

# The Paleo Times

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The Official Publication of the Eastern Missouri Society For Paleontology

## EMSP SOAPBOX

*By Abby Lee*

We have some interesting speakers for upcoming meetings at the St. Louis Science Center. We have worked with the Science Center to arrange speakers for March, April and May of this year. This has the potential to become an annual "speaker series." These public meetings will allow us to get our name out. The club membership has been fairly static lately, and only fresh blood can bring in more dues, take the club in new directions, and relieve the usual crowd from officer duty. Hundreds of flyers, the prep lab, and website have only brought us a few new members. I am looking forward to reaching more fossil enthusiasts that just never new a fossil club existed. As discussed in the January meeting-EMSP has no intention of formally merging with the Science Center. Our home base is the Wash U. Geology Hall.

Don't forget the club has decided to put up a non-member speaker (i.e. use club funds) this year. We still need ideas! The speaker would have to be June, or Sept- Nov.

P.S. sorry for all of the typos in the last newsletter.

### January meeting minutes

The weather kept most of us away on January 12<sup>th</sup>. Instead of the regularly scheduled program, attending members instead brainstormed and Dave Lucans showed us some awesome dino site slides from Argentina. Also, club member Henry Porter mentioned that if he attended the Tucson show, he would purchase some fossils for the club at the Tucson show and then subsequently reimbursed by the club. This has been done before and we turned

a good profit on items such as dino eggs by selling them at local shows.

### Business notes

The gem and mineral show held at the St. Charles convention center lost money last year. As a result, there may be no show this year. The show (I think) was the club's main fundraiser. We will probably have to rely on a good effort at the Stratford Inn and MAPS this year instead. Rick Poropat said the organization may request "start-up" money to get the show going again, and he would like to discuss the situation at the next meeting.

## Upcoming Events

**February meeting:** There is no formal planned speaker at the February meeting. However, a report by those who attended the Tucson show is likely (Rich, Bruce, Henry?). Also, we have everything we need to complete the fossil kits that we have been working on since the Holiday Party. Let's plan on finishing these kits at the February meeting while we watch a fossil-related video or slide show. All we need is some person-power, everything else is ready to go and will be provided. We can also bring along some of the clubs' fossils for organization.

### March, April, and May meetings:

Meetings will be held at the St. Louis Science center and open to the public. Speakers in the works include Janis Tregworthy updating us on her mammoth at Principia college, Mike Fix on the Chronister site dino, and Jon McLeod- a club member and paleontologist.

## Summer picnic

Rich Poropat has reserved the Kirkwood park pavilion for July 29<sup>th</sup> for our annual summer picnic.

## MAPS EXPO 2007- March 30-April 1<sup>st</sup> in Macomb, IL.

MAPS is the largest all fossil exposition in the U.S. The trip is well worth it. A university basketball stadium is filled with booths from national and international dealers. Cash is the recommended currency. The drive is manageable day trip from St. Louis. However, two days are required to really look at everything. Hotels fill up quickly for the weekend. Our club is thinking of holding a booth. More information will be discussed at this month's meeting.

## DUES ARE DUE

Our treasurer, Pete Smith will accept dues payment for a full year. Dues are \$15.00 per household per year and are payable on the anniversary date printed on your newsletter address label. See Pete at the next meeting or mail a check (payable to Eastern Missouri Society for Paleontology) to:

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

## February Meeting

The next meeting of the Eastern Missouri Society for Paleontology will be on Friday, February 9<sup>th</sup>, 2007 at 7:30 pm in room 203 of the new Earth & Planetary Sciences Building on the campus of Washington University. The Earth & Planetary Sciences building is on the southwest corner of Hoyt Drive and Forest Park Pkwy. There is a large parking lot just across the street. Please see the map below for more information.



For those that arrive late to the meeting, a cell phone number will be posted on both doors to call. Someone will come down to promptly let you in, but please try to arrive on time.

## Field Trips

**Cedar Creek Sat. Feb 17<sup>th</sup>.** Bruce Stinchcomb will lead the trip to near Fulton, MO to collect Mississippian-age fossils. We will meet at 9am at the Burger King across for what used to be called the Beltz Outlet Mall near I-70 and Hwy 61. The mall appears now to be called the Mall at Wentzville Crossing. The trip involves a creek so hiking boots are appropriate. Also, bring your hammer, chisel, sack lunch, newspapers for wrapping your finds, and a backpack or bucket to lug around your tools and collected fossils. The weather is often iffy this time of year, so the trip will be postponed if the weather is unusually cold or raining. Also, if the Missouri River is low nearby, the trip may swing by the rock dams. If you have any questions about the trip, please call Bruce Stinchcomb.

Dr. Stinchcomb is available for leading **Barite Pit** trips as well. A few weeks ago club members pulled out some nice Cambrian fossils- including a trilobite that was new to me; in addition to some

pretty crystals that clean up nicely with iron stain removers.

**Kansas River- tentatively set for April-** weather permitting and depending on the level of the river. Bruce Wake of Kansas City replied to my request for a Kansas River Canoe trip. He has graciously offered his home- sleeping up to 8, for arriving Friday night, canoeing on Sat, and leaving on Sunday. This trip offers the opportunity to collect Pleistocene-age bones, as well as, no quite so old bison bones.

### Thank you

To Clarence Zacker for providing me with Paleo shorts material for the last newsletter. As always- articles are welcome.

### RAFFLE

A new raffle item was donated by Dave Lukens. It is a Venus Clam from Rock Pit, FL thought to be 1 million years old. The clams are fossilized with napier intact and beautiful crystals inside. The clams hit the market only recently. They sell for over \$100 online and at shows.

### Distribution of the Newsletter by email

We keep adding to the list of club members who have elected to receive the newsletter by email. Many will go out by email this month. This is a cost savings measure for the club. Each newsletter currently costs 39 cents to mail. This is over \$4.00 per person each year for postage alone. A sign-up list will be available at meetings, or email Tom Lee ([motirek@gmail.com](mailto:motirek@gmail.com)) to begin receiving the newsletter electronically- note new address!

### Paleo-shorts

*Science Daily, soon to be published in Geology:*

*Titanis walleri-* the ice age “terror bird” is in the news this month from the University of Florida. *Titanis* specimens are only known from small fragments. The bird was an estimated 7 feet tall and 330 pounds.

UF paleontologist Bruce MacFadden used rare earth element analysis to confirm the ages of fossil specimens. This technique utilizes known changes in groundwater composition. Bones absorb

groundwater after death and trap unique chemical signatures.

*Titanis* was assumed to have immigrated across the Panamanian land bridge 3 million years ago. However, bones were dated to 5mya, meaning that the bird predated the land bridge. The bird was previously thought to be only 10,000 years old. The youngest specimen is now dated to 2mya.

*Side notes: this type of analysis is the next upcoming way to date fossils older than 40,000 years ago. The method originated from rock dating techniques. It can also identify the exact origin of a fossil. Tianis is flightless bird with a much different form than the Teratorns.*

### “Fossil Dealer Launch Research Journal”

Summarized from:

by Erik Stokstad

*Science: News of the Week*

19 January 2007: Vol 315. no5810, p.313

Stokstad writes that a longtime “taboo” in paleontology is publishing papers on privately owned specimens. Last week commercial fossil dealers started an online journal to document private specimens and make them accessible for study. Academic communities are not so enthused. “This self-publishing of fossils in private hands will further undermine our science,” says Mark Goodwin of the University of California, Berkeley. Many scientists share Goodwin’s viewpoint. However, some hope that important specimens can finally be studied; in addition to the adding incentives for commercial dealers to better document their fossils.

Researchers are in accord with the need for rare fossils to be accessible for study. However, anonymous buyers could pass the specimen into obscurity, making the research invalid because other academics could not verify results. Other academic concerns include the possible improper preservation and/or fieldwork used by private dealers. It is a perception that private dealers may not collect enough data to put their often unique and spectacular specimens in the proper context thus losing potentially important details for studying the specimen.

With these issues in mind, the Society of Vertebrate Paleontology (SVP) continues to accept only papers describing publicly owned fossils. Still, members of the academic community are frustrated

when they know of a valuable find in a private collection, yet the public will never know of its existence.

The new publication- the *Journal of Paleontological Sciences* (JPS) founders recognize the importance of private specimens. The commercial dealer group, Association of Applied Paleontological Science (AAPS) publishes in the new journal. America is not the first to have such a journal. Specialized journals in other countries have tapped the private fossil niche. JPS has specific guidelines to uphold the integrity of the publications and commercial community. Also, two academics are on the nine-member editorial board for JPS.

JPS will be free and published online four times a year. A printed version may be available for purchase as well. Advertisements will support the journal, but they will exclude fossil specimen ads. Twenty academics will review submissions (which must include photo and model documentation) for publication. To protect dealer secrets, the fossil locations will be logged, but restricted from publishing for 25 years.

Despite these promises, opponents state that photos and the promise of access, still allows for fraud should the fossil ever be sold to owner that does not wish the specimen to be studied. Scientists also worry that the journal will inadvertently drive up fossil prices and dissuade donations to public repositories. Consequently, institutions will be able to afford, and receive fewer fossils. Fossil poaching and theft could also increase. Proponents disagree with worse case scenarios. They believe the pros outweigh the cons.

*This may be an interesting debate we could have at a meeting. I'm sure some members of the club have something worth publishing, and the knowledge to do some, yet they lack association and/or degree to publish in an academic journal.*

## **The Giant Teratorns' Trail of Fossils and Evolution**

**By C.C. Zacher**

Mildly edited by Abby Lee

The giant avians from early North American lore, those they called the Thunder-Birds, likely rode the winds and updrafts ahead of morning storms. From this habit they acquired their Native American personae/personae, name and claim to fame. The other great-winged birds

they are akin to, their condor relatives, employ such energy-conserving traits today. In fact, the *Teratorn* specimens with their huge wings, were magnificently large and evolved as condor-like "analogues."

Both birds trace their ancestry and evolution ultimately from the New World vultures. Charles Darwin marveled upon observing the movement of South American (Andean) Condors in Chile. He would have delighted in knowing that these New World species, his beloved condors, (and vultures and also the *Teratorns*, had he know about them) descended from the birds that were true predators-catchers of live prey. They became exclusive carrion eaters over the slow course of evolutionary time. It was nature's way, adaptation and experiment.

Surely it might be easier to be a predator, to be able, if you are a hungry bird, to go out and kill prey rather than waiting for something tasty to die. But of course if there happened to be a good deal dead on the ground, it require less energy to glide down and eat it, compared to hunting and killing something (like the true eagles). In the transition to carrion eating, vultures as their active- hunting predecessors (only those from the Western Hemisphere) evolved and could eat larger meals in one "sitting." They became bigger and heavier. They gained wider wings to sustain them in soaring flight for searching a meal, but lost the speed and maneuverability required by a full-time predator. Adaptations in their structure, size and flight mode were carried out and refined throughout the course of their evolution until the vultures in general; and the condors in particular, became the most energy-efficient beings that soar over land. The *Teratorn* species might be expected to excel, as fully qualified examples, but adapted toward the ending Pleistocene Era in North America, the age of giant mammals, the Megafauna (as their diet source).

Finding bird bone fossils in good condition is of particular significance because they are not as robust and therefore durable as mammal bones. In order to fly, birds need to be as light as possible; their bones are particularly thin and fragile, nearly hollow. In contrast the bones, say, of a horse or bear need to be strong, load-bearing items to carry the weight of these large animals. Thus, they are more likely to survive predation, deposit and burial. Bottom line: fossil bones of birds are rare.

A partial humorous (wing bone) of a *Teratorn* was discovered by a San Bernadino County Museum paleontologist near Murrieta, Riverside County, California. This fossil suggests a wingspan of at least eighteen feet. Besides the Murrieta site, scattered and fragmentary fossils of *Teratorns* have been discovered at many places throughout the desert-southwest, including Nevada, the Grand Canyon of Arizona, and in the La Brea tar pits of California. Their span also went beyond the desert area into Oregon, and elsewhere. *Teratorn*

remains have even been found and located as far east as Florida.

Serendipitously, and not too long ago, the former existence of their relatives the California Condors was verified in upper New York State. The condor bones were found in Pleistocene layers within Genessee County, New York. Perhaps *Teratorns* and condors coexisted, as they seem to have shared similar haunts elsewhere geographically and prefer similar habitat.

In the flood plain of the Willamette Valley near Portland, Oregon at a place called Mill Creek Park a large bone was found that the excavators first identified as the leg bone of an elk. However, further examination revealed it to be the upper wing bone of a bird. The size of the bone meant the bird's wingspan must have been well over twelve feet and probably closer to fourteen to sixteen feet. Other recovered elements include quadrates and other cranial bones, partial dentries, partial sternum, and other partial post-cranial bone, and a series of cervical and thoracic vertebra.

Given the size of the bones, even the big California Condor, with a wingspread of about 9 feet, was small compared to this specimen of *Teratorn*. As enumerated in PaleoTimes (October 2006 issue) two North American species are known to exist, *Teratornis merriami* and *Teratornis incredibilis*, the later being the larger of the two.

#### References:

Excerpts on Charles Darwin and his relationship to the Condors (and about their flight and habits) were derived from Pilgrim on the Great Bird Continent (2006) by Lynda Lynn Haupt, published by Little, Brown, and Co.

Other sources from the internet and "The Paleo Times," Oct, 2006.

# What is EMSP?

The Eastern Missouri Society for Paleontology (EMSP) is a 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 life on earth. The club membership includes professional paleontologists as well as amateur hobbyists. The EMSP provides an open forum for the exchange of information and 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 the Earth and Planetary Sciences Building on the campus of Washington University. Each meeting includes an informal exchange of information and speakers on a variety of fossil-related topics.

Weather permitting, field trips to fossil collection localities around the St. Louis area are held each month. Led by experienced collectors, these trips are a fun way to augment discussions at the monthly meetings. The club participates in joint field trips with other paleo clubs, visiting fossil sites throughout the United States. EMSP is also a proud to be involved in partnerships with the St. Louis Science Center and the Greater St. Louis Association of Earth Science Clubs, Inc.

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