

Letter from the President

Well, fellow fossilnerds, here we are!! Hot, sticky, rainy summer and no place to fossil hunt! The summer doldrums are here! Our rivers and creeks are over our heads and unless you're a diver and going to Venice, you better have a land site if you want to fossil hunt. So, I guess this is as good a time as any to take a vacation, which lots of you guys are doing. Last month we had a rather low attendance at the meeting, since so many folks are not around.

Those faithful members who attended the July meeting were able to enjoy themselves digging through lots of fossil matrix gravel, and finding small fossils. Michael Gessel was kind enough to provide the sieved, washed gravel to us, before he returned to his summer place in New York. And, we thank Michael a whole lot for his kindness and generosity.

There is not much happening right now in the local fossil scene. However, a couple of members went to the FOSSIL Project workshop in Gainesville to study digital fossil photography and 3d printing. An article is inside this newsletter.

Mosaic has awarded us a date to hunt their phosphate mine, October 10. Please come to the meeting to sign up to go. Since it is off season, we should not have to do a lottery to pick spots, but I suggest to attend a meeting and sign up while there is still space available. In-person signup will take precedence over call-ins.

My wife recently had foot surgery, so she, of course is not fossil hunting. Asking her for her secret spots will do you no good, either, since she hunts with me, and I don't have any!

Florida Weekly called me and after a short interview ran a story about the fossil club. For those that missed it, a link is included inside.

As usual we try to include articles of interest and showcasing of members in our newsletter. If you want to contribute, please do. The newsletter belongs to everyone in the club.

The August meeting is our annual show-n-tell-n-trade-n-sell meeting!! Please come, and enjoy! Bring stuff to show! To trade! To sell! I hope to see you there! Same time, same place: 7pm, Zion Lutheran Church Fellowship Hall, 7401 Winkler Road, Ft. Myers, Fl.

SEE YOU THEN!!

Louis Stieffel

president

Fossil Club of Lee County



Fossil club Meeting Minutes

7/16/2015

Louis Stieffel called the meeting to order

20 members present

Prices are being set and tables sold for Shell Factory February show.

Don Lindsay is back and again working FCOLC library

Please contact Al Govin for any email changes 239 910-2339

"T-Rex" display still in Gainesville, FL

Dave Dayo discussed Fossil Project meeting in Gainesville including that in future scanning and 3-D printing will become available. Sue Collier also attended that meeting.

Don Lindsay and Zak Deyo spoke to two groups of teenagers at N. Ft. Myers Rec Center.

Next month's meeting will be our annual show and tell as well as show and sell.

Mosaic pit trip is scheduled for October 10th and will be in a different place than last year.

Pit access to various local pits was discussed. If you have any connections please step forward.

Snack break with snacks provided by Jeanne and Dave Seehaver.

Micro fossil hunt was held.

Door prizes were awarded and dollar auction was held.

Minutes by

Secretary/Treasurer Al Govin

United States and Canada Fossil Sites List

http://www.fossilsites.com/index.html

| OFFICERS Louis Stieffel, President 239-851-7499, <u>cape187@earthlink.net</u> Michael Siciliano, Vice President 239-980-1406 Al Govin, Secretary, Treasurer 239-910-2339 | DIRECTORS Charles O'Connor239-246-5526 Dean Hart941-979-8217 Dave Seehaver Jeanne Seehaver Don Lindsey Jim Manderfield | COMMITTEES Al Govin, Club Trips Director Curt Klug, Web Master Cherie Neat, Newsletter Developer Al Govin, Badges, Membership Dave and Jeanne Seehaver, Merchandise Dean Hart, Refreshment Michael Siciliano, Raffle and Dive Trips Charles O'Connor, Speakers Louis Stieffel, Auctioneer, Vertebrate Education, Newsletter editor, FOSSIL project representative |
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Meetings are held on the third Thursday of the month, at Zion Lutheran Church Fellowship Hall.

Websites & Locations of Interest

Fossil Club of Lee County: www.fcolc.com FCOLC c/o Al Govin 16331 Estuary Ct., Bokeelia, Fl., 33922 The FCOLC website is a source for links to Fossil websites of interest, archived monthly club newsletters, details on club meetings and officers. Museum of Natural History @ Gainesville www.flmnh.ufl.edu/ The Fossil Project www.myFOSSIL.org Randell Research Center PO Box 608, Pineland, FL www.flmnh.ufl.edu/RRC/ Smithsonian Natural History Museum www.mnh.si.edu Southwest Florida Museum of History 2031 Jackson St., Fort Myers www.MUSEUMofHISTORY.org The Bailey-Matthews Shell Museum, 3075 Sanibel-Captiva Rd, Sanibel, FL www.shellmuseum.org Cracker Museum at Pioneer Park in Zolfo Springs, FL Tel 863.735.0119 www.hardeecounty.net/crackertrailmuseum/about.html Cape Coral Friends of Wildlife Burrowing Owls www.ccfriendsofwildlife.org Calusa Nature Center and Planetarium 3450 Ortiz Av, Fort Myers Tel 239-275-3435 www.calusanature.org Imaginarium 2000 Cranford Ave, Fort Myers www.i-sci.org Florida Fossil Clubs Southwest Florida Fossil Club www.southwestfloridafossilclub.com Tampa Bay Fossil Club www.tampabayfossilclub.com Orlando Fossil Club www.floridafossilhunters.com The Fossil Forum www.thefossilforum.com/index.php Fossil Treasures of Florida www.fossil-treasures-of-florida.com Florida Paleontological Society http://floridapaleosociety.com/ Collecting Vertebrate Fossils on Florida state lands *requires* a permit. A fossil hunting permit is also part of being an ethical Florida fossil hunter. Florida Vertebrate **Fossil Permit** http://flmnh.ufl.edu/natsci/vertpaleo/vppermit.htm

Peace River Water Levels

http://waterdata.usgs.gov/fl/nwis/rt

Picking Up Isolated Native American Artifacts www.flheritage.com/news/faq.cfm

If you find an Indian artifact, such as an arrowhead, on Florida state lands or river bottom, be aware that possession of an Indian artifact found on state lands after 2004 is a Class 3 Felony.

These USGS water level gauge graphs show that Peace River fossil hunting is a long ways off!! Since the levels at Arcadia need to be around two ft. and the levels at Zolfo Springs should be at five or under for the river to be low enough for collecting, you can see it is not anywhere close to that, and still rising. Probably around the beginning of December, as usual, can we get back into the river!



USGS 02295637 PEACE RIVER AT ZOLFO SPRINGS FL

---- Provisional Data Subject to Revision ----

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French archaeology students find 560,000year-old tooth

The Associated Press - By By SYLVIE CORBET - Associated Press

(July 28, 2015 4:14pm)

PARIS (AP) — Two students have found a human tooth from about 560,000 years ago in a famous prehistoric cave in southwestern France, a discovery praised by archaeologists as the oldest human body part ever discovered in the country and being rare from that period in Europe.

The tooth was found last week during excavations at Tautavel, one of Europe's most important prehistoric sites, where about 40 volunteers are working under the supervision of scientists.

Paleoanthropologist Tony Chevalier, researcher at Tautavel's archaeological laboratory, called it a "major discovery."

Chevalier told The Associated Press that the adult tooth would help fill a gap between the very few oldest human fossils, notably found in Spain and Germany, and more recent ones.

Thousands of finds on the site include prehistoric tools and bones from animals, especially horses, reindeers and buffalos.

"We believe these men have lived for a long time in the cave or have regularly come back into it," Chevalier said. "We also know that the area was quite cold at the time. It was a steppe, with no trees. There had to be some long periods with snow."

These latest findings haven't been the subject of a scientific publication yet, but Tautavel is recognized as a reference by archaeologists all over the world.

There have been excavations at the cave for about 50 years and it's famous for the discovery of 450,000 human skull in the early 1970s, known by scientists as the "Tautavel Man."

Christian Perrenoud, a geologist and archaeologist who has been director of Tautavel's excavations for nine years, told the AP that his team used several dating processes to determine the age of the tooth.

Perrenoud said he is "pretty confident" that his team will find more human fossils from this period on the site. "Our daily life is to determine what human activities looked like 560,000 years ago," he said.

Professor Chris Stringer, merit researcher in human origins at the Natural History Museum of London, wrote in an email to the AP that "well-dated teeth of this age are very important as they probably belonged to the species Homo heidelbergensis, which is already known from Arago (in Tautavel) in France, Mauer in Germany and Boxgrove in England."

"If the tooth has calculus (tartar) attached to it, this may also provide direct evidence of the diet of these ancient humans," he added.

2015 The Associated Press

Original article can be found at:

http://centurylink.net/news/read/category/ Europe News/article/the associated press-





From---- Live Science:

No Tusks: Ancient Walrus Cousin Looked More Like a Sea Lion



by Laura Geggel, Staff Writer | August 05, 2015 02:30pm ET

About 10 million years ago, a distant cousin of the modern walrus snapped at fish as it swam near the shore of what is now modern Japan, a new study finds.

The roughly 10-foot-long (3 meters) creature didn't have tusks as walruses do today, but instead sported "moderatesized upper canines," that measured 3.4 inches (86.3 millimeters) long, the researchers wrote in the study.

It's no surprise this ancient pinniped (a group of fin-footed, semi-aquatic animals that includes seals, sea lions and walruses) didn't have tusks, researchers said. The walrus ancestor, which weighed a whopping 1,042 pounds (473 kilograms), looked more like a sea lion. [Giants on Ice: See Amazing Images of Walruses]

"We have a really good fossil record for <u>walruses</u>, and we see them gradually change from these sea-lion-looking animals to the really weird-looking, giant-tusked modern walrus," said Morgan Churchill, a postdoctoral researcher of anatomy at the New York Institute of Technology in Old Westbury, New York, who wasn't involved in the study. "This new fossil that's described, it just slots in really nicely into one of these small gaps that we see."

The fossil, a male young adult, was found in 1977, buried in a riverbank in Hokkaido, an island in northern Japan. Study co-author Naoki Kohno, an evolutionary biologist at the National Museum of Nature and Science in Japan, helped excavate the walrus fossil. Yoshihiro Tanaka, the study's first author and a doctoral student at Hokkaido University, joined the project in 2006 and helped finish cleaning the

fossil and analyzing its anatomy, he said.

They named the new species *Archaeodobenus akamatsui*, meaning "ancient walrus" — in Greek, "archaios" means ancient, and *Odobenus* is the genus name of modern walruses. The species name honors Morio Akamatsu, a curator emeritus of the Hokkaido Museum, who assisted the researchers as they examined the fossil.

Sea change

Archaeodobenus isn't the first fossil walrus found in Hokkaido. In 2006, Kohno published a study on another <u>newfound</u> <u>walrus cousin</u>, *Pseudotaria muramotoi*, from the same location. A comparison of the two fossils suggests *A. akamatsui* split from *P. muramotoi* during the late Miocene in the western North Pacific Ocean, the researchers said in the study.



The left-side view (top) and the underside view (bottom) of the creature's skull. Notice that its teeth are sharp, but nowhere near as long as modern walrus tusks. Credit: Tanaka Y, Kohno N (2015) PLoS ONE <u>Creative Commons</u>.

Changing sea levels may explain how the two species diverged, the researchers said. It appears that an ancestral population was living in the western North Pacific, but during the late Miocene, about 12.5 million to 10.5 million years ago, a sea level drop caused a change in shelf environments, the researchers said.

"That may have isolated these populations along different areas of the coast, allowing them to diverge in their [development]," Churchill told Live Science. "When sea level rose again, the amount of habitat available increased, and these two species were able to come back and contact one another."

However, "by that point, they were distinct enough that they were probably not interbreeding, as far as we can tell," Churchill said. [Image Gallery: 25 Amazing Ancient Beasts]

It's interesting to find that two members of the Odobenidae family lived at the same time, the researchers said. Today, the modern walrus (*Odobenus rosmarus*) is the only surviving member of the family, but fossil finds such as these show that the family was once diverse, with at least 16 genera and 20 species.

The study is an "important contribution to the study of pinniped evolution," said Robert Boessenecker, a doctoral student of geology at the University of Otago in New Zealand, who wasn't involved in the research.

"Prior to this study, the diversity of archaic, <u>sea lion-like</u> <u>walruses</u> was always observed (or assumed) to have been low, with only one species present at a given place and

time," Boessenecker told Live Science in an email . "These two species, preserved together, demonstrate that walruses diversified a bit earlier than previously thought perhaps 3 to 5 million years earlier."

The study was published online today (Aug. 5) in the journal PLOS ONE.

Follow Laura Geggel on Twitter <u>@LauraGeggel</u>. Follow Live Science <u>@livescience</u>, <u>Facebook</u> & <u>Google+</u>. Original article on <u>Live Science</u>.

FOSSIL project!!

On June 15, 16 and 17, Sue Collier, Zack Deyo and Dave Deyo attended the 2015 Fossil Project seminar at the University of Florida in Gainesville. The seminar focused on 3D digitalization of fossils for educators and citizen scientists. The first two days were chock full of lectures and hands-on workshops, led by scientists, educators, and experts in the field of 3D technology. Many of the breakout workshops used 3D items and included topics such as horse evolution, giant reptiles (Titanoboa Correjonesis- discovered in 2013, largest prehistoric snake- 12 meters long and weighed over 1 ton), making 3D items and Megalodon evolution.

The first day ran from 8 AM to 10 PM and attendees were treated to paleo collections tours by experts in the fields of Paleobotany, Vertebrate and Invertebrate Paleontology. At the conclusion of the lectures, the group met at the University of Florida, Museum of Natural History, for tours and a dinner in the main exhibit hall. After dinner, the fossil club members (about 8 in total, so the FCOLC was well represented) had a separate breakout session where experts in digital photography showed them how to take quality photos of favorite fossils that the citizen scientists brought with them. These pictures will be available on myfossil.com.

The second day continued with keynote speakers and demonstrations of making and using 3D items. A data base (Morphosource.com) of scanned fossils is in the beginning stages and will allow educators and citizen scientists to copy any fossils available, including Meg teeth from Dr. Hulbert's collection and vertebrae from Titanoboa.

The third day included a field trip to Thomas Farm where attendees were allowed to dig the scrap piles. Most of the items found were small and included a mammal vertebrate and a Parahippus horse toe bone. We were fortunate to be given a 3D Meg tooth from Dr. Hulbert's collection and Zack showcased it at two recent outreach events. The entire trip was informational and fun for any fossil enthusiast. The organizers of this event, Dr. Bruce MacFadden and Claudia Grant, could not have been more hospitable and engaging. Sue, Zack and I, did our best to network and represent the FCOLC in a positive light. I can't recommend future Fossil Projects enough and the Fossil Dudes volunteer for the next one.

Zack's Dad



Digging into the Lee County Fossil Club

BY STEPHANIE DAVIS sdavis@floridaweekly.com



Southwest Florida already has plenty of traffic, and during season, an abundance of tourists — now imagine it populated by mammoth elephants, saber-toothed cats, rhinoceroses and even camels roaming around.

Louis Stieffel digs the idea.

Mr. Stieffel is the president of the Fossil Club of Lee County and he has a passion for paleontology.

"We used to call ourselves the Paleontological Society of Lee County," he says of the organization, "but that was a bit of a mouthful; now we're the Fossil Club."

A south Louisiana native with the accent to match, Mr. Stieffel retired to Cape Coral in 1993 and has been fossil hunting ever since. The club evolved when he heard there were plenty of shark's teeth to be found on Venice Beach.

"Venice Beach is known as the Shark Tooth Capital of the World," says Mr. Stieffel.

"I kept meeting other people who were hunting up there, and then running into more around the Peace River sifting and collecting. We started exchanging ideas and sharing tips on where to hunt. That's how the group was formed."

If you're thinking this is a group that whiles away the days collecting shells and rocks, think again. The Fossil Club of Lee County has unearthed such rare prizes as part of a baleen whale lower jaw bone that was 7-feet long. These whales (they grew around 65 feet long), swam off our local beaches three million years ago. The jaw bone can be viewed at the Shell Factory in North Fort Myers where the club has a display. Many other finds that the club has discovered are on loan to a variety of educational venues including local libraries, the Caloosa Nature Center, and even the Florida Museum of Natural History at the University of Florida in Gainesville.



"There are a lot of fossils around here and a wide assortment," says Mr. Stieffel. "When construction is going on, I can sometimes get access to the pits dug out by the heavy equipment 15–18 feet underground. That's when you can find some really interesting stuff."

Mr. Steiffel says he would love to dig up evidence of the elusive saber-tooth cat. These fierce felines prowled Southwest Florida before the Ice Age and boasted fangs up to 20 feet long. Another treasure is the Glyptodon — a turtlelike creature. "They were huge," says Mr. Stieffel, "picture a large, armored mammal around the size of a Volkswagen Beetle."

Mr. Steiffel and other members of the club don't just sift through the dirt; they also get their feet wet by diving in the gulf and other local waterways. "Diving off the coast of Venice, I found half of a mammoth molar," he says.

To learn more about prehistoric Florida and to educate its members on how to identify their finds, the club meets monthly and invites guest speakers from the paleontology field. They also organize field trips, and host an annual fossil festival and auction. With well over 100 members, the club has been going strong and growing for more than 20 years.

"Paleontology is a hobby that just gets more fascinating as you go along," says Mr. Steiffel. "First you're finding shark's teeth on the beach, and the next thing you know, you're on the hunt for a saber-toothed cat." |

The Fossil Club of Lee County

>> Meets monthly at the Zion Lutheran Church Fellowship Hall, 7401 Winkler Road, Fort Myers

>> Meetings are held the third Thursday of each month. The next meeting is Thursday, Aug. 20.

>> Membership is \$20 a year (per family household) and is open to all ages.

>> Membership benefits include monthly meetings with informational guest speakers, bi-monthly fossil hunting trips during the winter season, educational trip access, monthly newsletters and an annual local fossil festival and auction.

>> For more information, contact Louis Stieffel at 458-9818 or head to fcolc.com.

This is a link to a Florida Weekly magazine article written about the FCOLC!! Except for the part about me originally forming the club it's pretty accurate! Louis

Ancient Reptiles Attacked with Giant Fangs

by Charles Q. Choi, Live Science Contributor | August 04, 2015 07:11am ET

Two fighting Tiarajudens eccentricus, which were odd saber-toothed reptiles. Credit: Voltaire Paes Neto.



Ancient mammal-like reptiles that once grazed across the globe may have possessed many of the fighting tactics seen in modern herbivores, including head butting and attacks with giant fangs, researchers say.

A number of these extinct beasts also possessed complex, molarlike teeth on the roofs of their mouths, scientists added.

Before the rise of the dinosaurs, the most successful vertebrates on land were the ancestors of mammals — animals known as primitive therapsids that are sometimes called mammal-like reptiles. These ancient creatures included the anomodonts, which were the most abundant tetrapods, or four-legged animals, of the Permian period, which

occurred about 250 million to 300 million years ago, right before the age of dinosaurs. [Images: Fossils Reveal Wacky Mammal Ancestors]

The new finding comes from an analysis of two such bizarre anomodonts, both the size of large dogs: *Tiarajudens eccentricus* and *Anomocephalus africanus*.

Vertebrate paleontologist Juan Carlos Cisneros at the Federal University of Piauí in Teresina, Brazil, and his colleagues recently discovered <u>Tiarajudens eccentricus</u>, an odd saber-toothed anomodont that once dined on leaves and stems amidst the dunes, ponds and streams of ancient Brazil. Although saber teeth might ordinarily conjure images of fearsome extinct predators, a number of modern herbivores possess these dagger teeth as well, such as the musk deer, water deer and muntjacs native to Asia.

The giant fangs of *Tiarajudens*may have played many different roles. Among males, the saber teeth may have been used during fights against rivals "for territory, resources and females," Cisneros told Live Science. "The sabers could also be used against potential predators that existed in the middle Permian, such as dinocephalians and therocephalians. *Tiarajudens* could deter predator attacks by displaying the canines, or indeed fight back with them. Modern deer also fight back predators in this way."

Dinocephalians were the first really large tetrapods to walk on land, reaching lengths of about 11.5 feet (3.5 meters); the group included herbivores that practiced head-butting combat, much like stags and rams, Cisneros noted.

In their new analysis of anomodonts and <u>dinocephalians</u>, the researchers noted that combat strategies typical of modern herbivores likely evolved more than 250 million years ago, back when Earth's first complex groups of land herbivores emerged.

"We now know that as soon as the herbivores became more diverse in the middle Permian, they began to employ these forms of combat," Cisneros said.

In addition, in their new analysis, the scientists also discovered how anomodonts may have used strange, molarlike teeth on the roofs of their mouths to eat — unusually shaped lower jaws had molars that could fit together with those on the palate for an efficient chew.

The researchers compared 260-million-year-old fossils of *T. eccentricus* with those of *Anomocephalus africanus*, which lived at least 265 million years ago in what is now South Africa. Scientists had previously seen large teeth on the palates of *T. eccentricus*, but the lower jaws they had of this species lacked teeth, so the researchers could not say for sure how the upper and lower teeth worked together. The lower jaws of *A. africanus* revealed how anomodonts might have eaten with their odd teeth.

"These species chew by using the jaws and the roof of their mouths," Cisneros said. "Obviously, the rows of teeth in the palate had some space in between, otherwise the animals would bite their tongues!"

They detailed their findings online July 15 in the journal Open Science.

Follow Live Science<u>@livescience</u>, <u>Facebook</u> & <u>Google+</u>. Original article on <u>Live Science</u>.

AMAZING FOSSIL DISCOVERY!!

In the spring of 2015 the Eocene aged Green River Formation near Kemmerer, Wyoming yielded another amazing fossil discovery. A fully articulated primitive horse ancestor, since nicknamed "Olive", was found by brothers Mark and Mike Oliver.



On May 28th, Zack Deyo, David Deyo, and Jack Boyce attended the 4th Annual STEM night at Sanibel School (K-8) discussing fossils with Teachers and future fossil hunters of SW Florida. STEM is the Science, Technology, Engineering, and Math program. Dana Sanner, Middle School Science teacher, is our contact.

> Principal Barbara Von Harten and Jack Boyce of the Fossil Club of Lee County



Fossil Hunting regulations and changes.

Excerpt from the Florida Fossil Hunters News

Volume 25, Number 7 - August 20 Page 3

Those of you who have not been members of our fossil club for very long, or haven't heard me say, "The day will come that collecting fossils here in Florida will be coming to an end." There's been a lot of buzz here in Florida and the rest of the U.S., that the Federal Government has taken a giant step to do just that. This will be a hot topic discussed at many fossil clubs.

Is this the asteroid that will make fossil clubs go extinct? I think not. But I do believe that the new regulations need to be shared with all concerned. I've read through the U.S. Dept. of Agriculture's final rule on the Paleontological Resources Preservation Act, dated April 17, 2015. It's comprises about 200 pages of summaries of the issues and discussions. Like all government Acts of Law, there is a lot of information to digest.

A lot of clubs are up in arms... and some may need to be... But overall I see no need to grab up my pitchfork and torch just yet.

The PRPA, Paleontological Resource Preservation Act, is intended for the implementation of regulations to provide preservation and protection of paleontological resources on National Forest System Lands. The National Parks were always places to take pictures and nothing else. The National Forest Lands were a grey area where regulations were concerned and some fossil collecting has been done there. These regulations address that grey area by requiring permits to collect on those Lands and limit the amount of invertebrate material. The vertebrate fossils were already covered by regulations. The Forest Service sees fossils as a non-renewable resource and a part of America's natural heritage. The big worry, I guess, is that this will now expand to all State Lands, etc. leaving even fewer places for amateur paleon-tologists (classified in the document as "casual collectors". Yes, it is worrisome to have more restrictions on the hobby that a lot of us love. But without regulations to protect these resources, there would not be much for anyone to collect.... especially for the generations to come. If you would like to read the document in it's entirety, go to: https://www.federalregister.gov/articles/2015/04/17/2015-08483/paleontological-resources-preservation



FOSSIL FINDS OF THE MONTH

Got these today, whale vert. and 2 3/8" Mako. and only hunted for about 30 minutes before some very heavy rains came. Also got 1 bead.

Yesterday got 3 beads and a nice deer antler and only able to hunt for 2 hours. Ron







Found this Wed. **7-23-2015** in the Peace River. There are some spots that can be worked. I believe it to be a horse metatarsal and it appears to be complete.





I don't know how people get eaten by sharks...I mean how do you not hear the music?

A very interesting article about Thomas Farms!

An Inside Look at an 18 Million-year-old Fossil Dig Site in Florida

By Robin Lloyd | December 31, 2013

It took only 10 minutes for paleontologists to dig up a scientifically important tortoise fossil this fall when a group of science writers visited the Florida Museum of Natural History's <u>Thomas Farm site</u>. Elsewhere, you might have to dig for hours to find anything of value. The 18 million-year-old site north of Gainesville is one of the most species-rich vertebrate fossil locations in the world, and the best Early Miocene site in North America, says site manager <u>David Steadman</u>, an ornithologist at the museum. "Florida is a paleontologist's toybox," he says.

Hundreds of thousands of fossils of modern and extinct birds, lizards, alligators, frogs, toads, bats, rodents, bear-dogs (<u>yesl</u>), camels, rhinos and other mammals, including three species of small, three-toed horses (*Archaeohippus black-bergi, Parahippus leonensis* and *Anchitherium clarencei*), have been unearthed at this site going back to when a farmer started piling up old bones that got in his way as he dug for a well there in the 1930s. Such discard heaps are called spoils piles, and amateur and professional paleontologists often toss their less intriguing dirt or busted, boring finds onto such heaps for kids and other visitors to paw through in case anything important was missed. Museum curators and other paleontologists dig now at Thomas Farm, but most of the work is done by volunteers, who can get up to speed in about two hours of training on how to non-destructively remove some of the most fragile now-blackened fossils, especially skulls, from gray layers of sand.

As happens a lot in life, the animals in their pre-fossil stage didn't mean to die at this site. Many fell into what was then a 90-foot-deep sinkhole where the farm is now located. The smaller crawlers and flyers that fossilized there were likely pooped, coughed or upchucked into the hole by predators roosting near its lip. For the past few decades, Museum teams have used little screwdrivers to dig down in 10-centimeter intervals to look for fossils in meter-square patches of a grid they've laid over the sinkhole. The hole filled up fast in geologic time, so all the fossil life in it is about the same age.

The first short video below features Steadman and <u>Richard Hulbert</u>, an authority on the Farm's fossil horses and manager of collections at the Museum, giving the group of visitors an introduction to Thomas Farm. He explains why you wouldn't want to try to go there to steal fossils.

https://youtu.be/f5Wd0wboFV4

The next video below shows Hulbert and Steadman finding a mammal metatarsal (a foot bone, probably from a minihorse) in just a few minutes of digging, and then finding a diagnostic piece of a fossil tortoise's carapace, a "neural," of scientific interest.

https://youtu.be/0HndLJvafDM

Finally, I shot video below of <u>Jonathan Bloch</u>, associate curator of vertebrate paleontology at the Museum, helping a visitor sort out which of her pulls from the spoils pile would be the "coolest" to a paleontologist. We all got to walk away with a bag of fossils.

https://youtu.be/Tx6HaZDysmg

Here are some other images I took at the site.



Sign at entrance to Thomas Farm, taken from bus, with Richard Hulbert in foreground.

Credit for all images and photos: Robin Lloyd

Thomas Farms!



Fossil of mammal bone dug up at Thomas Farm on 11/5/13.



Fossil of ungulate hoof dug up at Thomas Farm on 11/5/13.



Picking through the spoils pile at Thomas Farm.



Long view of the dig site, with tarps covering unexcavated portions of the grid.



Rinsing off sediment for later examination at Florida Museum of Natural History.



Standard gas station seen en route to Thomas Farm, northern Florida, 11/5/13.

Fossil Finds of the Month:



Left to right Some mammal vertebrae Both sides of a 2 5/8" Great White and a 3 3/8" Megalodon, beautiful colors and looks better in person. Ron



Pictures of Dave, Zack and Sue at Fossil Project workshop.









Eden Valley Petrified Wood

I was recently looking through my fossil cabinet and it caused me to ponder the human compulsion to "collect." Collecting may harken back to a primitive time in human history when food and tools weren't found at Wal-Mart, and the definition of "collecting" is usually followed by the definition of "hoarding", but if I had to add a new sub-collection to my existing fossil hoard, it would definitely be petrified wood. I've just started slabbing some of the outwardly humble pieces of wood I found in Arizona, revealing stunning mosaic interiors and fueling the fire to hunt petrified wood from different locations.

Petrified wood is a fossil, meaning that the substance of the living material, over time, is replaced by minerals and turned to stone. The wood has to be covered by volcanic ash, mud flows, sediments in lakes, etc., for this process to take place and then, for us to be able to find it, the surrounding materials must be disturbed in some way, such as earthquakes, erosion, glaciation, etc. which expose the now fossilized wood.

Arguably the most unique petrified wood in the world is found in the Eden Valley area of Wyoming and dates to the Eocene Epoch, about 50 million years ago. Club members Vickie and Jim Manderfield recently traveled to Eden Valley in search of this fossil treasure and I've included 2 photos of some of their finds.

There are 2 factors that make Eden Valley petrified wood so unusual. The first is that the trees grew in an area of shallow, algae filled lakes creating an environment where this particular petrification process began while the trees were either still alive or immediately after they died. The second factor is the algae itself which formed a thick coating around the wood, creating a perfect cast of the living tree. The trees eventually died, shrinking within their algae casts, leaving spaces that were slowly filled in with silica rich water solutions creating beautiful layers of white to blue -tinged chalcedony with occasional golden calcite inclusions. The wood itself has a gray to black color and retains every tiny detail of its living form.

Finding EV wood requires more work than just getting to the hunting grounds in west central Wyoming. The target area is 80 miles wide and the wood is 12-18" under the surface of the soil. The best hunting strategy for someone with time constraints is to seek out the shallow pits of other hunters and continue their work.

While it is possible to find fossilized wood in Florida, it can also be found in many other states and the following link is to a web page that provides an excellent basic outline for the history of petrified wood in the United States: http://andy321.proboards.com/ thread/ 64569/petrified-wood Feel free to use it as a vacation planner to start your own petrified wood collection.





One of the photos is a slab of my petrified wood from Arizona which shows its beautiful interior.

The other 2 photos are Eden Valley wood that Vickie and Jim Manderfield found in June of this year.

Aimee



MOSAIC MINE HUNT!!!

Sign up at the meeting!!

Since this was announced at the July meeting, many members signed on for the trip. We will have a signup sheet out again this month at the August meeting. Please try to attend the meeting if you want to sign up for this trip.

Greetings Louis and Leslie:

We are pleased to share that our management will accommodate the *Fossil Club of Lee County's* request for a fossil hunt on Mosaic's *Fort Green* property on *Saturday, Oct. 10, 2015*. This opportunity is a special privilege only for selected fossil clubs in Central & Southwest Florida. Please read this entire email carefully and let me know if you have any further questions.

CONTACT INFORMATION: <u>At least one week</u> <u>prior to the hunt</u>, you are required to electronically send (in either the body of an email, or attached as an MS Excel spreadsheet or Word document) a list of all the participants including <u>contact information for each</u> <u>participant to sherri.partain@mosaicco.com.</u>

Please include:

- First & Last Name
- Mailing Address
- Phone Number
- Email Address
- Age (if 13-17 years old)

We understand that sometimes there are last minute illnesses or changes to the participant list, so we request you email <u>sherri.partain@mosaicco.com</u> an electronic copy of the final list of participants <u>the</u> week after your trip.

Contact information for all participants is being requested by our Public Relations department as part of our public education campaign – where they'll receive periodic mailings, emails and communications (no more than once monthly – usually less). Participants may "opt out" of the e-mail newsletter electronically once they receive an issue.

WAIVER & RELEASE: All participants will be required to sign the attached "MOSAIC VISITOR AGREEMENT- WAIVER RELEASE.pdf." Hard copies of the attached form may NOT be available onsite, so please bring your copy with you. Participants ages 13-17 will be required to bring their <u>signed</u> form with them (or email a scanned copy to Sherri prior to trip) if their parent/guardian is not accompanying them.

WHAT TO EXPECT: Before being allowed to dig onsite, participants will be given a safety orientation. Mosaic cannot guarantee the quality or number of fossils, nor can we specify the exact location, type of land forms or materials you'll be digging in prior to the trip.

DRINKS/FOOD: Participants are responsible for bringing their own drinks and food. They will have an opportunity to eat their lunch while enjoying a presentation after the fossil hunt.

ZERO TOLERANCE: A zero tolerance policy will be in effect. If one person <u>knowingly</u> breaks the rules that person will be removed and sent home. Depending on the situation, your fossil club may be sent home early and/or not be allowed to dig the following year.

SIGNIFICANT FINDS: Mosaic strongly encourages that any scientifically significant fossils found on our property be shared with a museum or research institution, where they can benefit the scientific community as a whole as well as future generations.

DATE: October 10, 2015

TIME: 8:30 a.m.- 12:30 p.m.

MEETING LOCATION: Pavilion at the Fort Green Mine entrance road east off SR 37 in Polk County (see attached and link below)

http://maps.google.com/maps? hl=en&ie=UTF8&ll=27.672317,-82.038774&spn=0.017407,0.032744&t=h&z=15

VISITOR AGREEMENT: WAIVER AND RELEASE

Mosaic Fertilizer, LLC ("Mosaic") has granted me permission to visit its property or facility located at ______ (the "Facility") on the date listed below. In return, I acknowledge and agree as follows:

- Visiting the Facility may present certain dangers and substantial risk to myself, my clothing, and my property. I knowingly and voluntarily assume all risks associated with visiting the Facility. Furthermore, I expressly waive notice of any hazardous condition(s) which may exist in, upon, or about the Facility, and assume all risks associated with the same.
- 2. During my visit(s) I will abide by all safety rules and any other safety information provided by Mosaic employees and representatives.
- 3. I waive all damages claims and expressly release and forever discharge Mosaic from any claims, demands, or causes of action which may arise by virtue of my visit to the Facility, regardless of cause. This waiver, release, and discharge shall be effective for myself and for my heirs and executors. I understand that such claims, demands, or cause of action may include, without limitation, those relating to loss of life, personal injury, and property damage.
- 4. I agree not to disclose to others, nor to use without the express written permission of Mosaic, any Confidential Information disclosed to me or derived from or as a result of my visit(s) to the Facility, subject to the following terms:
 - a) "Confidential Information" means all information and data relating to Mosaic and the Facility and its operations, including but not limited to technical process, product, equipment, production, operational information, financial information, and third party confidential information whether in written or other tangible form, or disclosed orally or otherwise derived from observations at the Facility.
 - b) Confidential Information does not include information which (i) is in the public domain prior to the disclosure to me; (ii) is lawfully in my possession as evidenced by written records prior to disclosure to me by Mosaic, or (iii) becomes part of the public domain through no unauthorized act or omission on my part.
- 5. I realize that I would not be granted permission to enter the Facility, other than on the terms and conditions set forth above.

I HAVE READ THE ABOVE CAREFULLY AND FULLY UNDERSTAND THIS AGREEMENT. For persons under the age of 18, please also have this form signed by a parent or legal guardian.

| Signature: | |
|----------------------------------|--|
| Printed Name: | |
| Date: | |
| Signature of Parent or Guardian: | |
| Printed Name Parent or Guardian: | |
| Date: | |

