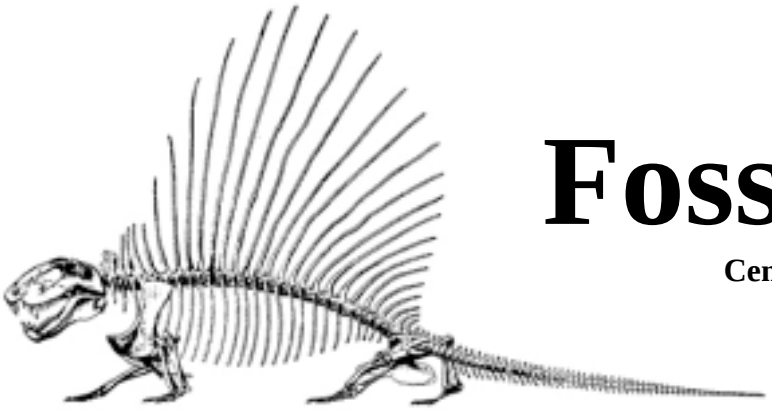


Fossil Footnotes

Central Texas Paleontological Society
October 2004

President's Message

Don't forget that the meeting this month is **Wednesday, October 13.**

I am ready for Texoma! I have been out of town a bunch, without even being able to collect while traveling. Hope to see all of you at 8:30 Saturday morning, October 16, at the entrance to Eisenhower State Park. If you haven't been on this trip, it's a must. We will have some campsites reserved in the park for both Friday and Saturday night. Let Ed Elliott know if you think you will be there (and about when).

Fossil Fest is moving forward. We are looking for folks to fill display cases. Those of you with an email connection should have received a note. (If you didn't and you should have, let me know, sometimes emails change.) We have all the booths rented and continue to sign up students and Girl Scouts. One of the major contributors to the success of the Show is participation by the members. This is a pretty easy thing to do if we have plenty of help. So make sure you carve out a few hours to help out, if at all possible. We need people Thursday night for setup, Sunday for take down, and Saturday, which can be busy.

My daughter is in Spain for the year. I am hoping to visit in the spring. If anyone knows anything concrete about collecting in Spain I would appreciate hearing from you. What little I have found on the web suggests it is hard to do for a visitor.

See you at the meeting. Wednesday Oct 13

- Mike

October Meeting
Wednesday October 13

November meeting Tuesday Nov 9

Fossil Fest 2004: Nov 5, 6, & 7
At Old Settlers Park on Hwy 79
Round Rock, Texas
Contact our president Mike Smith
For details
Msmith17@austin.rr.com

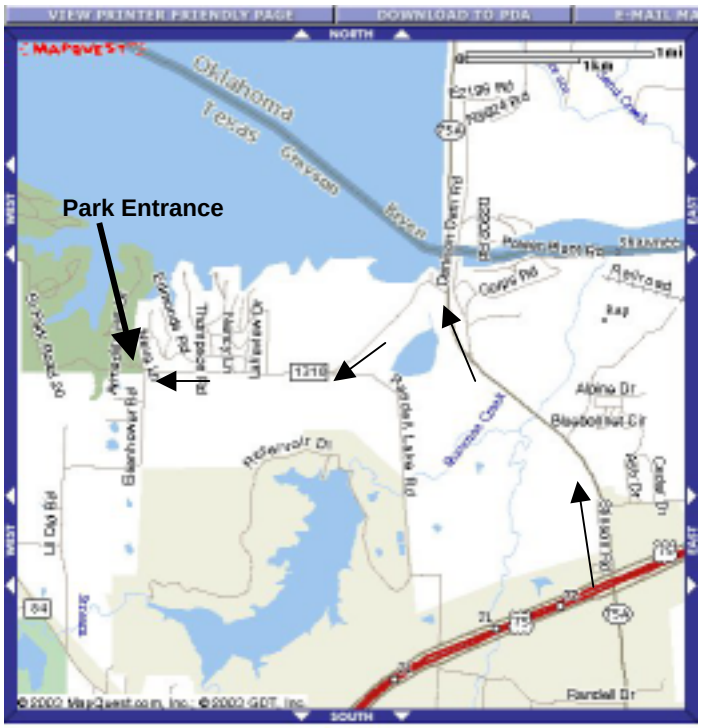
Lake Texoma Field Trip

All are invited to the annual collecting trip to the Lake Texoma area. This trip is the event of the year. Fall weather, camping, and collecting are as good as it gets, and this area of Texas is where friendships and memories are made.

Meet at the entrance to Eisenhower State Park at 8:30 on Saturday morning. We will be collecting a wide variety of material, from giant ammonites to small echinoids.

Campsites will be reserved at Eisenhower State Park. CTPS is paying for the campsites for both Friday and Saturday nights.

Hopefully, by the end of our October meeting, we will have it coordinated so all you have to do is drive in, look at a note on the entry bulletin board, and see which campsite to drive to. You can only do this if you **let Ed Elliott know by our October 13th** meeting if you need a campsite. You will be responsible for daily park entry fees. Only two vehicles are allowed at each of the five campsites. If there is an outpouring of attendees, we can endeavor to get more.



Our September Program

Danny had lined up Dr. Lundelius from the University of Texas at Austin to give us a talk on "Exceptional Fossil Preservation and What It Can Tell Us." We all enjoyed it.

There were no minutes of the meeting received at the time this newsletter was being prepared, so hopefully we will have a report in the next newsletter

Upcoming Shows

October 9-10, 2004 Tri-City Gem & Mineral Society show to be held at Mayborn Center, Temple, Texas

October 29-31, 2004 Fossilmania, Somerville Expo Center, Glen Rose, Texas sponsored by the Austin Paleontological Society and the Dallas Paleontological Society

November 5-6-7, 2004 Fossil Fest, sponsored By the Central Texas Paleontological Society, Old Settler's Park, (indoors) Round Rock, Texas

December 3-5, 2004 Austin Gem & Mineral Society, Gem Capers, December 3-5, 2004 held at the Crockett Center on Hwy 290

Petolodus sp., Permian shark, Brownwood, TX.

I left this picture out of last month's newsletter. Sorry guys.

This tooth was collected in August during the Brownwood field trip.

Fossil Fest 2004

We are nearly ready for Fossil Fest on November 5, 6 and 7. Bill Kidd is doing a great job notifying the local news media, Danny Harlow and John Hinte are handing out fliers to local establishments and the final planning is underway. Now we need the help of all of the CTPS members in a several ways.

Members are being given the opportunity to show off their fossil collections by reserving one or more display cases. The cases are fairly large, 2.5 to 3 feet wide, and they are lit, so you just need your specimens, labels, and whatever accompanying material you think appropriate. Please call or email me with your reservations. We already have reservations for East Texas petrified wood, Florida fossils and Colorado fossils in addition to local material.

We will need as many people as we can get Thursday evening the 4th and Sunday evening the 7th for transporting the tables and cases and setting them up. If you can help and/or have a truck that can be used for transporting the materials, please let me know.

We have begun the signup for the show itself. At least three people will be needed from 9 to 5 each day. I have started a sign-up sheet for 2 hours shifts. Let me know as soon as possible which shifts you will be able to cover.

Contact me at: ron@grassrootstrader.com or 345-6718 (H) or 936-5974 (W) if you can help.

Ron Root

September Field Trip

By Ed Elliott

It was a wonderful day for a field trip. While every day is, of course, this morning was cool with a bit of a breeze. By 7:30, ten members Janet and Ron Root, Melvin Noble, Guenther Oswald, Ed Bowden, David Lindberg, Eric and Byron Seaberg, Hal Hopkins, and myself, had arrived at the Stillhouse Hollow exit. Traffic had been light and we all made good time. It was nice having a little time to talk and share while we waited to see if anyone else would show. By 8:15, we were leaving the parking lot below the spillway. This is such a lovely place to collect. Down in a valley, surrounded by trees and with a nice stream running through it. The beavers seem to be reasserting themselves as the water is backing up a little behind a small dam.

The collecting is always enjoyable there and most of the fossils come out of a grey clay matrix, which cleans off easily. Every time I go there, I come away with something I've never found there before. Salenia mexicana and Heteraster texana are the most common echinoids found in this Walnut outcrop. Not infrequently these have pyrite on them. Quite a few were picked up this day. The most common ammonite is Engonoceras. One was picked up by Ed Bowden. Some gastropods here have original shell. Even the molds frequently have detail of the original shell. The most common oyster is Ceratostreon weatherfordensis. There are also Pycnodontes, Plicatulas, and several gryphea types. Clam steinkerns are frequent. Though I don't believe any were found this day, shark teeth have been picked up here as well. Several different species of Callianassa crab claws were found. My find of the day was a small jaw section of Uranoplosus (Pychnodont) with 13 teeth on it.

A consensus was reached that it was time to move on, so we caravanned to the next stop that we refer to as "Mother Neff". Actually it is some miles past that park; specifically 19.6 miles from I35 on Highway 107.

This is another site that is continually yielding new and varied fossils. Containing Walnut, Comanche Peak and Edward formations, this rather steep outcrop is not for those with balance problems. Every time I go there, at least once I find myself abruptly on my posterior portion without having intended it. The echinoids found there include Heteraster texana, Hemiaster whitei, Salenia mexicana and Goniopygus texanus. Ron Root and I both found big partial specimens of Tetragramma taffi this trip. There are many ammonites in the Comanche Peak part of the section, some large. The most common is Oxytropidoceras. Eric and I both picked up a 50-cent sized one that I haven't yet put a name to. Class Bivalvia is well represented with too many names to mention. The gastropods from here can be quite pretty, calcite recrystallized with original shell detail still intact. Many fossils in the Walnut part of the section are completely recrystallized gastropods, corals and even echinoids. Several of us took home the rudist Eoradiolites davidsoni from the Edwards. Just before we left, I leaned down and picked up my first shark tooth from this outcrop; a Protolamna aff. Sokolovi.

The day ended hot and we were all tired. And we all had a good time. I'm aware that most of us wanted a break from hunting the Cretaceous. A canoe trip to hunt vertebrate material will happen one of these days. It can't always rain. Still, these two outcrops are always worth the trip.

See you all in Texoma!!

T. rex, Living Fast and Dying Young

from *Discover Magazine* November 2004

How did Tyrannosaurus rex get so big? After four years zigzagging around the world begging museums for samples of the relatively rare tyrannosaur bones, paleontologist Greg Erickson of Florida State University has found the answer. Layers of bone can be read like tree rings, but until now, nobody had enough specimens to study how giant meat-eating dinosaurs matured. T.rex, Erickson now finds, lived fast and died young-"sort of the James Dean of dinosaurs." Unlike many modern reptiles, it didn't grown continuously throughout its life. Instead, the creature underwent an explosive teenage growth spurt, acquiring 70 percent of its adult body mass in five years. T. rex's accelerated adolescence may have been necessary, given the brutal competition for survival. "The oldest ones might have made it to 30, but even that would have been rare, " Erickson says. "It was a tough life, and most of them would have been killed before they reached their largest size."

In order to fuel its rapid growth, T. rex must have been a ravenous eating machine. Building on work by Erickson, Emily Rayfield of Cambridge has figured out the mechanics of T.rex's feeding strategy. She modeled bone stress and found that elastic tissue between plates of bone in T.rex's four and one half foot long skull acted as a shock absorber, allowing the creature to bite down on prey with an intensity that would crack the skull of most animals. "It ate using the puncture-pull method. It would have bit down with enough force to crush through bone and then pulled back, tearing off the flesh," Rayfield says. It might not have been pretty, but it was clearly effective: At its peak, an adolescent T. rex probably packed on five pounds a day and that was on the Cretaceous version of the Atkins diet.

Article written by Jocelyn Selim

Something New for Dr. James Sprinkle

Dr. Sprinkle has his eye on some new echinoderm territory. He has a proposal submitted; entitled:

Recovery and Study of a Major New Early Ordovician Echinoderm Fauna from Northeastern Utah and Southeastern Idaho.

Good luck on your newest venture!!

A tidbit from UT, THE PALEO JANK

Week of October 4, 2004
From Jonathan R. Wagner

Jank readers,

Details on the restoration of "Mangiasaurus rex", the mascot of Mangia pizza and latest project of local celebrity sculptor John Maisano, can be found at:
http://www.tmm.utexas.edu/education/mangia/

UTPaleo notables Ron Tykoski, Bob Rainey, and Ed Theriot are also featured on the site, cowering beneath the mighty claws of Big Green.

Thanks to Pamela Owen for calling this to the attention of the Jank editors!

The Restoration of *Mangiasaurus rex*

As noted in the local news, *Mangiasaurus rex*, the beloved mascot of Mangia Pizza, was found severely vandalized on Tuesday, September 22.

Here at the Texas Memorial Museum, we decided to see if we could help put *Mangiasaurus* back together. Check back here every few days to see the progress of the restoration. And stay tuned for a celebration of the re-installation of this Austin landmark!

Who was *Mangiasaurus*?

Museum paleontologists have identified *Mangiasaurus* as a theropod, a carnivorous dinosaur with strong jaws and short forelimbs. Dinosaurs like *Mangiasaurus* were bipedal, walking upright on their strong hind legs. Note that *Mangiasaurus* had three primary toes on his clawed feet, and his footprints show a three-toed pattern.

Although related to fierce carnivores like *T. rex* and *Velociraptor*, it is curious that *Mangiasaurus* was technically a pizzavore, and existed primarily on a diet of pizza. Remains of *Mangiasaurus* have been found with telltale fossilized pie pans nearby. *Mangiasaurus* teeth and jaws were superbly adapted to conquer crunchy crusts and thick Chicago stuffed pies. Museum scientists will continue to investigate fossil specimens for more clues about this fascinating creature of the Crust-aceous.

See theropod tracks. | Learn about a cousin of *Mangiasaurus*. | Find dinosaur coloring sheets and activities. | Visit the Museum.

Secrets of Dung

Ancient poop yields nuclear DNA

From Science News This Week, July 12, 2003

Researchers have extracted remnants of DNA from an unlikely source: the desiccated dung of an extinct ground sloth that lived in Nevada at the height of the last ice age. The feat is the first recovery of genetic material from cell nuclei of fossils that haven't been sheathed in permafrost. It suggests that scientists may be overlooking caches of fossil DNA preserved in warm arid environments.

Earlier work on fossils had isolated DNA carried in mitochondria, the powerhouses of living cells. However, the DNA in a cell's nucleus is typically longer and therefore holds much more genetic information about the species and

individual from which the cell derived, says Gregory McDonald, a paleontologist with the National Park Service in Denver.

Now, McDonald and his colleagues have isolated snippets of nuclear DNA from a coprolite-or piece of fossilized dung-of a Shasta ground sloth, a 2.3 meter-long, 350-kilogram herbivore. The coprolite, found in a cave in southern Nevada, may be as much as 15,000 years old, says McDonald. The team's analyses suggest that as many as 4,000 fragments of nuclear DNA measuring at least 100 base pairs in length may be present in each gram of the animal's desiccated feces. The researchers report their findings in the July 1 *Current Biology*.

Scientists using only skeletal characteristics and comparisons of mitochondrial DNA have had trouble discerning the relationships among extinct and living sloths, says McDonald. Some of those studies have suggested that the tree-dwelling lifestyle of all living varieties of two-toed and three-toed sloths evolved only once. Other findings suggest that arboreal living arose separately in two-toed and three-toed sloths.

The newly analyzed differences in nuclear DNA suggest that the Shasta ground sloth is more closely related to living three-toed sloths than to the two-toed varieties, which lends credence to multiple origins of tree dwelling.

The key to the preservation of the Nevada sloth's nuclear DNA was aridity, says McDonald. Lack of humidity desiccated the dung and stymied bacterial degradation of the genetic material in the stable environment provided by the surrounding cave.

The mummifying environment seems to promote long-term preservation of DNA despite the warm conditions, says Julio L. Betancourt, a paleontologist with the U.S. Geological Survey in Tucson.

In separate analyses of ancient sloth dung from a sheltered ledge outside a cave in the arid foothills of Argentine Andes, Betancourt and his colleagues may have identified a previously unknown species of extinct ground sloth. Mitochondrial gene sequences extracted from cells in the 16,000 year old, pecan-size pellets don't match those garnered from the four other living or extinct sloth species that have been genetically sequenced to date.

The Argentine dung fragments are much smaller than those left by the extinct horse-to-elephant size ground sloths already known to have inhabited the region, Betancourt notes. The dung came either from a species of ground sloth for which bodily remains haven't yet been found or from a species that also lived in another area but that scientists haven't yet genetically sequenced. Betancourt and his colleagues reported their findings in the May Quaternary Research. S. Perkins Science News

Articles

Please remember when you are looking through that favorite magazine and an article on fossils or other science related subjects catch your eye, save it and send it to your newsletter editor. Our club members might be interested in it too.

So copy it and send it to Hollis. She is always grateful for articles for the newsletter!!

Central Club Contacts, 2004

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Club Information

The Central Texas Paleontological Society is a scientific, non-profit, community-based organization devoted to the study of fossils, advancing the state of the science, educating the public, and collecting fossil specimens. Most of us are amateurs, fascinated by fossils, who love to collect.

Meetings are held on the second Tuesday of each month at the LCRA building, 3700 Lake Austin Blvd. (between Redbud Trail and Enfield Ave.) at 7:00 PM in the LCRA Offices Board Room of the Hancock Bldg. **The public is cordially invited** to attend these meetings as well as our field trips held throughout the year.

Annual dues are: $15 per person or $18 per family, which includes a subscription to this newsletter, membership in the South Central Federation of Mineral Societies, and liability insurance coverage for club activities. Associate membership is $10 per year and includes a subscription to this newsletter.

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About the Newsletter

Fossil Footnotes is distributed once a month prior to each meeting. Contact the Membership Chair to subscribe or obtain a sample-issue. If your mailing-label has a date marked with a colored pen, it means your membership has or is about to expire. Please send your check to the club Membership officer or bring it to a meeting.

We accept material from club members (and non-members at our discretion) including, but not limited to, information relevant to club activities, fossil collecting, paleontology & geology, and science education. Feel free to reproduce original material contained in this newsletter for educational purposes (including other club newsletters), so long as you credit the newsletter issue and author, if applicable. Send submissions by e-mail or hardcopies to the Editor (see above) at least two weeks before the meeting. Expect some publication delays for exotic formats.

FOSSIL FOOTNOTES
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