Fossil Club of Lee County

September 2016

Letter from the President

As the president of this group, I am involved with lots of fossil related things, and one of the main involvement is with our members. So, it's always sad when a member moves away. And it's always heartbreaking when we lose a member because they have passed on to another world. In the last several months we had the passing of David Sheehey and then Sharon Hale. Both were long time members and will be missed. But, an even harder one to take is the unexpected recent passing of Jim Hale. He had just relocated back to Wisconsin, when after almost a week I get a call from his son Scott, that Jim had passed. I hate to be the bearer of bad news, but many of you knew Jim, and Sharon, very well. They were both great people, and we will miss them. Rest in peace, dear friends. We'll miss you.

Our last meeting was a bit different, with participating members hunting through fossil matrix for micro fossils! Most seemed to have fun, and everyone found some. We want to thank the O'Tooles for bringing the refreshments!

This month will feature a speaker, Bob Fukua. Look further into the newsletter and read all about it.

Our annual fossil collecting trip to the Phosphate mines is scheduled for October 15th. Signups have been at the last 3 meetings. The trip is now full. If you want to add your name as an alternate, talk to Al Govin at the next meeting. Al has been handling all the details and regulations required by Mosaic .

The Fossil Club of Lee County will hold its 13th annual fossil festival on February 18, 2017. Like last year, it will be held at the world famous Shell Factory, in Ft Myers, Florida! It will be a one day, Saturday event, from 9am to 5pm. We start the planning early, as there is lots to do, and we will speak about the festival at every meeting from here on out.

This festival will be handled by two organizers, both respected, knowledgeable members of the FCOLC. They are Michael Cox and Jim Manderfield. Announcements have been sent out to potential dealers for solicitation as vendors at our show. As of this writhing we have already got a couple of commitments. Last year's festival was very busy and the Shell Factory wants us to expand it. Any member who would like to set up as a dealer, please let either of the directors know, or Louis, or Al Govin. Dealer tables are at a slight discount for active club members. It's a fun day for members who volunteer, so get ready! We will need everyone to help!

A sign-up sheet will be available at the September meeting for volunteers at the October 1st celebration of National Fossil Day. Located at the South Florida Museum, in Bradenton, Florida, 10am to 4 pm, and the club will have a table. This needs to be manned throughout the day. It's a fun, easy day, and by helping the club you get free admittance to the museum. It's a great museum and it's a always a nice fossil celebration! Consider participating and sign up at the meeting. You get

Continued from page 1

to see lots of great fossils and meet a lot of folks who enjoy this hobby as much as you do! Check out the flyer at the back of this newsletter.

You will notice that there are no pictures of fossil finds of the month, in this newsletter. The reason is because no one sent me any! We all want to see your fossils, and this is a great venue to show them. Please send me some pictures and a short write-up about them for next month's newsletter. cape187@earthlink.net

Anyone interested in writing a regular column in this monthly newsletter, let me know. It's a club newsletter, so we want club members involvement!

We also request that you bring in any show and tell fossils to each and every meeting! This is a nice way to share knowledge with other members. We all learn from each other.

I want to do a shout-out to a pair of very special members. These guys have taken an active role since joining. Presently they are both FCOLC directors and also do a terrific job running the club store. It's better than it's ever been in over two decades. I want to publicly thank Dave and Jeanne Seehaver for all their hard work and dedication to the club. Thank you guys! We're all glad you are a part of our club!

I hope to see many of you at the next meeting! Please try to make it. Our club is strong because of great members like you!

Louis Stieffel
President
Fossil Club of Lee County

Eleanor Elizabeth shared The FOSSIL Project's post.

The FOSSIL Project is offering a great opportunity: We will pay the registration fees for TEN fossil club members to attend the Geological Society of America national meeting in Denver, CO, scheduled for Sept 25-28, plus the fee for a cool pre-meeting short course we are hosting the afternoon of Sept 23! Contact me, Eleanor Gardner, at fossil@flmnh.ufl.edu to apply!

Minutes FCOLC Meeting 8/18/16

Meeting called to order by Louis Stieffel

Members present --36

Discussed upcoming Orlando show date change

Discussed National Fossil day of October 5th, 2016

Tom Granatai to have a personal fossil show at his home in Venice, FL September 23/24.

He has moved to Country Club Estates on Venice island.

Address 673 North Green Circle, Country Club Estates, Venice Island

phone: home 941 484-1533, cell: 941 483-0902 Please RSVP

FCOLC annual fossil show February 18. Co chairman Mike Cox, Jim Manderfield.

Victoria & Gary O'Toole thanked for doing refreshments.

Refreshments for September Valerie Rahn & Louis Kiesling

Refreshments for October Jeanne & David Seehaver

Al Govin discussed Mosaic trip requirements needed for attendees

Al Govin discussed overall fossil hunting and lack of access & trips.

Louis Stieffel discussed newsletter

Door prizes drawing took place

snack break held

Micro fossil hunt was held Members searched for micro fossils from matrix supplied by the club.

Show-n-tell held

Dollar auction held

Minutes by Secretary/Treasurer Al Govin

OFFICERS

Louis Stieffel, President
239-851-7499, cape187@earthlink.net
Michael Siciliano, Vice President
239-980-1406
Al Govin, Secretary, Treasurer
239-910-2339

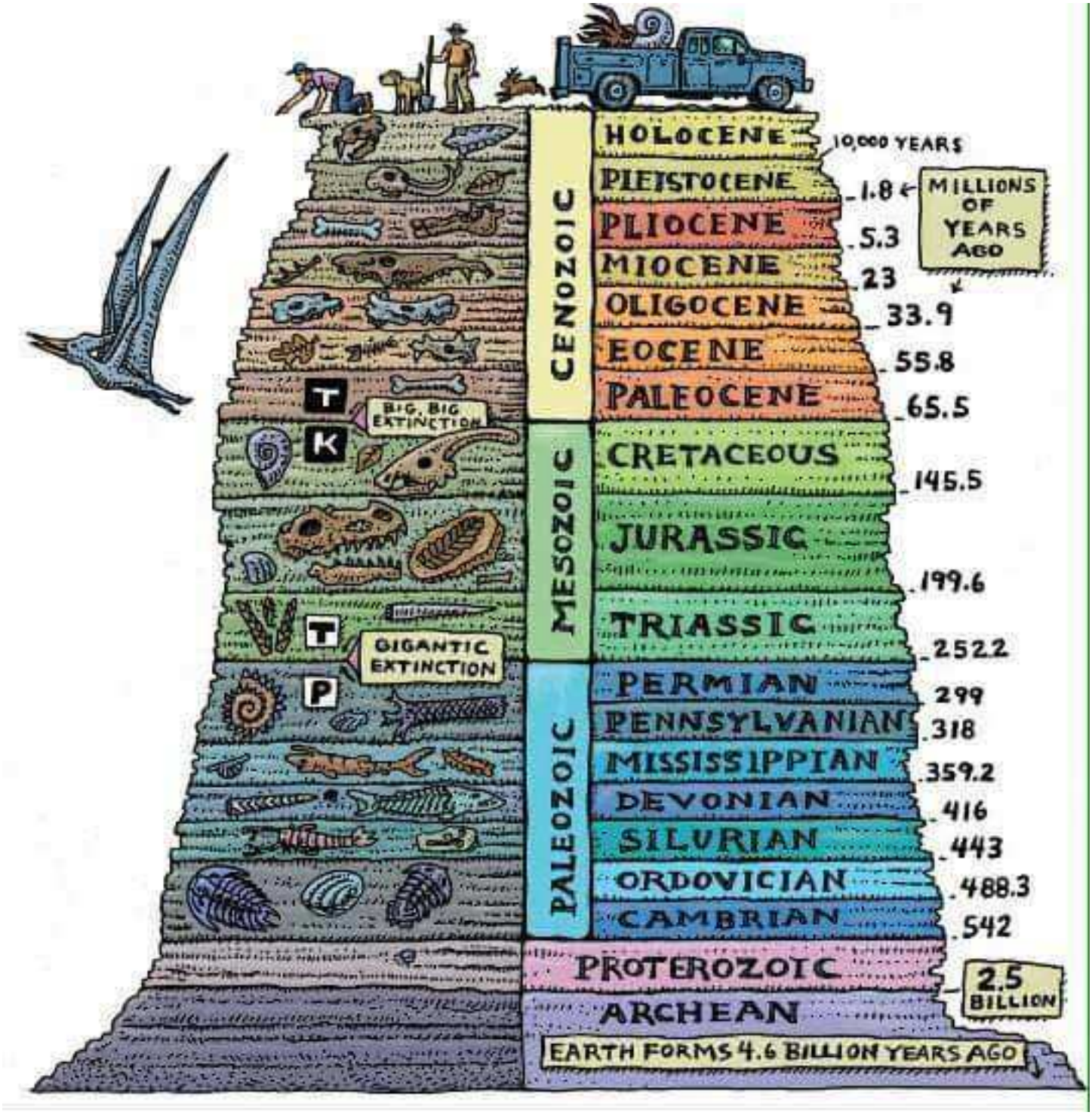
DIRECTORS

Dean Hart……941-979-8217
Dave Seehaver
Jeanne Seehaver
Jim Manderfield
Dr. John Taraska
Leslie Stieffel

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.


HOLOCENE
10,000 YEARS
PLEISTOCENE
1.8
MILLIONS OF YEARS AGO
PLIOCENE
5.3
MIOCENE
23
OLIGOCENE
33.9
EOCENE
55.8
PALEOCENE
65.5
CENOZOIC
T
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BIG, BIG EXTINCTION
CRETACEOUS
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JURASSIC
199.6
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PENNSYLVANIAN
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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

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

SEPTEMBER FCOLC MEETING SPEAKER

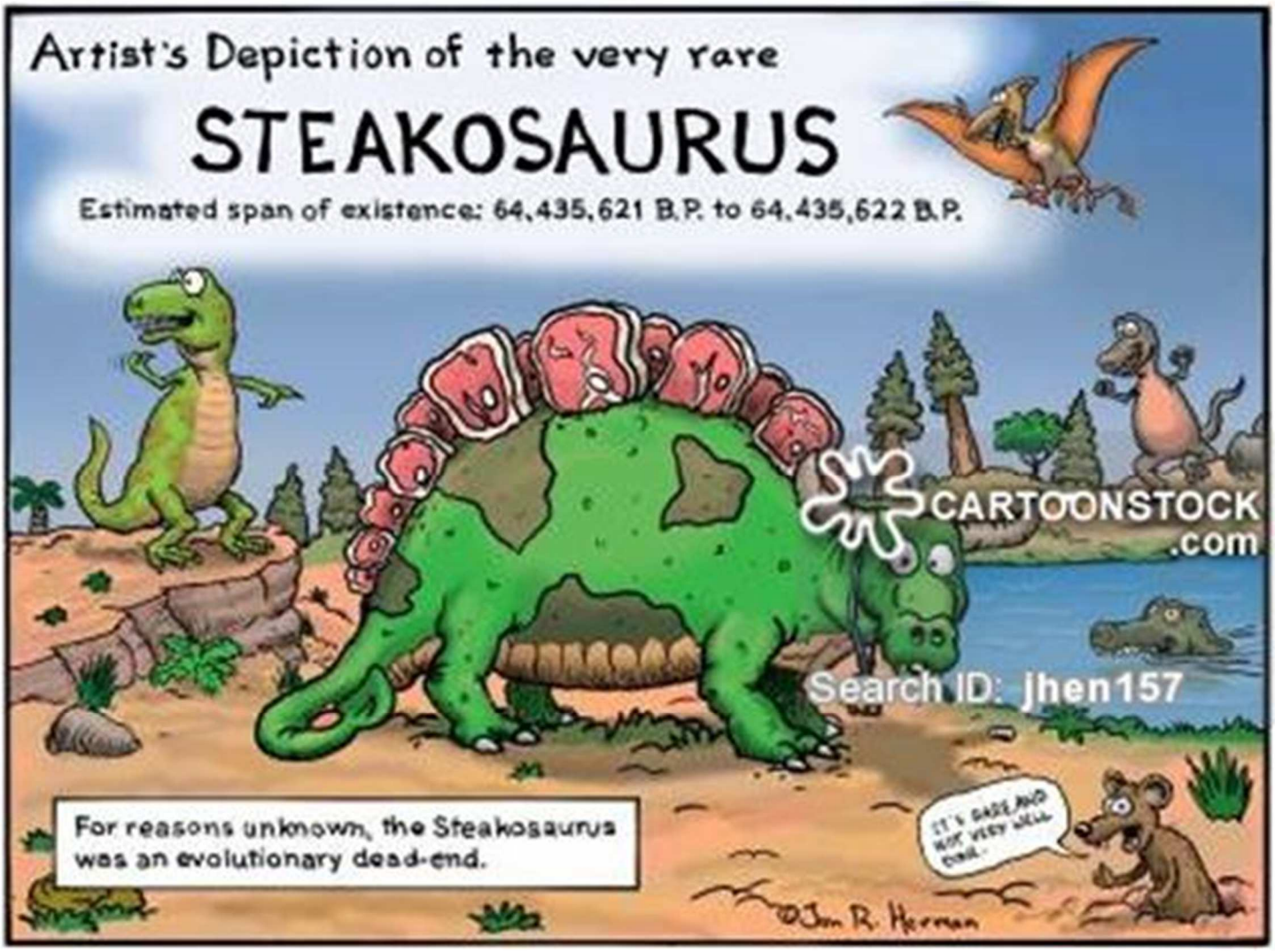
The title of this talk will be: *Geology And Fossils, Presented by Bob Fuqua*

The talk will explore the changing geology of the earth over time and its impact on life - and the associated fossils.

Bob Fuqua was born in Kansas in October 1949. He was fascinated by dinosaurs and fossils and found his first fossil shark tooth in the chalk bluffs of western Kansas when he was a young boy. He was also a big fan of the old Sea Hunt television show and knew that it was only a matter of time until he became a SCUBA diver. Fossils and diving - no wonder he ended up in Venice!

He graduated from Kansas State University in 1971 with a degree in Mechanical Engineering and then served in the U.S. Air Force for four years doing intelligence work. That led to a civilian career in intelligence. Bob retired in 2002 after 30+ years. Noting the lack of a good Venice oriented fossil book, he wrote one, *Hunting Fossil Shark Teeth In Venice, Florida*, in 2011. His other interests include astronomy, bicycle riding, stand-up paddle boarding, mini reef aquariums and restoring an old British sports car.

Bob



Aimeee's Corner!!

The Peace River is a fossil mecca but during the rainy months of summer, if you want to keep hunting for ancient treasures, you will need to branch out into other fossiling realms. Club member, Pam Plummer, and I have made a couple of fossil coral trips to the Withlacoochee River near Valdosta, Georgia. It's about a 5 hour drive from Cape Coral and within easy access of several inexpensive motels along I-75 so it makes for a perfect weekend fossil hunting trip. I like to seek out fossils that are relatively easy to collect because I, like most people, have limits on my time and finances. Florida and Georgia fossil coral, associated with upper Oligocene to lower Miocene shallow marine limestones, fits the bill and the Withlacoochee River provides great access to this interesting material. Surprisingly, there doesn't seem to be any other fossil material in this area but that allows you to focus on the coral hunt.

We've never strayed farther than 1.5 miles from the boat ramp in either direction and always come home with at least a few beautiful additions to our collections. This coral exposure, like most other easy-access fossil locations, has been hunted heavily for years and while the huge botryoidal coral heads are long gone, the river is still full of smaller botryoidal and druzy geodes that were broken off of the larger specimens and left behind.

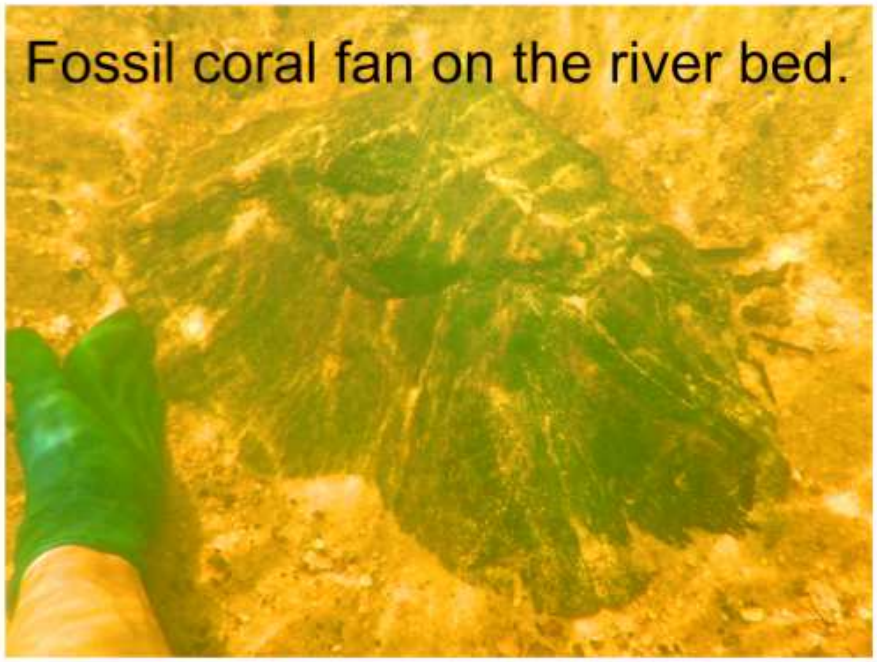
It does take some work and a little bit of muscle because the promising coral chunks need to be broken open to see what's inside. A sturdy rock hammer will do the trick. Once in awhile, you'll be lucky enough to lift a piece of coral out of the river and see water drain out of the hollow geode interior. We've used masks and snorkels but they aren't necessary. When the river is low, you can wade for coral and there are also areas where you can sift through chunks on dry land.

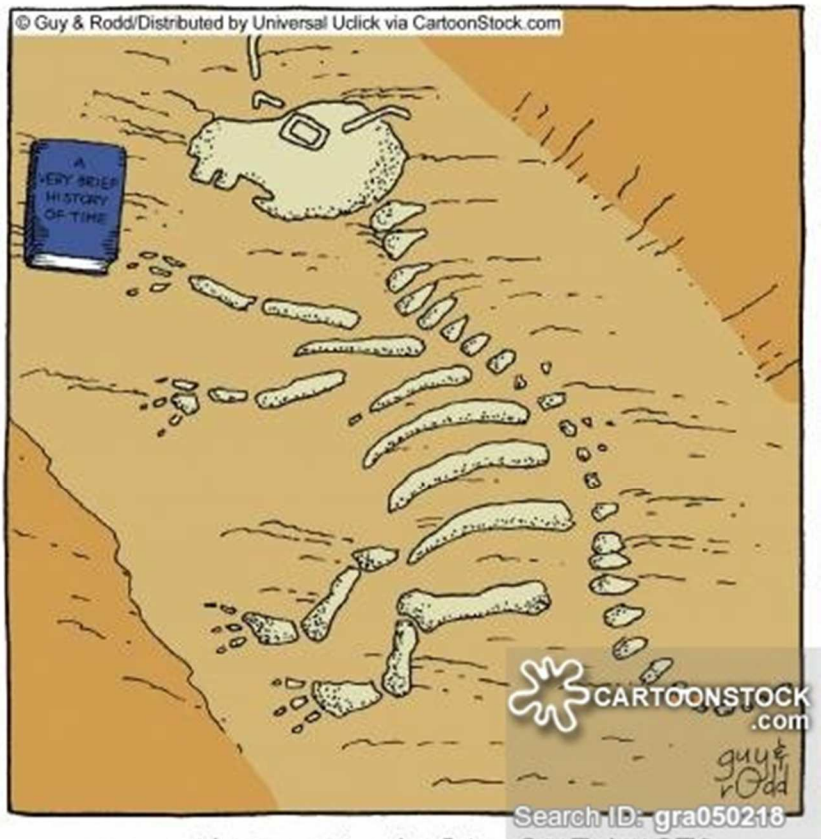
You'll want to prep your coral once you get it home and this may require some trial and error. Geodes that were never exposed to the river water are in pristine condition but most of the available botryoidal is fairly gunky. My boyfriend, Tom, has had good results by bleaching the pieces overnight to remove the moss and algae on the surface, then using Limeaway and elbow grease to reduce the mineral deposits on the botryoidal. He finishes the coral with a light coat of polyurethane to bring out the color and shine of the agate. Purists may shrink at the thought of using polyurethane but it can easily be removed with acetone.

Email me at miatria@hotmail.com and let me know how you satisfy your summer fossil cravings.

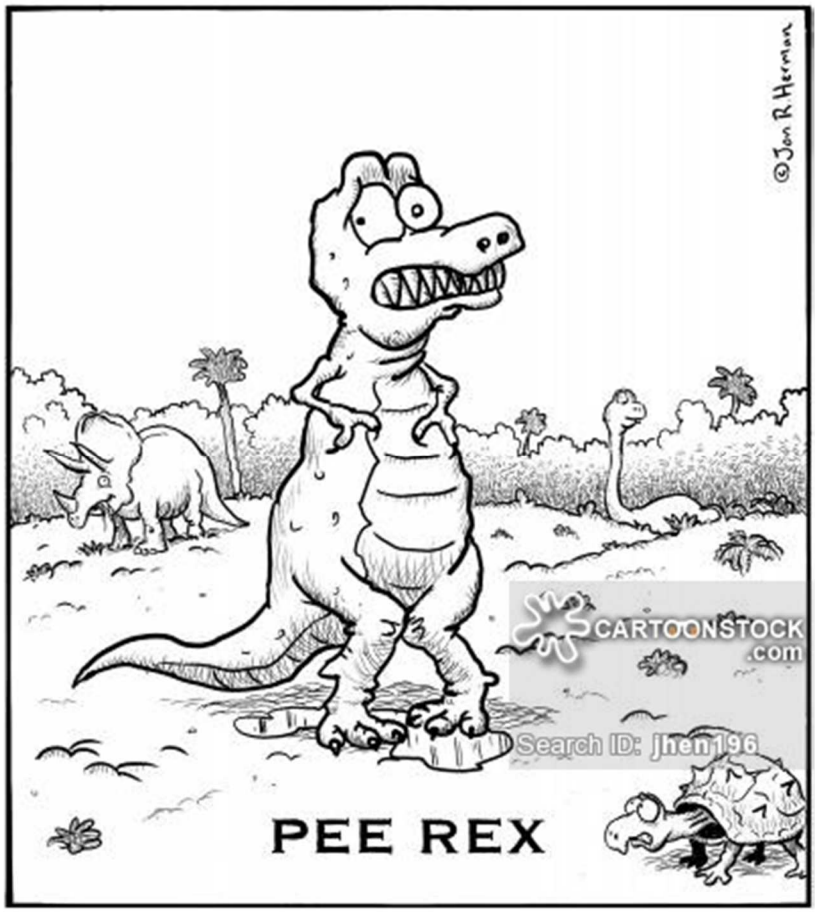
Aimeee's Corner!!

Aimeee's Corner!!





ON A HOT DAY IN 1941, SCIENTISTS UNCOVERED THE ONLY KNOWN REMAINS OF THE ELUSIVE NERDOSAURUS REX.



FOSSIL PROJECT NEWS!!

Hello, everybody!
As announced on FOSSIL Project social media accounts, we are excited to begin a free webinar series on the fundamentals of fossils. Our first webinar is this coming Wednesday, August 31, from 7-8pm Eastern. The speaker will be Mr. Jayson Kowinsky, a high school physics teacher from Pittsburgh, PA, who also happens to be an incredible amateur paleontologist and owner/operator at www.fossilguy.com. The title of his talk is "Fossil Collecting: Where, How, & When to Find Fossils."

In partnership with the Paleontological Society and with technical support from iDigBio, the FOSSIL Project is thrilled to be hosting a four-part webinar series throughout Fall 2016 (for future dates and speakers, see flyer inserted below & attached). All are welcome to attend these free webinars. Just connect at http://idigbio.adobeconnect.com/fossil-webinars/. Connect time will begin at 6:45pm ET, allowing for 15 minutes to address any technical problems. If you are unfamiliar with AdobeConnect online conferencing software, don't worry! All you need is an internet connection and the webinar link above. There is no sign-up or installation. (Unless you wish to use a mobile device – then you will have to download the AdobeConnect app for either Android or iPhone/iPad.) And here is a helpful "quick start guide" for connecting!

Please note that Continuing Education Units from the University of Florida are available for educators who attend all 4 webinars. To get CEUs, please register through the UF Conference Department at http://reg.conferences.dce.ufl.edu/SSP/1400056716.

Also, if you haven't yet, please consider joining the myFOSSIL community website at http://community.myfossil.org. As a member of myFOSSIL, you can view the recorded webinars at a later time, engage with other members in the dedicated webinar forum, and – best of all – receive a certificate of completion for attending all 4 webinars.

Fossil club/society officers, please feel free to forward this email to your members or include this info in your newsletters and bulletins.

Please contact me, Eleanor Gardner, at fossil@flmnh.ufl.edu with any questions or concerns.

Best,
Eleanor

Eleanor E. Gardner, M.S.
FOSSIL Project Coordinator
Florida Museum of Natural History
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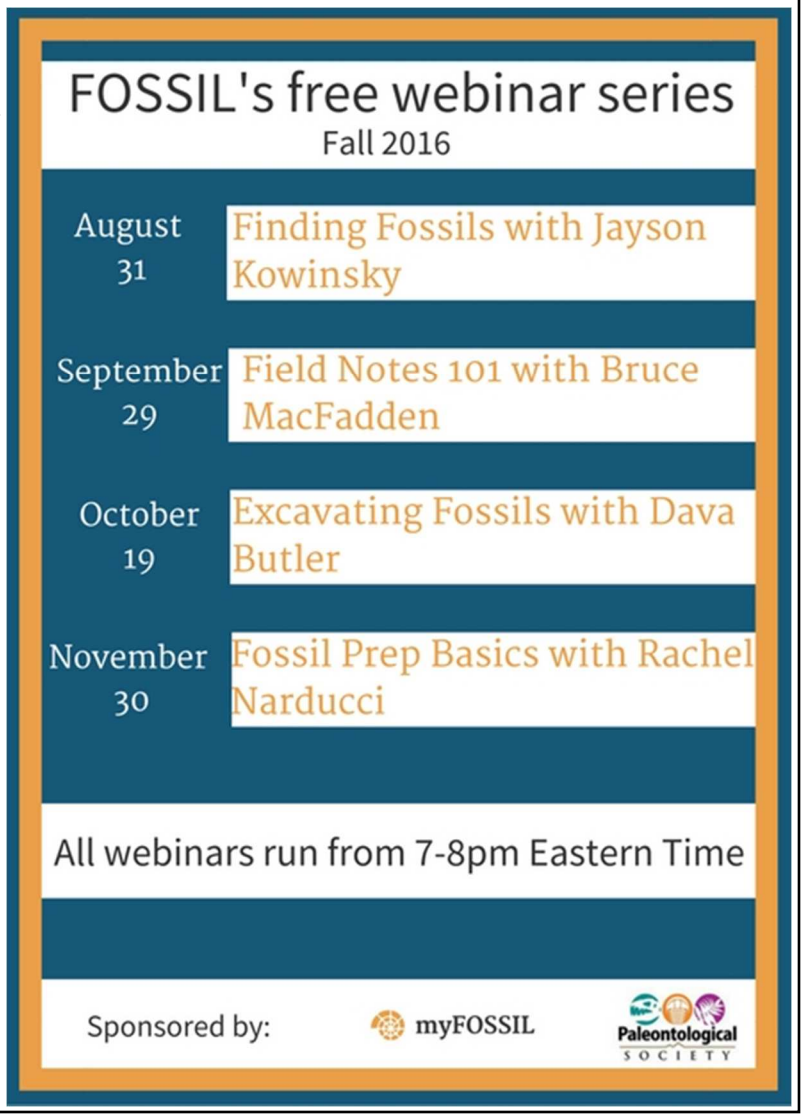
Email: egardner@flmnh.ufl.edu | fossil@flmnh.ufl.edu
Website: community.myfossil.org



Greatest Mysteries: What Drives Evolution?

By Jeanna Bryner, Live Science Managing Editor | August 15, 2007 09:24pm ET

Editor's Note: *We asked several scientists from various fields what they thought were the greatest mysteries today, and then we added a few that were on our minds, too. This article is one of 15 in LiveScience's "Greatest Mysteries" series running each weekday.*

From bizarre butterfly spots to rainbow-colored lizards to adaptations that allow squirrels and even snakes to "fly," physical innovations in the natural world can be mind-boggling.

Natural selection is accepted by scientists as the main engine driving the array of organisms and their complex features. But is evolution via natural selection the only explanation for complex organisms?

"I think one of the greatest mysteries in biology at the moment is whether natural selection is the only process capable of generating organismal complexity," said Massimo Pigliucci of the Department of Ecology and Evolution at Stony Brook University in New York, "or whether there are other properties of matter that also come into play. I suspect the latter will turn out to be true."

Flexible genes

Some scientists are proposing additions to the list of evolutionary forces.

"Over the past decade or two, scientists have begun to suspect that there are other properties of complex systems (such as living organisms) that may help, together with natural selection, explain how things such as eyes, bacterial flagella, wings and turtle shells evolve," Pigliucci told *LiveScience*.

One idea is that organisms are equipped with the flexibility to change their physical or other features during development to accommodate environmental changes, a phenomenon called phenotypic plasticity.

The change typically doesn't show up in the genes. For instance, in social bees, both the workers and guards have the same genomes but different genes get activated to give them distinct behaviors and appearances. Environmental factors, such as temperature and embryonic diet, prompt genetic activity that ends up casting one bee a worker and the other a guard.

If beneficial, this flexibility could be passed on to offspring and so can lead to the evolution of new features in a species. "This plasticity is heritable, and natural selection can favor different kinds of plasticity, depending on the range of environmental conditions the organism encounters," Pigliucci said.

Made to order

Self-organization is another evolutionary force that some experts say whips up complex features or behaviors spontaneously in living and non-living matter, and these traits are passed on to offspring through the generations.

"A classic example outside of biology are hurricanes: These are not random air movements at all, but highly organized atmospheric structures that arise spontaneously given the appropriate environmental conditions," Pigliucci said. "There is increasing evidence that living organisms generate some of their complexity during development in an analogous manner."

A biological illustration of self-organization is protein-folding. A lengthy necklace of amino acids bends, twists and folds into a three-dimensional protein, whose shape determines the protein's function. A protein made up of just 100 amino acids could take on an endless number (billions upon billions) of shapes. While this shape-shifting takes on the order of seconds to minutes in nature, the fastest computers don't have the muscle yet to pull off the feat.

The mechanism that triggers the final form could be a chemical signal, for instance.

Novelties in nature

The environment also could drive changes in an animal's appearance or phenotype, a phenomenon that intrigues many biologists.

For instance, Sean Carroll, a molecular biologist at the University of Wisconsin-Madison, discovered butterflies in East Africa have different colorings depending on when they hatch. Those hatching during the wet season emerge with brightly colored eyespots while their dry-season relatives wear neutral cryptic coats.

Biology has a pretty good understanding of how animals develop from a fertilized egg to a fully formed organism.

"We just don't understand how … the environment and [the] genetic blueprint interact during development," said Theunis Piersma of the Center for Ecological and Evolutionary Studies at the University of Groningen in the Netherlands.

Piersma's research on shorebirds called red knots has revealed the birds can morph their phenotypes depending on their migration routes.

When brought into captivity and placed in colder temperature environments, the shorebirds' flight muscles and organs shrink to reduce heat loss. The birds pass on to offspring the capacity to make these changes.

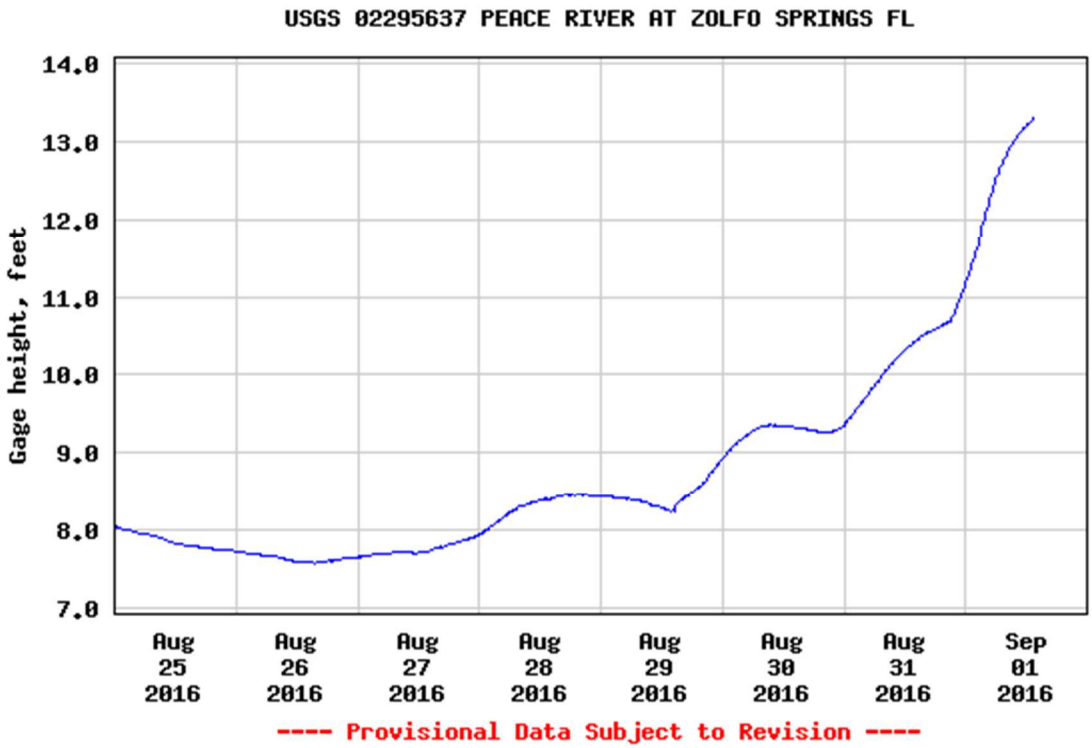
So the mystery is starting to clear around how diverse species with an array of features evolve. The field, which had relied in the past mostly on fossil records, got a boost with the development of genetic techniques and the integration of diverse sectors of science, connecting genetics, biology, ecology and computer science.

While scientists are shedding light on natural mechanisms that work to shape species, many questions in the field are brewing on the lab-bench. And the original question examined by Charles Darwin—what is the mechanism that causes new species to evolve—has yet to be fully explained. And another related question looms: How important are chance events, as opposed to natural selection, to shaping organisms?

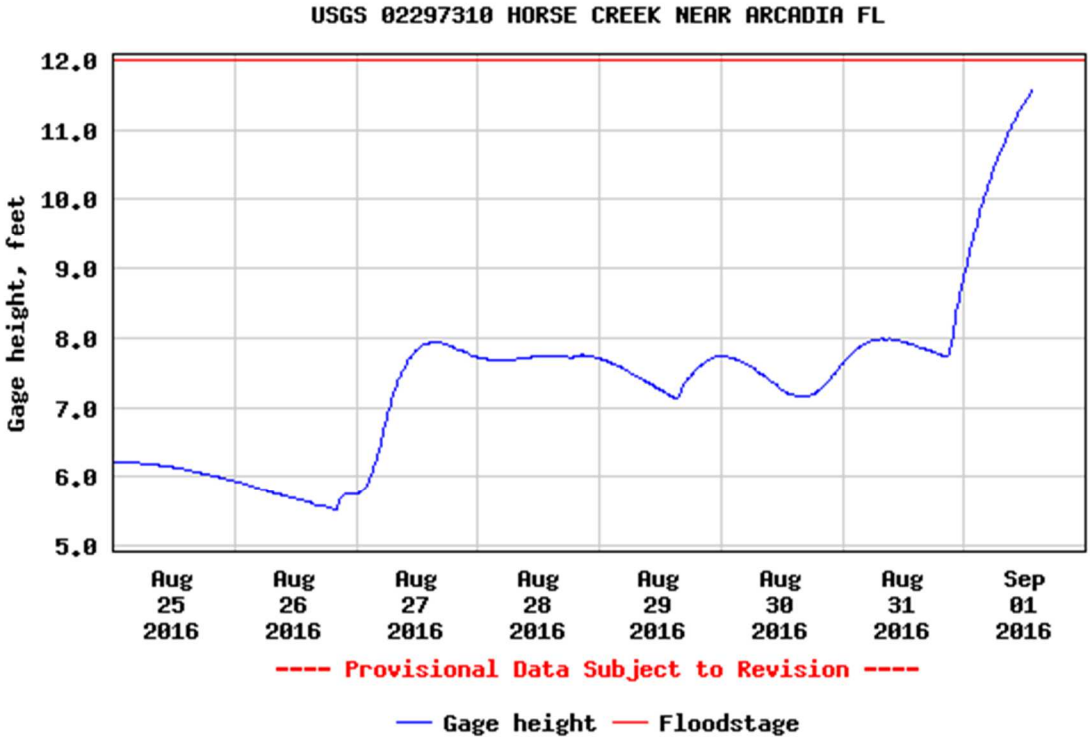
PEACE RIVER AND HORSE CREEK WATER LEVELS.

As you can see, it's still WAY too high. And, as I write this, the tropical storm is cutting across Florida, dumping even more rain. This happens every year, and we just have to wait it out! Fossil hunting is seasonal if you only hunt the rivers and creeks. But it's ok if you dive Venice or can find land sites. Good luck!!

Zolfo guage needs to be around 5 feet.



Horse creek gauge needs to be around 2 feet.



You never know WHAT you may run across at a fossil show!!

NO SWIMMING!! Is the sign even necessary??

I saw this article and it was very interesting, so I thought I'd share. I know, it's not fossils, but it's interesting.

Louis

Subject: Global warming

It's possibly the hottest "it's ever been" during the time that accurate records have been kept. Definitely the CO2 levels have spiked in the last hundred years, and the only likely cause is the man-made contributions. Even with the dramatic fluctuations in local climate the world climate overall gas been getting progressively warmer especially in recent years at an alarming rate (even the severe cold winter in the eastern US a year ago is related to the warming of the Arctic, causing a lower equator to pole temperature gradient that allowed the jet stream to make those amazing loops to bring cold air down in some areas while most of the earth, including Alaska, experienced record warm temps at the same time). Permafrost is melting in Alaska (I've seen the homes sinking...), and almost all of the glaciers in the world have been retreating at an alarming rate (and those that are advancing or even surging are only doing so because the increased meltwater upglacier is getting down and lubricating the bottom so the ice can slide forward). True, the last major interglacial (the one before the Wisconsinan advance) was warmer than today - there were crocs in Great Britain, sea level was higher by several meters (the Florida Keys were active submerged reefs), etc...but the temperature increase back then as the previous ice sheet melted was gradual, not rapid. Back during the Cretaceous the best climate models show that the Earth was ice-free (dinos roamed around on the southpole), but the warmer climate again was due to natural, slow-acting causes. Gradual buildup of carbon dioxide and other greenhouse gases (including water vapor) released by increased volcanic activity in subduction zones (seafloor spreading was much faster then, causing ridges to be elevated and global sea level to rise as a result by more than 300 meters) - estimates are that carbon dioxide may have been several times what the current levels are in today's atmosphere. The big difference between then and today is that with our input, carbon dioxide levels have been rising many, many times faster than could and did occur naturally, and as a result the changes can and probably will be catastrophic once certain thresholds are reached. Things like major swings in climate, extreme cold winters in some areas (due to that reduced temp gradient with a warming Arctic), etc will become commonplace.

We can learn a lot from the past geologic history. The biggest mass extinction of all time (the end of the Permian Period, when more than 90 percent of the world's species died off, as well as many families, orders, and even classes) has been directly linked to global climate change brought about by volcanic release of greenhouse gases (carbon dioxide, water vapor, and methane - from magma passing through coal fields - these gases built up gradually, but eventually caused such a heating and drying out of climate that land life was severely affected, and also the sea life was hit hard due to buildup of poisonous gases in the oceans, ocean acidification due to carbon dioxide buildup, etc (all coral even became totally extinct - the modern corals were derived from surviving sea anemones millions of years later). No need for any extraterrestrial cause. This extinction was amazing because the buildup of gases was gradual, yet look at what effect it had on life (the extinction wasn't overnight, but took about a million years). Imagine the effect we can have if the buildup of carbon dioxide continues at the rate it's happening now (many times faster - a couple hundred years rather than hundreds of thousands of years).

BTW - there's even growing evidence that the big mass extinction at the end of the Cretaceous (when the non-avian dinosaurs died off) was caused not by an extraterrestrial impact (larger impact events earlier in geologic time didn't cause extinctions), but by major outpourings of volcanic gases when India began to drift away from Africa to begin its journey northward toward Asia.

Part of the service we try to provide to members is announcements of any fossil shows/presentations we find out about. I received this notice from Tom Granata, who lives in Venice, and has been a past fcolc meeting speaker and also a festival vendor. He will be conducting a mini-fossil show at his home.

Subject: home mineral/fossil show

Hi all,
Tom Granata here in Venice.
I will be returning from Colorado and South Dakota on September 20.
The show will be on Friday Sept 23, and Saturday Sept 24, 8 to 4.
I would like to invite you to see the minerals and fossils from this trip before
I start my fall show season.
I have moved to Country Club Estates on Venice island.
My address is: 673 North Green Circle
Phone: Home: 941.484.1533
Cell: 941.483.0902

Please RSVP by phone or e-mail.
Looking forward to seeing you.
Tom G.

ORLANDO FOSSIL FAIR

Due to a conflict at the fairgrounds, the dates for the Orlando Fossil Fair will be changed from October 15-16. The new dates are Nov. 5th & 6th at the Central Florida Fairgrounds.

Central Florida Mineral and Gem Society, a non-profit educational organization, is hosting a Rock, Mineral, Gem, Jewelry & Fossil Show on October 7th, 8th and 9th, 2016 at Florida National Guard Armory, 2809 South Fern Creek Ave., Orlando, FL 32806. Show time: Fri. 1 pm to 6 pm, Sat. 10am to 6pm and Sun. 10am to 5pm. Vendors offering beads, minerals, gemstones, custom jewelry, fossils, artifacts, metaphysical stones, etc. Silent Auction and Door Prizes. Demonstrations: beading, cabochons and wire wrapping. Family Activities. Contact:phayes3@cfl.rr.com. Admission: Adults $5, Students $2, Uniformed Scouts Free. Website: www.cfmgs.org.

If you have any questions, please e-mail or call me at 407-816-1229. Thank you.

Betty Sumner, Secretary
Central Florida Mineral & Gem Society, Inc.

New Pterosaur Species with Intact Skull Uncovered in Patagonia

By Stephanie Pappas, Live Science Contributor | August 30, 2016 12:12pm ET

A paleoartist's reconstruction of a new species of pterosaur, *Allkaruen koi*.

Credit: Gabriel Lío

A new species of pterosaur named for its "ancient brain" has been found in Patagonia.

The flying reptile lived in the early Jurassic period, between about 199.6 million years ago and 175.6 million years ago. Paleontologists found the new fossil in north central Chubut province in Argentina. To their delight, the fossil included an intact braincase, offering them a new look at pterosaur neuroanatomy.

The researchers named the new species *Allkaruen koi*. *All* means "brain," and *karuen* means "ancient," in Tehuelche, a language indigenous to Patagonia. [Photos of Pterosaurs: Flight in the Age of Dinosaurs]

"Allkaruen, from the middle lower Jurassic limit, shows an intermediate state in the brain evolution of pterosaurs and their adaptations to the aerial environment," study researcher Diego Pol, a paleontologist at the Museo Paleontológico Egidio Feruglio in Argentina, said in a statement. "As a result, this research makes an important contribution to the understanding of the evolution of all of pterosaurs."

The new pterosaur was found in a bone bed that contains many pterosaur remains. Archaeologists uncovered a vertebra, jaws and a braincase. The braincase was only a few dozen millimeters long, indicating that it was from a small pterosaur species, the researchers said.

It's rare to find an intact pterosaur braincase, according to the researchers, and little has been known about the way pterosaur skulls (and thus brains) evolved over time. The researchers used computed-tomography scans to build digital models of the reptile's inner ear and the interior of its skull.

This technique, in turn, let the scientists put *Allkaruen* in its place in the pterosaur family tree. For instance, the researchers learned that some skull features associated with *Pterodactylus* — one genus of pterosaurs — had evolved by the early to middle Jurassic, even though pterodactyls themselves had not yet evolved.The research appears today (Aug. 30) in the open-access journal PeerJ.

Pterosaurs had a suite of adaptations that made them strong fliers. Their bones were feather-light, and they sported air sacs extending from their lungs to keep their body density down and their air exchange efficient, a 2009 study found. While some pterosaur species were tiny, others grew to be the size of giraffes. These behemoths may have used their limbs to leapfrog into flight, paleontologists say.

In 2015, researchers reported the discovery of a 200-million-year-old pterosaur in Utah that had a wingspan measuring 4.5 feet (1.4 meters) long, and 110 teeth, including four that were 1 inch (2.5 centimeters) long.

Original article on Live Science.

What If a Giant Asteroid Had Not Wiped Out the Dinosaurs?

By Adam Hadhazy | May 12, 2011 03:22pm ET

Life's Little Mysteries

During the new DC Comics Universe series "Flashpoint," in which a time-traveling supervillain alters the past to warp the present, Life's Little Mysteries presents a 10-part series that examines what would happen if a major event in the history of the universe had gone just slightly different.

Part 2: What if ... a giant asteroid had not killed off the dinosaurs?

Other factors were involved in dinosaurs' extinction, but the resounding death knell was the impact of a 6-mile-wide asteroid in present-day Mexico's Yucatan Peninsula 65 million years ago, creating what is known as the 110-mile-wide, 6-mile-deep Chicxulub crater. The event unleashed mega-tsunamis, planetwide wildfires and kicked up enough dust and debris to block the sun and cause a period of global cooling, which killed off many plants.

Life would be: Still dinosauric in all likelihood, assuming no other catastrophic, extinction-level events transpired. After all, dinos had a good long run of dominance on land for 160 million years prior, and if that continued, primates like us would not be around, said Damian Nance, a professor of geosciences at Ohio University. Mammals did co-evolve alongside dinosaurs, but they occupied fringe ecological niches and grew no larger than rodents in most cases.

Only with dinosaur plant-devourers gone would there be enough food for mammals to seize the day and eventually give rise to us (knocking out the predators that would eat mammals helped, too). Researchers have speculated that intelligent "dinosauroids" might have evolved in humanity's place, based on the relatively large brain size of late-emerging trodontid species, which were bird-like predators.

Of course, some of those dinosaurs that have survived into modern day — becoming birds — are quite smart, but not smart enough to have ended up on the other side of the insult "bird-brained."

T. Rex with Well-Preserved Skull Found in Montana's Hell Creek Formation

By Richard Farrell, Discovery News | August 19, 2016 07:55am ET

Paleontologists prepare to remove the T. rex skull from the dig site in northern Montana.

Credit: Dave DeMar / Burke Museum

There's a new *Tyrannosaurus rex* fossil on the block, with a cute nickname and about 20 percent of its former body intact, including a well-preserved skull.

The *T. rex* was found by paleontologists from Burke Museum and the University of Washington (UW) in Montana's famous dinosaur-fossil haven, the Hell Creek Formation. It has been dubbed the "Tufts-Love Rex," in honor of the volunteer paleontologists who first noticed bones jutting out of a hillside: Burke Museum's Jason Love and Luke Tufts.

The Burke and UW researchers say they were able to unearth roughly a fifth of the animal, including ribs, hips, jaw bones and vertebrae. (They'll search for more pieces of the iconic beast next summer.)

But the centerpiece of the find is the skull, which is about 4 feet long. So far, the scientists can see the right side of the skull -- from base to snout, including teeth -- and they think it's likely the left side, now trapped in rock, is intact too. (They'll begin the painstaking process of removing the remaining rock in October.)

The researchers estimate Tufts-Love lived about 66.3 million years ago, making its living toward the end of the Cretaceous Period, not geologically long before a mass extinction wiped out the dinosaurs. They also reckon, due to skull size, that the *T. rex* was 15 years old when it died, putting it about halfway through a typical *T. rex* lifespan.

The fearsome meat-eaters, with enormous jaws and razor-sharp teeth, were around 40 feet long and stood up to 20 feet tall. This find, the researchers say, would have been the height of a city bus at its hips and as long as one from head to tail-tip.

Tyrannosaurus rex fossils are uncommon finds, and even more so are well-preserved skulls. The UW and Burke team said their find marks just the 15th fairly complete skull in the world.

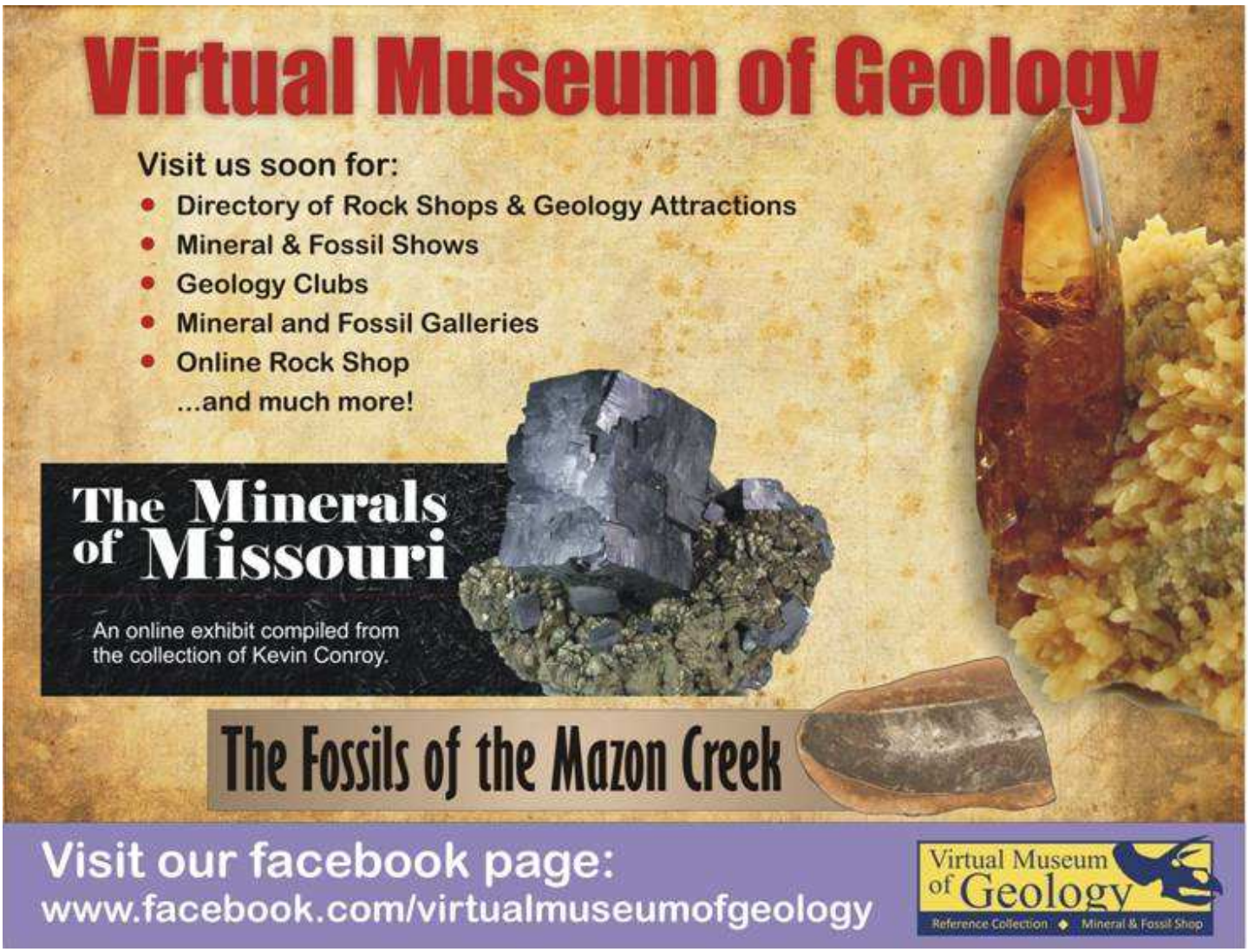
The skull is currently encased in a plaster jacket, the whole package weighing about 2,500 pounds. The plaster cover kept the Tufts-Love Rex intact during a move from its longtime home on a Montana hillside to its new digs at the Burke Museum in Seattle. (See video below for its arrival at the museum.) There it will go on display, still in the plaster casing, for a quick look by the public before going into long-term study by scientists beginning in October.

Just separating the skull from the rock that surrounds it could take more than a year, the researchers said.

"We think the Tufts-Love Rex is going to be an iconic specimen for the Burke Museum and the state of Washington and will be a must-see for dinosaur researchers as well," said research lead Gregory P. Wilson, a UW biology professor and Burke Museum curator, in a statement.

"Having seen the 'Tufts-Love Rex' during its excavation, I can attest to the fact that it is definitely one of the most significant specimens yet found, and because of its size, is sure to yield important information about the growth and possible eating habits of these magnificent animals," added Jack Horner, a Burke Museum researcher who founded the Hell Creek project Wilson now leads.

Original article on Discovery News.



www.virtualmuseumofgeology.com

Here is a link to a great article about an ancient fish and fierce predator:

Xiphactinus audax

http://oceansofkansas.com/xiphac.html

The link to the FOSSIL PROJECT NEWSLETTER

http://www.myfossil.org/wp-content/uploads/2016/07/FOSSIL-Project-Newsletter-July-2016-pdf.pdf

2016 FOSSIL FAIR

Florida Fossil Hunters

Twenty-fourth Annual

Fossils, Rocks, Gems & Minerals

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9:00am - 5:00pm
Sunday, November 6, 2016
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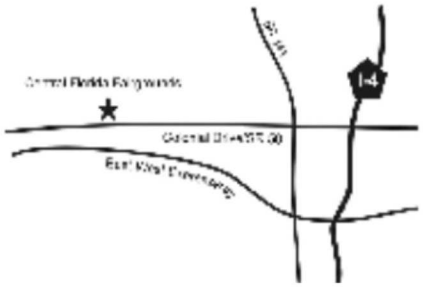
The fairgrounds will be on the right side, just past Mercy Drive.



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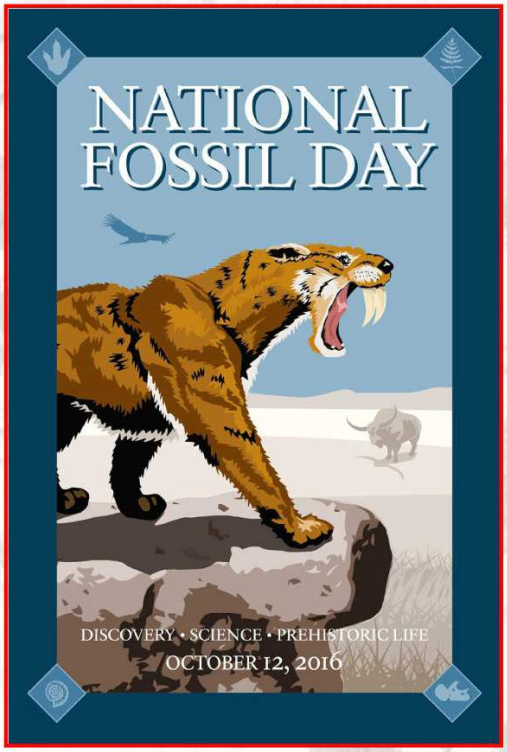
Mark Your Calendar!

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.
Fossil Clubs and Vendor Displays 10 a.m. to 4 p.m. Special 1/2 price admission to museum all day! $9 adults, $8 Seniors 65+, $7 children, kids under 3 FREE. Fossil Display Tables & and a Free Kids Dig Pit Sponsored by Mosaic.

Activities: Fossil Displays, Fossil Giveaways, Fossil Vendors, Kids Fossil Dig Pit, Speakers, Florida Paleo Authors & Book Signing, Junior Paleontologist Badge Program presented by the De Soto National Memorial Park Rangers, Special exhibit from the American Museum of Natural History: "*Dinosaur Discoveries: Ancient Fossils, New Ideas*". Special Screening of *Sea Monsters: A Prehistoric Adventure* in the Bishop Planetarium, Meteorite Display, Stone Knapping Demonstrations, and so much more!

Updates at: *NFD.FLGEO.COM*

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