

MEMPHIS ARCHEOLOGICAL AND GEOLOGICAL SOCIETY

**Memphis Archaeological
and Geological Society****New Format!**

We've refreshed our format as a continuing commitment to improving readability and presentation. Send the [editor](#) any feedback you want to share.

Help Needed

We need your help! Please see article on [Page 2](#)!

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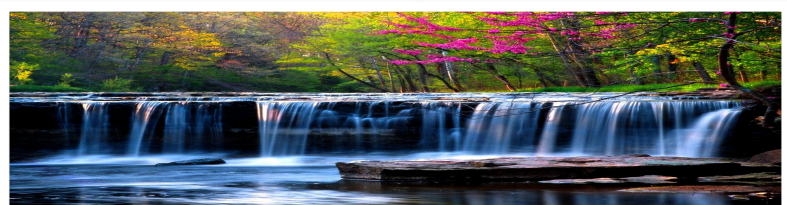


May Member Meeting Presentation

**Waterfalls and Geysers, The Power
of Water from Around the World**

Alan Schaeffer

Hi everyone, we will be exploring waterfalls from Iceland, New Zealand, Argentina/Brazil and the US. We will also learn about geothermal energies and their expressions from geothermal hotspots in Europe, North America and South America. As I have never seen a waterfall I didn't like, I hope you will share my excitement of both waterfalls and geothermal expressions across the globe!





Help Needed

We need help with the following positions to either lead or be a collaborator with the area lead in making our society the best it can be for you. If you can spare some time each month, please volunteer in the area that you most connect with:

Director - Historian/Rock Swap
 Director - Assistant Field Trips
 Director - Assistant Adult Programs
 Director - Assistant Librarian
 Webmaster

To learn more, email [Christine Anderson](mailto:Christine.Anderson@magsofmemphis.org)

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 Am on the 2nd Saturday of each month 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 [David Kitkowski](mailto:David.Kitkowski@magsofmemphis.org).

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

SFMS: <https://www.southeastfed.org/>

2025 MAGS Board



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Field Trips

Charles Hill
Field Trip Director

A Slow Start at Sugar Creek

Hello, MAGsters. I penned this report today with fond memories of our Sugar Creek field trip. First of all, the excursion did not go as planned. On this Saturday, the water was higher than it had been when I surveyed the site three weeks ago. My plan was to enter the creek by a bridge on the west side of the property. Unfortunately, the water under the bridge was deeper than anticipated. We did find a way in, but it was



very muddy. However, after we transversed the mud, we found an abundance of rocks and minerals, including petrified wood, banded chert, river agate, slag, and fossils.

Sugar Creek is an unusual place in many ways. Because it is flooded indirectly by the Mississippi River, you can find almost anything natural. It has been operated as a gravel pit, a forge, a recreation area, and, as legend would have it, a hideout for a notorious river pirate. Trip

participants were therefore able to find a various assortment of man-made artifacts.

The Spencer family had a wonderful time looking for rocks and playing in the water. Lynn Spencer went home with some beautiful agate. Wayne Fewell found a baseball-sized piece of slag with shiny metal spheres in it; and his wife, Sharon, found enough agate to be called "the agate whisperer." I myself found a piece of petrified wood about 9 inches long and 5 inches wide that should hold a good polish. In short, everybody had a good time; and we shall call this a good day.



May Field Trip

Dale Hollow Lake: A Trip to East Tennessee

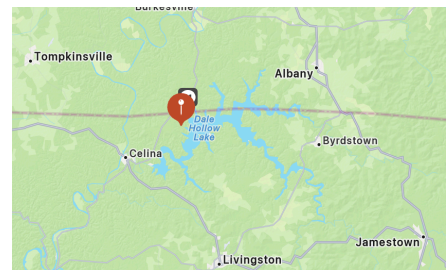
In May, MAGS will be traveling to East Tennessee to hunt for crinoid stems and crinoid plates at Dale Hollow Lake. This is a long trip that might require an over-night stay. The closest city to the Dale Hollow dig site is Livingston, TN. From Memphis to Livingston is 312 miles. There is lodging close and available. Last time our group went, we stayed at the Overton Motel.

This is a dig sight where we will not do much digging. Mostly it is just a matter of walking, looking, and picking up the fossils. These fossils are pushed out from their resting place by the ice of winter and washed out by the lake water. The first time I was there, I saw so many in one place that I thought someone had dumped an ashtray. The crinoids are in singular form and packed on top of each other in plates. The best thing about them is the color: blue!

These crinoids are light baby blue to a charcoal gray and are of very solid limestone. They can be cut without cracking or crumbing, tumble well, and make great jewelry. The plates are as fascinating and beautiful as anything you could find elsewhere. I will bring some to the membership meeting.

What are crinoids and why are they blue? Fossilized crinoids are the remains of marine animals related to starfish and sea urchins. During the Paleozoic age, crinoids were abundant in shallow tropical seas. Something buried the crinoids we find at Dale Hollow Lake; and while going through the fossilization process, they got close to a mineral that influenced their color. I am guessing copper.

If anyone wants to join us for this hunt, please come to the May membership meeting. The meeting is on May the 9th at 7:00 PM. I will have flyer with directions to Livingston, TN, and a sign -up sheet. If you cannot attend, please call or e-mail me. My number is (901)-626-4232, and my e-mail address is hunter3006@aol.com.



June Trip Announcement

When I committed to be Field Trip Director again, I told the MAGs board that I had obligations for the month of June. So with regret, I must inform everyone that there will be no field trip in June. However, the July trip will be to a crystal mine in Arkansas. We have been searching for an Assistant Field Trip Director; but so far, we have been unsuccessful. (Any volunteers?)

April Member Meeting Presentation

Gemology 101 - Jane Coop

Jane Coop delivered a brilliant presentation on "Gemology 101" at the MAGS meeting, captivating the audience with her in-depth knowledge and passion for the field of gemology. Despite initial technical difficulties—where the presentation slides refused to display—Jane's quick wit and humor turned the moment into a lighthearted exchange that brought smiles and laughter to everyone in attendance. She creatively improvised with physical examples of gemstones and enthralling anecdotes, keeping the momentum of her talk alive. Her ability to adapt effortlessly underscored her expertise and charisma.

Once the technical hiccups were semi-resolved, the presentation soared to new heights, delving into the fascinating world of gemstone identification. Jane's lively delivery and interactive approach engaged everyone in the room. The meeting was a resounding success, with attendees expressing their admiration for Jane's perseverance and charm. It was clear that the presentation left a lasting impression, making for a thoroughly enjoyable and enriching experience for all.

Hope to see everyone again at the next meeting.



Geology - Ripped from Today's Headlines

Scientists stumble across rare evidence that Earth is peeling underneath the Sierra Nevada

Deep earthquakes at 25 miles down. Part of some normal cycle or is there cause for alarm?
You be the judge!!

[CNN Article](#) and for the geology enthusiasts, the [Geophysical Research Letter](#).

Hidden magma cap discovered at Yellowstone National Park

It's protecting us but will it last? [ABC News Article](#)

Crystal Corner

David Kitkowski

This month's topic is birthstones and their potential significance for us. Assigning a particular gem to a calendar event like a month for example, has been going on for centuries, even before Babylonian times. Depending on the culture and personal significance, the gems assigned may vary, but the focus is very common, selecting gems that reflect a connection to a cultural or individual's characteristics, enhance certain traits and provide support during challenges.

The current widely accepted monthly birthstone standard in the West was set in 1912 by the American National Retail Jewelers Association. Interestingly, in other cultures like India for example, the birthstone is tied to your Vedic Astrology chart to ensure the gem has the deepest connection to your needs for support, and healing and strength through the gem's physical and metaphysical properties.

To understand the potential affects of birthstones on us, we need to briefly explore the idea of resonance. Current physics tells us that everything is made up of energy and each object (of observation) is energy vibrating at specific resonant frequencies. This natural frequency set is determined by the physical parameters of the object including matter, electric, magnetic and quantum attributes to name a few. Some folks have also studied the effect of thought and emotions on our frequencies as well. Here are three of the characteristics of resonant frequencies identified by R. Nave (Georgia State University):

1. It's easy to get an object to vibrate at its resident frequencies, but hard to get it to vibrate at other frequencies.



2. A vibrating object will pick out its resident frequencies from a complex range of frequencies, essentially "filtering out" other frequencies present.

3. Most vibrating objects have multiple resonant frequencies.

So, you and I, as very complex objects, are each vibrating at a unique set of resonant frequencies. Each frequency has different pitches or harmonics, like the same note at different octaves on a piano. Some of these harmonics can be at a very high frequency, like the vibrating frequency of a crystal.

To bring this home, when we walk up to a table of different crystals, we are naturally drawn to some and others we either don't really see as interesting or plain don't like them. Looking back on the three characteristics, the one's you're attracted to likely make you feel good because they are vibrating at a frequency that supports at least one of your resonant frequencies, you are naturally filtering out the other gems that are not vibrationally compatible, and you find several types of gems that are attractive matching your various resonant frequencies.

So spending time with your birthstone can have many positive affects, especially if you express an intention to have it support you in some way, meaning that it provides excitation at resonance (if you need a technical reason why it works).



Photo credit: Heidi Kitkowski

May Birthstone - Emerald

The emerald is a gem quality specimen of the beryl mineral family. According to Hobart King (geology.com), "For over 5,000 years, emeralds have been one of the most desirable and valuable stones." Together with the ruby and sapphire, they form the 'big three' meaning they generate more economic activity than all other colored stones combined. On the Mohs Hardness Scale of "resistance to be scratched", the emerald is a 7.5 to 8 out of 10 making it a very durable and beautiful gem.

Emeralds have been viewed as symbols of rebirth and renewal in both cultural and personal perspectives. A good stone for regeneration and recovery it is a positive stone full of energy encouraging us to live life to the fullest. No wonder it's so popular!

Some interesting cultural and religious beliefs about emeralds include:

Ancient Egypt: Egyptians believed emeralds symbolized fertility and immortality, often burying them with the deceased to ensure rebirth in the afterlife.

Indian Traditions: In Vedic astrology, emeralds are linked to Mercury, symbolizing wisdom, communication, and prosperity.

Christian Symbolism: Emeralds have been associated with paradise and divine love, appearing in religious art and iconography.

Middle Eastern Beliefs: Emeralds were thought to grant protection and wisdom, often used in amulets and talismans.

These cultural associations highlight the gemstone's universal appeal and spiritual depth. (Source: emerald.com)

Going back to our resonance connection, Astrology also works to understand energy cause and effect. May birthdays fall into the Taurus (ruby and diamond) and Gemini (Sapphire) astrological signs. Interestingly, beryl is a 6 sided crystal structure, and 6 is the sacred number of Venus whose house is under Taurus. Metaphysically, Emeralds are said to be aligned in vibration to the Heart Chakra.

So for our May birthday people, any of the 'big three' gems are good gems for you to add to your birthday wish list with emeralds topping the list.



Photo credit: Heidi Kitkowski

Fabulous Tennessee Fossils

Dr. Michael A. Gibson

University of Tennessee at Martin

FTF 122 – Robert’s Shark

It is not unusual to find fossil shark’s teeth in marine deposits, especially from Mesozoic and Cenozoic deposits. Teeth are resistant to deterioration because they are made of the mineral apatite. There are no marine deposits of these ages in Middle or East Tennessee. Many of the marine deposits in West Tennessee, especially in the Cretaceous deposits, produce fossil shark teeth fossils (for example see FTF 114), but occasionally shark’s teeth are found in places where they are unexpected. Back in 2023, Jackson resident Susan Holder’ son, Robert, found a single shark tooth (Figure 1) while he was installing water lines to a new dentist’s office off Vann Drive in Jackson, Tennessee, not far from the Boot Barn. It has been in his possession for the past two years and was recently brought to our attention for identification. This particular fossil shark tooth is an enigma as it should not occur in strata naturally exposed in Jackson, TN. The Jackson landscape is underlain by glacially-derived löess deposits (wind-blown terrestrial silt) from the Pleistocene Epoch (only a few tens to hundreds of thousands of years ago) in West Jackson and older Paleogene Period sediments of the Claiborne and Wilcox formations in East Jackson. These later formations are coastal plain sediments primarily, but not marine generally (at least in this area). So, finding a shark tooth in these deposits would be notable. I was excited that the mysterious tooth could lead me to a new marine unit in the Jackson area. But there is more to solve about the mysterious tooth.

Study the image in Figure 1 closely and note the non-curving triangular shape of the tooth,

serrated margins, lack of denticles (cusplets) near the top of the tooth, and the slightly convex surface. The area where the cusplets would have been appears to be broken on



Figure 1

both sides of the tooth, so we cannot rule out the possibility that the tooth did have cusplets. Robert Holder’s shark tooth most closely matches the morphology (and preservation style) of the white shark *Charcharocles*, or what most collectors have known of as *Charcharodon* (“meg teeth” – the new genus name for the megalodon is *Otodus*), albeit this would be a smaller tooth. The size is not atypical of “meg” teeth found in the Carolinas and Florida and the black preservation is similar as well; however, this does not make any sense. Smaller, often juvenile, teeth often lack the cusplets, so that part of the mystery isn’t too concerning. This tooth morphology is also similar to some of the teeth attributed to an extinct type of Mako shark in the genus *Isurus*. If Robert’s shark tooth indeed is a small *Charcharocles*, or even the *Isurus*, then what is it doing buried in Jackson, Tennessee?

Figure 1. Robert and Susan Holder’s shark tooth unearthed from a construction site in Jackson, Tennessee in 2023. Palm of adult hand for scale. (Photo by Susan Holder).



But there are more problems with this find. To my knowledge no other shark teeth have ever been found in Jackson. Next, the nearest known shark-bearing marine strata occurs many miles to the east of Jackson in the Cretaceous outcrop belt that houses the Coon Creek Formation and McNairy Sand. Additionally, the sediments outcropping in Jackson were thought to be mostly non-marine, or at least coastal paleoenvironments. Sharks need marine environments. Perhaps this tooth was transported from offshore by a storm and deposited in these sediments? Possible, but one would expect other fossils to have been transported in, as well, not just a single tooth. Shark teeth are almost never found alone in sediments.

Another issue is that the sharks we identified above that matched the tooth morphology are geologically too young. The oldest sediments in Jackson, and the age of the site where this tooth was found, is Paleogene. Most of the sharks identified above are Miocene and younger sharks (none have been found in Tennessee before). The age of the sediments doesn't work for *Charcharocles* or *Isurus* to be in Jackson strata. Also, there is no marine Miocene or Pliocene in West Tennessee anywhere (or anywhere in Tennessee except at the Gray Site).

So, how do we solve the case of the peripatetic shark tooth? One possibility is that the tooth was not part of the original sediments deposited in Jackson, but rather a random fossil collected by someone from somewhere else that was somehow lost at the site, only to be recovered by Robert (lot of ifs here). I had that happen once before in Jackson when a family that had just moved into a new house found Cretaceous Coon Creek Formation fossils in the

woods behind their house, which was geologically mapped as Pleistocene loess. Again, Cretaceous strata do not occur in Jackson. So, I thought that perhaps this was some new "outlier" outcrop of older sediments that hadn't been found before? When I investigated the site, I found that these fossils were all on the surface under a leaf litter and barely buried. As I dug more, I found the remains of the foundation for an old shed that had long since disappeared, along with other artifacts. This "find" turned out to be a grouping of Coon Creek fossils collected by someone years earlier and left behind their shed, shallowly buried over the years, only to be rediscovered by the new owners.

I don't think the above situation is the issue with Robert's tooth, however. Recall that he was digging a new line to install plumbing into an office building, so his tooth was buried to some depth, not on the surface. Now, I am wondering if the site of the dentist's office used fill "dirt" on the site before construction. If so, then the sediments in which the tooth was uncovered may indeed be of the correct age to house a shark of that age. It was simply brought to Jackson from elsewhere. Recall that the site was being worked on in 2023, two years ago, and is now a functioning business with a parking lot of asphalt, concrete, and buildings. It is possible that the fill may still contain other fossils, including more shark teeth, but not readily available. It does beg the question as to where the fill came from originally and if other Jackson sites might use the same material. I haven't visited the site yet, but plan to in the future. Maybe I can find some of the fill to test. As always, the mystery continues...

Bench Tips

Brad Smith

See More of Brad's Smart Solutions for Jewelry Making Series on Amazon [right here](#).

Drilling Small Items

Small pieces need to be held securely while drilling to prevent them from spinning if the drill catches. Having sliced my fingers occasionally in my younger days, I avoid band-aids now by using flat-jaw pliers or a ring clamp. Pliers also save you if the piece gets hot. Put a little tape over plier jaws if needed to avoid scratches.



Drilling a Stone

Small pieces need to be held securely while drilling to prevent them from spinning if the drill catches. Having sliced my fingers occasionally in my younger days, I avoid band-aids now by using flat-jaw pliers or a ring clamp. Pliers also save you if the piece gets hot. Put a little tape over plier jaws if needed to avoid scratches.





May Birthdays

- 9 Carol Lybanon
- 9 Sahnya Bollin
- 11 Mary Elliott
- 12 Pam Crumpton
- 15 Mike Klapka
- 16 Robert Duncan
- 17 Dave Kitkowski
- 20 Michele Robbins
- 30 Herb Nicholson

2025 Meeting Dates

- May 9th—Friday at 7:00 P.M.
- June 13th—Friday at 7:00 P.M.
- July 11th—Friday at 7:00 P.M.
- August 8th—Friday at 7:00 P.M.
(Annual indoor rock swap/potluck dinner)
- September 12th—Friday at 7:00 P.M.
- October 10th—Friday at 7:00 P.M.
- November 8th—Saturday at 10:00 A.M.
- December 12th—Friday at 7:00 P.M.
(Annual holiday party)

Adult Programs

May 9: Alan & Debbie Schaeffer,
"Waterfalls and Gysers"

June 13: Mike Howard, "UV Minerals"

Field Trips

May - Dale Hollow Lake, TN

June - No trip

July - Crystal Mine in AK

March Board Minutes

Josh Anderson

Zoom meeting called to order 6:32 P.M. Present: Christine Anderson, Joshua Anderson, Bonnie and Bob Cooper, Nannett McDougal-Dykes, Matthew Lybanon. Visitors: Jane Coop

Secretary: Presented February 2025 Board meeting minutes. Minutes approved.

President: Jane Coop reported on purchase status for show grand prize and holiday gifts. Discussed the need to clean/sort the filing cabinets at the Church.

Treasurer: Report approved.

Membership: Final renewal email sent. Board to review the unpaid members listing.

Adult Programs: Need presenters for July and November 2025 meetings. April: Jane Coop, Gemology 101, May: Alan Schaeffer, Waterfalls and Gysers

Field Trips: Elected were Charles Hill as Field Trip Director, and Dave Clark as Field Trip Asst. Director. Pompeii visit is under development.

Youth Programs: Jane Coop voted into lead the program. Program schedule being developed.

Library: No report.

Editor: The last date to submit materials is the 20th of each month.

Show 2025: Amended show dates: 12/4-12/8 2025. Continued contract work with Dealers. Advertising active on social media, need grab bag material and door prize options.

Old Business: Need to update Board Members



MAGS At A Glance

May 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28	29	30	1	2	3
				Board Meeting		TN Valley Rock & Mineral Society Rock Your World Show - Hixson, TN
4	5	6	7	8	9	10
TN Valley Rock & Mineral Society Rock Your World Show - Hixson, TN	Cinco de Mayo				Member Meeting 7 p.m. Waterfalls and Gysers Georgia Mineral Society Show Marietta GA	Georgia Mineral Society Show Marietta GA
11	12	13	14	15	16	17
Mother's Day Georgia Mineral Society Show Marietta GA						Harrison County Gem and Mineral Society, Inc. Show Biloxi, MS
18	19	20	21	22	23	24
Harrison County Gem and Mineral Society, Inc.						
25	26	27	28	29	30	31
	Memorial Day					