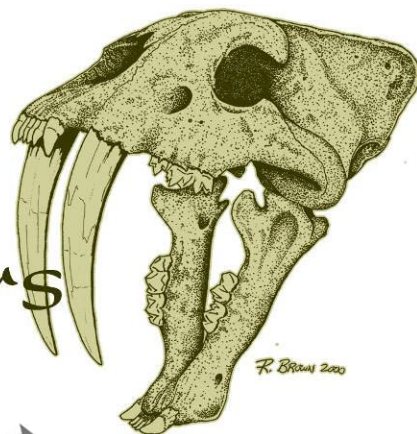


NEWS

Florida Fossil Hunters

Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters
Volume 30, Number 5

NOV/DEC 2020



From Ye Olde President.....

Hi to all FFH members and hope all is well.

FFH October show was a great success. Show attendance was good with over 700 adults and 150 kids. Dealers were happy and I want to thank all FFH members for volunteering for the show. All guest and volunteers follow all requirements for social distancing and wearing masks. FFH will schedule another show in October 2021 at the Sanford Civic Center.

FFH next meeting is at the OSC on Saturday November 14th at 3:00pm. Guest speaker will be Valerie and topic of discussion will be about Evolution of Man.

FFH Annual Christmas party will be held at Dave Dunaway's house on Saturday night December 12 at 5pm to 9pm. Dave address is 600 Fern Drive Longwood, FL 32779. FFH will supply Bake Ham and Condiments and drinks. We asked all members attending to bring a covered dish or desert. We will have FFH Annual Christmas Fossil Bucks auction at Dave's house. So don't forget to bring ur Fossil Bucks. Hope to see all FFH members at the Christmas party.

Salvatore Sansone
FFH President

November Mtg
Page 2

2021 Officer Elections
January Mtg, Pg 2

**Online 2021
Membership!**

Information on
new fees, Pg 2

Coming Events

UPCOMING MEETINGS at the Orlando Science Center

FFH meeting at OSC
Saturday, November 14th
2 pm - Kids' program
3 pm - Meeting

Save the Date 2021 Fossil Fair
Sat., Oct. 16, 9 am - 5 pm
Sun., Oct. 17, 10am - 4 pm
Sanford Civic Center

More events listed on back page
For more info...
www.floridafossilhunters.com

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Florida Fossil Hunters News

MEETINGS

Next Meeting scheduled for:

Sat. November 14th 2 pm – 5 pm

Orlando Science Center

777 E. Princeton St., Orlando, FL 32803

Guest speaker will be Valerie and topic of discussion will be about Evolution of Man

Please check floridafossilhunters.com close to scheduled events to verify plans due to COVID-19, event status may change dependent on facility closings.

Meetings are held at the Orlando Science Center. Admission and parking is FREE for those attending the meeting. Just let them know at the garage that you are there for the meeting, and they will let you in; same at the gate.

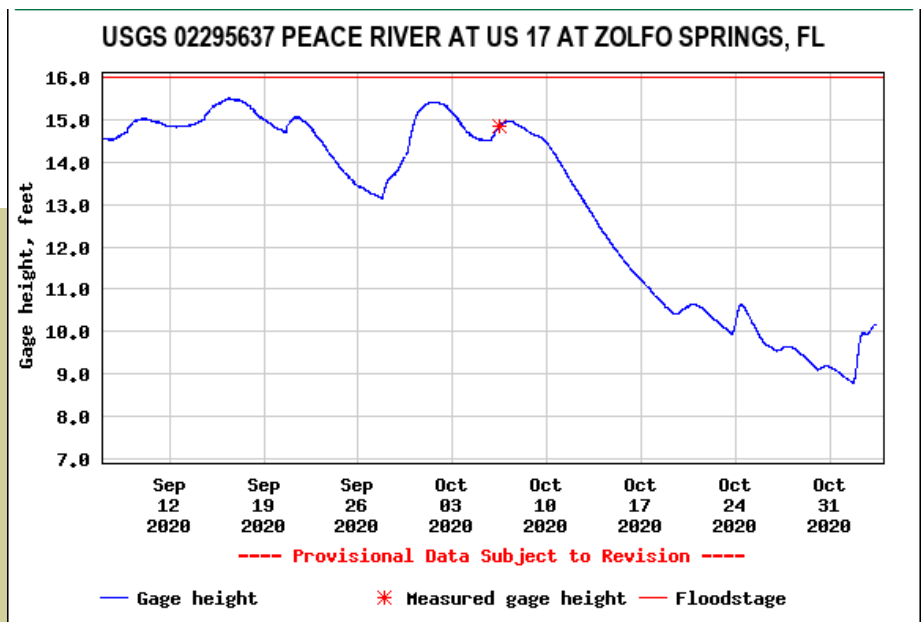
Kids' Fossil Blast

on Saturday, Nov 14th 2-3pm

Kids' Fossil Blast is an informal, hands-on experience aimed at kids ages 5 to 14.

Piece on the Peace

Water level from
September 7th to November 3rd



THANK YOU, VALERIE

FFH President wants to give Valerie FFH show chairman a special Thank You. Valerie's hard work and dedication made the FFH show the best in central Florida.

REGISTER/RENEW

Membership prices have changed.

- Family memberships cost \$25
- Individual membership will cost \$20

<https://floridafossilhunters.com/membership>

2021 ELECTIONS

All officers positions will be available for any FFH members for 2021. Check out the officer list on page 7 for more information. Voting will be held at the January meeting. Waiting for confirmation from OSC for January 16th. Check floridafossilhunters.org for confirmation of dates.

Would you like more information?

Email us at info@floridafossilhunters.com

Florida Fossil Hunters News

215-Million-Year-Old Fossil from Greenland Sheds Light on Origin of Mammals

October 19, 2020

A new genus and species of mammaliaform that lived during the Triassic period has been identified from a partial jaw with teeth found on the eastern coast of Greenland. It represents the earliest known example of a dentary bone with double molariform roots and a crown with two rows of cusps, and offers insight into mammal tooth evolution, particularly the development of double-rooted teeth.

The newly-discovered mammaliaform species was a shrew-like animal about the size of a large mouse, probably covered with fur.

Kalaallitkigun jenkinsi, lived Late Triassic epoch, around 215 Mil yrs ago.

Its partial left dentary, with two teeth still preserved in their respective alveoli, was found at the Liasryggen site located on the left bank of the Carlsberg Fjord, Jameson Land, East Greenland.

"I knew it was important from the moment I took this 2 cm (0.8 inches) specimen off the ground," said Dr. Grzegorz Niedzwiedzki, a paleontologist in the Department of Organismal Biology in the Evolutionary Biology Centre at Uppsala University.

Kalaallitkigun jenkinsi exhibits the earliest known dentary with two rows of cusps on molars and double-rooted teeth.

These anatomical features place it as an intermediate between the mammals and the insectivorous morganucodontans, another type of mammaliaform.

"The structural changes in the teeth are related to changed feeding habits," the researchers said.

"The animals were switching to a more omnivorous/herbivorous diet and the tooth crown was expanding laterally."

"Broader teeth with 'basins' on the top surface are better for grinding food. This development also forced changes in the structure of the base of the tooth."

"Our discovery of the oldest mammalian ancestor with double-rooted molars shows how important the role of teeth was in the origin of mammals," said Dr. Tomasz Sulej, a researcher in the Institute of Paleobiology at the Polish Academy of Sciences.

"I had this idea to look at the biomechanics and the collaboration with the engineers turned out great."

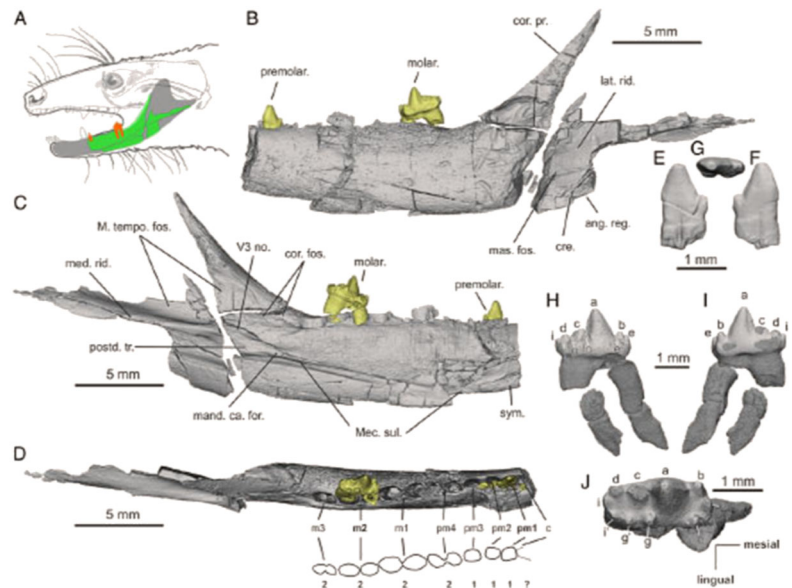
"It seems that the fossils of close mammalian ancestors must be looked for in even older rocks."

The discovery is reported in a paper in the *Proceedings of the National Academy of Sciences*.

Tomasz Sulej et al. The earliest-known mammaliaform fossil from Greenland sheds light on origin of mammals. PNAS, published online 10-12-20; doi: 10.1073/pnas.2012437117 <http://www.sci-news.com/paleontology/kalaallitkigun-jenkinsi-08962.html>



An artist's impression of *Kalaallitkigun jenkinsi*. Image credit: Marta Szubert.



Digital rendering of the holotype left dentary of *Kalaallitkigun jenkinsi* from the mid-to-late Norian of the Fleming Fjord Formation, East Greenland: (A) the life position of the preserved part of the dentary; (B-D) the dentary in labial (B), lingual (C), and occlusal (D) views; (E-G) the only preserved premolariform in labial (E), lingual (F), and occlusal (G) views; (H-J) the only preserved molariform (m2) in lingual (H), labial (I), and occlusal (J) views. M1-3 mark the position of molariforms (2 is double rooted); pm1-4 mark the position of the premolariforms (1 is single, 2 is double rooted); c marks the position of the canine; (A, G, and B) 1-b4 indicate cusp assignments in the molariform. Abbreviations: ang. reg. -angular region, cre. -crest, premolar. -premolariform, molar. -molariform, cor. pr. -coronoid process, cor. fos. -coronoid fossa, M. tempo. fos. -M. temporalis fossa, V3 no. -V3 notch for the mandibular nerve entering the mandibular canal, Mec. sul. -Meckel's sulcus, mand. ca. for. -mandibular canal foramen, mas. fos. -masseteric fossa, lat. rid. -lateral ridge, postd. tr. -postdentary trough, med. rid. -medial ridge, and sym. -symphysis. Image credit: Sulej et al., doi: 10.1073/

Florida Fossil Hunters News

Fossilized teeth reveal first mammals were far from warm blooded

October 13, 2020 8.29am EDT

Warm blood is one of the key traits that led to the success of mammals as they evolved from scurrying beneath the feet of dinosaurs to spreading into the wild and wonderful collection of animals we know today. But our new research, which involved X-ray scanning hundreds of fossilized teeth, suggests the first mammals were more like cold blooded reptiles, and that warm blood evolved much later.

Warm blood helps us maintain our body temperature regardless of our environment, allowing us to gather food at night and in cold climates, and helps us stay active for longer than our cold blooded relatives. However, exactly when, why, and how this evolved is still poorly understood.

We know from tiny fossils of bones and teeth that mammals first evolved over 200 million years ago, and had many of the traits we associate with mammals, such as specialized chewing teeth and bigger brains. But the physiologies (how an animal's body works day-to-day) of these animals is difficult to estimate using traditional methods, as this relates to soft organs that aren't usually fossilized.

Our new research, published in Nature Communications, now offers a glimpse into the physiologies of the first mammals, by pioneering X-ray imaging to count growth rings in their teeth and measure blood flow through their bones. Although it had previously been assumed that even the earliest mammals were warm blooded, this research sug-

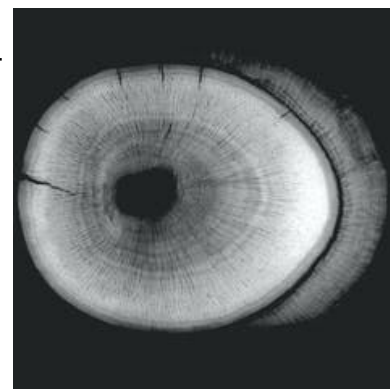
gests that they still had some way to go before developing warm blood and its benefits that we enjoy today.

Long lifespans and slow metabolism

Working with a 20-strong international team of scientists, we have estimated the lifespans of the earliest mammals for the first time. This was done by X-ray scanning hundreds of fossilized teeth found in south Wales of two tiny mammals, *Morganucodon* and *Kuehneotherium*, from the Early Jurassic epoch.

High-resolution scans performed at powerful "synchrotron" X-ray sources in Switzerland and France allowed us to count annual growth lines preserved in the fossilized cementum of these teeth. Cementum is the little-known tissue that anchors mammal tooth roots to the jaw, recording every year of an animal's life by growth lines that can be counted like tree rings to estimate lifespan.

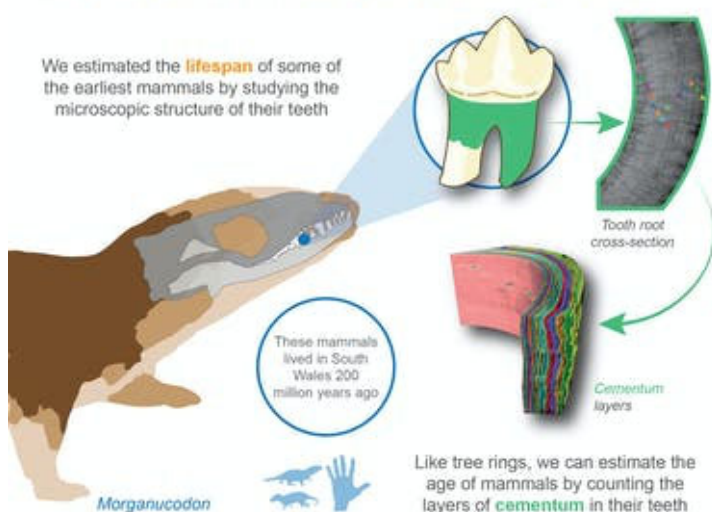
These lines are counted in living mammals by grinding



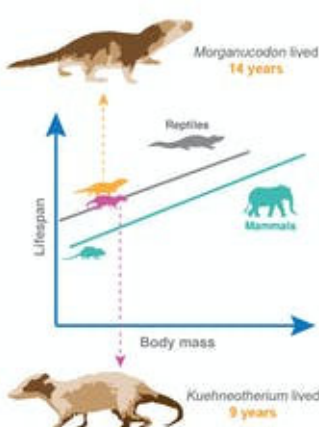
X-ray image of tooth cementum from *Morganucodon* revealing growth rings.

Reptilian physiology revealed in the first mammals

Unexpectedly long lifespans tell us that the first mammals had low basal metabolic rates, akin to reptiles, and were not warm blooded like modern mammals. Their activity levels were lower than modern warm-blooded mammals.

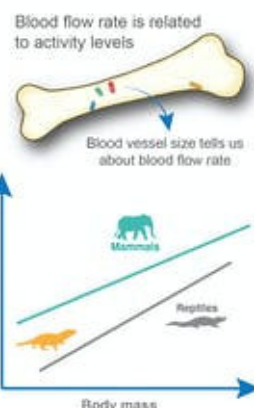


The earliest mammals had **longer lifespans** than modern small mammals



They had a slower pace of life and lower metabolism

How energetic were the earliest mammals?



Morganucodon had a lower capacity for sustained activity than modern mammals

Graphical abstract for Newham, E., Gill, P., Brewer, P., et al., and Corfe, I.J., 2020. Reptile-like physiology in Early Jurassic stem-mammals. Nature Communications. DOI: 10.1038/s41467-020-18898-4

Morganucodon adapted from Bob Nicholls/Paleocreation 2015 model. Infographic designed by Nuria Melisa Morales Garcia www.sciencegraphicdesign.com @Nuriamelisa1

Florida Fossil Hunters News

teeth down into thin sections that can be studied using microscopes. As this destroys the tooth, we could not do this with precious museum fossils, and so we used X-ray imaging. Counting rings in our fossil mammal teeth gave a lifespan of 14 years for *Morganucodon*, and nine years for *Kuehneotherium*.

These are significantly, and surprisingly, longer lifespans than those of similar, shrew-sized mammals living today whose wild lifespans rarely exceed two to three years. This suggests a dramatically slower metabolism, or pace of life, than living mammals, and instead more closely resembles that of living reptiles.

Low activity levels

The size of the openings for the major blood vessels running through an animal's limb bones is known to be proportionate to the levels of sustained activity (such as hunting and foraging) that they are capable of: smaller size suggests lower activity levels.

When we measured this in the femur of *Morganucodon*, we found that, while smaller than living mammals, they were also higher than those of living reptiles. This suggests that early mammals had an intermediate ability for sustained activity, between warm blooded mammals and cold blooded reptiles.

This combined approach of studying the lifespans and activity levels of early mammals provides the first direct window onto several aspects of how they lived. We can see that our earliest relatives kept a much slower pace of life, but had definitely started on the road to the active lifestyles of living mammals today.

We shall continue these studies through the early mammal fossil record, to shed light on the first steps towards the modern mammalian.

<https://theconversation.com/fossilised-teeth-reveal-first-mammals-were-far-from-warm-blooded-148022>

12,000-Year-Old Human Footprints Found in New Mexico

Oct 15, 2020 | **An international team of researchers has discovered a long prehistoric human trackway at White Sands National Park in New Mexico, the United States.**

The human tracks at White Sands National Park record more than 1.5 km (.93 miles) of an out-and-return journey. They show the footprints of a woman or an adolescent male that are joined, at point, by the footprints of a toddler.

"An adolescent or small adult female made two trips separated by at least several hours, carrying a young child in at least one direction," said lead author Dr. Sally Reynold of Bournemouth University and colleagues.



The team found the tracks in a dried-up lakebed, which contains a range of other footprints dating from 11,550 to 13,000 years ago.

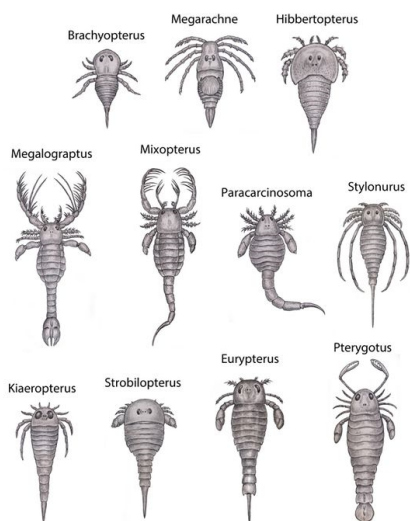
The lakebed's formerly muddy surface preserved footprints for thousands of years as it dried up.

The scientists previously found the footprints of mammoths, giant sloths, saber-toothed cats and dire wolves at the site.

"Giant ground sloths and Columbian mammoths were found to have intersected the human tracks after they were made, showing that this terrain hosted both humans and large animals at the same time, making the journey taken by this individual and child a dangerous one," they said.

Matthew R. Bennett et al. 2020. Walking in mud: Remarkable Pleistocene human trackways from White Sands National Park (New Mexico). *Quaternary Science Reviews* 249: 106610; doi: 10.1016/j.quascirev.2020.106610. Image credit: Cornell University.

To see the entire article: <http://www.sci-news.com/archaeology/white-sands-human-footprints-08953.html>



Eurypterids | October 21 by WillemSvdMerwe

Eurypterids were scorpion-like inhabitants of the seas, rivers and lakes of ancient Earth. They were indeed fairly closely related to spiders and scorpions, but constituted a quite different and distinctive group. Here you can compare the builds of a representative selection of species. Eurypterids ranged in size from a few centimetres to almost 3 m. in length! They're not to scale here, but Brachyopterus is the smallest (of these) while Pterygotus is the largest, some approaching 2m. in length. Biggest of all was Jaekelopterus, which was very similar to Pterygotus. The group is known from the Ordovician to the Permian periods, a temporal range of about 200 million years - quite a success. They were most abundant and diverse in the Silurian, around 400 million years ago.

Florida Fossil Hunters News

National Park Service interns unearthed fossils of a bizarre 220 Million year old reptile

By **Scottie Andrew, CNN**

Updated 12:05 PM ET, Fri October 16, 2020



This illustration by Midiaou Diallo shows what the Skybalonyx skapter might have looked like in life. Fossils of the reptile were found in Arizona's Petrified Forest.

(CNN)A peculiar, 220-million-year-old species of burrowing reptiles that evaded scientists has been found, fossilized. A team of National Park Service interns are credited with its discovery.

Hidden in a once-vibrant part of Arizona's Petrified Forest National Park, the burgeoning paleontologists unearthed fossils of the Skybalonyx skapter, an "anteater-like reptile" that probably predates dinosaurs, according to findings published this month in the Journal of Vertebrate Paleontology. It's a new species of a reptile previously thought to only live in trees.

The unusual Skybalonyx skapter belongs to the group Drepanosaur, often considered the ugly duckling of reptiles (perhaps partly because they bore some resemblance to fowl in life). The University of California Museum of Paleontology describes the creature's features as "seemingly drawn at random from evolution's spare parts box," with bird-like beaks and tails punctuated with a claw, almost too oddly fantastical to be real.

But the Skybalonyx skapter was real, and it lived in an area that was once overrun with life during the Triassic Period some 220 million years ago, Xavier Jenkins, a Idaho State University PhD student who was credited with the Skybalonyx's discovery, told CNN.

"It is genuinely so surprising that a site like Thunderstorm Ridge took this long to be discovered, and it's revealing a hidden diversity of ancient life at Petrified Forest," Jenkins said.

The Skybalonyx shows life existed in the park before dinosaurs got there

Jenkins' colleague, Virginia Tech graduate student Ben Kligman, literally stumbled into the area, which they dubbed "Thunderstorm Ridge," and found the small Skybalonyx fossils. In its prime, the area was likely a "swamp-like" environment with rivers and lakes that attracted species of all kinds -- including,

it seems, the typically tree-dwelling drepanosaur.

The fossils Jenkins and his fellow interns found were so small that they had to "screen-wash" them, meaning they broke down the rocks with water through metal screens.

They named the species Skybalonyx skapter, which in Greek means "dung-claw digger." It's fitting since its bones were "quite literally found in a deposit of fossilized poop," Jenkins said, and its claws were once perfect for digging.

The team's analysis showed that unlike other drepanosaur species, which all share a large claw on their second finger, the Skybalonyx skapter's claw was much wider than those of other species. Other known drepanosaur species' claws were much more suitable for climbing and living in trees.

Claws that wide, Jenkins said, are seen today only in burrowing animals like echidnas, or spiny anteaters, and moles.

"Skybalonyx goes to show that prehistoric ecosystems, such as those at Petrified Forest National Park, were much more similar to the modern than previously thought, with animals climbing, burrowing, swimming and flying just like today," Jenkins said.

The discovery of Skybalonyx also suggests that Petrified Forest hosted far more life, and for far longer, than previous research expeditions suggest, Jenkins said. The park's swampy past also resembles ecosystems that survive today and host relatives of the drepanosaur.

"These prehistoric ecosystems are not as alien as once thought, and are ... eerily familiar in composition to those of today," Jenkins said.

<https://www.cnn.com/2020/10/16/us/reptile-fossil-220-million-years-arizona-scn-trnd/>

Florida Fossil Hunters News

Florida Fossil Hunters

is a fun and educational group whose goal is to further our understanding of the prehistory of Florida. We encourage family participation and welcome explorers of all ages.

Membership is \$17 per year. Other household members may be included at no charge.

Meetings are usually held on the third Saturday of the month but may vary with club activities. Check the website for the date and location of the next meeting or call one of the officers.

Officers:

President	Salvatore Sansone	(321) 278-9294
Vice President 1	Steve Sharpe	(352) 552-2296
Vice President 2	Paul Hardin	
Secretary		
Treasurer	David Dunaway	(407) 786-8844

Chairs:

Field Trips	OPEN	
Fossil Fair	Valerie First	(407) 699-9274
Fossil Auctions	Dave Dunaway	(407) 786-8844
Fossil Bucks	Dave Dunaway	(407) 786-8844
Fossil Lotto	Ed Metrin	(407) 321-7462
Membership	Ken Sellers	
Newsletter		
	Elise Cronin-Hurley	info@elisech.com
Photography	John Heinsen	(407) 291-7672
Facebook	Salvatore Sansone	
	Ken Sellers &	Paul Hardin
Webmaster	Elise Cronin-Hurley	info@elisech.com

Board of Directors:

Marge Fantozi	
Valerie First	
Paul Hardin	
Cindy Lockner	
Ed Metrin	(407) 321-7462
Ken Sellers	

Membership Application

MAIL in this form or Register ONLINE at
www.floridafossilhunters.com/membership

Names: _____

Associate Members: _____

Address: _____

City: _____

State: _____ Zip: _____ Phone: _____

e-mail: _____

_____ New _____ Renewal

Please list any interests, experience, talents or just plain enthusiasm, which you would like to offer to the club:

Family membership: \$25
Individual membership: \$20

Please make your checks payable to:

Florida Fossil Hunters
Post Office Box 540404
Orlando, Florida 32854-0404

Associate members are people in the same household, included at no extra charge, 2 adult votes per household with Family Membership.

Membership year runs from January to December.

Newsletter Policy

Articles must be submitted by the first of the month to be included in that month's newsletter. These can be mailed to the above Post Office Box or e-mailed to: info@floridafossilhunters.com. Articles can be sent as text in the e-mail or in Microsoft Word files (.doc or .docx).

Please note in subject of email 'FFH News: [article or info]'

Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters â

Florida Fossil Hunters News

Florida Fossil Hunters Mark Your Calendar

FFH Scheduled Meeting Dates at the Orlando Science Center

November 14th 3:00-5:00pm
Kids (2:00pm)

December No Meeting,
Christmas Party Plans tba

January 16th Meeting
Date to be confirmed
Officer Elections

2020 FFH Fossil Fair

Was a great success!

***Thank you to all
who participated.***

***Mark Your Calendars
for the 2021 Fossil Fair
October 16 & 17***

See inside for more information on events.

Join Our Facebook group, Search:
[Florida Fossil Hunters](#)

facebook

Be Green

Email Bonnie at bonnierussell62@gmail.com
to receive the newsletter via email.



Visit us online at www.floridafossilhunters.com

Articles and comments should be sent to: info@floridafossilhunters.com

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