



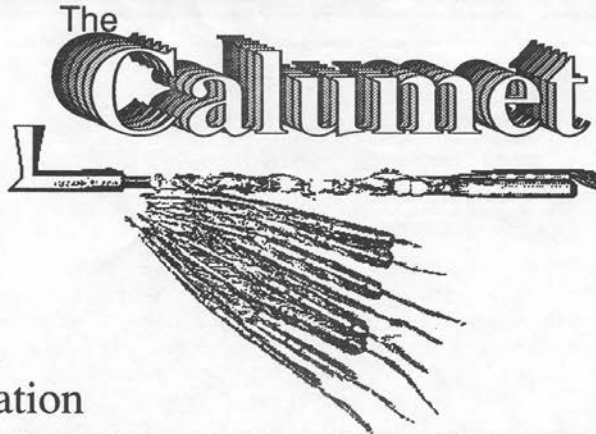
**Indian Peaks Chapter**  
Colorado Archaeological Society

Conservation

Preservation

Education

Exploration



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## Calendar of Events

September, 1990

September 6-16 Rock Creek Project, Louisville, with Carol and Pete Gleichman, excavation of an early ceramic site. Call Carol, 444-5574, to sign up.

September 12 First class in Principles of Excavation, the Indian Peaks Chapter PAAC class for this year. Registration is \$10 and call Ann Pipkins, 449-0851 to register. Ann is also looking for a place to hold the classes. Call her for location.

September 18 Chapter Executive Board meeting, 730 p.m. at Rick and Sue Lippincott's, 604 Holbrook, Erie. If you get lost, 828-3144 will bring help.

September 25 Indian Peaks Chapter meeting, 604 Holbrook, Erie. OD Hand will be talking about archaeology in downtown Denver, the excavation of Tremont House. Refreshments, of course. (See Page 7 for directions to Erie United Methodist Church.)

October 5-7 CAS Annual Meeting in Pueblo. More information in the next Calumet.



## Coffee Break

with

Ed & Rick

After a summer off, vacation, and some very hot weather, we're back with a new issue of *The Calumet*. We hope you all had a great summer, participated in some exciting archaeological events such as the Pawnee Grasslands survey, etc.

As we come toward Fall, the first opportunity is the Rock Creek dig with Native American Services (Carol and Pete Gleichman) on September 6-16. This salvage of a possible early ceramic phase habitation site, eroding out of the bank of Rock Creek, will give Indian Peaks members valuable experience in excavation working with experienced professional archaeologists. Carol also noted that tour leaders are needed to conduct school class tours of the site in the mornings on September 10-14. Call Carol at 444-5574 if you can help, and to set up the best time for your help.

Kevin Black informs us that some funds are available for dating... not that kind... the C/14 type...! Said funds to be given on the basis of need to date samples either past or present. Needless to say, your prezs immediately applied for some funds for the Rock Creek project. Any other old samples laying around that might need dating? Call Rick at 828-3144 and we'll try to include in the proposal.

Hold out a little time in October for Pawnee Grasslands Revisited with Bill Lucius. Bill wants to complete the mapping project there and is trying to work some dates in October around vacation (for him) and hunting season (pronghorn)! Watch next month's *The Calumet* for more information.

The Chapter has received the second \$1000 grant check from the Cultural and Scientific Facilities Board. Recommendations for additional equipment are welcome by Rick at 828-3144. The present equipment will be used on the Rock Creek project so come out and use your new gear.

Just when you thought it was safe to lay your UTM overlay on a 7.5 minute quad, along comes our own Paul Heinrich with a new report on UTMs, maps, and the fact that the two don't necessarily get along... Kevin feels they don't get along for most of us anyway. Read Paul's interesting and informative article beginning on Page 4. Also, catch the PAAC class schedule from Ann Pipkins elsewhere in this issue. PAAC is where you learn about UTMs!



## Native Seeds

by Sharon Pay

What does the painting of ancient Aztec buildings, pottery, and gourds have to do with the dyeing of cotton and wool?

The answer: Those little buggers, the Cochineals.

A cochineal is an insect widely found in Mexico. It resides on the cactus *Nopalea Cochinellifera*. The pigment found in the bodies of the insect was one of the three major dye and paint materials used by the Aztecs. Good for buildings, pots and fabrics. It yields a beautiful purple/pink color depending on the mordant used.

To begin, you purchase the bugs in a powder or dried form. To me they look like ground abalone shells, but a closer look suggests they resemble the body of lady bugs. Place the bugs in warm water to hydrate.

I did not believe the color could be very strong so I smashed one between my fingers and it yielded a color like a very ripe berry.

After the bugs are hydrated, you put them in a blender until you get a nice red color.\* This liquid is then put into the dye bath with a mordant. Ammonia and copper mordants yield purple. Alum gives a reddish lilac.

The wool or cotton is simmered in the dye bath for 45 minutes to 1 1/2 hours to get the color depth you desire, and then rinsed.

There you have it. Who would have thought that the ancient people would have used a bug for something to major in their lives. It's fun to see just how creative they were. Next time we'll see how the Navajo dyed their moccasins.

[\*Editor's Note: Think thrice about that blender bit... I for one am fussy about what rides along with my milkshake!]



"I can't believe you. We go in and out of this cave a hundred times a day—but you always just have to try that thing!"



For Your  
Information

## North American Datum Change Will Effect UTM's

by Paul V. Heinrich

For many years, a system of geodetic survey stations, called the "North American Datum 1927" (NAD 27) was used to determine horizontal distances and latitude and longitude within the United States of America. The U.S. Geological Survey and National Geodetic Survey have recently completely revised the NAD 27 to create a more precise and accurate North American Datum 1983 (NAD 83) to be used in all future mapping. The change to NAD 83 has shifted the latitude and longitude, the Universal Transverse Mercator Grid System (UTM) and State Plane Coordinate Systems for all of the United States (McKay 1988; Morgan 1987).

Both the UTM coordinates and latitude and longitude coordinates used by archaeologists for site location are still tied to NAD 27 at this time, although NAD 83 was adopted in 1986. Both UTM coordinates and latitude and longitude taken for site locations from current topographic maps are all based upon NAD 27. Since 1980, the new editions of U.S. Geological Survey 7.5 minute maps are still based upon NAD 27, but they indicate in the lower left hand corner the amount of shift to the north-south and east-west required to correct latitude and longitude to NAD 83 (Morgan 1987; Stefanic 1987).

The change from NAD 27 to NAD 83 will significantly alter the UTM coordinates for archaeological sites on future U.S. Geological Survey and other maps. For example, the use of NAD 83 will increase the Northing of an UTM coordinate by 212 m in eastern Colorado and by 214 m in western Colorado. The change of datum will decrease the easting of an UTM coordinate by 46 m in eastern Colorado and by almost 62 m in western Colorado (see Table 1) (Dr. Elizabeth B. Wade, National Geodetic Survey, personal communication, 1988). See UTM, Page 5

TABLE 1 SHIFTS IN UTM VALUES FOR FOUR GEODETIC STATIONS

State	Station	NAD 27 UTM	NAD 83 UTM	UTM Shift
County		Northing Easting	Northing Easting	(meters)
<b>Colorado</b>				
<b>Kit Carson</b>	<b>Kanorado</b>	<b>4,353,884.153</b>	<b>4,354,091.349</b>	<b>212.3</b>
		<b>754,564.5</b>	<b>754,518.3</b>	<b>42.2</b>
<b>Mesa</b>	<b>Glo</b>	<b>4,331,265.3</b>	<b>4,331,468.8</b>	<b>213.5</b>
		<b>713,314.1</b>	<b>713,252.6</b>	<b>61.6</b>
<b>Louisiana</b>				
<b>Bossier</b>	<b>Bellevue</b>	<b>3,615,399.7</b>	<b>3,615,606.0</b>	<b>206.3</b>
		<b>466,138.9</b>	<b>466,123.3</b>	<b>15.6</b>
<b>Plaquemine</b>	<b>Musk</b>	<b>3,282,278.1</b>	<b>3,282,480.2</b>	<b>202.3</b>
		<b>232,641.1</b>	<b>232,640.8</b>	<b>0.4</b>

**New Datum Shifts UTM's- continued from Page 4**

The change from NAD 27 to NAD 83 will also cause the longitude and latitude to change. The datum change will cause of line of longitude to shift eastward by 30 m along a line running through central Maine and Boston. It will cause no shift along a line through Cleveland, Ohio and Augusta, Georgia. A westward shift of 50 m along a line running through western South Dakota and central Texas, and of 100 m along a line running through central Washington and Santa Barbara, California, will occur in the change from NAD 27 to NAD 83. This change will cause latitude to shift in a much more irregular manner. The line along the latitude that does not change forms a curve starting at South Bend, Michigan, that bends from north to west crossing through or near Keokuk, Illinois, Wichita, Kansas, Santa Fe, New Mexico, and Long Beach, California. South of that line, the latitude will be shifted southward up to 32 m in south Texas and 40 m in south Florida. North of that line, the latitude will be shifted northward by varying amounts (Vincenty 1976).

There is currently a potential for confusion which will greatly increase with time, because of the change from NAD 27 to NAD 83. As indicated in the preceding paragraphs, the UTM coordinates for sites tied to NAD 27, will be off by at least 200 m for the Northing and variable amounts for the Easting of the UTM grid and for latitude and longitude coordinates depending on location within the United States on the new maps referenced to NAD 83, e.g.: United States Geological Survey (1988). Similarly, UTM coordinates and latitude and longitude determined from maps referenced to NAD 83, will be off by the same amounts on maps referenced to NAD 27 (Morgan 1987; Stefanic 1987). Also severe confusion can result if site locations based on NAD 27 are plotted on right-of-way or project boundaries using surveys based on NAD 83. Finally, caution should be used with site locations determined by satellite positioning techniques. Problems may result from satellite positions which will be NAD 83 coordinates that are plotted on maps using the NAD 27 grid on available topographic maps.

**THE NORTH AMERICAN DATUM**

The name of North American Datum 1983 (NAD 83) refers to its anticipated completion date, although project delays caused it to be completed in 1986. It is used only to measure horizontal distances. The separate datum used to measure vertical elevations is currently under revision itself. Previous to NAD 83, horizontal distances were measured using older, now obsolete data such as the New England Datum of 1839, U.S. Standard Datum of 1901, North American Datum of 1913, and the North American Datum of 1927 (Stefanic 1987).

NAD 83 consists of over 250,000 survey monuments scattered throughout the U.S., Canada, Mexico, Central America, Greenland, and the Caribbean Islands. These survey monuments form a network of control points which, when used with a reference ellipsoid, forms the basis for a system that can be used to very accurately measure horizontal and vertical positions (Morgan 1987; Stefanic 1987). Continued next month.

# PAAC News

from Ann Pipkins, PAAC Coordinator

Programs for People in  
Avocational Archaeology



## September

7-10	Gunnison	Colorado Archaeology
12	Boulder	Principles of Excavation
14-17	Pueblo	Basic Site Survey & Ethics
19/26	Boulder	Principles of Excavation
28-30	Grand Junction	Basic Site Survey & Ethics

## October

1	Grand Junction	Basic Site Survey & Ethics
3	Boulder	Principles of Excavation
5-7	Pueblo vicinity	PAAC Board Meeting
10/17	Boulder	Principles of Exvacation
19-22	Carbondale	Perishable Materials
24	Boulder	Principles of Excavation
26-29	Durango	Historic Archaeology

## November

2-5	Montrose	Perishable Materials
8/13/15	Fort Collins	Lithic Description & Analysis
16-19	Colorado Springs	Ceramic Description & Analysis
20/27/29	Fort Collins	Lithic Description & Analysis

## December

4	Fort Collins	Lithic Description & Analysis
7-10	Canon City	Principles of Excavation

Note that Indian Peaks Chapter will have one class between now and December. Call Ann to get the location of the class. Each chapter gets one class in each six month period.

Also note the fee for each class is \$10 payable to the "Colorado Historical Society- PAAC"

Members are able to take classes in other chapters to complete the course work needed for certification. Contact Ann Pipkins, 449-0851 for additional information.

Indian Peaks Chapter



Colorado  
Archaeological  
Society

## September Meeting

Tuesday, September 25, 1990

Erie Methodist Church\*  
604 Holbrook / Erie, CO

7:30 pm

“The Tremont House Excavation —  
Archaeology in Historic Downtown Denver”

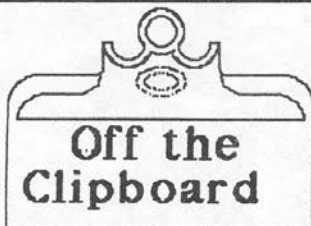
Speaker: OD Hand

OD Hand, formerly Assistant to the State Archaeologist, is now a staff archaeologist for the Colorado Department of Highways.



*Program is free and open to the public. Please join us.*

\* **Directions from Boulder:** Go east on Arapahoe to County Line Road. Go north on County Line Road to Cheeseman Street in Erie. Turn right on Cheeseman and go three blocks east to Holbrook. Go right on Holbrook to church. For more information call Ann Hayes at 494-3773.



Words like "Great," "Wonderful," "Fun," were used to describe the Indian Peaks annual Picnic held Saturday, August 4 at Erie. A major feature of the event was the unique "Atlatls at Erie" with mammoth, bison, and camel targets by our own Ann Hayes.

Top honors in the atlatl throw went to Kay Evatz with 12.5 points and Myriam Friggens with 6 points.

Comments heard on the 60/40/20 m course were such as "oh, that's the wrong end to throw," and "you get another shot for hitting the power lines. Paleocindians probably didn't have to contend with 220 volt power drops as they stalked the mammoth.

The food was excellent, the fellowship was fantastic. And the great part is we'll do it again next year.

From the Grand Nabob comes word of the Fifth Annual CAS Encampment at Twin Lakes back in June and July. More than 80 attended the event with 31 participating in the atlatl contest.

Leni sent a complete list of the winners, but space (and time) prohibits getting the whole thing in so....:

#### MEN'S DIVISION

First place Tim Boucher, Roaring Fork Valley

Second place Boney  
Cosyleon,  
Pueblo

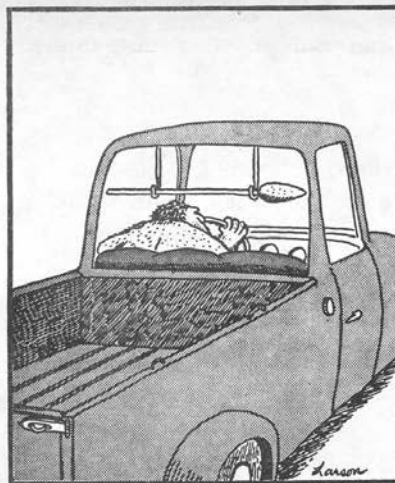
Third place Doug Bowman,  
Hisatsinom

#### WOMAN'S DIVISION

First place Elizabeth  
English,  
non-member

Second place Fran Cosyleon,  
Pueblo

Third place Leni Clubb,  
Indian Peaks



### Editor's Note!

There was a wealth of material for this issue of The Calumet, but time and space limited what we could do. We will get all of the excellent material in, this next month.

rrl



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1990 APPLICATION FOR MEMBERSHIP  
 IN THE INDIAN PEAKS CHAPTER,  
 COLORADO ARCHAEOLOGY SOCIETY

Individual membership \$20  New Member  
 Family membership \$25  Renewal

Name(s) \_\_\_\_\_

Address \_\_\_\_\_

Phone numbers \_\_\_\_\_ (h) \_\_\_\_\_ (w)

Make check payable to INDIAN PEAKS CHAPTER, CAS  
 Mail to JEANNIE HAMILTON, 1100 Deer Trail, Boulder, 80302  
 For renewals, please enclosed a stamped, self-addresses envelope  
 with your check to receive your membership card and roster.