MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News

Volume 63 ◊ Number 12 ◊ December 2017 ◊ A monthly newsletter for and by the members of MAGS

Join Us!

at the MAGS Holiday party

We're looking forward to seeing lots of our Members at our December 8 (our regular meeting date) holiday celebration. Come early to help us set up. And please bring a dish or two to share. It will help if you bring the type of food specified in the invitation above. Doing so will make sure we have good variety.

We will have presents, games, and prizes. The more people who come, the more fun we'll have. Come help us close out the year right.

In this issue

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 *Continued, P. 3*

2017-2018 MAGS BOARD

President–Charles Hill
1070 Park Swain Road, Grand Junction, TN 38039 ◊ (901) 626-4232 ◊ hunter3006@aol.com

1st VP (Field Trips)–James Butchko
4220 Dunn, Memphis, TN 38111 ◊ (901) 743-0058 ◊ butch513j@yahoo.com

2nd VP (Adult Programs)–W. C. McDaniel
2038 Central Avenue, Memphis, TN 38104 ◊ (901) 274-7706 ◊ w.c.mcd@att.net

Secretary–Mike Baldwin
367 North Main Street, Collierville, TN 38017 ◊ (901) 853-3603 ◊ mbaldwin05@gmail.com

Treasurer–Bonnie Cooper
8695 Baylor Road, Arlington, TN 38002 ◊ (901) 444-0967 ◊ rocks4us@hotmail.com

Director (Asst. Field Trips)– Kim Hill
4755 Royal Elm Cove, Memphis, TN 38128 ◊ (901) 388-7572 ◊ earthsis@aol.com

Director (Asst. Adult Programs)–Dave Clarke ◊
456 North White Station Road, Memphis TN 38117 ◊ (901) 308-0334 ◊ dclarke@fieldmuseum.org

Director (Youth Programs)–Open

Director (Asst. Youth Programs)–Open

Director (Librarian)–Leah Gloyd
2151 Dogwood Creek Court, Apartment 202, Collierville, TN 38017 ◊ (270) 847-3170 ◊ leahgloyd@outlook.com

Director (Asst. Librarian)—Jane Brandon
4384 Castle Avenue, Memphis, TN 38122 ◊ (901) 374-0366 ◊ jjbrandon@yahoo.com

Director (Membership Services)–Bob Cooper
8695 Baylor Road, Arlington, TN 38002 ◊ (901) 444-0967 ◊ rocks4us@hotmail.com

Director (Historian)–Carol Lybanon
2019 Littlemore Drive. Memphis, TN 38016 ◊ (901) 757-2144 ◊ sgcarol@earthlink.net

Newsletter Editor–Matthew Lybanon
2019 Littlemore Drive. Memphis, TN 38016 ◊ (901) 757-2144 ◊ lybanon@earthlink.net

Webmaster–Mike Baldwin
367 North Main Street, Collierville, TN 38017 ◊ (901) 853-3603 ◊ mbaldwin05@gmail.com

Show Chairman–James Butchko
4220 Dunn, Memphis, TN 38111 ◊ (901) 743-0058 ◊ butch513j@yahoo.com

Past President–W. C. McDaniel
2038 Central Avenue, Memphis, TN 38104 ◊ (901) 274-7706 ◊ w.c.mcd@att.net

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 General Membership Meetings and MAGS Youth Meetings are held at 7:00 P. M. on the second Friday of every month, year round. The meetings are held in the Fellowship Hall of Shady Grove Presbyterian Church, 5530 Shady Grove Road, Memphis, Tennessee.

MAGS Website: memphisgeology.org

MAGS Show Website: www.theearthwideopen.com

We aren't kidding when we say this is a newsletter for and by the members of MAGS. An article with a byline was written by a MAGS Member, unless explicitly stated otherwise. If there is no byline, the article was written or compiled by the Editor. Please contribute articles or pictures on any subject of interest to rockhounds. If it interests you it probably interests others. The 15th of the month is the deadline for next month's issue. Send material to lybanon@earthlink.net.

December DMC Field Trip

WHERE: Diamond Hill Mine, Antreville, Abbeville County, SC (fee site: $20 adults, $10 teens and seniors, $5 children)

WHEN: Saturday, December 9, 9:00 A. M.-2:00 P. M.

COLLECTING: Quartz crystals, beryl/aquamarine

INFORMATION: Marf Shopmyer, (864) 910-5369

Links to Federation News

- AFMS: www.amfed.org/afms_news.htm
- SFMS: www.amfed.org/sfms/
- DMC: www.amfed.org/sfms/_dmc/dmc.htm

Why Do I Ask? *Continued from P. 1*

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.

President's Message

Hi again, all. I wasn't at the Membership Meeting, but I understand it was great. I hate to have missed it because, like most of us, I always learn something new. We recently had a side field trip to the Wegner Crystal Mine in Mt. Ida, Arkansas. An issue came up that we have talked about before: deer hunting season. On our way in we saw two hunters bringing a deer out. We heard shots while we were there, and one Member saw people shooting into a pond. Because of this, the MAGS Board has decided to purchase brightly colored safety vests to be used on field trips. It is our hope that these vests will help keep us safe and give us some degree of comfort while we pursue our hobby.

This year is almost over. As we look forward to a new year, there is something I want everyone to think about: as I write this, we have only 159 days until the Show!

Thanks,

Charles

110 Steps

Matthew Lybanon (Editor)

In 2009, the world's largest dinosaur tracks were discovered in the French village of Plagne, in the Jura Mountains. Since then, a series of excavations at the site has uncovered other tracks, sprawling over more than 150 meters. They form the longest sauropod trackway ever to be found. Having compiled and analyzed the collected data, which is published in *Geobios*, scientists from the Laboratoire de Géologie de Lyon, the Laboratoire Magmas et Volcans, and the Pterosaur Beach Museum conclude these tracks were left 150 million years ago by a dinosaur at least 35 m long and weighing no less than 35 t (metric tons).

Between 2010 and 2012, researchers from the Laboratoire de Géologie de Lyon supervised digs at the site, a meadow covering three hectares. Their work unearthed many more dinosaur footprints and trackways. It turns out the prints found in 2009 are part of a 110-step trackway that extends over 155 m—a world record for sauropods.

Dating of the limestone layers reveals that the trackway was formed 150 million years ago, during the Early Tithonian Age of the Jurassic Period. At that time, the Plagne site lay on a vast carbonate platform bathed in a warm, shallow sea. The presence of large dinosaurs indicates the region must have been studded with many islands that offered enough vegetation to sustain the animals. Land bridges emerged when the sea level lowered, connecting the islands and allowing the giant vertebrates to migrate from dry land in the Rhenish Massif.

Additional excavations conducted as late as 2015 enabled closer study of the tracks. Those left by the sauropod's feet span 94 to 103 cm. The footprints reveal five elliptical toe marks, while the handprints are characterized by five circular finger marks arranged in an arc. Biometric analyses suggest the dinosaur was at least 35 m long, weighed between 35 and 40 t, had an average stride of 2.80 m, and traveled at a speed of 4 km/h. It has been assigned to a new ichnospecies: *Brontopodus plagnensis* (not the name of the dinosaur species but the name of the trace fossil). Other dinosaur trackways can be found at the Plagne site, including a series of 18 tracks extending over 38 m, left by a carnivore of the ichnogenus *Megalosauripus*. The researchers have since covered these tracks to protect them from the elements. But many more remain to be found and studied in Plagne.

***Ref**: Jean-Michel Mazin et al. The dinosaur tracksite of Plagne (early Tithonian, Late Jurassic; Jura Mountains, France): The longest known sauropod trackway, Geobios (2017). DOI: 10.1016/j.geobios. 2017.06.004*

Fabulous Tennessee Fossils

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

FTF 35

Tennessee Fossils Famously Displayed in Museum Dioramas

We all know that Tennessee has an abundance of fossils and fossil sites. I have highlighted only a few of these occurrences in my thirty-four previous essays, most of which are from western Tennessee. One of my earlier points was that Tennessee's fossil riches has drawn some of paleontology's greatest workers to do field work on many topics, which I will continue to highlight in the future. Many Tennessee fossils make it into museum displays across the state. The Pink Palace Museum serves as an official repository for West Tennessee fossils, especially fossils from the Coon Creek Formation. The Pink Palace is also the benefactor for the Coon Creek Science Center in McNairy County. As you would expect, the museum has many displays that are focused on the fossils from Tennessee. The Discovery Park of American (DPA) in Union City also houses many fossils from West Tennessee that span the last 600 million years of fossil history. West Tennessee fossils are also on display at the Tennessee River Museum in Savannah.

Moving east, Tennessee fossils are on display at the Tennessee Museum in Nashville. Murphreesboro has the Middle Tennessee State University Mineral, Gem, and Fossil Museum and Earth Experience: Middle Tennessee Museum of Natural History. In northeastern Tennessee the Gray Fossil Site has become the go-to place for Cenozoic vertebrates. In southeast Tennessee, there is the Natural History Museum of The University of Tennessee at Chattanooga. Incidentally, nearly all of the universities in Tennessee with geology programs maintain small museums or hallway exhibits available to the public, including UT Martin and the University of Memphis. At UT Knoxville fossils are visible at the McClung Museum, which also houses Tennessee's first dinosaur find (a hadrosaur), that was collected in West Tennessee. Most of these displays are of identified individual fossils or groups of fossils from selected localities (kind of like stamp collections on display). Some of the larger professional museums (e. g., Pink Palace, DPA, McClung, Gray Fossil Site) have incorporated their fossils into dioramas. Outside of Tennessee it is not uncommon to find our fossils on display as well. I took a group of students to the Field Museum of Natural History in Chicago where we counted over 40 Tennessee fossils on display. At the Smithsonian's Natural History Museum in Washington, D. C., I counted 63 fossil specimens on display (some displays had multiple specimens). Clearly Tennessee has wonderful fossils for national public education, viewed by millions yearly.

Dioramas are scenes built with three-dimensional fossil reconstructions or actual fossils to reconstruct the living scene the organisms were inhabiting. Dioramas can be miniature models of larger areas, 1:1 scale "close-ups" of a habitat, and small table-top scale to large-scale museum exhibits filling small rooms that visitors walk through. Most dioramas are somewhat unrealistic in that they will include in a visible area all of the organisms that could be found in that setting, as if they could all be seen within that single spot and all at once. Dioramas of fossil settings provide the fossils with paleoenvironmental context as well as identity. Think of them as three-dimensional photographs in which the observer is just outside of the field of view.

We would expect Tennessee museums to showcase their own fossil riches with dioramas, such as at the Pink Palace Museum (Figure 1A), DPA (Figure 1B), McClung Museum (Figure 1C), and Gray Fossil Site (e.g., http://philfraleyproductions.com/wp-content/uploads/2010/04/121.jpg). Most of these museums will have displays with seafloor and terrestrial dioramas depicting each of the over thirteen geologic time periods as it would have looked to the time-traveling visitor. Again, that is over thirteen dioramas if all periods are represented, such as at the Discovery Park of America. But Tennessee

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Fabulous Tennessee Fossils Continued from P. 4

fossils and their paleosettings are also used by some pretty famous museums outside of Tennessee as their archetypal representation of specific past settings. Some of America's major museums have Tennessee dioramas for public education. This means that thousands to millions of patrons are seeing a Tennessee fossil site as the representative of specific geologic time periods and paleoenvironments. Kudos to Tennessee fossils deposits!

I will offer one very prominent example of our importance in educating the populace about the history of life, Tennessee seafloor diorama style. I was, and remain, a consultant for exhibit preparation at Discovery Park of America, and when they were in their design phases in the early 2000s, I had the opportunity to visit the design firm in New York City to pitch my vision of the natural history hall. To illustrate some of my concepts for DPA's fossil exhibits, we planned to meet at the American Museum of Natural History so I could use AMNH displays as examples of what I envisioned, what I think needs to be done differently, and we could design new approaches for DPA, etc. I arrived in New York a day earlier than my scheduled meeting with the design team and visited AMNH to plan my walk-through and pitch for DPA the next day. I admit, this was my first visit to NYC and the AMNH, although I was familiar with the holdings. The AMNH exhibits are top notch, no question, but I also saw many things I would approach differently considering current paleontological knowledge and pedagogically as a teacher, at least for the DPA exhibits. Some of my ideas are visible at the museum, some not, some I cringe when I see. I learned a lot in the process.

At AMNH, I was particularly struck by their Mesozoic marine diorama in the "Milstein Hall of Ocean Life" exhibit, because they only depicted one period of the Mesozoic, the Cretaceous—no Triassic or Jurassic oceans. Here I was at the second most important fossil museum in North America (I put the Smithsonian first), and only one of three Mesozoic ocean dioramas were displayed! Wow! And, the AMNH chose the Coon Creek ecosystem (referred to as Ripley outside of Tennessee) to be the one representative of not only the Cretaceous, but of all of the Mesozoic era (250–66.5 Mya) for at least the eastern US (Figure 2). The diorama was originally exhibited as part of the John Lindsley Hall of Earth History from 1969-1991. In 1991, the AMNH underwent a drastic renovation, especially the Dinosaur Hall and Mesozoic, to show Earth's biohistory in an evolutionary context. However, the Coon Creek display remained the archetype for the Cretaceous oceans from the perspective of invertebrates...this diorama is now approaching half a century old...and still mostly accurate. Well, as is typical of museum displays, there are a few "mistakes" for public viewing. The official State Fossil of Tennessee, *Pterotrigonia thoracica*, is depicted as living on the surface of the sea floor. NOT! It was a shallow infaunal burrower. But then again, if it was buried, you couldn't see it in the display, huh? Also of note is that the official AMNH web site (http://lbry-web-007.amnh.org/digital/items/show/2754) for the display lists Benton County as the location for this assemblage... nope, McNairy County.

Also significant for Tennessee is that the original curators included Norman Newell and Roger L. Batten, both incredible famous geologists (Norm Newell was the late Harvard evolutionary biologist Stephen J. Gould's professor for example). I am happy to share that I trace my "professional genealogy" backwards through this lineage.

So, the Coon Creek fossil occurrence (actually the Dave Weeks site that you have visited that is run by the Pink Palace), remains New York's icon for oceanic Cretaceous sea life. Additionally, and perhaps influencing the AMNH, the 1958 first edition of *The Fossil Book* by Carrol and Mildred Fenton (NY, Doubleday Publishing, 482p.) used the McNairy County area to depict an diorama image of an "aberrant bottom dwelling" paleocommunity of oysters dominated by the well-known biostratigraphic fossil *Exogyra costata*, along with *Gryphaea mutalbilis* (which occurs much more rarely), with the phrase"...as they lived on the sea bottom in what is now McNairy County, Tennessee" (Fenton and Fenton, 1958, p. 175). At this point, I would like to point out as a personal aside, that this book was a primary resource in my public school library for fossils

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Fabulous Tennessee Fossils Continued from P. 5

during the 1960s...actually, THE primary fossil book available. I am sure many thousands of us "fossil-loving, baby-boomers" used "Fenton and Fenton" as kids as we entered the world of fossils; it was a standard holding for libraries at that time. Folks, as a professional paleontologist now in my fourth decade of work...this book (regardless of edition) still rocks (excuse the pun)! Who painted the seafloor diorama backgrounds for AMNH and why was Coon Creek chosen to represent the Cretaceous at AMNH? Well that is a much longer story for a later essay....stay tuned.

Figure 1. Tennessee Dioramas.

A (top left). Frankstown Fossil Slab at the Pink Palace Museum. Notice that the display consists of a slab of fossils as a preservation diorama.

B (top right). Discovery Park of America mural created by artist Karen Carr that reconstructs the living habitat for Cretaceous seafloor diorama.

C (bottom left). Cretaceous Coon Creek Seafloor Reconstruction at McClung Museum (photos by Michael A. Gibson).

Figure 2. American Museum of Natural History Cretaceous seafloor diorama based upon the Coon Creek Formation at what is now the Coon Creek Science Center in McNairy County, Tennessee (photo by Michael A. Gibson).

October Board Minutes

Mike Baldwin

Called to order 6:40 P. M. Present: Charles Hill, Mike Baldwin, James Butchko, W. C. McDaniel, Dave Clarke, Leah Gloyd, Jane Brandon, Carol Lybanon, Matthew Lybanon.

Secretary/Web: September minutes were distributed via email earlier. Hard copies were distributed at the meeting. The MAGS website has been updated with October information. Hard copies of the newsletter have been printed and mailed to 15 members who don't have email capabilities.

Treasurer: No report: Bonnie Cooper previously distributed copies of August bank statement. Matthew circulated a hard copy.

Membership: No report.

Field Trips: October 14—Richardson's Landing. November 18—middle Tennessee for Livingston geodes and Dale Hollow fossils. Information in the October newsletter. December—Crow Creek in Arkansas. January—Missouri to collect drusy quartz. James will contact Vulcan Quarry in Parsons, Tennessee, for an early 2018 field trip.

Programs: October—Dr. Jennifer Gifford [Road Cuts and Outcrops]. November—Konrad Armstrong [The Truth About Radiation]. December—annual holiday party. January—a trifecta [South America, South Africa and Iceland] presented by several MAGS Members. Keith Riding will present a program on Kilimanjaro in February. Dave Clarke will present a program on amber in March.

Historian: Carol and Matthew are working on an ongoing history of MAGS to be printed and housed in the MAGS library. They are also working on a video to be presented at the holiday party. The final rock swap of the year will be on October 22 at Freeman Park in Bartlett. There will be an egg hunt with rocks and fossils inside them, and door prizes. Tickets left over from other events will be used for door prize drawings.

Editor/Show: Outstanding tribute to Idajean Jordan in the October issue of *MAGS Rockhound News*. Need material for future issues. Deposit for the 2018 Show has been paid. The price will go up for future shows. Discussion followed concerning the cost of set up and running the show. Matthew will check to make sure we are on the calendar.

Old Business:

- Carol will have the microphone at the October meeting. Dave borrowed the laptop to check out the software installed and how to get better performance. Discussion followed about the distance of the projector from the screen. Dave will purchase some bright duct tape to secure the electrical cord to the floor for safety reasons.
- Discussion about how to spend discretionary funds, including Ronald McDonald House, Chucalissa, and purchasing a CD. A motion was passed to give $1000 to Chucalissa, $500 to Ronald McDonald House, and put $5000 in a CD.
- T-shirt discussion. Charles suggests newsletter article to solicit art. W. C. thinks we should put the club logo on the front and a modified representation of the Show postcard on the back. Carol relayed Bob Cooper suggestion of a dinosaur-ish design on the back. Dave suggested a mastodon on the back. Mike suggested a slogan also be placed on the back: "Found at the Mall of Memphis". He will work on black art for the front. Carol suggested a MAGS Volunteer shirt; she will email Members asking for mastodon designs for the club shirt. Submission due on or before October 31 and discussed at the November Board Meeting.
- Next Show meeting will be Monday, October 30.

Adjourned 7:39 P. M.

October Meeting Minutes

Mike Baldwin

Called to order 7:07 P. M. Three new Members, four visitors.

The outdoor rock swap and picnic at Freeman Smith Park in Bartlett will be on October 22 12:30-3:00. Trip to Richardson's Landing will be on October 14. Carol Lybanon: trip to Mt. Ida on Oct. 29; payment due tonight; bring your own tools or pay deposit to hire tools. Matthew thanked Members for submissions about Idajean Jordan; solicited material for next month's newsletter. Three displays. W. C. McDaniel: announced t-shirt design competition; circulated pre-order sign-up sheet; warned about stolen minerals from two shows.

Dr. Jennifer Gifford gave an interesting program on roadcuts and outcrops. Future programs: November, Konrad Armstrong, the truth about radiation; December, annual holiday party; January and February programs will be about MAGS journeys. March—amber.

Adjourned 7:57 P. M.

My September 2017 Trip To A State Historic Park

Dee Dee Goossens

Mackinaw Island, Michigan—it was my home away from home vacation. But this year my husband and I went all out. We stayed at the famous Grand Hotel. It was built in 1887, with 343 rooms. It's famous for the world's longest porch, 660 feet long.The views of Lake Michigan and Mackinac *Continued, P. 8*

My September 2017 Trip ... *Continued from P. 7*

Bridge are simply amazing.

No cars are allowed on the island, so your mode of transportation is horses and bicycling. In the height of summer there are up to 700 horses, used for taxis, tours, riding, and transporting items to hotels. My favorite foods on the island are whitefish and fudge. I had seven pounds of fudge shipped home—yum.

We took a horsedrawn carriage tour to Arch Rock. The tour guide told us that they had many ideas to help brace and preserve Arch Rock but none were workable or environmentally safe, so it is left to nature and will fall when it falls. It is natural limestone with a span of 50 feet, and rises 149 feet above the blue waters of the straits of Mackinaw.

On the shores of the island is Devils Kitchen—no, not a place for a meal, but a cave. I was told it is some of the oldest rock ever found—limestone—tested at 300 million years old and used as a Indian burial ground. In the '70s they found many hippies living in the cave and using it for parties. They used dynamite to blow up the inside and collapse the walls, so it is closed to this day.

British Fort Mackinac was founded during the American Revolution. Believing Fort Michilimackinac in Mackinaw City was too vulnerable to American attack, the British moved the fort to Mackinaw Island in 1780. Americans took control in 1796. In July 1812 the British captured the fort in the first land engagement of the War of 1812. It was returned to the United States after the war. It remained active until 1895.

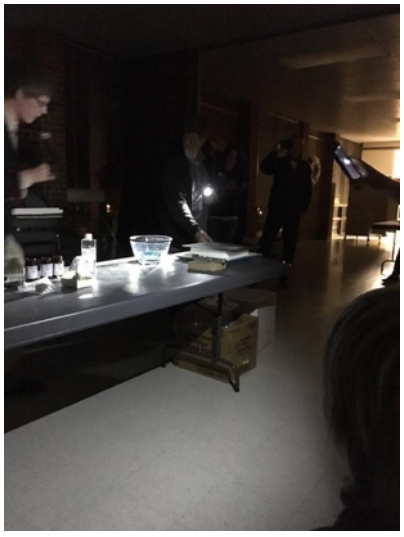
It still does a reenactment of firing rifles that were used, and cannons fire several times throughout the day. The Post National Cemetery is one of four cemeteries in the world to fly the flag at half mast 24 hours a day. The cemetery holds both British and American soldiers.

Michigan's state stone is the Petoskey stone: coral fragments in honeycomb patterns. Most of the limestone shale that makes up Mackinaw Island was deposited 500 to 345 million years ago. Over the millennia rising and falling waters washed away softer and older limestone, leaving only the harder material and forming the cliffs of Mackinac, Sugar Loaf, and Arch Rock.

The relaxing stay and wonderful food never last long enough. It is truly a place where I can unwind and relax until next year's visit. I can't wait for more island adventures.

November Program

MAGS Junior Member Konrad Armstrong gave an outstanding program on radiation. Here's a little of what it looked like.



December Birthdays

3	Diane Pence Diana (Dee) Brunner
4	Donna Pause Celeste Conner Ethan Davis
5	Tracy Thomas
6	David McAlister
8	Tina Wallace Alan Schaeffer
9	Angela Underhill
10	Chuck Reed
11	Jared Robbins Juergen Poppelreuter
12	Jonathan Adkins Marc Mueller
13	Hongbing Wang
14	J. Barry Gilmore
15	Kathy Baker Jerry Seamans
16	Genevieve Stockwell
17	Barbara Champagne
19	Cari Brose Nassem Yousef Paula Gunter
20	Ed Underhill
21	Floyd Harris Cheri Crews Yeh Hsueh
23	Jim McNeil
24	Allen Grewe
29	Bebe Buck Brandon Mayer Jeffrey Marker
30	Hope Johnson
31	Lynn Reed

Jewelry Bench Tips by *Brad Smith*

MARKING YOUR TOOLS

It makes sense to mark your tools if you ever lend them to friends or take them out to classes or workshops. Question is how to mark them permanently. For metal tools, I use a very small ball bur running fast in the Dremel or Foredom to "engrave" my initials. Other times I'll form the initials with a number of hits with a center punch.

But for hammer handles and other wooden tools, the country boy in me came back and thought "Why not make a branding iron ?" If you'd like to try one, all you need is a little scrap copper or nickel about 22-24 gauge, a piece of heavy brass or copper for a base, about 6 inches of metal rod and a piece of wood for the handle.

I formed my initials from a couple 4mm wide strips of sheet nickel. The "S" was one piece, but the "B" was three pieces soldered together with hard. (remember to form the letters backwards). I then soldered the letters with medium onto a piece of 1/8 inch thick brass bar to act as a heat sink. Finally, I soldered a piece of 1/8 round rod on the back of the brass bar as a shaft to join to a wooden handle.

See all Brad's jewelry books at Amazon.com/author/bradfordsmith.

Mineral Of The Month

Matthew Lybanon

Mt. Ida, Arkansas, is the Quartz Capital of the World. But that's not the only mineral of note in the area. Catalog Number 80327 in the Smithsonian Institution's collection is a chunk of the phosphate mineral wavellite from Montgomery County, Arkansas—the county whose county seat is Mt. Ida.

Wavellite [basic hydrous aluminum uorophosphate, $Al_3(PO_4)_2(OH,F)_3{\cdot}5H_2O$] was first described in 1805 and named for William Wavell (so it is properly pronounced wah-VELL-ite rather than WAVE-a-lite) who discovered the mineral. William Wavell was a physician, botanist, historian, and naturalist in Harwood Parish, Devonshire, England. William Babington (a founding member of the Geological Society of London who served as its president from 1822 to 1824) named the mineral in honor of Wavell's discovery.

Here are some basic mineralogical properties of wavellite:

- Color: Green to yellowish-green and yellow, greenish white, yellowish-brown, brown, brownish-black, blue, white and colorless; colorless in transmitted light
- Luster: Vitreous, Greasy, Pearly
- Hardness: 3½-4
- Specific gravity: 2.36
- Crystal system: Orthorhombic

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Mineral Of The Month
Continued from P. 9

- Type locality: High Down Quarry, Filleigh, North Devon, Devon, England, UK

One unique thing about wavellite is that it normally occurs as translucent green radial or spherical clusters. Wavellite forms spectacular pinwheel aggregates emanating from a central core in spherulitic balls. When the balls are complete, the radial structure is internal and not usually visible.

While it may not be the type locality, the Mt. Ida area is one of the leading locations in the world to find this mineral. Mike Howard's "Wavellite in Arkansas" article on his Rockhounding Arkansas website (http://rockhoundingar.com/wavellite.php) mentions two locations in Garland and Montgomery counties. The Montgomery County location is the Mauldin Mountain site, not far from the town of Mt. Ida. It makes an easy side trip for rockhounds who have already found enough quartz. OK, OK, that's not going to happen. But wavellite hunting is worth doing anyway.

Ref: https://www.mindat.org/min-4250.html

Membership

Bob Cooper
Membership Director

Greetings MAGS Members,

One more year has come about and now is the time to start thinking about renewing your MAGS membership for 2018. Some Members have already renewed and you can also. Remember, the MAGS membership runs from January 1 to December 31. The renewal membership fees for 2018 are:

★ **$25.00** (Family)

★ **$15.00** (Individual)

★ **$10.00** (Junior)

You can renew at the MAGS Membership Meetings or by mail. When renewing by mail, make your check payable to **MAGS** and mail it to **Bob Cooper, 8695 Baylor Rd., Arlington, TN 38002**. Those of you who have already renewed or will renew by the end of the January 12th, 2018, Membership Meeting will have a chance to win a unique specimen of calcite and pyrite (see pictures). The drawing for the specimen will be held at the end of the January 12th, 2018, Membership Meeting. You do not need to be present to win.

Thanks,

Bob Cooper

MAGS Membership Director
(901) 288-4797
rocks4us@hotmail.com

In Memoriam

Sincere condolences to the family and friends of Mike Austen, who passed away recently. Aside from being a MAGS Member, Mike belonged to—and had served as the club's President—the Central Arkansas Gem, Mineral, and Geology Club.

Show Committee Notes

Debbie Schaeffer

October 30, 2017

Present: Jim Butchko, W. C. McDaniel, Bob Cooper, Bonnie Cooper, Debbie Schaeffer.

Dealers: 7 contracts already in; 1 opening.

Hospitality: Debbie will do this year. Will check into Leonards and Maxwells again for this year.

Exhibitors: Tom Jones will do again this year.

Advertising: Kathy Baker will do notecards.

Web: Mark Mueller has agreed to update the Web again this year.

Rock Zone: We will not be able to put together grab bags on Thursday night because we will not be able to get into Agricenter until Friday. Suggestions for filling grab bags:

1. before the Show Dinner Friday night
2. during the day on Friday
3. at the shed prior to the Show

Door Prize: We have 2 Grand Door Prize options: carved petrified bowl from Madagascar and ammonite cluster from Morocco. W. C. suggested that we use the ammonite cluster for the Grand

Continued, P. 11

Show Committee Notes Continued from P. 10

Door Prize and use petrified bowl as prize for Show volunteers.

New Business:

- Bob suggested that we publicize the Show Meetings at Club Meetings and in the newsletter to attempt to get more involvement from other Members.
- Debbie suggested that we use a picture of the ammonite cluster for the Show Postcards this year and include information about how to win the Door Prize on the postcard.
- We discussed the difficulty of getting the storage shed open and closed. Bob offered to look at the options for repairing the door so it will be easier to access.
- There were some complaints at the show last year about not providing bags to attendees. W. C. suggested that we sell advertising space on the bags to cover the cost of the bags. We discussed using either kraft paper bags or small plastic bags. We would need to have someone research options for bags and printing.
- Boy Scouts and other Classes for the Show will be discussed later.

December Field Trip

On December 9 there will be a MAGS field trip to Crow Creek in Arkansas. Contact field trip leader Jim Butchko (contact information on P. 2) for more information.

Earthquakes!

Matthew Lybanon, Editor

Earthquakes remain the most difficult natural disaster to predict. They tend to occur with little to no forewarning and can thus be incredibly destructive. Often times, geologists are limited to historical trends in data to predict the likelihood an earthquake will occur. New research provides another dataset to inform communities about the near-term risks they face.

Scientists have found strong evidence that 2018 will see a big uptick in the number of large earthquakes globally. The prediction is based on the discovery of a correlation between increases in earthquakes and variations in the Earth's rotation rate. The link between Earth's rotation and seismic activity was highlighted in a paper by Roger Bilham of the University of Colorado in Boulder and Rebecca Bendick of the University of Montana in Missoula, presented at the annual meeting of the Geological Society of America.

The research team analyzed every earthquake to occur since 1900 at a magnitude above 7.0. They were looking for trends in the occurrence of large earthquakes. They found that roughly every 32 years there was an uptick in the number of significant earthquakes worldwide.

They compared the cyclicity in earthquakes with a number of global historical datasets and found only one that showed a strong correlation with the uptick in earthquakes. That correlation was to the slowing down of Earth's rotation. Specifically, the team noted that around every 25-30 years Earth's rotation began to slow down and that slowdown happened just before the uptick in earthquakes. The slowing rotation historically has lasted for 5 years, with the last year triggering an increase in earthquakes.

To add an interesting twist to the story, 2017 was the fourth consecutive year that Earth's rotation has slowed. This is why the research team believes we can expect more earthquakes in 2018, it is the last of a 5-year slowdown in Earth's rotation.

Earth's rotation rate is cyclical, slowing down by a few milliseconds per day, then speeding up again. This very small variation in the Earth's rotation is not noticeable except by careful measurements. And the cause of the variation is not clear. One hypothesis involves Earth's outer core, the liquid metal layer that circulates underneath the solid lower mantle. The thought is that the outer core can at times "stick" to the mantle, causing a disruption in its flow.

Also, the analysis that reveals the correlation between rotation rate and earthquake frequency is statistical. If there is a causal relationship, the mechanism is unknown.

It is difficult to predict where these extra earthquakes will occur, although Bilham said they found that most of the intense earthquakes that responded to changes in day length seemed to occur near the equator.

***Ref**: Roger Bilham and Rebecca Bendick, A FIVE YEAR FORECAST FOR INCREASED GLOBAL SEISMIC HAZARD (Invited Presentation), Geological Society of America Abstracts with Programs. Vol. 49, No. 6, doi: 10.1130/abs/2017AM-300667.*

MAGS At A Glance

December 2017

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30 Board Meeting, 6:30 pm, St. Francis Hospital	1	2
3	4	5	6	7	8 Membership Meeting, 7:00 pm, Holiday Party	9 MAGS Field Trip, Crow Creek/DMC Field Trip, Diamond Hill Mine, Antreville, SC
10	11	12 	13	14	15	16
17	18	19	20	21	22	23
24	25 	26	27	28	29	30
31 	1	2	3	4	5	6

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