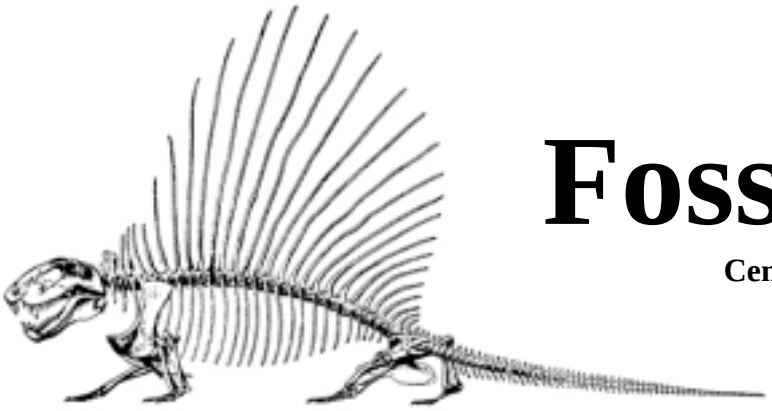

Fossil Footnotes

Central Texas Paleontological Society
September 2004

President's Message

The field trip was great, though I think Ed was disappointed that no one wanted to stay and collect by the light of our headlights. As usual, we collected some terrific stuff. I added a very nice *Petolodus* tooth to my collection of Wilson Clay Pit specimens.

I did follow through on my attempt to find out what the real deal is regarding returning from Canada with legally collected fossils. Results should be elsewhere in the newsletter. The short answer is that the rules are in fact very fair.

We swapped field trips last month. But the water level in the Brazos remains way too high, and I doubt it will drop sufficiently for collecting this month. Looks like we will not be doing a canoe trip this year. I am told the beaver dam at Stillhouse Hollow is gone. So we thought we would combine that with a trip to Mother Neff. Meet at the Stillhouse Reservoir exit (think its exit 285) just on the north side of Salado at 8:00 am on Saturday, September 18. We thought we would have a trip somewhat closer to home, since October is Texoma or the Sulpher River.

Fossil Fest is moving forward. We have all the booths rented and are starting to sign up students and Girl Scouts. Start thinking about putting together a display.

Don't forget that this is another non-Tuesday meeting – Wednesday, September 8.

- Mike

September Meeting
Wednesday September 8

October meeting Wednesday Oct 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

Our September Program

Danny has 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."

So be there on **Wednesday, Sept 8** at the LCRA large meeting room.

August 2, 2004 Meeting Minutes

I did not realize no one was taking minutes of the meeting until it was almost over, so I will do my best. *Hollis*

Our meeting started pretty much the same as usual, members laid out their latest finds while the others looked them over and wished they had been able to go to the same place.

Mike started the meeting with a welcome and introduced our guest speaker, Bill Heim from Virginia. Bill is an expert on sharks and has a very nice web site.

Bill talked about the resemblances of modern sharks and ancient sharks, about the numerous teeth with enamel as hard as steel. Rarely are the teeth found with the shark body, because as the sharks would swim by, a tooth might fall out.

Here is his web site address:
www.elasmo.com

Thanks Bill for a great talk!!

The August field trip will be August 14th traveling to Brownwood. Meet at 8:30 AM at the Early Mall.

New members attended as well as two guests who are friends of Bill our speaker.

Fossil Fest, all booths are sold.

The two part Mammoth tooth was present at this meeting. It is a really nice one too. Hal showed us his large coral "stand".

Door prizes won by Janet Root and Hollis Thompson.

Exporting Fossils from Canada

Michael K. Smith
29 August 2004

I followed through on my attempts to determine whether and under what conditions it is ok to bring fossils collected in Canada back to the US. I have not taken too much time writing this up, but the upshot is that if you are in a Canadian province that permits paleontological collection, you do not need a permit to export the fossils to the US if they meet **all** of the following criteria:

They are:
Not type specimens
Not amber
Valued under $500
If invertebrate, in bulk weigh less than 50 pounds
If vertebrate, in bulk weigh less than 25 pounds.

See *http://www.pch.gc.ca/mcp/list_e.cfm*, the section labeled *Palaeontology* that begins "Palaeontological specimens recovered from the soil of Canada, the territorial sea of Canada or the inland or other internal waters of Canada, as follows:"

These rules seem extremely reasonable. If you find something that qualifies as an element of the Canadian Cultural Property Export Control List, you can still apply for permission to export it, but this is obviously a lot more complicated.

Below are my email interchanges with Mr. Sutheat Tim, Senior Program Officer, Canadian Movable Cultural Property Directorate.

From: "Smith, Michael K" Date: 20/08/2004
To: Sutheat_Tim@pch.gc.ca
Subject: Amateur fossil collecting in British Columbia - exporting invertebrate fossils

Sir,

I got your name from Mr. Ray Sibbald of Canada Customs and am following up, both for my own future information, as well as for other collectors that I am in contact with.

I was in Victoria on business and was trying to find out whether it is possible for an amateur collector to take common invertebrate fossils from BC back to the US. As an officer in the Central Texas Paleontological Society for many years (currently president), I am extremely careful as regards collecting practices.

I found a website that seemed to imply that, with permission, this was possible. I called a number of people and ended up talking to Mr. Sibbald. He was surprised that this query had ended up in his lap, but did the best he could to track down the rules. Essentially, the text that he found seemed to say that a paleontological resource of ANY scientific value could not be taken out of Canada. Thus forbidding removing any paleontological resource, no matter how common.

But I still hold out hope that this is an extreme interpretation and that perhaps we were missing some qualifier. If the law meant this was never possible, I would have thought it would have clearly so stated.

I appreciate your time. If I am asking the wrong person I am sorry to have troubled you.

Sincerely, Michael K. Smith PhD, PE

---Next Message-----
From: Sutheat_Tim@PCH.GC.CA Aug 25, 2004
To: Smith, Michael K
Subject: Re: Amateur fossil collecting in British Columbia - exporting invertebrate fossils

Hello Dr Smith,

Thank you for your note. In answer to your question, Canada does not forbid the permanent export of any fossils from the country. This said, the export of any fossils, even common specimens, is subject to having a cultural property export permit issued. Under the cultural property export regulations presently in place, objects that can be considered to be of outstanding significance and national importance must first be offered for sale to institutions located in Canada prior to being permanently exported. If no institution manifests an interest, then the permit will be issued and the objects can be exported.

If you would like specific information on the export control mechanism in place, you may either visit our web site (www.pch.gc.ca/mcp) or contact me and I will be happy to provide you with this information.

Yours truly,
Sutheat Tim, Senior Program Officer

-Next Message-----
From: "Smith, Michael K" 08/26/2004
To: Sutheat_Tim@PCH.GC.CA
Subject: RE: Amateur fossil collecting in British Columbia - exporting invertebrate fossils

Mr. Tim,

Thank you very much for your reply. I followed the link you provided and it was very helpful. I had not found that site in my Google search for some reason. But I am still a bit uncertain. The Canadian Cultural Property Export Control List located at http://www.pch.gc.ca/mcp/list_e.cfm seems to exclude common invertebrate fossils that are not either type, specimens, amber, valued over $500, or in bulk over 50 pounds. (See the section labeled Palaeontology that begins "Palaeontological specimens recovered from the soil of Canada, the territorial sea of Canada or the inland or other internal waters of Canada, as follows:") Would it be correct to conclude that if a specimen does not meet the criteria listed it does not require a cultural property export permit?

- Mike

-Next Message--
From: Sutheat,Tim@PCH.GC.CA, Aug 26, 2004
To: Smith, Michael K
Subject: RE: Amateur fossil collecting in British Columbia - exporting invertebrate fossils

That's correct. An object must fall within one of the category of objects described in the Control List to be regulated. As you state, the value must be over $500 CAD for invertebrate or vertebrate, or meet the weight requirement, either 25 or 50 lbs depending of the circumstance, if exported in bulk.

Sutheat Tim

August Field Trip

By Ed Elliott

It dawned a lovely day for a field trip. A little after 7:00, I stopped at Goldthwaite to sample a little of the Walnut fauna there. While picking up my second Phymosoma texana, I was thinking that it was almost chilly. That's a very nice thing in August. The Roots showed up shortly after I did and made the hunting more enjoyable.

By 8:30 we had a nice group assembled at the mall in Early. Mike Smith, Melvin Noble, David and Mark Lindberg, Bill Kidd, Rosemary Smith, Hal Hopkins, Janet and Ron Root, Gary Rylander and myself. While we waited for possible stragglers, the laughter and joking made it obvious we were all anxious to get going. The main feature of the day was Wilson Quarry. I've been told that this is Moran Formation. Depending on who you read-this is either uppermost Pennsylvanian or lowermost Permain. Regardless of which period it is placed in, Wilson is both huge and replete with fossils. As many times as I have been there, and as many nice things as I have seen come out of there, on this day, I had a couple of surprises.

The first surprise was Hal's very nice shark tooth in a slab. I believe it is a cladodont type tooth from Symmorium reniforme. Though I had never seen one, they are reported from Wilson Quarry. One large cusp with two smaller cusps on either side; very pretty and nearly perfect. Both Mike and Gary picked up very nice specimens of Petalodus ohioensis. While teeth this large and complete are not easy to come by – they weren't the surprise. While Mike, Gary and I stood in the lower middle part of the quarry, an area that had been dug up, bulldozed and turned upside down – Gary leaned down and picked up a nearly complete spear point. I would have enjoyed watching him pick up this anthropological treasure more if I hadn't just walked by it myself. Bill Kidd also made the shark tooth list with a lovely little Parapristis sp. tooth. (If my spelling is off-please someone correct me.)

A lot more than teeth were found; many brachiopods were also found. I saw Janet pick up a very good Neospirifer. There are always lots of solitary corals. Archaeocidarid spines and plates were picked up by several people. I found several nice bivalves including Allorisma,

Wilkingia and Astartella. A few people picked up crinoid cups.

Leaving behind the purple and green rocks of Wilson, we headed for Santa Anna. A large variety of brachiopods, some corals and a few trilobites were the main features there. I will note that both Gary and I found a small, very robust solitary coral for which we don't yet have a name.

After I arrived home I had a call from Hal. While we were at Santa Anna, he had gone to check out the Brownwood spillway. One of the bryozoan slabs he was cleaning, not the "best" side, turned out to have a crinoid crown on it! It's always fun to discover things in the comfort of our own homes. He also reported finding an outcrop that had indications of plane material. Perhaps the next trip will include the spillway instead of Santa Anna.

All in all, a very good day…

Postscript: I know we all want to go to the Brazos River, unfortunately I don't know when that will be. As nice as it is to have all this rain this year, it keeps the river levels high. Even scuba gear wouldn't help on the Brazos.

Mystic Textile Cleaning Gun. (Water Gun)

For Sale:

This gun is made by the American Niagara Company (ANC). Frank Crane, a member of the Austin Paleontology Society has recently purchased a number of these guns at a significantly reduced price and is offering them exclusively to the members of both the Central Texas Paleo Society and the Austin Paleo Society at the low low price of $85.00. They normally sell for $159.00 plus shipping & handling. They are especially effective on the limestones in the area and have been used by several members who have found them a great asset to cleaning fossils. They plug into your home's electrical outlet and only used tap water for the cleaning element. No air compressor required.

For more information or anyone interested in purchasing one of the guns can contact Frank Crane at focrane@earthlink.net or call at (512) 267-8730

WORLD'S LARGEST, BEST-PRESERVED DINOSAUR EXHIBIT MAKES TEXAS DEBUT AT INSTITUTE OF TEXAN CULTURES

(San Antonio)-A rare, life-sized replica of a 67 million-year-old dinosaur is on display at UTSA's Institute of Texan Cultures through Nov. 7.

"**A *T. rex* Named Sue**," a touring exhibit created by The Field Museum of Chicago, features the world's largest, most complete and best-preserved *Tyrannosaurus rex* yet discovered - and it makes its Texas debut at the ITC.

The 42 foot-long by 12-foot-high replica is named after Sue Hendrickson, the fossil hunter who discovered the dinosaur bones in South Dakota in 1990. Although a foot, an arm, and a few ribs and vertebrae are missing, Sue includes one of the two complete *T. rex* forelimbs ever found.

The bilingual exhibit (English and Spanish) features a cast of the dinosaur skull and touchable models of the teeth, interactive kinetic models that demonstrate the functional anatomy of a *T. rex,* informational kiosks with seeing and smelling devices, and videos on the developing theories through the 20th century of what a *T. rex* looked like and how Field Museum scientists obtained CT images of "Sue's" skull.

Other ITC dinosaur exhibits on display during the *T. rex* exhibit include "Dinosaurs in Motion," featuring roaring dinosaurs and interactive stations that allow control of the actions of the dinosaurs; the "Dino-Maze," a huge outdoor, walk-through maze that tests knowledge of dinosaurs; and "The Bone Zone," an interactive area with children's activity centers including a

reading zone, a fossil wall and a dig box where participants can unearth dinosaur bones.

Educational activities include videoconferencing, programming with "Dino George," puppet shows and a video, "The Dinosaurs of Texas: *T-rex's* Southern Cousins."

The dinosaur exhibits are included with admission. Admission is: adults, $8.50; seniors (65 years and older), $6; military personnel (I.D. required), $6;children 3-12 years of age, $5; children 2 years of age and under, free. The Dino-Maze is $2 per person in addition to regular admission.

"A *T. rex* Named Sue" was created by The Field Museum, Chicago, and made possible through the generosity of McDonald's Corporation®. Other exhibit supporters are the Ellwood Foundation; H-E-B; the Nathalie & Gladys Dalkowitz Foundation; the USAA Foundation, A Charitable Trust; the Zachry Foundation; George Blasing ("Dino George" of Dinosaur World) and an anonymous donor.

Hours of operation are 10 a.m.-6 p.m., Tuesday and Wednesday; 10 a.m.-8 p.m., Thursday, Friday and Saturday; noon-5 p.m., Sunday; and closed Monday.

ITC hosts children's birthday parties and other special events. For more information, call 210-458-2275.
For more information about Institute of Texan Cultures exhibits and activities, call 210-458-2330 or visit www.texancultures.utsa.edu <http://www.texancultures.utsa.edu>.

Bird Brain??

Cranial scan of fossil hints at flight capability

S. Perkins from *Science News This Week*
August 7, 2004

A detailed X-ray scan of the fossilized brain case of an Archaeopteryx shows that several features of the ancient feathered creature's brain and inner ear were highly developed and similar to those of modern birds.

Many scientists consider Archaeopteryx, which lived about 147 million years ago, to be the world's oldest known bird. The creature had many characteristics of dinosaurs, such as a full set of teeth and a long, bony tail, but it also had wings and feathers. Only seven fossils of the species have been recovered, says Timothy B. Rowe, a paleontologist at the University of Texas at Austin.

Rowe and his colleagues used a computerized tomography (CT) scanner to map the portion of the skull that houses the brain of the Archaeopteryx specimen from the Natural History Museum of London. In the resulting stack of more than 1,300 images representing the 20 millimeter long braincase, the researchers could discern details as small as 20 micrometers across.

Examining bulges as well as fine markings on the skull's inner surface. Angela C. Milner, a paleontologist at the museum, and her co-workers reconstructed the overall anatomy of the ancient creature's brain. The regions associated with vision make up almost one-third of the brain's volume. Other well-developed lobes include those responsible for hearing and for muscle coordination, Milner notes. The researchers estimated the brain's total volume to be 1.6 cubic centimeters, or about a third of a teaspoon. Milner, Rowe and their teammates report their CT analyses in the August 5, *Nature*.

An adult Archaeopteryx, about the size of today's magpies and grackles, probably weighed just under half a kilogram, says Milner. The creature's ratio of brain volume to body mass ranks well above that typical of modern reptiles but somewhat below those of today's birds. For instance, birds with the same body mass as Archaeopteryx have brains that range from 30 percent larger to five times as large. However, the ancient species' brain is about three times the volume of brains of modern reptiles of similar mass.

The skull scan revealed the detailed structure of Archaeopteryx's inner ear. The arrangement of

canals there more closely resembles that of modern birds than of reptiles, says Milner. Also, the length of the cochlea-the tubular duct in the ear where sounds are converted into nerve impulses-is similar to that of modern birds but longer than that of reptiles. These characteristics suggest that Archaeopteryx had keen senses of hearing, balance, and spatial perception.

Such attributes would be critical for flying, says Lawrence M. Witmer, a paleontologist at Ohio University in Athens. Archaeopteryx's highly developed brain would have served as the on-board computer necessary to manipulate the creature's wings and feathered flight surfaces. Pterosaurs, a lineage of flying reptiles that ruled the skies between 235 million and 65 million years ago and is unrelated to Archaeopteryx, had similar enhancements of the brain and inner ear, says Witmer.

Results of the new research are important for several reasons. Witmer contends. For one thing, paleontologists can compare Archaeopteryx's anatomy with that of the reptiles that preceded it and look for patterns of brain and inner ear evolution. Also, scientists can look at braincase structures in more-recent flightless feathered dinosaurs, such as Caudipteryx (SN:8/19/00, p. 119), to see whether those creatures might be descendants of early birds. S. Perkins

Upcoming Shows

September 4-5, 2004 Pleasant Oaks Gem & Mineral Club of Dallas, Ellison Miles Geotechnology Institute, 3939 Valley View Lane, Farmers Branch, Texas

September 24-26, 2004 Houston Gem & Mineral Society's Gem, Jewelry, Mineral & Fossil Show, Humble Convention Center, Humble, Texas

October 2-3, 2004 Texoma Rockhounds Denison Senior Center, 531 Chestnut Street, Denison, Texas

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

Elasmo.com

I thought since Bill came and talked with us I would put some information in the newsletter about his web site. It is quite interesting and has some information that can be downloaded as a PDF.

Downloadable PDF files:

46 Million Year old Marine Fossils

Schizorhiza: a unique sawfish paradigm from the Difunta Group, Coahuila, Mexico

The Compleat Cladist: A Primer of Phylogenetic Procedures

Pollack Farm Fossil Site

Water Reptiles of the Past and Present

46 Million Year Old Marine Fossils from the Cane River Site, North Central Louisiana

This short article from the Louisiana Geological Survey talks about the importance of the Cane River site. Since the construction of Interstate Highway 49 near Natchitoches in northwestern Louisiana where an excellent section of the Middle Eocene Cane River Formation was fortuitously exposed uncovering fossils. Any fossiliferous outcrops is important since fossils provide the only direct means of documenting the history of life on the earth, but this site on IH 49 is especially important because the outcrops with marine fossils in Louisiana are rare.

Fossils are important in the unraveling of ancient history of the earth, but also in understanding the geologic history of Louisiana.

This short article has pictures of fossils found at this site as well as a map showing the location of the site and a lot of other interesting information regarding the location and it's importance.

Water Reptiles of the Past and Present by Samuel Williston in 1914

This PDF is 156 pages long and has lots of pictures and descriptions of reptiles and the like. "In most persons the word reptile incites only feelings of disgust and abhorrence; to many it means a serpent, cold gliding, treacherous, and venomous creature shunning sunlight and always ready to poison." This is a sentence from the introduction by Samuel Williston.

Here are a few of the Books available from the Elasmo web site

From time to time, books are published that are relevant to sharks and rays, particularly their fossils. When I come across one of these publications, I'll use my subjective judgment to include them on this site. To my knowledge, items listed below are still in print or at least available. If time permits, I'll attempt to make a few comments about the book.

Sharks of the Order Carcharhiniformes
Compagno, L.J.V. 1988
Reprinted by Blackburn Press (2003)
Hardcover - 1-930665-76-9

Die Selachier und Chimären des Unteren Meeressandes und Schleichsandes im Mainzer Becken (Rupelium, Unteres Oligozän).
T. Reinecke, H. Stapf & M. Raisch - 2001
Palaeontos 1
Softcover - ISSN 1377-4654

Sharks of the World — An Annotated and Illustrated Catalogue of Shark Species Known to Date
Volume 2. Bullhead, makeral and carpet sharks
Leonard J. V. Compagno - 2001
FAO Species Catalogue for Fishery Purposes No.1, Vol 2
Rome Softcover - ISBN 92-5-104543-7

Early Eocene Vertebrates and Plants from the Fisher/Sullivan Site (Nanjemoy Formation)>
Stafford County, Virginia
R. E. Weems et al - 1999
Virginia Division of Mineral Resources
Publication 152

Sharks, Skates, and Rays
The Biology of Elasmobranch Fishes
W. C. Hamlett et al - 1999
John Hopkins University Press
Hardcover - ISBN 0-8018-6048-2

Biology of the Megamouth Shark
editors Yano, K., Morrissey, J., Yabumoto, Y. and Nakaya, K - 1997
Tokai University Press, Japan
Hardcover - ISBN 4-486-03111-3

The Plagiostomia
(Sharks, Skates and Rays)
Garman, S - 1913 [REPRINT 1997]
Reprint by Benthic Press, Los Angeles
Hardcover - ISBN 0-9657121-0-9

Great White Shark,
the Biology of *Carcharodon carcharias*
editors Klimley, A. P. and Ainley, D. G. - 1996
Academic Press, San Diego and London
Hardcover - ISBN 0-12-415030-6

Cretaceous and Paleogene Fossils of North Carolina:
A Field Guide
Chandler, R and Timmerman, J - 1995
Softcover - a publication of the North Carolina Fossil Club
P.O. Box 13075, Research Triangle Park, NC 27709

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.

Central Texas Paleontological Society
P.O. Box 90791
Austin TX 78709-0791

Web page: http://texaspaleo.com/ctps

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
P.O. Box 90791
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