



(Address Correction Requested) **SUMMER, 1997**

John Day Fossil Beds National Monument Newsletter **National Park Service, U.S. Department of the Interior**

Paleontology Highlights ...

This newsletter will feature the ongoing work of our paleontology crew over the last few months, a very busy time for them. From the notes of our monument's paleontologist, Ted Fremd, the following:

"This has been a busy late Spring and early Summer at the monument for fieldwork, fossil preparation and conservation, curation, interagency cooperation, outreach, lectures, and research activities.

The paleomagnetic polarity project is off to an excellent start. This involves measuring the strata at about 2-meter intervals, and carefully collecting a series of rock samples. Each sample is oriented to what is now magnetic north, and its angle. Then each of the samples is tested in a laboratory to find out what the magnetic polarity of the earth was when the rock was deposited.

When hundreds of these are taken in a column, the graphic depiction of the column looks like a bar code on a product in a supermarket. Each dark and light band represent times the earth's North Pole and the South Pole switched. Armed with this unique "bar code", we can compare it to any column of rocks in the world that also preserve this "magnetic fingerprint", and they to us. Our project is probably the longest span of rock-time ever measured for this effort in one area. You will all get to know person who is doing the work, Barry Albright, of the University of Florida.

For a similar example in a smaller-scale paleomag project to what we are doing, visit ...

<http://www.dla.utexas.edu/depts/anthro/kappelman/sinapmain.html>

... and go to their paleomag page.

Rotten Lakes and Sorefoot sound like nicknames for some of this year's field crew. They are actually sites just west of the Clarno Unit. This year we have recovered a number of fine fossils from these areas and will be returning next week to put more of the materials in plaster jackets. Andy "Three Skulls" Greenfield found - well, you guessed it, another oreodont. Several other oreodont skulls and postcrania were found in the section by the rest of the crew as well, far beyond what statistically would be expected here, based on material from closer to our neck of the woods.

The Mascall roadcut work will begin just west of Dayville. The contractor is going ahead with ripper work on the site soon. We are acting in an advisory and survey capacity only; although we drew attention to the need for such scientific scrutiny, of the fossil bed strata removed, in the first place. We have maintained all along that no one has ever quarried that Mascall locality, so no one can possibly predict what fossils may or may not be discovered. Thus this is a golden opportunity to examine details of the rocks at no cost for the equipment and labor with no burden on the contractor... we hope.

Also on the Mascall Formation, beginnings of work east of "The Bowl" have yielded a small number of remains near a tuff bed that yielded some skull fragments of "giraffe deer" earlier this year. Erick Bestland and Evelyn Krull are hoping to help with section measurement and pinpointing new paleobotanical localities, while testing global climate change models that may be vindicated by the rocks in the Mascall strata. Most of our efforts are occurring just south of Picture Gorge, inside the western boundary of the monument.

The Rattlesnake Formation project has been highly successful this year; new localities, new specimens, a great crew (with Jim Martin and Cary Herbal from South Dakota School of

Mines), and important correlations. For the first time, this year we found an important tuff bed that lets us figure out where all of the sites on the southern end of the boundary of the Sheep Rock Unit fit into the framework of the formation. You probably thought we knew all that already; we did not.

It has been difficult because of the constantly shifting nature of the 7 million year old river channels, alluvial fans, and conglomerate lenses. Andy Greenfield found a bonus during our sampling of the faunas: a huge claw support bone, far bigger than any found from these strata before. If it is what we think it is, it belongs to a giant, sabertoothed felid that we have seen a hint of before: a large humerus collected almost a century ago by collectors working for Yale.

The fellow driving up in a BLM rig every day and performing fieldwork with us is John Zancanella, the Bureau's State paleontological coordinator. His internship lasts 4 weeks (minimal), during which he is helping us do fieldwork on a variety of exposures and lands. He is being exposed to a variety of training, field techniques, and prospecting sites.

One of the places "Zanc" has joined the field crew is this year's major cyclic prospecting effort across the river at Sheep Rock peak. This is Al Pajak's and Scott Foss's (monument staff) major responsibility for the year. So far, they have brought back several jackets with intriguing specimens safely contained within. The finest specimen yet this year (but it's early) from Sheep Rock may actually be a new and unlooked for partial skull of an unusual insectivore, no bigger than the end of your thumb, that used to live here 29 million years ago.

More little fossils with big implications: the Lone Rock sites continue to astonish us. Volunteer extraordinaire Dwight Hoy continues to painstakingly wash the matrix and sort through the concentrate, finding hundreds of more samples of the faunas that lived in that basin, previously unknown to science. Dwight is also a regular on our Monday fossil expeditions and always works hard finding items of interest.

Meanwhile, over at Painted Hills, the crew collected an odd little *perissodactyl* previously undiscovered in those strata; Kelly Cahill found what is only the second-known specimen of a new kind of rodent; and volunteer Lia Vella, from Hagerman Fossil Beds, found what appears to be much of the foot of an *agriochore* (a "clawed" *oreodont*). More of this animal is probably there. This item is still in the rock and will come out later this summer in a jacket along with whatever else we are fortunate enough to come across out there.

Lots of visiting scholars will be here throughout the summer: look for Harold Bryant from the Provincial Museum of Alberta, working with Ted on *nimravid* carnivores; Steve Manchester and his work on the Clarno floras; Jim Honey working on camels; and Spencer Lucas (New Mexico) working with Scott on the *entelodonts*.

We have begun to give our lectures in Portland at the OMSI "Giants of the Gobi" lecture series. Emphasis is on how Oregon is at least as significant as these beds, scientifically; but we must admit that some of those Gobi specimens are incredible. If you know you are going to be in Portland it is worth the visit to OMSI. Don't be surprised if in their demo lab you see volunteers working on our specimens and talking about the John Day Fossil Beds! We took over a lot of tools to loan to them for working on specimens from our collections.

We visited Mel Ashwill, one of the most important avocational paleobotanists in North America, at his home in Madras earlier this year. Mel continues to collect excellent specimens from areas for which he keeps detailed field notes, and has a new manuscript reviewing the Gray Butte floras. These are important plant sites contemporaneous with the mammal sites found in Turtle Cove, but for which we have poor plant remains.

The last thesis advisory committee for our graduate student, Dale Hanson, was held on the University of Oregon campus. Dale is doing a great job maintaining a 4.0 GPA, taking difficult graduate courses, all while working full-time as the GIS coordinator for the BLM.

More work was done to positively identify the existence and precise location of the "Cant's Ranch leaf locality" (figured prominently in "Oregon's Ancient Forests" book frontispiece). We relocated the site precisely and began preliminary examination of the "Pine Fish" site, near the Cant Ranch, visitor center site. This site, the closest leaf bed to the visitor center, contains abundant pines and small mud-minnows, quite different in content and context than the typical "Bridge Creek Flora." More to come ...

Rainbow Family Gathering Over ...

The 1997 gathering of the "Rainbow Family of Living Light" has come and gone, but not without much apprehension by local residents. It was held at Indian Prairie on the Big Summit Ranger District, Ochoco National Forest.

Approximately 25,000 people, eight times the number of county residents, attended the gathering in early July. The site was within 15 miles of the Painted Hills Unit of the monument. National Park Service staff assisted the U.S. Forest Service and other state agencies, providing protection and safety for both the people and resources.

The gathering was held only a few miles from the town of Mitchell, the nearest source for supplies. Many local townspeople commented after that the Rainbow Family participants were both "different" and "no trouble." The event reminded many of the peace gatherings of the late 1960's.

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