FLORIDA PALEONTOLOGICAL SOCIETY

NEWSLETTER

VOLUME 31 NO. 1 WINTER 2014

Florida Paleontological Society, Inc. Fall Meeting – November 23, 2013 Bristol, Florida

Water levels on the Apalachicola River were excellent the morning of the field trip, allowing for some productive collecting along the famous geological exposure known as Alum Bluff. Thirty members gathered early Saturday at the Bristol Boat Ramp, eagerly awaiting the ferry ride up to the bluff. It took two, twenty minute trips to get the entire group out to the site. However, everyone enjoyed the trip, getting to see the still beautiful fall foliage along the river.

Due to some recent slumpage along the banks of the mighty river our collecting area was limited, but still produced some great finds. The lower Miocene Chipola Formation was exposed at and just above the water level. Many people were able to sit and sift through the soft sand and mud looking for the abundant marine mollusks. Most were able to find some nice little gem shells by digging below the surface. Along the bank, the observant collector could see the weathered remains of large gastropods, such as the Stromboid, *Orthaulax gabbi*, and the ancient *Melongena sculpturata*. A few lucky members were able to procure a complete specimen of these fine large shells. Above this area and extending to the top of the bluff were slumps and exposures of the thick clays, containing rare Miocene plant fossils, and the Pliocene Jackson Bluff Formation. A couple of people were able to extract excellent portions of palm fronds from the clay and carefully pack them for the trip back to the boat ramp. Other members explored up and down the sides of the bluff in search of the highly prized marine snail, *Ecphora quadricostata*. Many participants were able to find some fine sharks teeth and one member discovered an excellent fish jaw.

Members collecting from the lower Miocene Chipola Formation exposed at the base of Alum Bluff. **Photo Credit: Paul Roth.**

After a good morning of collecting, the group gathered for a pleasant picnic lunch on the bank of the Apalachicola River. Members enjoyed turkey and roast beef sandwiches while sharing their recent discoveries. Later, everyone continued to scour the hill side for that one last unique find, as smaller groups were ferried back to the boat ramp.

FLORIDA PALEONTOLOGICAL SOCIETY, INC.

As stated in the Articles of Incorporation, "The purposes of this Corporation shall be to advance the science of Paleontology, especially in Florida, to disseminate knowledge of this subject and to facilitate cooperations of all persons concerned with the history, stratigraphy, evolution, ecology, anatomy, and taxonomy of Florida's past fauna and flora. The Corporation shall also be concerned with the collection and preservation of Florida fossils." (Article III, Section 1).

CODE OF ETHICS

ARTICLE X

Section 1. Members of the Florida Paleontological Society, Inc., are expected to respect all private and public properties.

Section 2. No member shall collect without appropriate permission on private or public properties.

Section 3. Members should make a sincere effort to keep themselves informed of laws, regulations, and rules on collecting on private or public properties.

Section 4. Members shall not use firearms, blasting equipment or dredging apparatuses without appropriate licenses and permits.

Section 5. Members shall dispose of litter properly.

Section 6. Members shall report to proper state offices any seemingly important paleontological and archaeological sites.

Section 7. Members shall respect and cooperate with field trip leaders or designated authorities in all collecting areas.

Section 8. Members shall appreciate and protect our heritage of natural resources.

Section 9. Members shall conduct themselves in a manner that best represents the Florida Paleontological Society, Inc.

FPS members, Wally Ward, Linda Spaulding, and Greta Polites on their way to the outcrop. A special thank you to Dave Paul and the Florida Geological Survey for providing transportation to the bluff. **Photo Credit: Mike Hein.**

Palm frond collected from the Alum Bluff Group by Norbert Dunkel. **Photo Credit: Mike Hein.**

ANNUAL DUES for the FPS are $10.00 for Associate Membership (persons under age 18) and $20.00 for Full Membership (persons over age 18) and Institutional Subscriptions. Couples may join for $25.00, and Family Memberships (3 or more persons) are available for $30.00. Persons interested in FPS membership need only send their names, addresses, and appropriate dues to the Secretary, Florida Paleontological Society, Inc., at the address on page 2. Please make checks payable to the FPS. Members receive the FPS newsletter, Florida Fossil Invertebrates, Fossil Species of Florida, and other random publications entitled to members.

NEWSLETTER POLICY: All worthy news items, art work, and photographs related to paleontology and various clubs in Florida are welcome. The editors reserve the right not to publish submissions and to edit those which are published. Please address submissions to the Editors, Florida Paleontological Society, Inc. Newsletter, at the address inside the front cover.

Florida Paleontological Society, Inc. Board Meeting - May 18, 2013 Bradenton, Florida

The meeting was called to order by incoming president, Harley Means and presided over by out-going president, Wallace T. Ward. Those in attendance were: Mr. Ward, Mr. Means, Alex Kittle, Roger Portell, Kevin Hutchenson, Sara Morey, Michael Hein, Paul Roth, Bonnie Cronin, Russell Brown, Craig Samuel, Marge Fantozzi, and Marcia Wright.

The treasurer's report was given by Mr. Portell in the absence of Mr. Whisler. Kevin Hutchenson moved and Sara Morey seconded a motion to accept the treasurer's report. The motion passed. Discussion followed about the Thomas book. It has been decided to not reprint it. There was a suggestion that when collectors send in photographs of specimens for ID by IP museum staff, the photos should conform to certain specific requirements. Those will be established to fit the needs of the IP staff.

Jim Toomey, our host for dinner and the auction, has generously donated his costs for the evening. The final tally for the weekend will be in the treasurer's report in the fall. Harley Means moved that FPS should send a thank you note to Jim Toomey for the wonderful evening. Paul Roth seconded the motion which passed by acclamation. Harley Means volunteered to write the note of thanks.

There are two $1,000 Morgan award student grants as Florida Fossil Hunters matched the FPS grant of $1,000. Roger Portell reported that the auction last night netted $699 for the FPS Morgan Award.

Under new business, Roger Portell reported that he had the President of SMR Aggregates (and our host for Saturday's dig) to lunch. Sara Morey moved that Mr. Portell be reimbursed for that bill. Kevin Hutchenson seconded the motion. It passed.

Roger Portell announced that the 10th North American Paleontological Conference will be hosted by the Florida Museum of Natural History in Gainesville, FL February 13-20, 2014 (field trips are Feb. 13 & 14, and 19 & 20). This will be a huge undertaking with an expectation of 500 participants. The museum will need many volunteers for many jobs.....registration, tour guides, food, transportation, and money to help with expenses. Michael Hein moved, seconded by Kevin Hutchenson, to form a committee to organize FPS's help with the conference. The motion passed. The committee shall be composed of: Harley Means, Paul Roth, Roger Portell, Craig Samuel, Kevin Hutchenson, and Marge Fantozzi. Craig Samuel moved that FPS donate $2500.00 to assist with the conference expenses. Kevin Hutchenson seconded and the motion passed.

The next meeting of FPS is tentatively scheduled for the weekend of Nov. 22-24, 2013. The location is yet to be determined. Possible sites are a Miami quarry or the Point A Lake Dam site on the Conecuh River near Andalusia, Alabama.

A discussion followed of the $45 field trip fee for our meetings. Since there were 61 participants and no complaints, we will continue with the fee to help defray the society's expenses.

Roger Portell moved that we suspend the nomination committee and have the board make future nominations. Marge Fantozzi seconded the motion. It passed.

The new president is Harley Means. We offer many thanks to out-going president, Wallace Ward. Paul Roth was nominated for president-elect. Craig Samuel made the nomination and Marge Fantozzi seconded it. Paul was elected. Alex Kittle was elected the new vice-president. He was nominated by Marge Fantozzi and the nomination was seconded by Roger Portell. Two new members were elected to the board. They are Russell Brown, nominated by Marge Fantozzi - seconded by Marcia Wright; and Bonnie Cronin, nominated by Paul Roth - seconded by Harley Means. All nominations passed.

Kevin Hutchenson moved that we thank Roger Portell for a fabulous field trip this weekend. Marge Fantozzi seconded the motion which passed by acclamation.

The FLMNH will soon need another FPS member collection for our display case in the museum. Craig Samuel generously volunteered specimens from his echinoid collection for the February, 2014 change over.

Marcia Wright moved that the meeting be adjourned; Harley Means seconded the motion which passed. The meeting was adjourned at 10:20 AM.

Respectfully submitted,
Marcia Wright
Secretary

INFORMATION, MEMBERSHIP, AND PUBLICATIONS

Address: Secretary, Florida Paleontological Society, Inc.
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University of Florida, Gainesville, FL 32611-7800
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website: http://www.floridapaleosociety.com

10th NORTH AMERICAN PALEONTOLOGICAL CONVENTION

FLORIDA MUSEUM OF NATURAL HISTORY

10th North American Paleontological Convention to be held in Gainesville, FL

The 10th North American Paleontological Convention is coming to Gainesville, February 15-18, 2014. The event, hosted by the Florida Museum of Natural History and administered by the Paleontological Society, is a major international paleontological meeting held every 4-5 years. It includes active participation from all fields of paleontology and will include field trips, symposia on a variety of topics, and a unique opportunity to meet with paleontologists from around the world. The Florida Paleontological Society is a "Class" level sponsor for the meeting. The FPS will have an exhibit booth set up and we are sponsoring the Celebrating Public Participation in Paleontology Symposium on the last full day of the conference.

Visit the 10th North American Paleontological Convention Web site at http://tinyurl.com/m46rbjr for more information on events and registration.

Florida Paleontological Society, Inc. Spring Meeting – May 18, 2013 Bradenton, Florida

Photos by Harley Means, Paul Roth, and Mike Hein.


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New Museum study describes world's oldest known grape fossils found in India

By Stephenie Livingston

GAINESVILLE, Fla. — Mysterious unidentified fossilized seeds from India, donated to the Cleveland Museum of Natural History in 2005 and stored among the museum's botany collections, were recently described by a Florida Museum of Natural History researcher as the world's oldest-known grape species.

Described in the September 2013 issue of the American Journal of Botany, *Indovitis chitaleyae* pushes the record of the Vitaceae (grape) family into the Late Cretaceous, about 66 million years ago. Researchers have long believed the grape originated during the Cretaceous, though they lacked fossil evidence, said lead author Steven Manchester, Florida Museum curator of paleobotany.

"Visiting the Cleveland Museum collections while working on an unrelated project, I happened across the specimens and was able to recognize the distinctive grape seed outlines within the preserved fruit fossils," Manchester said. "This helps to solve a mystery about the missing early fossil record of the grape family. DNA evidence suggests that the grapes diverged from the rest of the Rosid family tree, a major group of flowering plants including the apples, walnuts and chocolate, more than 80 million years ago, but the oldest fossil grapes known till now were from the Paleocene—only about 58 million years old."

The study suggests the Southern Hemisphere and India may hold more clues to the early evolution of the grape and contribute to scientists' understanding of the diversity of forests that flourished in India when it was an island 66 million years ago—long before its tectonic plate joined Eurasia about 50 million years ago. The presence of grapes in India when it was not a part of the Northern Hemisphere suggests an earlier radiation of the fruit "out-of-India," Manchester said.

"These fossils suggest that relatives of the grapes evolved from India and later migrated to Eurasia, possibly with the help of birds that may have carried the seeds in their stomachs by air," Manchester said.

Manchester said the fossil record for the Northern Hemisphere is relatively strong, but researchers need to intensify efforts to locate more plant fossils from India and the Southern Hemisphere.

This specimen of* Indovitis chitaleyae *from India contains 66-million-year-old characteristic grape seeds. Photo Credit: Steven Manchester

Manchester and study co-author Dashrath Kapgate, head botanist with J.M. Patel College, who originally donated the specimens, will begin searching the same fossil beds in India where the new grape fossils were discovered in November 2013 as part of a new four-year project funded by the National Science Foundation. Researchers hope to gain a better understanding of the species that grew there and learn more about past plant migration patterns between India and other continents.

Study co-author Jun Wen, botanist and curator of the botany department at the Smithsonian Institution, is using the newly discovered fossils along with younger fossils from other regions to build a timeline for the family tree of the modern grape family. Wen plans to investigate the DNA of modern species of the family from all areas of the world.

"We still want to know if the plants at the time were more closely related to those from Africa and other parts of the Southern Hemisphere, and whether or not they show similarities to the modern flora of Asia," Manchester said.

National Fossil Day 2013...

By Paul Roth

Due to the unfortunate timing of the Government shutdown, we were unable to go forward with our National Fossil Day (NFD) activities at Canaveral National Seashore this year. However.... that doesn't mean NFD wasn't a huge success! With our outreach efforts and spreading the word about NFD there were three other events taking place in Florida that were not affected by the Federal closures! I sincerely thank Pam Plummer for all the hard work she put in for the "Paynes Creek Historic State Park" NFD event. It is members like Pam that make FPS and Florida fossil community so great! We were also able to complete three very well stocked "Junior Paleontologist Educational Kits" that were donated to the National Park Service. These kits went to the Canaveral National Seashore, the Castillo de San Marcos/ Fort Matanzas, and the Timucuan Preserve/Fort Caroline/ Kingsley Plantation. We have been invited to participate in a "make up day" for Canaveral in April as part of their "Junior Ranger Day" activities, which will now include a Junior Paleontologist portion to the program thanks to your contributions, keep an eye out on Facebook for more information on this event as it develops. We are committed to our partnership for NFD with the National Park Service and want to thank everyone who donated specimens for the Junior Paleontologist Kits and their time. I also want to thank the other Florida organizations that have taken the time to partner with the NPS on such a worthy project. I ask that everyone keep an eye out for specimens and support for the 2014 events and Jr. Kits. This year FPS is partnering with the South Florida Museum who will be hosting a National Fossil Day extravaganza on October 4th. More details to follow. As Jack Horkheimer would famously say "Keep Looking Up", I will say... "Keep Looking Down" for all those fantastic fossils that will inspire the next generation of Paleontologists!

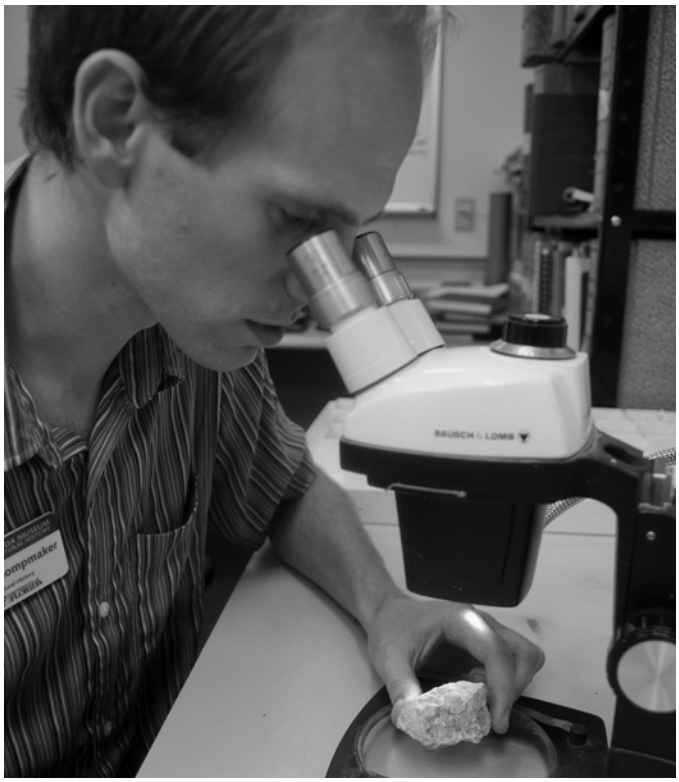
Junior Paleontologist Educational Kit presented to the Canaveral National Seashore.
Photo Credit: Paul Roth

Fossil record shows crustaceans vulnerable as modern coral reefs decline

By Stephenie Livingston

GAINESVILLE, Fla. — Many ancient crustaceans went extinct following a massive collapse of reefs across the planet, and new research suggests modern species living in rapidly declining reef habitats may now be at risk.

Appearing in the November issue of Geology, the study shows a direct correlation between the amount of prehistoric reefs and the number of decapod crustaceans, a group that includes shrimp, crab and lobster. The decline of modern reefs due to natural and human-influenced changes also could be detrimental, causing a probable decrease in the biodiversity of crustaceans, which serve as a vital food source for humans and marine animals such as fish, said lead author Adiël Klompmaker, a postdoctoral researcher at the Florida Museum of Natural History, who started the study at Kent State University.



University of Florida postdoctoral researcher Adiel Klompmaker examines fossils of ancient crustaceans at the Florida Museum of Natural History. **Photo Credit: Jeff Gage**

"We estimate that earth's decapod crustacean species biodiversity plummeted by more than 50 percent during a sharp decline of reefs nearly 150 million years ago, which was marked by the extinction of 80 percent of crabs," Klompmaker said. "If reefs continue to decline at the current rate during this century, then a few thousand species of decapods are in real danger. They may adapt to a new environment without reefs, migrate to entirely new environments or, more likely, go extinct."

Some scientists predict as much as 20 percent of the world's reefs may collapse within 40 years, with a much higher percentage affected by the end of the century due to natural and human-influenced changes such as ocean acidification, diseases and coral bleaching.

The study is the first comprehensive examination of the rise of decapod crustaceans in the fossil record. Researchers created a database of fossils from the Mesozoic Era, 252 million to 66 million years ago, from literature records based on museum specimens worldwide. The data included 110 families, 378 genera and 1,298 species. They examined the patterns of diversity and found an increase in the number of decapod species was influenced by the abundance of reefs, largely due to the role of reefs as a provider of shelter and foraging. Researchers call this period the "Mesozoic decapod revolution" because of the 300-fold increase in species diversity compared with the previous period and the appearance and rapid evolution of crabs.

Compiling information about crustaceans on this scale has historically been a challenge for researchers because most decapods possess a fragile and weakly calcified exoskeleton that does not fossilize well.

"Only a scant fraction of decapod crustaceans is preserved in rocks, so their fossil record is limited," said study co-author Michal Kowalewski, curator of invertebrate paleontology at the Florida Museum. "But, thanks to efforts of paleontologists many of those rare fossils have been documented all around the world, finally giving us a chance to look at their evolutionary history in a more rigorous, quantitative way."

"This new work builds a good case for the role of reefs in promoting the evolutionary diversification of crustaceans," said David Jablonski, a paleontologist in the department of geophysical sciences at the University of Chicago who was not involved in the study. "We have to take their argument for the flipside of that story very seriously. The positive relation between reefs and crustaceans implies that the damage caused to reefs by human activities — from overfishing to ocean acidification — is likely to have cascading consequences for associated groups, including crustaceans."

Jablonski said the study could serve as an important springboard for future research.

"It would be very interesting to extend this analysis into the Cenozoic Era, the 65 million years leading up to the present day," Jablonski said. "And it would be valuable to look at the spatial structure of the crustacean diversification, for example how closely their diversification was tied to the extensive reefs in the western Pacific and was damped in the eastern Pacific with their much sparser contingent of reefs."

Study co-authors include Carrie E. Schweitzer with Kent State University at Stark and Rodney M. Feldmann with Kent State University.

UF fossil bird study on extinction patterns could help today's conservation efforts

By Danielle Torrent

GAINESVILLE, Fla. — A new University of Florida study of nearly 5,000 Haiti bird fossils shows contrary to a commonly held theory, human arrival 6,000 years ago didn't cause the island's birds to die simultaneously.

Although many birds perished or became displaced during a mass extinction event following the first arrival of humans to the Caribbean islands, fossil evidence shows some species were more resilient than others. The research provides range and dispersal patterns from A.D. 600 to 1600 that may be used to create conservation plans for tropical mountainous regions, some of the most threatened habitats worldwide. Understanding what caused recent extinctions – whether direct habitat loss or introduction of invasive species — helps researchers predict future ecological impacts.

"People arrive about 6,000 years ago and within a millennium or two, you lose the big, spectacular critters — the ground sloths, the monkeys, the biggest rodents and some of the big extinct birds, like giant owls and eagles," said lead author David Steadman, ornithology curator at the Florida Museum of Natural History. "We have some bird species from our fossil site that, from a modern standpoint, are just as extinct as the others, but in fact, they almost were able to survive longer. That helps give us a gauge on what the future might bring."

Researchers used comparisons with modern bones to identify 23 species from the 4,857 bird fossils excavated from Trouing Jean Paul, a cave in southeast Haiti at an elevation of about 6,000 feet. The most common bird species include the Zenaida Dove, the Black Swift, the Least Pauraque, the Hispaniolan woodpecker and a new, undescribed extinct woodcock in the genus Scolopax. Researchers believe the woodcock became extinct between A.D. 1350 and 1800, surviving the first arrival of the Amerindians 6,000 years ago, but dying off following the arrival of Europeans and African peoples in 1492, Steadman said.

"When you take a look at what could've caused this, it really does just keep pointing to humans," Steadman said. "I just think it's habitat loss from people and introduction of non-native, invasive plants and animals. It's the same thing we're dealing with in Florida now — who knows what the pythons are going to wipe out in the Everglades."

Researchers radiocarbon-dated six individual bones from the extinct woodcock to determine the site's age. Because the locality also includes fossils of frogs, lizards, snakes, bats and rodents, in addition to the Common Barn Owl and Ashy-faced Owl, it was likely a roost where owls deposited boney pellets of their prey, scientists said.

Of the present-day species found at the site, as many as one-third are considered threatened today and four of the 23 total species are no longer found in the area. Their predominant habitat was pine forests, which are mostly disturbed today or entirely cut down for agriculture. The Least Pauraque, a type of nightjar, is now an endangered species that lives in an extremely localized area, Steadman said.

"This gives us some evidence of how drastic the range contraction was of this species — the Least Pauraque not only lived in the mountains, it was common there," Steadman said. "Within 1,000 years, it's lost most of its range and most of its population. From the standpoint of evolution, if we want that species to ever have the opportunity to evolve through time, we need to be concerned with time intervals that are measured in centuries and millennia, not just decades."

Jim Mead, professor and chair of the department of geosciences at East Tennessee State University, said the research is important because the direct radiocarbon dating represents a much later time period than the arrival of the first Amerindians.

"What Steadman is finding, more often than not, is that we as people bring in other things with us and indirectly wipe out other animals," said Mead, who was not involved with the study. "He's providing background data and I think that's critical to Hispaniola because you have two countries on that island and they're quite different culturally and economically, so those countries are going to play different games on the local fauna."

Mead said it is also significant that Trouing Jean Paul occurs at a high elevation, where human or climate pressures could result in animals finding a "refugia" upslope.

"Typically, a lot of sites are found in lower elevation, or we go to the lower elevations to look at localities we work on," Mead said. "But Dave is saying, 'Why don't we look at these other areas that haven't really been examined?' This one cave is a critical one for that. It gives us a 3-D look

UF researcher describes new 5-million-year-old saber-toothed cat from Florida

By Danielle Torrent

GAINESVILLE, Fla. — A University of Florida researcher has described a new genus and species of extinct saber-toothed cat from Polk County, Fla., based on additional fossil acquisitions of the animal over the last 25 years.

The 5-million-year-old fossils belong to the same lineage as the famous *Smilodon fatalis* from the La Brea Tar Pits in Los Angeles, a large, carnivorous apex predator with elongated upper canine teeth. Previous research suggested the group of saber-toothed cats known as Smilodontini originated in the Old World and then migrated to North America, but the age of the new species indicates the group likely originated in North America. The study appeared online in the journal PLOS One. DOI: 10.1371/journal.pone.0056173

"*Smilodon* first shows up on the fossil record around 2.5 million years ago, but there haven't been a lot of good intermediate forms for understanding where it came from," said study co-author Richard Hulbert Jr., vertebrate paleontology collections manager at the Florida Museum of Natural History. "The new species shows that the most famous saber-toothed cat, *Smilodon*, had a New World origin and it and its ancestors lived in the southeastern U.S. for at least 5 million years before their extinction about 11,000 years ago. Compared to what we knew about these earlier saber-toothed cats 20 or 30 years ago, we now have a much better understanding of this group."

Hulbert helped uncover fossils of the new genus and species, *Rhizosmilodon fiteae*, from a phosphate mine during excavations in 1990. The species was named after Barbara Fite of Lutz, Fla., who in 2011 donated one of the critical specimens used for the new description and allowed UF scientists to make casts of two other partial jaws in her collection.

UF 124634, holotype right mandible of* Rhizosmilodon fitae *with canine and first molar, from the Whidden Creek Site, Polk Co., Florida. Above, lateral view; below, medial view. **Photo Credit: Florida Museum of Natural History Division of Vertebrate Paleontology.**

The donation was a major contribution to the research because the remarkably well-preserved lower jaw contains almost pristine examples of all three chewing teeth, Hulbert said. The genus name *Rhizosmilodon*, meaning "root of Smilodon," implies the animal could be a missing link and direct ancestor of Smilodon, which became extinct about 11,000 years ago.

The study's lead author, Steven Wallace, an associate professor in the department of geosciences and member of the Don Sundquist Center of Excellence in Paleontology at East Tennessee State University, used comparative analysis of saber-toothed cat anatomy to help determine the animal's taxonomy. The analysis was primarily based on structure of the animal's lower jaw and teeth, smaller than the *Smilodon* and about the size of a modern Florida panther.

"The taxonomy of this animal was controversial because when it was first published 20 years ago, they only had one partial, somewhat-decent

lower jaw, and it was missing some of the critical features," Hulbert said. "We now have more complete specimens showing it has a mixture of primitive and advanced characters, and does not match any previously named saber-toothed cat genus or species."

Originally misidentified as a member of the genus *Megantereon* in the early 1980s, *Rhizosmilodon* is instead the sister taxon to *Megantereon* and *Smilodon*, and the oldest of the group. These three cats are in the same tribe — meaning they are more closely related than a family or subfamily — and are often called saber-toothed cats because of their long canine teeth, Hulbert said.

"When people think of saber-toothed cats, they think of it as just one thing, as if the famous tar pit saber-toothed cat was the only species, when in fact, it was an almost worldwide radiation of cats that lasted over 10 million years and probably had a total of about 20 valid species," Hulbert said. "Counting the newly described animal, there are now six different species of saber-toothed cats known just from Florida."

Saber-toothed cat expert Julie Meachen, an instructor at Marshall University School of Medicine in Huntington, W. Va., said the study helps settle the debate about whether the tribe arose from Eurasia before coming to North America.

"I think that this revision was well-needed," Meachen said. "The fact that it's one of the oldest lineages is really interesting because that means that this exciting group of saber-toothed cats really is a North American tribe — it evolved and persisted in North America."

Since 1915, more than 60 new species of reptiles, birds and mammals have been named from Central Florida phosphate mines, located southeast of Tampa and south of Lakeland. *Rhizosmilodon* lived in a forested coastal habitat that was also home to rhinos, tapirs, three-toed horses, peccaries, llamas and deer. Its relatively small size probably allowed it to climb trees and safely hide captured prey from large carnivores, such as packs of wolf-sized hyena-dogs and an extinct type of bear larger than the modern grizzly.

FLORIDA PALEONTOLOGICAL SOCIETY, INC.
APPLICATION FOR MEMBERSHIP

Mail completed form to :
Florida Paleontological Society
University of Florida, Box 117800
Gainesville, FL 32611-7800

New_____ Renewal_____

Name _____

Address _____

City _____ State _____ Zip Code _____

Email address _____Phone Number _____

TYPE OF MEMBERSHIP

1. INDIVIDUAL ACTIVE ($20.00) _____
2. INSTITUTIONAL ($20.00) _____
3. COUPLES ($25.00) _____
4. FAMILY (3 or more $30.00) _____
5. LIFE ($500.00) _____
6. ASSOCIATE (under 18 $10.00) _____

NOTE!! MEMBERSHIPS ARE FOR A CALENDAR YEAR AND ARE DUE NO LATER THAN JANUARY 1 EACH YEAR! PLEASE RENEW ON TIME!

BIOGRAPHICAL FACT SHEET

1. NUMBER OF YEARS OF INTEREST IN PALEONTOLOGY_____

2. WHICH BEST DESCRIBES YOUR STATUS: COLLECTOR ___ OCCASIONAL DEALER ___ FULL TIME DEALER ___ PROFESSIONAL POSITION ___ JUST STARTING ___

3. PRIMARY AREAS OF INTEREST:

	VERTEBRATE	INVERTEBRATE	BOTANY	MICRO
PLEISTOCENE	____	____	____	____
PLIOCENE	____	____	____	____
MIOCENE	____	____	____	____
OLIGOCENE	____	____	____	____
EARLIER	____	____	____	____

4. LIST ANY PREFERRED TYPES (Echinoids, Crabs, Horses, Sloths, Plants, etc.).

5. LIST ANY PUBLISHED WORKS ON PALEONTOLOGICAL SUBJECTS.

6. DO YOU BUY _____ TRADE _____ FIND _____ FOSSILS?

7. LIST ANY SKILLS OR ABILITIES THAT MAY BE OF USE TO THE SOCIETY'S PROJECTS (RESTORATION, PERPARATION, COMPUTER USE, GRAPHICS SKILLS, SPEAKING, PHOTOGRAPHY, PUBLIC RELATIONS, WRITING, FUND RAISING, ETC.).

8. LIST ANY UNUSUAL SPECIMENS FOUND, CIRCUMSTANCES UNDER WHICH THEY WERE LOCATED AND THEIR DISPOSITION.

PLEASE USE AN ADDITIONAL SHEET IF REQUIRED. THANK YOU!

Payments, contributions, or gifts to the Florida Paleontological Society are not deductible as charitable contributions for federal income tax purposes. Dues payments may be deductible by members as ordinary or necessary business expenses. We recommend that you consult with your tax advisor.