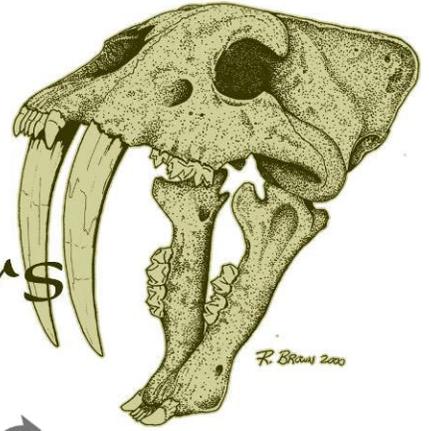


NEWS

Florida Fossil Hunters



Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters
Volume 33, Number 2

MAR/APR 2023

From Ye Olde President...

Fresh from the President's Desk

It's March and the spring time weather is here for fossil hunting. FFH is trying to setup field trips to Vulcan Mine and Peace River. I will send out emails about updates on the field trips schedule. I want to thank Louis Torres from the Museum of Gainesville for February's Guest speaker.

Your club is in need of NEW talent to take the club forward. We need FFH members to volunteer with knowledge about social media and online tools to help promote and better manage the FFH Club.

March meeting we have no scheduled quest speaker for the moment. March Theme will be Mastodons & Mammoths. I ask all FFH members to bring in and share your Mastodons & Mammoths fossils.

April's meeting has been changed. FFH meeting and Field Trip will be held at Chris Delory's Fossil Workshops and fossil warehouse. Chris has an amazing collection with items for sale and gives FFH members great deals. See page 2 for the address and details.

Thank You

Salvatore Sansone
FFH President

Coming Events

UPCOMING MEETINGS
at the Orlando Science Center

FFH meeting at OSC
Saturday, March 25th
2pm Kids' Fossil Blast
3pm Meeting & Elections

**FFH meeting at
Chris Delory Warehouse**
Saturday, April 8th
9am Meeting

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www.floridafossilhunters.com

MOSA
Natural History Festival

March 18, 2023
10:00am-3:00pm

See Page 3 for Details.

**MEETING
SCHEDULE**

2023
On Page 8

**2023
FOSSIL FAIR**

Save the Date
October 21 & 22

**RENEW
TODAY**

2023 Membership
Online/Mail/Mtg Pg 2

Florida Fossil Hunters News

MEETINGS & MORE

Our Upcoming Meetings

March 25th

2pm Kids' Fossil Blast 3pm Meeting.

Theme: Mastodons & Mammoths

Bring in your Mastodons & Mammoths finds to share.

April's 8th Meeting & Field Trip 10:00am

Held at Chris DeLorey Warehouse & Store address is: 4015 Pines Industrial Ave, Rockledge, FL 32955.

FFH members Meeting at 9am. *You must be a FFH member to attend field trips per our insurance.*

Regular Meetings are held at the Orlando Science Center.

Unless otherwise noted. Admission and parking is FREE to attending members. At the garage & ticket counter inform them you are there for the meeting. .

Kids' Fossil Blast

March 25th 2:00-3:00pm

Kids' Fossil Blast is an informal, hands-on experience aimed at kids ages 5 to 14.

REGISTER/RENEW

Membership options

- Family memberships cost \$25
- Individual membership will cost \$20

DEADLINE APRIL 1ST, 3 OPTIONS

RENEW NOW ONLINE!

Mail in form on pg 7, renew at the meeting, or

<https://floridafossilhunters.com/membership>

Florida Fossil Hunters
Memberships supports

- Monthly Meetings with speakers, auctions, fossil sharing and a kid's program
- Field trips
- School and community outreach
- Organize Fossil Fair for 30 years
- Manage FFH Facebook group that boasts more than 20,000 enthusiasts.
- Newsletter and website communications
- A stellar reputation with Central Florida science centers and museums... with our support of their events, Fossil collections to display, and community engagement.

PIECE ON THE PEACE

Want the most current height?
Visit floridafossilhunters.com and click on the easy **Peace River Gauge** button in the sidebar or under the Resources tab for

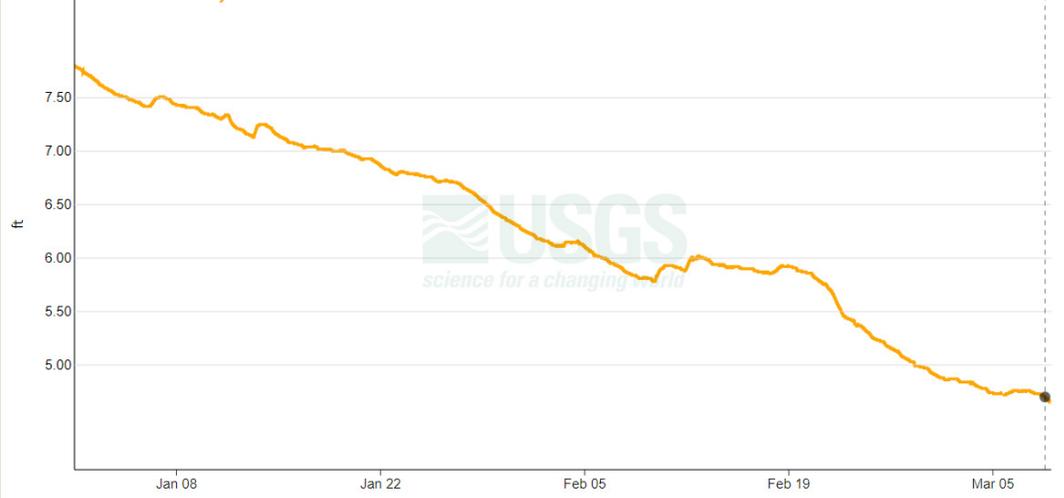
PEACE RIVER AT
US 17
AT ZOLFO
SPRINGS, FL

Peace River at US 17 at Zolfo Springs, FL

January 1, 2023 - March 8, 2023

Gage height, ft 

4.7 ft - Mar 08, 2023 01:45:00 PM EST



Florida Fossil Hunters News

Natural History Festival • March 18, 2023

10:00am-3:00pm • The Museum of Arts & Sciences, Daytona Bch • Speakers from the Smithsonian.

VOLUNTEERS NEEDED!!!! Email Melissa if you can volunteer to man our booth.

Setup begins at 8:00am. Check out the website for more information on the exciting speakers.

<https://www.moas.org/Natural-History-Festival-7-11893.html>

Fossil discovery reveals complex ecosystems existed on Earth much earlier than previously thought

Discovery challenges understanding of how quickly life recovered from the greatest mass extinction in Earth's history

Date: February 9, 2023

About 250 million years ago, the Permian-Triassic mass extinction killed over 80 per cent of the planet's species. In the aftermath, scientists believe that life on earth was dominated by simple species for up to 10 million years before more complex ecosystems could evolve. Now this longstanding theory is being challenged by a team of international researchers -- including scientists from McGill University and Université du Québec à Montréal.

A fossilized ocean ecosystem

Until now, scientists have long theorized that scorching hot ocean conditions resulting from catastrophic climate change prevented the development of complex life after the mass extinction. This idea is based on geochemical evidence of ocean conditions at the time. Now the discovery of fossils dating back 250.8 million years near the Guizhou region of China suggests that complex ecosystems were present on Earth just one million years after the Permian-Triassic mass extinction, which is much earlier than previously thought.

"The fossils of the Guizhou region reveal an ocean ecosystem with diverse species making up a complex food chain that includes plant life, boney fish, ray-finned fish, crabs, lobsters,

shrimp, and molluscs. In all, our team discovered 12 classes of organisms and even found fossilised faeces, revealing clues about the diets of these ancient animals," says Morgann Perrot, a former postdoctoral researcher at McGill University, now at Université du Québec à Montréal.

Challenging an age-old theory

Previously, it was thought that complex ecosystem would need five to ten million years to evolve after an extinction. However, the researchers found that the specimens in the Guizhou region evolved much quicker than that by using radiometric dating to date the rocks where the fossils were discovered.

"All of this has implications for our understanding of how quickly life can respond to extreme crises. It also necessitates a re-evaluation of early Triassic ocean conditions," says Perrot, whose research focuses on earth sciences and geochronology.

McGill University. "Fossil discovery reveals complex ecosystems existed on Earth much earlier than previously thought: Discovery challenges understanding of how quickly life recovered from the greatest mass extinction in Earth's history." ScienceDaily. ScienceDaily, 9 February 2023.

www.sciencedaily.com/releases/2023/02/230209224309.htm

Florida Fossil Hunters News

Dinosaur claws used for digging and display

27-Feb-2023 5:05 AM EST, by University of Bristol
Shuyang Zhou for the 3D modelling and functional scenario restoration
BYLINE: Laura Thomas

Newswise — Dinosaur claws had many functions, but now a team from the University of Bristol and the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) in Beijing has shown some predatory dinosaurs used their claws for digging or even for display.

The study focused on two groups of theropod dinosaurs, the alvarezsaur and therizinosaur, that had weird claws whose function had been a mystery up to now. It turns out that alvarezsaur used their rock-pick-like claws for digging, but their close relatives, the giant therizinosaur, used their overdeveloped, metre-long, sickle-like claws for display.

The new work is led by Zichuan Qin, a PhD student at the University of Bristol and the IVPP. He developed a new, computational approach in biomechanics to identify functions based on detailed comparison with living animals. First, the claws were modelled in three dimensions from CT scans, then modelled for stress and strain using engineering methods, and finally matched to functions of pulling, piercing and digging by comparison with modern animals whose claw functions are known.

“Alvarezsaur and therizinosaur are definitely the strangest cousins among dinosaurs,” said Professor Michael Benton, one of Zichuan’s supervisors. “Alvarezsaur were the tiniest dinosaurs ever, the size of chickens, with stubby forelimbs and robust single claws, but their close

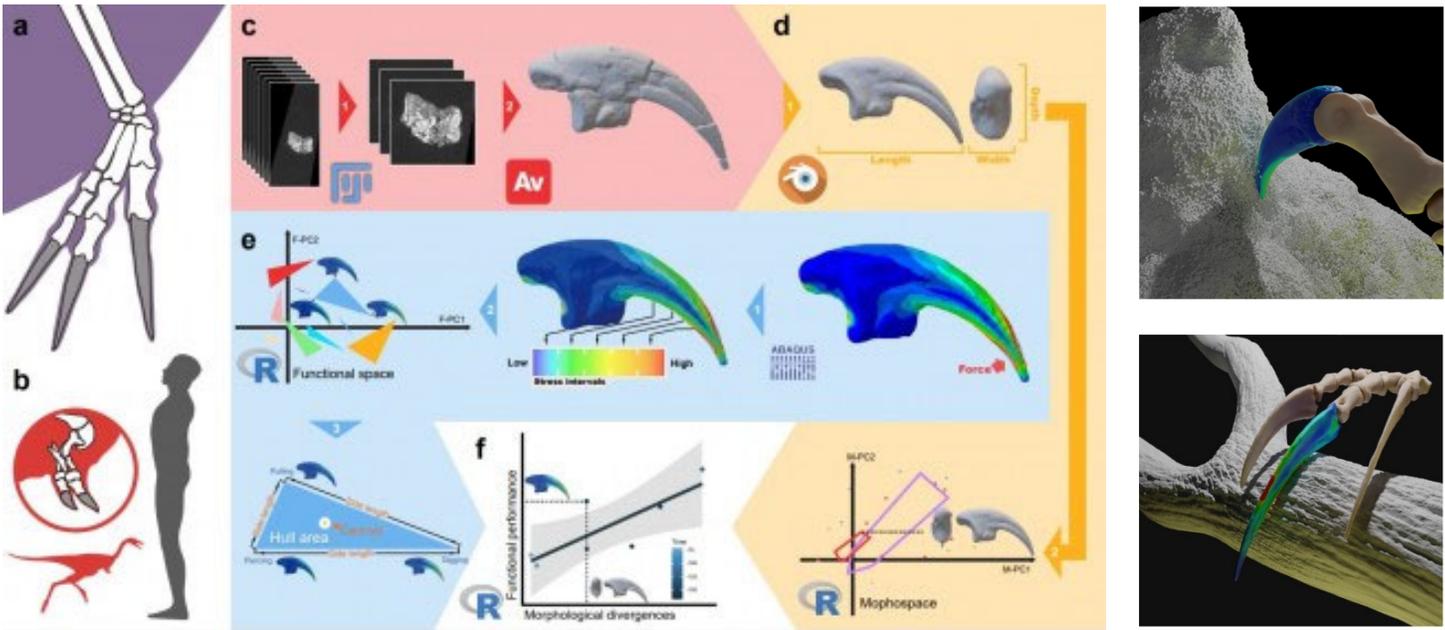
relative, the therizinosaur, evolved in the exact opposite path.”

“Therizinosaur is famous for its sickle-like claws, each as long as a samurai sword: Edward Scissor-hands on speed. We all saw Therizinosaur in ‘Jurassic World’ hitting deer and killing the giant predator Giganotosaurus. However, this is unlikely. These long, narrow claws were too weak for combat.” said Dr Chun-Chi Liao, an expert on therizinosaur from IVPP who co-authored this study. “Our engineering simulation shows that these claws could not withstand much stress.”

“Not all therizinosaur hand claws were so useless in combat, but most other related species could use their claws as powerful hooking tools when feeding on leaves from the trees.”, Dr Chun-Chi Liao added, “so, we conclude that the largest claws of any animal ever were actually useless in mechanical function, and so must have evolved under sexual selection to be used in display. The adult Therizinosaur I guess could wave the claws at a competitor and effectively say, ‘look at me, back off’ or wave them around in some way like a peacock can use its tail in display to attract females for mating.”

“Our previous work has shown that alvarezsaur evolved to become the tiniest dinosaurs by the end of the Cretaceous, and these dinosaurian midgets were using their punchy little claws for

Florida Fossil Hunters News



digging into ant hills and termite mounds. They were ant-eaters.” said Zichuan Qin.

“Our study shows that the early alvarezsaur, like Haplocheirus from the Jurassic, had multifunctional hands, but they were not good at digging. Their much smaller descendants had the efficient digging hands so they could feast on the Late Cretaceous termites.” added Zichuan Qin.

“Science and technology cannot bring dinosaurs back to life, but advanced computing and engineering techniques can show us how extinct animals lived,” said Professor Emily Rayfield, one of Zichuan’s supervisors, and an expert of dinosaur biomechanics. “Especially for extinct animals like alvarezsaur and therizinosaur, they are so bizarre that we even can’t find any living animals like them. Luckily, advanced technology can help us to simulate, on a computer, the functioning of extinct animals using fundamental engineering and biomechanical principles. This study shows very well how selection for function can lead to the emergence of specific, sometime very bizarre, forms.”

‘Functional space analyses reveal the function and evolution of the most bizarre theropod manual unguals’ by Qin, Z., Liao, CC., Benton, M.J et al in Communications Biology.

1	2
	3

1. Key taxa and work pipeline use in this paper. Silhouettes show the large and elongated forelimb of the late-branching therizinosaurian *Therizinosaur* (a) and the overall body shape and highlighted forelimb of the late-branching alvarezsaurid *Mononykus* (b), scaled against an adult human (height ~1.8 m). The work pipeline demonstrated by an unguis model from the Jurassic alvarezsaurid *Haplocheirus*, includes processes of 3D model reconstruction (c); model smoothing, measurement, and morphological analysis (d); finite-element analysis, ‘intervals’ method and functional-space analysis (e); and total evidence functional assessment (f).
2. Alvarezsaur claw digging dirt
3. Therizinosaur claws when hooking and pulling trees

<https://www.newswise.com/articles/dinosaur-claws-used-for-digging-and-display>

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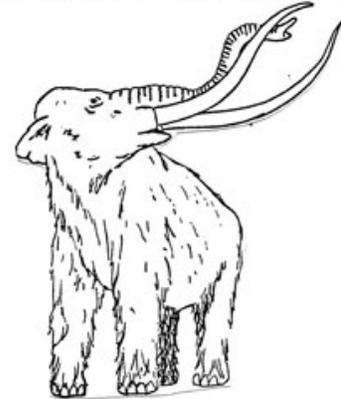
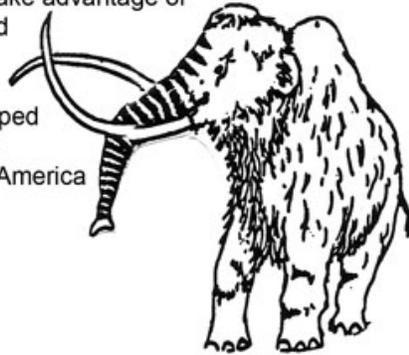
Mammoth or Mastodon WHAT IS THE DIFFERENCE

Proboscideans - Mastodons and Mammoths

Proboscideans originated in North Africa and spread from there. Their tusks are actually elongated incisors. The Mastodons arrived in North America 13 million years ago. They were browsers, feeding on the leaves, twigs and bark that were plentiful in the forests that covered North America at that time. As the climate changed, grasslands began to emerge.

The Mammoths evolved to take advantage of this food source. Their plated teeth enabled them to chew on the abrasive grass more efficiently than the cone-shaped teeth of the Mastodons. The mammoths arrived in North America around 2 million years ago.

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MAMMOTH

Mammuthus
10 - 12 feet
6 - 8 tons
grazer
tundra, grasslands

MASTODON

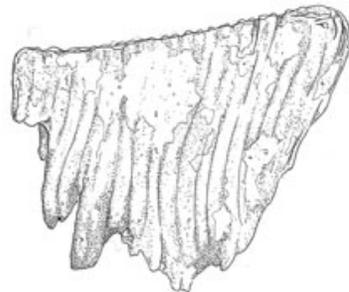
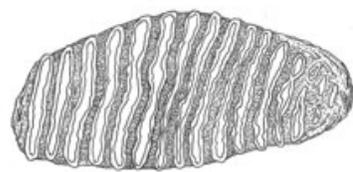
Mammut
8 - 10 feet
4 - 6 tons
browser
forest, woodlands

Height/shoulder
Weight
Foraging type
Habitats

Teeth

third molar
(side view)

(top view)

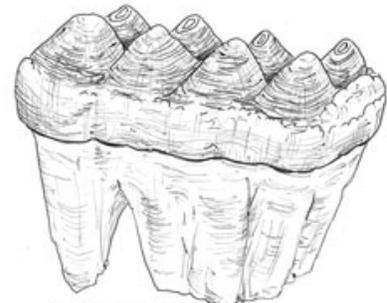


crown

root

plate

cone



WHY JOIN THE FLORIDA FOSSIL HUNTERS

MEETINGS

FIELD TRIP

VOLUNTEER

FACEBOOK GROUP

RENEW FOR 2023: www.floridafossilhunters.com/membership

Florida Fossil Hunters News

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 options are listed to the right.

Meetings are usually held on the third Saturday of the month but may vary with club activities. Check the website for the date and location of the next meeting or call one of the officers.

Officers:

President	Salvatore Sansone	(321) 278-9294
Vice President 1	Steve Sharpe	(352) 552-2296
Vice President 2		
Secretary	Melissa Cole	(407) 461-8507
Treasurer	David Dunaway	(407) 786-8844

Chairs:

Field Trips	OPEN	
Fossil Fair	Valerie First	(407) 699-9274
Fossil Auctions	Dave Dunaway	(407) 786-8844
Fossil Bucks	Dave Dunaway	(407) 786-8844
Fossil Lotto	Ed Metrin	(407) 321-7462
Membership	Ken Sellers	
Newsletter		
	Elise Cronin-Hurley	info@elisech.com
Photography	John Heinsen	(407) 291-7672
Facebook	Salvatore Sansone	
	Ken Sellers	
Webmaster	Elise Cronin-Hurley	info@elisech.com

Board of Directors:

Joyce Bittle	(407) 341-6366
Melissa Cole	(407) 461-8507
Marge Fantozi	(407) 256-5566
Valerie First	(407) 699-9274
Ed Metrin	(407) 321-7462
Ken Sellers	(407) 457-4117

Membership Application

MAIL in this form or Register ONLINE at
www.floridafossilhunters.com/membership

Names: _____

Associate Members: _____

Address: _____

City: _____

State: _____ Zip: _____ Phone: _____

e-mail: _____

____ New ____ Renewal

Please list any interests, experience, talents or just plain enthusiasm, which you would like to offer to the club:

Family membership: \$25
Individual membership: \$20

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 with Family Membership. Per our insurance policy, family membership covers married couples and children. All other individuals must have separate individual membership to be covered by our club insurance.

Membership year runs from January to December.

Newsletter Policy

Articles must be submitted two weeks before publication date. to be considered for an issue. Emailed to: info@floridafossilhunters.com. Articles can be sent either as text in the e-mail, in a google doc, or in Microsoft Word files (.docx).

Please note in subject of email 'FFH News: [article or info]#'

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dba/ Florida Fossil Hunters #

Florida Fossil Hunters News

Florida Fossil Hunters Mark Your Calendar

2023 Calendar

Meetings 3pm at OSC | Kids' Fossil Blast and alternative time and location noted when applicable.

See inside for more information

January 14th
February 25th
March 25th
April 8th—Field Trip Pg 2
May 20th
June 24th
August 26th
September 23rd
October 28th
November 11th
December Holiday Party - tba

Mark Your Calendar!

2023 Fossil Fair
October 21st & 22nd

Join Our Facebook group:
www.facebook.com/groups/floridafossilhunters



Visit us online at www.floridafossilhunters.com

Email info@floridafossilhunters.com to share articles, questions & comments

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