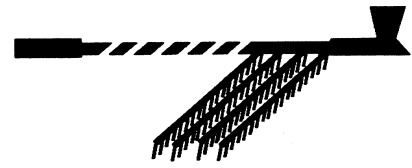


# CALUMET



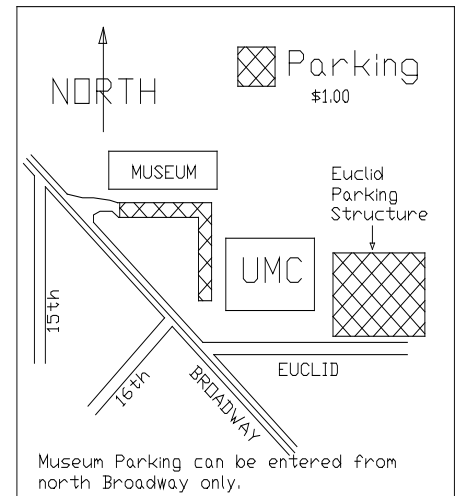
CONSERVATION    PRESERVATION  
EDUCATION      EXPLORATION

Newsletter of the Indian Peaks Chapter of the Colorado Archaeological Society  
OCTOBER, 1999

## CALENDAR OF EVENTS

**General (lecture) meetings are held in the University of Colorado Museum, Dinosaur Room  
Second Thursday of each Month, at 7:00 PM. The public is always welcome.**

October 7	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>October 14</b>	<b>IPCAS General Meeting, 7 PM.</b> Frank Eddy. Topic: Work in the Sinai Peninsula.
November 4	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>November 11</b>	<b>IPCAS General Meeting, 7 PM.</b> Steve Cassells. Topic: Anasazi pit-house villages located north of Bluff, Utah.
December 2	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>December 9</b>	<b>IPCAS Christmas Party, 6 PM.</b> At the Museum.
January 6	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>January 13</b>	<b>IPCAS General Meeting, 7 PM.</b> Presenter not confirmed.
February 7:30PM	3 Executive Board, Sword Microsystems Conference Room,
<b>February 10</b>	<b>IPCAS General Meeting, 7 PM.</b> Larry Conyers. Topic: Remote Sensing.
March 2	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>March 9</b>	<b>IPCAS General Meeting, 7 PM.</b> Dr. Doug Bamforth, IPCAS member Topic: Willow Bunker Project - progress report.
April 6	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>April 13</b>	<b>IPCAS General Meeting, 7 PM.</b> Dr. Bob Brunswig, IPCAS Professional Advisor Topic: RMNP Survey project - progress report.
May 4	Executive Board, Sword Microsystems Conference Room, 7:30PM
<b>May 11</b>	<b>IPCAS General Meeting, 7 PM.</b> Presenter not confirmed.



Map of Parking at CU Museum

## MEMBERSHIP RENEWALS

Please look at the mailing label printed on the last page of the Calumet. If a date appears after your name and that date has past, your membership is overdue. Please keep your membership current. Most of the projects in which we participate require an active CAS membership.

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## **A Weekend Volunteer Opportunity - Club Sponsored**

Mark October 9 and 10 on your calendar - the primary work weekend. Mark October 16 and 17 on your calendar - the alternate weekend, if bad weather cancels the primary date. This project is primarily survey and mapping of existing sites with the possibility of some shallow test excavations. **The limit of 15 volunteers for this project has been eliminated.**

At the Willow Bunker project, the CAS and PIT volunteers located a large surface site near the work station. The CU Field School students located a few others. We flagged the large site until we ran out of flags - about 150. Additional survey adjacent to the site found that concentrations of material occurred along a ridge for nearly a quarter of a mile. If the rules of SHPO are followed, exactly, there are about 40 sites - not counting about 30 isolated finds (which might turn out to be complete sites with further survey). However, the array of sites will probably be listed as one huge site.

Jeff Overturf, NFS, has arranged a weekend in October for surveying the site, doing the mapping, filling out the site documentation, and maybe even doing a couple of test pits. We will camp overnight at the work center. There will be a 'pot-luck' barbecue on Saturday night. We have invited the Fort Collins chapter to join us. The work center is located a mile north of the intersection of Colorado 14 and Weld CR77, just outside Briggsdale. Briggsdale is about 22 miles northeast of Greeley. It is best reached from Boulder and Longmont by taking I-25 north to Fort Collins, taking the Mulberry exit (3<sup>rd</sup> exit) east onto Colorado 14, and proceeding east for 42 miles to the intersection with Weld CR77.

Jeff is constructing a priority list of tasks to be completed. Almost certainly, survey of the major site will be first. Mapping of that site will probably be second. Jeff has discussed having a work-table that is moved from artifact to artifact during the mapping. The location of each artifact would be recorded using a Top-Con unit while volunteers would weigh, measure, photograph, and describe the artifact. This is a unique approach that would combine mapping and lab work, allowing the artifacts to be left in place.

If you are interested in this opportunity, please contact Tom Cree at (303) 776-7004 or [tlc@lanminds.net](mailto:tlc@lanminds.net) to make reservations. This will be a quick, fun project - especially for those who had difficulty participating in the weekday projects.

## **PAAC - Program for Avocational Archaeological Certification, 1999**

The Program for Avocational Archaeological Certification (PAAC) is designed to be a mutually beneficial educational program for avocational and professional archaeologists. It was established in 1978 by the Colorado Archaeological Society (CAS) and the Office of the State Archaeologist of Colorado (OSAC). It provides a means for CAS members and other citizens of Colorado to obtain formally recognized levels of expertise outside of an academic degree program. It also facilitates contributions by avocationalists to public service and assistance in education, governmental management of cultural resources, research, and the protection of archaeological resources in Colorado. PAAC's intent is to complement, not replace, existing university and governmental training programs.

PAAC is a statewide program designed to meet the needs of the avocational community. The program is supervised by the PAAC Board; members include the Board Chairperson (appointed CAS member), the CAS President, and the State Archaeologist. The State PAAC Coordinator (Assistant State Archaeologist) is responsible for course development, scheduling, and course presentation. Each CAS chapter designates a Local PAAC Coordinator (Morey Stinson 303-530-7727 is the Indian Peaks coordinator). The Local Coordinator is responsible for expressing group needs to the Board and State PAAC Coordinator, publicizing PAAC activities, organizing the arrangements for PAAC courses, and promoting the program. All participants in the PAAC program must: Be 15 years of age or older; Agree to the PAAC Code of Ethics; and Pay a non-refundable, nominal materials fee per course (\$12.00 plus an \$8.00 classroom fee)

The PAAC Class for the Indian Peaks Chapter will be Colorado Archaeology (20 hrs) – It covers the major periods and cultures of Colorado's prehistory, concluding with a brief summary of historic period American Indian groups in Colorado.

The first class will be on October 13th and meets once per week with the last class being on December 1st. Most classes are on Wednesday. Other class dates are October 21st, October 27th, November 3rd, 10th, and 18th. All classes begin at 6:30PM. Classes are held at the Foothills Nature Center, a Boulder Open Space facility located at 4201 North Broadway in Boulder. For more information call Morey or Janet Stinson at 303 530-7727 or to enroll, send your check for the \$20.00 fee to Morey Stinson, 7418 Park Circle, Boulder, Colorado 80301.



## **BYLAWS**

(Revised May 1992)

### **ARTICLE I. NAME**

The name of this organization shall be Indian Peaks Chapter, Colorado Archaeological Society.

### **Article II. Purpose**

The Indian Peaks Chapter, Colorado Archaeological Society (the Chapter) is a non-profit organization existing for the purpose of maintaining and promoting the goals of amateur and professional archaeology in the State of Colorado. These goals shall include, but not be limited to:

- A. Establishing and promoting high standards of archaeological research, documentation, reporting and resource management.
- B. Establishing and promoting mechanisms to represent archaeological interests in political and public forums, including increased state and federal recognition.
- C. Promoting education and interest in the fields of archaeology and resource management for both the chapter membership and the public.
- D. Adhering to the Constitution of the Colorado Archaeological Society (C.A.S.) of which this organization is a recognized member chapter.

### **ARTICLE III. MEMBERSHIP**

- A. Any person, interested in the field of archaeology and agreeing with the purposes of this chapter and those of the C.A.S., is eligible to become a member .
- B. Membership period is for twelve months, beginning on the date dues is first paid and ending on the anniversary date thereof, concurrent with membership in the Colorado Archaeological Society.
- C. Voting rights: All individual members and all family members over the age of 14 shall have one vote each.
- D. Chapter dues shall be established by the Executive Board in accordance with class of membership, subject to annual review, payable by the anniversary date of a member's joining of each year, and shall include C.A.S. membership dues.

### **ARTICLE IV. OFFICERS**

- A. The officers of this chapter shall be
  - 1) President,
  - 2) Vice President,
  - 3) Treasurer,
  - 4) Secretary,to be elected by the membership.
- B. The officers and committee chairmen, including the directors, shall comprise the Executive Board and have the power to vote on all issues which come before the Executive Board.
- C. The President and the Executive Board shall have the power to appoint committee chairmen and committeemen, or additional positions as they see fit. The committee chairmen include but are not limited to: Historian/Librarian, Publicity, Membership Secretary, Newsletter Editor, Field Director/s, C.A.S. Representative, Archaeological Advisory Committee Representative, Professional Advisor, Project Information Officer, PAAC Coordinator. and at least four Directors.

- D. The elected officers shall perform the following duties:
1. President
    - a. Presides over all regular chapter and Executive Board meetings.
    - b. With the Executive Board, appoints various positions in the Chapter, including Executive Board vacancies.
    - c. Insures the satisfactory performance of fellow officers and appointees.
    - d. Serves as a member of the Board of Directors of C.A.S.
  2. Vice President
    - a. Performs the President's duties in that officer's absence.
    - b. Arranges and presents each monthly chapter program.
    - c. Arranges special events and appoints assistants as necessary.
    - d. Arranges for PAAC classes with the PAAC Training Coordinator.
    - e. Collects, deposits, dispenses and reports all moneys connected with special events and makes final written report to the Treasurer and Executive Board.
  3. Treasurer
    - a. Collects and records all funds, deposits and disburses funds and presents an itemized statement of chapter finances at each Executive Board meeting.
    - b. Responsible for forms and reports of finances of the chapter to be made to the State C.A.S.
  4. Secretary
    - a. Records and files minutes of each chapter meeting and executive board meeting.
    - b. Maintains a file of all chapter correspondence.
    - c. Prepares a summary of minutes of meetings to be included in the chapter newsletter.
    - d. Carries out official correspondence of the chapter in conjunction with the President.
- E. Terms of the elected officers shall be for one year, January 1 to December 31. Elected officers may serve up to three consecutive years. Longer terms may be recommended by the Executive Board and approved by the membership.
- F. Any individual member in good standing shall be eligible to hold office, but shall hold no more than one office at a time, except is approved by the Executive Board. Resignations must be submitted in writing to the chapter Secretary.

**ARTICLE V. ELECTION PROCEDURES**

- A. At the Executive Board meeting in August of each year, a Nominating Committee shall be appointed by the president. It shall submit its report at the regular September meeting, at which time a complete roster shall be presented to the membership. Nominations may be made from the floor at this time. Nominations are to be published in the October newsletter prior to the October meeting. Candidates for office shall be introduced to the membership at this time to acquaint the membership with the candidates prior to the election-
- B. The election shall be held in November at the regular meeting.
- C. The new officers shall be installed at the December meeting to take office officially January 1<sup>st</sup> of the following year.

P h i l i p B o s s u n g

**ARTICLE VI. MEETINGS**

- A. The regular meeting of the Chapter shall be held on the fourth Wednesday of each month, unless otherwise authorized by the Executive Board.
- B. Fifteen percent (15%) of the membership shall constitute a quorum.
- C. Parliamentary authority shall be Robert's Rules of Order.

**ARTICLE VII. AMENDMENTS**

- A. These bylaws may be amended by a majority vote of the members present at any regular chapter meeting, proposed changes having been submitted in writing at the previous meeting or published prior to the meeting in the Chapter newsletter to the membership.

**ARTICLE VIII. CHAPTER PROPERTY**

- A. If the Chapter becomes inactive for any reason, its Charter, all records, funds, library, equipment, supplies, and other property become the absolute property of the Colorado Archaeological Society and shall be sent to the Executive Secretary or arrangements be made for these materials to be picked up by the Executive Secretary or his/her representative.
- B. If any member of the Chapter becomes inactive for any reason, all Chapter property or materials shall be delivered to a Chapter Officer. The Executive Board is empowered to request return of Chapter property from any member who becomes inactive as they see fit.

**ARTICLE IX. COMPLIANCE**

- A. No part of the net earnings of the Indian Peaks Chapter Colorado Archaeological Society, shall inure to the benefit of, or be distributable to its member, except that the Chapter shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article II, (PURPOSE).

No substantial part of the activities of the Chapter shall be the carrying on of propaganda, or otherwise attempting to influence legislation and, the Chapter shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office.

Notwithstanding any other provision of these Articles, the Chapter shall not carry on any activities not permitted to be carried an (a) by a corporation exempt from federal income tax under Section 501 ©(3) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States internal Revenue Law) or (b) by a corporation contributions to which are deductible under Section 170 ©(2) of the Internal Revenue Code of 1954 (Or the corresponding provision of any future United States Internal Revenue Law).

**ARTICLE X. CODE OF ETHICS**

All members are bound by the code of ethics stated in Article III of the Constitution of the Colorado Archaeological Society and any and all amendments thereto.

P i p e r P r i l l a m a n

**The 64<sup>th</sup> Colorado Archaeological Society (CAS) Annual Meeting  
The 4<sup>th</sup> Rocky Mountain Anthropological Conference (RMAC)**

**Date:** September 30<sup>th</sup> to October 3<sup>rd</sup>.

**Where:** Hotel Colorado - Glenwood Springs, CO. Call 1-(800) 544-3998, mention the RMAC for reduced rates.

**Theme:** Rocky Mountain Culture Area (Mexico to Canada).

**Presenters:** Over fifty, in two full days of programs, vendors, exhibits, and public forum.

**Banquet:** Speaker will be Jack Gladstone - singer, songwriter, and storyteller from Montana.

**Registration:** Professional (\$55) and CAS member/student (35).

**Additional Activities:** Alice Hamilton Scholarship Auction and Raffle, Board and Membership meetings, Awards, New Officers, Fun, Entertainment, and Education.

**Officers Needed**

It is time for the annual election of officers and board members. We would like to encourage members of the chapter to consider running for any of the offices in the club, or as a board member. The duties of the President, Vice-President, Treasurer, and Secretary are detailed in the copy of the by-laws on page 4 of this Calumet. The current officers and board members are listed on the last page of the Calumet. If you have any questions, please contact one of them.

We are especially looking for a person to assume the President's role. This position has been vacant. We also need a person to keep our books - our very capable treasurer, Dick Owens, is unable to continue in that position, next year.

**Cliff Shelters Protected**





## **BONES OF NEBRASKA MAMMOTHS IMPLY EARLY HUMAN PRESENCE**

### **Sites at Least 18,000 and 14,000 Years Old**

Don Alan Hall, The Mammoth Trumpet

Two sites on Nebraska's high plains are offering evidence that people were in the Americas before Clovis time 11,000 years ago. Mammoth bones from these sites reveal patterns of modification researchers believe could only have been caused by humans.

Because both sites are in well-studied, primary deposits of Peoria loess that are confidently dated, the investigators are convinced people were there at least 18,000 years ago. "There appears to be a tradition of mammoth-bone fracturing and flaking here in the plains that went on for seven to eight thousand years", says Steven R. Holen, Public Archaeologist and Research Assistant Professor with the University of Nebraska State Museum in Lincoln. He suggests that modifications to mammoth bone at the two sites appear the same as patterns documented at Clovis-age sites in the region. Samples of mammoth bones and soil humates from the La Sena site on the Medicine Creek Reservoir in Frontier County have been radiocarbon dated at between 19,000 and 18,000 years ago. At the nearby Jensen Mammoth site, where mammoth bone also appears to have been fractured and flaked by humans, radiocarbon dates of bone collagen and soil humates range between 15,000 and 14,000 years ago. But unlike Clovis sites containing modified mammoth bone and well-made flaked stone tools, these two sites have revealed no stone tools.

The discoveries present Holen and his colleagues with a weighty challenge because according to the conventional wisdom in North American archaeology, there were no humans in the Western Hemisphere before the makers of Clovis tools that date to no more than 11,500 years ago. By offering evidence to the contrary, they are likely to be told that either their chronology is wrong or the mammoth bone was modified by natural processes. Holen, however, is confident of the data. "I think we can demonstrate that this can only be human modification", he said in a recent telephone interview. "The stratigraphic sequence is really well known and there's no doubt about the dates for these sites. They're well dated and the stratigraphy is well understood. That's the strongest part of our argument at this point". Working with Holen on the project is geomorphologist David W. May of the Department of Geography, University of Northern Iowa, a leading specialist on deposits of Holocene and late Pleistocene age in central and southern Nebraska. They are confident that at each site bones of one individual mammoth were buried by loess--fine-grain, wind-blown silt--relatively soon after the animal died.

"We think we have very reliable radiocarbon dates", Holen said after explaining that the bone, especially at the La Sena site, is in good condition. Though water leaching down through loess can destroy bone, a weakly developed B soil horizon containing clay seems to have protected it. At the La Sena site this soil horizon actually caused some bones to become coated with a mineral deposit that helped protect them. "At the La Sena site the collagen content of the bone is very good".

"There's absolutely no doubt about how old these sites are", Holen added. The radiocarbon dates from humates in soil samples and mammoth bone collagen from the La Sena site appear in a paper May and Holen recently published in *Quaternary Research*. Humates are organic acids in humus; collagen is an insoluble protein that is a chief constituent of bone. Two soil samples from approximately four meters below the surface were found to date to 18,860  $\pm$  360 (Tx-7006) and 16,730  $\pm$  490 (Tx-6708) years ago. The latter sample (8 kilograms) was immediately adjacent to a large piece of mammoth bone at the buried B horizon, while the former was a larger (50-kilogram) sample taken about 20 centimeters above the horizon and the bones. Collagen in the mammoth bone was dated to 18,000  $\pm$  190 years ago (Beta 28728). May and Holen consider the older soil date more reliable because modern rootlets, which would skew the dates toward the present, were found around the mammoth bones in the B horizon. The larger sample avoided animal burrows, rootlets, and cracks in the loess.

### **Fracture Patterns**

If they are so confident of the antiquity of the sites, how can they be sure people were there? "Our interpretations are based primarily on the fracture patterns of the bones", says Holen. At the La Sena site the bones are disarticulated. Limb bones are very highly fractured but among them are unbroken ribs and vertebrae. "We see evidence of high-velocity impact points". Whatever broke the bone left impact scars that measured approximately four centimeters. "You can tell by the way the impact fractured the bones--the negative bulbs of percussion--that these were hit with something that had to be fairly large and coming at a pretty high rate of speed."

Further, the breakage occurs in the middle of the bone shafts, suggesting that the intent was to gain access to the marrow. Holen noted that studies of prehistoric bone breakage as well as ethnographic studies of people breaking elephant bones indicate that they were broken open for marrow. "We know that recent hunter-gatherer groups in Africa broke open elephant bones to extract marrow. We have good reason to think that people utilized marrow in prehistory". He noted evidence of marrow usage from Paleoindian bison kills. "People used marrow--it's a high-energy food".

### **Bone as a "Lithic Resource"**

Holen and his colleagues have observed that patterns in bone flaking in Clovis sites support their argument for human presence at the La Sena and Jensen sites. "There are well-documented cases at Clovis-age sites in North America of people breaking and flaking mammoth bone", says Holen, who has been investigating one Clovis site himself. In these cases, he says, "we see evidence of the bone being struck by something very hard, probably a hammerstone, and we see indications of high-velocity impact points. These points are very distinctive--they cause negative bulbs of percussion, and they cause radiating fractures from the point of impact", he said.

Clovis sites also provide evidence that people were flaking mammoth bone and using it as if it were a lithic resource. "They could take nice flakes off of these bones, which were presumably used as expedient tools in the butchering process. Bone flakes in very similar patterns to stone. You can see the platforms, bulbs of percussion, hinge fractures, and other diagnostic features of stone flaking on the bone flakes. These are the patterns we are looking for--and the patterns we see at both Jensen and La Sena sites as well as at Clovis-age sites".

### **Modification by Natural Processes?**

How can Holen be sure the mammoth bones from these two Nebraska sites were not modified by natural processes? Couldn't natural erosion have caused much of the breakage? And what about the teeth of those big Pleistocene carnivores, the massive feet of live mammoths, or the hooves of bison? His most important evidence to the contrary may not be the bone itself but the stratigraphy which has held its secrets for so long. Loess--windblown silt from meltwater of the continental glacier, which would have been no more than a few hundred miles north and east of these sites at the time the mammoths died--covered the bones within a few years. Deposition of the loess began about 20,000 years ago and continued for approximately 10,000 years; by then 12 meters had been deposited on southwestern Nebraska. Both sites are solidly within the loess deposit; the bones have not been moved by running water or erosion.

The fact that the bones are situated in a fine wind-blown deposit eliminates many natural processes that could have broken the bone, for example, transport in rock-filled streams. "There's no rock that could have fallen and broken these bones naturally. There's no rock that could have washed against them and broken them". He also discussed and rejected two natural causes that have been found to modify modern elephant bone--carnivore actions and trampling by other elephants. "Carnivores always begin gnawing at the articular ends of the bones and then work their way into the shafts", Holen said, pointing out that all the breakage at the La Sena and Jensen site occurs at mid-shaft. "We see very little evidence of carnivore action at these sites. It should be very apparent if carnivores are in these bone assemblages, and that evidence just isn't there. There's only very minor evidence of carnivore activity".

### **Trampling?**

"We have very highly fractured limb bones lying right next to complete ribs and vertebrae". That suggests that mammoth trampling is not the cause of this fracturing because the ribs would be broken much more quickly; they're lighter bones. Further, there is the evidence that something with an impact point of 4 cm broke the bone. "That is much larger than carnivore teeth and much smaller than mammoth feet", Holen observed.

"Basically we're rejecting the natural processes in favor of the human process by eliminating the arguments of natural processes, and using comparisons with known human modification of proboscidean bone. And we're seeing a very strong relationship between our assemblages and the patterns caused by human breakage".

Mammoths are believed to have become extinct soon after 11,000 years ago, but mammoth bones from sites approximately of Clovis age have frequently been found to show evidence of butchering. Bones at the La Sena site are completely disarticulated and limb bones are heavily fractured; at the Jensen site bones are scattered, but they're more or less in anatomical order with front bones being toward the head and rear bones in the opposite direction. "So far we haven't seen any cut marks from stone tools", Holen said. "Nor have we found any stone tools".

### **Miami Stone Circle, revisited III**

K. Kris Hirst - About.com Guide to Archaeology

08/24/99

An astonishing opinion piece in the September issue of Archaeology magazine suggests that the Miami Stone Circle has not been yet proven to be of Native American manufacture, or prehistoric in period; in fact, Jerald Milanich suggests that the excavators have yet to rule out the possibility that the site is actually associated with the septic tank which clearly is located within the circle's limits. Although his case is not convincing in the face of what has been published (which is all any of us outside of Florida can go on), the possibility exists that he is correct. Well worth the price of a copy of Archaeology: I recommend you rush out and snag a copy. One supporter of Milanich's viewpoint, by the way, is the Amazing Randi, that well-known debunker of the terminally weird.

07/01/99 - Advocates for the preservation of the Miami Stone Circle have won the first step toward being able to purchase the site from the developer. A Miami-Dade Circuit judge has determined that the site may be considered a "taking". Takings law says that the government may appropriate private property for public use, but only if the owner is fairly compensated. Takings law takes its direction from a clause in the 5th Amendment to the US Constitution: "nor shall private property be taken for public use, without just compensation". It is generally associated with the government expropriation of private land for a road or some other public facility, but this is not the first time it has been used to protect archaeological resources. At this point, the county must come up with a fair price for the property, in these cases this is usually based on the value of the real estate--the developer paid something on the order of \$8 million. But, in this case the developer is trying to work out a deal for just compensation for the value of the archaeological property, and I don't believe this argument has been used successfully before (but somebody correct me if I'm wrong).

According to the latest news, Florida Governor Jeb Bush and his cabinet are putting the Brickell site on the Conservation and Recreational Lands program, slating it for purchase in the next fiscal year for its appraised value or 50 percent of the developer's selling price, whichever is cheaper. The Brickell site, you'll recall, was the focus of intense international scrutiny earlier this year, when the site was rediscovered within the proposed right-of-way of an exclusive Miami beachfront condominium project. The site is cut into the native bedrock, with a series of holes which have been interpreted (by some people) as sea animal shapes such as whales and dolphins. The ensuing debate was typical of development vs. preservation discussions in this country and around our planet. This step is not the end point for the Brickell site because the money to pay for the site has yet to be found, but it goes a long way to protecting this one-of-a-kind resource.

### **ANCIENT CLAM BAKE**

AMÉLIE A. WALKER - Archaeology Magazine

Geologists at the University of Delaware have successfully used ground penetrating radar (GPR) to measure a midden site on an upland surrounded by a saltwater marsh at Cape Henlopen in Delaware. Previously, the technique had not been used in coastal marsh areas because GPR signals do not effectively penetrate salt water. Because of its proximity to the marsh, it was thought that the ground water at the site was salty. The Cape Henlopen site has been profiled down to depths of roughly 25 feet. The shell midden is six feet deep, 90 feet long, and 60 feet wide, and it is underlain by Holocene sand. The GPR reading will be confirmed by archeological excavations at a future date.

The site, which dates to between A.D. 1000 and 1600, was discovered by the Delaware Department of Natural Resources and Environmental Control in 1976 and is listed on the National Register of Historic Places. Items found on the surface of the shell mound include pieces of pottery, stone tools, and fire-cracked rock. It is thought that Native Americans waded into the water and collected seafood, then heated rocks to drop into pots, cooking the meat. There were many such coastal shell middens when Europeans settlers first arrived, but nineteenth-century farmers, after a suggestion by geologists, used them to fertilize their fields.

William J. Chadwick, a graduate student at the University of Delaware, is using the GPR information in his study of the deposition of shell middens and the evidence of sea-level changes during the evolution of Cape Henlopen over the past 2000 years. Data from work done on other similar sites will be presented at the Geological Society of America Annual Meeting during the last week of October in Toronto, Canada.

### The Name Game

All of the strings of petroglyphs in past issues were made up of names of members of the club. The strings often contain both first and last names and other times - only the last name. The drawings are a one-for-one replacement for letters. The first letter of strings and each name is the "cap" form, the other letters are usually in lower case. These were the names in the September Calumet:

E i a l n e H i l l

Elaine Hill

A n n e M u t a w

Anne Mutaw

P a t r i c k B a t c h e l d e r

Patrick Batchelder

### Amazon.com

IPCAS has been approved as an amazon.com associate. What does that mean? We can receive 5% - 15% of all book sales that are initiated from amazon.com links on our IPCAS web-site. We can make money for our club three ways:

1. Visit the IPCAS site ([www.coloradoarchaeology.org/ipcas](http://www.coloradoarchaeology.org/ipcas)), purchase a book from the featured book list, CD list, or video list, and IPCAS receives 15% of the sale. We have compiled a list of books on Colorado archaeology, general archaeology, Native American titles, anthropology, paleontology and more for your selection.
2. Jump directly to the Amazon.com site from the IPCAS site, order a book, and IPCAS receives 5% of the sale.
3. Use the Search button to look up an Amazon book, CD or video, order it, and IPCAS receives 5% of the sale.

#### Restrictions

1. You have to go through the IPCAS web site in order for the club to receive money off the sale.
  2. You can not use the one click ordering tool on the Amazon.com site. If you do, we lose the revenue for the sale.
- This is an easy way to raise money for our chapter. Please talk up this feature and **START USING THE IPCAS SITE TO ORDER BOOKS, VIDEOS, AND CDs.**

### Chapter Library

Our chapter has a library of archaeology books and periodicals. If you wish to check out any of the items in the library, please contact Mac Avery at (303) 499-3455, e-mail at [averycompany@sprintmail.com](mailto:averycompany@sprintmail.com). If you would like to know what is held in the library, ask Mac for a copy of the "card catalog". Items in the library are available to all club members.

### Electronic Calumet

The electronic version of the Calumet will be sent to members as .txt or .htm attachments to e-mail. If you would like to receive electronic copies of Calumet issues, please send an e-mail to Tom Cree, [tlc@lanminds.net](mailto:tlc@lanminds.net). Please state which format you prefer.

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