents*.

Some writers try to escape from this dualism. Jean M. Auel's *The Clan of the Cave Bear*, the 1980 best-seller about a Cro-Magnon girl, Ayla, who grows to maturity among a tribe of Neanderthals, tries to balance these opposites through some extraordinary speculation. Ayla's adopted people, the Neanderthal Clan of the Cave Bear, do not have her ability with abstraction. One of the most wonderful episodes in the novel is that in which Ayla astonishes the clan's wise man, who can dimly, with effort, grasp the concept of "twenty" (two sets of ten fingers), by immediately recognizing the possibility of thirty, forty, fifty, etc. Neanderthals' ability to think relationally is also limited by a language consisting in large part of gestures, a compensation for inadequate vocal apparatus. Consequently, they cannot invent: their life style has not changed in 100,000 years, and they are dying of stagnation. They have not even achieved any

IMPLEMENT

real distance from the dominance patterns of apes, and Ayla's tragedy lies in her ability, though increased intellect, to *desire* what no other tribal female can even *conceive*: freedom from subservience to males, and liberty to hunt like them.

But if they cannot invent, the Neanderthals can *discover*, and in 100,000 years they have discovered an enormous range of folk medicine, food preparations, tool technology and uses for animal parts. Auel has done a lot of painstaking research here, and Neanderthal lifestyle sounds nearly as comfortable as life at Walden Pond, except for the weather. Much more importantly, the clan shares a communion from which we are agonizingly excluded. Neanderthal people had the largest human brains on record; but it was the part of the brain associated with memory, that was developed, over the frontal lobes connected with abstract thought. And so, Auel has made a breathtaking assumption: what if the Neanderthal could reach back, behind even a perhaps-photographic personal memory, into racial memory, Jung's collective unconscious? Auel's clan is in a certain sense telepathic, and can dream its way in ritual through the entire evolutionary past, from amoeba forward, while modern people are still struggling with Genesis 1. If the Neanderthals lost the future, perhaps we have lost the past.

The Clan of the Cave Bear is a good yarn spun from a serviceable prose. Michael Bishop's 1982 **No Enemy But Time** is more in the way of a stylistic *tour de force*. Where the stories mentioned so far deal with Neanderthal people, Bishop is fascinated by *Homo habilis*. History repeats itself with variations: where the Neanderthal debate turned on the question of *sapiens* or non-*sapiens*, the *habilis* debate has turned on that of *Homo* or non-*Homo*. Bishop's hero, Joshua Monegal, opts for *Homo*, and puts his money where his mouth is by going back in time, mating with a habilene woman, and fathering a child. True, the author has to manipulate biology a little here: Joshua's mate Helen is a mutation, anatomically a bit more advanced than the rest of her people. (She is named by Joshua from a Poe poem, because Poe wrote that life is a "dream within a dream," and Joshua time travels by racial dreaming—exactly like the hero of one of the very first prehistoric tales, Jack London's *Before Adam*, 1906, curiously enough). But the point stands: Joshua is an American black with Hispanic blood; and the way that the "civilized" world treats such a racial combination ensures that when he finally comes to live with habilene people for two years, he feels accepted and at home for the first time in his alienated, embittered life. *Homo habilis* of course have fewer creature comforts to offer a *sapiens* outcast than the Neanderthal, but there are no harsh winters to endure. Though they can sing hauntingly, their speech is pretty limited. But they can love, and are as gentle as, say, the Kalahari Bush people are alleged to be.

We learn quite a lot about Joshua's modern upbringing because the book's chapters alternate between modern "reality" and prehistoric "dream." Structurally, what this does is to create the impression of mirror-worlds, a common symbol of alienation and split consciousness in literature. (Poe, who figures persistently in this novel, is full of mirrors for that reason). Joshua, like many an archetypal quest hero, in his time-travel dreaming has to make a sort of underworld journey into a mysterious realm connected with both dreams and primordial nature, to find out some secret about his identity that will heal the psychic wound he carries within him. His antagonist—the dragon he has to kill, so to speak—turns out to be time itself: the title comes from a Yeats poem that says the beautiful have "no enemy but time." Beyond a delightful dramatization of *Homo habilis*, what Bishop offers to **Mammoth Trumpet**'s readers especially is the suggestion that all of us who feel drawn to the prehistoric human past are, like another American black, in search of our "roots," or, in the words of Proust's novel, "in search of lost time."

Two recent stories deal, though indirectly, with Cro-Magnon people. Guy Davenport's "Robot," in his book *Tatlin!*, is a recreation of the discovery of the cave paintings of Lascaux. Clifford Simak's "Grotto of the Dancing Deer" recounts a man's discovery that one of the Cro-Magnon artists is still living—and still painting—immortal yet incognito, much like de Camp's Neanderthal. Simak's tale is simple and lyrical;

Davenport's, ultimately even more moving, is elaborated with a richness of language and an intellectual power almost without equal in contemporary fiction. The story concerns the cave paintings, but it is also about much, much more. It is embedded in a book that has as one of its recurrent motifs the idea that the past is not vanished and inaccessible but always potentially, like the kingdom of heaven in the Gospels, within or in the midst of us, ready to come alive again if only we are worthy of the encounter. In the course of the story, the famous and historical excavator Abbé Breuil recounts a visit paid him by a young Spaniard

One of the recurrent motifs is the idea that the past is not vanished and inaccessible but always potentially, within or in the midst of us, ready to come alive again if only we are worthy of the encounter.

while he was working at Altamira. The Spaniard could speak no French, but studied the cave paintings of horses and bulls with "a terrible look on his face, wonder and admiration, a kind of worship." His name was Picasso, and when he painted a picture years later in commemoration of the nearby town of Guernica, it was dominated by a horse and archaic bull: the past recaptured, recreated through the human imagination.

For the past, according to all these writers, is always an imaginative reconstruction, however scientific the method involved. That does not mean the process is merely subjective: the self-critical factors of adherence to evidence (the actual bones, tools, etc.) and logical argument are still relevant to any interpretation, whether artistic or scientific, of what early humans and their lives were like. But for any theory or representation to cohere, some vivifying principle has to enter the picture. The opening sentence to Wells' "The Grisly Folk" is Ezekiel's "Can these bones live?" and the answer can only be: only insofar as the constructive power of the human mind can animate them.

We have approached the threshold of the Neolithic in our survey—really beyond the Pleistocene purview of **Mammoth Trumpet**. Still, I would like to close by recommending Samuel Delany's *Neveryon*, series,

of which the third and final volume, *Flight from Neveryon*, has just been published. For Delany's fantasy trilogy is the apotheosis of the theme of reconstructing the human past: its motto might be Blake's "As the eye, so the object." Perhaps it should be consulted by all students of human prehistory for its complex but brilliant meditation on the problems of model-making when human feelings are involved. Every time the complacent, Victorian-sounding narrator (not Delany) says something like "in those primitive times" (meaning the borderline Neolithic of its setting) we laugh, for the obvious wider intention of the series is really to invite us to become *aware* of our own preconceptions—particularly those most dangerous ones that tend to dualize everything into black-and-white, either-or terms: past/present, Nature/Culture, primitive/civilized, rational/irrational, normal/perverted, masculine/feminine. Such terms have their uses, but only when conceived dialectically, like the Taoistic *yin* and *yang*, where each is inherent in the other and continually challenges and recreates the other—not as mere dichotomies. We laugh, but we wince and are thoughtful, for we recognize such dichotomizing tendencies in ourselves, and know that they are the fruit of that fatal tree of all dualisms, the tree of the knowledge of good/evil.

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Principal Works Mentioned

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- H.G. Wells, "The Grisly Folk," 1921.
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- Samuel R. Delany, *Tales of Neveryon*, 1979, Neveryóna, 1983, and *Flight from Neveryon*, 1985, all from Bantam.

Drawing contributed to the Mammoth Trumpet by Eugene R. Gryniewicz.

LOST IN TIME



Students from Auburn University recreate scenes from past cultures in the Southeastern U.S. as part of a dramatic 1 hour documentary to air this fall on PBS.

Lost in Time is an hour-long, award-winning documentary that traces the story of the Southeast's very early inhabitants, from their crossing of the Berengian land bridge 12,000 years ago to the arrival of Hernando de Soto in A.D. 1540. It will air nationwide on PBS Tuesday, September 24th at 10:00 PM Eastern time (check local listings) as part of American Indian Week celebrations. Developed by Auburn Television, with funds from the Committee for the Humanities in Alabama (CHA) and the private Linn-Henley Trust, *Lost in Time* shows not just the history of these early Indians but also the methods modern scholars use to interpret the past.

The idea for the film came from Birmingham publisher John Henley III, who was concerned about the way Southeast history, particularly prehistory, is taught in public schools. He approached Auburn Television with the idea of producing a film to shed some light on the subject. Joseph O. Vogel, Associate Professor of Anthropology at the University of Alabama and former director of the state museum of natural history, served as the filmmakers' emissary to the state archaeological community, and consulted with the producers on the script. He also appears on camera to explain some of the analytical techniques scholars use to "make suggestions" about the life of ancient Americans.

Taped at key archaeological sites in the southeastern region of the U.S., *Lost in Time* blends dramatic recreation, prehistoric artifacts and more into a sweeping history that begins when mammoths, saber-toothed cats, and camels roamed what is now Alabama. The film takes the viewer through three eras of human prehistory. It starts with migration, 10,000 to 12,000 years ago of Paleoindians from Asia to North America, and goes on to tell how a warming climate led to the development of new hunting and food processing methods that characterize the 7,000-year period of the Archaic tradition. The final segment of the film presents details about the sophisticated Mississippian culture that developed 1,000 years ago along Alabama's Black Warrior River, now known as Moundville.

For information about acquiring the film for educational purposes, contact the producers at: Auburn Television, Auburn University, AL 36849.

ESMÉE WEBB . . . BRINGING AN OLD WORLD VIEW

Specialists on New World prehistory are almost always from the New World themselves. Esmée Webb is one of very few exceptions—an English archaeologist from the University of London who has become involved with the question of the peopling of the Americas. The Center for the Study of Early Man and the Institute for Quaternary Studies at the University of Maine at Orono hosted Webb this year during part of her visit here on a Fulbright grant, while she gathered information for a projected book that will attempt to evaluate New World archaeological controversies from an Old World perspective.

In Webb's experience, informed views of New World data are not at all common across the ocean. "If you asked the average European archaeologist what they know about the archaeology of the early Americas, the answer would be: 'nothing.' By and large, it's not taught, for obvious reasons in that it's difficult to get over here, and the museums in Europe don't have the collections that allow you actually to study the artifacts firsthand." Libraries tend to lack necessary resources. European governments are not likely to be enthusiastic about funding American studies; yet American funding tends to go by priority to Americans. Trans-Atlantic researchers like Webb risk being stranded in a monetary limbo.

The worst result of these practical difficulties is a sort of fatalistic resignation. People say: well, maybe nationals should be content simply to study the archaeologies of their own countries. Webb profoundly disagrees: such a result would perpetuate an insularity potentially unhealthy for the field. Her own interest in the Americas in fact grew out of a dissatisfaction with the course she had been teaching at the University of London, which she and others came to feel should be expanded in perspective by including recent discoveries in the New World and Australia. This was in 1976-77. Knowing something already about Australia from talking to visiting excavators, Webb concentrated on trying to educate herself about the Americas. She has made trips to North America in 1978, 1982, 1983, and 1984-1985, during which she has inspected much of the evidence pertaining to the original inhabitants of the continent. Webb regrets that shortage of funding has limited her pilgrimages to the sites and collections. But she still feels that her Old World background gives her an original perspective that could result in a genuine contribution to New World archaeology.

Basically, Webb feels that she has three things to offer: detachment, originality of training, and acquaintance with analogous Old World artifacts. First of all, her status as a European and relative newcomer makes her more or less a disinterested third party in the debate over alleged pre-Clovis sites and artifacts (i.e., evidence with proposed dates behind the commonly accepted frontier of 10,000-15,000 years ago). In fact, the first American to recommend she come over felt she might be more likely to be accepted as a neutral by both sides in the argument—or, if nothing else, as a fresh eye.

Second, Webb's approach to her adopted interest marshals behind it a rich and many-sided education, quite different in some respects from that of most American archaeologists. Her first love had always been stone tools, but when she was an undergraduate, it was not possible to specialize in prehistory, only in Roman or Classical archaeology, Egyptology, etc. So, like many English students, she went on at the University and read history. As a result, her B.A. is in medieval history and philosophy. Her fluency in French enabled her later to go to France and work with François Bordes at a middle Paleolithic site called Pêch de l'Azé (in local dialect, "hill of the ass"). Bordes was a revelation: he ate, lived, and slept prehistory, and his typology of stone tools is still standard for the middle Paleolithic in Europe. Moreover, he introduced her to flintknapping. After supper at a local inn, they would go in the evenings to his cottage in the Dordogne, near the excavation site, and practice making tools in the garden. Webb claims not to be very good at it—"I seem to be firmly stuck in the lower Paleolithic"—but Bordes impressed on her the importance of knowing what can happen when one hits a piece of stone. There is a limit to the potential range

of shapes a stone will take, and this is particularly important for people to know who are dealing with the older, possibly pre-Clovis materials.

Webb's M.Phil. in archaeology from the University of Newcastle covered the usually British specialties—Neolithic, Bronze, Iron, Roman—and she has excavated sites dating from the Pleistocene to the 15th century A.D. The only degree she has not added to her collection is a Ph.D., because the man she went to Cambridge to work under died. Recently, though, she has earned an M.Sc. in Quaternary geology, because she considers it extremely important to understand the whole environment of a site in order to be able to judge the status of its supposed artifacts. "Basically, in Europe, if you work as a Pleistocene archaeologist, you come out of the earth sciences; you don't come out of an anthropology department. In fact, we have very few anthropology departments."

She finds a number of differences between British and American archaeology students. "You go to university for only three years in Britain, to study just one subject, and you've already decided what that subject is going to be, so that it is possible to graduate with a degree in archaeology having studied it exclusively for three years. The practical skills of excavating are an integral part of the course, so that we are trained to draw plans and sections, to be able to use simple surveying instruments, to take, process, and print our own photographs, and to make our own artifact draw-

"I feel particularly with stone tools that it's absolutely essential that you draw them, because it isn't until you sit down and try to draw it that you really begin to ask yourself the questions about how it was made that are fundamental to understanding the artifact."

ings. Each individual ideally is supposed to be able to produce a full excavation report for the public."

"I feel particularly with stone tools that it's absolutely essential that you draw them, because it isn't until you sit down and try to draw it that you really begin to ask yourself the questions about how it was made that are fundamental to understanding the artifact." The book Webb is writing on New World questions will indeed include some of her own drawings.

This leads us to Webb's third possible advantage, an acquaintance with Old World artifacts. She definitely does *not* mean to imply that she advocates making the European Paleolithic a model for New World studies. Her approach is comparative, but it is the difference that can be most illuminating. The European culture contemporary to the earliest generally-accepted American material is the Magdalenian, which flourished some 12-15,000 years ago between glacial maximum and glacial warmup. It is best known for producing the great cave paintings of the Dordogne region. If people came from Siberia into North America at the end of the Pleistocene, they necessarily resembled the Magdalenians in being hunters who were able to cope with cold weather. We should therefore expect a comparable range of hunting and cold-weather technologies, but not necessarily comparable styles.

At any rate, the Clovis and Folsom points represent more or less the kind of hunting technology expectable under the circumstances. But the kind of evidence surviving in Europe to indicate cold-weather clothing and even tents (needles and pins, post holes) has not yet made an appearance in the New World. Making the (perhaps risky) assumption that it was the women who used the pins and needles, there may be an unintended accuracy in speaking of the study of early *man* in the New World. Women's activities may be underrepresented in the archaeological record. This

points towards what Webb sees as the major difficulty with the whole "Clovis model," that it implies a whole culture or tradition and yet is discussed mainly in terms of only one artifact type, projectile points.

The purpose of Webb's book will be to reconsider the Clovis question more broadly, paying less attention to the projectile points and more to the whole spectrum of Paleoindian technology, which no one, she feels, has yet fully described. It will not be a site-by-site catalogue, nor will it be dealing with South American data. The purpose will be more conceptual: to give a picture of the whole New World environmental set-up during the last glaciation as an Old World archaeologist, familiar with the comparable period in Europe, might see it. She will consider claims for pre-Clovis material, but (as the foregoing discussion intimates) Webb is skeptical about most of them. She will be returning to England in August, where she hopes that her teaching schedule will enable her to continue with the actual writing.

—Michael Dolzani

New References and Resources—

Journal of Southeast Asian Earth Sciences is a new quarterly to be published by Pergamon Press. The first issue will appear late this year; the journal will be an international interdisciplinary publication related to the earth sciences in Southeast Asia. The journal will emphasize research papers, but it will also carry short communications relating to new developments of broad interest, book reviews, and reports of meetings. Editor in chief is: B.K. Tan, Department of Geology, University of Malaya, Kuala Lumpur 22-11, Malaysia.

Quaternary of South America and Antarctic Peninsula is a journal edited by Jorge Rabassa (La Plata, Argentina), published by A.A. Balkema Rotterdam. The journal, issued annually since 1983, presents papers on the Quaternary, in English. Hardbound only, the cost is approximately \$23/year. Available through M.B.S., 99 Main St., Salem, NH 03079.

La Période Paléolittienne (Des Éléphants, Des Caribous . . . Et Des Hommes), Volume XV, Nos. 1-2 of *Recherches Amérindiennes au Québec*. Traces the development of humans in North America after the retreat of the glaciers. Papers include: *Présentation sur les traces des premiers Québécois, Claude Chagnon*; *Mémoire d'éléphants . . . , Norman Clermont*; *Paléogéographie du Québec, méridional entre 12 500 et 8000 ans BP, M. Parent, J.-M.M. Dubois, P. Bail, A. Larocque, et G. Larocque*; *Couvert végétal et paléoenvironnements du Québec entre 12000 et 8000 ans BP: L'habitat dans un milieu changeant, Pierre J.H. Richard*; *Recherches archéologiques au site paléolittien de Vail, dans le nord-ouest du Maine, 1980-1983, Richard M. Gramly*; *La période paléolittienne sur l'île du Prince-Édouard, David L. Keenleyside*; *Blanc-Sablon et le Paléo-Indien au détroit de Belle-Isle, Dominique Groison*; *Trois sites paléolittiens sur la côte sud de l'estuaire du Saint-Laurent, Pierre Dumais et Gilles Rousseau*; *Le site CeEu-10, Une occupation préhistorique ancienne de la région de Québec, Ian Badgley et Paul Boissonnault*; *Le Complexe Plano de Témiscamie est-il une illusion? Charles Martijn*; *Glossaire paléolittologique et archéologique pour la période paléolittienne, Jean-François Moreau*. \$10.50 (Canadian dollars), available from: *Recherches Amérindiennes au Québec*, 6200, de-St-Vallier, Montreal, H2S 2P5, Canada.

Fieldwork Opportunities Bulletin of the Archaeological Institute of America. Published each February, it lists more than 100 excavations seeking volunteers and staff. Prepaid orders (\$4 for AIA members, \$6 for non-members) to: A.I.A., P.O. Box 1901, Kenmore Station, Boston, MA 02215.

Woman, Poet, Scientist: Essays in New World Anthropology Honoring Dr. Emma Louise Davis, compiled by the Great Basin Foundation and edited by Thomas C. Blackburn. A collection of 13 papers on the topic of early peoples in western North America. Ballena Press Anthropological Papers No. 29. 160 pages, illustrated, references, ISBN #0-87199-106-6. Price is \$21.95 plus \$1.25 postage and handling. California residents please add sales tax. Available from Ballena Press, 381 First St., Los Altos, CA 94022 or the Great Basin Foundation, 1236 Concord St., San Diego, CA 92106. Titles include: *The Dating of Paleoindian Skeletons from California: Implications for the Colonization of the Americas—Jeffrey L. Bada, A Hair, Faunal, and Flaked Stone Assemblage: A Holocene and Late Pleistocene Record from False Cougar Cave, Montana—Robson Bonnichsen and Charles W. Bolen, Evidence for Middle and Late Pleistocene Man in the Central Mohave Desert of Southern California—Fred E. Budinger, Jr. and Ruth DeEtte Simpson, Shores: Perspectives on Paleoamerican Habitat, Subsistence, and Society in the Far West—Joseph L. Chertkoff, Shamans and Power in Western North America: The Numic, Salish and Keres—Jay Miller, Early Human Expansion Around the North Pacific Rim—Herbert L. Minshall, Early Man in the Americas: Who, When, and Why—B.O.K. Reeves, Wisconsinian Glaciation and the Dispersal of Native Ethnic Groups in North America—Richard A. Rogers, Once Again—The Dating of the Peopling of North and South America—Richard Shutler, Jr., Possible Impacts on Early Man of Late Quaternary Lake Fluctuations in the Great Basin—George I. Smith, The Yuha Man Burial of Southeastern California—Rose A. Tyson, A Last Look of Malaga Cove—William J. Wallace, Probable Early Man Migration Routes in the Great Basin—Donald R. Tuohy.*

A PALEOINDIAN SITE COMPLEX IN NORTHERN MAINE

(Continued from page 1)

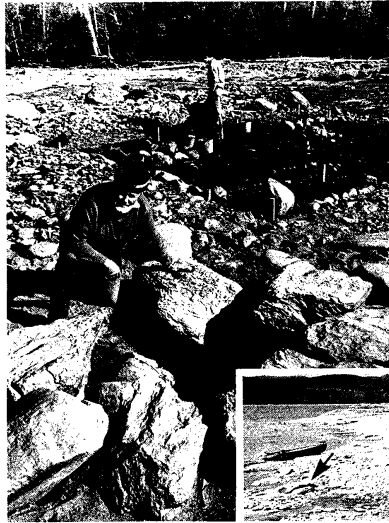
on the edge of one of the loci produced several organic lenses. Gramly sent samples to several laboratories for dating, some by linear accelerator mass spectroscopy and some by the regular radiocarbon method. Gramly feels it was possibly the difference in techniques that accounts for the variety of dates that came back. The same material yielded dates that ranged from 10,200 to 11,100 years B.P.

About 250 m west of the Vail site is Kill Site #1, also discovered in 1980. About 750 m west-northwest of Vail is Kill Site #2, (which yielded two fluted points) discovered in 1983. A fourth discovery near Kill Site #2 is the Wight site, which appeared in 1984 when the water level in the reservoir lowered. This site consists of large bifaces and a very large thinning flake lying on the ground.

The fall of 1984 marked the finding of one of the most interesting members of the complex, the Adkins site, about 1 km south of the Vail site. A stone tool assemblage, including about 100 tools and fragments and two deeply concave fluted points, was found at Adkins. Clear quartz was formed into beautiful scrapers that sparkle like gems, as well as into what Gramly thinks of as micro-tools—gravers and other small tools about 1 cm in size.

Also at Adkins is a pit 1.5 m in diameter and 20 cm deep that lies up against the base of two large boulders (see photo). Based on analogies to Eskimo stone structures catalogued by a 1906 Danish expedition to northeast Greenland, Gramly is convinced that this pit was probably a meat cache. It has a gap about 35 cm wide for a "doorway," and could have held, on rough estimate, the hindquarters of about fifteen animals the size of caribou. This is a kind of structure no one has located in a Paleoindian site before. In arctic areas, such permanent caches were constructed from very heavy rock to discourage scavenging by bears and wolverines which, as Gramly has read, are capable of dislodging a rock it takes two men to move. The Adkins cache seems to have been constructed much like the Greenland versions: other rocks were made to jut over the pit and up against the two stationary boulders, creating a chamber inside, which could have been roofed with a combination of wood and ice. In the fall of last year, the whole structure was mapped, then airlifted to the Maine State Museum, where it will be reconstructed and displayed. By plotting the location of over one hundred flaked stone artifacts next to the cache, Gramly has disclosed, in addition, an oval cluster measuring approximately three by four meters. The oval cluster has a gap, inferred by a sudden absence of artifacts, facing the cache. According to Gramly, this may mark the former location of an entrance to a tent.

Gramly deduced the existence of a sixth site before



A crew member clears washed-in sand from the doorway of the meat cache at the Adkins site. Behind him, others continue excavation of a possible tent site. Inset, looking north along the shore of Aziscohos Lake, shows the cache at the time of discovery. (Photos: Buffalo Museum of Science, courtesy of M. Gramly.)

he actually discovered it. Of the two reworked fluted points found at Kill Site #2 in 1983, one was of Munsungun chert. As the people at the Vail site had not used such a material, Gramly assumed there must be another site whose inhabitants had used it. And he was right; in May, 1985, the Morss site was found on a flat point jutting out into the lake about 1.5 km north of the Vail site. It is a fairly simple site, consisting of three loci, two of which are possibly related. In one of the latter two loci, Gramly found the base of a fluted point made of red chert whose reworked tip showed up in the second locus. About 20 m away, the main locus contained a reworked fluted point and assorted utilized flakes—gravers and side scrapers. But, unlike the similar-sized tool assemblage at the Adkins site, there were no trianguloid end-scrapers.

Gramly has published on the Vail site, and intends eventually to produce a monograph on all of the sites. Their interrelatedness as a complex, and not a simple aggregate, is what he wants most to emphasize. Each site taken individually is not so interesting or informative as the expanded picture of an entire regional network of human habitation. Gramly is comparing the similarities and differences among the sites, and

trying to deduce as far as possible from the physical evidence how the people who established each of them might have been related or have interacted. Says Gramly, "We tend to focus on the internal dynamics of particular sites and not enough on why the site is there. The great benefit from continuing to do fieldwork in an area is to get a cluster of sites that are somehow related to one another; then you begin to get as close as you really can be to doing anthropology for this early period."

For example, of the three major sites, the Vail site sits in the center with the Morss about 1.5 km north and the Adkins about 1.0 km south of it. Gramly believes the lithics at the Adkins site derive from southern sources in middle New Hampshire, the lower Champlain valley and eastern Maine, while those at the Morss include Munsungun chert like that 150 miles to the north—a rather remarkable distance. The Vail site has now shown a smattering of the lithic materials from both north and south, but for the most part employs local material from a nearby quarry called Ledge Ridge. The question is, can one draw any conclusions from this about population movements? Gramly theorizes that it is as if the valley were entered twice, colonized from two directions.

Obviously, more data might help clarify such relationships, and Gramly is sure that more sites will turn up belonging to the complex, which is the biggest reason he has so far put off writing up the composite data into an overall study.

His 1984–85 searches, funded by the Maine Historic Preservation Commission, provided a number of possible new leads. In the fall of 1984, for instance, sand-sifting near Kill Site #1 produced a late-Paleoindian Plano point. Plano points do not occur at Vail, so Gramly believes it is reasonable to assume that there might be a Plano point site nearby. The Ledge Ridge area north of the Vail site (in Maine, but nearly on the Maine-New Hampshire border) remains tantalizing; there, a difficult-to-reach chert outcrop has been hammered upon, and flakes have been found in the soil. Elements in the flakes overlap nicely under X-ray fluorescence with those contained in Vail artifacts. But since no fluted points have been found, it remains as yet only a strong inference that this was a Paleoindian stone workshop.

Specimens from the complex will be on exhibit both at the Maine State Museum, Augusta, Maine and at the Buffalo Museum of Science in Buffalo, New York, where Gramly is Curator of the Anthropology Division. He will be coming back to Maine to continue his work on this expanding group of sites.

Sets of slides on the Vail Site are available for purchase from the Buffalo Museum of Science, Humboldt Pkwy, Buffalo, NY 14211.

—Michael Dolzani

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Animal Remains from Archaeological Sites

D. Gentry Steele and B. Miles Gilbert, editors.

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CONFERENCES

12th International Radiocarbon Conference

Approximately 300 delegates at this triennial conference held in Trondheim, Norway, June 24-28, heard the usual glowing reports of how well the various gas, liquid and solid counters (traditional Beta particle counters) are performing. Of greater interest to the larger community of radiocarbon users were the developments at the two extreme limits of the method: large-sample, high-precision dating of tree ring clusters and small-sample, moderate precision dating of a remarkable variety of substances.

Fluctuations in the amount of Carbon-14 in the atmosphere have occurred throughout at least the past 10,000 years. It is because of this fluctuation that the radiocarbon timescale must be calibrated, usually using the absolute timetable established by the year-to-year tree ring chronology (dendrochronology). The calibration of the radiocarbon timescale, by extremely accurate and precise measurements on 10 or 20 year blocks from trees grown in both Europe and North America, is nearly complete. The 7,000 year curve presented by the Belfast (Ireland) group (using the liquid scintillation Beta particle counting technique) almost exactly overlaps the curve from the Seattle (Washington) laboratory (using the gas proportional Beta particle counting technique).

Archaeologists working with remains dating less than 10,000 years old have been given a plethora of calibration tables to use to interpret their "raw" radiocarbon dates. Some justifiable frustration from the archaeologists was eloquently expressed during the conference. The need was expressed by both radiocarbon laboratories and archaeologists that a universally applicable set of data be made readily available.

New terminology for calibrated dates was agreed upon (by no means unanimously): 1) raw, conventional ages remain as "years BP" (years before present), 2) dendrochronologically corrected ages are now "Cal BP" or "Cal AD/BC." The use of other dating techniques such as TL (thermoluminescence), K/Ar (potassium/argon, a ratio technique usually for dating volcanic material), and U/Th (uranium/thorium, a ratio technique often used for dating cave formations), among a host of other techniques, should be encouraged to explore whether their terminology and calibration can be brought into agreement as well.

Papers concerning the relatively new radiocarbon dating technique, TAMS (tandem accelerator mass spectroscopy; also termed AMS, leaving off the word tandem) accounted for 25% of the conference. Most radiocarbon accelerators can now produce results comparable with the average traditional Beta-counting laboratories, a precision of

$\pm 1\%$ and an age range back to 40,000 yr BP. The lack of accurate 13/12 ratios (other carbon isotopes) and uncertainties about accelerator beam current and background levels hinder progress with the TAMS technique. Several experiments with gas inlet ion sources may offer better performance in some cases, though this has yet to be proven. There were many demonstrations of the capabilities of present TAMS systems to yield useful data on small volume samples. These include carbon from cores taken of polar ice, foraminifera (tiny marine animals whose shells form the bulk of chalk and some limestones) from ocean sediments, atmospheric gases, archaeological cultigens (e.g., a single kernel of corn), and finally—blood from a stone (tool)!

Much new effort is going into chemical analysis of samples, noticeably for bones and lake sediments. The dating of more than 20 chemical fractions from a single bone at the University of Arizona (Tucson), and more than 200 different bones using "purified collagen amino acids" at Oxford (England), have brought back confidence in the dating of bones—certainly a needed breakthrough for the dating of the earliest Americans. Well-preserved bone from temperate or dry-cave sites can be routinely dated on less than 5.0 g of whole bone in most cases, and less than 0.5 g of bone recovered in the most favorable conditions. Arid-zone or water-washed bone still requires more efficient (and more gentle) chemistry to be developed. Lake sediments have also been subjected to vigorous chemical separations, yielding individual dates on various definable classes of compounds which can be compared with dates from the more traditional fossils and plant humates.

Radiocarbon dating traditionally is accurate back to about 45,000 BP, with special cases and advanced techniques acquiring dates back to approximately 70,000 BP. Quaternarists are interested in the past 2 million years BP. What is needed are techniques for dating remains from the earlier part of the Quaternary, far beyond the Carbon-14 range. The conference focused discussion on whether isotopes of other elements could be used, from 7Be (Beryllium) to 205Pb (lead). Most attention has been focussed on 10Be and 36Cl (Chlorine), with perhaps the most exciting development involving both 10Be and 26Al (Aluminum).

What it all means for the bemused Quaternary scientist is not yet clear except that patience is in order. Those who need isotope dating should keep in touch with their radiocarbon specialist. Interested Quaternarists can keep up-to-date by reading the articles in the journal *Radiocarbon* and a variety of science oriented archaeological journals. One

hope is that there will be an eventual synthesis of the data from the isotopic measurement and the chemical identifications which is increasingly useful for environmental reconstruction.

—Richard Gillespie, Department of Geosciences
University of Arizona, Tucson, AZ 85721

UPCOMING . . .

Sept. 10-13, 1985 AMERICAN ASSOCIATION FOR STATE AND LOCAL HISTORY ANNUAL MEETING, Topeka, Kansas.

For more information, please contact the American Association for State and Local History, 708 Berry Road, Nashville, TN 37204.

Sept. 20-22, 1985 5th ANNUAL LITHIC WORKSHOP, Washington, Connecticut, USA.

This year's workshop to be held at the American Indian Archaeological Institute, will focus on the Paleoindian through Woodland Period lithic industries centered around source areas of the Hudson Valley cherts. Contact Scott Silsby, Gulf Branch Nature Center, 3608 N. Military Rd., Arlington, VA 22207.

Oct. 31-Nov. 3, 1985 EASTERN STATES ARCHAEOLOGICAL FEDERATION, 52nd Annual Meeting, Buffalo, New York, USA.

Contact Dr. Michael Gramly, Buffalo Museum of Science, Humboldt Pkwy., Buffalo, NY 14211.

May 19-24, 1986 INTERNATIONAL SYMPOSIUM ON ARCHAEOMETRY, Nuclear Research Centre, Athens, Greece. Topics include: non-metals, dating of organic materials (e.g. radiocarbon and other cosmogenic nuclides, dendrochronology, amino acid dating), and dating of inorganic materials (e.g., thermoluminescence, ESR, fission track, uranium series, archaeomagnetism). Deadline for submitted abstracts is mid-November, 1985. Contact Dr. Yannis Maniatis, Archaeometry Symposium, NRC Demokritos, 153 10-GR aghia Paraskevi, Attiki, Greece.

Aug. 25-29, 1986 5th INTERNATIONAL CONFERENCE ON ARCHAEOZOOLOGY, Bordeaux, France.

The conference is soliciting papers and ideas in the field of archaeozoology, defined as, "the study of animal remains connected with the settlements of ancient human groups." Contact Dr. Pierre Ducos, Ve Conférence ICAZ, C.R.E.P., St. André de Cruzieres, France.

Sept. 1-7, 1986 UNION INTERNATIONALE DES SCIENCES PREHISTORIQUES ET PROTOHISTORIQUES, XIth Congress, Southampton and London, England.

Contact Peter Ucko, Department of Archaeology, University of Southampton, Southampton SO9 5NH, England.

July 31-Aug. 9, 1987 12th CONGRESS, INQUA, Ottawa, Ontario, Canada.

Contact Dr. Alan V. Morgan, Department of Earth Sciences, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada.

GEOLOGICAL SOCIETY OF AMERICA MEETINGS

1985 Orlando, Florida (Oct. 28-31)

1986 San Antonio, Texas (Nov. 10-13)

1987 Phoenix, Arizona (Oct. 26-29)

1988 Denver, Colorado (Oct. 31-Nov. 3)

For details: S.S. Breggs, Geological Society of America, P.O. Box 9140, Boulder, Colorado 80301.

GLOSSARY

Lens—a thin non-continuous layer of foreign material, usually thinning toward the edges, within a continuous sedimentary layer. Hearths and other localized human activities are often revealed as lens shaped layers in soil profiles.

Silicified tuff—deposits of volcanic ash and dust which have become impregnated with or converted to silica through geologic action to form a hard, fine-grained stone.

Scute—a section of dermal bone, such as a piece of armadillo or turtle shell, which forms the hard external covering of an animal.

Chalcedony—one of many forms of fine-grained quartz, usually cream-colored and often used for the manufacture of stone implements.

Basaltic cobble—dark colored, fine-grained rock of volcanic origin which has been worn into rounded, brick-sized pieces by stream action.

Unifacial margin retouch—shaping and/or sharpening of a (stone) fragment resulting in the removal of flakes from one side only.

Isotope—any of two or more forms of an element having the same atomic number (number of protons) but different atomic weights (number of electrons and/or neutrons).

Beta particle (β)—one of many particles, in this case an electron, given off by the natural decay of isotopes such as Carbon-14.

Loess—wind deposited, silt-sized particles, usually derived from glacial outwash deposits.

Soil humate—an organic compound derived from the decomposition and further reaction of the humus (organic material) in soil.

SUGGESTED READINGS

On the Vail Site

Gramly, Richard Michael 1982 The Vail Site: A Paleo-Indian Encampment in Maine. *Bulletin 30, Buffalo Society of Natural Sciences*.
Gramly, Richard Michael 1981 Eleven thousand years in Maine. *Archaeology* 34(6):32-39.

Gramly, Richard Michael and Kerry Rutledge 1981 A new Paleo-Indian site in the state of Maine. *American Antiquity* 46(2):354-360.

On Human Burials in Argentina

Fidalgo, Francisco et al., Investigaciones arqueológicas en el sitio 2 de Arroyo Seco. In A. Bryan (ed.) *New Evidence for the Pleistocene Peopling of the Americas*. Orono, Maine: Center for the Study of Early Man. (available soon in Spanish with English abstract)

Politis, Gustavo G. and D.P. Tonni 1982 Archeology of the Pampa Region. *Revista de Pré-Historia* 3(4):109-139. (in Spanish)
Hrdlicka, Ales 1912 Early man in South America. *Smithsonian Institution, Bureau of American Ethnology Bull.* No. 52. Washington, D.C.

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