

# NEWS

## Florida Fossil Hunters

Volume 18, Number 7

August 2008



### Prez Sez:

Please bring your summer finds to the meeting this month. We're all curious to see the treasures everyone has acquired.

This month's meeting will focus on preparing for our Fossil Fair in August. Of course, there will be plenty of opportunity to catch up on each other's summer adventures and admire their fossils.

*See You Then!!!*  
Shelley Zimmerman

# 2008

## Seventeenth Annual, Florida Fossil Hunters Fossil, Mineral, and Gem Show

Central Florida Fairgrounds

Saturday, October 11, 2008 - 9:00 - 5:00pm

Sunday, October 12, 2008 - 10:00am - 4:00pm



### Coming Events

#### **Meetings held at the Orlando Science Center**

*August 20th*

6:00pm Kid's Blast and  
7:00pm Meeting

*September 17th, 7:00pm Mtg*

*October 15*

6:00pm Kid's Blast and  
7:00pm Meeting

*October 11-12 Fossil Fair*

*November 19, 7:00pm Mtg*

*December 17*

6:00pm Kid's Blast and  
7:00pm Meeting

*For more info...*

[www.floridafossilhunter.com](http://www.floridafossilhunter.com)

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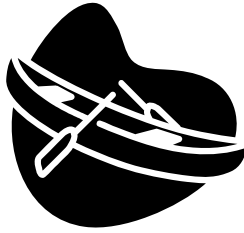
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# Florida Fossil Hunters News

# Fragments

## **Piece on the Peace**

Oh, yeah, it's summer. The Peace River has varied between 7 ft. to 11 ft. in the past four weeks. No good for hunting but we can take solace in the thought that there will be fresh fossils uncovered and moved.



Be sure to check the river level via the link on our website before you head down there. *Happy hunting.*

## **Evolution Cruise**

Insight Cruises has scheduled a cruise from February 27th to March 9th, 2009 that features an Evolution seminar in partnership with Scientific American. You can learn more about it by going to their website [www.insightcruises.com](http://www.insightcruises.com). It's listed as Scientific American/Bright Horizons, Cruise #3, Evolution Emanation.

## **Falls of Ohio Fossil Festival**

The festival will be held September 20th and 21st at the state park in Clarksville, Indiana. It will feature vendors selling fossils, minerals, books and food. A local quarry is donating 30 tons of Silurian and Devonian rocks containing fossils for folks to hunt through.

For more info go to [www.fallsoftheohio.org](http://www.fallsoftheohio.org)

# Kids' Fossil Blast

It's been four years since we studied the evolution of horses so we're going spotlight them again for this session. So bring your curiosity and questions and we'll see you at the Fossil Blast at 6 pm on Wednesday, August 20th at the Science Center.

The Kids' Fossil Blast is a fun, hands-on way to find out about fossils for kids mainly ages 4 to 14 yrs. Each meeting we focus on a different type of fossil using real fossils, replicas and printed materials. Sometimes the kids even get to take real fossils home. We meet every other month at 6:00 pm at the Orlando Science Center.

## **July Club Picnic**

First of all, a big THANK YOU to Dave Dunaway for hosting the picnic. Sara arrived with a car full of buns, plates, condiments and meats, etc. Russell volunteered to do the grilling and the rest of us brought delicious foods to share. As a bonus, we got to tour the latest additions to Dave's on-going fort project. He has made small recreations of a jail, a hotel, and a general store along the back wall. It is mind boggling!

# 2008 Fossil Fair

We only have two meetings left until the Fossil Fair! When one works on the fair, the year goes REALLY fast! The vendor tables have all been rented, although I can't be sure all dealers will appear until the day of the show.

I have submitted the fair info to various free advertising venues such as magazines, newspapers, radio and television stations. Every week, I hand out flyers at either the zoo or science museum or both. Anybody else who has places to hand them out would be quite helpful.

I will be mailing to many schools and colleges as soon as the school year starts. Envelopes are stamped and ready to go.

Post cards will be going out about a month before the fair to those on our mailing list. Still have to cut them out and stamp them.

Mary Hurley-Smith is working on the scout participation advertising and tables.

What is still needed: People to sign up for the various positions during the fair, including night security.

- Plastic grocery bags (bring to fair, if possible)
- Kid's pit fossils
- silent auction material
- anything else I am forgetting

There will be a sign up sheet at the next two meetings, or, you may call me.

We REALLY need participation during the show so try to volunteer to take the burden off those that spend more than their share of hours helping.

If I have forgotten anything or any suggestions, just let me or someone know.

Thanks, Valerie First 407-699-9274

## **Fossil Fair T-Shirts**

This year's design is based on the fossils we can find at Vulcan Mine. The shirts will be available in two colors: white printing on a slate blue and black printing on a light ash grey. We hope to keep the cost down to the usual \$10. Quantities will be limited so be sure to get yours. If we can get the production rolling soon enough, we'll have them at the September meeting.

## **VULCAN FIELD TRIP DATES**

*Currently these dates are available:*

- September 13th, 2008      October 11th, 2008
- November 8th, 2008      December 13th, 2008

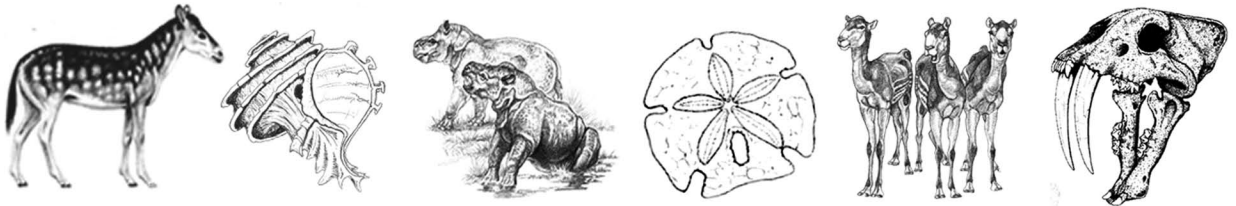
Check the website for more info.

# Florida Fossil Hunters

# 2008

## Seventeenth Annual Fossil, Mineral, and Gem Show Central Florida Fairgrounds

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Sunday, October 12, 2008 - 10:00am - 4:00pm



Fossils, Rocks  
and Artifacts

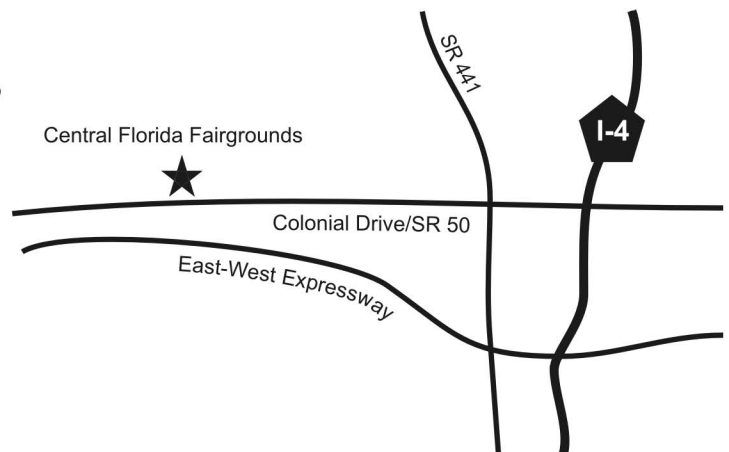
FOR ONLY  
\$4.00 Adults  
\$1.00 Children

Hourly Silent  
Auctions

Kids can dig for their own fossils

**From Tampa (I-4)** - Take I-4 all the way into Orlando and then take the Colonial Drive (Hwy 50) exit and go Westbound. The fair grounds will be on the right side, just past Mercy Drive.

**From Daytona (I-4)** - Take I-4 all the way into Orlando and then take the Colonial Drive (Hwy 50) exit and go Westbound. The fair grounds will be on the right side, just past Mercy Drive.



For more information on the 2008 Fossil Fair  
contact us by email at [FossilFair@floridafossilhunters.com](mailto:FossilFair@floridafossilhunters.com),  
call 407-699-9274, or check the website at [www.floridafossilhunters.com](http://www.floridafossilhunters.com)

# Scientists find how amber becomes death trap for watery creatures

By Cathy Keen

*Shiny amber jewelry and a mucky Florida swamp have given scientists a window into an ancient ecosystem that could be anywhere from 15 million to 130 million years old.*

Florida Museum researchers David Dilcher and Alexander Schmidt allowed resin from trees on Dilcher's land east of Gainesville to flow into the surrounding water, which trapped numerous organisms from the swamp in sap. The process of trapping these modern-day organisms in resin gives researchers a link to how prehistoric aquatic specimens become entombed in similar fluid. *Photo by David Dilcher.*

Scientists at the Florida Museum of Natural History and the Museum of Natural History in Berlin made the landmark discovery that prehistoric aquatic critters such as beetles and small crustaceans unwittingly swim into resin flowing down into the water from pine-like trees. Their findings were published in October 2007 in the Proceedings of the National Academy of Sciences.

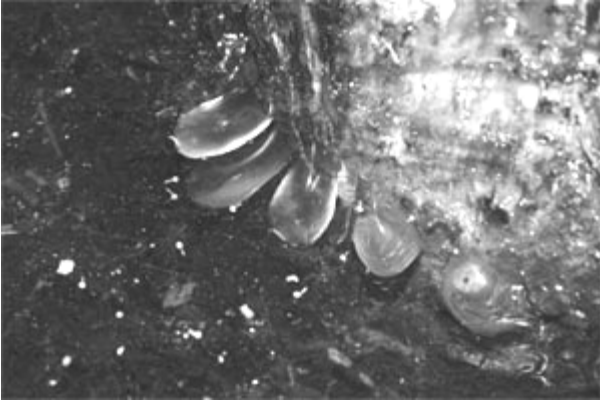
The resin with its entombed inhabitants settled to the bottom of the swamp was covered by sediment and after millions of years became amber, a bejeweled version of the tar pits that trapped saber-toothed tigers in what is now California, said David Dilcher, Florida Museum of Natural History paleobotanist and one of the study's researchers.



"People never understood how freshwater algae and freshwater protozoans could be incorporated in amber because amber is considered to have been formed on land," Dilcher said. "We showed that it just as well could be formed from resin exuded in watery swamp environments. Later the swamps may dry up and the resin hardens."

Dilcher and Alexander Schmidt, a researcher at the Museum of Natural History in Berlin, replicated the prehistoric demise of the water bugs by taking a handsaw to a swamp on Dilcher's property near Gainesville. After they cut bark from some pine trees, the resin flowed into the water and they collected the goo and took it back to Dilcher's lab on the University of Florida campus.

Small elongated resin droplets up to 4 cm long hang at the water's surface attached to a tree trunk. The resin lingers at the surface and its exposure to air hardens the top layer, capturing organisms and objects that come in contact with the sap. Stuck in



the sticky sap were representatives of almost all the small inhabitants of the swamp ecosystem, Dilcher said. "We found beautiful examples of water beetles, mites, small crustaceans called ostracods, nematodes, and even fungi and bacteria living in the water," he said.

The discovery not only solved the mystery of how swimming bugs could have been entombed in sticky sap from high in a tree but could lead to new information about prehistoric, maybe even Jurassic, swamps, Dilcher said. Studying organisms that were trapped for millions of years in amber may help scientists recreate prehistoric water ecosystems and learn how these life forms changed over time.

While no one is claiming the entombed bugs will be brought back to life through genetic splicing, the discovery may give clues about the evolution of microorganisms.

"We all think of horses, elephants and people as having changed a great deal through time," he said. "Have amoeba and other microscopic organisms changed much? Or have they found a niche or what we call a stasis in which their evolutionary lineage persists for many hundreds of millions of years? We don't have the answers to those questions until we look at the fossil record."

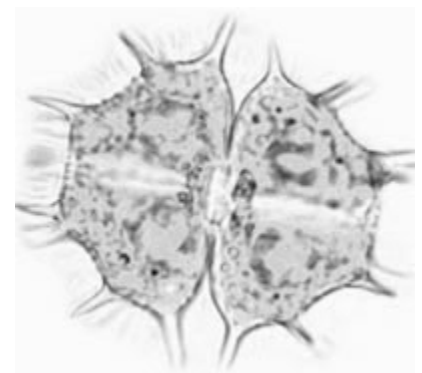
Examples of aquatic organisms found in resin include Desmid (green algae) genus *Xanthidium*.

Insects such as bees, ticks and fleas that become embedded in amber have received a great deal of attention because they are so abundant, Dilcher said. "Unfortunately, people have overlooked the little things while searching for the big bugs and the flowers in amber."

Microorganisms are important because they form relationships with higher organisms, making them the foundation of the pyramid of life, Dilcher said. "To understand more about their evolution adds an important step in our understanding of life itself."

Gene Kritsky, editor of the journal *American Entomologist* and a biology professor at the College of Mount St. Joseph in Cincinnati, said Dilcher has performed a great service in answering a question that has long puzzled scientists, the seemingly contradictory aspect of finding aquatic insects in tree resin.

"It's been one of the strange things mentioned by biologists and entomologists for decades – how do you account for aquatic insects and organisms in what seemed to be an ancient terrestrial environment," Kritsky said. "Dilcher examined this contradiction by creating the conditions that would cause sap deposits to flow into water to see what would happen. The results demonstrated that aquatic insects can be trapped in resin without leaving their aquatic world. Thus, the presence of aquatic organisms in amber is the result of a simple natural process."



# Duck-billed Dinosaurs Outgrew Predators To Survive

*Adapted from materials provided by Ohio University*

*ScienceDaily (Aug. 6, 2008) — With long limbs and a soft body, the duck-billed hadrosaur had few defenses against predators such as tyrannosaurs. But new research on the bones of this plant-eating dinosaur suggests that it had at least one advantage: It grew to adulthood much faster than its predators, giving it superiority in size.*

In a study published online August 5 in the Proceedings of the Royal Society of London B: Biological Sciences, scientists compared growth rate data from the hadrosaur, *Hypacrosaurus*, to three predators: the tyrannosaurs *Albertosaurus* and its gigantic relative *Tyrannosaurus rex*, as well as the small Velociraptor-like *Troodon*.

The research suggests that it took 10 to 12 years for *Hypacrosaurus* to become fully grown. Tyrannosaurs, however, reached adulthood after 20 to 30 years, said Drew Lee, a postdoctoral fellow in Ohio University's College of Osteopathic Medicine who co-authored the paper with Lisa Noelle Cooper, a doctoral student at Kent State University and a researcher with the Northeastern Ohio Universities College of Medicine.

"Our duck-billed dinosaur grew three to five times faster than any potential predators that lived alongside it," Lee said. "By the time the duck-billed dinosaur was fully grown, the tyrannosaurs were only half grown – it was a huge size difference."

*Hypacrosaurus* also reached sexual maturity early, at only two or three years of age, Cooper said.

"That's another added bonus when facing predators – if you can keep reproducing, you're set," she said. "It's the stuff of evolution."

Cooper conducted the original analysis of the hadrosaur while an undergraduate student at Montana State University. Working with scientists Jack Horner and Mark Taper, Cooper looked at thin sections of the long leg bones of a specimen of *Hypacrosaurus* and counted and measured the growth rings, which each represent one year of life.

"We were shocked at how fast they grew. If you look at a cross section of the bone of a nestling or even from within the egg, there are huge spaces in which blood supply was going through the bone, which means they were growing like crazy," she said.

*Hypacrosaurus* was one of three common prey for the meat-eating tyrannosaurs, but was the most vulnerable, Lee said. He described the animal, which lived 67 million to 80 million years ago, as the "Thomson's gazelle of the Late Cretaceous." The other two had horns or had stout, tank-like bodies that would have provided some physical protection from their enemies. But even those creatures show faster growth rates than the predators, Lee noted, with the hadrosaur boasting the quickest growth spurt.

At least one study suggests that living animals employ this survival strategy as well, Lee said. Scientists have found that killifish, a tiny freshwater fish found mainly in the Americas, mature faster when predators lurk. Anecdotal evidence suggests that creatures such as African ungulates grow big to create an advantage over lions, cheetahs and hyenas, he said. And researchers also see signs of this phenomenon in butterflies, toads, salamanders, guppies and some birds, Cooper added.

"Over evolutionary history, this pattern seems to be prevalent," she said.

Though scientists are careful to preserve dinosaur fossils, they've also learned much more about growth rates, life spans, behavior and sexual reproduction of dinosaurs in the past decade by cutting up the bones and taking a closer look at the clues they contain, Lee and Cooper noted. Such research has offered a much more detailed picture of the relationships between different dinosaur species, including predator and prey. Cooper also has used the same bone analysis techniques to confirm the ancestor of whales, a study she co-authored last year in *Nature*.

Lee, who recently published a study in the Proceedings of the National Academy of Sciences on the sexual maturity rates of dinosaurs, hopes to conduct more research on communities of dinosaurs, such as those of *Allosaurus*, *Stegosaurus* and *Apatosaurus*, to draw further conclusions on the fast growth survival strategy.

"This study is a stepping stone to a larger comparative study on community changes that impacted dinosaur evolution," Lee said.

The work was supported by grants from the Dinamation Society, the MONTSUS Undergraduate Scholars Grant from Montana State University, the Undergraduate Scholars Program of Montana State University, the Paleontology Department of the Museum of the Rockies and the Charlotte and Walter Kohler Charitable Trust.

# 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 held the third Wednesday of each month at 7:00pm, check the website for the location.

**Officers:**

- President Shelley Zimmerman (407) 891-1260
- Vice President Paul Bordenkircher (407) 687-3843
- Secretary
- Treasurer Sara Morey (407) 353-8675

**Chairs:**

- Education Melissa Cole (407) 834-5615
- Field Trips Shelley Zimmerman (407) 891-1260
- Fossil Fair Valerie First (407) 699-9274
- Fossil Auctions Dave Dunaway (407) 786-8844
- Fossil Bucks Dave Dunaway (407) 786-8844
- Fossil ID Table Andreas Kerner, intlfossils@msn.com
- Fossil Lotto Ed Metrin (407) 321-7462
- Auctioneer Roy Singer (407) 645-0200
- Historian Valerie First (407) 699-9274
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- Membership Melissa Cole (407) 834-5615  
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- Newsletter Bonnie Cronin (352) 429-1058  
Elise Cronin-Hurley (407) 929-6297
- Photography John Heinsen (407) 291-7672
- Webmaster Elise Cronin-Hurley (407) 929-6297  
elise@liseydreams.com

**Board of Directors:**

- Dave Dunaway (407) 786-8844
- Jeremy Smith (407) 293-9391
- Roy Singer (407) 645-0200
- Ed Metrin (407) 321-7462
- Tom Tomlinson (407) 290-8474

## Membership Application

Names: \_\_\_\_\_

Associate Members: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: Zip: \_\_\_\_\_

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).

# Florida Fossil Hunters Mark Your Calendar

**Wednesday, August 20th**

6:00pm Kid's Blast and  
7:00pm Meeting

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Visit us online at [www.floridafossilhunters.com](http://www.floridafossilhunters.com)

Articles and comments should be sent to: [elise@liseydreams.com](mailto:elise@liseydreams.com)

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