Fossil Club of Lee County

May 2016

Letter from the President

Last month we had one of our best attended April meetings in memory! Usually, with the seasonal residents going back north right after Easter, we have a much smaller meeting then4est month. But, for some reason, we had over 60 members in attendance. And, many came to show off their fossil discoveries! Which is great! We had mammoth teeth galore, and other cool fossils! I hope we have as many members at this meeting as well, with as many fossils to show off!

Our speaker last month, Ron Bopp, gave an interesting presentation of fossil shells and invertebrates. He covered all the areas from collecting to displaying to identification. It was very interesting and informative.

The speaker this month will be Valerie First, who will talk about evolution.

Annual elections were held at the April meeting. The same slate of officers and directors were reelected, and a new board member Dr John Taraska was added. The elections next year will be held in March, due to the reporting needs we make to the state, so the term of office for this year will be eleven months.

A board meeting was held two weeks after the general meeting. One order of business was addressing the club sponsored scholarship. It was decided to fund the existing Ken Ericson scholarship at the University of Florida for $1000. This will be awarded to a student in paleontology, to be decided by the Museum Director of Paleontology, Bruce McFadden.

Also, at the board meeting Leslie Stieffel was voted in as a board member. She has worked diligently behind the scenes for many years for the club, and it was decided to make her a recognized member of the board.

National Fossil Fest Day will be Oct 1. At the Bradenton museum again. We are signed up to have a manned table representing the FCOLC.

The 12th Annual Fossil Festival will take place at the Shell Factory again, on February 18. This should not conflict with any other fossil club's activities. It will be outside, again, and larger than this year.

A link is provided inside to view some of the Smithsonian Museum collections. It is SO huge, it's hard to comprehend. Keep in mind that just a fraction can possibly be displayed. The majority is used for research and learning.

Fossil hunting is trying to happen again, as the waters recede, but every small rain causes it to go up again. Usually the ground is very dry this time of the year and a small rain causes hardly any water rise in the rivers, but it's saturated this year. Hunt when you can, and do it as much as possible while you can. However, it's the time of year for Alligator mating and nesting and general activity. Be careful! If you see alligators, move. They can be aggressive right now. And, leave them alone. They are a protected species. And, bring in your finds for show and tell.

Many fossils and stories are posted on our FaceBook page. They don't get shown here. So, log on to FaceBook and search for FCOLC. *You will like what you see!* And, it's safe. No one is out to get you if you check out our FaceBook page!

June will be our annual show and tell and trade and sell meeting. AND- we have a date change for that meeting! Moved from the 16th to the 23rd!! Mark your calendars!

We finally got in a club walk-in fossil trip. It was fun and everyone had a good time. We really want to do a canoe trip, and are watching the river levels and will announce as soon as we can. Al Govin is trying to set it up.

Continued from page 1

On a closing note, a sad one. Last month we lost a member, permanently; Sharon Hale. This month, unexpectedly, we received the news of the passing of David Sheehey. He enjoyed the FCOLC and volunteered a lot of his time getting the club library as good as it is, and had recently moved away from the area and the club. But, he succumbed to cancer and has left us for good. This job gets difficult with news like this, and it is sad that we lose such good folks. Both of these members enjoyed life and when healthy enough, lived it to the max. I suggest we all emulate their example and do that also. Remember these fine folks, in both your prayers and your thoughts.

Louis Stieffel

President

Fossil Club of Lee County

A cool link. The Dinosaur wars! A different kind of fossil hunting than what WE do!

https://youtu.be/gs72EIQcY_o

A great link to behind the scenes of the Smithsonian!!

http://www.techinsider.io/museum-of-natural-history-behind-the-scenes-2016-3

Fossil Club of Lee County Meetings Are held the third Thursday of the month,
at the Zion Lutheran Church Fellowship Hall. 7pm. 7401 Winkler Road, Ft Myers, Florida.

OFFICERS

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239-980-1406
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Dave Seehaver
Jeanne Seehaver
Jim Manderfield

COMMITTEES

Al Govin, Club Trips Director
Curt Klug, Web Master
Cherie Neat, Newsletter Developer
Al Govin, Badges, Membership, Trips
Cindy Bateman, Librarian
Dave and Jeanne Seehaver, Merchandise
Dean Hart, Refreshment
Michael Siciliano, Raffle and Dive Trips
Mike Cox, Speakers, Trips
Louis Stieffel, Auctioneer, Vertebrate Education,
Newsletter editor, FOSSIL project representative

Meetings are held on the third Thursday of the month, at Zion Lutheran Church Fellowship Hall.

FCOLC Club Meeting of 4/21/2016

Loui Stieffel called the meeting to order.
61 members were present.
Louis announced the board will have an upcoming meeting to award scholarship money.
Louis introduced the officers and board of directors to membership.
Potential trip for April 29th to Peace River discussed.
An announcement made; no trips to Girl Scout camp possible.
A reminder given that fossil permits required to hunt the Peace River or any state property.
Fossil permit applications are available at our website.
Club membership also required to make club sponsored trips.
Anyone who is not getting news letter contact Al Govin.
Elections held. A motion was made to elect existing officers and seconded. All present voted yes to elect officers.
Ron Bopp was our speaker and spoke very nicely about fossil shells.
Door prizes were awarded.
Snack break taken.
Mike Cox to do refreshments for May.
Ken Fullman to do refreshments for June.
Dollar auction held.
Meeting adjourned.

Minutes by Al Govin
Secretary/Treasurer

ATTENTION!! NOTICE!!!

The meeting date for June, 2016 **has been changed**!!! The third Thursday is June 16. This date is no longer valid!

The new date--*for this month ONLY*, will be June 23. That is the following Thursday.

The Fellowship Hall where we meet will be used by another group on the 16th, and our date has been moved a week to the 23rd.

Please mark it on your calendar. Thanks you.

Websites & Locations of Interest

Fossil Club of Lee County: www.fcolc.com

FCOLC Fossil Club of Lee County, Inc. c/o AL GOVIN
TREASURER
3584 MIDDLETOWN ST. PORT CHARLOTTE, FLORIDA 33952

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

FOSSIL FINDS!!!

A pair of Mammoth teeth and also a pair of Tapir jaws, found by Kyle Clements.

FOSSIL FINDS!!!

A pair of large Mammoth teeth found by Ken Folmann

Museum of Natural History in San Jose, Costa Rica. While going there for dental work, I decided to bring some fossils to donate. After working through the language barrier, they were accepted gratefully. The director I had spoke with online was on vacation in Spain, so it took a bit of gesturing and pseudo Spanish to get communication down. But, in the end, all went well.
Louis

May Meeting Speaker

The speaker this month (May) will be Valerie First. She hails from Orlando, where she is a member of the Florida Fossil Hunters and also the chairperson for the Orlando fossil show. Valerie speaks about evolution. She brings items to show, and speaks about their relevance to evolution. When asked for more detail, Valerie wrote:

"I talk about past and present animals from diapsids/ synapsids to humans and how things evolved from that time.

I also have the desire to show others that may want to do this, a way to present to the public. I call it "street teaching" because I talk to anybody that stops by and wants to hear what I have to say (all ages, all levels of knowledge). I present evolution in a way that the listeners figure it out themselves by following what I am saying. Since most at the meeting will probably know about Florida fossils, I will also give them information regarding human fossils found outside of this country and how I use this to convey an exciting topic that is, like all of science, still being unraveled.

I think it very important to combine subjects, especially paleontology and paleoanthropology as they are all related, as are many other subjects, and shows how we are all related to everything and to everyone".

So, come to the meeting and listen to this most interesting topic. And bring your show and tell!

A nice sight to see! Low water, fossil screens and pretty scenery!
From a recent trip to a creek by Leslie and I, along with Staci and Dean. We all found a few treasures, and had a great time doing it! Leslie has not been fossil hunting in a while, but really enjoyed being out on such a beautiful little creek.
If you get the chance, go! Even if you don't find a lot it's still a nice way to relax and enjoy the day!
Louis

A FOSSIL STORY!!

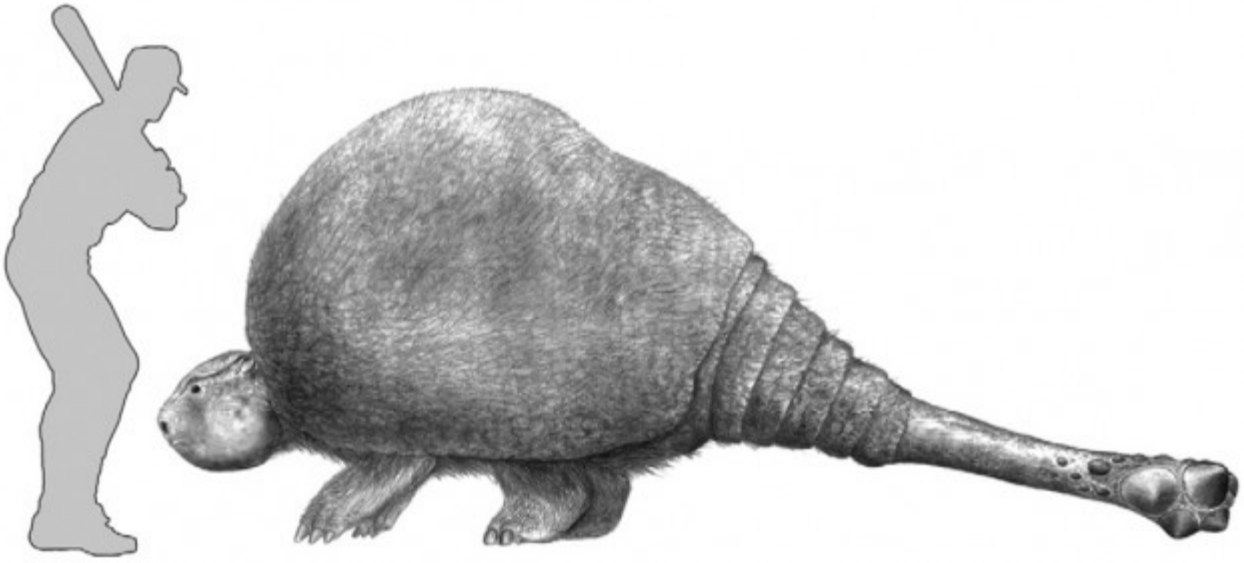
Hey everybody ! Wanted to share a fossil hunting story with you and pass on some product info with you I had some nice success with. Some of you may or may not know of PaleoBond. So I was walking along a creek and I noticed what looked like a square looking bone fragment. In a flash i was processing the data my eyes were receiving. An object! Leg bone fragment ?Camel? kinda square. So I poked it with my probe and it made a clinck sound (you know the sound I am talking about) so I picked it up not leg bone but tooth !! Sloth !! Eremotherium ! the big one ! It was only a fragment but still really cool it had 360 degree surface on it. It had a crack on one side and a couple on the side. By the time it got home it had another crack and after drying out a few more. Oh no my precious find is slowly dying ! In total it had about a dozen cracks and all of them were moving. So i found this product on Ebay called PaleoBond. Basically its crazy glue with zero viscosity so it can flow into all the cracks and crevices. It comes with these micro applicator tips and will cost you about $10 plus shipping. I just received it and put it to work and it worked great my tooth is rock solid. I just applied the glue to every crack with the micro applicator tip and let it flow into all the cracks. Solid as can be. Highly recommended. You might loose a little skin stuck to the fossil in the process but you will save your find from degradation. Of course I wont talk about the fact that the trip Jack Boyce and I took to find this fossil cost us dearly. It cost us a swamped nearly sunk boat, water in the carburetor, a long paddle ride home and a brand new $350 chain saw sitting on the bottom of the creek somewhere and some lost keys. But that's a whole nother story for another time

Joe Larkin

Fossils found recently by Joe Larkin. His FIRST Mammoth tooth!

Congratulations, Joe!

Extra Armor Gave Glyptodon an Edge



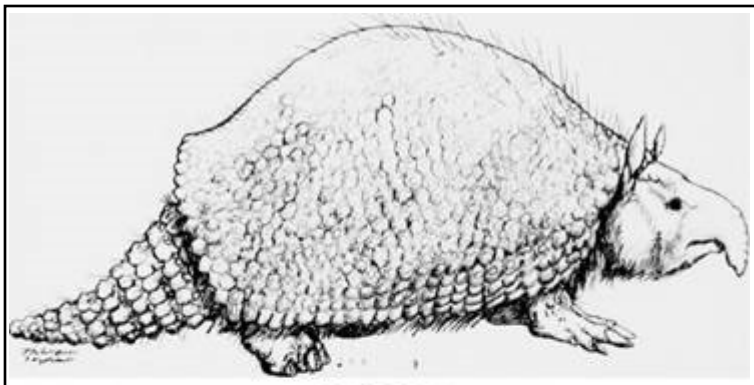
Killing a glyptodont was no easy task. Prehistoric, bad-ass cousins of modern armadillos, these large mammals were protected by bony shielding on almost every part of their body. Some, such as*Hoplophorus*, even had modified tail clubs tipped with mace-like arrangements of spikes. Saber-toothed cats like *Smilodon* were surely formidable predators, but even they would have had a difficult time preying upon glyptodonts and shucking them from their shells.

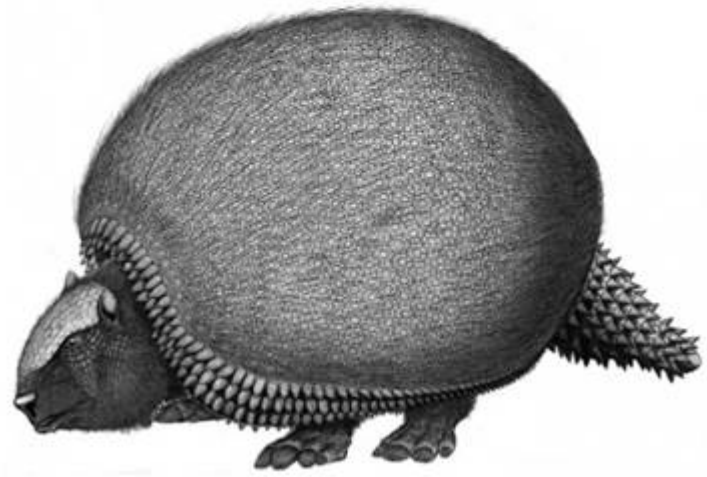
The heavily-damaged skull of a juvenile Glyptotherium texanum, as viewed from the top. Notice the two holes in the frontal bones. The front of the skull is to the right. From Gillette and Ray, 1981.

At least one sabercat found a way around all that armor, though. Stored within the American Museum of Natural History's massive Frick Collection of fossil mammals is the busted-up skull of a juvenile Glyptotherium texanum designated F:AM 95737. Tiny fractures run over the entire skull – damage done after death but before fossilization – but most remarkable are two oblong holes sunk into the frontal bones. These holes were likely made by a large saber-toothed cat (though a jaguar is another possibility), and, as assessed by paleontologists David Gillette and Clayton Ray, the apparent ease with which the predator dispatched its victim suggests that this Glyptotherium was stuck. Rather than a sabercat jumping out from nowhere and biting the glyptodont on the head, they reasoned, "It seems more likely that this juvenile was stranded, perhaps in mud, or was otherwise debilitated, unable to avoid an approaching predator."

The single, perforated skull represents a lucky catch for a saber-toothed hunter, as well as paleontologists. Traces of predation on glyptodonts are rarely found. Juveniles – in which the armor plating had not fully ossified – may have been more vulnerable than adult glyptodonts, but predation on these animals was probably more common than the small collection of damaged bones suggests. The recent discovery of additional armor accessories hints that some of these shelled mammals were in an arms race with the predators of their time.

Among the first of the glyptodonts to become known to scientists was, not surprisingly, Glyptodon. It lacked the tail club seen among some of its relatives – instead possessing a short tail encircled by spiny rings – but species of Glyptodon were just as well-armored. In addition to the head shield, bony shell, and tail rings, bits of bony armor were embedded on its underside, along its hind limbs, and in its face. Now, thanks to some well-preserved shells from two South American species, we know that Glyptodon had an extra fringe of spines along the margins of its carapace.





A restoration of a trunked Glyptotherium arizonae from North America, and an updated version of Glyptodon from South America (note the fringe along the front border of the shell). (Top image from Gillette and Ray, 1981. Bottom image from Zurita et al., 2010)

The accessory structures were described by Alfredo Zurita, Leopoldo Soibelzon, and colleagues last year from shells of the large, recent species *Glyptodon munizi* and *Glyptodon reticulatus*. Found in northern Argentina and bordering countries, these two species lived after the great interchange of American mammals that brought *Smilodon*, bears (the predecessors of the immense *Arctotherium*), and other large predators to South America. (*Glyptodon munizi* is older, dating from the early-mid Pleistocene, while *Glyptodon reticulatus* lived during the last 100,000 years before disappearing about 12,000 years ago.)

Well-preserved shells of both species had extra rows of outwardly-oriented bony knobs along the sides, culminating in a set of larger, forward-oriented spines in front of the head. These were not tightly-connected to the rest of the shell, explaining why they have been so rarely found, but in life they may have been wrapped in a tough sheath that would have made them even longer and spikier. These fringes of mini-spikes – so far as we know – are unique to these species.

The spiky shell curtains of the two *Glyptodon* species appear to have been defensive structures. They would have made it difficult for predators to attack the neck and forelimbs of the glyptodonts without risking injury, and Zurita and co-authors propose the additional spines were an adaptation spurred by new carnivores on the landscape. The origin of the spike fringes, the increase in glyptodont size, and the addition of extra osteoderms elsewhere on the body all follow the interchange of American mammals. Before this time the predatory mammals were smaller and not as diverse, and so it would be expected that new predators from the north would influence the evolution of the native South American herbivores.

Curiously, though, the glyptodonts that traveled to North America – like *Glyptotherium* – do not appear to have possessed the sharp shell fringe despite having lived alongside some of the same predators. Perhaps these structures have yet to be found intact among North American species. After all, it took over 170 years for them to be recognized in the South American *Glyptodon*. If the difference is real, though, then the same group of mammals – encountering similar predators on two different continents – became adapted in different ways. Either way, the glyptodonts were literally some of the toughest mammals of all time, and I can only imagine how a saber-toothed cat or short-faced bear would overcome all that armor.

Top Image: The glyptodont *Doedicurus clavicaudatus*, with a baseball player for scale. From Blanco et al., 2009.

References:

Blanco, R., Jones, W., & Rinderknecht, A. (2009). The sweet spot of a biological hammer: the centre of percussion of glyptodont (Mammalia: Xenarthra) tail clubs Proceedings of the Royal Society B: Biological Sciences, 276 (1675), 3971-3978 DOI: 10.1098/rspb.2009.1144

Gillette, D., and Ray, C. (1981). Glyptodonts of North America Smithsonian Contributions to Paleobiology, 40, 1-255

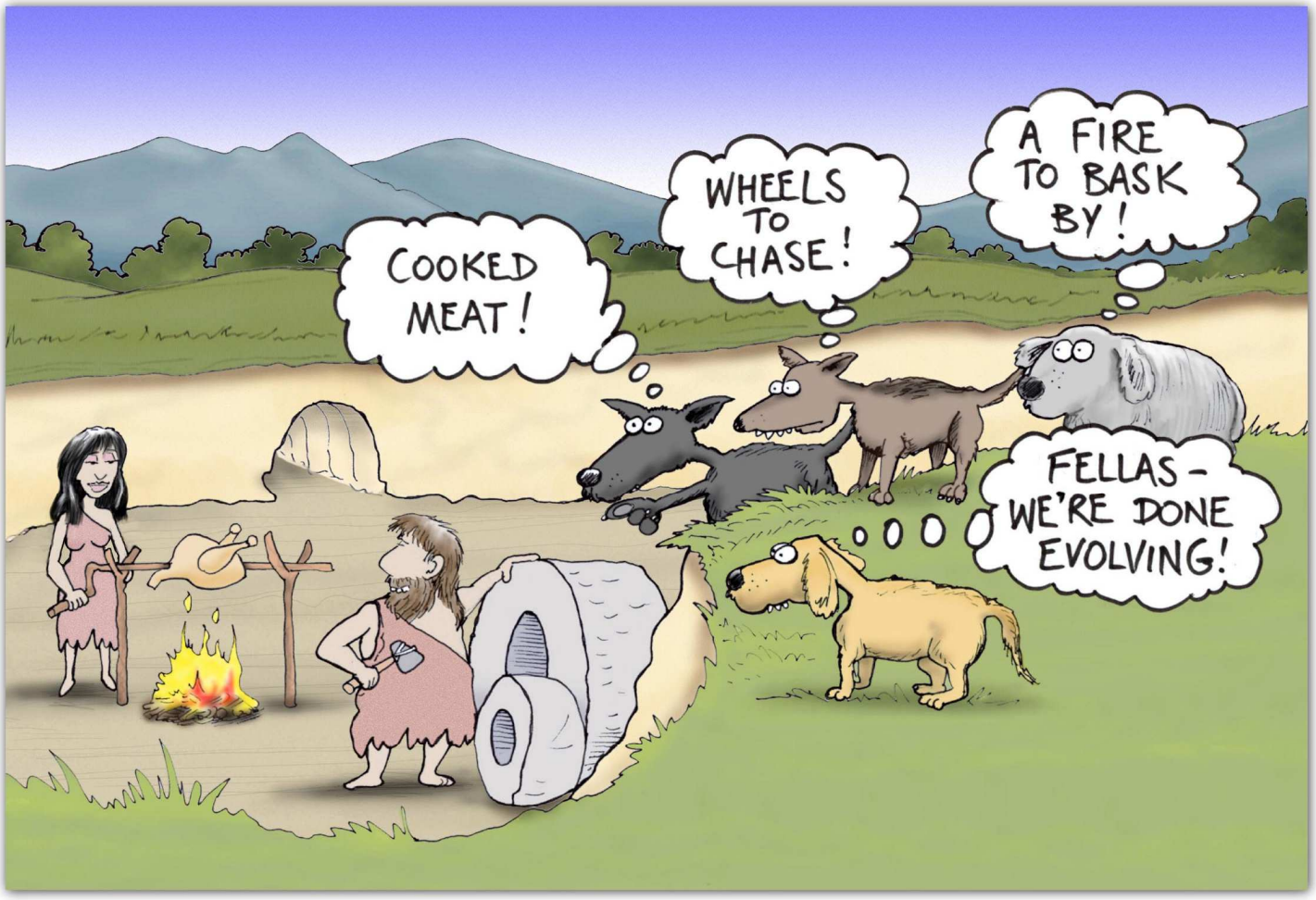
Zurita, A., Soibelzon, L., Soibelzon, E., Gasparini, G., Cenizo, M., & Arzani, H. (2010). Accessory protection structures in Glyptodon Owen (Xenarthra, Cingulata, Glyptodontidae) *Annales de Paléontologie, 96* (1), 1-11 DOI: 10.1016/j.annpal.2010.01.001

Pre-Mosaic!

While reading a book recently called ***PAYNE'S PRAIRIE***, by Lars Anderson, I came across a couple of paragraphs about the phosphate mining industry here in Florida. I never knew that much about it, except that it has exceptional fossils in the phosphate layer. I knew it has been around for a while, but didn't realize how long. "While digging on his property near Hawthorne (Alachua County), Dr. C.A. Simmons discovered calcium phosphate, a valuable substance for making fertilizer. He began mining the phosphate and processing it into fertilizer in 1883, but money was tight and his operations closed the following year." Soon other deposits were found and by 1890 Florida was a boom state! Land values soared and new towns were built near the larger mines."

One man who capitalized on this was William N Camp. HE established the Albion Mining and Manf Co., NW of Gainesville. "***By 1895, there were four hundred phosphate mining companies in central Florida***". Then the boom eased and companies shut down, and"by the turn of the century, only about 50 were still operating, including Bill Camp's. " By 1907 Camp was the largest landholder in Florida.

Louis



Forget the experts: domestication of the dog only took about 8 seconds.

Newbies abound!!

Our recent walk-in trip to the Peace river, at Wachula's Crews Park, was well attended by many of our newest members. Excited and willing to learn how to do it, Al Govin And Louis Stieffel escorted nine eager fossil hunters to a walk-able gravel bar and set up shop! Within a few moments of showing where and how to dig and sift, fossils started being thrust into the air with shouts of "I found this" " What do I have?" , " Is this Mammoth tooth what I think it is?", " I finally found my Meg!!", etc. Since we all stayed reasonably close to each other, everyone was able to share in each other's discoveries.

The weather was great, the sun was out, the rains stayed away and the river was actually low enough to hunt! Most everyone learned a thing or two, and I believe most could see the benefit of "the flip". Hard to believe that after looking so thoroughly, a good couple of flips would show that you didn't see it all! And, yes, there is a method to discarding your pickings! And, there can be muck on the riverbank, so wear shoes that will stay on! Overall, I believe a good time was had by all!

Now--if the river would just stay low enough, we could plan that canoe trip!!

Louis

Is It Possible to Clone a Dinosaur?

by Laura Geggel, Senior Writer | April 28, 2016 10:02am ET

Are you sure you want to clone a *T. rex*?
Credit: releon8211 / Shutterstock.com

Apologies to people keen on reviving extinct dinosaurs, but researchers have never recovered dinosaur DNA, which is necessary for cloning. But, intriguingly, they have found fragments of mystery DNA in dinosaur bone, experts told Live Science.

It's unknown whether this DNA is dinosaurian, or whether it belongs to other life-forms, such as microbes; nondinosaurian animals, such as earthworms; or even paleontologists who have worked with these fossils.

"I've found DNA in dinosaur bone," said Mary Schweitzer, a molecular paleontologist at North Carolina State University. "But we did not sequence it — we couldn't recover it, [and] we couldn't characterize it. Whoever it belongs to is a mystery." [6 Extinct Animals That Could Be Resurrected]

It's no surprise that dinosaur remains contain DNA, she said. Bone is partly made up of a mineral called hydroxyapatite, which has a strong affinity for certain biomolecules, including DNA. In fact, researchers often use hydroxyapatite to purify and concentrate DNA in the lab, Schweitzer said.

"That's one of the reasons that I don't work with DNA myself," Schweitzer told Live Science. "It is too prone to contamination and really difficult to interpret."

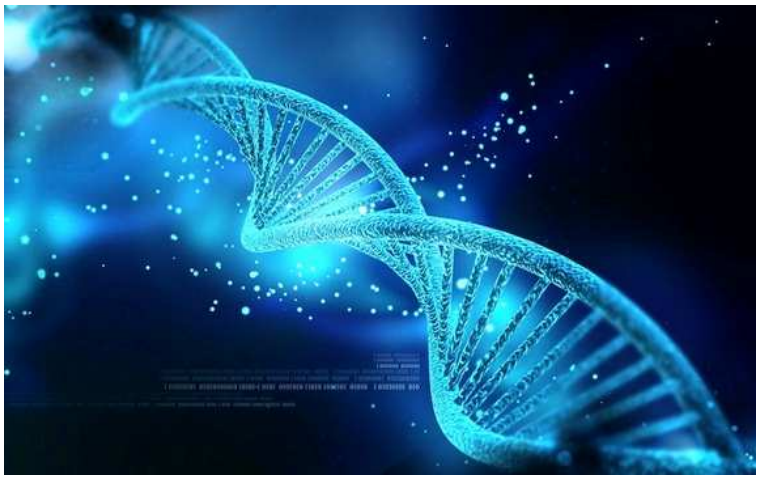
Instead, Schweitzer analyzes dinosaur fossils for soft tissue, such as the blood vessels that she and her colleagues found in an 80-million-year-old duck-billed dinosaur. But she has still pondered the steps needed to clone an extinct dinosaur. Here is the science it would take to create an actual"Jurassic Park" dinosaur, according to molecular experts.

How long can DNA survive?

Scientists need DNA to clone dinosaurs, but an organism's DNA starts decaying the moment after that organism dies.

That's because enzymes (from soil microbes, body cells and gut cells) degrade DNA. So does UV radiation. What's more, oxygen and water can chemically alter DNA, causing the strands to break, said Beth Shapiro, an associate professor in the Department of Ecology and Evolutionary Biology at the University of California, Santa Cruz.

"All of these things will break down the DNA into smaller and more degraded pieces, until eventually, there is nothing left," Shapiro told Live Science.



If any DNA from the Mesozoic period has miraculously survived, then it would likely be fragmented and badly damaged, making it unsuitable for use in cloning dinosaurs.
Credit: Creations | Shutterstock.com

The oldest recovered and authenticated DNA from bone belongs to a 700,000-year-old horse from the frozen Klondike gold fields in Yukon, Canada, said Shapiro, who co-wrote a 2013 study on it in the journal Nature.

Still, it's unclear just how long DNA can survive.

Scientists have proposed that DNA can survive as long as a million years, but definitely not more than 5 million or 6 million years, Schweitzer said. That's woefully short of 65 million years ago, when the asteroid slammed into Earth and killed the nonavian dinosaurs.

However, more experiments are needed to determine how long, and in what conditions, DNA can survive, Schweitzer said.

Moreover, don't expect a "Jurassic Park" twist to work. In the 1993 blockbuster, scientists find dinosaur DNA in an ancient mosquito caught in amber. But amber, it turns out, does not preserve DNA well. Researchers tried to extract DNA from two stingless bees preserved in copal, a precursor of amber, in a 2013 study published in the journal PLOS ONE.

The researchers couldn't find any "convincing evidence for the preservation of ancient DNA" in either of the two copal samples they studied, and they concluded that "DNA is not preserved in this type of material," they wrote in the study.

They added, "Our results raise further doubts about claims of DNA extraction from fossil insects in amber, many millions of years older than copal." [What If a Giant Asteroid Had Not Wiped Out the Dinosaurs?]

Dinosaur DNA?

If researchers choose to study the DNA lurking in dinosaur bone, it will be difficult to say whether it was dinosaurian in nature, the experts said.

"The DNA fragments that were recovered from that horse bone were short (on average 40-ish letters long) and showed characteristic signs of postmortem damage," Shapiro told Live Science in an email. "But they could be mapped to the genome of a modern horse, and so we know that they were of horse origin."

In contrast, the dinosaurs' living relatives are birds. But birds evolved out of the theropod line — a group of bipedal, largely carnivorous dinosaurs such as *Tyrannosaurus rex* and *Velociraptor*. Other dinosaur groups — including the hadrosaurs (the duck-billed dinosaurs), the ceratopsians (such as *Triceratops*), the stegosaurs and the ankylosaurs — do not have living relatives.

In addition, any surviving dinosaur DNA will be highly fragmented and badly damaged.

"Here is a key problem with dinosaur DNA," Shapiro said. "I would then have to ask, 'Is this dinosaur DNA, or microbial DNA that got into the dinosaur bone while it was buried in the soil?'"

Cloning adventures

For the sake of argument, let's say that researchers found fully sequenced dinosaur DNA. This means that researchers would have an entire genome, including the so-called junk DNA and the viral DNA that's incorporated itself into the dinosaur's genetic code. This viral DNA could be a problem, especially if it could infect modern plants and animals, Schweitzer said.

It would take about 5,000 *Velociraptors* (or any dinosaur species, for that matter) to make a sustainable population with genetic diversity.
Credit: Todd Marshall

Next, they'd have to find a host organism to help clone the beast. That would likely be a bird. But a mother bird is a far cry from a mother dinosaur, Schweitzer said.

"There's more to developing a vertebrate organism than just what its DNA says," she said. "A lot of the timing is dictated by genes and proteins that the mother produces during development. How is it going to get the developmental signals that it needs?"

Again, let's say that, somehow, the host mother was able to give birth to this creature. The resulting offspring would be a half-bird, half-dinosaur creation, Schweitzer said. But could this animal survive in today's climate?

"Its genes and proteins survived in a very different world," she said. "The carbon dioxide content in the atmosphere was different; the oxygen content was different; the temperatures were different — how is it going to function [in the modern environment]?" [How Do Dinosaurs Get Their Names?]

Moreover, the creature's digestive enzymes might not work on modern animals and plants, and it wouldn't have Mesozoic microbes, which it likely would need to digest and absorb nutrients, Schweitzer said.

"[Dinosaurs] were designed to break down dinosaur proteins," Schweitzer said. "Or [ancient] plants, if you want to bring a plant eater back, which I'd highly recommend."

It would be cruel to bring back just one dinosaur for our own amusement, she said. But it takes at least 5,000 animals to create a sustainable population with genetic diversity, Schweitzer said.

"How are you going to clone 5,000 *T. rexes*?" she asked. "And, if you could, where are you going to put them?"

There are so many problems researchers would have to overcome to clone a dinosaur, Schweitzer said. "Getting the DNA, which we have not done — that would be the easy part," she said.

Still, she plans to continue her studies on dinosaur bone. And though cloning might be a pie-in-the-sky idea, she still thinks about it from time to time.

"To be honest, I'd really like to see a *T. rex*," Schweitzer said. "It would be very cool."

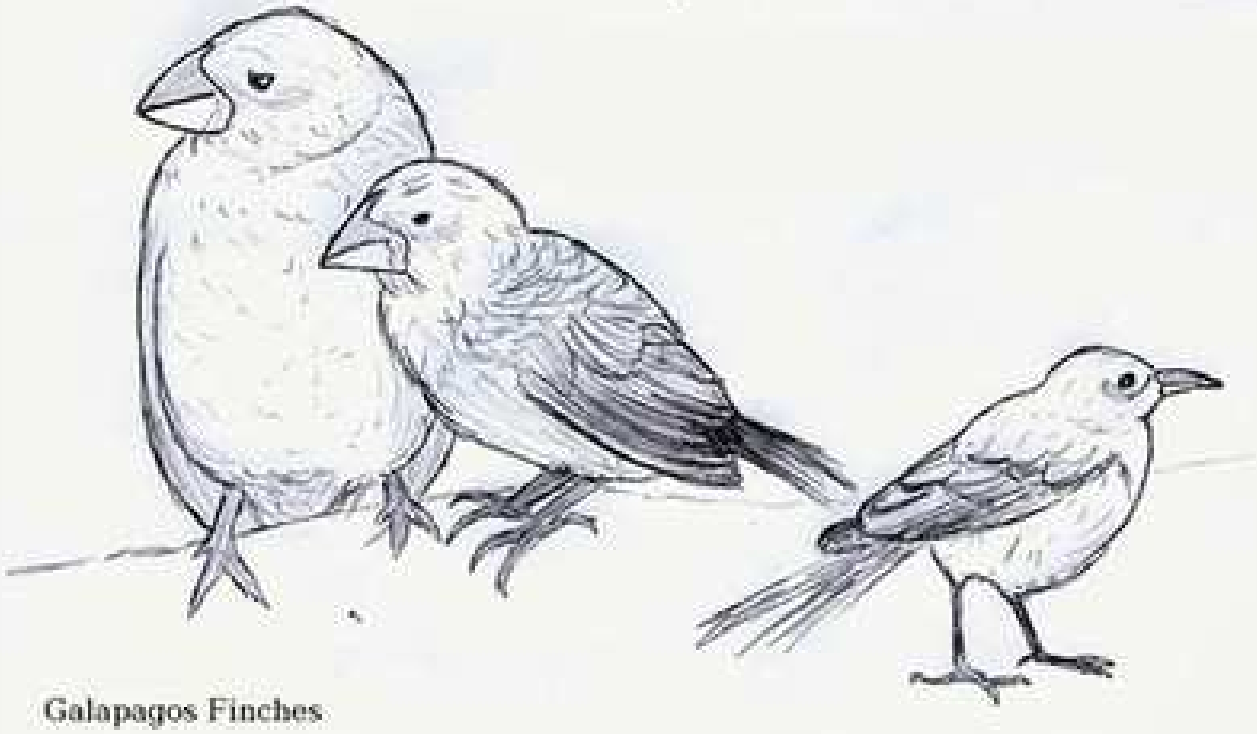
Follow Laura Geggel on Twitter @LauraGeggel. Follow Live Science's Life's Little Mysteries @LLMysteries, Facebook & Google+.


Image Credit: Todd Marshall

Mom, why does brother's beak look different than mine?

I always worried you'd ask about this one day.

It's a secret, so you can't tell anyone, but your brother's adapted.



Galapagos Finches

World Sea Turtle Day Celebration

Jun 4th 10:00 am - 3:00 pm

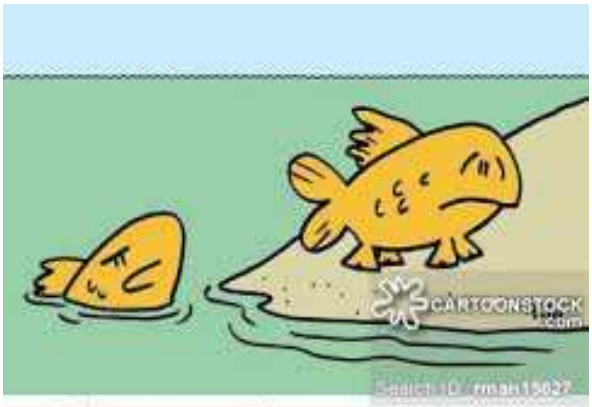
Florida Museum - 3215 Hull Road, Gainesville, FL 32611 SW 34th Street and Hull Road

Celebrate World Sea Turtle Day with the Sea Turtle Conservancy!

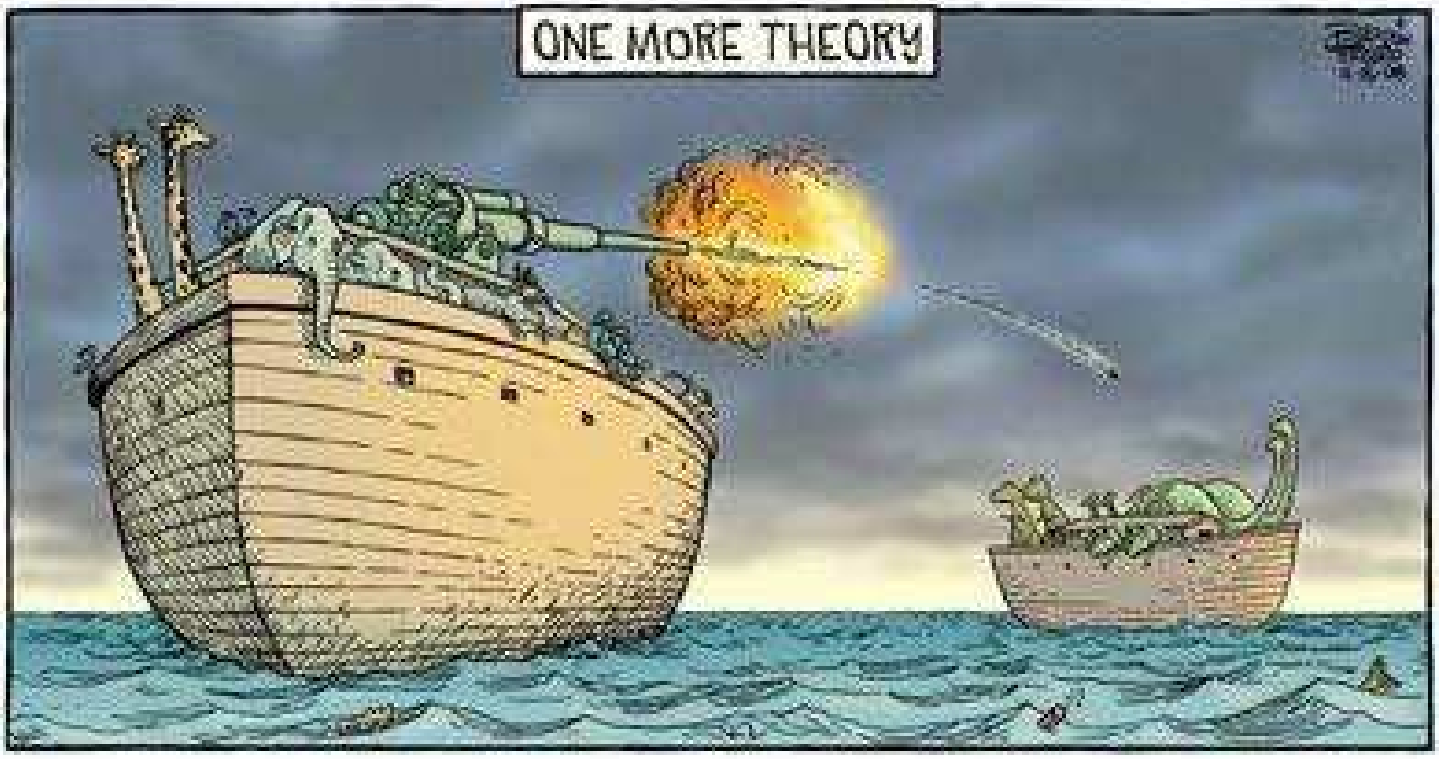
Children and families are invited to tour the Museum's sea turtle exhibit with staff from the Sea Turtle Conservancy. The free event features sea turtle specimens, a turtle library and stickers and bookmarks for all kids. Children also may create fun crafts to take home, meet sea turtle scientists and play turtle trivia for a chance
to win a cool prize.

Visitors will also have the opportunity to speak with researchers from the Archie Carr Center for Sea Turtle Research at UF about sea turtle conservation and careers in marine biology.

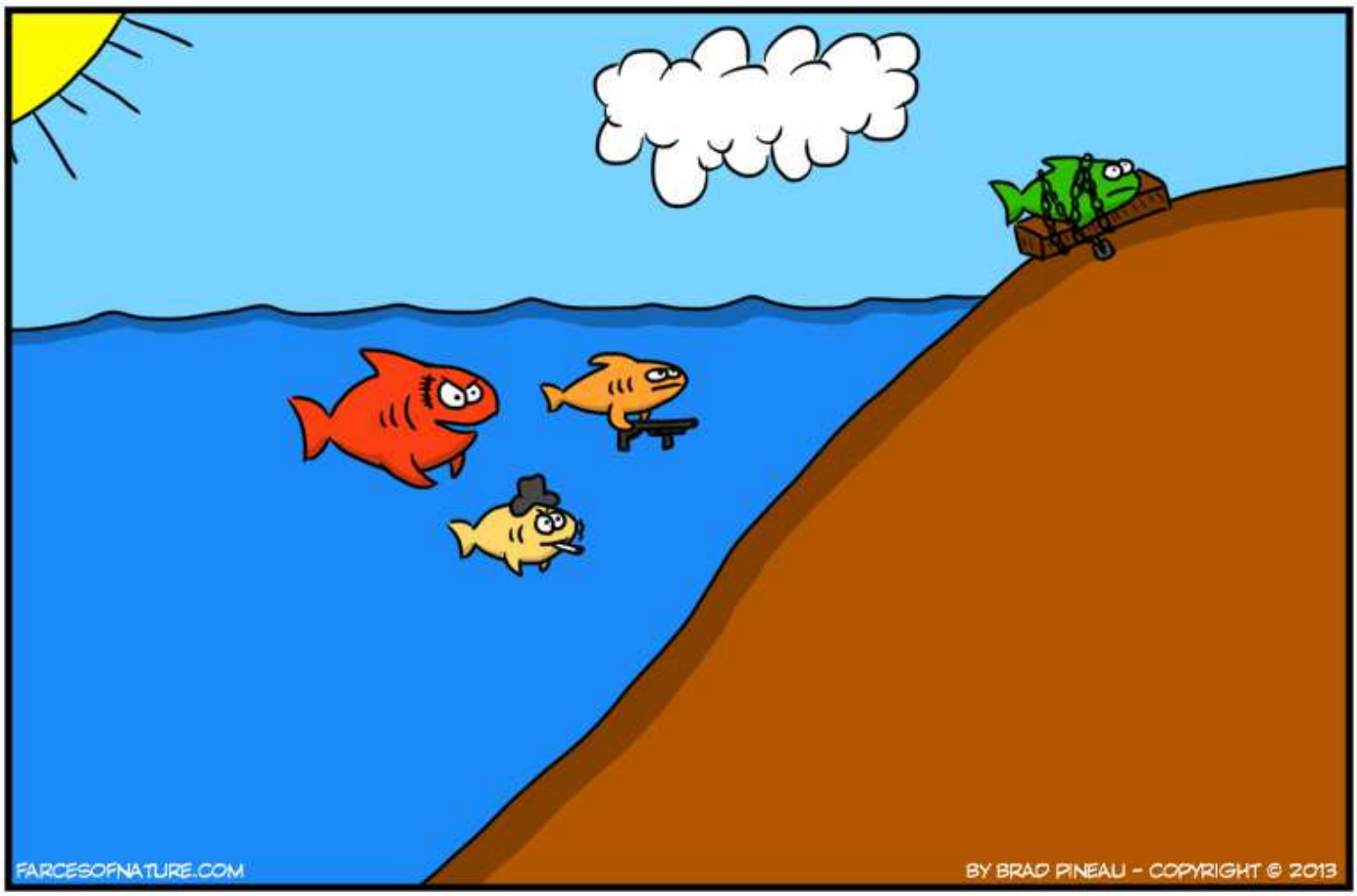
- See more at: http://www.flmnh.ufl.edu/calendar/grid/sea-turtle/#sthash.PdNIxnVb.dpu



"Oh, so now the ocean isn't *good* enough for you?"



FARCES OF NATURE



FISH MAFIA

Beginners' Luck in Wauchula

By *Victoria O'Toole*

I've always thought that fossil geeks are the best people on Earth. Now, I know that for sure. On the last day of April, a handful of club members, led by Louis and Al, beat the heat in the waist-deep waters of the Peace River in Wauchula, FL. The word Wauchula means "bird in the nest" and is thought to be a reference to Sandhill Cranes. Some of us remarked that we saw Sandhill Cranes flying overhead as we drove through the orange groves and cattle ranches to meet at the river's edge – a good omen and a beautiful morning!

Our tiny caravan of mostly "newbies" followed our leaders, sifters and shovels in hand, into the water to an area that they thought was promising. Al began showing us how it's done. And boy did he ever! The second shovelful of gravel yielded a beautiful 2-inch megalodon tooth. Of course, we had to accuse him of planting it! But, he was to show us later in the day that he just knows what he's doing. His count for the day – 4 beauties!

Now that we all knew what to do, we got down to business. We spent the day swapping stories, showing our finds and learning an incredible amount about Florida fossils and how to hunt them. Everyone found at least one megalodon tooth and a whole jar of little shark teeth. Joel found a horse tooth which Louis identified as being a specific tooth from a specific position in the horse's mouth. Interestingly, my husband, Gary, and I found the exact same tooth from a different horse! What are the odds?

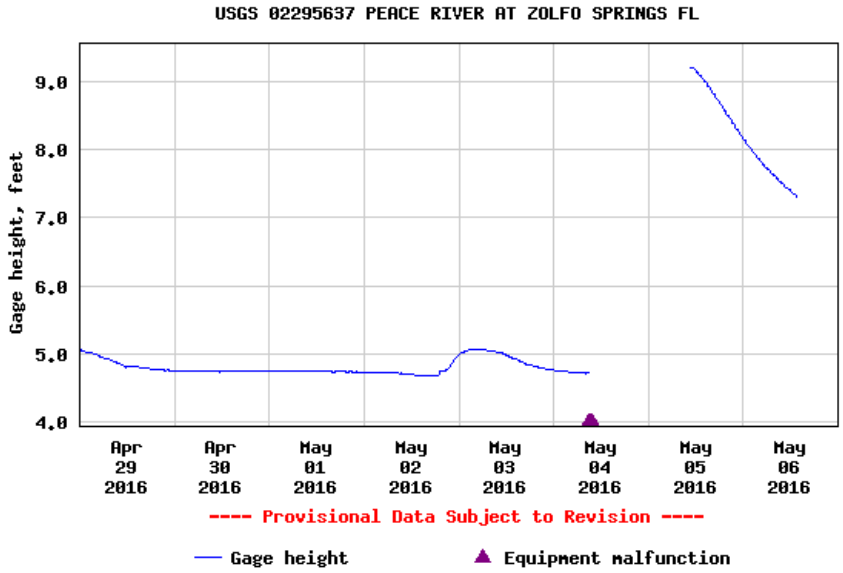
We also found a bison molar and there were pieces of dugong rib enough to go around for everybody. But, the find of the day had to be the mammoth tooth that Gary pulled up along with a pristine tooth plate from a mammoth in the same area. The whole group was so gracious, giving us a round of applause in celebration of our find.

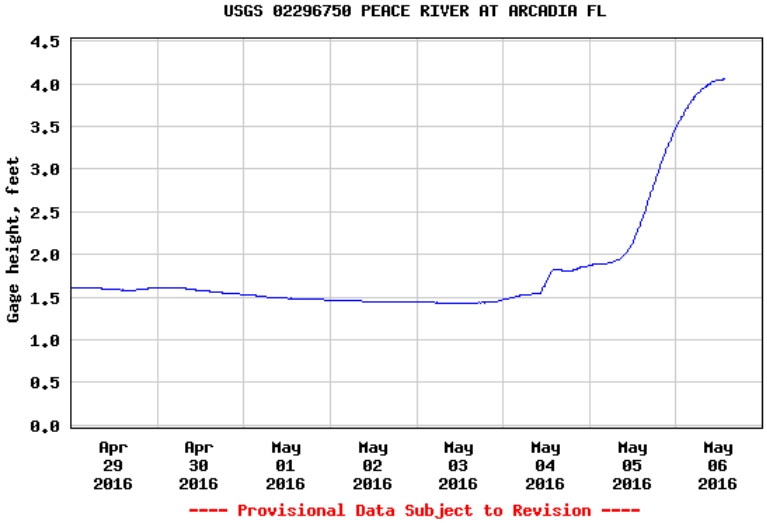
Our deepest thanks goes to Al Govin for his time and organizational skills and to Louis, whose patience and good nature really made this trip worthwhile. He made a point of stopping by to "visit" each of us several times during the day to show us how to more efficiently sift and identify what we had. Without his knowledge and generosity of spirit, the day would not have been nearly as much fun and we would each have lugged a bag of worthless rocks home to wonder what they were until the next meeting.

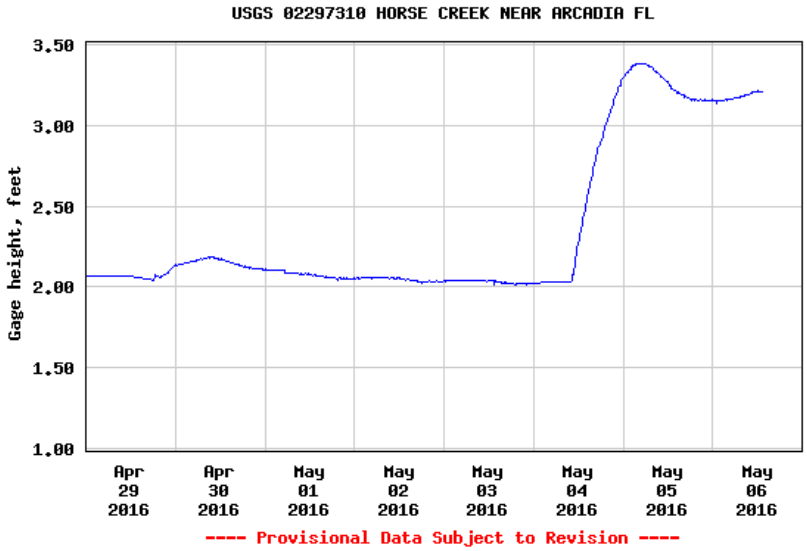
There's nothing quite like the anticipation that comes with every shovelful of gravel into your screen. And the feeling you get when the moment your eyes first spy the prize spurs you on. After all, the best fossil you've ever found is only the next shovelful away. So, come join us on our next adventure. You might come away with a fossil treasure and you'll always come away with new friends and a great time.

RIVER LEVELS!!

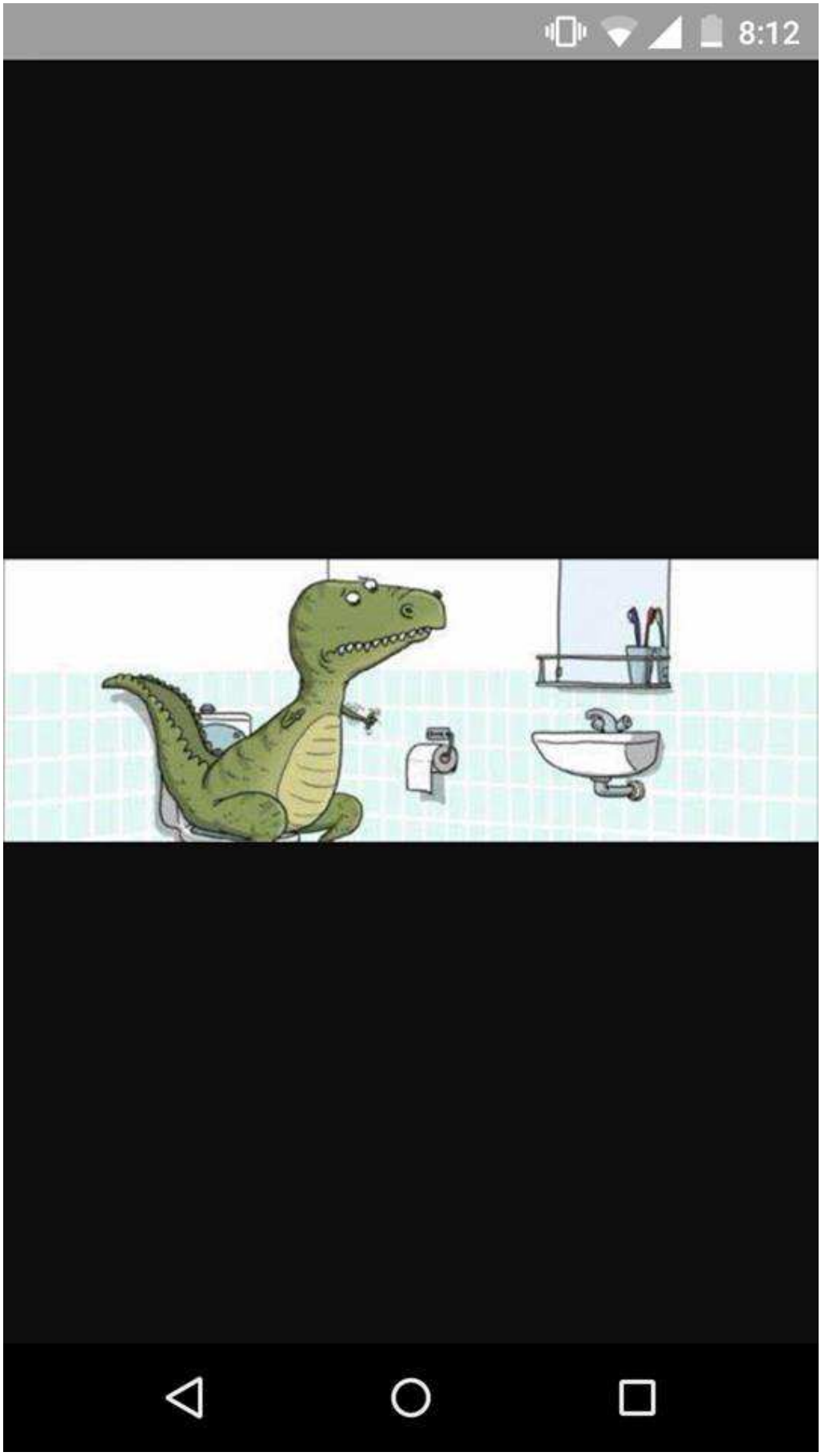
As you can see, the recent rain has caused the river to go up again. The USGS gauge at Zolfo needs to be about 5 feet. It shot up 4 feet in one day!! It's falling in that stretch of the river, but since the water goes southward, it causes levels to increase further downriver. The gauge at Arcadia shows it's still going up. When that slug of rainwater gets past it, levels should get back to where we need them to be to fossil hunt. The creeks always go up the fastest, but then, usually, drop the quickest. Odds are better for hunting more northern creeks and parts of the river for now. Then, in a few days, head south.







COPROLITE happens!!



Aimeee's Corner!!

The spring months mean it's time for me to head back to the deserts of the American southwest and not a moment too soon as I haven't been able to spend much time hunting Florida's rivers due to another wet winter.

I recently flew into Phoenix, Arizona to meet up with my partners in crime, club members Vickie and Jim Manderfield, for another fun rockhounding trip. It's "fun" if you don't mind driving several hours to get to your target area and it's fun if you like digging for hours at a time but since I'm writing this for the FCOLC, I think you all do.

The main destination of this year's trip was the Mongollon Rim (NOT the Mongolian Rim) which is a geologic feature about 200 miles long, starting in Yavapai County and running eastward, ending near the border of New Mexico and forming the southern edge of the Colorado Plateau in Arizona. The "rim" is composed of limestone and sandstone deposited during the Carboniferous and Permian periods, as well as extensive lava flows. Our hunting focus was the small stretch near Kohl's Ranch.

The beauty of Arizona is that the entire state is pretty much composed of exposed rocks so no matter where you are, you're bound to find something interesting. We were driving along the Mongollon Rim at over 6,000' in elevation and I wanted to stop and take a picture of a snow bank (very interesting for a Florida resident). The hillside across the road from the snow bank was covered with marine deposit fossils which included large shells, possible branch corals, and loads of fascinating little geodes with tiny fragile crystals inside.

The next day, Vickie and I were on a quest for Payson geodes in a mostly volcanic rock area. The ground was almost paved with the geodes (easy hunting) but we also found small fragments of fossil coral, brachiopods, and crinoid stems, as well as a surprising boulder of golden selenite, and the muchsought-after-but-really-hard-to-find Diamond Point terminated quartz crystals. Here's a hint if you're searching for these crystals: skip the locations listed in the rock hound books and simply scour the graded sides of the road.

We had one more stop on the Mongollon Rim and that was the well-marked Paleo Site near Kohl's Ranch. This is a hillside exposure of the Naco Formation (approx. 300 mya) that has been made easily accessible for rockhounds of all stripes with a large paved parking lot and a plethora of marine fossils a short walk from the car. A few minutes picking at the soft sediments will yield handfuls of beautiful brachiopods and chunks of matrix showcasing a variety of the same as well as crinoids and other ancient sea creatures.

I'm hoping Arizona will be a yearly trip from now on and if you haven't been, put it on your travel calendar.

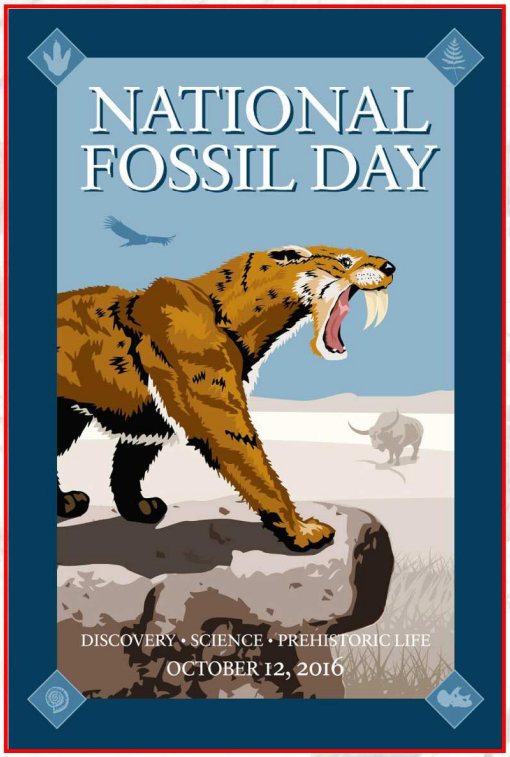

Vickie Manderfield collects shells, corals
and geodes on AZ's Mongollon Rim.


Variety of rocks from Diamond Point area
of Mongolian Rim, AZ

Mark Your Calendar!

Please Join us in Celebrating National Fossil Day 2016!!!

"Fossil's & Dino's at Play"



National Fossil Day Celebration!

Saturday, October 1st, 2016

South Florida Museum
Bradenton, Florida

Come join us in celebrating this year's *National Fossil Day*. The South Florida Museum is excited to be a host institution this year and to partner with local and state agencies, organizations and clubs. Guests can come and meet real paleontologists and geologists who work everyday to uncover the secrets fossils reveal about our ancient Earth.

Location: South Florida Museum, 201 - 10th St. West, Bradenton, FL 34205
Time: Museum hours 10 a.m. to 8 p.m. Special Family Night Event extended hours. Clubs and Vendor Displays 10 a.m. to 4 p.m.

Updated 2016 Schedule Coming Soon!

2015 National Fossil Day Florida Sponsored by:

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