



MAMMOTH TRUMPET

Volume 24, Number 3 ■ July, 2009

Center for the Study of the First Americans
Department of Anthropology
Texas A&M University
4352 TAMU
College Station, TX 77843-4352
www.centerfirstamericans.com

WE NOW ACCEPT
CREDIT CARDS!



SAM WILLIS, 2004

Two if by sea . . .

What if not all early migrants from Asia trudged across the Bering Land Bridge? If hardy souls made the trip in watercraft instead, we'd expect to find evidence of their presence on the Pacific Coast and along rivers, convenient avenues for exploring inland. Coastal-entry migration is the theory Oregon State University anthropologist Loren Davis has been refining for much of his academic career. Thanks to an endowment that accompanies his appointment as director of the Keystone Archaeological Research Fund, Dr. Davis now has the funds to investigate sites along the coast from Oregon to the Sea of Cortez, in the interior of the Baja California Peninsula, and in the lower Salmon River Canyon of western Idaho—the spectacular backdrop seen in this photo. Our story of his ambitious agenda starts on **page 8**.

The Center for the Study of the First Americans fosters research and public interest in the Peopling of the Americas. The **Center**, an integral part of the Department of Anthropology at **Texas A&M University**, promotes interdisciplinary scholarly dialogue among physical, geological, biological and social scientists. The **Mammoth Trumpet**, news magazine of the **Center**, seeks to involve you in the peopling of the Americas by reporting on developments in all pertinent areas of knowledge.

MAMMOTH TRUMPET



Volume 24, Number 3
July, 2009

Center for the Study of the First Americans
Texas A&M University, 4352 TAMU, College Station, TX 77843-4352

Department of Anthropology
ISSN 8755-6898

World Wide Web site <http://centerfirstamericans.org> and <http://anthropology.tamu.edu>

Early Bear Hunting and Ceremony on the Northwest Pacific Coast



CANADIAN ARCHAEOLOGISTS investigating sites along America's northwest coast have discovered evidence suggestive of bear-hunting rituals dating to the earliest Holocene epoch. These discoveries are shedding light on the ceremonial lives of these ancient people and the Old World Paleolithic roots of these rituals.

Archaeologists Duncan McLaren, Rebecca Wigen, and Quentin Mackie, with the University of Victoria, British Columbia, along with Daryl Fedje of Parks Canada are seeking traces of some of the earliest Americans at a remarkable site on Ellen Island, also known by its native name of Kilgii Gwaay, British Columbia. Ellen Island is near the southern end of the Queen Charlotte Islands, or the Haida

Gwaii, which, in the Haida Nation language, means "Islands of the People." Kilgii Gwaay means "Big Voice Island."

Kilgii Gwaay

The Kilgii Gwaay site, a wet shell midden located in the intertidal zone of a small bay on the south shore of the island, is one of the oldest known coastal shell middens in the Americas. Prehistorically the site was situated immediately above the high-tide mark adjacent to a small pond or lagoon. By 9400 RCYBP rising sea levels had submerged the site; then tectonic uplift in the last 5,000 years raised the landscape. Its present position, 1–3 m below normal high tide, presented a challenge for the excavators because units are exposed only in 3- to 4-hour tidal windows.

INSIDE

5 Assaying the footwear of Great Basin Paleoamericans

Made of twisted bark or tule, 9,000-year-old sandals served their wearers well. They tell OSU anthropologist Tom Connolly a lot about the culture—and the people who wore them.

8 Searching for seafaring First Americans

Thanks to an endowment, OSU anthropologist Loren Davis now has the funds to test his theory that not all colonizers from Asia arrived in the New World on foot.

12 Making sense of the first fluted point found in Beringia

Is the triple-fluted point a relic from Clovis people who reversed the direction of travel of an early migration across the Bering Land Bridge, or was it an independent invention of local inhabitants?

16 Discovering Clovis in the Sonora desert of Mexico

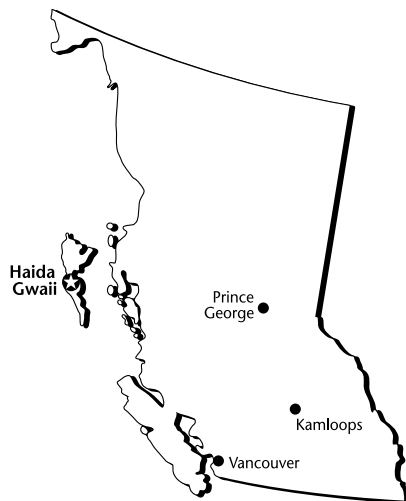
Gearchaeologist Guadalupe Sanchez Miranda finds that Clovis people were right at home south of the future border. They had mammoths for company and toolstone for knapping their distinctive points.

Haida archaeologist Captain Gold discovered the Kilgii Gwaay site in the early 1990s, but it wasn't until 2000 that a detailed study of the site

revealed its potential for answering questions about the First Americans. Intensive investigations in 2001 and 2002 produced a large assemblage of nearly 4,000 lithic artifacts. More remarkably, the extremely wet conditions preserved normally perishable materials such as bone and even wood.

The stone-tool assemblage includes a variety of unifacial tools—scrapers and scraperplanes, spokeshaves, denticulates, and graters—along with a single biface fragment. Bone tools include a barbed point, perforators, and a possible flint-knapping billet. The investigators recovered braided twine and more than 100 wooden artifacts including stakes, wedges, possible points, and wrapped sticks.

Radiocarbon dates obtained for the site indicate it was occupied for a relatively brief period between 9450 and 9400 RCYBP. Rising sea levels not only



sealed the site, but also provided the conditions for the amazing preservation of the largest collection of animal bones from any early site on the Northwest Coast.

Bear bones

The unprecedented quality and quantity of faunal remains at Kilgii Gwaay make it possible to gain detailed insights into the diet of the early-Holocene occupants and may also illuminate aspects of their ceremonial lives.

The faunal assemblage includes abundant bones of black bears, the only large land mammal represented, and marine animals exploited by human hunters including harbor seal, sea otter, river otter, northern sea lion, northern fur seal, a vari-

ety of marine fish, and various sea birds. Cutmarks on bones, patterns of bone breakage that occur when marrow is extracted, burnt bones, and the presence and absence of certain kinds of bone consistent with human decision making are evidence the bones resulted from human activity and not natural agents or erosion.

As of 2005, excavators had recovered 83 bear bones and at least 11 more “large land mammal” bones almost certainly from bears. The high incidence of bear

bones, considering the short period of occupation by the early-Holocene hunters, and the complete absence of bear bones from non-cultural deposits at the site strongly suggest the bones are the result of human hunting. Puzzlingly, the number of cranial and mandibular bones is relatively high, while vertebrae and metapodials (front and rear foot bones) are virtually absent. Teeth are fairly numerous, which isn’t unusual given the extreme hardness of tooth enamel com-



The Mammoth Trumpet (ISSN 8755-6898) is published quarterly by the **Center for the Study of the First Americans**, Department of Anthropology, Texas A&M University, College Station, TX 77843-4352. Phone (979) 845-4046; fax (979) 845-4070; e-mail csfa@tamu.edu. Periodical postage paid at College Station, TX 77843-4352 and at additional mailing offices.

POSTMASTER: Send address changes to:

Mammoth Trumpet

Department of Anthropology, Texas A&M University
4352 TAMU
College Station, TX 77843-4352

Copyright © 2009 **Center for the Study of the First Americans**. Permission is hereby given to any non-profit or educational organization or institution to reproduce without cost any materials from the **Mammoth Trumpet** so long as they are then distributed at no more than actual cost. The **Center** further requests that notification of reproduction of materials under these conditions be sent to the **Center**. Address correspondence to the editor of **Mammoth Trumpet**, 2122 Scout Road, Lenoir, NC 28645.

Michael R. Waters Director and General Editor
e-mail: mwaters@tamu.edu

Ted Goebel Associate Director and Editor, **Current Research in the Pleistocene**
e-mail: goebel@tamu.edu

James M. Chandler Editor, **Mammoth Trumpet**
e-mail: wordsmiths@touchnc.net

Laurie Lind Office Manager

C & C Wordsmiths Layout and Design

World Wide Web site <http://centerfirstamericans.com>

The **Center for the Study of the First Americans** is a non-profit organization. Subscription to the **Mammoth Trumpet** is by membership in the **Center**.

Mammoth Trumpet, Statement of Our Policy

Many years may pass between the time an important discovery is made and the acceptance of research results by the scientific community. To facilitate communication among all parties interested in staying abreast of breaking news in First Americans studies, the **Mammoth Trumpet**, a science news magazine, provides a forum for reporting and discussing new and potentially controversial information important to understanding the peopling of the Americas. We encourage submission of articles to the Managing Editor and letters to the Editor. Views published in the **Mammoth Trumpet** are the views of contributors, and do not reflect the views of the editor or **Center** personnel.

—Michael R. Waters, Director



PARKS CANADA, DARYL FEDJE

pared with bone, but McLaren and his colleagues think canine teeth are somewhat under-represented compared with molars, premolars, and incisors.

Bears and people

Bears were present in the Haida Gwaii by about 14,500 years ago. According to McLaren and coauthors, “glaciations may have promoted, rather than inhibited, coastal range extension by grizzly bears because, during such times, a combination of marine foods and ice bridges may have provided a viable coastal corridor for this species.”

These factors also are relevant for considering the migration of people into the region, but the earliest documented human presence here is not until around 10,600 years ago.

There is relatively little evidence for bear hunting in much of late-Pleistocene North America. Questionable associations of artifacts with grizzly bear bones, dating from about 9,500–8,000 years ago, have been recovered from Lime Hills Cave 1 in southwestern Alaska. Grizzly bear bones, some exhibiting apparent cutmarks, also have been recovered from Bluefish Caves in the northern Yukon Territory. At the Wewukiyepuh site along the Snake River in Idaho (10,300 RCYBP), Paleoindians butchered and ate a grizzly bear and an elk. On Your Knees Cave, the southeastern Alaska site made famous for the Paleoindian human skeletal remains discovered there (MT 20-4, “Exploring the Northwest Coast: E. James Dixon and the Peopling of the New World”), also included bones from both brown and

black bear. It has been suggested that these human remains may, in fact, represent an unsuccessful bear hunter (MT 14-1, “Charting the way into the Americas”).

In contrast, McLaren and his fellow researchers have assembled evidence from a number of sites from the same general period indicating that bear hunting was quite important to the earliest people in the Haida Gwaii. K1 Cave and Gaadu Din are limestone caves in which Fedje, McLaren, and Mackie have recovered bear bones associated with artifacts. Limited investigations at other cave and intertidal sites by Fedje and Mackie, working with others, also have yielded bear bones as part of the faunal assemblages. McLaren and colleagues sug-

Kilgii Gwaay (Ellen Island).



Holistic archaeology

McLaren, Wigen, Mackie, and Fedje draw upon archaeology, ethnography, and biology to interpret the data from Kilgii Gwaay. They argue that “traditional and folk knowledge provide an essential complement to scientific data in our attempts to understand human-animal interactions.”

The Haida are the indigenous inhabitants of Haida Gwaii. According to the Haida Nation

McLaren excavating at K1 Cave (left), Mackie excavating at Gaadu Din cave (below).



BOTH: PARKS CANADA, DARYL FEDJE

Web site, they have lived there since “time immemorial.” Today there are about 5,000 Haida living in the islands.

Historically, the Haida hunted bear using two principal tactics. In winter, when a den was found, hibernating bears were roused and killed as they

emerged. In summer, hunters set deadfall traps along trails traveled by bears. Regardless of the method employed, the Haida, like many northern peoples, invested bear hunting with a great deal of ceremony. Bear hunting wasn’t practiced merely as a means of subsistence, but as a kind of religious covenant

between hunter and prey. McLaren and coauthors note that there were “rites involved in the waking, dispatching of, and removal of a bear from its winter den.”

According to Irving Hallowell, author of an important study of bear ceremonialism, “no other animal was found to attain such universal prominence as the bear.” Bears played a key role in the belief system of all the indigenous cultures of the Northwest Coast. An important question relates to just how far back in time this kind of ceremonialism can be traced. According to McLaren and his fellow researchers, the Kilgii Gwaay

An in situ bear mandible with visible cutmarks from an intertidal excavation unit at Kilgii Gwaay.



PARKS CANADA, DARYL FEDJE

site is yielding evidence for bear ceremonialism going back to the earliest human presence on the island.

Evidence for ceremony

For the Haida, bears were more than a source of food. The bear bones found at the Kilgii Gwaay site suggest the special relationship between bears and people extended back at least to the early Holocene.

The relative abundance of cranial and mandibular bones from black bears at Kilgii Gwaay cannot simply be explained by their economic value to the ancient hunters. Although brain and tongue are enjoyed by native peoples, the head is not ranked high for overall food value and skulls are not often carried from the butchery sites. Therefore the relatively high frequency of skulls and skull fragments at Kilgii Gwaay may indicate that heads of bears were being saved and used for purposes other than providing a meal. Perhaps they fulfilled a ceremonial function in the lives of the early inhabitants of Kilgii Gwaay.

Working at a shored intertidal excavation unit at Kilgii Gwaay are (left-right) McLaren, Allan Davidson of the Haida, and Fedje.



PARKS CANADA, QUENTIN MACKIE

This is supported by the purportedly low frequency of canine teeth relative to other kinds of teeth. According to McLaren and his coauthors, the rarity of canines might reflect “their value and curation as charms or talismans.” Considering the small numbers of teeth recovered, however, it is also possible that the apparent rarity of canine teeth in the Kilgii Gwaay faunal assemblage simply may be a statistical anomaly.

Finally, and most importantly, 35 of 70 bone fragments that

exhibited burning are from large mammals, probably bear. This compares with one burnt sea mammal bone and 29

burned fish bones. This pattern suggested to McLaren and his co-researchers that bear bones (and possibly fish bones as well) had been “specially disposed of through cremation.” Although it’s possible bones were burned as fuel for fires, the researchers note that more efficient wood fuel was abundant when people

occupied the site.

The disposal of bear bones through burning is consistent with observed “ethnographic patterns of ceremonialism bestowed upon bear and the first salmon caught in the spring.” McLaren and his colleagues concluded that the evidence indicated “a continuation of ancestral bear hunting traditions by the earliest human settlers of the region.”

These data support the theory of pioneering anthropologist Irving Hallowell that the widespread distribution of bear-hunting ceremonialism across the northern regions of Eurasia and North America originated in the Paleolithic cultures of the Old World. According to Hallowell, in many northern cultures across Europe, Asia, and into America, bear bones would be burned or buried after a feast—except for skulls, which would be decorated and hung in a special tree. Hallowell concluded that for all these cultures to share such important aspects of ceremony surrounding the bear, they must have common roots in the Old World Paleolithic period.

Belgian paleontologist Mietje Germonpré and Finnish professor of comparative religion Riku Hämmäläinen recently have described a number of discoveries from Chauvet Cave in France in which cave bear bones have been disposed of in ways that suggest ritual behavior consistent with Hallowell’s ideas. For example, bones, including a canine tooth and a penis bone, both of which likely had special ritual significance, were found on high ridges or in niches or holes in the cave. One skull in particular was encrusted with calcite, which means it had been lying on the cave floor for some time before a Paleolithic person broke it loose from the mineral blanket and positioned it on a large flat-topped rock. These discoveries, as much as 20,000 years and half a world away from Kilgii

continued on page 20

WHEN WE THINK OF ANCIENT ARTIFACTS we usually think of projectile points, modified bone, hearth remnants, or maybe even bits of basketry . . . but what about an artifact of a much more personal nature? What about something a living, breathing human wore on his or her body? What about footwear?

By studying Paleoamerican sandals, scientists can not only shed light on early American resources and craftsmanship, they can determine the relative stability of the population of a region based on the endurance of a particular style of sandal they wore. Paleoamerican sandal styles can serve as a gauge of population mobility. They can even tell tales of the lives of the people that left them behind.

The sandals of Fort Rock Cave

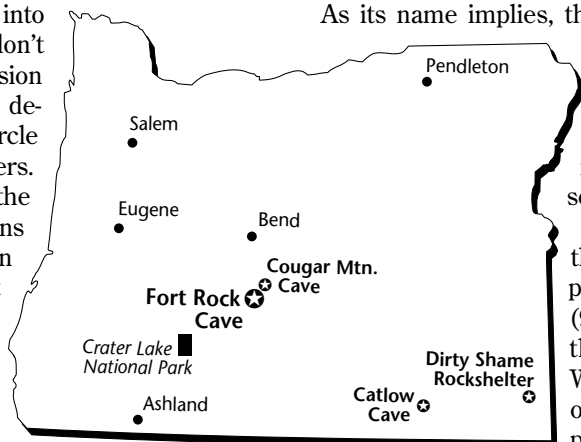
In 1938 Luther Cressman recovered about 100 sandals or sandal fragments in Fort Rock Cave in central Oregon. One pair in particular is especially well preserved and therefore frequently photographed. Tom Connolly, research director for the University of Oregon Museum of Natural and Cultural History/State Museum of Anthropology, says the full story behind the collection of Fort Rock Cave sandals is somewhat elusive. "Excavation techniques and record keeping were quite different in the 'thirties," says Dr. Connolly. "One thing Cressman did was point-plot the sandals and sandal fragments he saw—but a couple of dozen into that process he quit doing that, so we don't have a full distribution with the precision we'd like." The initial point plotting describes an arc indicative of a discard circle around the perimeter of living quarters. The size and southern orientation of the cave, along with nearby faunal remains and the luxury of a well-watered basin below, all lead scientists to believe Fort Rock Cave was the winter residence of a group of early-Holocene people. Connolly also points to evidence of a contemporary summer residence not far from the cave: "Just to the north of Fort Rock Cave, on the north edge of the Fort Rock Basin, is the

Newberry Volcano. Up in the caldera of the volcano, on the shore of Paulina Lake, is a site that is a contemporary of Fort Rock Cave. A wikiup-type structure dating to 9500 years ago served as a high-elevation summer camp base. If you look south from the caldera rim you see straight down into the Fort Rock Basin, and it's less than a day's walk to Fort Rock Cave."

Walking in Their Shoes



A pair of Fort Rock Cave sandals.



Ancient shoe styles in the Great Basin

Fort Rock Cave sandals are one of three types found in the archaeological record of the Great Basin. The Fort Rock Cave style was extant until about 9200 CALYBP, when the long-lived Multiple Warp and Spiral Weft types of sandals made their appearance in the archaeological record. All three styles are twined with sagebrush bark or tule. Unlike fabric made on a loom, where wefts engage warps with a simple over-and-under interweave pattern, twining employs pairs of wefts twisted around the warp. (See Web site <http://www.washington.edu/burkemuseum/basketsidgame/atechnique.html> for examples of plaited, twined, and coiled methods of construction.)

The Fort Rock Cave style sandal typically has five robust warps and a finely twined toe flap that fits over the front

of the foot. The sole is flat with no heel pocket. A cord pulled through a series of interlocking loops attached to the rear half of the sole cinches the sandal around the ankle.

As its name implies, the Multiple Warp sandal has many warps, usually 10 or more. The wider sole accommodates a heel pocket, and a series of loops attached to the edges of the sole pulls it tight to the sides of the foot and secures it across the top of the foot.

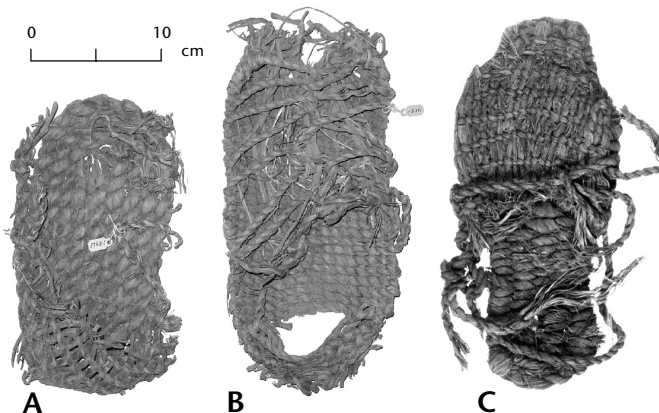
Unlike the other styles, warps in the sole of the Spiral Weft type run perpendicular to the length of the foot (90 degrees from their orientation in the Fort Rock Cave and Multiple Warp sandals). The sole is twined over these fibers in an elongated oval pattern, spiraling out from the center of the sole to the edges; that is, the wefts are generally aligned

with the axis of the foot, but make a U-turn at the toe and heel.

Did they get the boot about 9,000 years ago?

Fort Rock Cave sandals, the oldest of all Great Basin styles, became famous in the 1960s when Cressman revealed their great antiquity through the use of the then new technology of radiocarbon dating. The objectionably large samples needed for reliable carbon dating in the past, however, posed an obvious roadblock, and a long period of time elapsed with no new radiocarbon dates. "Now, with the development of radiocarbon dating to a point where you can get reliable dates from

Different styles of Paleoamerican sandals from the Great Basin: A, Spiral Weft (Roaring Springs Cave); B, Multiple Warp (Paisley Cave #2); C, Fort Rock Cave (Catlow Cave).

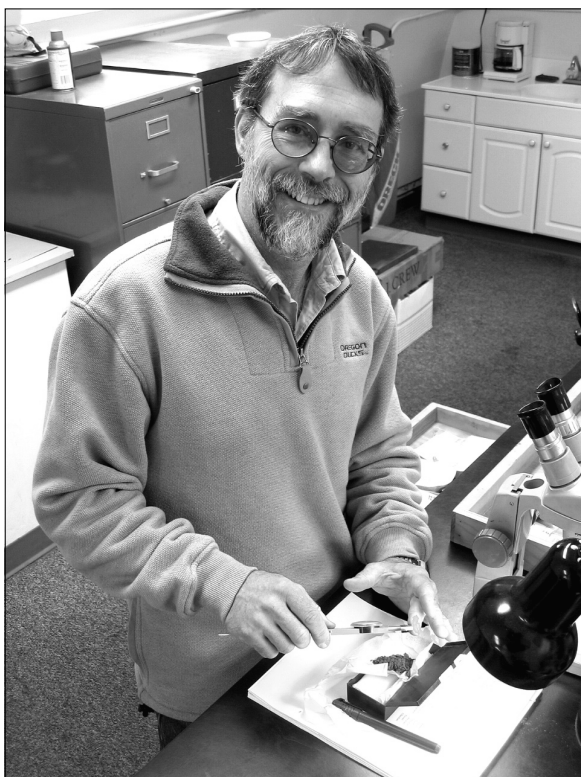


minuscule samples," Connolly explains, "we've actually gone back and started to date a lot of sandals and basketry items in the collections." At present he has 50 radiocarbon dates on all three styles. "And that," he says, "is where we came up with this big *Aha!* that the Fort Rock Cave sandals are all older than 9200 CALYBP." All the dates range from 9200 to slightly older than 10,000 CALYBP—"multiple sites, different sandals, all date to the same period." About 20 dates made on Multiple Warp and Spiral Weft sandals from sites in Oregon and northern Nevada range from just older than 9000 CALYBP to quite recent times (about 300 CALYBP for Multiple Warp and 1500 CALYBP for Spiral Weft).

Functional styles didn't go out of fashion

Connolly believes the long-standing continuity of the Spiral Weft and Multiple Warp styles is just as striking as the great antiquity of the Fort Rock Cave style of sandals. He notes that the basketry of the northern Great Basin has also shown remarkable continuity for thousands of years, starting

Connolly in the lab, 2008.



around 9000 CALYBP. He explains that "there are a lot of artifacts that are stylistically distinctive that you can look at and say, 'Oh that is 8,000 years old or 2,000 years old,' but with basketry in this part of the world it is difficult because basketry

from ancient times to modern times is really in most cases indistinguishable." Because basket making is a learned art, Connolly thinks it speaks to a long and stable cultural continuity in this part of the world for 9,000 years (MT 12-2, "Archaeologists May Overlook Value of Fiber Artifacts").

Has he noticed personal touches on sandal artifacts of the Great Basin? "No," he says, "they are remarkably standard." Standardization is yet another indication of the astonishing stability of the regional culture over time.

Another change indicated in the archaeological record around 9000 CALYBP is a reduction in population density. In the past it was assumed that Paleoamericans increased their mobility during this time in an effort to find increasingly scarce sources of food and water. But those who hold to the oasis theory assert that populations react in exactly the opposite way in periods of drought, that they *decrease* their mobility and stay close to precious sources of water (as do the fauna they hunt). Connolly believes it's possible that the changes seen around 9000 CALYBP suggest that another population inhabited the area. "I think if you look at the sandals and if you look at the basketry, we have this really pretty incredible continuity that's exhibited in the sandals and basketry technology for 9,000 years," he explains. "Then if we go back just a little bit before 9,000 years there's such a dramatic change in the footwear technology that I think you do have to ask, 'What does it mean, a break in continuity at that time?' Maybe it's the same people and maybe it's not." When pressed for a reason why a culture might change their footwear technology from a Fort Rock Cave style to a Multiple Warp or Spiral Weft style, Connolly admits he can't think of a good reason based on sandal serviceability. Moreover, there's little evidence for basketry predating 9200 CALYBP. Leather may have been more commonly used prior to the robust emergence of basketry, which became much more abundant as Fort Rock Cave-style sandals were vanishing.

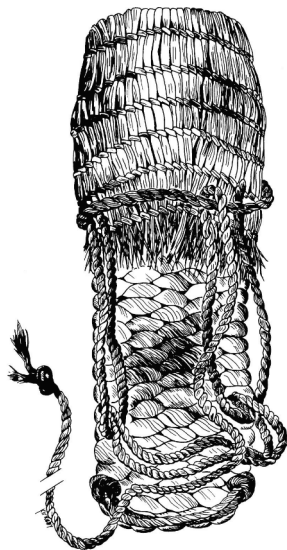
Getting to the sole of it

Although it isn't clear whether Fort Rock Cave sandals represent a group of people that died out, moved on, were assimilated, or simply changed their footwear, it's clear that the

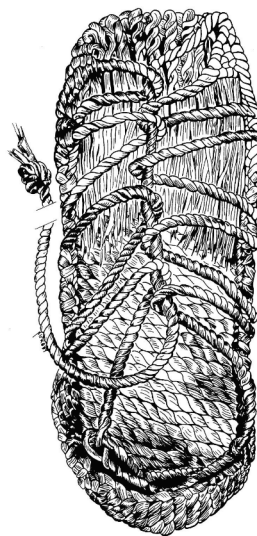
sandals belonged to a community of people. Extensive wear on the sandals found in Fort Rock cave indicates they were discards that had outlived their usefulness, but Connolly believes discards nonetheless provide an assemblage for study that has only begun to realize its usefulness. “The sandals as a whole set,” he argues, “give you the profile of a community. Big adult size shoes, child size shoes, shoes well worn at the balls of feet or at the heels.” Different wear patterns and the minutiae that hint of flesh-and-blood humans at work and play fascinate Connolly. “Some are caked in mud and others are not,” he reflects. “You get the impression of adults and kids, men and women, doing very different things.” The pair that is most photographed has pinhead-size char marks on the toe flaps and evenly, well-worn soles. You can almost hear the crackling of the fire and see the sparks that scorched the sandals as their wearer shuffled past the hearth, perhaps pacing back and forth across the room the way grandmothers often do. Was the wearer elderly? Possibly. Connolly feels certain the condition

handle on the age chronology of different styles, structures and materials.”

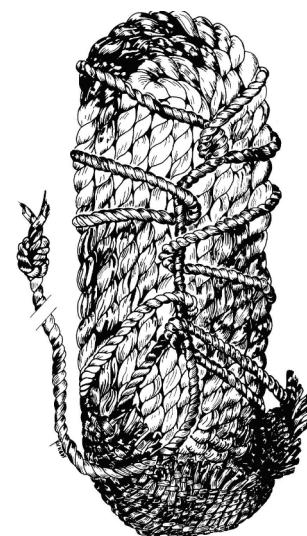
New technologies promise to unveil even more secrets. He notes that “there are lots of fiber artifacts in museum collections and we have a really great opportunity to learn a lot about them by just continuing radiocarbon dating and other research efforts.” One of those new research avenues is the prospect of applying minor isotope studies to fiber artifacts. By analyzing minor isotopes in plant fibers, scientists may be able to determine where they originated, based on the chemistry incorporated into the system of the plant while it was growing. Understanding the geographical origins of fiber artifacts may inform scientists about trade patterns and how people were distributed across the landscape. Using chemical analysis to discover the relationship of organic remains to their environment is becoming a favorite technique of laboratory sleuths: *Mammoth Trumpet* readers will recall our story (MT 23-2, “Chemical Studies Reveal the Lost World of Pleistocene



Fort Rock Cave style



Multiple Warp style



Spiral Weft style


KRIS KIRKBY, COURTESY UNIVERSITY OF OREGON
MUSEUM OF NATURAL & CULTURAL HISTORY

of the shoes indicates someone who did a lot of walking in a relatively clean environment. Another set was highly worn and caked in mud; the wearer was apparently engaged in very different activity in marshes or lakes. The big picture that the sandals assemblage paints is one of a community of individuals. “It’s really hard to just look at them as cultural objects,” says Connolly. “You can take the set and look at it as a community of people. That touches me in a pretty powerful way. It’s a great reminder that archaeology is about communities of people, not just simply about artifacts we find.”

Future studies

The future of this assemblage of sandals and other ancient textile artifacts is promising. Radiocarbon dating is in full swing, and Connolly’s excitement spills over when he relates his ambitious plans: “Now that we are able to radiocarbon-date these fiber artifacts while destroying an insignificant sample of material, we’ve really gone back to the collections, and not just sandals but all kinds of fiber artifacts, to get a much better

America”) of geologist Kathryn Hoppe, who infers the migratory habits and changes in the environment of extinct herbivorous fauna by measuring the proportions of isotopes of trace elements in their teeth.

Paleoamerican sandals of the Great Basin have enriched our knowledge about communities of real people that lived before us—and there is still a wealth of secrets to be teased out in the laboratory. 

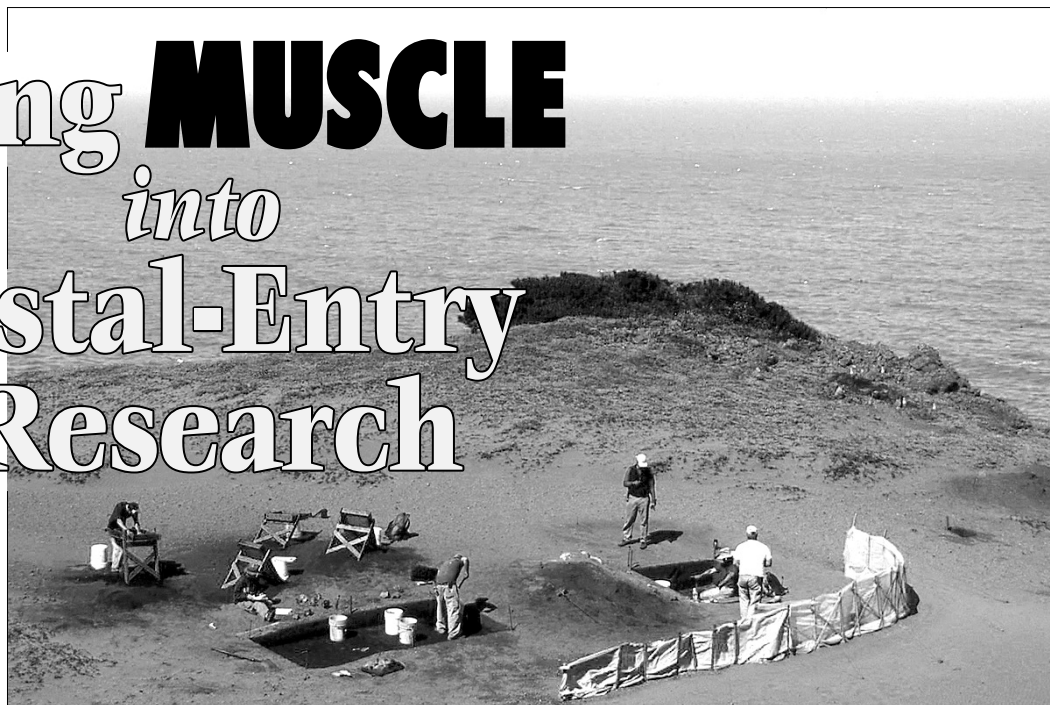
—Dale Graham

How to contact the principal of this article:

Tom Connolly
Director of Research
University of Oregon Museum of Natural & Cultural
History and State Museum of Anthropology
1224 University of Oregon
Eugene, OR 97403-1224
e-mail: Connolly@UOregon.edu

Putting **MUSCLE** into Coastal-Entry Research

Overview of the Indian Sands
site excavations, 2004.

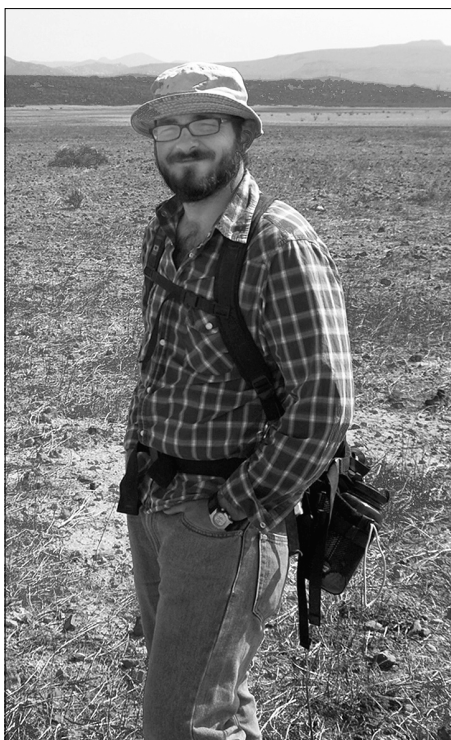


TIM GOGGIN

THE EARNINGS from a new endowment are helping an Oregon State University archaeologist meld innovative methods and speculative projects into a cooperative, focused, and sustained effort to track down the First Americans. The Keystone Archaeological Research Fund targets the Pacific Northwest, the Pacific Coast, and the Baja California peninsula—an area many researchers believe may hold untapped troves of ancient sites, and a key region for evaluating multiple points of entry by New World colonists.

Loren Davis, named executive director of the Research Fund in 2008, is a 39-year-old assistant professor of Anthropology and geoarchaeological specialist at Oregon State University (OSU). With the appointment, Dr. Davis becomes the latest researcher to enjoy a major financial boost for First American studies from retired Denver geologist and avocational archaeologist Joseph Cramer and his

Sam Willis in the Jaraguay
Paleolakes region of the Central
Desert of Baja California, Mexico.



LOREN DAVIS, 2006

A host of ambitious projects on his to-do list

“This funding means we will have the freedom to try new methods and pursue research topics that may not be popular at the moment, but can take us in exciting directions with dramatic results,” Davis says in the winter 2009 issue of the *Oregon Stater*, the university’s alumni magazine. Eager to exercise that freedom, he has hit the ground running with a host of research projects under the endowment’s umbrella. They include:

■ Refining the chronology of an ancient Idaho site that has produced Clovis-age dates and stone-tool technology dramatically different from the benchmark fluted points of the Clovis culture, long the bearer of the First Americans mantle.

■ Returning to important ancient sites on the Oregon coast and refining their chronologies, while searching out even more ancient coastal dirt that potentially hides exciting Paleoamerican secrets.

■ A cooperative paleo-shoreline mapping and underwater excavation venture to find early sites in Baja California’s Sea of Cortez.

■ Cooperative exploring of dry lakes and rockshelters of inland Baja California, and excavating ancient Pacific-side sites along the peninsula.

wife, Ruth. The Cramers have established similar research funds at other universities across the U.S. to energize a logical and systematic search for the continent’s first inhabitants (**MT 18-1**, “A Campaign to Find the First Americans”).

- Using computer modeling to direct a survey seeking early hunting sites in Baja California’s now parched Central Desert.
- A cooperative international effort to unlock the genetic his-

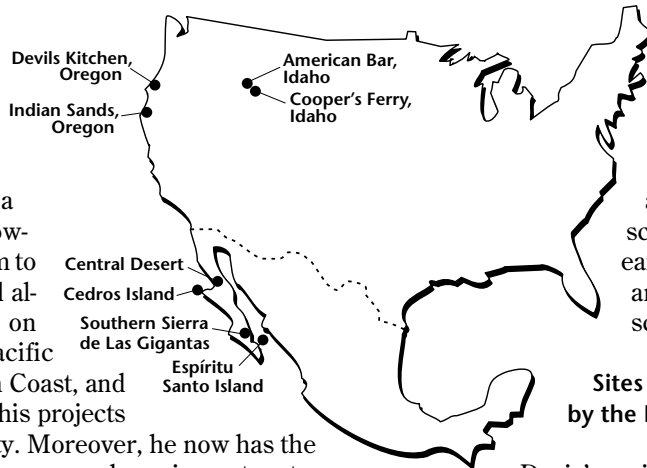
tory of Baja California's early people through comparative DNA sampling.

Without question the directorship is, says Davis, "a significant gift." This endowment makes it possible for him to continue doing things he had already been doing, working on sites throughout the Pacific Northwest, along the Oregon Coast, and in Baja California. And now his projects are assured long-term stability. Moreover, he now has the funds to purchase cutting-edge research equipment, enter cooperative ventures with colleagues at other universities, lure talented graduate students into Paleoamerican research, and provide them with creative research projects.

The Pacific Northwest, a region he's intimately familiar with, is uniquely suited to exploring the hotly debated idea that the earliest humans entered North America along the Pacific Coast rather than by crossing a land bridge from Asia to North America, a long-dominant paradigm of First Americans studies now contested by new research. Although not totally wedded to the coastal-entry theory, Davis believes it deserves more study. He also considers that explorations of Baja California, historically quite limited, are crucial in developing evidence of early immigration along the Pacific Coast.

Geoarchaeology prized above all other tools

Pursuing his proposed agenda involves an interdisciplinary effort, Davis likes to say, of "like-minded researchers." He finds them at a newly established research consortium at OSU, the Pacific Slope Archaeological Laboratory, whose specialists bring to bear expertise in such fields as paleobotany, oceanography, DNA analysis, nuclear engineering, and Davis's specialty of geoarchaeology, a marriage of soil science, geology, and anthropology. These specialties, reinforced by others as needed, form a multi-pronged



**Sites targeted for research
by the Keystone Archaeological Fund.**

Davis's opinion, isn't the most economical approach for finding paleo-age sites without the benefit of obvious visual markers such as shell middens. Hoping to stumble onto an artifact while plodding across a clueless coastal landscape like Oregon's sand dunes is to Davis "like looking for a

needle in a thousand haystacks or more. If you don't know where the right haystack is to begin with, then you won't have much luck." The logic of his argument is compelling: If you expect to find evidence of occupations 15,000 years old, where better to look than in 15,000-year-old soils?

The benefit of geoarchaeology is that "it lets you find the haystacks first,



**Martin Brix (left) and Davis diving
on a submerged site in the Sea of
Cortez, Baja California Sur, Mexico.**

the haystacks in this case being the early landscape remnants." That's the lesson Davis drives home in his students. In field trips to the coast, students participating in his Oregon Paleocoastal Survey hone their skills at spotting remnants of old landscapes.

Success stories at sites on the Oregon coast



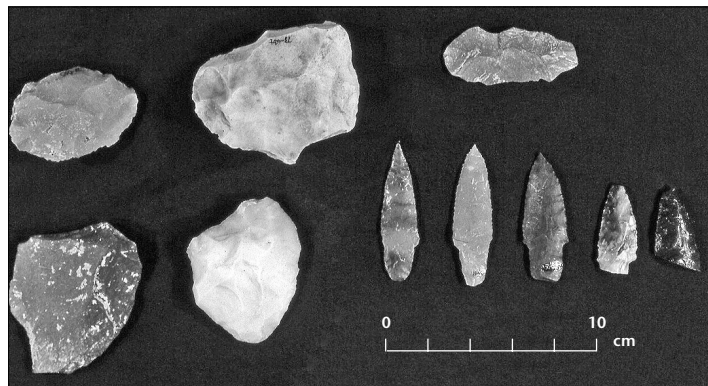
Davis successfully tested this method at the Indian Sands site (35CU67c) on the Oregon coast just north of the California border (MT 22-1, "Late-Pleistocene Occupations on the Oregon Coast"), a project he documented in an article in the 2008 edition of *Current Research in the Pleis-*

**Davis talks stratigraphy with
Celeste Henrickson at Cueva
Santa Rita, Baja California
Sur, Mexico.**

tocene (see “Suggested Readings”).

After compiling sand-dune chronologies, investigators bracketed a distinctive paleosol in an area of Pleistocene-age sediments. “We didn’t

**Earliest artifacts
from the Cooper’s
Ferry site.**



LOREN DAVIS

find any artifacts sticking out of it,” Davis recalls, “but we reasoned that if we trusted this approach we should dig in the old dirt.” The exercise in faith yielded thousands of pieces of stone debitage, many stone tools, and a charcoal date of $10,430 \pm 150$ RCYBP—the oldest site recorded on the Oregon coast.

This geoarchaeological approach to finding early coastal sites was validated by their later work at the Devil’s Kitchen site in coastal Coos County, Oregon. Excavations in that “uplifted ancient stream channel” contained “almost the entire Holocene,” Davis notes, and produced an 11,000-year-old date near the bottom in what looks like an ancient forest. Mad-

Amy Gusick confers with Davis during the project to find early underwater sites in the Sea of Cortez. Espiritu Santo Island appears in the background.



MIKE FAUGHT, 2007

dening, though, no evidence for humans was found at the lowest depth. Davis believes human habitation is somewhere nearby, and he’s counting on his new research funds to help find it.

Returning to an Idaho site

At the same time he’s exploring early site possibilities on the Oregon coast, Davis is also searching farther inland. This summer, now with money in his pockets, he returns to Idaho’s Salmon River canyon to revisit the Cooper’s Ferry site, where in 1997 he excavated a single 2-by-2-m test pit and discovered a cache of four stemmed stone spear points and a stone scraper. Associated bone and charcoal showed the site was occupied more than 11,000 years ago (**MT 13-4**, “Cooper’s Ferry Spear Cache One of NW’s Oldest Sites”).

Bioturbation problems at the time obscured site chronology. Developing a more accurate site chronology at Cooper’s Ferry site tops this year’s ambitious list of research objectives, for he hopes it will

provide critical insights into the nature of early unfluted lithic traditions in the New World. A more accurate date for human occupation of the Salmon River canyon might also clarify issues in the vigorously debated suggestion that different groups of early Ice Age peoples migrated to the Americas at different times. Davis also hopes to establish environmental conditions for the period of occupation and determine how technological, economic, and site use patterns changed through time at Cooper’s Ferry.

Exploring Baja California—and the ocean floor around it

At the same time he’s completing unfinished business in Idaho, Davis is looking south toward Baja California, where Cramer research money is being applied to cooperative research on early sites, both on shore and off. Offshore Pacific Paleoamerican sites for him are “the brass ring that has not yet been grabbed” by archaeologists. He hopes to change that.

Last spring Davis, working through OSU’s Pacific Slope Archaeological Laboratory, teamed up with Amy Gusick at the University of California–Santa Barbara to set about creating a topographic map of the bottom of the Sea of Cortez west of

Davis in the Jaraguay Paleolakes region of the Central Desert of Baja California, Mexico.



BOB JACKSON, 2006

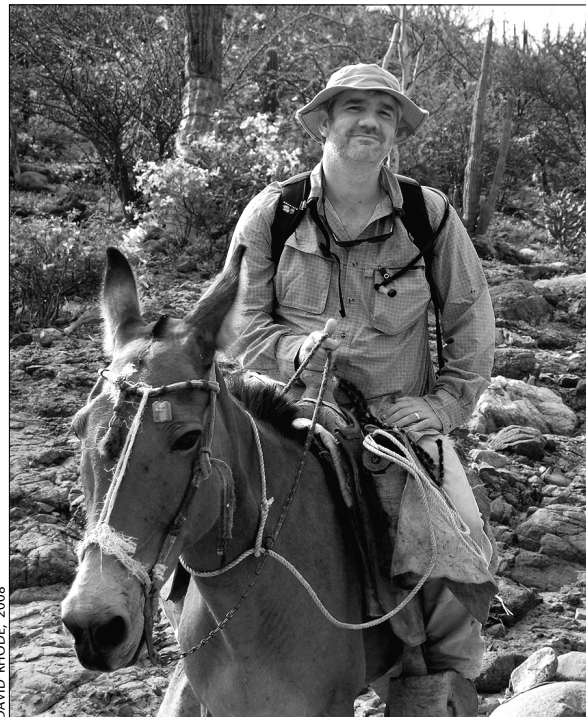
Espiritu Santo Island near La Paz in Baja California Sur. Researchers monitoring a hand-held GPS unit and a fish finder ran successive transects back and forth across the sea ("like mowing a lawn," says Davis) to plot a profile of the sea floor and reconstruct the paleo shoreline. To their relief, scuba divers' inspection of high probability areas predicted by their model revealed a shell midden along the continental shelf about 60 ft below the current shore line. Although they aren't certain the shell midden is of Paleoamerican age, Davis notes that "this did show that our method worked, anyway, and that was the whole point." Davis, Gusick, and Mike Glassow of UC-Santa Barbara have written a \$100,000 National Oceanic and Atmospheric Administration grant to expand this search, excavate the submerged shell midden, and identify and collect data from 10,000-, 13,000-, and 18,000-year-old shorelines detailed in their modeling.

Davis, in cooperation with Matthew Des Lauriers of California State-Northridge and the Instituto Nacional de Antropología e Historia de México (INAH), is also excavating sites on Cedros Island, which lies off the Pacific Coast about halfway down the Baja California peninsula. In the winter 2008 *Solstice Report* for the Pacific Slope Archaeological Laboratory, Des Lauriers writes that two sites on Cedros Island, dating to the terminal Pleistocene and early Holocene, provide the "earliest documented evidence for coastal, maritime adapted settlement of the Pacific Coast of Mexico, and have the potential to provide data that touch upon technology, subsistence, migrations and the origins of maritime adaptations."

Davis is also teaming with Celeste Henrickson of the University of California-Berkeley in another innovative project. She is excavating under the Cueva Santa Rita rockshelter in southeastern Baja California and finding extremely well preserved, if not very deep, archaeological remains. Hers are the first such excavations to open a window on the Guaycura peoples of Baja California, about whom little is known except reports from early Jesuit missionaries that they had a unique language and political system. The cooperative effort in this area broadens internationally this year as Eske Willerslev, a specialist in ancient DNA research at the University of Copenhagen, joins the research team. He will study ancient DNA samples from chewed agave wads, or quids, from hair from the capes of shamans, and from other DNA-carrying materials to decipher the genetic history and culture of the Guaycura inhabitants. These people have lived in isolation; based on cranial morphology, some researchers contend they are similar to their Paleolithic ancestors. Davis hopes that comparing their DNA with known Paleoamerican samples might help resolve the issue.

This summer, 13 years after Davis first started research in Baja California, he will launch an ambitious project to document early sites in the Central Desert region of the peninsula. Thanks to financing by the Keystone Archaeological Research Fund, Sam Willis, Davis's first doctoral student, will conduct field surveys and excavations across Baja California's Central Desert, a swath of parched land midway down the peninsula. The goal of the project? To narrow the search for early sites by creating computer models that link rangeland resource management data—what Davis calls "cowboy science"—with data from regional Paleo-environmental studies. It's an ambitious project—the study area is the size of Massachusetts—amounting to putting water back into dry lakes and identifying the best ancient graz-

ing lands. Davis, writing in the 2008 *Solstice Report*, explains the rationale behind the modeling effort: "We assume a 'If you graze them, the hunters will come' viewpoint wherein the spatial distribution of early hunting sites are expected to mirror the spatial patterning of grazing potential." Many of the data for the project had to be created from scratch because in datasets for similar studies previously conducted in the U.S., data for Baja California are either incomplete or nonexistent. In the course of the study, Willis will survey for new sites and excavate sites previously found, primarily around



Astride a local all-terrain vehicle, Davis surveys sites in the southern Sierra de Las Gigantas of Baja California Sur, Mexico.

30 already identified dry lake basins, and also build a temporarily supported cultural resource model showing the nature of cultural adaptations across the varied study area.

Willis is excited by the project and grateful that the fund has made money available for him, a 37-year-old student, to seek a doctorate in his chosen field. "For me, this is the chance of a lifetime," he says.

For Davis, these cooperative projects are an effective way to spend the yearly allotment of endowment money, about \$60,000, and keep a flow of researchers working in the field. His multifaceted plan makes especially good sense when working in Mexico, where the government only issues one permit at a time to a researcher. This means that a researcher can't start another project until the existing one is complete, which can take years and drastically slow research efforts. Davis has found that spreading the money around by funding graduate students and cooperating with researchers from other universities is the best way to blanket this virtually untapped region with First Americans research.

continued on page 19

Fluted-Point Technology in Alaska

An Early Example from the Seward Peninsula

Chris Young and Sabra Gilbert-Young excavating test units at the BEN-192 WP11 locality, where the fluted point and channel flake were found. The plastic sheeting prevents mixing of soils.

(Inset) the first fluted point found on the Seward Peninsula, in situ. It measures about 2.1 cm across.

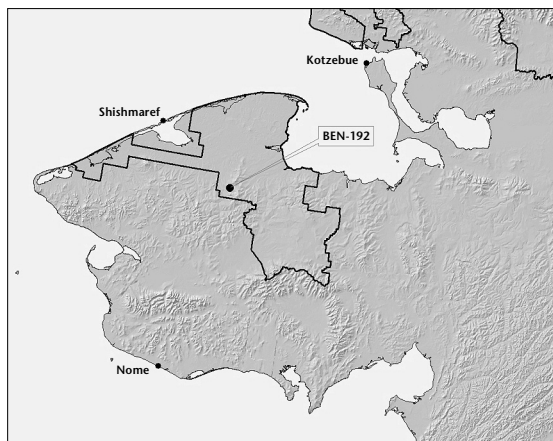


UNLESS NOTED, ALL PHOTOS: ROBERT GAL

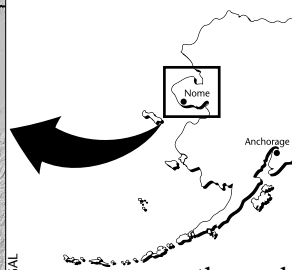
BACK IN SUMMER 2005, a group of National Park Service archaeologists, led by the husband-and-wife team of Christopher Young and Sabra Gilbert-Young, ventured into Alaska's Bering Land Bridge National Preserve for a brief archaeological reconnaissance. Not that performing fieldwork in northern Alaska is either easy or quick; the environment has always been a challenge for the researcher. After all, this is one of the few places in America where you still have to worry about getting eaten by bears if you're not careful. Even if you do avoid the grizzlies, the terrain is inhospitable even during the warm months—and, as Young points out, it's "outright life-threatening in the winter."

The Preserve is located on the Seward Peninsula, a fat spur of land that points due west toward Siberia. Conditions are particularly extreme on the Peninsula, which is roughly the size of the state of Maryland, heavily vegetated, and underlain by permafrost. "Visibility is drastically limited," explains Robert Gal, who worked with the Youngs during their foray into the Preserve. "Fieldwork is also limited to three to five snow-free months. Only seven archaeologists have worked in its interior—ever."

Yet this "very special part of the world," as Gilbert-Young calls it, is a region of intense archaeological interest, given that it's one of the few surviving remnants of the ancient land bridge that once connected the New World with the Old. As such, it has the potential to provide tantalizing clues about the earliest peopling of the Americas. Indeed, Gal



Location of BEN-192 within the Bering Land Bridge National Preserve (black outline).



AFTER ROBERT GAL

the Old. As such, it has the potential to provide tantalizing clues about the earliest peopling of the Americas. Indeed, Gal

and the Youngs didn't go away disappointed: Just north of historic Serpentine Hot Springs, they made an exceptional discovery that may result in a reassessment of a widely accepted belief about Alaskan archaeology.

A question of antiquity

Site BEN-192 sprawls across several hundred meters of tundra along the edge of a decomposing granite outcropping that arcs roughly from the southwest toward the northeast. It was first identified as part of a helicopter/pedestrian-based survey of high-probability areas surrounding Serpentine Hot Springs, and consists of six associated surface concentrations of chipped-stone tools and debris. As Gal describes it, "The surface of the site is a deflation lag of decomposed granite. When I found the site, I expected a thin soil zone overlying granite regolith. The thick—approximately 35 cm—soil of decomposed granite and humus was surprising."

That wasn't the site's biggest surprise, however. One of the lithic concentrations yielded the base of a small projectile point, triply fluted on both sides. It's made of a reddish brown chert that appears to have come from the Brooks Range, a full 320 km (200 mi) to the north.

were probably highly mobile, much like the Paleoamerican groups of the eastern United States. Gilbert-Young agrees. The toolstones, she says, "could have been picked up at their

source by these people as part of their food quest. Just based on the current environmental conditions in the area, these people would have to have been highly mobile to keep provisioned."

"If you don't want to apply that model," Young offers, "then it is also pos-

The stratigraphic profile at the BEN-192 WP11 locality (10-cm units on a meter scale).



sible that the chert may have been part of a larger regional obsidian-for-chert trade network involving the Batza Téna obsidian source 250 miles to the east."

Two 50-by-50-cm units were excavated within 1½ m of the surface find, yielding charcoal and seven flakes from depths of up to 47 cm below the surface (bs). The excavations also produced the proximal fragment of single channel flake from 5 cm bs. Ironically, the channel flake is made of a translucent chalcedony—a completely different material from the original find. Clearly, the fluted point was no onetime experiment for the occupants of BEN-192.

As exciting as this find is, it's not unique; similar points have turned up in loosely dated contexts here and there in the region, most notably at sites like Girls' Hill and Putu Creek. What makes this point unique is that it's the first fluted point ever found in situ on the Seward Peninsula—and that the radiocarbon dates for the associated charcoal seem unusually old, ranging from 9480 ± 40 to $10,250 \pm 60$ RYBP. If they're accurate, Alaskan fluted projec-

Robert Gal in the field in northern Alaska.



That might seem a bit startling, but it's not unexpected for the region. As Young explains, "The western Brooks Range is a cornucopia of toolstone; that can't be said about the Seward Peninsula, which in comparative terms is a toolstone-impo-

tile-point technology is significantly older than previously thought.

Cultural diffusion. . . or not?

Fluting has always played second fiddle to other stone-tool technologies in the Land of the Midnight Sun, and in fact the antiquity of fluted projectile points in Alaska has been hotly

debated for years. Beringia's earliest inhabitants didn't bother with them; they mostly made do with little triangular points and microblades. But distinctive double- and triple-fluted points have been found at a few sites. Previously, they've been loosely dated to later (sometimes much later) than 8500 RCYBP—and to most Paleoamericans researchers, that seems right on the mark.

These days, it's pretty much an article of faith among archaeologists that fluted-point technology is a continental invention—that it originated after humans made it into the heartland of North America, however they may have accomplished the journey. From there, the original Clovis technology spread across the entire inhabited continent, becoming the standard for hunting cultures and evolving into new styles as time progressed. The argument is that eventually, in a sort of cultural backwash, fluted-point technology made its way back to Alaska, the place where humans apparently first set foot on American soil.

It's hard to tell when this might have occurred. At most fluted-point sites in Alaska, the contexts are muddled and the dating is ambiguous; for example, at Putu Creek radiocarbon dates in the range of 6000 RCYBP are associated with other dates as early as 11,400 RCYBP. A fairly late time frame for the adoption of fluted-point technology seems reasonable; after all, it ought to have taken quite some time for it to diffuse north. BEN-192 suggests, however, that it happened much more quickly than was previously thought. Unlike earlier finds, the fluting technology expressed there was found *in situ* and the dating is more solid. In fact,

**Chris Young at the BEN-192
WP11 locality, view to south.**



the point and channel flake seem to date from about the same time that the Folsom culture was winding down in the American Southwest. If that's indeed the case, fluted-point technology worked its way back to Alaska within less than a thousand years—fairly quickly, on the grand scale of cultural diffusion.

There is, of course, another intriguing possibility. Was fluted technology adopted by the people who once occupied BEN-192—or did they invent it independently? “The technology adopted in the manufacture of these triple-fluted points is quite different from that in other projectile points found in the Arctic and North America,” Young notes. “Unfortunately, the extremely small sample of dated triple-fluted points [at Putu Creek, Girls’ Hill, Batza Tena, and Serpentine] all lack a clear association between the points and the material dated, so any

attempt at a temporal linkage is easily debatable. That aside, triple-fluted points such as the one from Serpentine Hot Springs are so technologically unique from other fluted points and, at present, so geographically constrained . . . that they could potentially be representative of a proprietary design. At its strictest sense, this would be limited to a single individual, but I believe [it's] more likely attributed to a particular group.”

Gal is less certain about that, but he does point out that the points found at Putu Creek are technologically and formally identical to the point from Serpentine Hot Springs, with their edge-grinding, V-shaped base, and triple fluting. “These forms also occur at Teshekpuk Lake; on the Kukpowruk River and Driftwood Creek on the Arctic Slope; at several places in the Noatak drainage (2-Kugururok and 1-Nimiuktuk sites); in the ‘Interior’ at Batza Tena, Girls’ Hill, and The Island; and at Cape Denbigh on Norton Bay. And now this form appears in the interior of the Seward Peninsula.

“I very much suspect that this form is an Alaskan horizon marker. . . . All these occurrences are isolates or assemblages that are highly variable in character. Two questions persist: What is the date of this horizon marker? and, What other forms are associated with it? Unfortunately, answers to the second question are usually corrupted by strong preconceptions.”

Cautionary tales

One issue that will certainly give critics pause is the fact that, while the point and the channel flake fragment from BEN-192 were found on or near the surface, the dated charcoal came from significantly deeper contexts, 32–39 cm below the surface. That said, BEN-192 is a northern Alaska site, and it's

easy to imagine that significant cryoturbation has occurred over the millennia since the charcoal was deposited.

Young admits this as a possibility, but doesn't believe that cryoturbation has destroyed the site's context. "The coarse sediments of the underlying matrix are not conducive to violent frost events such as heaving and wedges," he explains. "While it's highly unlikely that there has been *no* cryoturbation exercised upon the matrices, from what was encountered during our limited testing there was no evidence



Gal is optimistic about the prospect. "Of all the fluted-point sites I've visited in Alaska, this one has the most promise for spatial-cultural integrity *and* dateable context," he notes. "For all of the Seward Peninsula, only two locations, Serpentine Hot Springs and Trail Creek Caves, have cultural materials dating earlier than about 4,000 years ago." But he remains cautious in his outlook, willing to take the long view. As he puts it, "The East Coast of the U.S. has been plowed, scarified by civil constructions, and had its surface and subsurface scrutinized by thousands of humans for several hundred years. Yet only

Chris Young at the BEN-192 WP11 locality, view to the northeast. Localities WP 8–10 lie in the exposed mineral soil where the helicopter sits.


of the more violent frost wedges or heaving. Additionally, none of the artifacts encountered exhibited a telltale sign of such action, as evidenced by artifacts being found on edge.

"The coarse sediments are [also] less likely to facilitate violent cryoturbation because the site is located on an exposed, currently unvegetated, slightly sloping surface. I consider slope creep and eolian erosion as the primary processes directly influencing site development."

What does this mean for the dated charcoal? "Charcoal is associated with the finds. That's as far as a prudent researcher should take such an association, especially based on the extremely limited nature of the work undertaken," Young cautions. So while there's room for hope, any hard-and-fast conclusions about the antiquity of BEN-192 are still premature. "So little of the site has been tested that it's all really speculation at this point," Gilbert-Young says. "Because both of the 50-cm² test units were excavated near the fluted-point base (which was found on surface), we have very little information about what was going on with the rest of the site. What I observed in the test units indicates a long-term, stable depositional sequence. What that means for the rest of the site remains to be seen. We had but a few hours on site, and years since to wonder about it."

That lack of information may soon be remedied. "We're in the process of issuing a permit to Ted Goebel of Texas A&M University to investigate the site further this summer," explains Gal, who still works for the Park Service in Alaska (the Youngs have since moved to decidedly warmer digs in Nevada). "Our discussions have emphasized the importance of the geoarchaeological context of the site, which will be investigated by Mike Waters of the TAMU team this summer."

recently have Clovis and possible pre-Clovis sites been identified there.

"It will take much longer and be much more difficult to add Alaska's pieces to the puzzle of human settlement of the Western Hemisphere." 

—Floyd Largent

How to contact the principals of this article:

Christopher E. Young
Sabra E. Gilbert-Young
Environmental Services Division
Nevada Department of Transportation
1263 S. Stewart St.
Carson City, NV 89712
e-mail: CYoung@dot.state.nv.us

Bob Gal
Western Arctic National Parklands
National Park Service
240 West Fifth Avenue, Rm. 114
Anchorage, AK 99501
e-mail: bob_gal@nps.gov

UNTIL JUST A FEW YEARS AGO, a glance at an archaeological map of the American Southwest might have led the casual observer to conclude that the First Americans were, somehow, discouraged from occupying the region that would eventually become the Mexican state of Sonora. In Arizona, just north of the U.S.-México border, there were classic early sites like Lehner, Naco, and Murray Springs; south of the border, there was very little. So what kept the Paleoamericans out of Sonora?

Nothing, as it turns out; like the blank spaces on a medieval map marked “Here Be Dragons,” the gaps in Sonora’s Paleoamerican record were more the result of ignorance than an actual lack of early settlement. Happily, a new generation of Mexican scientists, led by geoarchaeologist Guadalupe Sanchez Miranda, is beginning to remedy that. In less than a decade, their fieldwork has produced abundant evidence of a widespread Paleoamerican occupation of Sonora. In addition to numerous smaller localities and isolated finds, more than a dozen significant sites (many with at least some intact deposits) have now been identified in a variety of geographical settings. Sanchez and her team are pursuing a program of systemic geoarchaeological research at six of these sites, including the largest known concentration of Paleoamerican cultural material in México: site SON:K:1:3, otherwise known as El Bajío.

Illusions of permanence

When you’re standing at the border between the United States and México, it’s hard to tell where one country ends and the other begins. Sure, in some places there’s a fence dividing the territories; but mostly, both countries depend on the brutal Southwestern desert to stand guard over their national sovereignties. Oddly enough, those arid stretches of sand and scrub have also proven a peculiarly resistant barrier to our understanding of the earliest occupation of North America. Despite a clear geographical continuity between our nations, the region south of the interna-

tional border was, until recently, largely ignored by First Americans researchers.

But that’s rapidly changing, as Guadalupe Sanchez points out: “During the last seven years, a handful of archaeologists have begun to develop the missing archaeological paradigms in different regions of México, and this has resulted in an amount of data that we’ve never seen before. The future for the study of the first Mexicans looks promising.” As the head of the Subdirección de Laboratorios y Apoyo Académico of Mexico’s Instituto Nacional de Antropología e Historia (INAH),

Beyond the Border

Paleoamericans in Sonora, Mexico

Excavation of Knapping Station 12 at El Bajío.
The Cerro La Vuelta quarry is located on the hill
in the background.

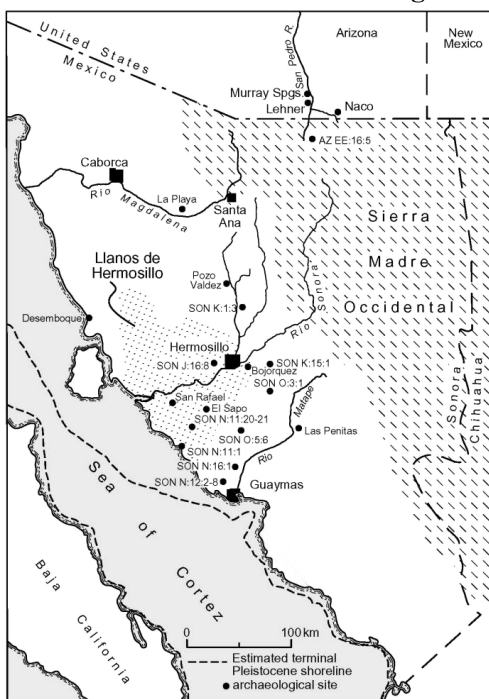
Sanchez is playing a significant role in that archaeological renaissance.

She cites several reasons for the gaps in the record, including a former domination of Paleoamerican studies by researchers who limited their studies to only a few sites of

great antiquity, and then failed to train any students to continue their work. A focus on the excavation of mammoth remains by INAH archaeologists and paleontologists, she says, has also contributed:

“Presently, over 150 have been reported, with many of them having been excavated. However, with the exception of three sites excavated before 1960 (Santa María Iztapan I and II, Los Reyes Acozac, and San Bartolo Atepehuecan), these mammoths lack any human traces.”

Finally, archaeological research in the high desert is just plain difficult. Even if one were to ignore the killer heat and lack of water, “It’s difficult to find the archaeological contexts, and it may



take years to develop a method for investigating the Paleoamerican archaeology of a region,” Sanchez asserts. “North American Paleoindian projectile points have been found all over Mexico, from Baja California to Oaxaca, but with very few exceptions they’re isolated finds; as yet, we don’t know which artifacts are the diagnostic Paleoamerican tools

Other contributors to the effort include Alaskan Edmund Gaines, INAH’s Alberto Peña and Joaquín Arroyo-Cabral, and the University of Arizona’s Vance Holliday. Funding for the current efforts comes from INAH, the Argonaut Archaeological Research Fund, and National Geographic; earlier contributors included the Arizona Archaeological and Historical Society and the Center for the Study of Planet Earth. Their money and efforts have been well spent: Sanchez and her team are rapidly sketching in the Paleoamerican occupation of Sonora that had previously only been hinted at by sites like El Bajío, which has been known to archaeology since the 1970s.

The southwesternmost Clovis site yet identified, El Bajío is hard to miss: this scatter of debitage, bifaces, blades, and fluted points covers an amazing 4 km² and includes at least 15 discrete activity areas, most notably an amazing lithic quarry atop Cerro La Vuelta, the area’s highest hill. The quarry alone covers about a hectare (2½ acres), and is characterized by enormous debitage dumps up to 20 m long and 1 m deep.

El Bajío’s primary attraction was the fine-grained vitrified basalt at Cerro La Vuelta; indeed, the quarry offers the finest knappable material in

that characterize central and southern México. Our work in Sonora has been successful because we can rely upon diagnostic Clovis, Dalton, and Plainview points to find the sites and then test the archaeological contexts.”

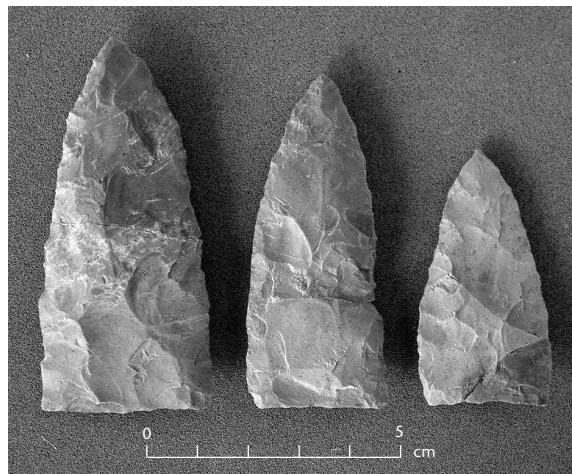
A new hope

In conjunction with her husband, INAH’s John Carpenter, Sanchez has been researching Sonoran archaeology since 1992. It wasn’t long before the lifeways of the earliest Sonorans became their focus. “Our interest in the Paleoindian and Archaic occupations of Sonora were kindled over a decade ago, when our research at the predominantly Early Agriculture period/Trincheras tradition site of La Playa (SON F:10:3) demonstrated the presence of significant Archaic period components, along with a Clovis point, bifaces, and partially fossilized antler billets of probable Paleoindian affiliation,” explains Sanchez. “In 1996, Julio Montané took us to the El Bajío site, where we promptly found four basal Clovis point fragments; the importance of the site was thus quite obvious during the first visit. From that point, I began to systematically investigate the Paleoamericans of Sonora.”

all of northern Sonora. However, the site is littered with other activity areas—particularly campsites and knapping stations—that have yielded a great variety of artifacts, including Clovis points, Clovis preforms, bifaces, polyhedral cores, blades, and endscrapers. Sanchez cites an average density of at least five artifacts per square meter, which is gratifyingly high. Most of the thousands of tools collected so far are made of the local

basalt, but about 5 percent were manufactured using other materials, including locally available quartz crystal and obsidian. Intriguingly, the tools from some of the activity loci display evidence of extensive resharpening and re-use, suggesting long-term occupation.

Paleoamerican bifaces from Knapping Station 12 at El Bajío.



One thing the site has yet to offer is intact Paleoamerican deposits, although Sanchez remains hopeful that they exist; artifacts have been observed eroding out of more recent deposits in at least three separate localities at El Bajío. “There’s no doubt that this site is one of



the most impressive Paleoamerican sites that I've seen," Sanchez observes. "It's very possible that buried [Paleoamerican] deposits still exist at the site, [but] because the gully erosion of the site it is very patchy, it will take some time to find the deposits."

Archaeology at the end of the world

Like El Bajío, most of the promising Paleoamerican sites in Sonora occur in the Basin and Range province. AZ:EE:15:5, just south of the international border, has yielded a single fluted quartz crystal point. SON:O:3:1, a lithic scatter about half the size of El Bajío, is especially interesting because it has produced 5 fluted points and about 40 endscrapers from contexts that also included the bones of mammoth and other Pleistocene fauna. SON:K15:1 has yielded a single fluted point in association

Guadalupe Sanchez, Joaquín Arroyo-Cabrales, and Rob Miller (left to right) excavating at the El Fin del Mundo site in 2007.



with other late-Paleoamerican artifacts; in addition, more than 3½ m of intact, well-stratified deposits were identified there, including four black clay horizons.

Two of the other sites under review fall within the Sonoran coastal plain: SON:N:11:20 and SON:J:16:8. SON:N:11:20 is especially notable; so far, nearly 30 diagnostic Paleo points have been recovered from the surface dune field, including at least 17 that are classic Clovis (the rest have Dalton-like affinities). Intact deposits to a depth of 3.6 m have been identified there. The stratigraphy at SON:J:16:8 (another site near Hermosillo) is even more impressive: 6½ m of intact deposits have been documented, complete with 4 buried soils. The cultural assemblage has produced 4 fluted points thus far.

One of the most interesting new sites in Sonora was discovered quite recently. "During the spring 2007 field season of the Geoarqueología y Tecnología Lítica de los Sitios Paleoindios de Sonora project," Sanchez recounts, "we found El Fin del Mundo [the End of the World], a Clovis site where at least two American mastodons were

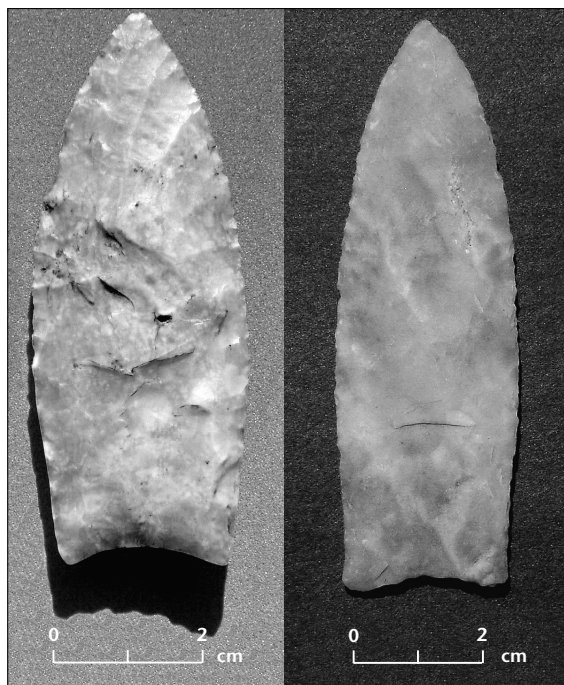
hunted and butchered in a pond-like deposit, and at least four Clovis points were found in and around the island, and a few flakes were associated with the bones." Radiocarbon assays for

the site have produced a preliminary date of 11,040 ± 480 RCYBP from organic material. "Although for now it's a ballpark date," Sanchez says, "the site is unquestionably within the range of the Clovis culture. The good preservation of the deposits at Fin del Mundo is going to be fundamental for the reconstruction of the paleoenvironmental conditions of the Paleoindian peoples of Sonora."

How early is early?

If there was ever a pre-Clovis occupation of Sonora, Sanchez and Co. have yet to find any compelling evidence of it. The data indicate a vigorous Clovis occupation first, followed by a sparser late-Paleoamerican occupation that, so far, has largely eluded the INAH researchers. "In private collections and sites, we have seen diagnostic projectile points of late-Paleoindian affiliation, including Plainview-like points, Dalton, and Golondrina points," says Sanchez. There was also this interesting find: "At El Bajío we excavated a knapping station feature with non-fluted square-based lanceolate points, with over-shot flaking and basal thinning. We were able to refit four of the points, but there are at least eight square points in the feature. I believe that these points could be associated with the late-Paleoindian occupation in Sonora."

Why the general scarcity of later-Paleoamerican occupations in Sonora?




Clovis points: (left) from the Las Peñitas site; (right) a classic specimen from the El Fin del Mundo site.

That's hard to say, but it fits with apparent population decreases observed in other parts of the continent immediately after the Clovis era. The reasons for that decline may be purely cultural or geographical, or they may be associated with the Younger Dryas cooling interval at the end of the Pleistocene epoch. What triggered the Younger Dryas remains to be determined, though as recent readers of *Mammoth Trumpet* know, one possible explanation was a comet strike in northeastern Canada (**MT 23-1**, "The Clovis Comet: Evidence for a Cosmic Collision 12,900 Years Ago"). Interestingly, a black mat—one of the common stratigraphic markers cited by Clovis Comet devotees—is present at El Bajío. But as Sanchez admits, based on the dating, "The black mat at El Bajío represents a middle-late-Holocene phenomenon. However, at Fin del Mundo we have a white mat deposit from late Pleistocene/early Holocene that is going to be added to the database."

One thing is for certain: now that someone has bothered to fill in the archaeological blanks in Sonora, it's becoming a very important region in Paleoamericans research. "The great quantity of sites, some quite extensive and with evidence for multiple seasonal occupations, situated in varied landscapes, appear to represent several groups exploiting different types of environments," Sanchez explains. "The Sonoran Clovis surely

found a very different environment [here], with very different resources. Fine knappable materials are hard to find in this region. El Bajío is the only big quarry of fine material; however, they developed new techniques and used rather rough materials for making Clovis points and other artifacts."

Even after nearly a decade of steady archaeological progress, there remains a great deal to be learned about the Paleoamerican occupation of México in general and Sonora in particular. But Sanchez is confident about the future. "Our project will continue for many years," she affirms. "We will continue the investigations at Fin del Mundo, I hope to be back at El Bajío soon, and we plan to continue investigations at many of the other Paleoindian sites that we have documented." 

—Floyd Largent

How to contact the principal of this article:

Georqilga. Guadalupe Sánchez Miranda
Subdirectora de Laboratorios y Apoyo Academico
Instituto Nacional de Antropología e Historia
Moneda 16, Col. Centro 06060
Ciudad de México

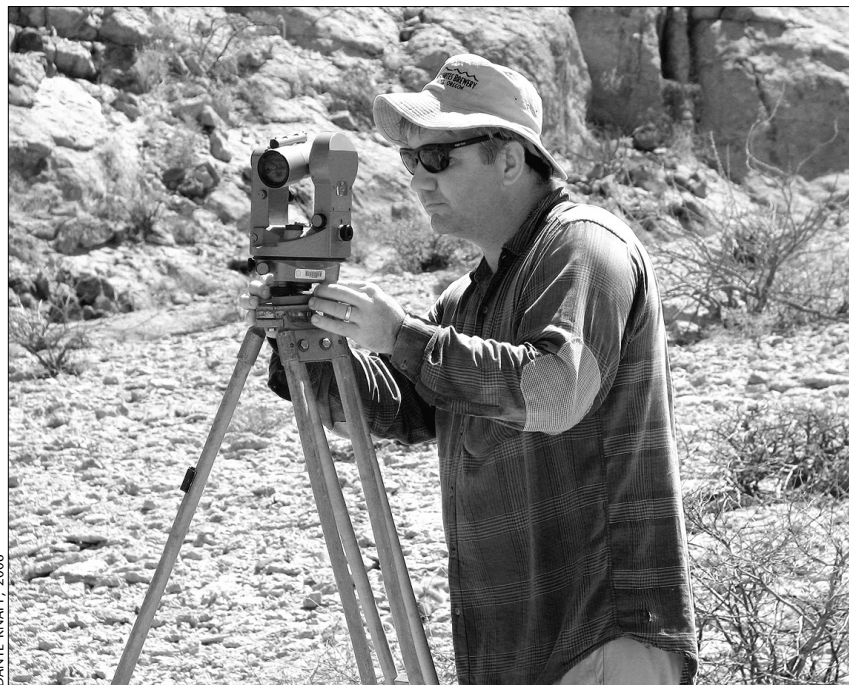
e-mail: guadalupe_sanchez_miranda@hotmail.com

Putting Muscle into Coastal-Entry Research

continued from page 11

You can't win 'em all

Davis is quick to admit that some archaeological projects don't




always pan out. A 2004 project on Espiritu Santo Island in the Sea of Cortez off La Paz, for example, looked extremely promising when investigators discovered shells collected from the surface of the site were of Clovis age—more than 11,000 radiocarbon years old. When Davis found a human femur and other human bone fragments in close proximity to the shells, so close they

might be directly associated, he thought he had struck paydirt. Testing the femur and bone fragments, however, revealed they were completely fossilized and couldn't be radiocarbon-dated. To make matters worse, the shell dates may have been false markers. Studies have revealed that prehistoric people weren't always choosy about the shells they picked up to use as plates, scrapers, or craft items. Often the shells they collected were very old, not shells from recently living molluscs. "There are now radiocarbon dates showing people were picking up 36,000- to 40,000-year-old shells and bringing them back," Davis says, laughing. "It makes you want to pull out your hair when the people of the past are working against you, just not playing by the rules."

Davis admits he may occasionally misstep before the current and planned cooperative research efforts have run their course. "But this is one of the major benefits of this grant," he says,

Davis leveling a transit at the J69E site on Espiritu Santo Island, Baja California Sur, Mexico.

“we can conduct some very exploratory efforts.” He hopes Joe Cramer’s endowment will give him the leverage he needs to get grants from private and government agencies to fuel still more ambitious First Americans research. That’s why Davis is confident the endowment will return benefits worth many times its face value. 

—George Wisner

How to contact the principal of this article:

Loren Davis
Assistant Professor, Department of Anthropology
238 Waldo Hall
Oregon State University
Corvallis, OR 97331-6402
e-mail: loren.davis@oregonstate.edu

Early Bear Hunting and Ceremony

continued from page 4

Gwaay, do suggest some remarkable parallels in fundamental beliefs about bears and their special relationship to people.

Conclusions


The evidence from Kilgii Gwaay indicates that peoples living along the Northwest Coast by around 9400 RCYBP had developed a specialized way of life focused on the sea coast and the maritime resources available in that rich environment. Although there is no direct evidence for it, the people must have had seaworthy watercraft that allowed them to travel among the islands of Haida Gwaii. This, of course, has implications for the peopling of the Americas, for the development of sophisticated watercraft and the varied techniques for exploiting the diverse fauna of the coast likely required a long period of development. It supports the idea that the coast of western North America was one of the principal routes of entry for the first colonizers of America.

An oral tradition of the Tongass Tlingit, quoted by McLaren and his coauthors, suggests this region was a place where two separate waves of migration might have met. A Tlingit elder said the first people to reach the Northwest Coast “came from the ocean.” Over time, they prospered and eventually were joined by “people from the Interior who had come to the coast

Suggested Readings

- Davis, L. G. 2005 Preliminary Report of Archaeological Investigations at Site J69E, Espiritu Santo Island, Baja California Sur, Mexico.
- 2008 New Support for a Late-Pleistocene Coastal Occupation at the Indian Sands Site, Oregon. *Current Research in the Pleistocene*, Vol. 25, pp. 74–76.
- Davis, L. G., and C. E. Schweger 2004 Geoarchaeological Context of Late Pleistocene and Early Holocene Occupation at the Cooper’s Ferry Site, Western Idaho, USA. *Geoarchaeology: An International Journal*, Vol. 19, No. 7.
- Davis, L. G., M. L. Punke, R. I. Hall, M. Fillmore, and S. C. Willis 2002–2004 A Late Pleistocene Occupation on the Southern Coast of Oregon. *Journal of Field Archaeology*, Vol. 29, Numbers 1 and 2.
- Gusick, A. E., and L. G. Davis 2007 Mal de Mer no Más: Searching for Early Underwater Sites in the Sea of Cortez. Paper presented at the 2007 Society for American Archaeology Conference, Austin, Tx.

and this combination formed a nucleus from which the Tlingit, Haida, and some Tsimshian were derived.”

Considering the early evidence for bear ceremonialism at Kilgii Gwaay, it’s interesting that the group that came from the sea was called the Teikweidi—the Brown Bear Rock House (or cave) People. 

—Bradley Lepper

How to contact the principals of this article:

Duncan McLaren
Department of Anthropology
University of Victoria, PO Box STN CSC
Victoria, BC V8W 3P5
e-mail: dmclaren@uvic.ca

Rebecca J. Wigen
University of Victoria
PO Box STN CSC, Victoria, BC V8W 3P5

Quentin Mackie
University of Victoria
PO Box STN CSC
Victoria, BC V8W 3P5

Daryl W. Fedje
Parks Canada
711 Broughton Street
Victoria, BC V8W 1E2

Suggested Readings

- Fedje, D. W., A. P. Mackie, R. J. Wigen, Q. Mackie, and C. R. Lake 2005 Kilgii Gwaay: An Early Maritime Site in the South of Haida Gwaii. In *Haida Gwaii: Human History from the Time of the Loon to the Time of the Iron People*, edited by D. W. Fedje and R. W. Mathewes, pp. 187–203. UBC Press, Vancouver, British Columbia.
- Fedje, D. W., R. J. Wigen, Q. Mackie, C. R. Lake, and I. D. Sumpter 2001 Preliminary Results from Investigations at Kilgii Gwaay: An Early Holocene Archaeological Site on Ellen Island, Haida Gwaii, British Columbia. *Canadian Journal of Archaeology* 25:98–120.

- Germonpré, M., and R. Hämäläinen 2007 Fossil Bear Bones in the Belgian Upper Paleolithic: The Possibility of a Proto Bear-Ceremonialism. *Arctic Anthropology* 44(2):1–30.
- McLaren, D., R. J. Wigen, Q. Mackie, and D. W. Fedje 2005 Bear Hunting at the Pleistocene/Holocene Transition on the Northern Northwest Coast of North America. *Canadian Zooarchaeology* 22:3–29.
- Rockwell, D. 1991 *Giving Voice to Bear: North American Indian Myths, Rituals, and Images of the Bear*. Roberts Rinehart, Niwot, Colorado.