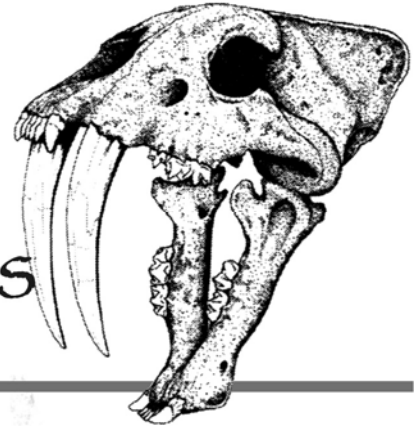


NEWS

Florida Fossil Hunters

Volume 17, Number 10

November 2007



Prez Sez:

Remember we are meeting a week earlier in the cafeteria at the Orlando Science Center due to Thanksgiving!

George Hect will speak on miniature fossils.

The fossil of the month is the Dugong of course! This is to celebrate the Vulcan mine find (see write-ups on the field trip on page 3). I hope the older Jeremy Smith brings a skull of one.

December is our Fossil Auction meeting so collect your fossil bucks!

See you there!
Shelly Zimmerman

Coming Events

November 14, 2007

7:00pm Meeting
at the Orlando Science Center

December Meeting tba

Fossil Auction Meeting

Next Kid's Fossil Blast

February 20, 2008

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November meeting early
in observance of Thanksgiving

November 14th

Orlando Science Center Cafeteria, 7:00pm

Fragments

Florida Fossil Permits

There is now a link on our website to take you directly to the permit application on the Florida Museum of Natural History's website. Richard Hulbert, who now is in charge of the permit program, would like to remind everyone to submit a photocopy of your ID with your application.

Piece on the Peace

I can't believe it. After all the rain we've had at the end of October and the Peace River is still below 5 feet at the Zolfo Station.

So if your hands are still itching to dig, go down to the River and get your feet...and if you're like me..and the rest of yourself soaked and find the treasures that await you there.

Volunteer Diggers Wanted - Last Call

The Florida Museum of Natural History will continue their fossil excavations at the quarry near Newberry from October 23rd through December 20th, 2007. It is anticipated that this will be the last year working at this fabulous fossil site.

No experience is necessary.....there is on-the-job training and they supply the tools.
For more information and to sign up, visit www.flmnh.ufl.edu

The Gem & Mineral Society of the Palm Beaches will hold their 41st Annual Gem, Mineral, Jewelry, Bead and Fossil Show on November 17th and 18th, 2007, at the South Florida Fairgrounds, Southern Blvd., West Palm Beach, FL.

Hours: Saturday 9 am to 6 pm
Sunday 10 am to 5 pm

There will be geode cracking, gem identification, door prizes and a fossil dig and gem mining for the kids. Cost is \$7 for adults. Children under 12 are free. Parking is free.

For more info go to www.gemandmineral.cc

Canaveral Annual Parade of Gems

The Canaveral Mineral and Gem Society will hold its 32nd Annual Parade of Gems on November 10th and 11th at the Melbourne Auditorium, 625 E. Hibiscus Ave., Melbourne.

The hours are 10 am to 5 pm for both Saturday and Sunday.

Redrawing the Neanderthals

Researchers working on the DNA sequencing of the Neanderthals have discovered that they had the gene that is thought to be responsible for red hair in modern humans. It wouldn't be surprising to discover that in actuality, the Neanderthals were fair skinned and had blond and/or red hair. After all, they lived farther north than Homo sapiens at the time and would have needed to maximize their absorption of sunlight to manufacture Vitamin D in their bodies.

Time to order new wigs for the museum dioramas.

To all who volunteered at the Fossil Fair...

Thank You

*Once again our members came through
and made our Fossil Fair,
not only a success,
but an enjoyable experience for all.*

Kids' Fossil Blast

Oh, we did have a blast looking at all the rocks and minerals from Florida. Of course, the calcite crystals were the stars of the show.

We'll take December off for the party and auction, so our next Kids' Blast will be on February 20th, 2008.

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 pm check the website for the location.

Vulcan Dig Report

Date: Saturday, October 27th.

Weather: Clouds and light rain.

Part I

Met 51 brave fossil hunters as we waited and hoped to get a break from Mother Nature. Alan, our company contact at Vulcan Mine, greeted us and guided the caravan of cars in. We were led into an new area where, I believe, none of us had collected before. The rain stopped and, after a brief safety talk, we scattered for what turned out to be one of the best days ever at Vulcan Mine. The area was so large that we couldn't cover it all.

The common echinoid, "Rhyncholampas gouldii", of course was found fairly abundantly. Plus about everyone found sea urchins, "Gagaria mossomi", some large, some small as a pea. Also there were more chert piles, boulders and small pieces of every color than even Dave Dunaway could have carried out....if he had shown up. One boy found a shark tooth, broken but identifiable (*Odontaspis cuspidata*) and I found a single ray mouth-plate.

Dugong bones were found here and there and a new, younger Jeremy Smith found the Fossil of the Day, part of a Dugong skeleton consisting of several ribs and vertebrae. It was mostly crushed but was still a great learning experience for all of us as we salvaged what we could.

Our President Shelley Zimmerman, of course found the best looking calcite crystal formation I've ever seen. A few of us that were still there at the mine helped dig and carry a small piece, about 400 lbs., to the road and into Kathy's minivan.

Over all summary: One fantastic day collecting at Vulcan Mine and I can't wait until we get to go again. Come to the meeting and see some of the goodies we brought back.

See you at the meeting.
Russell Brown

P.S. Shelley and Kathy, please bring in that small crystallized rock ya'll found.

Part 2

Our Vulcan Mine trip was the best. A dugong partial skeleton was found at one end of the mine and huge crystal cavities at the other. I did not get to see the dugong as I was digging, but how exciting!! My high school student and club member Pam Rivera noticed a boulder with a crystal geode in it so I traced the bulldozer tracks and discovered a hidden tunnel/vein system of huge dog-tooth calcite crystal-covered rocks underground. Many people helped excavate but Kim Bowe did the most work and took home a hefty 300 pound slab covered with 2 1/2 inch dog-tooth crystals. Ed Metrin helped Sunday and found a great 70 pound geode; the roof section of a small cavern. We learned to lift huge boulders by using the Egyptian method of leverage and back filling under the rock as it comes out of the pit. I will eventually get the huge one out with the 3 foot long (and still counting) crystal vein in it.

I would like to thank the big strong men that lifted my 400 pound monolith into Kathy's van! It will have a home as a showpiece. The excavating will continue and members are welcome as long as you like sore muscles, mud everywhere, cuts and scrapes, sunburns and other unpleasantness..... but you can dig up some magnificent pieces! I will return to dig another day.

Shelley Zimmerman

Fossilized Body Imprints Of Amphibians Found In 330 Million-year-old Rocks

ScienceDaily (Oct. 30, 2007) — Unprecedented fossilized body imprints of amphibians have been discovered in 330 million-year-old rocks from Pennsylvania. The imprints show the unmistakably webbed feet and bodies of three previously unknown, foot-long salamander-like critters that lived 100 million years before the first dinosaurs.

"Body impressions like this are wholly unheard of," said paleontologist Spencer Lucas, a curator at the New Mexico Museum of Natural History and Science. Lucas will present the discovery on October 30, 2007, at the annual meeting of the Geological Society of America in Denver.

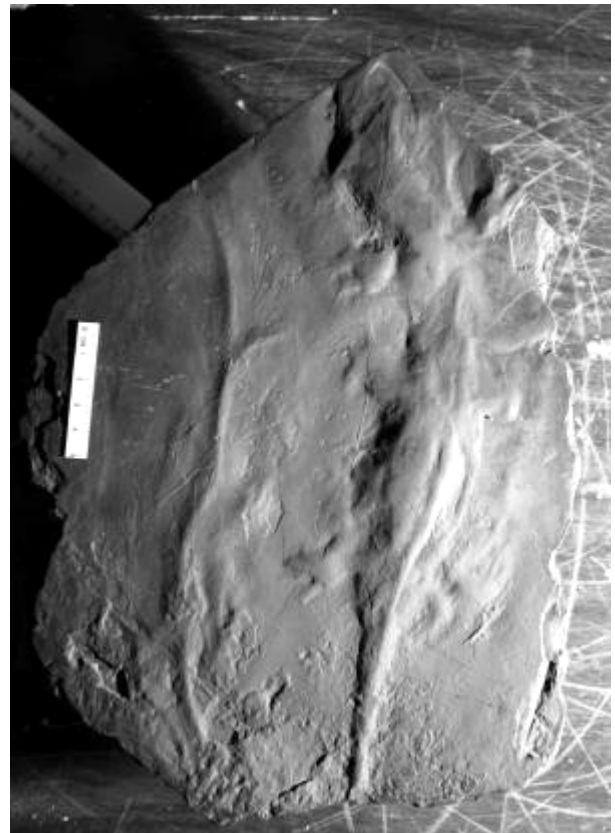
The fossil imprints, while lacking any bones of the animals, actually contain rare information that bones cannot, said Lucas. Without the imprints of the webbed four-toed feet, for instance, it would be virtually impossible to say they were truly amphibians. The imprints also provide body proportions and important clues to the kind of outer skin the little beasts had. The skin is smooth, not armor plated as many would have expected, Lucas said.

The imprints were found in reddish brown, fine-grained sandstone rocks of the Mauch Chunk Formation in eastern Pennsylvania that correspond to what's known as the Viséan Age, an early part of the Mississippian Epoch. That, in turn, is part of the Paleozoic Era that stretched from 542 million years ago to 251 million years ago, when the age of reptiles started. The Mauch Chunk is older and therefore located beneath the heavily mined coal beds of Pennsylvania.

Also found in rocks from the same formation and of the same age are footprints of other relatively large animals and fossils of insects and plants, Lucas explained. There is even a saucer-sized footprint of an unknown vertebrate that suggests larger four-footed beasts lived far earlier than ever before suspected.

"It's bigger than anything discovered in the bone record," said Lucas.

Interestingly, the rock specimen with the triple imprints was collected decades ago near Pottsville, Schuylkill County, eastern Pennsylvania, but had been sitting, unexamined, in the Reading Public Museum Collection, said Lucas. As part of his senior thesis, Kutztown State University student David Fillmore uncovered the imprint fossil while studying the large collection of Mauch Chunk Formation footprints in the Reading Public Museum Collection.



The imprints show the unmistakably webbed feet and bodies of three previously unknown, foot-long salamander-like critters that lived 100 million years before the first dinosaurs. (Credit: Image courtesy of Geological Society of America)

Adapted from materials provided by [Geological Society of America](#).

New 'toothy' dinosaur species discovered

SALT LAKE CITY, Oct. 3 (UPI) -- U.S. scientists have identified a new dinosaur species found to have populated the Grand Staircase-Escalante National Monument area in Utah.

"It was one of the most robust duck-billed dinosaurs ever," said Utah Museum of Natural History paleontologist Terry Gates. "It was a monster."

Researchers from the museum, the national monument and California's Raymond Alf Museum of Paleontology unearthed fossils of the ancient plant-eater from the rocks of the Kaiparowits Formation.

The creature -- named *Gryposaurus monumentensis* -- was a duck-billed dinosaur dating to the Late Cretaceous Period 75 million years ago.

"*Gryposaurus monumentensis* is probably the largest dinosaur in the 75-million-year-old Kaiparowits fossil ecosystem," said Alan Titus, paleontologist for the national monument.

Scott Sampson, another museum paleontologist, emphasized the massively built skull and skeleton by referring to the animal as the "Arnold Schwarzenegger



of duck-billed dinosaurs."

The scientists said the dinosaur had more than 300 teeth available, but with numerous replacement teeth stored in its jawbone it might have carried more than 800 teeth. It is estimated to have grown to about 30 feet in length.

The discovery is reported in the *Zoological Journal of the Linnean Society*.

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India: How to Build a Racing Continent

Fifty million years ago the Indian sub-continent collided with the Eurasian continent with a velocity of about 20 cm/yr. The force of this collision pushed up the Himalayas as well as the Tibetan plateau.

Now scientists think they have discovered the reason why this plate has moved so much quicker than others. They have used a seismological method to measure the thickness of the lithosphere (the crust and upper mantle) and have found that is only 100 km. thick compared with 200 km. thick for the other former components of Gondwanaland (Australia, Antarctica, Africa & South America).

The cause of the breakup of Gondwanaland was a hot mantle plume that pushed up under the supercontinent. This plate could have melted the material of India's lithosphere as it passed over the plume.

A hot mantle plume has also been cited as the cause of the massive outpouring of volcanic material, now called the Deccan Traps, in India. This volcanic event has been implicated, in addition to the meteor impact event, in the demise of the dinosaurs and other creatures that occurred 65 million years ago.

Saber-toothed Cat Was More Like A *Pussycat* Than A Tiger

ScienceDaily (Oct. 2, 2007) — In public imagination, the sabre-toothed cat *Smilodon* ranks alongside *Tyrannosaurus rex* as the ultimate killing machine. Powerfully built, with upper canines like knives, *Smilodon* was a fearsome predator of Ice-Age America's lost giants.

For more than 150 years, scientists have debated how this iconic predator used its ferocious fangs to kill its prey. Now a new Australian study, published recently in the US Proceedings of the National Academy of Science, hopes to lay the arguments to rest. And the results will put in dent in *Smilodon*'s reputation.

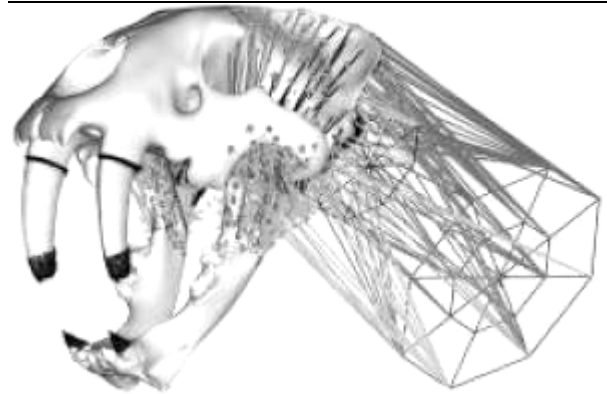
Scientists from the University of New South Wales and University of Newcastle have used a computer-based technique called Finite Element Analysis (FEA) to test the bite force and feeding mechanics of the fearsome predator.

FEA, normally used in the analysis of trains, planes and cars, allowed the team to "reverse engineer" designs to find out what sort of forces a structure like a sabrecat skull was able to handle.

"Skulls are much more complex than most man-made structures, and to apply the technique to a fossil big cat required some tricks engineers usually have to handle," says the University of Newcastle's Colin McHenry, lead author on the paper.

"Historically there have been a number of interpretations about how *Smilodon* killed," says UNSW palaeontologist Dr Steve Wroe. "Early researchers thought it had a weak bite. More recently, people have suggested that the bite was strong."

Using the skull of a modern-day lion for comparison, the team determined that *Smilodon* had a relatively weak bite - about one third as powerful as a lion of similar size. "For all its reputation, *Smilodon* had a wimpy bite" says Dr Wroe. "It bit like a moggy."



Imaging shows the Smilodon bite had a narrow jaw which restricted its killing behavior. (Credit: Dr. Stephen Wroe)

In a range of "digital crash-tests", the team found that under most conditions, the sabre-tooth skull performed very poorly compared to that of the lion. This would have seriously limited the big toothed fossil cat to a very specific range of killing behaviors.

Although its bite was weak, this is not to imply *Smilodon* was not a formidable predator. "Anything but," says Dr Wroe. "*Smilodon* was an awesome beast -- and what it lacked in bite force it more than made up for elsewhere."

"The sabrecat had an immensely powerful body; perfect for wrestling large prey to the ground, and our models show that it needed to do this before trying a bite," explains Mr McHenry. "Killing was more likely applied to the prey's throat, because it is easier to restrain the prey this way. Once the bite was done the prey would have died almost instantly."

Dr Wroe describes the lion as a "better all rounder" in the hunting stakes. *Smilodon* was massively over-engineered for the purposes of taking small prey, but a ruthlessly efficient hunter of big game."

The team is now applying their techniques to inform medical research involving dentists, surgeons and safety scientists.

Adapted from materials provided by [University of New South Wales](http://www.unsw.edu.au).

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
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Board of Directors:

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- 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).

Mark Your Calendar

Florida Fossil Hunters Mark Your Calendar

November 9-11: Florida Paleontological Society, Fall Meeting

November 10th: Canaveral Annual Parade of Gems

November 14, 2007: 7:00pm Meeting at the Orlando Science Center

November 17-18th: The Gem & Mineral Society of the Palm Beaches

December Auction and Party, tba

February 20, 2008: Next Kid's Fossil Blast Meeting

Visit our website www.floridafossilhunters.com

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

Florida Fossil Hunters

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Florida Fossil Hunters News