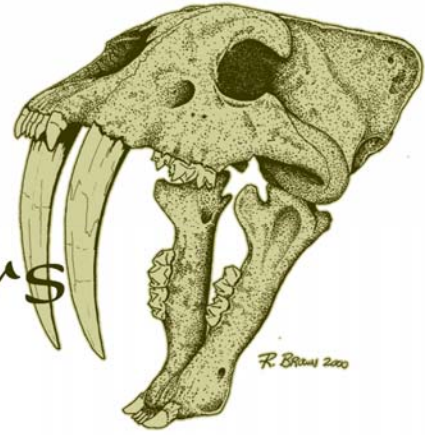


NEWS

Florida Fossil Hunters



Florida Prehistorical Museum, Inc. dba/ Florida Fossil Hunters
Volume 22, Number 1

January 2012

President's Message

Welcome 2012. Hope everyone enjoyed the Holidays. I'd like to thank all who attended our Dinner/Auction last month. January is here and so is winter. Just because it's freezing outside doesn't mean fossils are harder to find. It's just hard to make yourself go out and find them.

The beginning of the New Year brings us to a time, not only to reflect on what has been accomplished last year, but to plan for the future.

I have only one goal this year: to get the Florida Fossil Hunter education/fossil center at the Orlando Science Center up and going. This was the club's original aim back at its beginning and my priority as my last year as President. I'll be needing all the help I can muster from each of you. As everyone who knows me, I keep a full plate of projects that keep me busy and I'll have very little time off of work this year. I may not be able to attend all the meetings, but I'll always be making sure things get done.

This month, the club will be heading to Gainesville to see the Florida Museum of Natural History instead of a regular meeting at OSC. Check out the article in this newsletter for details.

We officers and Board members will be planning the rest of the meetings and activities for 2012. As these are finalized, we'll put them in the newsletter and on the website. Some of the things we're thinking about are: trip to the Brevard Zoo, BBQ party at Vulcan Mine, Peace River float trip, the Orlando Science Center's Fossil Fest in March, our regular auctions plus a Kids' auction in the summer, etc.

These are just a few ideas we've kicked around. If you have any ideas or suggestions, please let's know.

When I was a kid, older folks would say, "Wait till you get my age. Time really goes by fast." Now that I'm that age, I find that it's true. So make the most of your time.

Russell Brown, President

Looking forward to 2012

January Mtg

at Florida Museum
of Natural History
January 21st
(see pg 2 for more details)

February Mtg

February 18, 2012
2pm Kid's Fossil Blast
3pm Club Mtg

March Mtg

March 17, 2012
OSC Fossil Fest
(see pg 2 for details)

Coming Events

UPCOMING MEETINGS at the Orlando Science Center

January 21, 2012

Trip to Florida Museum
of Natural History

February 18, 2012

2:00pm Kid's Fossil Blast
3:00pm Club Mtg

March 17, 2012

Orlando Science Center's
Fossil Fest, No Club Meeting

More events listed on back page

For more info...

www.floridafossilhunter.com

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Fragments

Dinosaurs: Dead or Alive at the Brevard Zoo

We hope to visit the zoo as a club group during the time the dinos will be at the Zoo. If you want to go on your own, you can get the info on the Zoo at www.brevardzoo.org and the info on the special programs with the Dinosaur exhibit at www.brevardzoodinos.com. Check out future newsletters and our website for information on a club trip to the Zoo.

Cruisin' the Fossil Highway

This traveling exhibit featuring the art of Ray Troll and the insights of paleontologist Kirk Johnson will be at the Florida Museum of Natural History in Gainesville from February 4th through September 3rd. Our club has been invited to participate on opening day, so we'll have volunteers there with displays and information. If you'd like to volunteer for this event, please email me at bjrb48@netzero.com or call me at 352-429-1058. ~ Bonnie Cronin

Our own Russell Brown's artwork will be displayed as well as other Florida artists as part of this exhibit.

There will be 3 free Sunday presentations of Florida Museum paleontologists as part of this exhibit:

Feb. 29th - Cruisin' for Fossil Nuts with Steve Manchester, PHD, FI. Museum Curator of Paleobotany.

Mar. 11th - Cruisin' for Fossil Primates with Jonathan Bloch, PHD, FI. Museum Assoc. Curator of Vertebrate Paleontology.

Apr. 29th - Cruisin' for Florida's Fossil Horse with Richard Hulbert, PHD, FI. Museum Vertebrate Paleontology Collections Manager.

Kids' Fossil Blast

Our next Kids' Fossil Blast will be on Saturday, February 8th, at 2 pm. Check our Feb. newsletter for more info.

Piece on the Peace

For those of you willing to brave chilly water, the Peace River has been at 4.5 ft. at the Zolfo gage station for at least 3 weeks. You very rarely have to worry about crowds hunting fossils in the river this time of year. Wet suits are a real plus. Tip: wet suits and dive boots can be found cheaper at the dive shop near the Outlet Mall near Kirkman & International Dr. in Orlando.

Fossil Fair 2012

Mark your new 2012 Calendars, - October 13th & 14th.

FOR MORE FRAGMENTS SEE PAGE 6

FFH - 2011 Morgan Award

As the club approved this year, we have made an award to a paleontology student for his/her research. This year's award has been made to Carly Manz. Following is her advisor's recommendation and summary of her project. Her entire application can be viewed on our website.

Dear Roger:

The purpose of this letter is to express my strong support for Carly Manz's (UF Geology graduate student) proposal to assess the range of climatic and ecological latitudinal variability in the early Miocene of the New World Tropics using stable isotopes from the dental enamel of fossil mammals in Florida and Panama. The C isotope data will then be used to test the idea that Florida and Panama would have been similar in ecology (as suggested by overlapping faunal composition) and the O isotope data will allow for a test of whether Florida and Panama had similar evaporation sources of precipitation in the early Miocene. While pilot data for this study (done as a class project) suggest that the mammals were eating a similar C3-dominated diet in both areas and that the evaporation sources of precipitation for Florida and Panama in the Miocene were different than they are today, significantly larger sample sizes are needed to document these patterns before they are ready for publication. Additionally, using the new laser-ablation system to test for seasonality is a great idea and has the potential to make this study even more interesting.

Carly is an excellent PhD student. She works hard, thinks creatively, and has the ability to complete the projects she sets her mind to. Her dissertation, on an obscure group of Paleogene insectivores, has the strong potential to be a huge contribution...at the very least giving us the first real idea about the initial steps in the origin of bats. This will be a big deal, but it is also mostly a biological study. Carly regards herself as a geologist and is planning her career accordingly. In order to make sure she is competitive for these jobs, her committee is encouraging her to branch out into some geochemical projects. This award will provide Carly with the funds to complete an interesting paper using geochemical tools and help her on her way towards what I am certain will be a successful career as a paleontologist in the geosciences. It would also facilitate Carly's continued participation in the Panama Canal Project. If Carly is funded for her analytical work, we will provide additional matching funds of up to \$500 to help Carly with travel expenses to present her results at an international meeting (e.g., GSA). Without any reservation, I highly recommend Carly Manz for the Gary S. Morgan Student Research Award.

Sincerely, Jonathan I. Bloch

Associate Curator of Vertebrate Paleontology, UF
Florida Museum of Natural History

Tours of Florida Museum of Natural History

Saturday, January 21, 2012

Dickinson Hall - 10 am

You must be 16 or older to participate in this tour.

This is a "behind the scenes" look at what really goes on at the University and Museum. We'll get to see the Paleobotany, Invertebrate, and Vertebrate sections where they clean fossil finds for display and/or research. There are hundreds of specimens in the storage areas and we'll get to hear about them first-hand from the people that work there.

The tour begins at 10 am. Be there by 9:45 am to sign in and get your name badge.

Leave at LEAST 30 m in. to find a parking place and walk to Dickinson. Even though you don't need a permit to park on Saturdays, that doesn't mean you'll find a space easily. Some people missed the tour last year because they were too late.

Please register for the Dickinson tour by emailing Bonnie at bjrb48@netzero.com or calling 352-429-1058. I have to let them know how many people will be attending.

Powell Hall - 1:30 pm

This is the public part of the Museum. We'll gather in main room near the mammoth/mastodon and then head into the Fossil Hall. They don't have an available tour guide at the Museum for this day but those of us that have been through lot of times will be able to explain

most of the items and answer questions. The exhibit covers the 65 million years of Florida's history since the demise of the dinosaurs and the rise of the mammals.

There is no need to pre-register for this tour and kids of ALL ages are welcome to participate.

Directions:

To Dickinson: From I-75 & Exit 384, go east on S.R. 24/ Archer Rd. approx. 2 mi. Turn left onto Gale Lerner (just past Shealy Dr.) and go north. Turn right onto Museum Rd. Dickinson Hall will be on right past the greenhouses. There is a parking garage across the street as well as parking lots further west on Museum Dr.

To Powell: From I-75 & Exit 384, go east on S.R. 24/ Archer Rd. Turn left onto S.R. 121/SW 34th Street. Get into the right lane. Go 3/4 mi. and then turn right onto Hull Rd. The entrance to the Museums will be on your right.

Admission to Powell Hall is free although a donation of \$6 per adult and \$4 per child is recommended. There is an additional charge if you want to go to the Butterfly Exhibit while you are there. Don't know how many butterflies will be out in January though.

January 21st is also Collections Day at Powell Hall. There will be many different collections on display throughout the building.....not just fossils.

What to do.....

Too cold to go digging?

Fall and break a leg taking down xmas lights?

Bad haircut and staying inside for a few months?

Well, then you can still play with your fossils. Now is the time to label, sort, and/or display them.....all those things you've been putting off.

It's sad to say that one day we'll all be gone. And if you're like me, you have piles of things you've collected through the years. To our families most of this will be a bunch of junk, old rocks, bones, and a lot of "what the heck is this" things - if you haven't taken the time to properly label your collections.

Many of today's important information comes from older collections that have been donated to museums... not

only here, but around the world. As fossil hunting goes, we all know it's here today... gone tomorrow.

Roger Portell and Richard Hulbert at the Florida Museum of Natural History will tell you, "without the information of where and when collected, it's just another rock."

So take time to make field notes and label your finds. Remember, too, that if you're collecting fossils other than invertebrate material or sharks' teeth, this is the time of year to fill out your report and renew your Florida Fossil Hunting Permit.

And as you're sorting out those fossils, you can make a few displays..... as simple as putting a few out on a shelf or putting them in easy-viewing framed box. It's a great way to remind yourself of the excitement and fun of finding them plus sharing them with everyone who comes into your home.

Dinosaurs With Killer Claws Yield New Theory About Evolution of Flight



*New research from Montana State University reveals how dinosaurs like Velociraptor and Deinonychus used their famous killer claws, leading to a new hypothesis on the evolution of flight in birds.
(Credit: Illustration by Nate Carroll)*

ScienceDaily (Dec. 14, 2011) — New research from Montana State University's Museum of the Rockies has revealed how dinosaurs like Velociraptor and Deinonychus used their famous killer claws, leading to a new hypothesis on the evolution of flight in birds.

In a paper published Dec. 14 in *PLoS ONE*, MSU researchers Denver W. Fowler, Elizabeth A. Freedman, John B. Scannella and Robert E. Kambic (now at Brown University in Rhode Island), describe how comparing modern birds of prey helped develop a new behavior model for sickle-clawed carnivorous dinosaurs like *Velociraptor*.

"This study is a real game-changer," said lead author Fowler. "It completely overhauls our perception of these little predatory dinosaurs, changing the way we think about their ecology and evolution."

The study focuses on dromaeosaurids; a group of small predatory dinosaurs that include the famous *Velociraptor* and its larger relative, *Deinonychus*. Dromaeosaurids are closely related to birds, and are most famous for possessing an enlarged sickle-claw on digit two (inside toe) of the foot. Previous researchers suggested that this claw was used to slash at prey, or help climb up their hides, but the new study proposes a different behavior.

"Modern hawks and eagles possess a similar enlarged claw on their digit 2's, something that hadn't been noted before we published on it back in 2009," Fowler said. "We showed that the enlarged D-2 claws are used as anchors, latching into the prey, preventing their escape. We interpret the sickle claw of dromaeosaurids as having evolved to do the same thing: latching in, and holding on."

As in modern birds of prey, precise use of the claw is related to relative prey size.

"This strategy is only really needed for prey that are

about the same size as the predator; large enough that they might struggle and escape from the feet," Fowler said. "Smaller prey are just squeezed to death, but with large prey all the predator can do is hold on and stop it from escaping, then basically just eat it alive. Dromaeosaurs lack any obvious adaptations for dispatching their victims, so just like hawks and eagles, they probably ate their prey alive too."

Other features of bird of prey feet gave clues as to the functional anatomy of their ancient relatives; toe proportions of dromaeosaurids seemed more suited for grasping than running, and the metatarsus (bones between the ankles and the toes) is more adapted for strength than speed.

"Unlike humans, most dinosaurs and birds only walk on their toes, so the metatarsus forms part of the leg itself," Fowler said. "A long metatarsus lets you take bigger strides to run faster; but in dromaeosaurids, the metatarsus is very short, which is odd."

Fowler thinks that this indicates that *Velociraptor* and its kin were adapted for a strategy other than simply running after prey.

"When we look at modern birds of prey, a relatively short metatarsus is one feature that gives the bird additional strength in its feet," Fowler continued.

"*Velociraptor* and *Deinonychus* also have a very short, stout metatarsus, suggesting that they had great strength but wouldn't have been very fast runners."

The ecological implications become especially interesting when dromaeosaurids are contrasted with their closest relatives: a very similar group of small carnivorous dinosaurs called troodontids, Fowler said.

"Troodontids and dromaeosaurids started out looking very similar, but over about 60 million years they evolved in opposite directions, adapting to different niches," Fowler said. "Dromaeosaurids evolved towards stronger, slower feet; suggesting a stealthy ambush predatory strategy, adapted for relatively large prey. By contrast, troodontids evolved a longer metatarsus for speed and a more precise, but weaker grip, suggesting they were swift but probably took relatively smaller prey."

The study also has implications for the next closest relatives of troodontids and dromaeosaurids: birds. An important step in the origin of modern birds was the evolution of the perching foot.

"A grasping foot is present in the closest relatives of birds, but also in the earliest birds like *Archaeopteryx*," Fowler said. "We suggest that this originally evolved for predation, but would also have been available for use in perching. This is what we call 'exaptation': a structure evolved originally for one purpose that can later be appropriated

for a different use."

The new study proposes that a similar mechanism may be responsible for the evolution of flight.

"When a modern hawk has latched its enlarged claws into its prey, it can no longer use the feet for stabilization and positioning," Fowler said. "Instead the predator flaps its wings so that the prey stays underneath its feet, where it can be pinned down by the predator's bodyweight."

The researchers suggest that this 'stability flapping' uses less energy than flight, making it an intermediate flapping behavior that may be key to understanding how flight evolved.

"The predator's flapping just maintains its position, and does not need to be as powerful or vigorous as full flight would require. Get on top, stay on top; it's not trying to fly away," Fowler said. "We see fully formed wings in exquisitely preserved dromaeosaurid fossils, and from biomechanical studies we can show that they were also able to perform a rudimentary flapping stroke. Most researchers think that they weren't powerful enough to fly; we propose that the less demanding stability flapping would be a viable use for such a wing, and this behavior would be consistent with the unusual adaptations of the feet."

Another group of researchers has proposed that understanding flapping behaviors is key to understanding the evolution of flight, a view with which Fowler agrees.

"If we look at modern birds, we see flapping being used for all sorts of behaviors outside of flight. In our paper, we are formally proposing the 'flapping first' model: where flapping evolved for other behaviors first, and was only later exapted for flight by birds."

The researchers believe their new ideas will open multiple new lines of investigation into dinosaur paleobiology, and the evolution of novel anatomical structures.

"As with other research conducted at the Jack Horner paleo lab, we're looking at old paleontological questions with a fresh perspective, taking a different angle," Fowler said. "Just as you have to get beyond the idea that feet are used just for walking, so we are coming to realize that many unusual structures in modern animals originally evolved for quite different purposes. Revealing the selection pathways that mold and produce these structures helps us to better understand the major evolutionary transitions that shaped life on this planet."

Denver W. Fowler, Elizabeth A. Freedman, John B. Scannella, Robert E. Kambic. ***The Predatory Ecology of Deinonychus and the Origin of Flapping in Birds.*** *PLoS ONE*, 2011; 6 (12): e28964 DOI:[10.1371/journal.pone.0028964](https://doi.org/10.1371/journal.pone.0028964)

Vulcan Field Trip

January 14th

There will be a field trip to Vulcan Mine near Brooksville on Saturday, November 12th and the Trip Leader contact is Ron Wittschen, email redbear@rwittschen.com, phone 407-637-5476. This is one of the few places where kids are allowed in to fossil hunt. Be sure to stay with them since there are steep cliffs, sharp rocks, and small sink-holes.

You MUST be a member of the club for insurance purposes to participate in this field trip.

Meet on the driveway loop near the entrance to the Mine by 8:30 am to sign releases before we are escorted into the mine around 9 am. We get to drive our vehicles in so you can have your coolers, snacks, and equipment handy while you hunt. They usually allow us to dig until noon and sometimes people can stay till 2 pm.

All participants MUST be escorted into and out of the mine. Do not leave on your own since it is easy to become lost.

Directions: The trip will take approximately 2 hours from Orlando to Vulcan Mine. Be sure to allow for extra time to stop at a restroom before you get there. **THERE ARE NO RESTROOM FACILITIES AT VULCAN**, other than the boulders and the hills.

From Orlando take Hwy. 50 west (or the 408 west to the FL Turnpike, take exit 272 and then continue west on Hwy. 50) to Brooksville. Follow 50A/98 North through Brooksville and turn right on Ponce De Leon Blvd. (Hwy 98 North). Go approximately 10 miles. Vulcan/Cemex will be on your left. The address is 16313 Ponce De Leon Blvd, Brooksville, for those of you who want to download a map.

If you follow the truck route for Hwy. 50, you have to turn right onto 41, and then take the fork to the left to hook up with Ponce De Leon Blvd/98. There are several fast food places on 41 where you can take advantage of the bathroom facilities. Be sure NOT to keep following 41 north. You want to take 98 north from Brooksville.

This is mostly surface collecting with occasionally a little digging to pry out a specimen. Bring a small trowel or screwdriver or rock hammer, and a bucket to put your fossils and rocks into. You may want to bring small containers and tissue for fragile fossils.

Wear a hat, sturdy shoes, long pants (some of the rocks are sharp), and sunscreen. Bring lots of water and/or drinks and some snacks or lunch to eat.

We find mostly echinoids and sometimes sea urchins, pieces of bone, or other fossils are found. We also find chert rocks. This is the material that the Indians used to make their arrowheads and tools.

Next Trip February 11th
Trip Leader Needed! (Earn Fossil Bucks)

Fragments Continues

Lake County Historical Museum

Bonnie & I installed a long-awaited fossil display at this Museum located at 317 W.Main St. in the heart of Tavares. They have a beautiful building (the old courthouse) full of items telling the story of the area's history. If you're ever in Tavares, drop by and check it out. It's just a couple blocks away from Wooten Park on Lake Dora where the sea planes fly in and out of. There are a number of cafes which offer a variety of yummies as well.

Elephant's Sixth 'Toe' Discovered

A mysterious bony growth found in elephants' feet is actually a sixth "toe". For more than 300 years, the structure has puzzled researchers but this study suggests that it helps support elephants colossal weight. The five conventional toes point forward, giving elephant a tip-toed stance, but the extra toe points backwards into the heel pad, adding extra support.

The scientists looked at early elephants and they had a different kind of foot, which seemed to be quite flat-footed and didn't leave much room for this structure underneath. Fossils revealed that this "pre-digit" evolved about 40 million years ago, at a point when early elephants became larger and more land-based.

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	Russell Brown	(352) 429-1058
Vice President	Dave Dunaway	(407) 786-8844
Secretary	Bonnie Cronin	(352) 429-1058
Treasurer	Sara Morey	(619) 302-4863

Chairs:

Education	Bonnie Cronin	(352) 429-1058
Field Trips	OPEN	
Fossil Fair	Valerie First	(407) 699-9274
Fossil Auctions	Dave Dunaway	(407) 493-4253
Fossil Bucks	Dave Dunaway	(407) 493-4253
Fossil Lotto	Ed Metrin	(407) 321-7462
Auctioneer	Roy Singer	(407) 645-0200
Membership	Bonnie Cronin Nicole Barr	(352) 429-1058
Newsletter	Bonnie Cronin	(352) 429-1058
	Elise Cronin-Hurley	(407) 929-6297
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	elise@liseydreams.com	

Board of Directors:

Melissa Cole	(407) 834-5615
Ed Metrin	(407) 321-7462
Dave Cass	(407) 409-9095
Shelley Zimmerman	(407) 891-1260
Marge Fantozi	
Marcia Wright	

Membership Application

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:

Membership is \$17 per year. Our membership year runs from January to December. All renewals are done in December and January.

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.

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: elise@liseydreams.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'.

Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters

Florida Fossil Hunters News

Florida Fossil Hunters Mark Your Calendar

See inside for more information on events.

January 13, 14, 15, 2012
Pinellas Gem & Mineral Show

January 14 & 15, 2012
Tomoka Gem & Mineral Show

January 14, 2012- **Vulcan Field Trip**

January 21st: **Tours at Florida Museum
of Natural History in Gainesville**

February 4th: **Opening of Cruisin'
the Fossil Highway at FLMNH**

February 11th: **Vulcan Mine Field Trip
- if we can get a trip leader**

February 18th: **2 pm Kids' Fossil Blast
3 pm Meeting**

March 10th: **Vulcan Mine Field Trip
- if we can get a trip leader**

March 17th: **Orlando Science Center's
Fossil Fest**



TIME TO RENEW
your Florida Fossil Hunters
2012 Membership.

Be Green

Email Bonnie at bjrb48@netzero.com to
receive the newsletter via email.



Join Our Facebook group, Search:

[Florida Fossil Hunters](#)

facebook

Visit us online at www.floridafossilhunters.com

Articles and comments should be sent to: elise@liseydreams.com

Florida Fossil Hunters

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Florida Fossil Hunters News