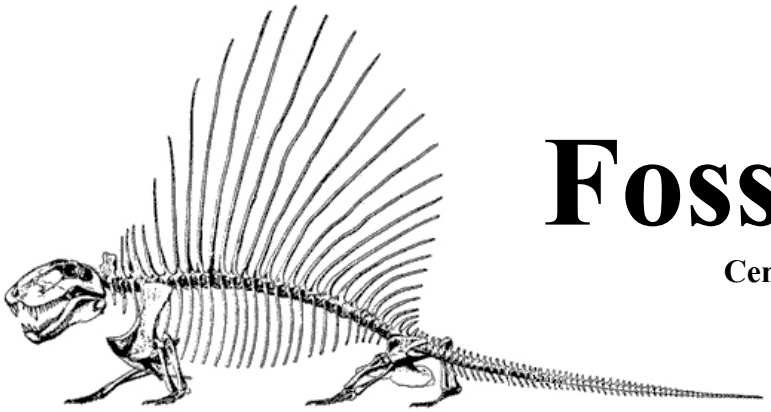


Fossil Footnotes

Central Texas Paleontological Society
April 2005

President's Message

By Danny Harlow

It's time for the annual club auction so make plans to attend Saturday April 16th. We will finalize all of the details at this month's meeting. If you cannot make the meeting but wish to attend the auction we will send out an e-mail with instructions after the meeting or contact a club officer for information.

We have been having excellent attendance at the meetings and field trips. Thanks to all attending, the high level of interest and participation is the life-blood of our Club.

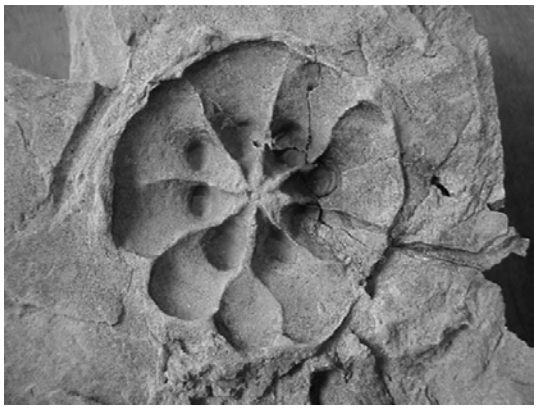
Fossil Fest is starting to take shape and all indications are with everything falling into place as we expect, this could be our best one to date. Thanks to Show Chair Ron Root for his excellent organization and hard work. And to all of the Club officers that attended the past Show Committee meeting for their excellent ideas.

At the last meeting it was voted on and approved to purchase a video projector. I am happy to report that it has been accomplished. I was able to purchase a new Epson Powerlite S1 Plus from an auction on EBAY for a total price of $650.00. I have tested it on my laptop using Windows XP and it works great. Greg Thompson will have the honor of being the first speaker to break it in as our speaker this month. His subject will be on "Remarkable Preservation and What We Can Learn From It". It sounds like a very interesting topic to which I am looking forward. Plan to attend. You don't want to miss this one.

See you at the April meeting!

Danny

Fossil of the Month



Kirklandia texana
Lower Cretaceous
Weno – Paw Paw Formation
Grayson County, Texas

This is another photo from the archive that deserves to be shown again. It is the most detailed and beautiful jellyfish that I have seen

from the classic Weno - Paw Paw site collected by club member John Hinte on a past field trip to Lake Texoma. This is surely a museum piece of these rare Medusae fossils if there ever was one.

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Minutes March Meeting

By Eric Seaberg

For the March meeting we had approximately 25 people in attendance with several first time attendees. There was not a formal speaker for the meeting and as a result we had several small discussions.

Several people manned a table for an educational event at the Children's Museum and found that the crowd had lots of good interest in paleo-history and fossils. We received an invitation to return and Danny suggested that we do it again later.

The field trip to Bandera was discussed and planned.

The club auction on April 16th at West Cave preserve was discussed. The area is always beautiful, but the flowers should be in high bloom for the event. The material to be auctioned is donated by club members. Consider bringing a specimen or paleontological item, if you plan to attend.

The fossil fest committee sent out the first dealer contact list and the event is scheduled for Nov. 4th, 5th, and 6th.

www.geoscienceworld.org Web site was mentioned as an interesting site for research. Remember the TexShare card. You can get one from your local library and it allows you to get guest borrowing privileges from any other Texas library.

Eric made a trip to Kansas City and took a little time to hunt. The material around the area is Pennsylvanian and there are several road cuts in the area that have some interesting material in them. I made contact with, Gil Parker, a member of the KMPS (Kansas and Missouri Paleontological Society) and visited the science store he runs. www.hms-beagle.com. He and his son are very knowledgeable with both the local Pennsylvanian fossils and also with many vertebrate fossils collected further west.

Danny brought up the idea of buying a projector to aid presentations. He proposed to buy a $639 model. The motion passed and he was authorized to make the purchase.

Hal gave a report on the latest Moroccan creations / "fossils" from the Tucson show. He witnessed petrified wood with slabs on the edges and unknown filler in the middle, various carved ammonites, multiple teeth on a slab suspiciously all in the same plane, and mass- manufactured-arrowheads. Buyer Beware!!

Danny showed some brachs that he had found around town. These are rare in the Cretaceous as well as the corals as discussed in the last meeting.
http://www.cretaceousfossils.com/invertebrates/brachiopods/kingena_wacoensis.htm

Danny then read an interesting article advancing a theory that hydrogen sulfide had an intimate role in the mass Permian extinction.

It was brought up that several display cases would be prepared for display in the Austin Bergstrom airport. The display is of Texas gems, minerals, and fossils and opens sometime in April. The Austin Gem and Mineral Society are coordinating the population of the cases.

There were 8 nice door prizes given out to round out the meeting.

AUCTION/ BAR-B-QUE PICNIC

Saturday, April 16

WESTCAVE PRESERVE.

Come out to eat some fantastic bar-b-que, bid on some great fossils to add to your collection, relax in the hill country and take a tour of the grotto at

the Westcave Preserve. We gather at their beautiful exhibit center at noon. We will eat first, then open up the auction.

Please bring some fossil related item(s) to donate, with a suggested opening bid / minimum bid. Specimens, tools, and books are the usual. And bring your checkbook; this is an auction. It raises funds to purchase Fossil Fest raffle items. This year's auction will include some of Quinton Martin's collection that his wife graciously donated last year. The atmosphere is very relaxed and a good time is guaranteed.

The club provides the meat, plates, utensils and some drinks. Please share a side dish or a dessert to compliment the meal. See you there!

Directions: Westcave Preserve is located in southwest Travis County, approximately 45 minutes from downtown Austin.

From Austin: Travel west on Highway 71 to the village of Bee Caves. Turn left at Ranch Road 3238 locally known as Hamilton Pool Road. Travel 14 ½ miles on Hamilton Pool Road to the Pedernales River. Westcave Preserve is the first gate on your right after crossing the river.

From Areas West of Westcave Preserve: Take Highway 281 to the village of Round Mountain. In Round Mountain, turn east on Ranch Road 962. Travel 17 miles on Ranch Road 962. The gate to Westcave Preserve will be on your left. (Note: To remain on Ranch Road 962, veer left at the y-intersection after Cypress Creek).

WESTCAVE PRESERVE
24814 Hamilton Pool Road
Round Mountain, Texas 78663

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Upcoming Shows

April 1-3, 2005 Southwest Gem & Mineral Society 45th Annual Fiesta of Gems Morris Activity Center on Coliseum Road

April 8-10, 2005 M.A.P.S. Expo XXVII, Western Illinois University, Macomb, Illinois

Apr. 9-10, Abilene, TX - The Rock Show. Civic Center, N. 6th & Pine Sts. 9th, 10-6; 10th, 10-5. Sallie Lightfoot, 325-692-4642, slightfoot@aol.com.

Apr. 15-17, Fort Davis, TX - Big Bend Gem & Mineral Show. CDRI Facility, Hwy 118. 15th & 16th, 9-6; 17th, 10-5. Donna Trammell, 432-426-2924, rocklady101003@yahoo.com.

Apr. 30-May 1, Lubbock, TX - Lubbock Gem & Mineral Society. 46th Annual Gem, Mineral, Fossil, & Jewelry Show. Lubbock Civic Center. 30th, 10-6; 1st, 10-5. Archie Scott, 806-894-1584, asscott2@dorr.net.

May 14-15, Waco, TX - Waco Gem & Mineral Club. Annual Show. Heart of Texas Fair Complex, Fin Arts Building, 4601 Bosque Boulevard. 14th, 10-5:30; 15th, 10-5. Ruby Lois Jones, 254-666-4077.

November 4, 5, 6, 2005 Old Settler's Park
Highway 79, Round Rock, Texas

Visit our Web Site

http://www.texaspaleo.com/ctps/index.html

2005 Field Trips

Schedule for this year's field trips but subject to change

Apr 16th-17th	Kent or E. Texas
May 14th	Brownwood
June 18th-19th	Oklahoma
July 16th	Brazos Canoe
Aug 13th	Non-Vertebrate Lab (UT)
Sept 17th	Midlothian
Oct 15th-16th	Sulfur/Red River
Nov ???	Kerrville
Dec ???	

March Field Trip

By Ed Elliott

It was a wonderful day for a field trip. (But then, every day is!) A good number of people agreed with me because 28 members showed up in Bandera. There were a lot of new faces in the crowd, some new to collecting. While I didn't get a chance to have a conversation with everyone there, most seemed to be finding fossils and enjoying themselves.

A very brief description of the Glen Rose Formation wouldn't be out of place. While other Trinity Formations are exposed at the surface, the Sycamore Sandstone, the Pearsall Formation Members-The Hammett Shale, the Cow Creek Limestone, and the Hensel Sandstone) with the exception of the oyster beds in the lowest unit of the Cow Creek, the Glen Rose is the only fossiliferous Trinity Formation. The Paleoenviorments were tidal flats, beaches, reefs, shallow water evaporates, alluvial deposits and other shallow water deposits. The middle Glen Rose was a shallow, relatively quiet water carbonate shelf, which stretched from South Florida across the Gulf Coast and into Central Mexico. The outcrop we seek is Mid-Glen Rose and is called the Salenia texana zone; this contains the most varied and extensive fauna in the formation. It varies from a few feet to twenty feet in thickness. It is usually a crème colored nodular lime mudstone that has undergone extensive bioturbation and seldom exhibits bedding planes. A faunal list should include the huge foraminifer, Orbitolina texaxa, the fruiting body of the dasyclad alga (think seaweed) Porocystis globularis, and frequently the echinoids Salenia texana, Palhemiaster comanchei, Heteraster obliquatus, Loriolia rosana, and Salenia mexicania. You might also find scallops, gastropods and numerous bivalves.

As we stood around the meeting site and discussed what we hoped to find at the first stop on Highway 16, the extremely rare Cidaris and the "free floating" crinoids were most often mentioned. While no rare echinoids were found, Paul Hammerschmidt and Dan Woehr found at least three crinoids. We don't know if these crinoids were benthic or pelagic. In fact, to the best of my knowledge, these are unstudied and not yet named. Several members were also happy to pick up claws of the hermit crab, Paleopagurus banderensis and the smaller Callianassa sp.

At our second stop at Lake Medina, I was happy to see new member David Jones pick up a nice large crinoid. I also heard that Mark Lindberg got one also. Bivalves, gastropods, scallops and Salenia texana made up the bulk of the finds here.

At this point, Melvin Noble, my partner in crime for the day, and I headed south for a little exploration and a nice visit with Don O'Neill. His health may not be good, but his grip is still strong and he had just returned from several hours of rock hunting with his son, Sean. Bill Thompson took over the lead and took the club to two sites he had found near Highway 306. I was told that lots of large bivalve Arctica gibbosa and the large gastropod Lunatia pedernalis was found.

The find of the day goes to Paul and Janet Root. Bill reported they both found a large Orthopsis sp. I am not familiar with any large species in the Glen Rose. Kudos!!

A good trip on a lovely day; hope to see you at the auction.

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Petrified wood

By Bill Kidd

Petrified wood normally is produced by nature over millions of years, attracting the attention of paleontologists and rockhounds. But artificially manufactured petrified wood is attracting the attention for possible use as a medium to filter or store hazardous or radioactive wastes.

A team of materials scientists, in the Department of Energy laboratory at Pacific Northwest National Laboratory (PNNL) in Richland, Wash., have developed a way to convert wood into a mineral, accomplishing the feat in a matter of days. Bill Cannon, PNNL spokesman, said the material is being looked at for possible use in filtering out toxins, as well as a number of other applications. Use of the material as a containment material for radioactive waste is another potential use, Cannon said.

Dr. Yongsoon Shin and his colleagues started with pine and poplar boards purchased from a local lumberyard, and took the planks back to their laboratory. The scientists then took a one-centimeter cube from a board, gave it a two-day acid bath, soaked it in a silica solution for two more days, air-dried the material and put it into an argon-filled furnace which was gradually increased to 1,400 degrees centigrade to cook for two hours, and then cooled in argon until it reached room temperature.

The result was petrified wood--with the silica having taken up "permanent residence" with the carbon left in the cellulose to form a new silicon carbide--or SiC--ceramic, Cannon said.

For best results, the scientists have reported, the soaking in silica should be repeated up to three times.

Cannon said the research was being aimed at developing filtration and sensor systems, with the scientists experimenting on how to control reactions. "That's what's driving this," he explained. But the material is attracting attention already for other uses, Cannon noted. The material produced has "an incredible surface area," he said.

That's because the intricate networks of microchannels and pores in plant matter provide enormous surface areas, Cannon reported. In the case of wood, one gram of material could be flattened out to cover a football field, the scientists reported. That means the material could prove useful in filtering out pollutants from fluids, or in industrial chemical separation work. "The more surface area, the better the filter, and the better the sensor to react with more material going through," Cannon noted. "And conceivably, the more surface area that you could coat to remove a toxin," he said.

Shin reported the material also could be used for catalyst support at high temperatures. "The material is extremely stable up to 1,500 degrees [centigrade]," he said. It also could be used as a reinforcing material, Shin reported, because the silicon carbon is "very hard--diamond-like hard." Shin also has experimented with mineralizing other natural materials, including rice hulls and pollen.

The process also could be used to produce templates for various uses, he noted. The acid-leaching method results in an identical, positive reproduction of the wood, but if Shin wants to obtain a negative impression, he can alter the pH to favor the base end of the scale. However, Shin reported, the positive image is "a lot better" in terms of surface area and uniformity.

Negative forms "collapse easily," but it is possible to make fiber-type materials where the minerals fill in wood-grain openings, he said.

Science, Vol. 307, Issue 5717, 1852, 25 March 2005

Tyrannosaurus rex Soft Tissue Raises Tantalizing Prospects

By Erik Stokstad

It's not Jurassic Park-style cloning, but a remarkable find has given paleontologists their most lifelike look yet inside Tyrannosaurus rex--and, just possibly, a pinch of the long-gone beast itself.

On page 1952, a team led by Mary Schweitzer of North Carolina State University in Raleigh describes dinosaur blood vessels--still flexible And elastic after 68 million years--and apparently intact cells. "If we have tissues that are not fossilized, then we can potentially extract DNA," says Lawrence Witmer, a paleontologist at Ohio University College of Osteopathic Medicine in Athens. "It's very exciting." But don't fire up the sequencing machines just yet. Experts, and the team itself, say they won't be convinced that the original material has survived unaltered until further test results come in.

The skeleton was excavated in 2003 from the Hell Creek Formation of Montana by co-author Jack Horner's crew at the Museum of the Rockies in Bozeman, Montana. Back in the lab, Schweitzer and her technician de-mineralized the fragments by soaking them in a weak acid. As the fossil dissolved, transparent vessels were left behind. "It was totally shocking," Schweitzer says. "I didn't believe it until we'd done it 17 times." Branching vessels also appeared in fragments from a hadrosaur and another Tyrannosaurus skeleton. Many of the vessels contain red and brown structures that resemble cells. And inside these are smaller objects similar in size to the nuclei of the blood cells in modern birds. The team also found osteocytes, cells that deposit bone minerals, preserved with slender filipodia still intact.

If the cells consist of original material, paleontologists might be able to extract new information about dinosaurs. For instance, they could use the same sort of protein antibody testing that helps biologists determine evolutionary relationships of living organisms. "There's a reasonable chance that there may be intact proteins," says David Martill of the University of Portsmouth, United Kingdom. Perhaps, he says, even DNA might be extracted. Hendrik Poinar of McMaster University in Hamilton, Ontario, cautions that looks can deceive: Nucleated protozoan cells have been found in 225-million-year-old amber, but geochemical tests revealed that the nuclei had been replaced with resin compounds. Even the resilience of the vessels may be deceptive. Flexible fossils of colonial marine organisms called graptolites have been recovered from 440-million-year-old rocks, but the original material--likely collagen--had not survived.

Schweitzer is seeking funding for sophisticated tests that would use techniques such as mass spectroscopy and high performance liquid chromatography to check for dino tissue. As for DNA, which is less abundant and more fragile than proteins, Poinar says it's theoretically possible that some may have survived, if conditions stayed just right (preferably dry and subzero) for 68 million years. "Wouldn't it be cool?" he muses, but adds, "the likelihood is probably next to none."

Article provided by Mike Smith

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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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