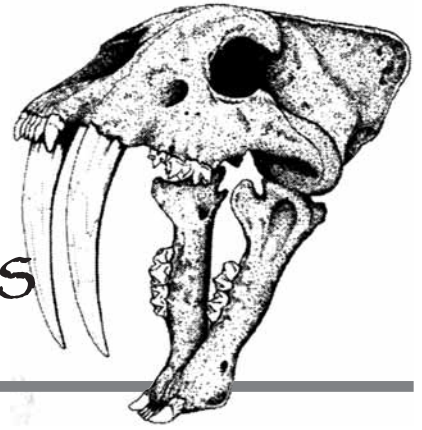


NEWS

Florida Fossil Hunters



Volume 16, Number 10

November 2006

Prez Sez

Fossil Fair 2006 - a great success.

This was partially due to good weather and a wider variety of vendors with a wide array of items for people to look at and buy. Valerie First did a great job as our Fossil Fair Chairperson. She not only got more vendors, she also did a fantastic publicity job which brought in more people to visit the fair. Many thanks for all her time and work. The club members who volunteered put in more than their usual hours since some of veteran volunteers weren't able to attend this year. Thank all of you for staying at your posts long past the time you volunteered for.

Andreas Kerner will be our guest speaker at the November meeting at the Edgewater Library.

See you at the Meeting!
Dave Dunaway

Coming Events

November 11th

Vulcan Mine Field Trip
See page 3 for more info

November 15th

7:00pm Meeting
at Edgewater Library ← ■■■

December - date tba

7:00pm Meeting
at Dave Dunaway's House ← ■■■

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Florida Fossil Hunters News

Fragments

Fossils at the Museum

The Sigerson Family Fossil Fest will be held on November 11th from 10 am to 3 pm at the Daytona Beach Museum of Arts and Sciences. Guest speaker Mark Renz will talk on recent fossil digs in Florida. Zach Zacharias, Curator of Education, will present "Return to Prehistoric Florida: The Story of the Giant Ground Sloth." This show is fun, informative and interactive for the whole family. The festival will also have a paleo-lab for kids, fossil identification, displays, games, tours, and a book signing by Mark Renz.

The museum is located at 352 S. Nova Rd., Daytona Beach, and the web site is www.moas.org

Mountains Go Up, Temperatures Go Down

One recent theory by geological scientists is that the intensive and rapid weathering of mountains made of volcanic rock takes carbon dioxide out of the atmosphere. This in turn causes the climate to cool and starts an ice age. The most recent example of that mechanism would be the uplift of the Himalayas 40 million years ago. This started the ice age we live in now - actually, we're in a slightly warmer interglacial.

The scientists have found the same chemical signatures for span of time 450 million years ago during the Ordovician when ancient volcanic rock was pushed up onto the eastern side of North American and the Appalachian Mountains were formed.

Kids' Fossil Blast

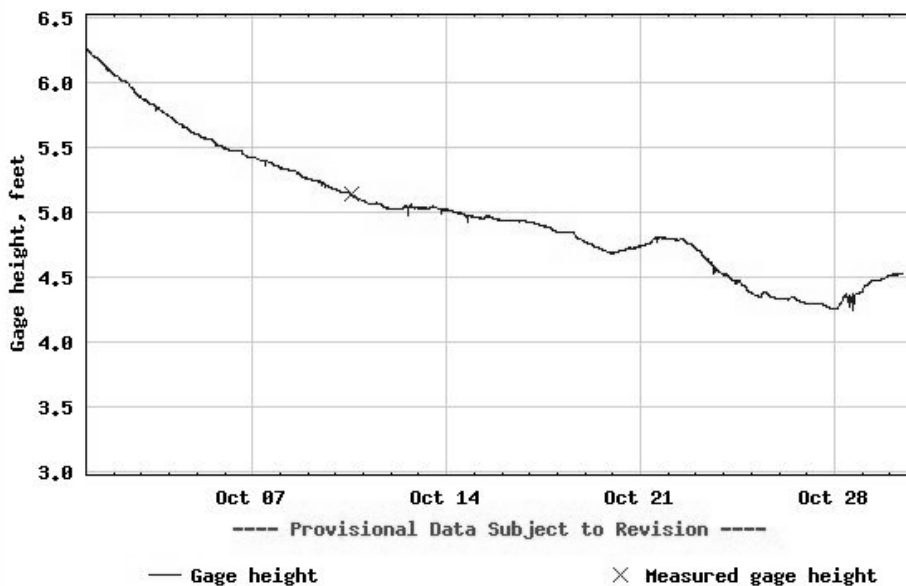
We had to get out the magnifying glasses to examine the rodent fossils at the last kids' fossil blast. We tried to count the number of teeth that rodents had. It was tricky.

There will be no Fossil Blast in December so our next meeting will be in February 2007.

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.

**THANK YOU
THANK YOU
THANK YOU**
for your help at the Fossil Fair

USGS 02295637 PEACE RIVER AT ZOLFO SPRINGS FL



A Piece on the Peace

The water level is still low enough for fossil hunting. In fact, you might find that you have to drag the canoe in some places. We don't complain as long as we can find fossils! The weather has been great so don't pass up the opportunity to go this season.

To Club or Not to Club

This is the time of year when we usually scratch our heads and wonder who we can get to volunteer for the Board of Directors. This year we're scratching even harder because Dave Dunaway's term as President is done and no one has stepped forward to volunteer for the position.

So, we ask "***Is it worth the extra time and effort to volunteer for the Fossil Club?***" Some people might feel that it wouldn't matter if people didn't gather periodically and chat about old rocks and bones and artifacts. Those that hunt would still find them and all kinds of information is available on-line to those that want to learn more. So why go through the extra work?

I remember all those years when I read whatever I could get my hands on regarding fossils, archeology, ancient civilizations, etc. (*actually, I still do*) But there was no one to talk to about the ideas or discoveries made. No one to share the utter vastness of time, the *Why* of the way creatures evolved, or the dance of the continents.

Then I found the Fossil Club and there were lots of people with the same passion for learning and discovering not only the past of humans and their culture but the past of all living things.

And I found out that I wasn't as weird as I thought. Okay, I'm still weird but now I'm part of a bunch of weird people.

I think our lives are better because we meet and share our experiences and our treasures.

So, if you think it's better, too, please consider giving a little more time to the club. It's not a presentation put on by the same 10 people. It's a cooperative effort of all of us and no previous experience is necessary.

Field Trip

Vulcan Mine, Brooksville

When: Saturday, November 11th. Meet at the guard gate by 8:30 am. Everyone must sign a release form prior to participating.

Directions: From Orlando, take Hwy. 50 west to Brooksville. Turn right onto US 98 and go north approximately 10 miles. Vulcan Mine will be on your left. For those of you using a GPS, the address is 16301 Ponce De Leon Blvd.

What we find: echinoids, sea urchins, sand dollars, chert (the rock that Indians used to make points) and the occasional shark teeth and bones.

This is surface collecting and shallow digging.

You will need: buckets, small containers for fragile fossils, trowels or small shovels or rock hammers.

Bring lots of water and drinks and food.

Wear sturdy shoes, hats, sunscreen and gloves.

Children are permitted and most love the experience of fossil hunting and seeing a working mine. However, they must be under adult supervision at all times. Some of the areas have steep slopes and sharp rocks. Also there are usually very large trucks hauling material.

There will be a sign-up sheet at the Fossil Fair and the October meeting. For more information, email Bonnie Cronin at bjrb48@netzero.com or call 352/429-1058 or cell 321/279-2592.

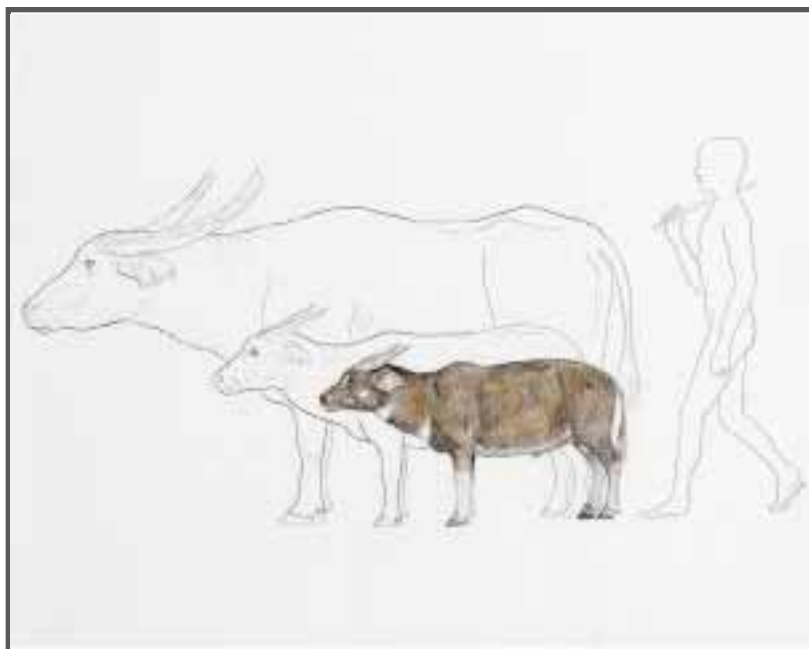
New Dwarf Buffalo Discovered By Chance In The Philippines

Everybody's Got a Water Buffalo

The Field Museum (www.fieldmuseum.org)

October 23, 2006

Almost 50 years ago, Michael Armas, a mining engineer from the central Philippines, discovered some fossils in a tunnel he was excavating while exploring for phosphate. Forty years later, Dr. Hamilcar Intengan, a friend of his who now lives in Chicago, recognized the importance of the bones and donated them to The Field Museum.



If not for the attention and foresight of these two individuals, science might never have documented what has turned out to be an extremely unusual species of dwarf water buffalo, now extinct.

The new species, described in the October issue of the *Journal of Mammalogy*, has been named *Bubalus cebuensis* (BOO-buh-luhs seh-boo-EN-sis) after the Philippine island of Cebu, where it was found. Its most distinctive feature is its small size. While large domestic water buffalo stand six feet at the shoulder and can weigh up to 2,000 pounds, *B. cebuensis* would have stood only two-and-one-half feet and weighed about 350 pounds.

B. cebuensis, which evolved from a large-sized continental ancestor to dwarf size in the oceanic Philippines, is the first well-supported example of "island dwarfing" among cattle and their relatives.

"Natural selection can produce dramatic body-size changes. On islands where there is limited food and a small population, large mammals often evolve to much smaller size," said Darin Croft, lead author of the study and a professor of anatomy at Case Western Reserve University.

*The Field Museum commissioned a color reconstruction of what *Bubalus cebuensis* probably looked like. This drawing shows the extinct dwarf water buffalo in proportion to the tamaraw (a dwarf water buffalo that lives on the Philippine island of Mindoro); a full-sized water buffalo; and a human being. *B. cebuensis*, which once lived on the Philippine island of Cebu, shrunk due to "island dwarfing," whereby some large mammals confined to an island shrink over time in response to evolutionary factors, such as a limited food supply and a lack of predators. (Illustration by Velizar Simeonovski, Courtesy of The Field Museum)*

Significant finding on several levels

Water buffalo are members of the cattle family and are placed in the genus *Bubalus*, which includes four living species. Two species, *Bubalus bubalis* and *B. mindorensis* are closely related, and the new fossil species appears to be a close relative of this pair.

B. bubalis is the well-known domestic water buffalo. *B. mindorensis*, popularly known as a tamaraw, is also a dwarf, although at about three feet tall at the shoulder and 500 pounds it is considerably larger than the newly discovered species. The highly endangered tamaraw lives only on the

Philippine island of Mindoro. Two poorly known species of the genus *Bubalus* from the Indonesian island of Sulawesi, known as anoas, are more distantly related.

The new species, *B. cebuensis*, teaches scientists a great deal about the entire buffalo genus. Its discovery on Cebu--in combination with the occurrence of the rare tamaraw on Mindoro and a report of fossil teeth potentially referable to *Bubalus* on Luzon--indicates that this genus might have once lived throughout the Philippines, most of which is an oceanic archipelago, never connected to any continental land mass.

"Documenting past mammal diversity in the Philippines, an area of extremely high conservation priority, is vital for understanding the evolutionary development of the modern Philippine flora and fauna and how to preserve it," said Larry Heaney, a co-author of the study and curator of mammals at The Field Museum. "The concentration of unique mammal species there is among the very highest in the world, but so is the number of threatened species."

B. cebuensis also can help scientists to better understand "island dwarfing," whereby some large mammals confined to an island shrink in response to evolutionary factors. This may occur due to a lack of predators (the animal no longer needs to be large to avoid being eaten) and/or limited food (smaller animals require less food).

The research could provide insights into debates on the evolution of small-bodied species elsewhere in the tropics such as the proposed new hominid, *Homo floresiensis*, found on the Indonesian island of Flores in 2003. "Whether or not *Homo floresiensis* ultimately is shown to be a new dwarf hominid species, discovery of this new fossil water buffalo provides additional evidence that dwarf species can evolve quickly in isolation," said John Flynn, a co-author of the study, and chairman and Frick Curator in the Division of Paleontology at the American Museum of Natural History. "Other fossil dwarf mammal species likely remain to be discovered in the poorly explored island systems of tropical Southeast Asia."

The discovery of *B. cebuensis* supports the hypothesis that the tamaraw evolved to a small size due to its island habitat. Further, the fact that *B. cebuensis* lived on a smaller island than the tamaraw and evolved into a smaller size than the tamaraw supports the hypothesis that the size of an island plays a role in island dwarfing: the smaller the island, the smaller the dwarf.

The new discovery also shows that dwarfing can affect different parts of the body differently. For example, *B. cebuensis* had relatively large teeth, which is typical of island dwarfs, but also relatively large feet, which are usually reduced in dwarfing.

Scientists were able to determine the size and features of the new species based on a partial skeleton consisting of two teeth, two vertebrae, two upper arm bones, a foot bone, and two hoof bones. The fossil could not be dated with certainty, but the authors estimate that it probably lived during the Pleistocene ("Ice Age"), probably between 10,000 and 100,000 years ago, but it is possible that it is younger.

The discovery demonstrates that there are fossils to be found in the Philippines, which rarely produces fossils due to its hot, wet conditions, which are not conducive to fossil preservation. Only a few fossils of elephants, rhinos, pig, and deer have been found previously, according to Dr. Angel Bautista, a co-author of the study and curator of anthropology at the National Museum of the Philippines in Manila. "Finding this new species is a great event in the Philippines," he said. "We have wonderful living biodiversity, but we have known very little about our extinct species from long ago. Finding this new fossil species will spur us to new efforts to document the prehistory of our island nation."

The Philippines include more than 7,000 islands. During the last glacial maximum about 20,000 years ago, much of the water in the oceans was frozen in glaciers, resulting in much lower sea levels--about 400 feet lower. Because of this, some groups of current islands within the Philippines became connected by land. Some of the mammals, including water buffalo, probably migrated to the Philippines during these periods by swimming short distances between islands. Once the glaciers melted and sea levels rose, these mammals became isolated on their respective islands. Over the years, they evolved into the unique species found there today.

According to Heaney, about 200 native mammal species currently live in the Philippines, and nearly two-thirds of them are endemic (only found there). Only Madagascar has a higher percentage of endemic mammals.

"This discovery highlights the importance of making fossils available for scientific study," Croft said. "If not for the generosity of Mr. Armas and Dr. Intengan, we probably never would have known about this extinct species."

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 Dave Dunaway (407) 786-8844
 Vice President Paul Bordenkircher (407) 687-3843
 Secretary
 Treasurer Sara Morey (407) 834-0281

Chairs:

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 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: intfossils@msn.com
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 Jeremy Smith (407) 293-9391
 Roy Singer (407) 645-0200
 Ed Metrin (407) 321-7462
 Tom Tomlinson (407) 290-8474

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).

West Australian Fossil Find Rewrites Land Mammal Evolution

A fossil fish discovered in the West Australian Kimberley has been identified as the missing clue in vertebrate evolution, rewriting a century-old theory on how the first land animals evolved.



Monash University PhD

students Mr Erich Fitzgerald and Mr Tim Holland were part of the research team, led by Museum Victoria's Head of Science Dr John Long, that made the spectacular discovery by studying a 380 million-year-old fossil fish called Gogonasmus, or Gogo fish, named after Gogo Station in Western Australia where it was found.

The fossil skeleton shows the fish's skull had large holes for breathing through the top of the head but importantly also had muscular front fins with a well-formed humerus, ulna and radius - the same bones are found in the human arm.

"This new fossil proves that features of land-living tetrapods (four-legged vertebrates) evolved much earlier in their evolutionary history than previously thought," Mr Fitzgerald, a researcher in the School of Geosciences, said. "This means that humans can trace their evolutionary roots, and adaptations for life on land, further back in time, to more than 380 million years ago."

"This little fossil fish, Gogonasmus, is therefore the ultimate 'Mother' of all tetrapods."

The research findings are published in the journal Nature.

"Gogonasmus is the new pivotal fossil for understanding the earliest phase in the transition from sea-going fish to land-dwelling tetrapods -- from dinosaurs, to kangaroos, and ultimately, us humans," Mr Fitzgerald said.

"The fossils of Gogonasmus raise the possibility that tetrapods originated not in the northern hemisphere, as is widely thought, but in Gondwana, the ancient southern super-continent, and more specifically Australia. But further discoveries of fossils in Australia are needed to confirm this."

A Gogonasmus display will be launched by Dr John Long at Melbourne Museum on 19 October at 10am, and will run until 18 November.

Mark Your Calendar

November 11th

*Vulcan Mine Field Trip
See page 3 for more info*

November 15th

*7:00pm Meeting
at Edgewater Library* ← ■ ■ ■

December - date tba

*7:00pm Meeting
at Dave Dunaway's House* ← ■ ■ ■

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