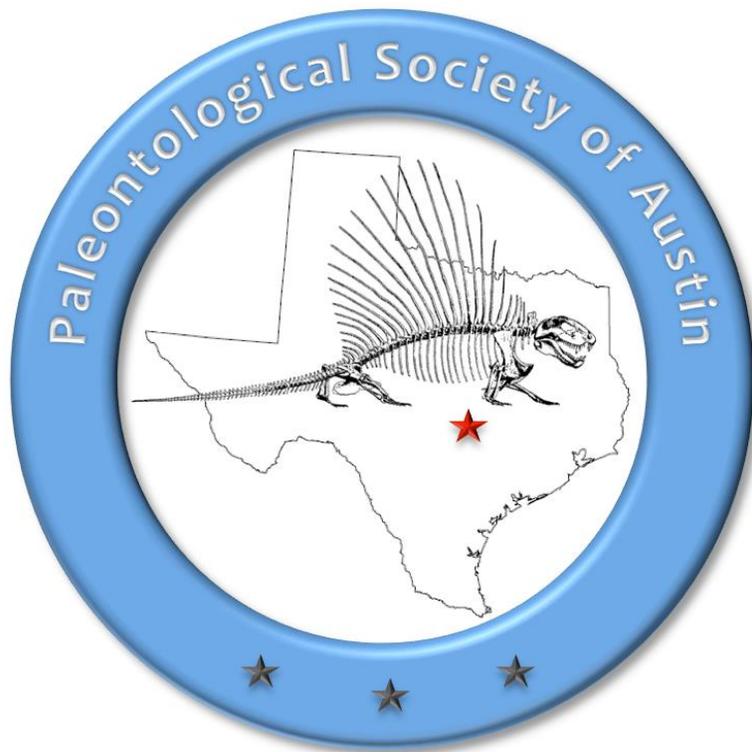


Paleo Footnotes

Newsletter of the
Paleontological Society of Austin

Austin and Central Texas



Volume 9, Number 9
September 2014

President's Note

Well its Saturday morning (yes I am writing this rather late) and the temperature is all of 61 degrees. Of course summer in Texas isn't over yet but we at least have a bit of relief and some hard rains to wash out more fossils. Hope you all get a chance to get out and enjoy the cooler weather and find some great specimens.

Our speaker this month will be Pam Owen of the Texas Memorial Museum. As she informed us a year ago some big changes have occurred recently at the museum and she wants to tell us what is up, as well as ask for our support in the months and years ahead. This will be an informative and important presentation, especially if you regard the museum as one of our more important local resources.

Suzanne has lots of Fossil Fest info as well as continuing requests for volunteers for Gem Capers, Fossil Fest and other outreach opportunities.

And don't miss the fossil stuffing party! Come to the next meeting an hour early and help us prepare for Fossil Fest. Always a lot of fun so come early.

And after several year's absence from the schedule, Ed has gotten us back into the quarry in Clifton. This location has produced some great fossils, including good ammonites, echinoids and shark teeth.

See you Tuesday,

-- Erich



Group shot from last month's field trip on the Brazos River.

Next Meeting
Tuesday September 16, 2014
7:00 p.m. at the Austin Gem and Mineral Society building
6719 Burnet Lane, Austin, TX

Texas Memorial Museum
What is happening and how PSA can Help
Pamela R. Owen, Ph.D.

On September 1st, Pam began her new role at Texas Memorial Museum as Associate Director. Pam will talk to PSA members about the changes at TMM, her National Fossil Day plans and volunteer opportunities. Whatever you think of the changes at the museum, good or bad, they need our support. Please come hear her presentation and learn what PSA can do to support this fine institution.

Next Field Trip
Clifton Chemical Lime Quarry, Clifton, TX.
September 20, 2014 - Meet at 8:00AM

The quarry mines the Edwards Limestone. We will collect from exposed layers of the overlying blue-grey Kiamichi Clay and the yellow-buff Duck Creek Limestone that the quarry leaves behind. The Duck Creek produces nice large ammonites. The Kiamichi has a larger variety of fossils with ammonites as well. Some of the ammonites can be large and you should bring some of your larger tools with protective eye-wear. You will be scrambling over piles of heavy rock so sturdy shoes and boots are suggested. We will be driving into the quarry and parking near where we collect. This means two things: First, there will be no leaving for lunch or restrooms so be prepared and pack everything with you. Second, it will be easy to get those big ol' ammonites home!

The quarry is northwest of Waco. Exit I-35 onto Highway 6 and go west past Valley Mills. About 7.7 miles past Valley Mills (3.3 miles before Clifton) you will see a cattle facility with pens on the left. Shortly after that you will hit 2602. Turn left and go 1-2 miles and enter the quarry parking lot on the right.

PLEASE DO NOT BE LATE.

We will all go in at one time, after signing some kind of waiver. The quarry manager has been nice enough to let us in at 8AM, If you are late, and miss the group, you probably will not get in.

August Field Trip Report 2014 Pleistocene on the Brazos

It was a beautiful day dawning on the nice drive in, and very serene on the very still Brazos River. With me on the water were: Paul Hammerschmidt, Melvin Noble, Dax Gonzalez and a friend, Cathy and Gary Rylander, Mike Smith and Kevin Bills. I apologize for not remembering Dax's friends' name. I only heard it once and didn't have a pen or paper on the water.

Our first stop was certainly not the best one. Gary picked up a nice bone and Melvin found a nice Bison vertebra. A few others found some bone. The first stop is always hit or miss. Then on to the next one. Too many gravel bars to put stop numbers on – the water was low enough that in a few places – there were bars in the middle of the river. On a large stop only a few bones were found. Then Melvin found a horse tooth. Then a large grin holding a mammoth tooth walked up. The grin was attached to Kevin. Very nice find. A little while later, Melvin picked up another horse tooth and Mike picked up a nice mammoth tooth. A while later Melvin picked up another horse tooth and it was Paul's turn to pick up a mammoth tooth. Next it was Dax's turn and he picked up a nice mammoth tooth and a large piece of an elephant's knee. A while later we all heard a shout and saw Dax with his arm extended holding the best (and his second) mammoth tooth of the day. Five mammoth teeth on one trip! Dax's two and Mike's were nearly complete, not the usual chips and water worn chunks the Brazos usually gives us. Very cool finds. And, as usual, the trip itself was a lot of fun. The day wasn't as hot as we had expected. All the birds we usually see were on show – roseate spoonbills, white ibis, herons, egrets, all flying by for us to look at. Just being on the water was a lot of fun. Add collecting and I think we all had a great day. See you in Clifton for some Edwards Fm., Kiamichi Fm., and lower Washita collecting.



Dax's fossil finds

JOIN US! PRE-MEETING FOSSIL STUFFING PARTY, 6pm on 9/16

It's time for the annual stuffing of 1000 ziploc bags with Fossil Fest flyers and small fossil giveaways. **Got Fossils? Bring them! We need 1000 clean, (recognizable as) fossils** that will fit in a sandwich sized ziploc bag. These giveaways will go to students and the general public at the upcoming AGMS Gem Capers show Friday through Sunday, October 3 - 5. After the show, the extras will be given to Pamela Owen for give-away to field trip students at the Texas Memorial Museum.

PSoA BOOTH at AGMS GEM CAPERS SHOW

Don't miss out! No prior experience or expertise required! Sign-up NOW (online at www.mysignup.com/agms - the passcode is paleo) as a Volunteer for the Paleontology Table at the **AGMS Gem Capers** show held **Friday through Sunday, October 3 - 5** (with set-up on Thursday, October 2) at the Palmer Events Center . This is our largest educational outreach of the year and presents an enormous opportunity to educate the general public about paleontology and fossils while spreading the word about Fossil Fest. Volunteers will receive free admission to Gem Capers all weekend long! It's a blast! The PSoA booth will feature an educational Quest for Knowledge, fossil touch table, fossil displays, paleo tools, fossil cleaning and give-aways. Please consider filling a Display Case for the show - PSoA has three cases reserved. It's great practice for Fossil Fest! If you're interested in filling a Display Case at the show, consider participating in the **SCFMS Case Competition** (optional). Did I mention that Volunteers get in FREE to Gem Capers?! It's a great show and lots of fun! For more information about Gem Capers, visit the AGMS Gem Capers website.

FOSSIL FEST UPDATE

Save the date! The 24th Annual Fossil Fest will be **Saturday to Sunday, November 15 - 16, 2014** (with set-up on Friday, November 14). This year's show theme is... Discover Ice Age Texas! We'll be exploring all the ice age animals that roamed Texas during the Pleistocene. **Sign-up NOW (online at www.mysignup.com/fossilfest - the passcode is paleo).** We are very fortunate to have David Lindberg pulling together and assembling **Teacher Kits** for the show. These kits are full of higher quality fossil specimens to be used in classrooms across the Austin area and may be picked up by teachers at Fossil Fest. If you know any science teachers, please let them know about the opportunity to pick up kits for their classroom. Please join me in thanking David for his time and talents collecting and assembling these fossil kits as it is a time consuming but very important task! Last, but definitely not least, thanks to Erich Rose for designing this year's **show theme Exhibit**. Erich will create a great ice

age exhibit for us to proudly place as the center piece of the entrance gallery and the first thing that our attendees will see. The support and assistance of every PSoA member is essential in making Fossil Fest a success. There are many ways that members can help out so please stay tuned for upcoming opportunities!

FLYERS: Last month, volunteers were asked to disperse **Fossil Fest tear pads/flyers**. Those flyers should all now be in place at your designated public attractions and facilities around the Austin area. Please send email to showchair@austinpaleo.org if you have ideas for other locations where we should advertise our annual show.

VENDORS / EXHIBITORS: Currently, there is 1 Large and 3 Small Booths available for interested vendors, exhibitors and demos. Vendors/Exhibitors include: AGMS, Jack Grant, Lonestar Paleontology, Natural Selection Enterprise, Nature's Treasures, Don Painter (FL fossils), Shu's Rocks & Minerals and Teredo's. Keep your eye out for prospects while travelling or at upcoming gem and fossil shows. Send your recommendations to showchair@austinpaleo.org.

DISPLAY CASES: We encourage you to create a display case for the show this year. We have a lot of display cases to fill! We would love to see those fossils you worked so hard to collect - in searing heat, ankle deep mud, slippery slopes, capsizing canoes or finger numbing cold! So start sorting through your fossils now! Additionally, it would help us teach some key TEKS (Texas Essential Knowledge and Skills) concepts to students. If you're in need of display case ideas, please consider:

- A display of how a plant or animal becomes a fossil
- Examples and a brief description of changes to an organism over time
- Collection of a particular organism and their structures
- One organism - characteristics used to identify it with samples and diagrams
- A fossil and display showing what we were able to learn about the type of climate / environment the organism would have been in while living - deep ocean/shallow ocean, cold/warm temperature, turbid/calm environment, etc - this may be one for one of our university grad student / researcher / professor

FOSSILS: We need lots and lots of CLEAN cast off fossils for the DIG PIT (very small) and SPINNING WHEEL. Keep this in mind when you're out collecting: if you come across an outcrop with a lot of a particular fossil, please pick up extras for the fest! Until next month...

Suzanne Galligher
Fossil Fest Show Chair

WANTED!

DEFINITELY *NOT* ALIVE!

**SMALL, CLEAN, RECOGNIZABLE FOSSILS!
LOTS AND LOTS AND LOTS OF THEM
FOR THE SAND & GRAVEL DIG PIT AND OUTREACH EVENTS**



FRANKY "THE ROCK" FOSSIL

HAUL 'EM TO THE NEXT GATHERING

**BRAGGIN'
RIGHTS**

REWARD

Austinpaleo.org

Reflections on a Mammoth Dig

This is the story of a new mammoth find in North Central Texas. The story begins back in May, 2014 when the owner of a gravel and sand pit in Ellis County (45 miles south of Dallas) while working with his backhoe, came across a big bone. He stopped his machine, came down to take a look and, with his keen eye, saw a big bone coming out of the sandy soil. The dig started soon after that and I was part of the team excavating the mammoth. The mammoth was given the name Ellie May because it was found in Ellis County and May because it was found in late May.

The owner had damaged part of the skull of the mammoth with his machinery. Otherwise, the find has proven to be a magnificent specimen of a mammoth. The skeleton was about 80 percent complete and almost all was found in anatomical position. The size of the tusks and the shape of the pelvis suggest that the mammoth was young (subadult) and that it was a female. The lamellar frequency of the teeth exposed points to a Columbian mammoth, *Mammuthus columbi*. The lineage of the mammoths in North America is *Mammuthus meridionalis* (the ancestral mammoth) --- *M. imperator* --- *M. columbi*. The woolly mammoth, *M. primigenius* was not present this far south (i.e., Texas) and it was an immediate descendant of the steppe mammoth *M. trogontherii* in Eurasia. In the Americas there was another species of mammoth, *M. exilis*, the pygmy mammoth descended from the mainland Columbian mammoth and lived on the Channel Islands of Southern California.

But, going back to our mammoth the skeleton shows no sign of scavengers and Ellie May was found lying on her left side practically articulated. What happened to her? Nobody seems to know as yet. The age of sediments is old; they go back to the late Pleistocene (last Ice Age or Wisconsinan glaciation). It corresponds to the Rancholabrean (North American Land Mammal Age). The mammoth remains are located within the Trinity River Basin and are sands and gravels deposited by the ancestral Trinity River and its tributaries. It has not been the only mammoth remains in Ellis County. There have been at least 2 others, but they have been only isolated bones.

The stratigraphic column at the mammoth locality shows from top to bottom: Topsoil, several strata of paleosols, interfingering very coarse gravels, and fine sand deposits. Ellie May came to rest at a depth of around 3 meters in this fine sand (composed of fine grains rounded and well sorted). These deposits lay unconformably on the blue-gray shales of the Upper Eagle Ford Group and/or even younger deposits. It is not uncommon to find an Upper Cretaceous faunal assemblage in the gravels: vertebrae and shark teeth of *Cretodus* sp., *Cretolamna appendiculata*, *Cretoxyrhina mantelli*, *Ptychodus whipplei* *P. anomymus*, *P. mammillaris*, and fragments as well as complete inoceramid pelecypods.

The sediments where the mammoth bones are encased will be dated by geochronologic methods (Optically Stimulated Luminescence). In addition, radiocarbon dating will be run on the collagen of the bones, to further confirm the age of the mammoth remains. Most important for the paleoecology of our mammoth Ellie is that she wasn't alone, tooth fragments of another proboscidean (a gomphothere mastodon) in addition to an incomplete tusk of another mammoth have been found in the same locality. This last one appears to be much older than Ellie since it

was not found at the same stratigraphic level. It was found at least 3 m deeper than the stratum where Ellis was lying.

All of this makes one's imagination fly trying to picture how was the landscape in what is now North Central Texas in the late Pleistocene: a herd of Mammoths roaming, grazing near lake shores and not far away some nearby forest where gomphotheres mastodons were browsing peacefully under a clear blue sky.

The mammoth remains will be studied for a long time; new hypothesis will come to life as of the life and death of our Ellie the mammoth. But one thing is for sure, all of us lucky enough to have participated in the dig will cherish her forever. It is said that you live as long as people remember you ... well Ellie will live long if only in our minds. The fossil remains will be taken to a museum and I have already heard of top notch specialists in mammoth research, ready to fully study her scientifically. So, long live Ellie the Mammoth!

I am planning to do my part by presenting the research of myself and my coauthors on the mammoth in Ellis County at a congress that will take place in 2016 in Vienna, Austria.

Virginia Friedman



PSA member Virginia Friedman working on the mammoth.

The purpose of the **Paleontological Society of Austin**, a 501(c)(3) non-profit organization, is the scientific education of the public, the study and preservation of fossils and the fossil record and assistance to individual, groups and institutions interested in various aspects of paleontology.

Meetings of the **Paleontological Society of Austin** are held the third Tuesday* of each month, 7:00 p.m. at the Austin Gem and Mineral Society building, 6719 Burnet lane, Austin, TX. The public is cordially invited to attend. See web site for April & December dates.

Annual Dues: \$18/individual, \$24/family and \$12/associate (non-voting, receiving newsletter) Send to: Treasurer, Paleontological Society of Austin, PO Box 90791, Austin, TX 78749-0791

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DATED MATERIAL – *Next Meeting June 17th.*

FIRST CLASS MAIL