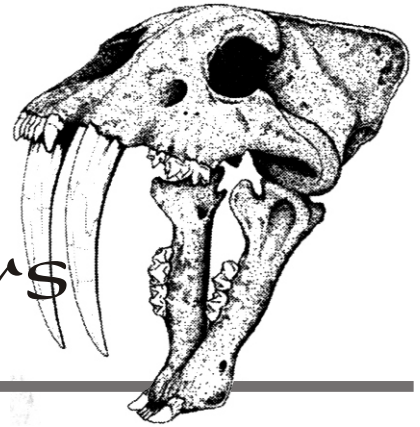


NEWS

Florida Fossil Hunters



Volume 15, Number 7

August 2005

Prez Sez.....

Hope everyone has been having a good summer. Be sure to bring your finds to the August meeting along with all the stories of your adventures.

August's meeting will be a display night with Reptiles as the theme. I know all of you have at least some turtle shell. Bring in your gator, snake, and turtle fossils to share with everyone.

Sharon and Valerie have been working hard on preparing for the fair and will have news and sign-up sheets at the meeting.

See you there.

Dave Dunaway.

The July Picnic

The July Picnic at Dave's was a great time. We had around 20 people show up. There was plenty of food - hamburgers, hot dogs, casseroles and desserts - more than enough to fill everyone.

It gave those who attended a chance to see all of Dave's collections: fossils, bottles, skulls, etc. The weather was hot and humid but luckily Dave has a pool for those who wanted to cool off. His beagle Smedley got to show off his dog-paddling skills.

Dave has a nice property including rolling hills, a vineyard, an orange grove and even a chicken "condominium". He had put an electric fence around his entire property not only to keep out the party crashers but also to protect the old fort he has discovered on his land. According to Dave, the name is Fort Reid.

We want to thank Dave for letting us use his property, hosting the party and working so hard to make it a success. We hope to make it a yearly event.

If any club member would like a tour of his estate, just contact Dave at the meeting.

Russell Brown

August Meeting will be back at
Robert E. Lee Middle School

Coming Events

August 17th

6:00 pm Kid's Fossil Blast

7:00pm Meeting and Auction

September 21st

7:00pm Meeting

Florida Fossil Hunters

2005 Fossil Fair

October 15th & 16th

Central Florida Fairgrounds

(See the flyer on page 3 for
more details)

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Fossil Fair 2005

We will be featured in the October 4th issue of Florida Travel and Life magazine! It will be the lead article on one section, with a full page of photographs and several pages of text. This is just 2 weeks before our fair, so we are hoping this will greatly enhance our attendance. We have started receiving dealer registrations. The fair is a whole month earlier, so we will need to begin working on fair planning at the August and September meetings. We will begin having sign-up sheets at the August meeting. We're going to create an educational display area for the entryway area, on the ground sloth and armadillo, etc. If you have any anteatr, ground sloth, armadillo materials for our display tables, please let us know.

SAVE ITEMS:

Please save any bags that you have especially big bags, plastic or paper particularly ones with handles even food take out bags as long as they are not stained. Also all sizes of plastic zip bags. We have donations already of packing materials to help cushion the fossils and breakables.

KID'S PIT FOSSILS

Any fossils that you want to donate to the kid's dig pit, please bring to the set-up party at the fairgrounds on October 14th.

SILENT AUCTION

We would appreciate any items for the silent auction children friendly things coloring books, books, points, etc. especially anything armadillo or ground sloth as well as items that would appeal to adults.

You will get fossil bucks for your donations and your time volunteered at the fair. We welcome any suggestions and if you would prefer to work at a particular activity let us know.

Valerie & Sharon

Film Review

Volcanoes of the Deep Sea, 2003 by Big Picture Productions
DVD produced by James Cameron and narrated by Ed Harris
Orange County Library System # ZZ505824946

I saw this DVD at the library, the underwater cover picture caught my eye first and I checked it out. While watching it, suddenly one of the characters starts talking about fossils on the beach in Spain. Well that got my attention, especially as he mentioned trying to find a living fossil!

The movie was made for IMAX theatres and the pictures are spectacular. There are 2 scientists (Botanist & Paleontologist) studying the oceans and creatures where underground volcanoes erupt into the water. It has one of the best explanations for how life started on earth that I have ever heard. It also shows footage underwater of where two continental plates meet. It lasts about 45 minutes and there is a 28 min educational section as well. You can request it, if you hold an Orange County card, by calling the library or going to the website: www.ocls.info. They also have a reciprocal borrowers agreement with Seminole County. Maybe blockbuster or other movie rental places may have it. I highly recommend it.

Submitted by Sharon Barfoot

Fragments

Fall (October) Fossil Show

Looking for some-one who wants to share a fossil sales booth at the 2005 "Florida Fossil Hunters" October fossil show. You rent 2 tables and I rent 2 tables side by side as a booth.

Like myself, is your fossil collection is out growing the location you are trying to store it in or is your spouse after you "do you really need that many and what do you plan to do with them. You can only display 3 or 4 of the best." Any fossil (vertebrate or invertebrate) of the same species do you have more then 3 or 4 of. Example: more then 5 horse teeth hole in varying length. Like me over 30 horse teeth. Deer antler pieces more then 3 or 4.

You look through your collection and keep 3, 4, or 5 of your best of a species and the rest you sell.

We need to let Val know and pay before September 1st to be sure to get the four tables before there all sold. Tables cost about \$55.00 each or your cost \$110.00 for the 2 tables. If you think you have enough fossils to sell so you can recover your cost & table rent and still make money for your self.

Let me know at the August meeting or e-mail me if you cannot be at the meeting.

E-mail me at: iamafossil@aol.com

Wiley Dykes

A Piece on the Peace

As usual for the rainy season the Peace River is too high for digging. It has gone over flood stage at least three times this year. Maybe it'll be low enough in November - keep your fingers crossed.



Kids' Fossil Blast

For our August program, we'll be looking at reptile fossils - alligators, snakes and turtles.

See you at 6 pm in the cafeteria at Lee Middle School. If you found any fossils this summer, bring them in to show everyone.



2005 Annual Fossil Fair



Presented by Florida Fossil Hunters

Focusing on the Xenarthra group – Giant Ground Sloths, Armadillos, & Anteaters.



Learn about these amazing prehistoric creatures!
Educational Displays,
Dealers selling fossils, artifacts, gems & minerals, Raffles & Silent Auctions

Kids Dig Pit \$.50
Find your own fossils!

Free Raffle Ticket! Code 963
 Code: _____
 Name: _____
 Address: _____

 City, ST, Zip Code: _____

 Telephone: _____
 E-mail: _____

Oct. 15th & 16th
Central Florida Fairgrounds
Exhibit Building A

Sat—9:00 am to 5:00 pm

Sun—10:00 am to 4:00 pm

For Only \$3.00 adult & \$ 1.00 child

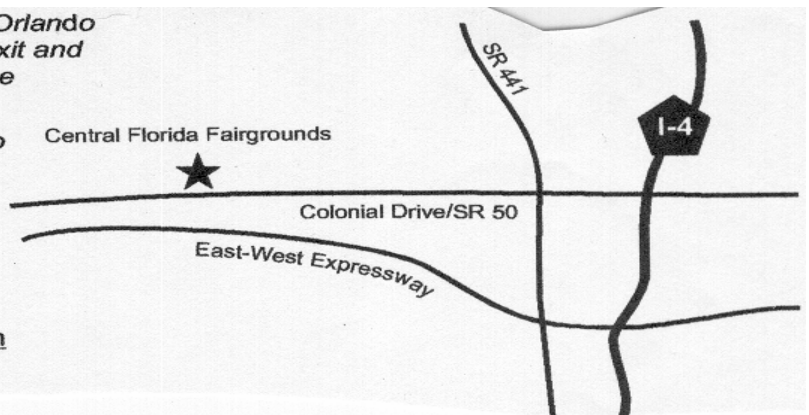
For more information visit:

www.floridafossilhunters.com

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 visit online at www.floridafossilhunters.com or e-mail us at info@floridafossilhunters.com



The Green River Formation

by Tom Caggiano

Historical Background

In 1856 Dr. John Evans collected the first fossil fish known to science from the Green River Formation. The *Knightia eocaena* was described by Dr. Joseph Leidy in Philadelphia. Although fossils had been reported from the area, this was the first described. And so begins the story of one of the greatest fossil sites known to science.

Soon after, geologists, railroad workers, and others started reporting fossil sites in surrounding areas. Most of the fish collected were sent to Edward Drinker Cope, who did the majority of the work on the fish fauna of what became known as the Green River Formation. Cope travelled west and did some collecting of his own, and in 1871, published a major work on the fishes.

The Green River Formation outcrops in the states of Wyoming, Utah and Colorado and showcases the remains of a large lake system. Scientists have determined that the system was made up of three lakes that varied in size and depth through time. The system existed for just over twenty million years, forming about sixty million years ago and disappearing around the end of the Eocene.

The formation preserves the remains of a subtropical environment. The extremely fine-grained sediments produced beautiful fossils that grace the collections of museums around the world. They also grace the collections of many amateurs, the fish being for sale in almost every rock shop in the country, many museum shops and every souvenir shop in the Midwest. The formation has produced over a million specimens with over one half million in the last thirty years alone.

The Lakes

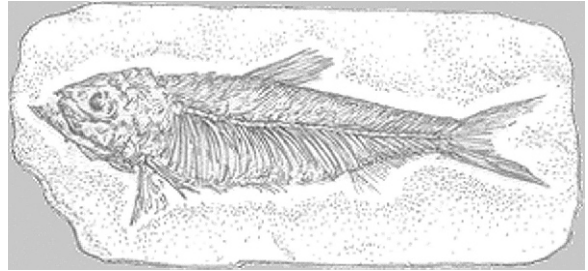
Fossil Lake was the deepest of the three lakes in the system. It had a small surface area and was short-lived. Fossil Lake produces the largest share of fish specimens of the three lakes.

Lake Gosiute produced a smaller variety of fossil fishes and a different state of preservation as well. It outcrops near the Fontenelle Reservoir and near the Farson Dam. The shales and fossils are not the typical Green River specimens most of us are familiar with.

Lake Uinta was the largest in surface area but was the shallowest. In existence for 17 million years, it was the longest-lived of the three lakes. Its sediments form one of the thickest lacustrine sediments known, almost 7000 feet in some places.

Field Work

The fish are collected from two different units. One, called the "split fish layer," is so called because the layers split,



exposing the fossils. This sometimes reduces the quality, as part of the fossil ends up on each side of the matrix. The other unit is called the "eighteen inch layer." It produces the finest specimens because it splits above the specimens, leaving them under a thin layer of rock. Careful preparation exposes a complete fossil.

Eighteen-inch-layer specimens are collected by removing the caprock, then cleaning off the fossil-bearing layers. Once clean, one looks for the outline of a vertebral column covered in matrix. A saw is used to cut a square around the fossil to a depth suitable to reach below the bottom of the specimen. The surrounding rock is then removed, leaving the fossil sticking up off the strata. A blade is then used to pry up the fossil and its surrounding matrix.

Split-fish fossils are collected by selecting a block of suitable size and splitting off thin layers using thin blades. Blades are driven into the block at various points around the block until the layer breaks free. One then carefully examines both sides of the rock for fossils including those that may still be covered with a thin layer of matrix, in which case the line of vertebrae show as a linear bump on the rock surface. A rock saw is used to square up the collected pieces at which time they can be packed for shipping.

Preparation

Since specimens can end up on very thin fragile slabs of rock, it is sometimes wise to mount the entire piece onto a plywood board cut to match the shape of the specimen before beginning preparation work. Epoxy works well as an adhesive.

The method of preparation varies, depending on whether you are working with a split-fish-layer or eighteen-inch specimen. The split-fish specimens generally require little or no work. One might use an optical magnifier and clean off any stray pieces of matrix still covering parts of the fish. Remove dust with a mild burst of air and finish with a light coat of a clear acrylic spray.

Eighteen-inch specimens require much more work. While the matrix is very soft and easy to remove, the fossils tend to be extremely fragile. The bones tend to be fairly stable but the scales are very delicate. The utmost care must be taken in order to produce a museum-quality specimen.

The thin layer of rock that covers the fossil can be thinned

The Green River Formation (con't)

down using one of several methods. An aircscribe, mini sandblaster or simply bulk gouging with a large needle all work equally well. One must be careful to leave a thin layer of matrix. The next step should be done under strong magnification. The "scratch and blow" method has proven to be the best way to produce a fine specimen -- a light scratch at the matrix using a fine steel needle and then a burst of air to remove the dust. Patience is the name of the game, as prying up sections of matrix will cause the fish to "split," resulting in a poor outcome. Care must be taken not to put much pressure on the fossil itself, as this will cause pieces of it to flake off. Eventually, the complete fossil will be uncovered and should then be sprayed with a protective acrylic spray. The spray is important, as prolonged exposure to humidity can have an adverse effect on the quality of the fossil.

The Fish

While the formation preserves over twenty species of fish, five constitute over 98% of collected specimens. We will confine our discussion to common types.

Knightia

This is probably one of the most common fossils in the world. [Editor's note: I read recently that it is indeed the most common vertebrate fossil thus known.] The sheer numbers boggle the imagination. In 1978 alone, over 20,000 were collected. You can find them for sale at any place that offers natural history items.

Two species are known with *K. eocaena* being the most common. A member of the herring family, they average five inches in length with a maximum size of ten inches. They have a deeply forked tail and a single dorsal fin in front of the mid-body line. *Knightia* fed on algae, ostracods and insects and they were the major food source for many of the larger fish from the lakes. They were schooling fish and are frequently found in mass mortality or "death" layers. Fossils have been found packed as densely as several hundred fish per square meter of slab rock.

Mioplosus

Cope described two species of this perch-like fish, however, present-day researchers doubt the existence of *M. sauvagenus*. With the only specimen found having been lost, no further study is possible. *M. labracoides* is a fairly common predator easily distinguished by the two dorsal fins, large fan-shaped tail and an anal fin equal and opposite its second dorsal fin. A voracious predator, *Mioplosus* is the fish most commonly found eating other fish, something for which the Green River fish fossils are famous.

Diplomystus

The upturned mouth of this herring type fish indicates that it was probably a surface feeder. They have a wide anal fin, single dorsal fin, and a deeply forked tail. The maximum size

is listed at twenty-six inches, but they are more commonly three to six inches. *D. dentatus* is also known from the Cretaceous of South America. When Cope originally erected the genus, he listed four species, however, more recent research has pared it down to *D. dentatus* only. Another *Knightia* predator, "Diplos" have been found containing fossils of their last meals.

Priscacara

Priscacara has grinding-type teeth, indicating that it probably fed on snails and crustaceans. It is easily identified by its stout dorsal and anal fin spines, which, in my opinion, make it the most attractive of the Green River fossils. Two species, *P. serrata* and *P. liops*, are the most common. Several others are under review by current researchers. *Priscacara* are known only from the Eocene. They have a large oval body and range in size from one inch to fifteen inches with four to six most common. They were schooling fishes and are more commonly found in the eighteen-inch layer.

Phareodus

The largest of the common fishes is *Phareodus*. Two species, *P. encaustus* and *P. testis*, are known. They average fifteen inches, with a maximum of thirty inches. With the dorsal and anal fins located at the very back of the body, these fish cannot be confused with any other Green River species. They have large very sharp teeth and have been found with the remains of *Mioplosus* and *Priscacara* inside.

Collecting Opportunities

Fortunately, gaining access to collecting sites in the Green River Formation is easy. One has a choice of several quarries open to fee collecting. I've collected in three. Years back I spent a few hours at Warfield's Quarry and I collected at Ulrich's about three years ago. Most recently I collected at Antares Fish Quarry. All three are commercial quarries that allow individuals to collect for a fee. These quarries are usually leased from local landowners or governments for fossil collecting rights. Overburden is bulldozed off and you are given an area to work. Ulrich's provides more assistance but charges a higher fee. You drive your own vehicle into Antares and Warfield, while Ulrich drives you to the site in their four-wheel drives. There are others in the Kemmerer, Wyoming area; I suggest you check them all out and pick the one that best suits your situation.

The Green River formation is a world-class site that offers amateur collectors the opportunity to collect museum-quality specimens with limited expertise, expense, and effort.

Reference:

Grande, Lance, 1984. Paleontology of the Green River Formation, with a Review of the Fish Fauna. Geological Survey of Wyoming, Bulletin 63.

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, Lee Middle School Cafeteria (Maury Road, two blocks West of Edgewater Drive, Orlando).

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Florida Fossil Hunters
Membership Application

Names: _____

Associate Members: _____

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

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

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 messages in the e-mail or in Microsoft Word files (*.doc).

Montana Volunteers to Unearth Dinosaur Bones

Submitted by: Sharon Reagan

Volunteers in Montana are working this week to uncover what is believed to be a never-before-seen species of sauropod dinosaur, perhaps about twice as old as most dinosaur fossils found in the state.

Malta paleontologist Nate Murphy is leading efforts to remove the bones from private land near the Little Snowy Mountains in central Montana.

The sauropod is kin to long-necked, plant-eaters like the 8-ton, 60-foot *Camarasaurus* and the larger *Brachiosaurus*, but with a larger head and shorter neck.

"There's roughly about two dozen known sauropod skulls on the planet, and we just found another one," Murphy said.

What's more, the one found near Roundup is intact, which is rare.

Volunteers have so far uncovered about 20 percent of the fossil, including the neck and skull.

Experts who examined pictures of the sauropod's vertebra

determined the fossil is indeed a new species. The animal was an adult when it died. Its body was shaped like a massive barrel, and it walked on stocky limbs.

The new dinosaur is important for a couple of reasons, said Dave Trexler, paleontologist at the Two Medicine Dinosaur Center in Bynum.

First, the discovery of a sauropod so far north in Montana helps scientists further define the range of these particular Jurassic beasts.

This dinosaur also seems to represent a missing link in the evolution of the sauropods. It is believed to have roamed the earth 150 million years ago, making it about twice as old as most dinosaur skeletons found in the state.

"It really does help us put together a more comprehensive and complete picture of sauropod evolution as well as sauropod range," Trexler said.

Once the bones are freed from the hillside, they'll be confined in plaster jackets and hauled to the Judith River Dinosaur Institute.

Catherine Carr writes:

Dear Richard, I hope you have having an enjoyable summer and sitting in air-conditioning whenever you can.

Joel and I just returned from two weeks of mission work in Nicaragua. While I was in the city of Esteli I found a rock with a sea shell imbedded in it. We are quite a ways inland and I have never seen such a thing here....and I do always stay alert for interesting rocks and fossils. The second week we were north of Matagalpa and I found some striated rock (grey and beige) that was very intriguing.

Would any of the staff up there be interested in these samples? I would be happy to pass them along.

I look forward to hearing of any digs where slave labor is being sought. I am always glad to bring along extra food and drinks.

Thanks again for your presentation at the Central Florida Fossil Club: it opened a whole new door of interest for many of us.

Peace in Christ, Catherine Carr, DeLand

Richard Hulbert answers:

Catherine: While I wish that I had been enjoying air conditioning, we have had the good misfortune of finding a major new site in late May. For the last month Art and I have spent most weekdays sweating away outside, collecting bones, jaws, and in some cases skulls of about 20 individual animals. We finished up for the summer just the other day, but will be back in the fall with a big crew of volunteers. Our web site has been up-dated recently to reflect this, but we won't have details planned and posted until mid-August. But you (and feel free to pass this along to others in your area) can generally plan on a dig that will run between mid-October through mid-December. As noted on the web site, organizations like the Central Florida Fossil Club can reserve blocks of places for their members, in return for a donation to help us offset expenses.

I don't remember if you were involved in the 2000 sloth dig in the limestone mine near Newberry, but if so, the new site is close to that one, about the same age, and has more mammals and less turtles.

With regard to the specimen with shells from Nicaragua, the invertebrate paleontology collections manager Roger Portell would be the one making a decision about accepting it as a donation. His email is portell@flmnh.ufl.edu. He will have to be certain that it was taken out of the country legally. The other specimen could be an igneous or metamorphic rock from your description. If so, we don't have a geology collection at the museum.

Cheers, Richard

Mark Your Calendar

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7:00pm Meeting and Auction

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Florida Fossil Hunters News