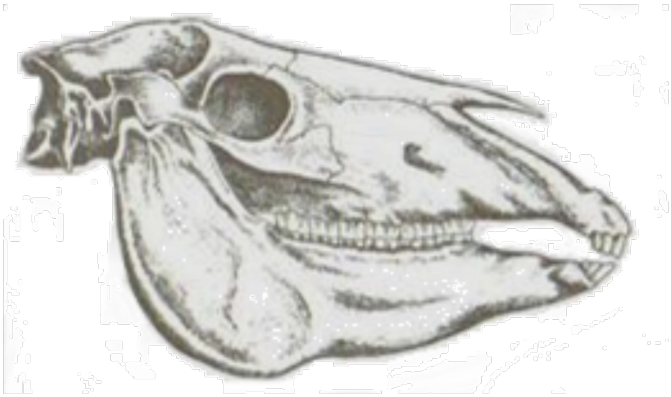


Fossil Club of Lee County

Decemer 2017

Letter from the President

What's this?? A newsletter!! Well, I'll be!! Finally! Yes, I know, after all these years of never missing one, then not doing a newsletter because of Hurricane Irma, and all the related power outages. But, then, double jinx! A computer crash! Yes, my hard drive totally corrupted and it's been a struggle. After getting it repaired, then the long process of retrieving all the information and files and such (so glad I had a Carbonite subscription to save my stuff!) to make it work again. And the address book and folders, and pictures, and on and on.. It's been a battle. Of course, to add to it, after a bad exposure to mold, and fighting a allergy attack for three weeks, and then my phone (yes we DO need it!) breaking down, it's been a pile-on that didn't want to end. But, hopefully, I am at the end of the battle, and if things will just stay and behave, normalcy may prevail. And the newsletters will keep on truckin!

Last month Dr. Rick Batt gave a very interesting presentation on the evolution of shells, and he also brought in a nice black light to show how some fossils flouresque. And any member who wanted to bring in fossils they had to see if they would glow in the light could do so. Several very interested members brought in some neat examples. Thanks Rick, for the interactive demonstration!

This month will be our annual Christmas party meeting, where members bring a dish to share and gift to exchange. <u>More about this inside the newsletter</u>.

We are working on some fossil hunting trips. More will be talked about this at the meeting.

November 4th was the national fossil day celebration, this year held at the Florida Museum of Natural History, in Gainesville, Fl. It was held there to celebrate 100 year anniversary of the museum. Jeanne Seehaver took on the organizational task for the club and did a great job. She distributed all the pertinent information to the members who attended and helped organize a very nice outing. Thanks Jeanne! We had several members participate, and considering it's out of town, and overnight, we had a very respectable showing from our club! We started with a basement tour of the collections. (Never long enough!). Then we attended a talk. The next day we participated in a club showing in the main entrance to the museum, along with other clubs and immediately next to the giant mammoth skeleton! That night was dinner out, to help celebrate Jeanne's birthday (39). Sunday morning we all met at Dr. Gordon Hubbell's home, where he has a museum of fossil shark. Shark everything! Teeth, verts, jaws, etc. Then, sadly, it was over, and everyone split and either went to a local creek to hunt or drove home. A good time was had by all. <u>Some pictures are inside!</u>

Shirley made some great chili for the meeting in October! Thanks! January refreshments will be the Marc Cantos traditional meal. He provides a complete meal, every January! which we will eat at the beginning of the meeting, so come hungry, he says!

No speaker is lined up—yet—for January. Or, February. March is the annual FCOLC fossil auction.

Our annual fossil festival is February 17. Lou Keisling and Val Rahn are the organizers and will be looking for some help! Please plan on volunteering to do your part. We all have fun, and even more so when we get involved!!

Fossil donations are needed for the festival silent auction, the annual March FCOLC scholarship auction, and kids digs. Aimee Hankel has been VERY generous in fossil donations. It is VERY much appreciated!

We have had a $1000 donation, to our scholarship fund. This is a member who wishes to remain anonymous! But—we all thank this member for the extreme generosity. It will go a long ways towards helping a deserving student with their education.

Membership is due, January 1st! You can renew at this meeting. Just see Al Govin, treasurer/secretary.

Season is getting here. I see license plates changing color!! Welcome back, all our seasonal snowbird friends!!

See you at the meeting!!

MERRY CHRISTMAS!!!!

Louis Stieffel
President
Fossil Club of Lee County

OFFICERS

Louis Stieffel, President
239-851-7499, cape187@earthlink.net
Leslie Stieffel, Vice President
239-980-6311, cape187@earthlink.net
Al Govin, Secretary, Treasurer
239-910-2339, algovin1@hotmail.com

DIRECTORS

Dean Hart……941-979-8217
Dave Seehaver
Jeanne Seehaver
Dr. John Taraska

COMMITTEES

Al Govin, Club Trips Director
Curt Klug, Web Master
Cherie Jacobs, Newsletter Developer
Al Govin, Badges, Membership, Trips
Cindy Bateman, Librarian
Dave and Jeanne Seehaver, Merchandise
Dean Hart, Refreshment
Joe Larkin, $1 Raffle
Lou and Valerie Rahn, Festival Organizers
Louis Stieffel, Auctioneer, FOSSIL project representative, Newsletter editor, Speakers, Vertebrate Education

Here is a site that has every river and creek mapped **for the whole state**, separated by county. Click on the zoomify tab below each map to zoom in. Enjoy !

Save to your desktop so you can find and use it often!

http://fcit.usf.edu/florida/maps/galleries/hydrography/index.php

Meetings are on the third Thursday of the month, 7:00 pm, in the Fellowship Hall at Zion Lutheran Church , 7401 Winker Road, Fort Myers, FL 33919

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

FCOLC CHRISTMAS MEETING!!

As in the past, our annual Christmas meeting, (late this year on December 21), will be a Social type meeting, with members bringing a dish to share. The club provides drinks, the turkey—cooked this year by Sue Rhodes!, and the ham—cooked this year by Gordi Ahl!. Members share a dish they would like to bring, be it meats or vegetables or salads or deserts! (We always seem to have lots of delicious deserts!) The club provides the plates, napkins, silverware, etc. If you bring a serving spoon, please label it with your name, so when it's left behind ☺ we can return it to the owner.

Also, a part of the annual Christmas extravaganza! is our gift exchange! It's simple, for any member who would like to participate. Simply wrap a gift, whether it be fossils, or non-fossil, and place on the designated table for that type of gift. If you bring one-you get one! Bring two-get two! If you bring a non-fossil gift, please take that same type. If you want a fossil gift, then you must bring a fossil gift to swap for. This is a good time of year to be generous. Try to swap a gift that you would like to get yourself.

Do not put your name on the gift.

We will also have some door prizes to hand out to lucky blue ticket winners!

Any member, who want to bring in any fossils for show and tell, as usual are welcome to do so.

See you there!! MERRY CHRISTMAS!!!!

Louis

Aimeee's Corner!!

The Other Lives of Fossils

I've always pondered, as I'm digging in the rivers and creeks of Florida, what must have gone through the minds of Native Americans when they came across megalodon teeth and mammoth bones. They might have thought "dinner" in regards to the mammoth bones, but more than likely, in a time when superstition and scientific ignorance ruled, certain fossils attained deep spiritual significance. Recently, a reader of my blog reached out to me to see if I had any segments of the Cretaceous period baculites I found in northeastern Montana for sale. He said he liked to give them to friends of his who were Blackfoot Indians and lived near the American/ Canadian border of Montana. They viewed the baculites segments as talismans. I'd never heard of such a thing.

Time for Google!
Here's what I found out, and it was all news to me...
Baculites were cephalopod marine animals and exhibited elaborate suture lines between the segments of their shell-like bodies, which are still visible in many of the fossils. Members of the Blackfoot tribe and some other Plains tribes, perceived the shape of baculites segments as resembling a bison, thus the segments were imbued with the spiritual power to summon bison herds. Referred to as *iniskim,* they were rubbed with red ochre and placed in medicine bundles. Blackfoot Indians were traditionally dependent on bison for food, shelter, clothing, etc. and lived a semi- nomadic life following the herds on their migration route which covers what it now the area between Montana and Canada.
Blackfeet and other northern tribes began collecting these fossils at least a thousand years ago, many from a big fossil deposit on Canada's Bow River which rockhounds now know as "Baculite Beach." Grab a towel and some Hawaiian Tropic! That's a beach I want to visit!
I've included a photo of two baculites segments that I found in Montana this June. One shows the suture lines and the other is an example of how you could imagine an animal shape in the fossil, a poetic artful way for the animal to live on long after it's gone extinct.

Fossil Board meeting

Yukagir Woolly Mammoth

The beautifully preserved head of the Yukagir woolly mammoth – the most complete ever found. It is 22,500 years old. Discovered in Yakutia in 2002, as well as its head and tusks, the front legs and parts of its stomach and intestinal tract were recovered from the permafrost.

Pictures at

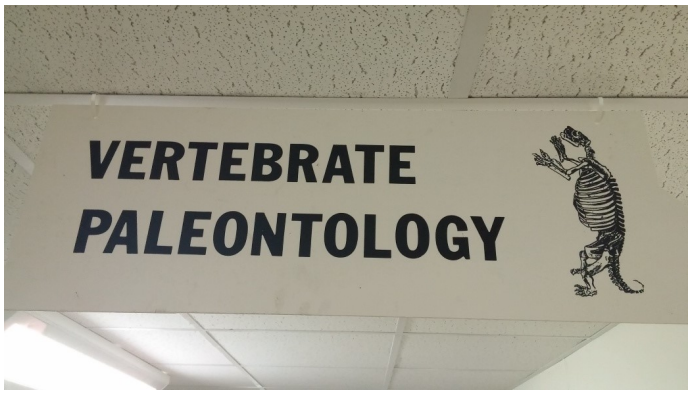
Dr. Gordon Hubbell's Museum

Nov. 5, National Fossil Day

Pictures of the

FLMNH Basement Collections Tour

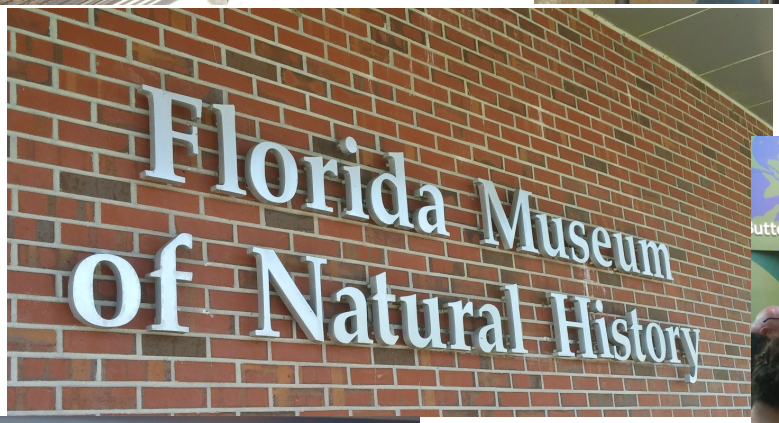
Nov 3, National Fossil Day



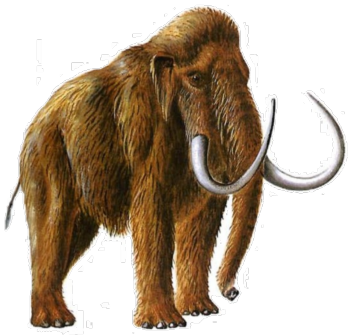
Pictures of the

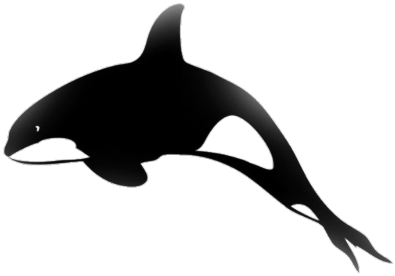
NFD Celebration Event at the Museum

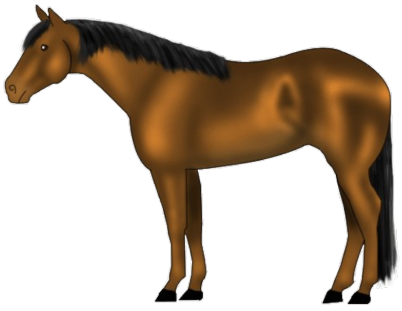
Nov 4, National Fossil Day



Mike Siciliano had a good day diving the fossil beds of Venice Beach!! He also had mammoth, whale, and horse.








WHAT IS A DINOSAUR'S LEAST FAVORITE REINDEER?
COMET!
The Oatmeal http://theoatmeal.com

I'm not a huge triangle collector, (shark teeth), even though in the course of 25 years of collecting I've acquired a good many. But, other fossils often need repair, and sometimes restoration, so as to be used in an articulation of limb bones, etc. Most museums consider a dinosaur, for example, complete, if its 60%. The rest is reconstructed and restored.

However, shark teeth collectors very, very rarely ever try to re-create a shark dentition, where the teeth positions are important to have and thus a repaired tooth is ok. Since most are just displayed as individual specimens, most collectors want as perfect a tooth as they can afford. Thus, usually, when dealing with a shark tooth, unless it's an extremely rare example, value will not increase with restoration. Occasionally, yes, but usually, no. And, if the resto job is not excellent, the tooth can be greatly devalued and undesired.

These are my thoughts, but, keep in mind, I'm not as serious a triangle collector as many other folks.

Louis

Picture of a baby Mastodon jaw. Found in a Gainesville creek! Discovered last year, by a local collector. No wear on the teeth, and an unerupted third molar still in the jaw, indicates that this baby mastodon was still nursing.

FLMNH Database search tutorial

Here's the tutorial for the search function my talk was based on. This should help navigate the database and look at fossils.

Sean Moran, M.S.

Ph.D. Student

University of Florida, Department of Biology

Florida Museum of Natural History

smmoran@ufl.edu

(609) 617-5919

To view images of vertebrate fossils from the Florida Museum of Natural History collections:

1. Go to floridamuseum.ufl.edu/vertpaleo-search
2. To see images check the "Only Results With Images" box at the top of the search
3. Enter your search terms of interest:
    - Taxonomic terms (e.g., Class, Order, Family, Genus, Species)
        - These are all latinized names, so you will need to know (generally) what you are looking for. Good resources include "The Fossil Vertebrates of Florida" -Richard Hulbert, the taxonomic lists on the FLMNH Vertebrate Fossil Sites pages (floridamuseum.ufl.edu/florida-vertebrate-fossils/sites/), FLMNH species accounts (floridamuseum.ufl.edu/florida-vertebrate-fossils/species/), or simply by using Google.
    - Locality terms (e.g., County, Site, Formation, Land Mammal Age, Epoch)
        - Again, some of these terms may be unfamiliar to a general collection, such as the Hemphillian North American Land Mammal Age, but resources on the FLMNH website (e.g., floridamuseum.ufl.edu/florida-vertebrate-fossils/land-mammal-ages/) should be able to provide some help.
    - Collection terms (e.g., Collector, Donor Name, Date Collected)
        - These should be fairly self-explanatory.
    - Anatomical terms (Nature of Specimen)
        - This will perhaps be the most commonly used search field, but also the trickiest to navigate without familiarity of the terms used. I would recommend changing the drop-down menu from "Equals" to "Contains" so that search returns all results with the search term entered. Most anatomical terms will bring back the terms you will likely be looking for. For example, typing in "ulna" in the Nature of Specimen field and changing the drop-down to contains will return all ulnae from our collection that have been imaged, "femur" will return all femora, "vertebra" all vertebrae, "skull" all skulls, "mandible" all lower jaws, etc.

          However, due to our identification system, searching on "tooth" will only return a subset of all the photos of our teeth. This because our teeth are labeled as C, I, P, or M (for canine, incisor, premolar, or molar, respectively) for mammals and then given a number that pertains to which exact tooth it is (1 through 4). So, a P4, left upper would be a left upper fourth premolar while a m3, right lower would be a right lower third molar. If you simply switch the drop-down to "Contains" and type "p1" then "p2" then "p3" then "p4" into the Nature of Specimen field you should all images that contain a premolar in them or "m1", "m2", "m3" for specimens that contain a molar. It's a little tricky, but feel free to email me atsmmoran@ufl.edu if you can't get it figured out. Hopefully, in the future the database search function will be a little more user-friendly.
4. Click the blue "Submit Query" button
    - This will return all the images at the bottom of the page for the search you typed in above.

Other useful hints include switching between the table and list option in results box, clicking the "Display" box for a field that may not show up by default, sorting by a particular field using the "Sort Direction" drop-down menu, and exporting the results as a .csv file.

Dinosaur-Killing Asteroid Cast a 2-Year Shroud of Darkness Over Earth

By Laura Geggel, Senior Writer | August 23, 2017 03:31pm ET

Credit: solarseven/Shutterstock

The 2 minutes of darkness caused by the total solar eclipse earlier this week may seem momentous, but it's nothing compared with the prolonged darkness that followed the dinosaur-killing asteroid that collided with Earth about 65.5 million years ago, a new study finds.

When the 6-mile-wide (10 kilometers) asteroid struck, Earth plunged into a darkness that lasted nearly two years, the researchers said.

This darkness was caused, in part, by tremendous amounts of soot that came from wildfires worldwide. Without sunlight, Earth's plants couldn't photosynthesize, and the planet drastically cooled. These two key factors likely toppled global food chains and contributed to the mass extinction at the end of the dinosaur age, known as the Mesozoic, according to the study. [Wipe Out: History's Most Mysterious Extinctions]

The finding may help scientists understand why more than 75 percent of all species, including the non-avian dinosaurs, such as *Tyrannosaurus rex*, and large marine reptiles, such as the plesiosaur, went extinct after the asteroid slammed into what is now Mexico's Yucatán Peninsula, the researchers said.

Killer asteroid

When the space rock smashed into Earth, it probably triggered earthquakes, tsunamis and even volcanic eruptions, the researchers said. The asteroid hit with such force that it launched vaporized rock sky-high into the atmosphere. Up there, the vaporized rock would have condensed into small particles, called spherules.

When the spherules plunged back down to Earth, they collided with air molecules, causing friction and heating to temperatures hot enough to ignite fires around the world. In fact, a thin band of spherules can still be found in the geologic record, the researchers said.

Most large Mesozoic land animals died in the asteroid's immediate aftermath, "but animals that lived in the oceans or those that could burrow underground or slip underwater temporarily could have survived," the study's lead researcher, Charles Bardeen, a project scientist at the National Center for Atmospheric Research (NCAR) in Boulder, Colorado, said in a statement.

"Our study picks up the story after the initial effects — after the earthquakes and the tsunamis and the broiling," Bardeen said. "We wanted to look at the long-term consequences of the amount of soot we think was created and what those consequences might have meant for the animals that were left."

Earth without photosynthesis

Even though researchers found evidence for the asteroid in the late 1970s, there still isn't "universal agreement" on how long Earth was shrouded in darkness after the space rock smacked into the planet, Bardeen told Live Science. [Doomsday: 9 Real Ways Earth Could End]

Bardeen and his colleagues used the most up-to-date estimates of the amount of fine soot in the geologic record — that is, 15,000 million tons. Then, they plugged that amount into the NCAR-based Community Earth System Model (CESM) — a modern chemistry-climate model that factors in components related to the atmosphere, land, ocean and sea ice. This model allowed the scientists to simulate the effect of soot in the years following the asteroid impact.

"Different studies have assumed various types of particles including dust, sulfates and soot," Bardeen told Live Science in an email. "All of these particles can block enough sunlight to cool the surface, but only soot is so strongly absorbing that it is self-lofting, can heat the stratosphere and reduces sunlight at the surface light to very low levels."

The new results show what a catastrophic effect the soot had on Earth.

"Our study shows it is dark enough to shut down photosynthesis for up to two years," Bardeen said. "This would have a devastating effect, particularly in the ocean, since the ocean relies upon phytoplankton as a primary source of food and loss of this would be catastrophic to the entire food chain."

Even if the soot levels had been one-third this estimated amount, photosynthesis would have still been blocked for an entire year, the researchers found.

Other catastrophic effects

In addition to stopping photosynthesis, this worldwide cloud of soot would have prevented much of the sun's heat from reaching Earth. After three years following the crash, the land and oceans would have cooled by as much as 50 degrees Fahrenheit (28 degrees Celsius) and 20 degrees F (11 degrees C), respectively, the researchers found. [Crash! 10 Biggest Impact Craters on Earth]

In contrast, the upper atmosphere, known as the stratosphere, would have warmed because that's where the soot floated around, absorbing the sun's heat. These roasting temperatures would have depleted the ozone, and also allowed for vast quantities of water vapor to hover in the stratosphere. When this water vapor chemically reacted in the stratosphere, it would have created hydrogen compounds that led to further ozone destruction, according to the researchers.

As the ozone disappeared and the soot cleared, damaging doses of ultraviolet light reached Earth, harming life there, the researchers said.

When the stratosphere eventually cooled down, the water vapor there condensed and began raining, abruptly washing away the soot, Bardeen said. As some soot left, the air there cooled, which in turn led the water vapor to condense into ice particles, which washed away more soot.

Once this cooling cycle repeated enough times, the thinning soot layer vanished within months, the researchers found.

Bardeen credited his friend Betty Pierazzo, a senior scientist at the Planetary Science Institute, a nonprofit headquartered in Tucson, Arizona, with securing funding from NASA for an earlier study that enabled and inspired this study. Unfortunately, Pierazzo died before research on the end-Cretaceous asteroid got underway.

Bardeen also noted several limitations, including that the model is based on a modern Earth, and that at the end of the Cretaceous period Earth's continents were in different locations and the planet also had different atmospheric properties, such as different concentrations of gases.

The study was published online Monday (Aug. 21) in the journal Proceedings of the National Academy of Sciences.

Original article on Live Science.

UF | IFAS Extension
UNIVERSITY of FLORIDA

FUN AND FABULOUS FLORIDA FOSSIL DAY

FREE EVENT

DECEMBER 9, 2017 · 10AM – 12 NOON
COLLIER COUNTY PUBLIC LIBRARY HEADQUARTERS
2385 ORANGE BLOSSOM DRIVE | NAPLES, FLORIDA 34109

3 EXPERT SPEAKERS WILL DISCUSS AND SHARE INFORMATION:

Finding Fossils in Collier County
Bill McDaniel
Collier County Commissioner, District 5

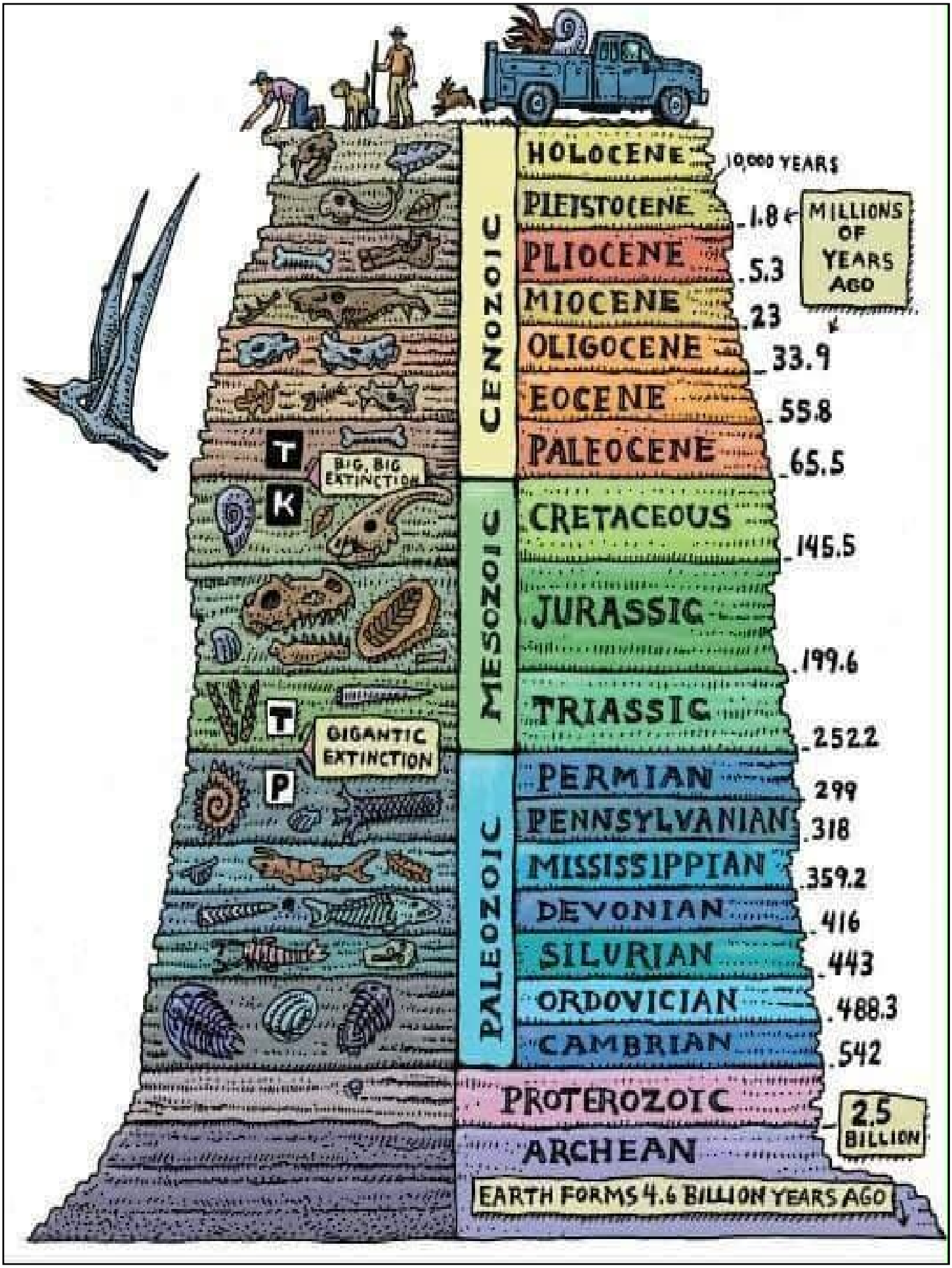
The story of Southwest Florida Vertebrate Fossils
Louis Stieffel
President, The Fossil Club of Lee County

The story of Southwest Florida Invertebrate Fossils
Dr. Gary Schmelz
Author of Fabulous Florida Fossil Shells

Activities include:
Fossil Displays | Children's Activities
Door Prizes | Refreshments

RESERVE YOUR SPACE ON EVENTBRITE BY DECEMBER 6TH, 2017
{LINK}
For more information call: **239-252-4800**

Sponsored by: UF/IFAS Extension Collier County & Collier County Public Library


HOLOCENE
10,000 YEARS
PLEISTOCENE
1.8
PLIOCENE
5.3
MIOCENE
23
OLIGOCENE
33.9
EOCENE
55.8
PALEOCENE
65.5
CENOZOIC
MILLIONS OF YEARS AGO
T
K
BIG, BIG EXTINCTION
CRETACEOUS
145.5
JURASSIC
199.6
TRIASSIC
252.2
MESOZOIC
T
GIGANTIC EXTINCTION
P
PERMIAN
299
PENNSYLVANIAN
318
MISSISSIPPIAN
359.2
DEVONIAN
416
SILURIAN
443
ORDOVICIAN
488.3
CAMBRIAN
542
PALEOZOIC
PROTEROZOIC
2.5 BILLION
ARCHEAN
EARTH FORMS 4.6 BILLION YEARS AGO