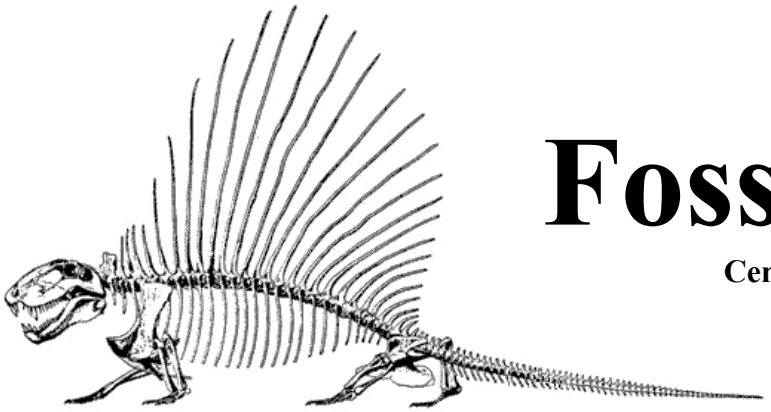

Fossil Footnotes

Central Texas Paleontological Society
January 2005

Happy New Year

President's Message

I first want to thank this years Officers and Board Members for a job well done. This is an organization run by volunteers and what the members get out of it is critically dependent on the donation of time, effort, and expertise by these folks.

Secondly, thanks to the broader list of people who help out with our various activities, especially Fossil Fest, the Auction, and the Christmas Party.
While we can plan activities until we are blue in the face, it takes a lot more than 7 people to make them happen.

Finally, I'd like to thank all the members. Our shared fascination with fossils is what keeps CTPS alive and going strong!

The slate of Officers for 2005 is listed elsewhere in the newsletter. Danny Harlow has kindly agreed to be President for this year. Most of the other names will be familiar to you. While the Bylaws call for 4 Officers and 3 Board Members, there is lots of work that needs to be done. We will be looking for help with a variety of things this year, so let us know if you are interested.

It has been a pleasure to serve as President for such a great organization this past year. Thank you for the opportunity and let's get collecting!

- Mike

January Meeting Changed

January Meeting to be held on Monday January 10, 2005

The LCRA management scheduled a series of meetings in the Board Room, which trumps our earlier reservation. So we have had to move to Monday. We will be voting on officers and board members – we have a complete slate – though if any of you would like to volunteer, let us know.

The voting machines are standing by.

Our Newly Designed Web Site

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

Take a look at the newly revamped web site. Thanks to Mike and his architect son, Jonathan.

Upcoming Shows

January 15-16, 2005 Hill Country Gem & Mineral show, Fredericksburg, Texas

January 22-23, 2005 East Texas Gem & Mineral Show, Tyler, Texas

February 19-20, 2005 Williamson County Gem & Mineral Show, Georgetown Community Center, San Gabriel Park, Georgetown, Texas

February 19, 2005 Gary Bowersox will come to Austin to talk about his travels and adventures in

Afghanistan. His talk will be held at the Austin Gem & Mineral Society's Clubhouse from 1:00 PM until 5:00 PM. Gary is a very colorful and interesting person who has traveled to Afghanistan to buy gemstones many times over the past twenty plus years.

The charge is only $10.00 per person and promises to be very intriguing. Light refreshments will be served.

Contact Hollis Thompson at 512 341-0212 or dopsticks@sbcglobal.net for additional information or a registration form.

Gary is being sponsored by the Texas Faceters' Guild

February 26-27, 2005 Clear Lake Gem & Mineral Society show, Pasadena Convention Center, 7902 Fairmont Parkway

March 12-13, 2005 Gulf Coast Gem & Mineral Society, Corpus Christi, Texas

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

Thanksgiving Day

Father, we around this table Thank Thee:
For Thy great gift of life,
That Thy love for us is not dependent upon any unworthiness of ours,
For good health,
That we know neither hunger nor want,
For warm clothes to wear,
For those who love us best,
For friends whose words of encouragement have often chased away dark clouds,
For the zest of living
For many an answered prayer
For kindly providences that have preserved us from danger and harm.

We thank Thee that still we live in a land bountifully able to supply all our needs, a land which still by Thy Providence knows peace, whose skies are not darkened by the machines of the enemy, whose fields and woodlands are still un-blasted by the flames of war, a land with peaceful valleys and smiling meadows still serene.

O help us to appreciate all that we have, to be content with it, to be grateful for it, to be proud of it-not in an arrogant pride that boasts, but in a grateful pride that strives to be more worthy.

In Thy name, to whose bounty we owe these blessings spread before us, to Thee we give our gratitude.

This prayer was written by Peter Marshall. (*A Man Called Peter*)

Have You Paid Your Dues?

Please check your label to see if it is time to mail in your dues.

You don't want to miss a single issue.

2005 Tentative Field Trips

This is the tentative schedule for this year's field trips

Jan. 15th	Jacksboro
Feb 12th	Hwy 21
Mar 13th	Bandera
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 ???	

Caught in the Act!
Ancient Sea Life Evolves

From the January 2005 issue of the Smithsonian **Around the Mall** *Scenes and Sightings from the Smithsonian Museums and Beyond*

This article authored by Eric Stokstad

Over millions of years, delicate crinoids developed spikes and armor that thwarted hungry predators.

Most visitors to the "Life in Ancient Seas" hall at the National Museums of Natural History amble right past the modest glass display case full of fossilized crinoids, cousins of starfish and sand dollars. But scientist say, the ancient specimens are definitely worth a second look: a new study of changes in crinoid's anatomy over millions of years has provided unusual evidence of evolution in action.

With long, feathery feeding arms, crinoids may resemble marine plants, but they are animals. (Echinoderms, technically) that filter food from the water. The stalked-variety, called sea lilies, only lives at depths of 300 feet or more. Stalk-less crinoids, known as feather stars, usually live in shallow water, mainly in tropical reefs, where they hide in crevices during the day and glide out to feed at night.

The new research makes novel use of what might be called paleoforensic evidence: if a fish bites off a crinoid's arm, the regenerating arm is skinnier than the old stump, making the injury easy to spot. Because crinoids have been around for 500 million years, the scars in fossil crinoids can yield clues to how the animal responded to predators over the ages. Paleontologists Forest Gahn at the museum and Tomasz Baumiller at the University of Michigan focused on crinoids that were preserved when storms whipped up seafloor sediments and quickly buried the wispy creatures. "They all lived and died at one time," Gahn said. "You have a snapshot of the ocean floor, which you can survey just like a modern community."

Gahn peered at a lot of those snapshots, examining 2,575 crinoid fossils from across the Northern Hemisphere. Less than 4 percent of crinoids had arms that were regenerating, he discovered, in fossil older than 380 million years. At that point, new predators such as armored, shell-crushing sharks called placoderms began to appear, and the prevalence of injured crinoid arms jumped three-fold. At one site in present-day Iowa, the most abundant crinoids-and at 13 inches high, the tallest and most exposed to swimming carnivores-endured the highest rate of attack. But some crinoids, over time, fought back. Within roughly five million years, Gahn and Baumiller reported in the journal *Science*, the tallest crinoids were endowed with sturdy spines and thick armor, defense mechanisms that would have arisen randomly in some individuals, bettering their chances of repelling attackers and reproducing. Paleontologist David Meyer of the University of Cincinnati says that Gahn and Baumiller are "documenting beautifully" the evolutionary impact predators can have on prey.

If it's a bit puzzling why fish would want to munch on crinoid's arms, which are little more than the mineral calcite-not exactly good eating-today's crinoids hint at the reason. The echinoderm's delicate arms host tasty shrimp, worms, snails and even small fish. Gahn and Baumiller suspect that ancient predators had their eyes on similar guests, which can be seen clinging to crinoids in some fossils. In fact, the pair's latest study has found support for the idea regenerating arms were twice as common in snail-infested crinoids than snail-free ones.

The scene-stealers at the museum may be the great carnivores, like Tyrannosaurus rex, with its toothy snarl. But though the humble crinoids may never star in a horror movie, its fossils, in an overlooked case in the corner, offer a surprisingly rich tale of evolution's cunning responses to long-vanished predators.

We came across this pamphlet by accident and thought it might be of interest.

The Ashfall Fossil Beds

About 12 million years ago, a volcano in southwest Idaho spread a blanket of ash over a very large area. One or two feet of this powdered glass covered the flat savannah-like grasslands of northeastern Nebraska.

Most of the animals, which lived here, survived the actual ashfall, but as they continued to graze on the ash-covered grasses, their lungs began to fill up with the abrasive powder. Soon their lungs became severely damaged and they began to die.

The smaller animals died first (smaller lung capacities) and finally, after perhaps three to five weeks, the last of the rhinos perished; their bodies were quickly covered by the blowing and drifting ash.

Undisturbed except by an occasional scavenging meat-eater, the skeletons of these animals are preserved in their death positions, complete with evidence of their last meals in their mouths and stomachs and their last steps preserved in the sandstone below.

Of the seventeen species of vertebrates recovered from the volcanic ashbed, twelve are mammals.

Ashfall wildlife and the impending cloud of volcanic ash. The Ashfall skeletons are found in an ancient waterhole as depicted here. Fossil evidence at the site reveals complete, articulated skeletons of large mammals, birds, and turtles, as well as seeds of grasses and trees.

Paleontological Finds 1991 thru 2000

1991
- First skeletons uncovered in Rhino Barn from the barrel-bodied rhinoceros *Teleoceras major*.

1992
- Rhino cow with calf positioned nose to nose.
- Remarkably complete skeleton of the horse *Cormohipparion-occidentale*.
- Glimpse of a camel *Procamelus grandis*, discovered by Jennifer Tschirren.

1993
- Partial skeleton of sabre-toothed deer *Longirostromeryx*.

1994
- Mare and foal of *Neohipparion* in close association.

1995
- Volunteer Norma Brockmoller discovers cow rhino skeleton that is dubbed "Brockie".
- Jaw of raccoon-dog *Cynarctus*.

1996
- Student Andria Skaff discovers fairly complete skeleton of horse *Pseudhipparion*

1998
- Students Amy Allison and Melissa Mestl discover skeleton of sabre-toothed deer *Longirostromeryx* and meticulously reveal evidence of soft tissue preservation (muscle in neck and leg, visceral content).

1999
- Student Neil Gipson finds single tooth of the raccoon-dog *Cynarctus*.
- Sam Matson discovers fossil burrow in volcanic ash bed that is the right size for the horned rodent *Mylagaulus*. Sam also finds a milk tooth of *Mylagaulus* in the burrow fill.

2000
- With excavations in the Rhino Barn nearing completion, a third *Longirostromeryx* (partial skeleton) is revealed.

All Ashfall skeletons are buried in a bed of pure volcanic ash. Volcanic ash consists of tiny shards of glass from broken glass bubbles. These glass bubbles form and then break apart during powerful volcanic eruptions.

The ash particles are small enough to have been breathed deeply into the lungs of animals when volcanic ash blanketed northern Nebraska twelve (12) million years ago.

At the Ashfall fossil site in northeast Nebraska, the ground beneath the soil looks something like this in cross-sectional view.

Sedimentary rock layers (strata) contain fossils that reveal clues to environmental conditions and the animal life of specific times in the past. The particles of sediment that make up the rock reveal clues about the environmental setting and how the rock was deposited.

Ashfall Fossil Beds State Historical Park
86930 517th Avenue
Royal, NE 68773
Phone: (402) 893-2000

Email: ashfall2@unl.edu

Rick Otto, Superintendent

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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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