

The Paleo Times

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Rick Poropat, Editor

February Meeting

Weather permitting, our next meeting is **Friday, February 9, 2018** at 7:30 pm in Room 203 on the second floor of the Earth and Planetary Sciences building on the Washington University campus. Our program for the evening will be presented by Dr. David Schmidt of Westminster College who will talk about those fabulous fossils of the White River badlands. A business meeting will follow the program.

Please join us for a great program!

PaleoFest Speakers Announced

The Burpee Museum PaleoFest-2018 speakers have been announced. It's an all-star cast all around! The dinner speaker is Steve Brusatte. His talk is titled "The Rise and Fall of the Dinosaurs". Many details can be found in the FAQ. PaleoFest is March 3-4, 2018.

Saturday & Sunday Lectures:

Dr. Philip Currie
University of Alberta
Dr. David Evans
University of Toronto & Royal Ontario Museum
Cary Woodruff
PhD Student, University of Toronto
Dr. Brandon Peacock
Meeker Postdoctoral Fellow, Field Museum
Amy Atwater
Paleontology Collections Manager, Museum of the Rockies
Dr. Lauren Sallan
University of Pennsylvania
Dr. Alida Bailleul
Postdoctoral Research Associate
University of Missouri School of Medicine
Dr. Anders Carlson
Oregon State University
Dr. Lydia Tackett
North Dakota State University
Dr. Evon Hekkala
Fordham University, American Museum of Natural History
Dr. Thomas Holtz
University of Maryland
Dr. Eva Koppelhus
University of Alberta
Kathryn Pauls

Calendar

Feb. 9	Monthly EMSP Meeting Washington University
Feb 16-18	Cabin Fever Show Kirkwood Community Center
Feb 16-18	Geofest Show Indiana State Museum Indianapolis, Indiana
Mar. 23-25	Rock Hobby Show Machinist Hall Auditorium Bridgeton, Missouri
Apr. 6-8	MAPS Fossil Exposition XL Sharpless Auction Facility Iowa City, Iowa
Apr. 14-15	S. Illinois Each Science Club Show Marion, Illinois Pavilion
Aug. 12	EMSP Picnic Kirkwood Park
Dec. 15	Holiday Party Kirkwood Community Center

DUES ARE DUE

Dues for 2018 are payable in January and are \$20.00 per household per year if receiving the newsletter by e-mail or \$25 for those receiving the newsletter by regular mail. Those members not renewing their membership by the end of February will be dropped from the mailing list.

See Rick Poropat at the February meeting or mail a check (payable to Eastern Missouri Society for Paleontology) to:

EMSP
P.O. Box 220273
St. Louis, MO. 63122



Rick's Ramblings

EMSP has been offered coveted table space at the Rock Hobby Club show at Machinist Hall on March 23, 24 and 25. For this year only, we will be replacing a dealer who cannot attend. It is very important for us to have a good showing if we want to be considered for future shows. We have purchased a 3-front-table booth to sell from, a similar arrangement to the other shows we have done. In addition to our sales booth, our club has also been asked to provide workers to help set up display cases, and place skirts around display tables. This work will need to be done on Friday morning before the show opens (I will let volunteers know the exact time we need to arrive). The skirts and cases will also need to be taken down at the end of the show on Sunday. In consideration for this work, we will receive a 15% reduction in the cost of our booth. This same deal is offered to Rock Hobby Club members who volunteer. Unlike the August show, we have NOT been asked to staff the ticket table or provide displays.

An email copy of the volunteer sign-up sheet was sent out by email a week ago. Response thus far has been only fair. **The club booth slots for Friday have been filled**, but we have no volunteers in the booth for Saturday and only one volunteer for Sunday. We need three people in each time slot per day for table sales and security.

In addition, only one person has volunteered to assemble display cases and attach table skirts on Friday

show, please contact Rick Poropat. If we don't get enough volunteers to do the job we will have to forfeit our space to someone else.

In other news, EMSP has decided that, due to declining attendance and sales, resulting from outdated GSLAESC practices and poor advertising, we will no longer have a sales booth at the August show at Machinist Hall. It just does not make sense for us, financially, to continue the effort. EMSP will continue to be a member club and support the Association by attending meetings, staffing the ticket table, creating special displays and helping at take-down. We hope to be able to replace the August show with the March show at the same location.

Treasurer's Report

The end-of-January club account balance is available by request from the treasurer.



"You sure it not Triceratops?
It have three horns."

Attention Concerned Parents: a warning about paleontology !



1. Did you know that 1 in 5 children will experiment in paleontology and that many begin as early as grade school?
2. A paleontology addiction usually starts with a natural curiosity about dinosaurs - but then rapidly involves an interest in all manner of extinct organisms.
3. Be aware of any suspicious bags and boxes of "rocks" hidden under childrens beds, they may be secretly trading or buying fossils from older kids in the neighborhood.
4. Monitor the emails and texts that your children are sending to others and be sure to look for certain "code words" used in paleontology... words like **evolution, taphonomy, cladistics or morphology**.
5. Notice if their interest in normal activities such as sports, cheerleading, watching television and listening to pop music starts to decline.
6. On family vacations, does your child ask if they can visit the solitary, darkened rooms and cabinet lined spaces of a natural history museum, rather than having fun at a popular theme parks or attractions that regular children enjoy?
7. Do they roll their eyes and/or make faces when a friend or relative refers to the Biblical seven days of creation or Noah's Ark?
8. Know the signs your kids are getting involved with Paleontology **before It is too late!**

Fossil of the Month



The fossil for the month of February is the rare echinoderm, *Comarocystites shumardi* Meek & Worthen, from the Middle Ordovician Kimmswick Formation near Pevely, Missouri. This rare echinoderm resembles a coral, but is actually an extinct marine animal called a paracrinoidean.

Paracrinoidea is an extinct class of blastozoan echinoderms. They lived in shallow seas during the Early Ordovician through the Early Silurian periods. While blastozoans are usually characterized by types of respiratory structures present, it is not clear what types of respiratory structures paracrinoidea likely had. Despite its name, the paracrinoidea are not closely related to crinoids.

Paracrinoidea are characterized by a mouth with two to five feeding arms arranged asymmetrically, or somewhat bisymmetrically. They have a U-shaped gut, and their anus is located next to the mouth. They have irregularly shaped bodies (theca), and a stem, superficially similar to crinoids, and may have used the stem to attach themselves to a substrate, although some reconstructions show them partially buried in sediment.



A complete *Comarocystites punctatus*

New Eocene fossil data suggest climate models may underestimate future polar warming

A new international analysis of marine fossils shows that warming of the polar oceans during the Eocene, a greenhouse period that provides a glimpse of Earth's potential future climate, was greater than previously thought.

Scientists frequently look to the Eocene to understand how the Earth responds to higher levels of carbon dioxide. During the Eocene, the concentration of carbon dioxide in the atmosphere was more than 560 parts per million, at least twice preindustrial levels, and the epoch kicked off with a global average temperature more than 8 degrees Celsius -- about 14 degrees Fahrenheit -- warmer than today, gradually cooling over the next 22 million years. These characteristics make the Eocene a good period on which to test our understanding of the climate system, said Laura Cotton, study co-author and curator of micropaleontology at the Florida Museum of Natural History.

One of the challenges has been accurately determining the difference between sea surface temperatures at the poles and the equator during the Eocene, with models predicting greater differences than data suggested.

The research team used large bottom-dwelling forams as "paleothermometers" to gain a more precise temperature reading. Forams have an exceptionally long fossil record, spanning more than 540 million years, and they are often well-preserved in ocean sediments. Most are small enough to fit into the eye of a needle -- Cotton describes them as "an amoeba with a shell" -- but they were so abundant during the Eocene that there are entire rocks composed of them.

By studying the chemical composition of fossilized foraminifera, tiny single-celled animals that lived in shallow tropical waters, a team of researchers generated precise estimates of tropical sea surface temperatures and seawater chemistry during the Eocene Epoch, 56-34 million years ago. Using these data, researchers fine-tuned estimates from previous foram studies that captured polar conditions to show tropical oceans warmed substantially in the Eocene, but not as much as polar oceans.

Importantly, when modern climate models -- the same as those used in the United Nations' recent Intergovernmental Panel on Climate Change reports -- were run under Eocene conditions, many could not replicate these findings. Instead, the models consistently underestimated polar ocean warming in the Eocene.

Modified from the following source:

Florida Museum of Natural History. "New Eocene fossil data suggest climate models may underestimate future polar warming." ScienceDaily. ScienceDaily, 22 January 2018. <www.sciencedaily.com/releases/2018/01/180122184607.htm

The Eastern Missouri Society for Paleontology (EMSP) is a registered Missouri not-for-profit organization dedicated to promoting the enjoyment of fossil collecting. It is open to all individuals interested in learning about the history of ancient life on earth. The club membership includes professional paleontologists as well as amateur hobbyists providing an open forum for the exchange of information as well as access to expertise on collecting, identifying, preparing and displaying fossils.

EMSP meetings are held on the second Friday of every month (except July, August and December) at 7:30pm in Room 203, on the second floor of the Earth and Planetary Sciences Building on the campus of Washington University. The building is located at the SW corner of the intersection of Forest Park Parkway and Hoyt Drive. Each meeting includes an informal exchange of information and speakers on a variety of fossil-related topics. Note: the building doors automatically lock at 7:30pm.

Club activities include occasional field trips led by experienced collectors, a great way to augment discussions at the monthly meetings. The club also participates in joint field trips with other paleo clubs, visiting fossil sites throughout the United States. EMSP is also proud to be involved in a partnership with the St. Louis Science Center as well as STEM outreach to classrooms, community events and science fairs.

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