

THE FOSSIL RECORD



SEPTEMBER MEETING: MOSASAUR ORIGINS

By Tom Dill

The DPS will meet on Wednesday, September 14th, at 7PM Central time, in person and on Zoom. We will be back at our normal meeting place, the Boonesville Auditorium (Room 125) of the Ellison Miles Building (Bldg H) at Brookhaven Campus of Dallas College (3939 Valley View Lane, Farmers Branch). Mike Polcyn, Senior Research Fellow at the Institute of the Study of Earth and Man at SMU, will speak on “The Origin and Early Evolution of Mosasaurian Squamates”. His talk explores the basal relationships of mosasaurs and their nearest relatives, including recently published data that helps clarify where the group fits in the squamate tree of life.



Mike was a member of the Dallas Paleontological Society while working as Chief Technology Officer at a telecommunications company. He began affiliating with the Huffington Department of Earth Sciences at SMU, where he is now a Research Associate. He founded their Digital Earth Sciences Lab, for the 3D capture of anatomy using CT and laser scanning, for visualization, computer modeling, analysis, and 3D printing. He specializes in the systematics, evolution, and paleobiology of mosasaurs. Many DPS members and associates have contributed their mosasaur finds to this effort. Now an honorary member of DPS, Mike has over 65 peer-reviewed publications, and has worked in the field in Nebraska, Kansas, Arizona, Texas, Arkansas, Israel, Mongolia, and Angola.

For remote attendees, you are welcome to join our Zoom meeting by clicking on this link:

<https://us06web.zoom.us/j/83765036222> or start the Zoom app and enter the **Meeting ID: 837 6503 6222**. You then need to enter the **Passcode: 618114**. As usual, please mute your audio until you are ready to speak, especially during the presentation. You can post questions for Mike in the chat box, starting with uppercase QUESTION so they are easy to identify, or unmute yourself at the end to ask your questions yourself. We hope to see you online.

SOUTHGATE SAND AND GRAVEL QUARRY WRAP-UP

By Roger Farish

Photos By Kate Fenton and Linda Farish

Only 11 avid collectors showed up in Ferris, Texas last Sunday (8/28) for an investigation of a remote sand and gravel operation in the Trinity River drainage. That was good news since the quarry was relatively small and very stingy with its Pleistocene remnants.

The Pleistocene (often referred to as the Ice Age) is the geological epoch that lasted from about 2,580,000 to 11,700 years ago, spanning the Earth's most recent period of repeated glaciations according to Wikipedia. The end of the Pleistocene corresponds with the end of the last glacial period. The Late Pleistocene witnessed the spread of modern humans outside of Africa. Humans were able to populate the Americas for the first time due to lower sea levels that provided natural bridges between Asia and North America. This was coincident with the extinction of most large bodied animals in these regions.

The paleontological community and the general public are naturally preoccupied with the demise of the earth's largest creatures - the dinosaurs. BUT there was a huge mammal diversity during the



Pleistocene that included mammoths and mastodons along with a giant ground sloth that could stand 17 feet tall, 12 species of horses, 4 species of bison (the largest was about twice the size of today's bison), a giant beaver, tapir, camel, peccaries and an armadillo the size of a Volkswagen. There were fifty genera of large, land-based mammals in the Pleistocene of the United States (Martin, 1967). So, what happened to them?

Mark McKinzie addresses this puzzle in our NSR book.

What caused the extinction of these large terrestrial mammals at the end of the Ice Age? How come the majority of the large mammalian herbivores survived four major episodes of glaciation over millions of years only to become extinct at the end of the last glacial maximum? Why did it not appear to affect the smaller mammals such as the rodents? Why were the larger marine mammals (such as the whales) not affected?

There is still not a consensus about these extinctions. Clovis man was an efficient hunter, but to wipe out every large mammal including knee-high horses. Not likely.

Several remnants of these animals were found Sunday. Sveta and Aleksandr Earnest found several knuckle – type bone pieces as did several other people. Linda Farish did score the 'finds of the day' with her camel tooth and two sections of an adult mammoth tooth (see photos below). Of course, I did what I was supposed to – find a shark tooth – a blade of a *Cretodus crassidens*. Nicholas Du upstaged me with a *Cretoxyrhina* tooth more complete than mine. Pleistocene sand and gravel is Cretaceous material that was plowed up at the end of the last glaciation, tumbled down the river by the ensuing flood and redeposited on top of the Cretaceous downstream. So, because we found Coniacian shark teeth, we can tell about how far they have traveled. Also we found that sand erodes quickly creating some eerie hoodoos.

Thanks to Vice President Kate Fenton and Linda for supplying some of these photos.



A SINGULAR PATHWAY DINOSAUR VALLEY TRACKS SERIES: I

By Kate Fenton

Several DPS members adventured down to Glen Rose to the Paluxy River to assist with cleaning and identifying newly discovered dinosaur tracks. This is the first of several accounts of the journey!

When the prolonged drought dried up portions of the Paluxy River that winds through Dinosaur Valley State Park in Glen Rose, TX, many volunteers were eager to walk in some readily accessible giant footsteps made 113 million years ago during the Lower Cretaceous. Among the volunteers were several DPS members who couldn't resist the opportunity to play in the mud where dinosaurs once danced.

These tracks have been known intermittently since the Seventies but the entire trackway has not been fully identified, cleaned, measured, mapped and filmed until now. The uniqueness of this trackway is that it contains roughly 161 steps



made by a single individual in addition to cross paths and the presence of other theropods.

Who is the Lone Ranger whose multiplicity of tracks garnered so much recent attention? Why it's an Acrocantosaur, a three-toed bipedal dinosaur. This dinosaur grew to about 15 feet tall, 36 feet long and could weigh several tons. The Acrocantosaur is one of five species of dinosaurs along with a crocodylian whose tracks are found in the park. His or her footprints are startlingly well-preserved and very distinctive. By studying the tracks, we can learn many things about the behavior of the living creatures who made them.



Rangers provided pumps and generators to remove remaining stagnant pools of water to assist the volunteers. Using plastic tools and their hands to avoid damaging the tracks, volunteers

removed the silt and gravel that filled the tracks, bailed and sponged away any remaining water, swept an area about two feet either side of the Lone Ranger's pathway so that the measuring, mapping and videoing by drone could occur. After brief rain showers in the middle of the effort, some of this work had to be repeated. By Friday, August 26, all of the tracks had been readied and documented for posterity. This documentation is important because the river is a continuing erosional force that will eventually scour these tracks away.

The planned work was completed just in time because extensive news coverage brought several times the number of usual tourists to the park. On Saturday the park had to be closed from 10:30 to 3 pm to those who did not have reservations due to the sheer number of people eager to see the phenomenon.

As a volunteer, the experience was exhilarating. I learned a lot, got a lot of exercise, enjoyed the outdoors, spoke with many interesting people who worked alongside me, and thrilled at the idea of kneeling in the imprints of these giants that lived so many sunrises and sunsets ago. I would check this experience off my bucket list but it wasn't on my list; I had never imagined I would have such a remarkable opportunity so close to home!



REMEMBERING ED SWIATOVY

The DPS mourns the loss of a pillar of the Society, Ed Swiatovy. Ed's contributions to Texas fossils and incredible spirit leaves a legacy, and he will not be forgotten.

Ed was a member of the Dallas Paleontological Society since 1994, and an author of Occasional Papers volume 4, the Guidebook to the North Sulphur River, including the recently revised version. We will miss him.

Shared by Ed's wife Catherine:

"It is with great sadness to announce that my husband Ed has passed. He loved fossils, studying, collecting them and giving programs to children. We were members of Texoma Rockhounds starting in 1973, missing 9 years in the 80's and rejoining in 1993. We are having a celebration of his life at the Sherman museum on Sept. 10th from 2 to 4 and displaying some of his collection."

Shared by George Phillips:

"I was saddened to hear of the loss of the much adored Ed Swiatovy of Sherman. Back in the 2000s, the DPS made several trips east to Mississippi and Tennessee, and that's how I came to know Ed. Coauthor of the North Sulphur River guidebooks (2001, 2019), Ed was always up and eager for a fossil exploration. He and Cathy made several donations to the Museum of Natural Science in Jackson, MS (my employer), including a nearly (~92%) complete *Phyllacanthus hemigranosus* (MMNS IP-4429) he found in March 2010 at Lake Texoma--one of his old stomping grounds. Ed and Cathy took me on my first collecting trip to Texas; they were such wonderful hosts. At Lake Texoma, 16 years ago this week, I was having difficulty developing a search image in the shallow water near shore, the rippled light reflection on the surface confusing my ability to focus on the bottom, when Ed directed me closer to where he was standing, his body blocking the light so that I could easily see one of the most perfect echinoids I'd ever seen up to that time--a *Craginaster completus*. Ed let me 'find' it, and today it bears catalogue number MMNS IP-901. You will be missed by many, Ed, but your legacy lives on."

Shared by Chad Standifer:

"It's been nearly 20 years, but he afforded me the opportunity to share a find of ours with the DPS in my teenage years. An exceptional mariella we spent the majority of an afternoon extracting from the banks of Lake Texoma. He was so proud that he did a fair amount of work to put it in a condition to display and it had its spot in his coffee table for many years. That's just the kind of Grandpa he was."



OPPORTUNITY FOR FOSSILMANIA FUN: VOLUNTEER SLOTS NOW OPEN!

When: Save one or more of these dates: October 28-29-30

Where: The Somerville Expo Center in Glen Rose, TX of recent dinosaur track fame!

What: Our 40th Fossilmania , one of two annual fundraisers

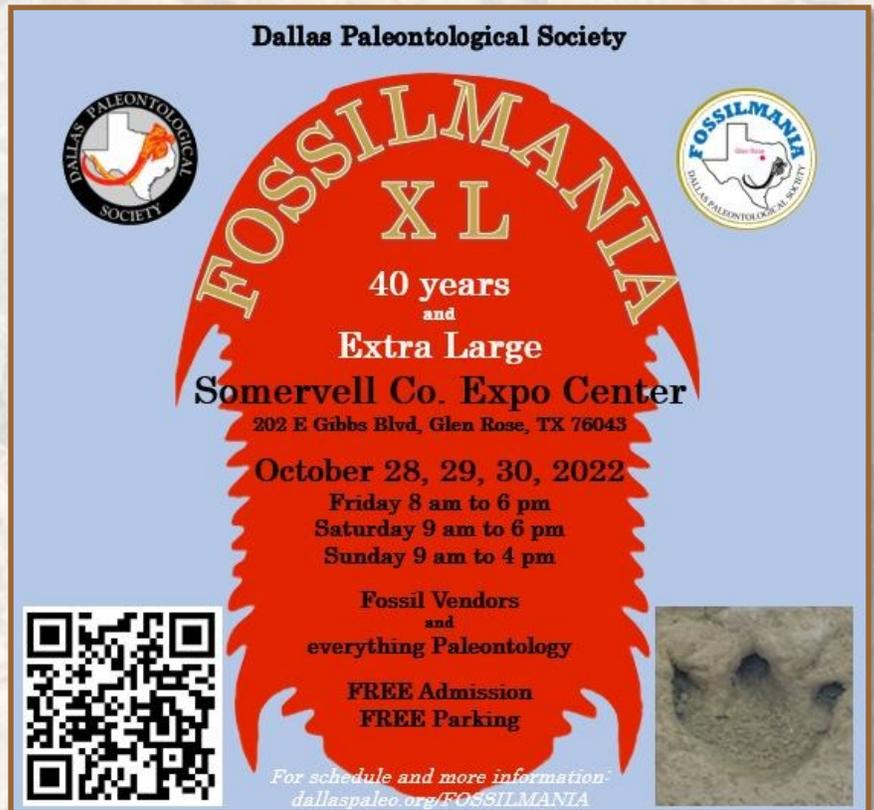
Vendors display a wide variety of interesting and beautifully prepared fossils and paleo-related products and DPS presents speakers and field trips each day. There's an ongoing Silent Auction concluded on Sunday. And a Raffle of beautiful, unusual and/or rare fossils gathered from interesting places. There's also a Kids Corner where fossils and dinosaur related activities abound. Hourly drawings for door prizes include fossils for adults and fun items for the kids. Admission is free.

New this year is a Fossil Swap. For \$10 a day, you can bring your own fossils & get a parking spot in a designated area devoted to swapping, shopping or sharing tips for finding or preparing your fossils. Feel free to set up a table and/or chair, a shade awning, or just open the trunk, the hatch back or the tailgate to show off your treasured fossils or all things related to paleontology. We've never done a Swap before so we encourage you to look at your holdings and decide if you've got surplus fossils or related items that you'd like to barter for fossils that might round out your collection. Make room for your 2022-2023 treasures! Consider this an extension of the Vendors' show-but it's outside.

Enrich your life – volunteer! Make some new friends & strengthen your ties with members you've already met by volunteering an hour or two at the DPS tables. We meet and greet the public, answer questions about DPS, sell a limited amount of DPS-related merchandise, hold hourly door prize drawings, lead a few local field trips, host a few speakers, manage the Kids Corner, and enjoy the company of other fossil lovers.

Why raise funds? All profits from Fossilmania support the operation of the Dallas Paleontological Society. We undertake activities that provide education about paleontology and advance the science of paleontology while enjoying the company of others with similar interests. There is strength in numbers!

Interested? Contact Kate Fenton, at VP@dallaspaleo.org to sign up for a couple of hours on Friday, Saturday or Sunday. Fossilmania hours are 8-5 on Friday; 9-5 on Saturday and Sunday.



Dallas Paleontological Society

FOSSILMANIA XL
40 years
and
Extra Large
Somervell Co. Expo Center
202 E Gibbs Blvd, Glen Rose, TX 76043

October 28, 29, 30, 2022
Friday 8 am to 6 pm
Saturday 9 am to 6 pm
Sunday 9 am to 4 pm

Fossil Vendors
and
everything Paleontology

FREE Admission
FREE Parking

For schedule and more information:
dallaspaleo.org/FOSSILMANIA

The poster features the Dallas Paleontological Society logo on the left and the Fossilmania logo on the right. A QR code is located in the bottom left corner, and a small image of a fossil is in the bottom right corner.

OLIVER CREEK WRAP-UP

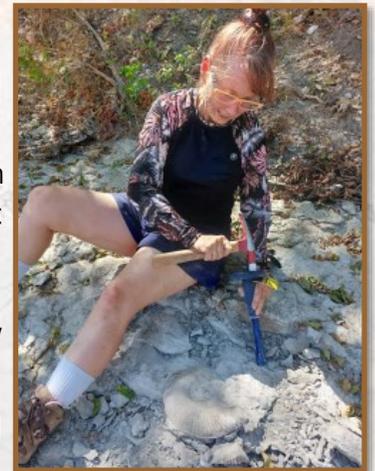
By Roger Farish

Despite record setting temperatures (thermometer didn't exceed 104F), hardy DPS members were not deterred from this popular field trip. As you can see, we can't just go to Justin and 'meet at the horse' since they've removed it. Hold Harmless Agreements were collected and 5-gal. restaurant buckets were distributed. Thanks to Diane Vowell for printing extra Hold Harmless Agreements as there are usually some who forget them. As usual, everyone had to verbally repeat, 'OXY-TROPI-DOCERAS' at orientation until they got it right. Landowners hadn't been able to mow near the creek due to fire hazard, so parking was in their field and we got to make the short walk to the creek (bed). Dry, dry, dry. After lunch eight cars did trek up to the west end of the creek where we did continue to find ammonites and echinoids. None of the 48 initial attendees seemed disappointed.

Everyone was finding the *Hemiaster whitei* echinoids. Soon ammonites started to be discovered. Several people found a very productive layer in the soft limestone that contained quite a concentration of the *Oxytropidoceras supani* (most common). Phil Scoggins' 2-fer on a slab is shown below. I observed four touching in one cluster, but they didn't hold together. First-timer Anthony Rust found his share with a good complete one to take home. New member Dusty Rainbolt (real name – she writes cat books) patiently exposed a great Oxy (redhead photo to the right). New-member family of Syllas, Sadie, Gehrig, Dustin and Allycen Kent went for volume. It was great to see so many families on the trip.

I saw evidence of several crabs, but Rebecca Bruton had the best (son Maddox says he really found it). Sveta Earnest found the first *Salenia mexicana* and it took son Aleksandr all afternoon to catch up, but he did find one. Sveta also found a very well preserved different species of Oxy called *Oxytropidoceras* (*Mirapelia*) *texanum* (Young, 1966) – see below. (Thanking Mercer Brugler for the ID.) Linda Farish also had a find-of-the-day of a first time ever *Tetragramma taffi*. Historically we have found a few *Phymosoma* on Oliver Creek, but never one of these.

A cooler of soft drinks and one of water were provided so heat problems would not be on us, but everyone was well prepared AND NOT EVEN ANY WHINING. Huge thanks to Debra Rogers who iced down a large watermelon as well as plenty of oranges for lunch desert. Thanks to Phil for some of these pictures.



DALLAS PALEONTOLOGICAL SOCIETY OFFICERS, COMMITTEE CHAIRS, AND ADVISORS

Elected Offices:

President	Estée Easley	president@dallaspaleo.org
Vice President	Kate Fenton	vp@dallaspaleo.org
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DPS Advisors:

Philip Scoggins, Rocky Manning, Tom Dill, Roger Farish

Professional Advisors:

Dr. Tony Fiorillo, SMU Shuler Museum
 Dr. Louis Jacobs, SMU Shuler Museum
 Dr. Merlynd Nestell, University of Texas at Arlington
 Dr. Ron Tykoski, Perot Museum of Nature and Science

The Dallas Paleontological Society was founded in 1984 for the purpose of promoting interest in and knowledge of the science of paleontology. It was intended by the founding members that the Society would be a network for the exchange of data between professionals and serious amateurs in this field.

dallaspaleo.org

The Dallas Paleontological Society meets the second Wednesday of every month at 7:00pm at Brookhaven College, unless we have something special happening that month. Please [check our calendar](#) for exact dates. Original versions of minutes and treasury reports will be available upon requests. Come meet with us, hear a speaker, learn about paleontology, and bring your unidentified fossils and unique finds to share with the group. You will be welcome, and we will enjoy meeting you. For a map of our meeting location visit dallaspaleo.org/contact.

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DPS Members were all smiles after a successful ammonite fossil hunting field trip to Oliver Creek. Photo by Roger Farish.

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