

MAGS  ROCKHOUND NEWS

Volume 69 ♦ Number 12 ♦ December 2023 ♦ A monthly newsletter for and by the members of MAGS

Come Celebrate



You're Invited
To the MAGS Holiday Party
Saturday, December 9, 11:00 A.M.-1:00 P.M.
Shady Grove Presbyterian Church
 MAGS will provide the turkey and ham.
 Members, bring the fixin's.
 Food Suggestions:
 Appetizers Salads Vegetables Casseroles Desserts
 MAGS will provide all the gifts and drinks.
 Join us for all the fun.

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PAST HOLIDAY PARTIES

As I was thinking about writing this little party article, I looked back at past holiday parties. We have pictures from parties starting in 2008, showing many of our MAGS friends, our food tables, and our table decorations. We have pictures with a Santa Claus, with many backgrounds, Christmas trees, and snowmen.



We love getting together to share a holiday meal. The club now provides the turkey, the ham, and the gifts for all who attend. Our Members are asked to provide the sides. Think in terms of what a holiday meal consists of: vegetables, salads, starches, and of course desserts. We always need more main course items.

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CAROL LYBANON

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: New website coming.

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

Past Holiday Parties Some suggestions: green beans, carrots, sweet potatoes, mashed potatoes, cranberries, *Continued from P. 1* other vegetables, lettuce salads, dinner rolls. We need your family's favorite menu items.



Rock Hunting and Predators

By Carl Roessler

This book is a stunning celebration of natural splendor. It spans all seven continents and visits some of the earth's remotest regions, showing rocks, minerals, plants, and animals. For although Civilization has claimed much of our planet, millions of square miles of pristine wilderness still flourish.

Six highly knowledgeable authors and some of our foremost wildlife and landscape photographers explore the more than 30 unspoiled Edens, each with its own uniquely fascinating flora and fauna, each boasting breathing vistas. Trek through Africa's Serengeti, with lions, wildebeest, and elephant on the vast savanna.

There are over 200 arresting full color photographs, detailed maps, and sidebars, showing the

delicate balance between animals and land.

I hope you enjoy this book.

Nannett McDougal-Dykes
MAGS Librarian

It's Complicated

Matthew Lybanon, Editor

"Everything should be made as simple as possible, but not simpler."—Albert Einstein

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Fabulous Tennessee Fossils

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

FTF 106?

Fabulous Tennessee Fossils Takes A Break



After 105 consecutive monthly articles, **Fabulous Tennessee Fossils** is taking a breather. Dr. Gibson has retired from the University of Tennessee at Martin and is in the midst of a move. He has graciously offered to write articles bimonthly while he gets settled in his new home. There may also be a small change in focus. The articles may cover other geology topics of local interest, such as stratigraphy, sedimentary features, geologic formations, etc. That may result in a change of title. Watch for the new article series.

It's Complicated The La Brea Tar Pits in Los Angeles are a valuable source of fossil information. Between 50,000 and 10,000 years ago, naturally occurring asphalt in these "tar pits" trapped organisms ranging from massive predators to hoary bats (*Lasiurus cinereus*), rainbow trout (*Oncorhynchus mykiss*), and garter snakes (*Thamnophis sirtalis*). A recent study found that a number of large animal species disappeared abruptly between 14,000 and 13,000 years ago. And the researchers have a pretty good idea why.

Some 14,000 years ago, downtown Los Angeles was home to quite a few species of "megafauna." The researchers dated 172 specimens belonging to seven extinct species—the dire wolf (*Aenocyon dirus*), the ancient bison (*Bison antiquus*), a camel called *Camelops hesternus*, a horse called *Equus occidentalis*, the saber-toothed cat (*Smilodon fatalis*), the American lion (*Panthera atrox*) and Harlan's ground sloth (*Paramylodon harlani*)—and the still-living coyote (*Canis latrans*).

The scientists noticed that although the coyote fossils dated anywhere from 16,000 to 10,000

years ago, every other species abruptly disappeared sometime between 14,000 and 13,000 years ago, with the camels and sloths seemingly blinking out a few hundred years before the predators.

What happened? F. Robin O'Keefe, a biologist at Marshall University (Huntington, West Virginia) and a co-author of the new research, provided some details. The researchers analyzed sediment cores from a nearby lake that provided data on air temperature, salinity, and precipitation. They noted a 300-year-long period of high charcoal accumulation from wildfires in the lake that began about 13,200 years ago—right around when the megafauna went missing from the tar pits.

Next the scientists used a computer model to figure out how fires, climate change, species loss, and human arrival in the area fit together. Often, because of the scarcity of data, extinctions are blamed on just one culprit, such as human hunting or climate change. But reality is usually more complicated. O'Keefe says that humans likely pushed the ecosystem over the brink by killing off herbivores, which allowed the vegetation that served as wildfire fuel to prolifer-

ate just as the climate was drying out anyway and left carnivores without prey.

"It's not necessarily like massive wildfires drove an extinction of megafauna," according to Allison Karp, a paleoecologist at Yale University. "It's that human dynamics changed the fire regime; this interacted with a climate that is arid and at a higher temperature; and this, combined with decreases in herbivore densities, really pushed the system in a nonlinear way and shifted it to another state—a state that included a lot less herbivores and a very different vegetation community and a much higher fire regime than had been seen previously."

Jacquelyn Gill, a paleoecologist at the University of Maine, agrees. "We know that in modern systems, extinction is very rarely uncausal," Gill says. "You often need to have some force that's stressing this population. Then there's often an element of bad luck or some other stressor that comes in. We see that over and over again."

The three scientists agree that the parallels between today's headlines and the disappearance of these animals from *Continued, P. 6*

From The Archives
MAGS Newsletter, April 1976

Memphis Arch. & Geol. Society April 1976

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Alabama Crystallized Petrified Wood

by Preston Watts

The fact that Alabama has been blessed with a unique type of petrified wood is not generally known in rockhound circles.

There are two general areas where the unique type of wood covered with quartz crystals is found. One is near Wetumpka in Elmore County, and the other is near Brilliant in Marion County. Both sites are on private property. There are some indications of other scattered sites of similar wood but these two will be addressed separately.

The Marion County, Brilliant, Ala., exposure is about 50 feet above the coal deposit which has been strip mined. Current estimate is that the trees are float laid down in the latter part of the Pennsylvanian period and prior to the general crustal upheaval of the area. Subsequent to deposit the logs were all encased in a ferrous sandstone varying from one half to 6 inches in thickness. Prior to the petrification process most of the cellulose wood fibers had rotted and remain as clay-like filler material. The molecules of cellulose remaining were replaced with SiO_2 , i. e., petrified. Either concurrently or subsequent to this process, the presence of a supersaturated solution of SiO_2 resulted in all of the petrified wood surfaces being covered with small (micro to 5mm) quartz crystals. Even minute separated pieces of wood were petrified and covered with crystals. Unknown temperatures and pressures may have influenced this process. Each quartz crystal is twinned, double terminated, and about half are smoky. These phenomena make the wood of interest to most. The micro crystals - free and formed in the clay - are especially well crystallized and provided nice specimens for micro-mounts. The smoky crystals make particularly nice specimens as dazzling surfaces on petrified wood. Photographs cannot do justice to one of these specimens neither can my vocabulary.

The Elmore County, Wetumpka, Ala., exposure resulted from Alabama Power Company digging a cut-off canal on the Coosa River. Generally about 30 feet below the current land surface, the petrified logs were part of the excavated material. Water level in the canal is such that access to the exposure is only possible when the lower lake is low and turbines about are not running. The wood is located about 15 feet below normal water level.

This deposit has quartz crystals similar to those at the Marion County site but there are major differences in the two exposures. The crystals vary in size from micro to 15cm. in length. All are doubly terminated even though attached to the SiO_2 wood. Colors of the crystals vary from brilliant clear through all phases of smoky to an opaque black. Crystal arrangement also varies from single to multiple overlapping arrangements. Like the Marion County specimens, football-shaped clusters are found in the clay-like residue. The principle difference between the two sites is the filler residue which did not "petrify." At the Marion County site this is a clay-like red material. At the Elmore County site it is carbonized wood. The petrified wood is generally black to gray but this filler material is really charcoal. When it is heated it will burn. The clusters and individual clear quartz crystals are in this charcoal.

(Mr. Watts is a member of Huntsville G & M Soc. He took 1st place, Class IV Individual Article with the EFMLS Feb. 74. Those who have been fortunate enough to collect this Ala. wood know how hard it was to describe the beauty of it...it is not cutting material but neither does all wood have to be cutting to attract attention. It's beautiful when covered with xls.)

It's Complicated southern California against a backdrop of wildfires and climate change are eerie. O'Keefe notes that the research traces a shift from two different ecosystems in just a few centuries. "Mathematically, it's a catastrophe," he says. "If the medium of that state shift is fire, and then you look around, and everything's starting to catch on fire, you start to think, 'Is it happening again?' That's a rational thing to think."

Ref: F. Robin O'Keefe et al. ,Pre-Younger Dryas megafaunal extirpation at Rancho La Brea linked to fire-driven state shift. *Science* 381, eabo3594 (2023). DOI:10.1126/science.abo3594

Why Do I Ask?

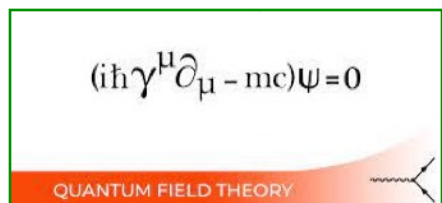
Matthew Lybanon, Editor

Every month I ask for newsletter input, generally with some variation on the same theme:

- The newsletter is more interesting with several viewpoints and writing styles.
- If it interests you, it will probably interest other rockhounds.

Bottom line: If people don't send me stuff, I have to write everything that appears in *MAGS Rockhound News*.

My thing is science. I've been working on an article explaining fluorescent minerals the right way—using quantum field theory. So

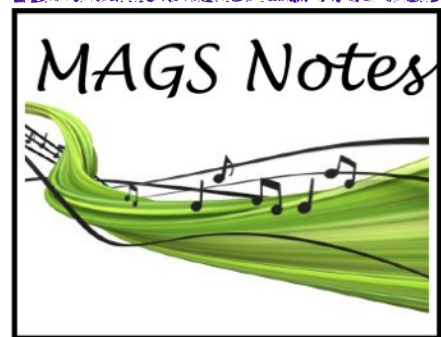


far I've finished the first seven pages. It's going to be an easy read; only 11 Feynman diagrams and not too many equations.

I could really use some more time to finish and polish the article (I haven't decided whether it's better to concentrate on the Lagrangian approach or the Hamiltonian approach). So it would really help if you would send me material to put in the next few issues, while I work on my article. It's up to you.



Thanks, Christine, for this picture of Josh presenting a great program on archaeology in Yemen at our November meeting.



December Birthdays

- 3 Lucy Uhrman
- 4 Ethan Davis
- 6 David McAlister
- 7 Asher Parish
- 8 Alan Schaeffer
- 12 Marc Mueller
- 13 Hongbing Wang

- 15 Kathy Baker
- Jerry Seamans
- 19 Paula Gunter
- 20 Racheal Mitchell
- Wingfield Bouchard
- 23 Jim McNeil
- 24 Jocelyn Ashurst
- Allen Grewe
- 25 Abigail New
- 27 Brandon Robinson
- 29 Bebe Buck
- 30 Michael Parry

Adult Programs

December 9: Holiday Party

January-February 2024: TBD

Junior Programs

December 9: Holiday Party

January-February 2024: TBD



HAPPY HOLIDAYS!

Jewelry Bench Tips by

Brad Smith

TEMPLATES

Whenever I have to make more than 2-3 exact copies of a sheet metal component, I think of making a template. Templates let me easily draw the

Continued, P. 7

Jewelry Bench Tips shape of an
Continued from P. 8 item to cut out.



Art stores or online sources like cooltools.us/ and kingsleynorth.com/ sell templates for common shapes like circles, ovals, hearts, etc. but for nonstandard shapes, I make my own out of a scrap of sheet plastic or sheet metal. My preference is brass. I carefully lay out the shape using a steel ruler, a set of dividers, a scribe, and a fine center punch.

One example is the brass template in the pic above that lets me quickly trace the design of ginkgo leaf earrings onto silver sheet. Another is the nickel template which makes it easy to drill a pattern of holes for pin inlay into wooden handles.

TESTING FOR SILVER

Often you need to identify some of those unknown "silvery" pieces of metal in the bottom of the toolbox or some piece of old jewelry that is not hallmarked. Is it silver or is it something else?

Of course, if you need to know exactly what you have, it's best to send your metals off for refining. But inexpensive silver testing solutions can be used to help distinguish higher silver content alloys from alloys that have the same appearance but with little to no silver content, like German Silver or Nickel.

I purchased a half-ounce bottle of JSP Silver Testing Solution #GT41. It's not a rigorous analytic test, but it lets you know if you're on the right track. And it's inexpensive. Mine was only \$3.

With a fresh solution you have an instant reaction after applying it to the metal being tested. The procedure is simple—apply a small drop and watch for a color change. Note that the acid will leave a slight mark, so choose a spot that is out of the way or will be easy to polish.

If you suspect the object is silver plated, you should file a little notch somewhere inconspicuous to expose what metal is below the surface. Otherwise, all you test will be the surface plating.

Here's the reaction I got when testing various materials:

- Fine silver Red/Orange
- Sterling silver Brick Red
- 80% silver 20% copper Dark red changing to gray
- Brass Yellow changing to blue
- Nickel Gray-green
- Copper Yellow changing to blue
- Steel Black
- Stainless Steel No color change

Caution—If you do any of this testing, know that you are handling a reasonably strong acid. The GT41 label says it includes nitric acid and potassium dichromate.

- ✓ Wear safety glasses.
- ✓ Do not get any testing solution on your skin.
- ✓ Use a solution of baking soda and water to neutralize acid.

- ✓ Wash and clean up well when you're done.

See Other Tips in my Smart Solutions for Jewelry Making Problems

<http://amazon.com/dp/B0BQ8YVLTJ>

October Board Minutes

Josh Anderson

Zoom meeting called to order 6:43. Present: W.C. McDaniel, Christine McManus, Joshua Anderson, Nannett McDougal-Dykes, Melissa Koontz, Jim Butchko, Bonnie Cooper.

Secretary: Minutes submitted via email, presented and approved.

Treasurer: Report approved. Newsletter printed and mailed.

Membership: One renewal.

Field Trips: Oct. & Nov. TBA.

Youth Programs: Oct., Tour de Rocks. Nov., Rock Sculptures. Dec., Holiday Party.

Library: 2 new books on dinosaurs.

Editor: Sent report via email. Requests for photos and material for newsletter. Also requested more information on MAGS at Memphis Botanic Garden for Halloween Hike.

Rock Swaps: No report.

Adult Programs: Oct., Tour de Rocks. Nov., Josh Anderson-Geologist's Trip to Ancient Yemen.

Show: 9-10 dealer contracts already for 2024.

New Business:




1. We are covered for: Fluorescence Frenzy Exhibit MOSH.
2. We are covered for: Memphis Botanic Garden Halloween Hike.
 - Wheel spin.
 - Carol Lybanon-touch table.
3. 2024 Officers Positions—let W.C. know if you plan to continue or not in the next couple weeks, please.

Old Business: None.

Adjourned 7:05.

MAGS At A Glance

December 2023

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30	1	2
3	4	5	6		7	 Holiday Party, 11:00 A.M.-1:00 P.M.
10	11	12	13	14	15	16
17	18	19	20		22	23
DMC Field Trip		26	27	28	29	30
24		1	2	3	4	5
31						6

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Memphis Archaeological and Geological Society
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