

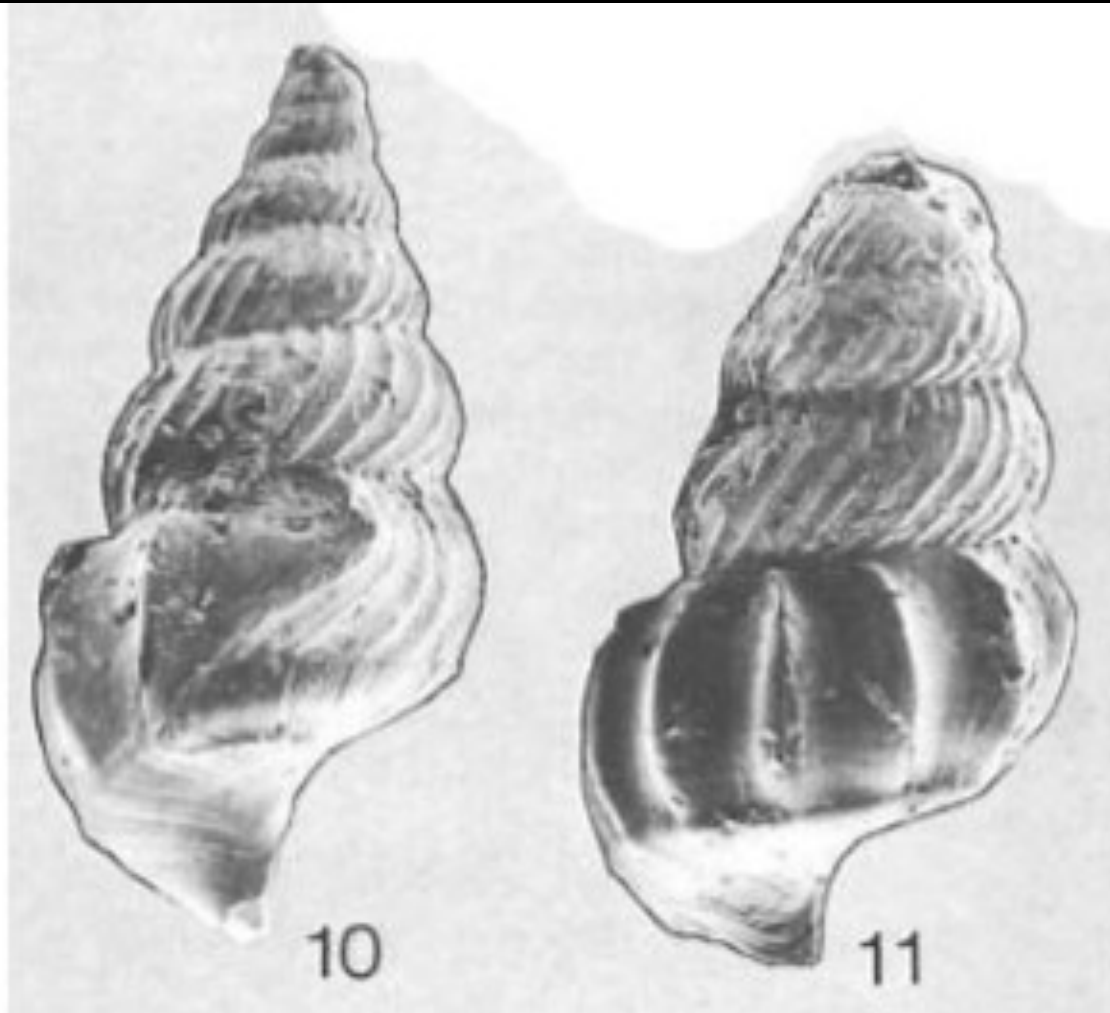
MISSISSIPPI GEOLOGICAL SOCIETY

*e***BULLETIN**

Volume 70

No. 6

February 2022



**RARE MARINE GASTROPOD FOUND IN CRETACEOUS BURMESES
AMBER COMPARED WITH A SPECIES FROM MISSISSIPPI**
David T. Dockery III, RPG

OIL PATCH QUIZ
Steve Walkinshaw, Vision Exploration



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PRESIDENT'S LETTER

David Snodgrass, MSOGB



Dear MGS Member,

We seem to be getting back to our pre-Covid normal these recent weeks... well that is other than mega high oil/natural gas and gasoline prices. People are moving around and traveling about without too much worry these days. There is, however, more good news. Unless otherwise notified, we are going to restart in-person meetings at the River Hills Club on April 13, 2022 at 11:30 with great food and a distinguished lecturer lined up this time sponsored by SPE. Our May lecturer will be Dr. James B. Harris of Milsaps College and I hope to have someone lined up for June regarding the recent development, Hydrogen Gas Storage in Mississippi. We very much would appreciate your attendance and I will be breaking down this year's activities that hopefully will occur uninterrupted. More information will be forthcoming, so please stay tuned and stay well.

MGS President,

David H. Snodgrass, RPG

2021-2022 MGS MEETING SCHEDULE

When	What/Who	Where
September	Fall BBQ	Cancelled
October	Cancelled	Cancelled
November	TBD	Cancelled
December 8	SPE Distinguished Lecturer	Online - 11:30am
January	TBD	River Hills - 11:30am
February	TBD	River Hills – 11:30am
March	TBD	River Hills – 11:30am
April 13	Dr. James B. Harris - Millsaps	River Hills - 11:30am
May	Boland Scholarship Awards	TBD

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MGS SCHOLARSHIP AWARDS

Faculty & Students,

This is a new year and the Mississippi Geological Society along with the Boland Scholarship Fund would like to remind you that we want to honor the most outstanding overall students for the 2021-2022 year.

Each year, the Boland Scholarship awards 1 student from each institution a check that rewards students for their hard work and dedication to the Geosciences and their community.

We look forward to a great year and hope to see you at our monthly meetings.

Best Regards,

Matt Caton
Editor



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MONTHLY POST

David T. Dockery III, RPG

RARE MARINE GASTROPOD FOUND IN CRETACEOUS BURMESE AMBER COMPARED WITH A SPECIES FROM MISSISSIPPI.

David T. Dockery III, RPG

Fossil insects are not uncommon in amber deposits worldwide. The first American amber insect was described by Cockerell in 1917. It was the caddis fly *Dolopilus praemissus* from amber in the Late Cretaceous Coffee Sand at its type locality at Coffee Landing on the Tennessee River in Tennessee. Other fossils from Cretaceous amber from the Turonian Raritan-Magothy Formation in abandoned clay pits at Sayreville, Middlesex County, in central New Jersey include a biting midge (Grogan and Szadziwski, 1988), the earliest known fossil ant (Agosti et al., 1997), and even a bird feather (Grimaldi and Case, 1995). Published fossils from Burmese (Myanmar) Cretaceous amber from Kachin, as of May 2021 (Ross, 2021), include 2038 species from 1,382 genera of which 1908 species are arthropods (insects). The first two marine gastropods from Burmese amber were published by Ting-Ting Yu, Bo Wang and Ed Jarzembowski (2019). These were named as the wentletrap snails (Family Epitoniidae) *Epitonium (Epitonium) zhuoi* and *Epitonium (Papyriscala) lyui*. So, what are the chances that these new Burmese fossil seashells would have anything to do with the Cretaceous Coffee Sand of Mississippi (as published by Dockery, 1993, see Figure 1)?

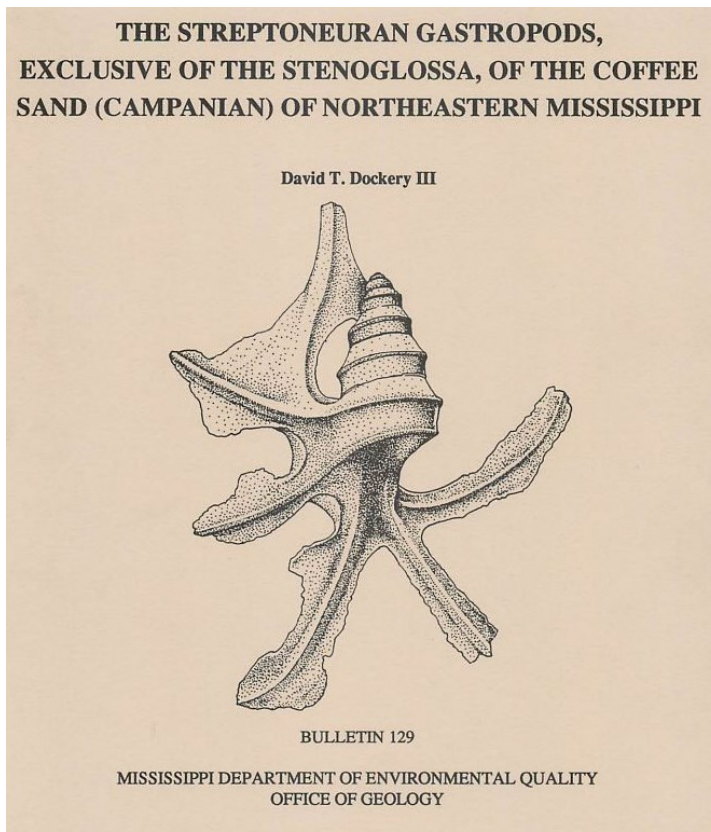


Figure 1. Cover of MDEQ Office of Geology Bulletin 129 on Coffee Sand gastropods published in 1993.



MONTHLY POST

David T. Dockery III, RPG

Marine fossil localities in the Coffee Sand of Mississippi have attracted paleontologists from such places as England, France, Germany, and Japan (Figure 2), who have accompanied me in collecting these localities. The Japanese asked me how long before we get there more than once in our travel from Jackson to northern Lee County, Mississippi. One said we can get from one end of Japan to the other in this time (probably an exaggeration). In Chapter 4, Cretaceous Geology, of *The Geology of Mississippi*, I noted how widely distributed some Cretaceous gastropod taxa from the Coffee Sand were, many of which I named for family members. Of those (and quoting from page 133) “the *Epitonium* belonging to Fae [Terrell Fae Yonkers, my sister-in-law] *E. faearium* was found in the basal Mexcala Formation (lower Maastrichtian) in Guerrero State, southern Mexico (Perrilliat et al., 2000), as were many other Coffee Sand gastropods; Melanie’s [my wife’s niece] *Punctiscalla*, *P. melaniea*, was cited as being “very similar” to “*Confusiscala*” *shutanaurensis* from the Late Cretaceous Trichinopoly Group in the Ariyalur area of Tamil Nadu in southern India (Bandel, 2000, p. 79); and Yonker’s *Lemniscolitorina*, *L. yonkersi* [named for my father-in-law], was compared with *Lemniscolitorina kuhurens* of the Trichinopoly Group, India (Bandel, 2000, p. 106).



Figure 2. Japanese professors and graduate student (holding Bulletin 129 on the Coffee Sand gastropods). Dr. Tomoki Kase, Department of Geology, National Science Museum, Tokyo, Japan (and author of *Early Cretaceous Marine and Brackish-water Gastropods from Japan*), is standing next to Dockery at far right.



MONTHLY POST

David T. Dockery III, RPG

The *Epitonium*, *Epitonium (Epitonium) zhuoi* Yu, Wang, and Jarzembowski, 2019 (Figure 3), was discussed in the introduction as follows: “The type genus *Epitonium* Röding, 1798 is abundant in records documenting the Cenozoic, e.g., *Epitonium (Boreoscala?)* sp. from the Eocene of Tanga (Ladd, 1970); *Epitonium (Crisposcala) okinavensis* Macneil, 1960 and *Epitonium (Glabriscala) submaculosum* Macneil, 1960 from the Pliocene of Japan (Macneil, 1960).

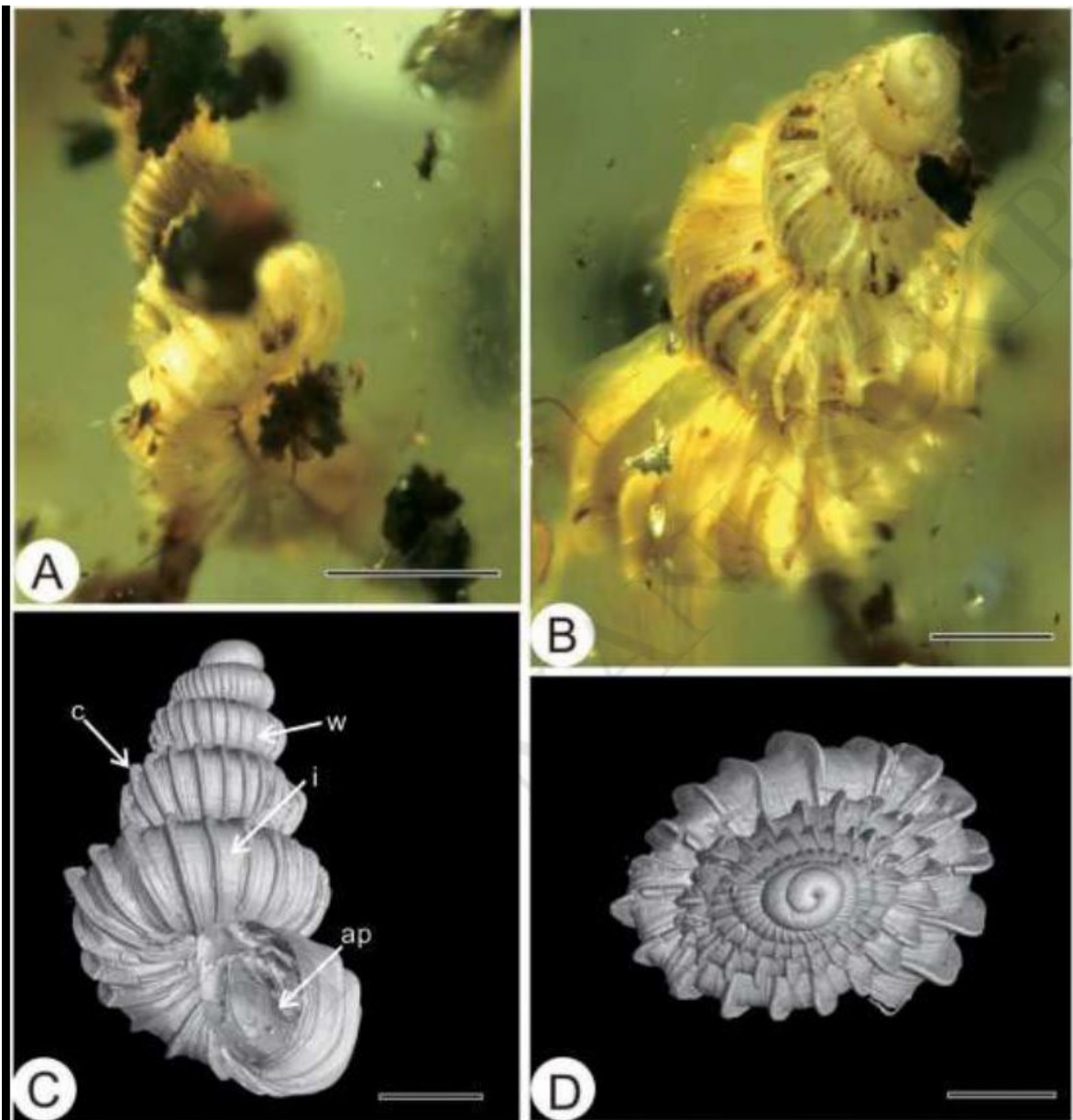


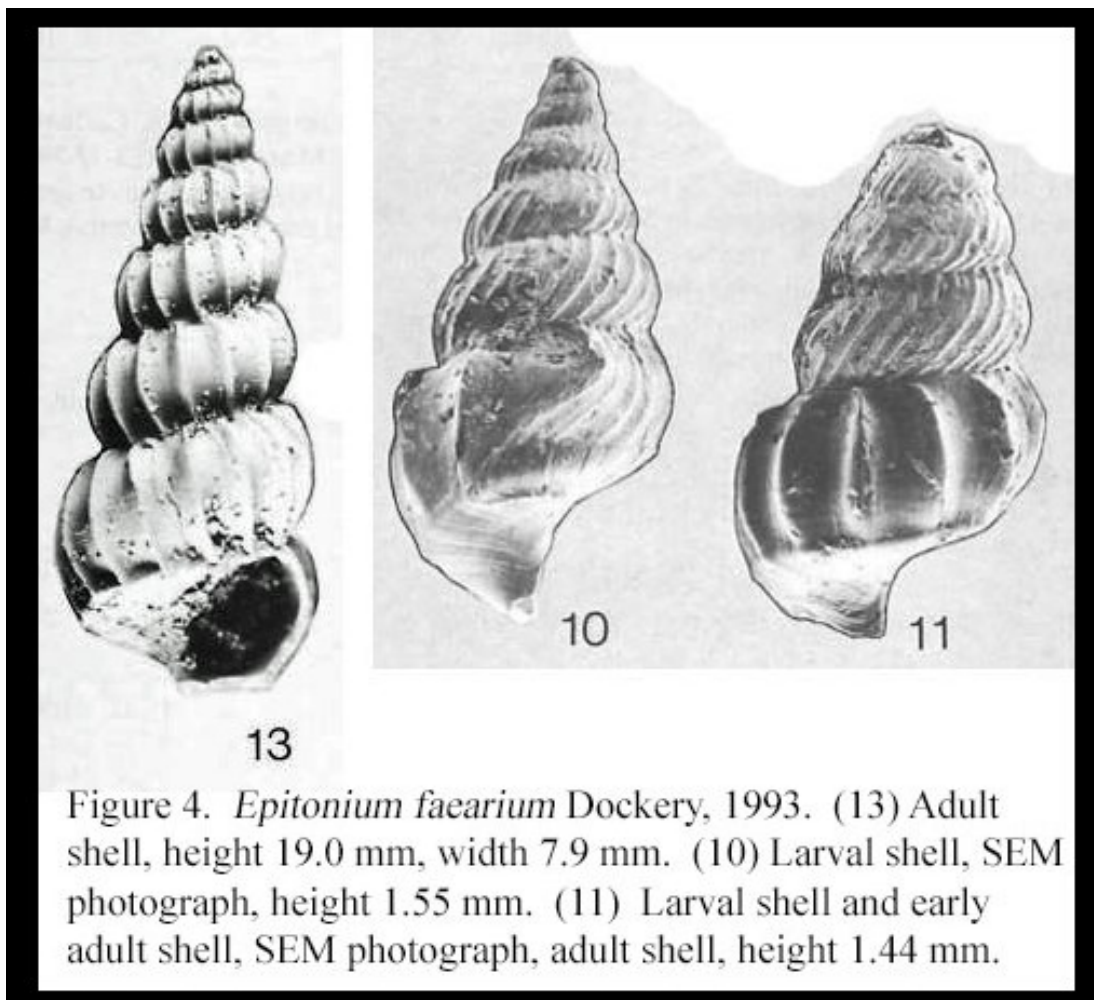
Figure 3. *Epitonium (Epitonium) zhuoi* Yu, Wang, and Jarzembowski, 2018. (A) Apertural view; (B) lateral view; (D) apical view of embryonic shell. (C, D). Micro-CT reconstruction. Scale bar = 0.5 mm.



MONTHLY POST

David T. Dockery III, RPG

However, Mesozoic records of *Epitonium* are rather sparse: *Epitonium* cf. *faearium* Dockery, 1993 has been reported from the lower Maastrichtian of southern Mexico (Perrilliat et al., 2000); *Epitonium* sp. from the Cretaceous of Minnesota (Bergquist, 1944); and *Epitonium faearium* Dockery, 1993 from (Figure 4) the Upper Cretaceous of Coffee Sand, Mississippi (Sohl, 1964; Dockery, 1993). In this work, we report the first record of Epitoniidae preserved in amber. Two new species, *Epitonium* (*Epitonium*) *zhuoi* n. sp. and *Epitonium* (*Papyriscala*) *lyui* n. sp., are described from Burmese amber dating from the mid-Cretaceous.”



Epitonium faearium is shown in Figure 2, with one adult and two larval shells. *Epitonium* (*Epitonium*) *zhuoi* is shown in amber and the reconstructed shell in Figure 3. Congratulations to my sister-in-law Terrell Fae Yonkers in the citation of her fossil shell patronym *Epitonium faearium* in Yu, Wang, and Jarzembowski, 2019, *First record of marine gastropods (wentletraps) from mid-Cretaceous Burmese amber: Palaeoworld*, Volume 28, Issue 4, December 2019, Pages 508-513.



GEOLOGY POST

THE RICHARD R. PRIDDY ENDOWMENT

HELP A STUDENT ATTEND SUMMER FIELD CAMP! The Richard R. Priddy Endowment has been created specifically to provide funding for students to attend Summer Field Camp. Field camp is required for all Millsaps Geoscience majors, and most scholarships typically do not cover these costs. The Endowment honors the late Dr. Richard Priddy who was Chair of the Millsaps Department of Geology from 1946 to 1972.

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This solicitation is submitted by Millsaps Geoscience alumni, Rev. Torrey Curtis ('67), Steve Franks ('68), Wayne Upchurch ('68), Clayton Breland ('70), and David Williamson ('72). We are not official representatives of Millsaps College.



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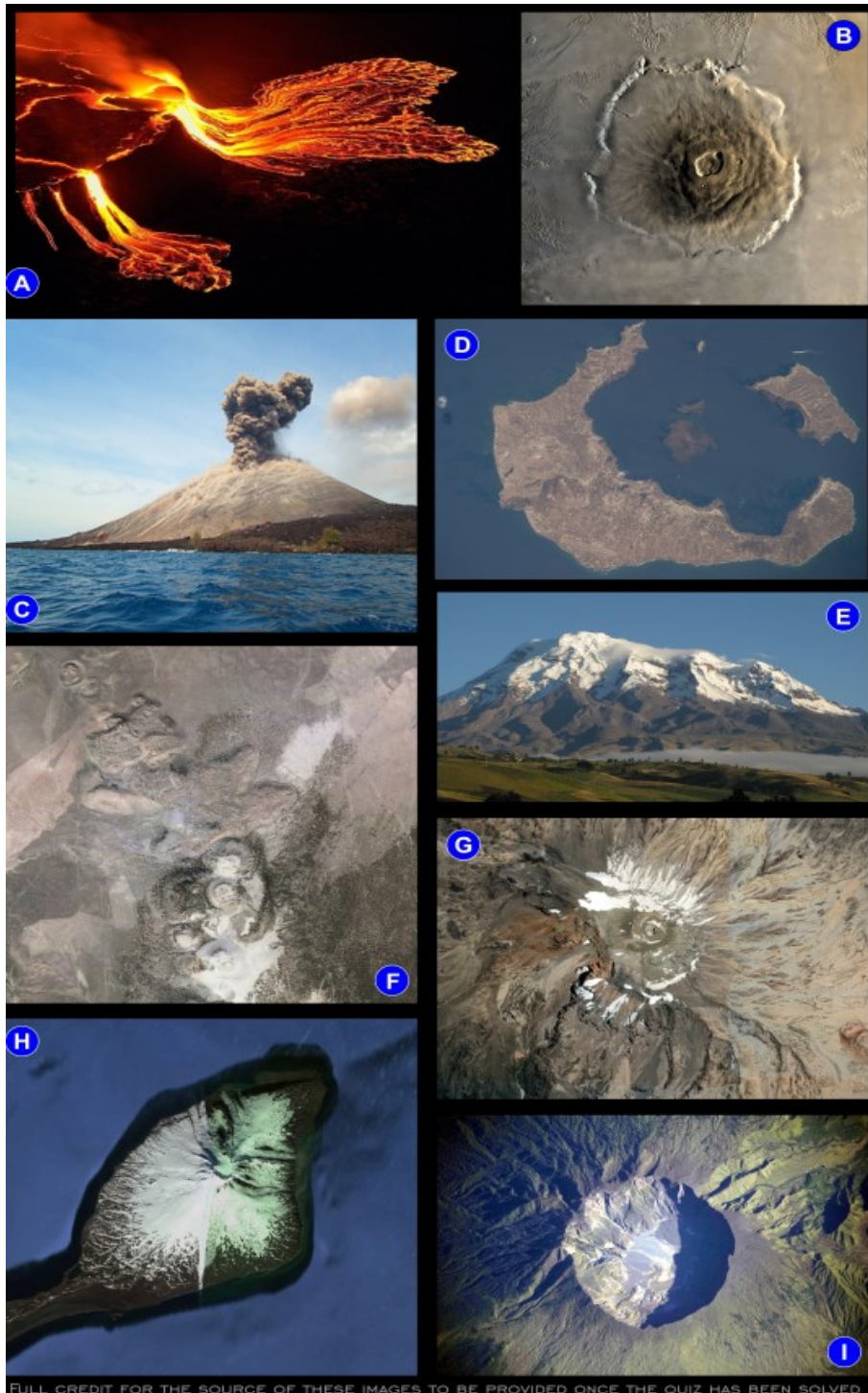


MONTHLY QUIZ

Steve Walkinshaw

Oil patch quiz time. It's all about volcanoes! The recent explosive submarine eruption of the Hunga Ha'apai volcano on January 15, 2022 was estimated to have a Volcanic Explosivity Index (VEI) of 5, a reminder of the awesome power of such eruptive events. How does this recent eruption compare with other similar occurrences?

Images from several prominent volcanoes are shown in the montage.





MONTHLY QUIZ

Steve Walkinshaw

OIL PATCH QUIZ

Questions...

Part 1: The summit of one volcano shown is the furthest point from the center of the Earth. Identify the image in the montage ("A", etc.) and name the volcano.

Part 2: The summit of another volcano shown is the furthest from the Equator. Identify the image associated with this volcano and name the volcano.

Part 3: The largest volcano known to man is shown in one of the images. Identify and name this volcano.

Part 4: The acoustic wave associated with the blast from this volcano's eruption is reported to have traveled 7 times around the globe. Identify the image associated with this volcano and name the volcano.

Part 5: Earth's northernmost active volcano is shown. Identify the image associated with this volcano and name the volcano.

Part 6: The world's largest freestanding mountain is illuminated by one of the images. Identify the image associated with this volcano and name the volcano.

Part 7: One image shown is that of the volcanic complex located closest to San Francisco, California. Identify the image associated with (and name) this volcanic complex.

Part 8: A volcanic eruption that occurred ~3,600 years ago (VEI 7) changed the course of Western civilization and is believed to have been the inspiration for a local legend. Identify the image associated with (and name) this volcano, and name the legend.

Part 9: The only other volcano shown that erupted with VEI 7 force is believed responsible for The Year Without a Summer. Identify the image associated with this volcano and name the volcano.



MONTHLY QUIZ

Steve Walkinshaw

OIL PATCH QUIZ

Part 10: Another volcanic eruption (not shown) occurred ~240 years ago and caused widespread famines and temperature extremes, including the freezing over of the Mississippi River at New Orleans and the observation of ice floes in the Gulf Of Mexico. Thousands perished from starvation. Name this volcanic eruption.

Bonus:

Part 11: A probable Late Cretaceous volcanic complex was discovered in the northern Gulf of Mexico in 1963. Name this volcanic complex.

Part 12: Blocks of alkali basalt have been discovered near the top of a salt diapir in another area of the GOM. Name the salt diapir.

Part 13: A massive Pleistocene eruption ejected an astounding ~2,450 cubic kilometers with VEI 8 force, creating a caldera as large as 5,700 square kilometers. Some of the welded ash-flow tuffs are more than 400 meters thick. This eruption impacted most of the surrounding continent and is presumed to have impacted global temperatures for a long period of time. What is the specific

Answers at end of Bulletin



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I am looking for more content from the industry and our schools.

Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

mcaton13@yahoo.com

Thanks & Regards,

Matt Caton
Editor

GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

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<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

<http://www.ngdc.noaa.gov/seg/topo/globegal.shtml> More great maps to share with kids and students.

www.geo.org Don't forget we have our own web page.

<http://micro.magneet.fsu.edu/primer/java/scienceoptiscu/owersofl0/>

<http://asterweb.jpl.nasa.gov/galery/default.htm> Great satellite images of volcanoes

<http://terra.nasa.gov/gallery/> More here

www.ermapper.com They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terraserver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnmf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



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MONTHLY QUIZ

Steve Walkinshaw

ANSWERS

Part 1: The summit of one volcano shown is the furthest point from the center of the Earth. Identify the image in the montage ("A", etc.) and name the volcano. Image "E", Mt. Chimborazo, Ecuador

Part 2: The summit of another volcano shown is the furthest from the Equator. Identify the image associated with this volcano and name the volcano. Image "A", Mt. Erebus, Antarctica

Part 3: The largest volcano known to man is shown in one of the images. Identify and name this volcano. Image "B", Mons Olympus, Mars

Part 4: The acoustic wave associated with the blast from this volcano's eruption is reported to have traveled 7 times around the globe. Identify the image associated with this volcano and name the volcano. Image "C", Mt. Krakatau, Indonesia

Part 5: Earth's northernmost active volcano is shown. Identify the image associated with this volcano and name the volcano. Image "H", Mt. Beerenberg, Jan Mayen Island

Part 6: The world's largest freestanding mountain is illuminated by one of the images. Identify the image associated with this volcano; name the volcano. Image "G", Mt. Kilimanjaro, Tanzania

Part 7: One image shown is that of the volcanic complex located closest to San Francisco, California. Identify the image associated with (and name) this volcanic complex. Image "F", the Mono-Inyo Crater Complex, California

Part 8: A volcanic eruption that occurred ~3,600 years ago (VEI 7) changed the course of Western civilization and is believed to have been the inspiration for a local legend. Identify the image associated with (and name) this volcano, and name the legend. Image "D", Santorini (aka Thera), the Legend of Atlantis

Part 9: The only other volcano shown that erupted with VEI 7 force is believed responsible for The Year Without a Summer. Identify the image associated with this volcano and name the volcano. Image "I", Mt. Tambora, Indonesia

Part 10: Another volcanic eruption (not shown) occurred ~240 years ago and caused widespread famines and temperature extremes, including the freezing over of the Mississippi River at New Orleans and the observation of ice floes in the Gulf Of Mexico. Thousands perished from starvation. Name this volcanic eruption. The Laki Fissure Eruption, Iceland, 1783-1784

Part 11: A probable Late Cretaceous volcanic complex was discovered in the northern Gulf of Mexico in 1963. Name this volcanic complex. The Door Point Volcano, offshore St. Bernard Parish, discovered by Shell

Part 12: Blocks of alkali basalt have been discovered at the top of a salt diapir (the seafloor) in another GOM area. Name the salt diapir. the Alderice Bank; the basalt spires found there are the oldest known (~77 Ma) exposed rocks that have been encountered off the continental shelf of Texas and Louisiana

Part 13: A massive Pleistocene eruption ejected an astounding ~2,450 cubic kilometers with VEI 8 force, creating a caldera as large as 5,700 square kilometers. Some of the welded ash-flow tuffs are more than 400 meters thick. This eruption impacted most of the surrounding continent and is presumed to have impacted global temperatures for a long period of time. What is the specific name of this eruptive event, and what is the name of the caldera? The Huckleberry Ridge Eruption of the Island Park Caldera, part of the greater Yellowstone Plateau Volcanic Field



MONTHLY QUIZ

Steve Walkinshaw

CREDITS

Here are the credits for / sources of the images shown in the montage.

Image "A": <https://steemit.com/science/@hopf-orbifolds/lava-lake-in-antarctica>

Image "B":

https://nssdc.gsfc.nasa.gov/photo_gallery/photogallery-mars.html#features

Image "C": <https://www.indonesia-tourism.com/lampung/krakatau.html>

Image "D": https://upload.wikimedia.org/wikipedia/commons/3/3d/ISS-48_Santorini_Caldera%2C_Greece.jpg

Image "E": https://upload.wikimedia.org/wikipedia/commons/2/21/Ecuador_Chimborazo_5923.jpg

Images "F", "G" and "H": Google Earth