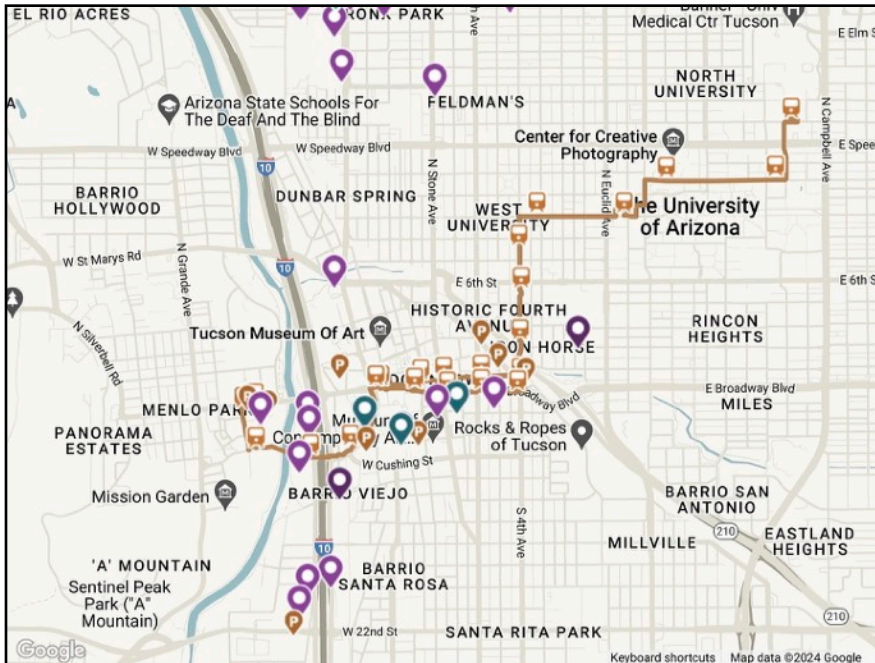




Volume 70 ◊ Number 02 ◊ February 2024 ◊ A monthly newsletter for and by the members of MAGS

Going To The Tucson Show

Without Breaking The Bank W.C. McDaniel February Program



The greatest gem and mineral show(s) on earth and beyond occur every year, beginning the final week of January and extending to mid-February, in Tucson, Arizona. Going to these shows—note I use the plural “shows” as there are 40-45 shows scattered along the I-10

corridor—is on the bucket or wish list of many rockhounds. However, completing that task is challenging. Time, distance, and money are pretty immense. So, to help MAGS Members enjoy Tucson the February program will go to Tucson though the

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REMINISCENCES OF PHOSPHATE MINERAL COLLECTING IN ARKANSAS

Today, all of Arkansas is covered with a blanket of snow ... in my area around 1.5 inches. So it is a good day to look back at some of the minerals I have collected over the years and just enjoy their pictures! I chose to look over the pictures of iron and aluminum phosphate minerals as they are some of the more colorful species



J. Michael Howard

in Arkansas. Out of 100 or more photographs, I picked eight to share with my readers. All of these specimens were self collected, except for photo 7. That specimen came from Ken Headley, as a gift at the Mount Ida Quartz, Quilts, and Crafts Show many years ago! Most of these specimens were sold as part of my collection to an Oregon

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News ◊ A monthly newsletter for and by the members of MAGS

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MAGS AND FEDERATION NOTES

Memphis Archaeological and Geological Society,
Memphis, Tennessee

The objectives of this society shall be as set out in the Charter of Incorporation issued by the State of Tennessee on September 29, 1958, as follows: for the purpose of promoting an active interest in the geological finds and data by scientific methods; to offer possible assistance to any archaeologist or geologist in the general area covered by the work and purposes of this society; to discourage commercialization of archaeology and work to its elimination and to assist in the younger members of the society; to publicize and create further public interest in the archaeological and geological field in the general area of the Mid-South and conduct means of displaying, publishing and conducting public forums for scientific and educational purposes.

MAGS Membership Meetings are at 7:00 P. M. on the second Friday of each month May-October, and 10:00 A.M. on Saturday after the second Friday November-April. The meetings are held in the Fellowship Hall of Shady Grove Presbyterian Church, 5530 Shady Grove Road, Memphis, Tennessee.

MAGS Website: memphisgeology.com

MAGS Show Website: <https://earthwideopen.wixsite.com/rocks>



Please contribute articles or pictures on any subject of interest to rockhounds. The 20th of the month is the deadline for next month's issue. Send material to mlybanon@yahoo.com.

Go to <https://www.southeastfed.org/sfms-field-trips/dmc-field-trip-program> for the DMC field trip schedule and other information.

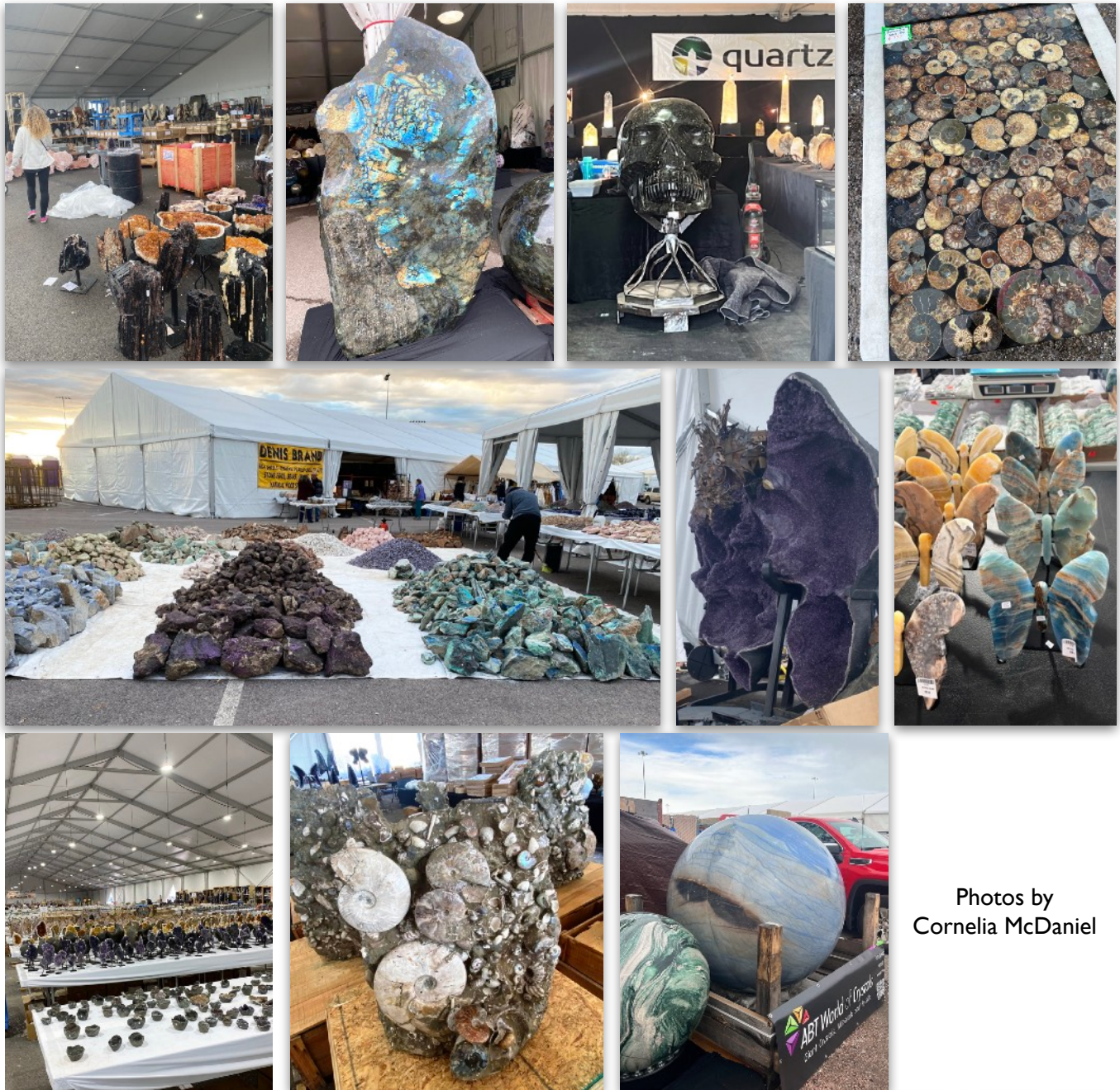
Links to Federation News

- ➔ AFMS: www.amfed.org/afms_news.htm
- ➔ SFMS: <https://www.southeastfed.org/>

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News ◇ A monthly newsletter for and by the members of MAGS

Going To The Tucson Show ... wonders of YouTube. So sit back, relax ,watch the wonders of the earth and keep your wallet full.
Continued from P. 1



Photos by
Cornelia McDaniel

President's Message

Some other February meeting features

1. Gemstone heart to every MAGS Member who has renewed/paid their 2024 mem-

bership dues.

2. Free show ticket to the first ten people who sign in.
3. Free show ticket to anyone who brings and displays an exhibit, especially if it is a nat-

urally occurring heart shaped stone.



Continued, P. 5

*Reminiscences of Phosphate ...
Continued from P. 1*

mineral dealer in 2019. But this is the beauty of having photos of the pieces ... so I can think back on the fun I had both collecting and photographing!

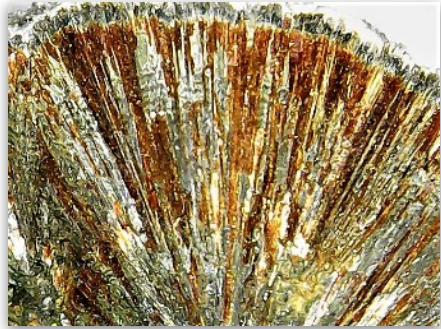


Figure 1. A radiating broken cluster of brown beraunite needles coated, near the top of the photo, by black rockbridgeite. This specimen is from Blaylock Mountain in Polk County, from Meredith York's Claim. Magnification is 10X. Self collected.



Figure 2. Cacoenite needles coating beraunite, magnification is 15X. This specimen is from Three Oak Gap, at an abandoned manganese claim, in Polk County. Self collected.



Figure 3. Green kidwellite crystal clusters on manganese oxide from Meredith York's Coon Creek Claim, at the former Coon Creek Manganese Mine, in Polk County. The magnification is 15X. Self collected.



Figure 4. Purplish strengite sword blade crystals from the Coon Creek Claim (Mine) in Polk County. Magnification is 15X. Self collected.



Figure 5. Wavellite "eyes" showing multiple nucleation sites from the Avant wavellite pit, Garland County. Magnification is 15X. Self collected.



Figure 6. White wavellite coated by green terminations from the County Quarry, Mauldin Mountain, Montgomery County. Magnification is 15X. Self collected.



Figure 7. Color zoned wavellite from the County Quarry, Mauldin Mountain, Montgomery County. Magnification is 20X. Specimen collected by Ken Headley.



Figure 8. Yellow and smaller white wavellite spheres from the County Quarry, Mauldin Mountain, Montgomery County. Magnification is 15X. Self Collected.

President's Message
Continued from P. 3

Show24—Update



Grand Door Prize

Memphis Mineral, Fossil and Jewelry Show 2024

THE EARTH WIDE OPEN Sat. April 27, 9-6 | Sun. April 28, 10-5

Rocks, Fossils, Minerals, Gems,
Lapidary Equipment, Jewelry and Beads

Agricenter International
7777 Walnut Grove Rd.,
Memphis, TN

Presented by the
Memphis Archaeological
and Geological Society

Adults - \$6, 2 day pass - \$10 12 & under - \$2 Scouts in Uniform - Free

<https://earthwideopen.wixsite.com/rocks> 901-921-3096 / 901-490-3575

Planning for the April 27/28 Show continues to move forward, Here is a status update.

- We will not use Section A of the building which contain the children's area, exhibits, and concessions. They will relocate to the entrance hall. Specific layout planning for that section is underway.
- Dealers—We are sold out of space with a waiting list. We may be able to add some small dealer spaces created by not using section A.
- Exhibitors and demonstrations continue to commit.

W. C.

Fabulous Tennessee Fossils

*Dr. Michael A. Gibson,
University of Tennessee at Martin*

FTF 107

Specimen Labels & Taxonomic Nomenclature, Part 1

While packing-up my UT Martin library and getting specimens from our collections ready to be moved into storage during our building renovation (as well as moving active research specimens to my new working labs at Coon Creek Science Center and here in Mobile, Alabama), I noticed that I still had a collection of Devonian fossils on-loan from the Peabody Museum at Yale University. Look-

ing at these specimens reminded me about specimen labeling conventions and about codes that often come with specimen labels. Labeling specimens is extremely important for museums, but personal collections should have a labeling system and database as well for them to be useful to the scientific community especially. Remember that you, my fellow amateur fossil enthusiasts, are in

the trenches with professional paleontologists in discovering fossils that may provide insight into Earth's biopast. Taxonomic nomenclature and labeling can be very "legalistic" and sometimes difficult to decipher at a glance, but labels can provide useful information when properly done. I thought I would begin the new year with a quick review of labels and the types of



Continued, P. 6

Fabulous Tennessee Fossils
Continued from P. 5

information that should be archived on them by using an actual Tennessee specimen from the Peabody Museum at Yale University as an example.

Figure 1 is a photograph of a specimen storage box in the YMP Type Collections Cabinet #596 housed the “Dunbar Type Specimens, 1917” drawer at Yale from Carl O. Dunbar’s dissertation work in West Tennessee in the early 1900s (for more on Carl O. Dunbar, I refer you to FTF 27 and FTF

52). I was at the museum in New Haven, Connecticut, in 2019, just a few weeks before the Covid-19 lockdown, doing work on their Coon Creek Formation fossil collection (yes, Dunbar collected at that site as well as the Devonian Ross Formation). This brachiopod specimen is *Trematospira costata angusta* and was collected over 100 years ago—it has an interesting history. The labels for this specimen are well done. The first thing for you to see is that there is more than one label card (and that it is card stock for durability, not regular paper and in ink). Most specimens will have an initial accession (acquisition) card, usually filled-out by the collector or the collections manager and staff at a museum. The small card to the right appears to be the original label for this specimen. There are some standard bits of information that occur on nearly any museum label card (and you should also record

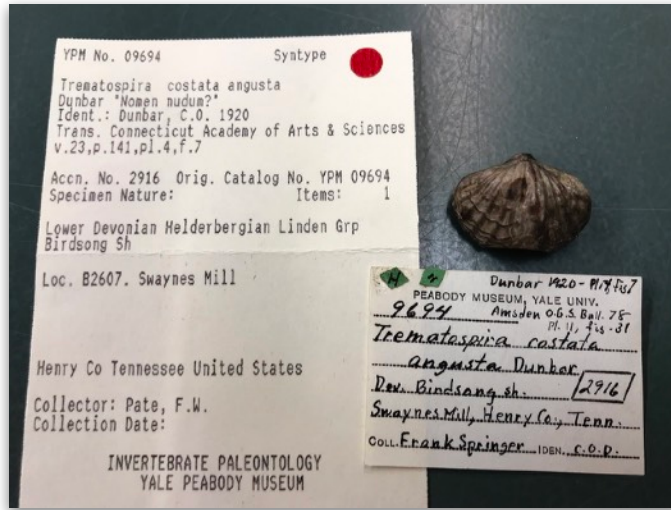


Figure 1. Specimen box with labels for *Trematospira costata angusta* from the Carl O. Dunbar “type” collections at Yale’s Peabody Museum of Paleontology (Photo Credit: MAG, 2019). See text for discussion of labeling details.

for your specimens): (1) name of the taxon, (2) any accession number assigned to the specimen (e.g., 09694 is the YMP number, but 2916 in the box is the accession number from an updated YMP cataloging), (3) geologic age and geologic formation, (4) collecting locality information (sometimes this is a site number referenced to a master list of collecting sites, B2607 in this case), and (5) collector. Additional information may include who identified the taxon if different from the collector (in this case C.O.D. for Carl O. Dunbar himself). Notice that on this card Frank Springer is listed as the collector. If you were to go back to Dunbar’s original field notes for this specimen you would find that Springer (who was a famous paleontologist who specialized in crinoids and is credited with his work on *Scyphocrinites*) was collecting with Dunbar in West Tennessee and he personally found this specimen that Dunbar used in

his dissertation study. I like this card also because it shows another important feature that should be on a label, but usually is not found, namely the publication where this specimen was named or used. In this case, Dunbar described this specimen in 1920 as part of a paper he published in the Connecticut Academy of Sciences (note the plate and figure number). This card also lists a publication that contains another im-

itations of the specimen used later by Thomas Amsden in his work on Oklahoma brachiopods, published as an Oklahoma Geological Survey bulletin. I usually write this information on the back of the label cards for the UTM collections. This is significant because Amsden’s paper was not published for another 30 years!

And now this creates a mystery of sorts. The later date of the Amsden reference means that the smaller card is **not** the original accession card for this specimen (or that there was no accession card for a considerable time between the collection date and the accession). Dunbar’s original card is either missing or there was no original card until the museum later cataloged his materials. I am unsure at this point about this, at least for sure; however, I do know that very few of the Dunbar type material from the Ross Formation have his hand-written labels in the boxes. I suspect that the actual accession of this specimen did not occur in 1920, but later in time when *Continued, P. 7*

Fabulous Tennessee Fossils the material was given to the museum. It is possible that this specimen remained in the Yale teaching or research collections, or in Dunbar's personal collections, separate from the museum collection until that accession.

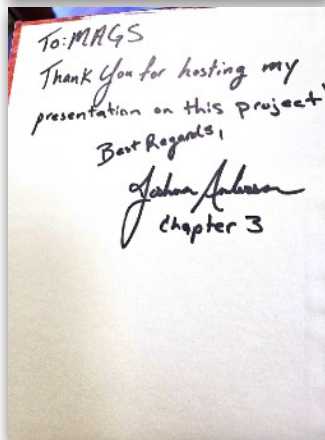
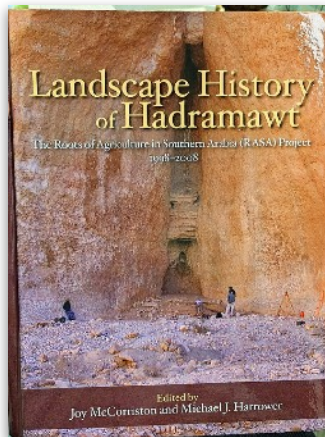
Notice that there are two cards with this specimen and there appear to be two different numbers associated with it. This is not uncommon and it is good practice to never change a card or replace a card. If something changes with the labeling, say a new name for the genus or a new identification by someone else, then a new card is added with the new information, but all of the previous cards should remain with the specimen for historical purposes. In this case, the larger card was typed out when the cataloging of the invertebrate collections at YMP was updated using a new recording system (most likely during computerization). One interesting discrepancy exists with the new card. Notice that now the collector is listed as F.W. Pate (who also worked in West Tennessee during this time). I am not sure why this is the case; however, human error is possible. We would have to go through the field book information of each of these paleontologists to resolve the issue.

There are several other features that I will point out but explain in the next essay. Notice that word "syntype" on the new card along with a red dot in the upper corner. This tells us that this is a special specimen. I will explain the "type" system in the next essay. On

the smaller card, you will see a green diamond with the letter H in it. Also notice the term "nomen nudum" on the larger (newer) card, which tells us something about the status of the name used by Dunbar. More on these aspects in the next essay.

Library Report

Nannett McDougal-Dykes



Landscape History of Hadramawt

The Roots of Agriculture in Southern Arabia (RASA) Project 1998-2008

This is an amazing book full of archaeologically explored regions in Arabia. The project addresses the development of the food production and human landscapes, topics of enduring interest. Re-

search Objectives, Geological and Environmental Content...

With our very own Joshua Anderson in Chapter 3: Paleohydrology, Geomorphology, and Paleocology.

Thank you so much for the **amazing** talk and donation of this interesting and (Long) in a good way book

Thanks,
Nannett



Adult Programs

February 10: "Going to the Tucson Show Without Breaking the Bank."

March 9: TBD

April 13: Show.

Junior Programs

February-April: Same as Adult Programs.

Field Trips

February 17: Nonconnah Creek

March & April: TBD

February Birthdays

- 2 Ryan Pudwell
- 3 Bill Price
- 9 Vincent Mayer
- 10 Gypsee McManus

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News ◊ A monthly newsletter for and by the members of MAGS

MAGS Notes

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Louis White
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- 24 Katie Waddell
Cheryl Yarbrough
- 25 Pamela Chase
- 26 Sara Carter
- 27 Susie Logan
Leigh Butchko
- 28 Joy Ashurst

December Board Minutes

Josh Anderson

Meeting conducted via email due to the inability of W.C. McDaniel to attend. Contributing: W.C. McDaniel, Christine McManus, Joshua Anderson, Nannett McDougal-Dykes, Melissa Koontz, Jim Butchko, Bonnie Cooper, Matthew Lybanon.

Secretary: Minutes approved.

Treasurer: Report approved. Newsletter printed and mailed.

Membership: No new Members. Renewals are slowly coming in.

Field Trips: None for remainder of year.

Youth Programs: December, Holiday Party.

Library: New book donated by November adult program presenter Josh Anderson: *Landscape History of Hadramawt: The Roots of Agriculture in Southern Arabia (RASA) Project 1998-2008*, published in 2020 by the Cotsen Institute of Archaeology Press at UCLA. Report was awarded the 2022 Anna Marguerite McCann Award for Fieldwork Reports.

Editor: Deadline for input to the January 2024 newsletter is December 20, 2023. So far, have no information

“Oh, My Goodness, What’s Under Your Feet?”

At the January Membership Meeting Lou White talked about things you can find in the local area. Here are a few pictures.

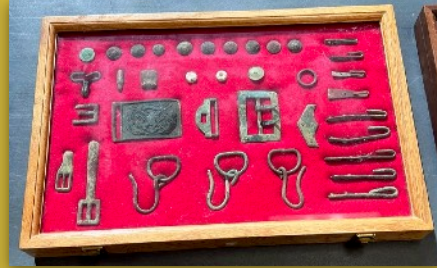


Photo Credits: Christine Anderson and Nannett McDougal-Dykes

on programs (adult or junior) field trips, and other MAGS activities in 2024.

Rock Swaps: None scheduled.

Adult Programs: Need speakers for new year. Will coordinate with W.C. for possible candidates. Dec., Holiday Party. Jan., TBA.

Show: No report.

New Business: Holiday Party

- Members have been sent Holiday Party information.
- Set up Friday after 6:00 pm—tables/chairs/decorations.
- W.C. has all the table covers.

- W.C. will get plates.
- Carol is making the tabletop decorations.
- W.C. has all the Holiday gifts, tree for gift table, and door prizes.
- Carol & Matthew are getting the turkey.
- W.C. will supply ham (will ask if a Member will do that).
- Requesting each board member to bring a 12 pack of drinks. Will request Members bring a 12 pack. Would like to start using smaller size drinks for meetings.
- Other activities to be decided.

Old Business: None.

Above The Speed Limit

Matthew Lybanon, Editor



On February 6, 2023, a magnitude 7.8 earthquake occurred in southern Turkey near the northern border of Syria. This quake was followed approximately nine hours later by a magnitude 7.5 earthquake located around 95 kilometers to the southwest. The first earthquake was the most devastating to hit earthquake-prone Turkey in more than 20 years and was as strong as one in 1939, the most powerful recorded there.

Governments around the world were quick to respond to requests for assistance. The disaster impacted at least 15.73 million people in Turkey and Syria, with over 55,000 lives lost and nearly 130,000 injured. Millions were displaced from their homes.

The National Earthquake Information Center says there are about 55 earthquakes a day around the world—about 20,000 a year. Fortunately, most are too weak to cause damage. Why are some of them so much more destructive?

New research may answer this. According to Prof. Jay Fineberg (Hebrew University of Jerusalem), “If you have a quake that moves faster than the sound speed, the damage of the earthquake becomes huge, because instead of the earthquake just shaking relatively gradually, the buildings will

get hit by a hammer, so the hazards are much greater for a supersonic quake than a regular one.

“The most destructive quakes in recent history have been supersonic quakes. This has been known for the past decade in the field of quakes. The quake in Turkey, it’s surmised, might have been supersonic.”

The research was published in *Science*, and was recently lauded by *Physics World* as one of the top 10 breakthroughs of 2023. The team was looking for something else when they found out that, contrary to existing scientific knowledge, cracks can travel through materials at supersonic speed.

Brittle materials fail by means of rapid cracks. Classical fracture mechanics describes the motion of tensile cracks that dissipate released elastic energy within a point-like zone at their tips. Within this framework, a “classical” tensile crack cannot exceed the Rayleigh wave speed.

Rayleigh waves are a type of surface acoustic wave that travel along the surface of solids. They are part of the seismic waves that are produced on the Earth by earthquakes. In seismology, Rayleigh waves (called “ground roll”) are the most important type of surface wave.

When Fineberg and his team were pulling apart materials in their lab to check something unrelated to cracks, they noticed that the measurements for the crack formations were off.

“It seemed to contradict physics. We started to do more and more experiments, first verify-

ing again that we weren’t making mistakes. Then we found the conditions under which these supersonic cracks propagate.”

This serendipitous discovery, he says, “is a fundamentally new way of understanding how things can break.” This discovery may point the way to studying the physics of extremely destructive earthquakes in the laboratory.

Ref: Meng Wang *et al.*, *Tensile cracks can shatter classical speed limits.* *Science* 381, 415-419 (2023). DOI:10.1126/science.adg7693

Rockhound House?

Matthew Lybanon, Editor



“Fake image made by AI” was the main reaction when this photo was posted on Facebook. Fake? Maybe, or maybe not.

Charlevoix, a Northern Michigan town, is home to 28 “Mushroom Houses” built by the eccentric architect Earl Young. His works are made mostly of stone, using limestone, fieldstone, and boulders that he found throughout Northern Michigan. Readers can see pictures and more information online: <https://roadtrippers.com/magazine/charlevoix-mushroom-houses/>.

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News ♦ A monthly newsletter for and by the members of MAGS

MAGS At A Glance

February 2024

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1 Zoom Board Meeting, 6:30pm	2	3
4	5	6	7	8	9	10 Membership Meeting, 10:00am, "Going to the Tucson Show Without Breaking the Bank"
11	12	13 	14	15	16	17 MAGS Field Trip, Nonconnah Creek
18 	19	20	21	22	23	24 DMC Field Trip
25	26	27	28	29 March Board Meeting, 6:30pm	1	2



Find us on Facebook. The Memphis Archaeological And Geological Society Page is where you will see accurate information about MAGS events and about the Memphis Mineral, Fossil, Jewelry Show.

Memphis Archaeological and Geological Society
 2019 Littlemore Drive
 Memphis, TN 38016

