

MAGS ROCKHOUND NEWS

Volume 70 ♦ Number 12 ♦ December 2024 ♦ A monthly newsletter for and by the members of MAGS

December 13 Holiday Party



Hi, everyone! It is that time of year when we plan family events, holiday parties, good food, celebrations, and gift giving. Joy to everyone.

Our Holiday Party is scheduled for Friday, December 13, at 7:00 P.M. As in the past the club will provide turkey and ham. We

ask our Members to bring all the other food. We always have an abundance of sweets so please consider making a side dish, a vegetable or appetizer or a starch.

We appreciate everything our Members contribute. If you would like to help in any way, contact Carol *Continued, P. 4*

In this issue

December 13 Holiday Party	P. 1
Lithium—'White Gold' In Arkansas	P. 1
MAGS And Federation Notes	P. 2
RockFest 2024	P. 4
Library Report	P. 4
The Largest Mass Extinction—Why?	P. 4
Fabulous Tennessee Fossils	P. 5
MAGS Notes	P. 7
Wales Geology Adventure	P. 8
October Board Minutes	P. 8
Jewelry Bench Tips	P. 9
MAGS At A Glance	P. 10

LITHIUM—'WHITE GOLD' IN ARKANSAS

Editor's Note: *Lithium is a critical element for the production of rechargeable Li-ion batteries. A recent USGS report stated that large deposits of lithium are buried deep below southern Arkansas. This article gives details.*

J. Michael Howard is a retired geologist/mineralogist, Arkansas Geological Survey.

What is Lithium?



J. MICHAEL HOWARD
Lithium [from Ancient Greek λίθος (lithos), 'stone'] is a chemical element represented by the symbol Li and an atomic number 3 in the Periodic Table of Elements. It is a soft, silvery-white alkali metal. Under standard conditions, it is the least dense metal and the least dense solid element. Like all alkali metals, metallic

Continued, P. 3

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

2024 MAGS BOARD

President—W. C. McDaniel
(901) 490-3575 ♦ w.c.mcd@att.net
1st VP (Field Trips)—Open
2nd VP (Adult Programs)—Christine Anderson
(901) 201-8011 ♦ catclaus79@yahoo.com
Secretary—Josh Anderson
(727) 252-4344 ♦ wadijosh@gmail.com
Treasurer—Bonnie Cooper
(901) 288-4797 ♦ rocks4us@hotmail.com
Director (Youth Programs)—Mike Baldwin
(901) 494-9262 ♦ mbaldwin05@gmail.com
Director (Librarian)—Nannett McDougal-Dykes
(901) 634-9388 ♦ nannettswonders@yahoo.com
Director (Membership Services)—Open
Director (Historian)—Open
Newsletter Editor—Matthew Lybanon
(901) 757-2144 ♦ mlybanon@yahoo.com
Assistant Newsletter Editor—Carol Lybanon
(901) 493-6700 ♦ sgcarol@earthlink.net
Webmaster—Open
Show Chairman—Open
Past President—Charles Hill
(901) 626-4232 ♦ hunter3006@aol.com

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

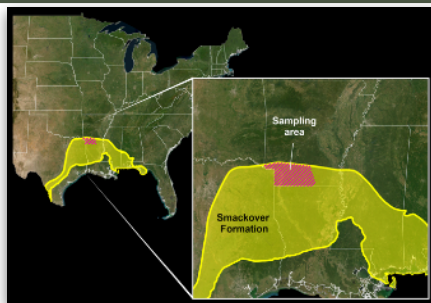
- ➔ AFMS: www.amfed.org/afms_news.htm
- ➔ SFMS: <https://www.southeastfed.org/>

Lithium—‘White Gold’ In Arkansas Continued from P. 1

lithium is highly reactive and flammable, and must be stored in vacuum, inert atmosphere, or inert liquid such as purified kerosene or mineral oil. It exhibits a metallic luster. It corrodes quickly in air to a dull silvery gray, then black tarnish. It does not occur freely in nature, but occurs mainly as pegmatitic minerals, which were once the main source of lithium. Due to its solubility as an ion, it is present in ocean water and is commonly obtained from brines. Lithium metal is isolated electrolytically from a mixture of lithium chloride and potassium chloride.

Arkansas has the potential to be a major source of lithium, a critical mineral for batteries and the energy transition, within the Smackover Formation, which is a geological unit in southwestern Arkansas that contains lithium-rich brine. A United States Geological Survey-led study, supported by the Office of State Geologist, formerly the Arkansas Geological Survey, estimates that the Smackover Formation could contain 5–19 million tons of lithium, which is enough to meet the world's projected demand for lithium car batteries nine times over by 2030.

For over 50 years now, bromine has been extracted from wells drawing brine from the Smackover by removing the fluids, processing to extract the bromine, and then returning the fluids via injection wells to the formation. This process keeps the fluid pressure up and drives the process. This is exactly the same way brine extraction for lithium will pro-



ceed. Presently there are 4 companies with leased land in Arkansas, the land being underlain by the lithium-bearing brine. Some properties will require the drilling of new extraction wells, but much of the properties were drilled in the early 1920s through the 1950s for oil. Some of these wells can be reworked to use either as fluid extraction wells or as injection wells.

The land underlain by the Smackover Formation includes the southern one quarter of the State of Arkansas, and was formed in a shallow warm sea that existed during the Jurassic (from 201 to 145 million years ago). The rock unit is primarily composed of poorly cemented oolitic sands and has very high porosity and permeability. The forementioned brines are sea water that was incorporated interstitial (between the grains) during the formation of the unit. The environment was similar to the present day Bahama Islands in the present day Gulf of Mexico.

Large tracts of land have been leased by several companies, which are presently in negotiation concerning the royalties with the landowners during the extraction process. The companies offered 1.25%, whereas the landowners have countered with 12.5% of contained value. Until this issue is resolved by the Arkansas Oil & Gas



Commission, which now has the regulatory responsibility for oil, natural gas, and lithium and bromine, no production can occur. One meeting has been held and no decision made, so I personally think whatever is decided by the OGC will result in a lawsuit by the most offended parties and it will likely be involved in legal litigation to resolve this issue. This could take several years, but hopefully not. The demand for lithium is not expected to decrease over the next 30 years, but steadily rise due to its use in electric vehicles (EVs) and other commercial uses. Major auto manufacturers in the USA and China are in the early stages, first few years, of production of EVs; the best known manufacturer of fully rechargeable electric vehicles in the USA is Tesla, however, hybrid electric vehicles have been produced for several years by Toyota. Whether you like it or not, some form of electric vehicles are in the consumer's future in this country, from electric bicycles to electric motorcycles and more!

Refs:

1. *Encyclopedia of Arkansas, Online, 2024.*
2. *News Articles by the Magnolia Reporter, Online, 2024.*
3. *Personal discussions with Arkansas State Officials, 2024.*
4. *USGS press release, <https://>*

Continued, P. 4

Lithium—‘White Gold’ In Arkansas
Continued from P. 3

www.usgs.gov/news/national-news-release/unlocking-arkansas-hidden-treasure-usgs-uses-machine-learning-show-large.

5. Katherine J. Knierim et al., *Evaluation of the lithium resource in the Smackover Formation brines of southern Arkansas using machine learning*. *Sci. Adv.* 10, eadp8149 (2024). DOI:10.1126/sciadv.adp814.

Editor’s Note: Where did the name “Smackover” come from? Smackover is a small town (population 1,581) in Union County, Arkansas. But that doesn’t answer the question.

The most likely explanation for the name’s origin is that French explorers, two centuries before the town was founded in 1880, had commented on how the area was covered with sumac, or in French, **sumac couvert**. It wouldn’t be the first time Americans mispronounced a French name.

December 13 Holiday Party
Continued from P. 1

Lybanon (sgcarol@earthlink.net) or Bonnie Cooper (rocks4us@hotmail.com). We always need helpers.

Please come and we will celebrate the holiday together.

Library Report

Nannett McDougal-Dykes

Cave of Lascaux

by Brad Burnham

In 1940, four boys were walking on a hillside near the French town of Montignac. They were looking for an underground passage that would lead to the Manor of Lascaux, a large old house near the town. Instead they found a



RockFest 2024

Nannett McDougal-Dykes



What an amazing time the 90+ Rocks table had at the RockFest at Oren Dunn City Museum in Tupelo, Mississippi. The tempera-

ture was just right to be outside and have a great time painting rocks. Inside George Phillips and team were identifying rocks and fossils all day. Thanks, everyone, for a wonderful day!



hole in the ground. They wanted to explore the hole, but it was too dark see see anything.

So, what do you think the four boys did? ... You’ll have to check out the book to reveal this amazing story. This book has amazing layout and design. It will be in the MAGS Library in January.

Energy

by Raintree Publishing



The word ‘energy’ is often used in today’s world. For example people say that a person who makes quick decisions or is always on the go is “full of energy.”

Sometimes you get up in the morning feeling good. You are ready to play games of football,

basketball or tennis. Then you are full of energy too.

‘Energy’ has very different meanings: Solar Energy, Wind Energy, Nuclear Energy, and more. This book will help you explore it all. The book has amazing designs and layouts. Check it out.

The Largest Mass Extinction—Why?

Matthew Lybanon, Editor

Earth has experienced five mass extinctions (the “Big Five”), and some scientists believe we are currently in the midst of a sixth. The biggest of them was the end-Permian (250 mya).

Around 90% (by *Continued, P. 7*)

Fabulous Tennessee Fossils

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

FTF 117

Christmas Edition—Fossil Christmas Trees from Tennessee



Happy Holiday season to you all; Christmas is approaching fast. As I write this, my wife is unpacking her Christmas decorations and adorning our house in Mobile, Alabama, for the second time since my retirement in 2023. Christmas music is playing and our dachshund, Dash, is hiding out with me in my garage office (he gets nervous whenever he sees boxes being loaded and unloading as he thinks we are packing for a move and worries he will be left behind). How do I tie Christmas to fossils in Tennessee? I could take the easy route and just write about decorating a Christmas tree with fossils as the ornaments. I have seen this a couple of times over the years and even did it myself in my UT Martin office a few times (unfortunately it didn't dawn on me to take photographs of these). The trick to decorating a tree with fossils is to find fossils that are not so heavy that they weigh-down the branches. Small fossils that are not infilled with sediment or embedded in rock work best and seashells are also most easily used, but these trees look more like the modern seashell Christmas trees that adorn many coastal shops and houses because the shells will look more modern [remember the "Cenozoic Marine Evolutionary Faunas and Floras" discussion from FTF 37 (2018)], despite their fossil status. Or, I could point out that globally, over 30 species of organism have been named in

honor of Christmas, but these are mostly modern extant plants, not fossil plants. So, what of "Christmas fossils in Tennessee" or perhaps I should call them "Paleochristmas fossils"? I know...I am stretching things a bit; however, for this essay, I will write about the Tennessee fossil record for trees that are typically used for Christmas trees.

Let's begin with what tree taxa are commonly used as Christmas trees. According to a broad Internet search, there are about 16 primary Christmas tree species that occur within the fir, pine, spruce, cypress, and cedar groups. Fir species include: Balsam Fir (*Abies balsamea*), Fraser Fir (*A. fraseri*), Canaan Fir (*A. balsamea*, var. *phanerolepis*), Douglas fir (*Pseudotsuga menziesii*), Grand Fir (*Abies grandis*), Noble Fir (*A. procera*), and Concolor Fir (*A. concolor*). Pine tree species, the most common conifer tree globally, that are favored for Christmas trees are: White Pine (*Pinus strobus*), Scotch Pine (*P. sylvestris*), and Virginia Pine (*P. virginiana*). Spruce trees are more common in cooler climates. Favorite spruce species for Christmas trees include: Blue Spruce (*Picea pungens*), Norway Spruce, (*P. abies*), and White Spruce (*P. glauca*). Cypress is really a shrub, or "shrub tree", that can grow tall. Cypress species used for Christmas trees include: Arizona Cypress (*Cupressus arizonica*), Ley-

land Cypress (*C. leylandii*), and Red Cedar (*Juniperus virginiana*). Do these taxa have fossil records in Tennessee? To further simplify this essay, I will also focus on identifying the "earliest occurrence" of a "Christmas tree taxa" in Tennessee.

Notice that all the trees listed above are evergreen trees and that most are conifers (cone-bearing seed plants), which belong to the gymnosperms ("naked seed"; needle-like leaves) plant group. In terms of morphology and size, conifers vary from small wiry shrubs to tall trees. We know from the global fossil record that conifers originated in the Northern Hemisphere during the Middle Pennsylvanian Period, approximately 310 million years ago. Cone-bearing evergreens rapidly expanded worldwide and became a dominant foliage that survived the Permian extinction event and rose to dominance during the Mesozoic Era. It was during the Late Triassic through Jurassic periods that conifers underwent an explosive evolutionary diversification that resulted in the modern families listed above. Conifers declined during the Cretaceous, with the concurrent rise of angiosperms (flowering plants), but are still one of the most successful and widespread terrestrial organisms on Earth. Interesting, many conifer species also demonstrate great longevity resilience

Continued, P. 6

Fabulous Tennessee Fossils (e.g., some *Continued from P. 5* *Pinus longae* trees are known to be older than 4,600 years old).

Where do we find Pennsylvanian-age fossil deposits in Tennessee? Tennessee is blessed with a strong fossil record of the “carboniferous” (Mississippian and Pennsylvanian periods), primarily capping the Cumberland Plateau region of Tennessee. Tree-bearing fossiliferous strata of that age also occur on the ridgetops in the Valley and Ridge physiographic province, and as far west as Short Mountain in middle Tennessee. The climate during the Pennsylvanian (and most of the Triassic and Jurassic as well) in Tennessee was quite tropical; more tropical than today. Consequently, the Tennessee plant fossil record for these periods is dominated by tropical plants (ferns, fern trees, *Lepidodendron* scale trees, stigmariian roots, *Calamites* “horsetails”, etc.). The Tennessee fossil record for the coal-bearing Pennsylvanian is nearly devoid of conifers; however, there have been some anecdotal (unverified) mentions of *Walchia* being found in Tennessee by some amateur paleontologists collecting in the Cumberland Plateau coal fields. *Walchia* is a problematic fossil group that had needle-like leaves and small cones. If confirmed, *Walchia* would be the oldest Christmas tree group fossilized in Tennessee strata. There are no Permian, Triassic, or Jurassic age rocks or sediments in Tennessee. We could say that there is a “Christmas tree fossil gap” in our record.

We next find conifers in the Cretaceous age (and younger) fossil plant-bearing sediments that are common in West Tennessee. Conifers are a well-documented component of the paleoflora in the southeast, which includes species from seven families of conifer: Podocarpaceae, Taxaceae, Araucariaceae, Cupressaceae, Taxodiaceae, Cephalotaxaceae, and Pinaceae. Edward Wilber Berry (1875-1945) published his classic “Upper Cretaceous Floras of the Eastern Gulf Region in Tennessee, Mississippi, Alabama, and Georgia” (U.S.G.S. Professional Paper 112) in 1919. Berry has been mentioned before and will get another article later. Berry’s tome remains the most significant documentation of Late Cretaceous plants for Tennessee (although some of the taxa have been revised). Berry noted many conifer taxa throughout the Southeast (e.g., *Chepalotaxospermium carolinianum*, *Protophyllocladus subintegrifolius*, *Cunninghamites elegans*, *Dammara borealis*, *Brachyphyllum macrocarpum*, *Protodammara speciosa*, *Geinitzia formosa*, *Araucaria bladenensis*, *Androvettia carolinensis*, *A. elegans*, *Abietites foliosus*, *Sequoiua reichenbacki*, *S. heterophylla*, *S. ambigua*, *S. fastigata*, *Widdringtonites subtilis*, *W. reichii*, *Pinus raritanensis*, *Tumion carolinianum*, and *Cupressioxylon* sp.), but *Cupressioxylon* sp. was the only Cretaceous taxon listed as occurring in Tennessee. This makes it the oldest officially identified conifer from Tennessee! Modern Cupressus are generally recognized as a type of cypress. Berry’s *Cupressioxylon* specimens were collected from the classic Coffee Landing (“Coffee Bluff”)

exposure just northwest of Savannah, Tennessee (Hardin County), which he attributed to the Eutaw Formation. These specimens, which consist of permineralized wood material, were only identified to genus-level and are deposited at Johns Hopkins University. To my knowledge they have not been studied since collection; I have not seen these specimens myself and Berry did not include figures of his specimens. The Coffee Bluff exposure is worthy of its own article, so watch for that in the future (I am currently working on separating fossil vertebrates from that locality that were collected with the help of amateur collector Joshua Welsh).

So, as we enter the Christmas season, your bit of “Christmas trivia” that you can use at those numerous cocktail parties when conversations lull or to break the ice is: When was the oldest Christmas tree plant in Tennessee (be careful how you word this one)? Answer: *Cupressioxylon*. After saying the word (because you practiced how to say it), have the party repeat after you! What type of plant was the earliest “fossil Christmas tree from Tennessee”? Cypress, not pine or spruce or fir! Next year I will probably continue this thread with more “fossil Christmas tree taxa from Tennessee” trivia and move up in time to the Eocene plant deposits. Merry Christmas from Alabama to my MAGS friends!



The Largest Mass Extinction—Why?
Continued from P. 4

some estimates as high as 96%) of all species alive at the time may have gone extinct during the end-Permian extinction, making it the worst ever mass extinction. It is widely thought that it was triggered by massive volcanic eruptions in what is now Siberia. New research provides more details.

The ultimate driver of the end-Permian mass extinction is a topic of much debate. The Great Dying at the end of the Permian Period may have been amplified by El Niño events far stronger and longer lasting than any today. These giant El Niños caused wild swings in the climate that killed off forests and many land animals, says Alexander Farnsworth at the University of Bristol in the UK. They also triggered feedback processes that helped make this mass extinction as bad as it was.

Coupling between the oceans and the atmosphere plays a large role in the Earth's weather. A small change in sea-surface temperature can produce a large effect on climate.

Today, El Niño occurs when warm water in the western Pacific spreads eastwards across the surface of the ocean. This creates an area of abnormally warm water that heats the atmosphere and affects weather across the planet.

Before the Permian extinction began, the researchers found, El Niños were probably of a similar intensity and duration as today. That is, the anomalously warm water was about 0.5°C hotter than average and the events lasted for a

few months.

These events, however, were happening in a massive ocean called Panthalassa, which was 30% wider at the equator than the Pacific Ocean is today. This means the area of anomalously warm water during El Niños was much larger than today, and thus had a bigger planetary impact.

As atmospheric partial pressure of CO₂ doubled from about 410 to about 860 ppm in the latest Permian, changes in ocean circulation led to more intense El Niños. The resultant deforestation, reef demise, and plankton crisis marked the start of a cascading environmental disaster. Reduced carbon sequestration initiated positive feedback, producing a warmer hothouse and, consequently, stronger El Niños. The compounding effects of elevated climate variability and mean state warming led to catastrophic terrestrial and marine losses.

In the sea, the temperature variations would have been less severe, and marine animals can more easily migrate to avoid them. This explains why marine extinctions happened later, when global warming got more intense.

By the peak of the extinction, the temperature anomaly during El Niños was up to 4°C, with each event lasting more than a decade, Farnsworth says. It isn't clear if something similar will happen in the future. Computer models vary in their forecasts of how El Niños will change as the planet warms, says Farnsworth. But they are already having a bigger impact because they are happening in a warmer world.

The study shows that under specific climate conditions, El Niño events can cause extinctions. Giant El Niños such as those in the end-Permian are unlikely today because the Pacific is smaller than Panthalassa. But there could still be serious consequences.

Ref: Yadong Sun et al., *Mega El Niño instigated the end-Permian mass extinction*. *Science* 385, 1189-1195 (2024). DOI:10.1126/science.ado2030



🎵 Adult Programs

December 13: Holiday Party

January 11, 2025: Jane Coop, "Gemology"

February 8, 2025: Jeremy Veldman, "Eclipse"

🎵 Junior Programs

December 13: Holiday Party

January & February, 2025: TBD

🎵 Field Trips

January or February, 2025: Graceland

February or March, 2025: Melba Cole's Selenite property

🎵 December Birthdays

4 Ethan Davis
 6 David McAlister

Continued, P. 8

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

MAGS Notes

Continued from P. 7

- 7 Homer Beaudoin
Asher Parish
- 8 Karmen Vance
Tina Wallace
Alan Schaeffer
- 13 Hongbing Wang
- 15 Kathy Baker
Jerry Seamans
- 19 Paula Gunter
- 23 Jim McNeil
- 24 Alan Grewe
- 29 Bebe Buck



Wales Geology Adventure

Dr. Nina Baghai-Riding

I participated on a field trip excursion in Wales from July 14-19. The group stayed at the Croft B & B in Bridgnorth. I got to see some amazing geology and learned new terms such as **liesegang rings** (colored bands of cement observed in sedimentary rocks that typically cut across bedding), **granophyre** (a subvolcanic rock that contains quartz and alkali feldspar in characteristic angular intergrowths), **toposcope** (a graphic display that shows the direction and distance to notable landscape features from a high vantage point), **orthoquartzite** (a sedimentary rock that's made up of quartz grains that are cemented together), and more. I also saw some amazing sandstones and Precambrian rocks. A few photos are shown at right. My upcoming environmental science classes at Delta State University will be enriched from this experience.



Glaciated landscapes occur at the Carding Mill Valley.



An urn made of Jurassic limestone at the Arley Arboretum.



A Precambrian/Cambrian unconformity in Telford, Shropshire.



Note the raindrop impressions on the Precambrian rock at Carding Mill Valley.



Red Permian sandstone at Bridgenorth. People have lived in the caves and tunnels.

October Board Minutes

Josh Anderson

Called to order 6:30 P.M. Present: W.C. McDaniel, Christine Anderson, Joshua Anderson, Nannett McDougal-Dykes, Bonnie Cooper, Matthew Lybanon.

Secretary: September 2024 Board meeting minutes were approved.

Treasurer: Report approved.

Membership: No new Members.

Field Trips: October-DMC trip to Memphis Stone and Gravel (DeSoto County Pit). Safety glasses required. 80+ people signed up so far plus approximately 30 people from Georgia group. November-Open, no leader available for Arkansas crystal dig trip. December-Open.

Youth Programs: No update.

Adult Programs: October-Dr. Ryan Parish, U. of Memphis Archaeology. November-Exploring the Theobald Collection, W.C. McDaniel (in

Continued, P. 9

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

October Board Minutes progress will
Continued from P. 8 update). De-

cember-Holiday Party: January 2025-Jane Coop.
2025 mostly booked.

Library: Two new junior program books added.

Editor: Requests next 3 months of MAGS events each month. The deadline for submissions is the 20th of each month.

Rock Swaps: None.

Show: Donation of \$5,350 made to club from 2024 proceeds. 2025 quote from Agricenter sent in email by W.C. and discussed. Deposit has been made to Agricenter \$1,308.00 for show already. Contracts have been sent to dealers. One contract from dealer already received.

New Business: None.

Old Business: Email from W.C. McDaniel for recommendations reviewed by Board. W.C. asks Board to review over the next month or two. Items discussed:

- Membership
 - *Additional family members and their lifetime membership details
 - *Membership dues and some ideas on upcoming changes
- Finances-W.C. reviewed details and status as of September 2024
- Inventory-W.C. reviewed details and status as of September 2024
- Miscellaneous-current newsletter hardcopy recipient status and proposals for moving forward into 2025
- Ideas for additional sources of income - meeting changes, Theobald collection,
- Show door prizes, other sales, auctions, raffles

Adjourned 7:05 P.M.

Jewelry Bench Tips by Brad Smith

DIVIDERS



A set of dividers is a tool I find very useful in laying out the geometry of a piece I'm making. It has two needle-like tips with an adjustment to set the spacing between them.

They can be used to transfer a measurement. Let's say you need a 7 mm wide strip of sheet metal. Set the spacing between the divider tips to 7 mm on the ruler. Then lay the sheet on the bench, put one tip against the edge, and run the dividers down the edge scribing a line parallel to the edge.

Dividers can be used to mark equal segments of a line or arc. For instance, assume a line between A and B that might be straight or curved, and you want to divide it into 5 equal lengths. Set the dividers to an estimate of the distance. Starting at Point A, use the dividers to mark off five lengths along the line. If you end up short of Point B, lengthen the distance on the dividers. If you end up overshooting Point B, shorten the length of your dividers. After a few tries, the length on the dividers will be the exact distance you need to mark the 5 segments.

Dividers can let you quickly find the center of a circular disk. With one tip of the dividers at the edge of the disk, set the other tip to an estimate of where the center might be. Fix one tip of the dividers at the 3 o'clock position and scribe an arc with the other tip

near the center. Do this again from the 6 o'clock, 9 o'clock, and 12 o'clock positions. The arcs at the center will form a small four-sided box. The center of the box is at the center of the disk.

PIECE OF LEATHER

Leather has a multitude of uses in the shop. I often use a scrap of it to work on to avoid scratching the back of a piece of jewelry while setting stones. It's also great for times when you need to clamp one of your tools in a vise, for instance a drawplate. Scraps of leather can be salvaged from purses or belts that are being thrown out.

TOUCHING UP A BEZEL

Pumice wheels are good for touching up a bezel after you've set the stone. The hardness is about 6 on the Mohs scale, less hard than quartz, so it shouldn't scratch any of your agates or jaspers. However, I'd avoid or be real careful of using pumice near the softer stones like turquoise, amber, howlite, etc.

If you're unsure about the hardness of your wheels, test them on a piece of glass. Glass is about 5 1/2 on the Mohs scale, softer than quartz. So if the wheel doesn't harm glass, it's safe for use on the quartzes and harder stones.

My preference is the one inch diameter ones such as those shown at riogrande.com/Product/AdvantEdge-Pumice-Wheels-Medium/332722?pos=2

See More of my Smart Solutions for Jewelry Making Series
<http://amazon.com/dp/B0BQ8YVLTJ>

MAGS At A Glance

December 2024

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5 Zoom Board Meeting, 6:30 P.M.	6	7 
8	9	10	11	12	13 Membership Meeting, Holiday Party , 7:00 P.M.	14 DMC Field Trip
15	16	17	18	19	20	21
22	23	24 	25 	26	27	28
29	30	31 	1	2	3	4

Memphis Archaeological and Geological Society
PO Box 880
Cordova, TN 38088

