



Volume 62 ◊ Number 12 ◊ December 2016 ◊ A monthly newsletter for and by the members of MAGS

You're Invited



You're Invited
to the MAGS Holiday Party

December 9, 7:00 PM, Shady Grove Presbyterian Church

MAGS will provide the turkey, ham, and table decorations. You are requested to bring a potluck appetizer, casserole, dessert, salad, or vegetable. Come early to help decorate and prepare the hall for our party.

Last Name A-G: Vegetables or Casseroles
Last Name H-N: Desserts
Last Name O-Z: Appetizers or Salads

MAGS will provide all the gifts.
Come and enjoy.

Food Games Music Friends

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LIBRARY UPDATE

I just wanted to let MAGSters know that 50 books have been added to the library. I would like to thank Alan Parks, Jimmy McNeil, Marc Mueller, and Nannett McDougal for their donation of books.

The library will not be open in December due to the MAGS Holiday



NANNETT MCDUGAL

Party. It will reopen in January. If you have any books out, please hold them until the January meeting.

Editor's Note: The library is another benefit of your MAGS membership. It has an outstanding collection of books and videos. Check it out (pun intended).

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

President's Message

The 2016 closing date is approaching so MAGS Members are scurrying around checking out the last events of the year. The last Membership Meeting on December 9 will be our Holiday Party. Check out the party announcement elsewhere in the newsletter. December 17 will be our last field trip of the year, to Dale Hollow Lake for fossils and Livingston, Tennessee, for geodes. On the way home get ready and plan ahead for 2017:

- Renew your membership. Dues are essential to the needs of the club and required for you to participate in club activities such as the January 21 field trip to Parsons, Tennessee, for fossils and more fossils.

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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, TN.

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. If an article has a byline the author is a MAGS Member, unless explicitly stated otherwise (we welcome articles by nonmembers). If there is no byline, the article was written or compiled by the Editor (a MAGS Member). Please contribute articles or pictures (everybody likes 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.

There is no December 2016 DMC field trip.

Links to Federation News

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

President's Message • Mark your calendar and schedule a day or two off for the Show. Work days are April 20/21 and show dates are April 22/23. The Show is our BIG event and requires an even BIGGER commitment from you. Look for volunteer opportunities early next year.

- August 11 will be our indoor rock swap and picnic. The only indoor picnic in America that combines food, rocks, air conditioning, and eager and hungry rockhounds into one grand event.
- August 17 Total Solar Eclipse occurs. Go to www.eclipse2017.org/2017/path_through_the_US.htm to check the path and times.
- December 8 for annual (2017) Holiday Party.

W. C. McDaniel

Attention MAGS Members

Bob Cooper

Now is the time to start thinking about renewing your MAGS membership for 2017. Some Members have already renewed and you can also. Remember, the MAGS membership runs from January 1 to December 31. The membership fees for 2017 are:

- ★ **\$25.00 (Family)**
- ★ **\$15.00 (Individual-this is a change)**
- ★ **\$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 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 2017 Membership Meeting will have a chance to win a fossilized bivalve scallop. The drawing for the fossilized bivalve scallop will be held at the end of the January 2017 Membership Meeting. You do not need to be present to win.

Road Trip!

Diana Poppelreuter

Who doesn't enjoy a road trip with friends collecting rocks on a club outing? Here are a few quick notes to make it easier—or at least learn (laugh) from my mistakes.

Maps: real hard copy maps and directions, as even not-so-remote areas unexpectedly have no cell service. No cell service suddenly means no navigation app, no calling for directions, no reading the field trip email (was that 8 A. M. Central or Eastern?)

Because I beat my dear vehicles up getting to these sites, checking that the spare is inflated, jack kit is there, and having jumper cables NOT stored under all the rock buckets and gear.

Keys. They mysteriously disappear from time to time, so keep a complete set with someone in the trip group. The spares in

Atlanta don't help when I'm in Kentucky! (P. S., my undying thanks to the family member who drove said keys all the way up from Atlanta last trip).

I tend to get really focused at a good site (and they're all good sites) and forget basics like drinking enough (or any) water, eating, timely biological breaks... I vow to set an alarm on my cell phone for such. Having a dig partner who's not so obsessive helps as well. A thermos of coffee is a treasured item. Because dig days are long and exhausting, planning low- to no-effort meals for afterwards is just practical. Frozen ingredients dropped into the crockpot keep it from overcooking on a really long day. Reserve healthy food for the ride home and the drive-through isn't such a temptation.

Good hunting! Please send in your tips for keeping the collecting hauls managed and somewhat organized.

MTGMS Show

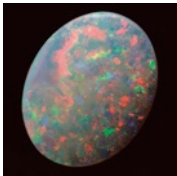
The Middle Tennessee Gem and Mineral Society announces the "Earth Treasures" Show: Ag Expo Park, Franklin, Tennessee; December 10-11; Saturday 9:00 A.M.-6:00 P.M.; Sunday 10:00 A.M.-5:00 P.M.; Adults \$4; over 30 dealers plus classes, speakers, exhibits, demonstrations, silent auction, and hourly door prizes. The show features handmade silver, stone, and Native American jewelry, lapidary and faceting rough, slabs, fossils and mineral specimens, supplies, tools, and more. www.MTGMS.org.

Why Are These Rocks Pretty?

Why have people valued gemstones for thousands of years? Gems have no real practical value: You can't eat them, they won't keep you warm in the winter, ... Yet "diamonds are a girl's best friend." Some cultures thought gems have magical properties, but the main reason is simpler. The prime requisite for a gem is that it must be beautiful. How they look is what matters most.

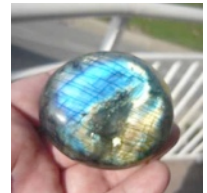
The optical properties of gemstones are important because they provide a nondestructive means to identify gemstones and are responsible for all the features one immediately observes and admires, including color, luster, brilliance, scintillation (brilliance and scintillation are the sparkle and flashes of white light emitted from gemstones), and dispersion (the breakup of white light into component spectral colors—the fire of a gemstone), as well as special phenomena such as play of colors, labradorescence, and the like. Ultimately, the crystalline structure and chemical composition of gem materials affect the behavior of light and are responsible for optical properties of gemstones.

MAGSters are familiar with fluorescence and luminescence in minerals. Some gems also have these properties. Several other features related to the optical properties of gemstones are mentioned above. This article will concentrate on just five: play of color, labradorescence, chatoyancy, asterism, and adularescence.



Opal displays a burst of striking colors known as **play of color**. As the stone is moved, its appearance changes and a sparkling display of rainbow-like colors can be seen from different angles. This is caused by the diffraction of light hitting the stone. Microscopic examination reveals that opals are made up of tiny silica spheres (150 to 300 nm) interspersed with water. The shape, size, and alignment of these spheres affect the opal's color.

Labradorescence is a similar phenomenon seen in feldspars such as spectrolite and rainbow moonstone. It's an effect that causes a mineral to display dark, metallic-like color shimmers, usually blue and green. The name is derived from labradorite, the mineral which is the primary example of this effect. The effect is believed to be due to the presence of very fine platelets of different compositions as well as minute inclusions of limenite, rutile, and possibly magnetite, which cause the diffraction of light.



Chatoyancy (from the French for "cat") is more commonly called "cat's eye." It's an exotic optical property that is rarely seen in many gemstones. The effect appears as a bright, narrow slit—similar to what you see in the eyes of your favorite feline friend. This phenomenon is caused by parallel fibrous or needle-like inclusions. The inclusions interfere with the passage of light, which is scattered and reflected back to the viewer. The effect is best seen in gems cut *en cabochon* (a dome-shaped cutting style for gems that lacks facets).

Asterism is the star in star sapphires. It's a name applied to the phenomenon of gemstones exhibiting a luminous star-like shape when cut *en cabochon*. The typical asteria is the star sapphire, generally a bluish-grey corundum, milky or opalescent, with a star of six rays. The effect is caused by the dense inclusions of tiny fibers of rutile (also known as "silk"). The stars are caused by the light reflecting from needle-like inclusions of rutile aligned perpendicular to the rays of the star.



Adularescence is an optical phenomenon that manifests as a soft shimmer of light moving within a gemstone as it is rolled back and forth. This property is most commonly associated with moonstone (it's what produces a floating blue cloud), a member of the feldspar family. The effect is named after "adularia," the name once used to refer to moonstone. It comes from light interference caused by layered deposits of differing materials. Adularescence is often described as an internal surge of undulating light that appears to float about like a moveable cloud. The glow seems to originate from within the stone rather than the surface.

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Why Are These Rocks Pretty?
Continued from P. 4

Many minerals form beautiful crystals, but the most prized of all are gemstones. These are some of the reasons why.

Book Review: *The Bone War of McCurtain County*, by Russell Ferrell
Carol Lybanon

The North Mississippi Gem and Mineral Society had Russell Ferrell as their guest speaker in September. Mr. Ferrell wrote a book about two amateur rockhounds who made a unique discovery in McCurtain County, Oklahoma.



This book has some history and geology along with information about geological times. The most interesting parts of this book are the interviews and the story of Cephis Hall and Sid Love. These men endured all the hardships of extracting the wonder dinosaur from the ground by hand.

Cephis Hall and Sid Love were rockhounds who were always able to find the best hunting places, especially for quartz crystals. They made extra money by guiding other rockhounds on collecting trips. Cephis had dreamed about finding a dinosaur but there

were few where he hunted. Cephis hunted on property owned by a logging company. The company never minded surface hunting. One day they found a bone identified as dino, and thus the story begins. Since they planned to do some digging, they felt they needed permission from the company. The logging company gave them permission and stated they had no interest in what the two of them found. Cephis and Sid spent several years of spare time removing the bones they found. They learned how to protect their finds and how to safely remove their fossil. Even after finding many parts of the beast, they were told they would never find the prize. They did however find the prize: the skull.



After several years and much hard work Cephis had his dream. He had found a dinosaur—and what a specimen. They had unearthed a giant flesh eater. After finding the skull their dinosaur was identified as an *Acrocanthosaurus*. This dinosaur was larger and meaner than a *T-Rex*. It was a top of the chain carnivore.

This book details all the work, court cases, bone preparation, and at last a full scale *Acrocanthosaurus* was erected at the Black Hills Institute. As promised, an exact model of their dinosaur was given to Cephis and Sid. They wanted

the people of McCurtain County to have something of their hard work. The closest museum was located in Idabel, Oklahoma. Cephis and Sid's dinosaur model is now owned by the Red River Museum. The actual fossil of the *Acrocanthosaurus Atokensis* is now property of the North Carolina Museum of Natural Science. At this time the Red River Museum is being renovated and the *Acro* is not on display.

December Birthdays

- 1 Kelly Blumenthal
- 3 Diana (Dee) Brunner
- 4 Donna Pause
Ethan Davis
- 5 Tracey Thomas
- 6 David McAlister
- 8 Tina Wallace
Alan Schaeffer
- 9 Angela Underhill
- 10 Lily Christenson
Chuck Reed
- 11 Juergen Poppelreuter
- 12 Barbara Roy
Marc Mueller
- 13 Hongbing Wang
- 14 J. Barry Gilmore
- 15 Kathy Baker
Jerry Seamans
- 16 Addie Lou Dawson
Genevieve Stockwell
Spence Herrington
- 17 Christopher Carpenter
- 18 Marvin Nutt
- 19 Amber McGregor
Danny Alexander
Cari Brose
Paula Gunter
- 20 Maricarmen Windisch
Ed Underhill

Continued, P. 7

Fabulous Tennessee Fossils

Dr. Michael A. Gibson,

University of Tennessee at Martin



FTF 23—Tennessee Namesake Index & Guide Fossils: Echinoderms with the *tennesseensis* Epithet

In my last article I wrote about the index fossil coral *Calceola* as a Tennessee namesake index fossil species. Echinoderms are popular fossils to collect, especially the “sea lilies” or crinoids. Shimer and Shrock (*Index Fossils of North America*, 1944) listed six echinoderms, all crinoids, with the species epithet *tennesseensis*: *Centrocrinus tennesseensis*, *Euryocrinus tennesseensis*, *Hormocrinus tennesseensis*, *Lampteroocrinus tennesseensis*, *Periechocrinites tennesseensis*, and *Pisocrinus tennesseensis* and all but one are indexes to the Silurian Brownsport Formation of the Western Valley of the Tennessee River, especially Decatur and Perry counties. I should note a correction to my previous FTF 22 article in which I introduced the concept of Tennessee namesake index fossils. I in my writing, not the newsletter editor, inadvertently left an “r” out of “*Homocrinus*”, which actually should be written as *Hormocrinus* as correctly listed in this article. *Homocrinus* (no “r”) is a real genus of crinoid named by the great paleontologist James Hall of New York, but that genus does not contain a Tennessee namesake. A detailed discussion of all of the morphological features and the locations of individual plates or plate arrays that separate each of these fossil taxa is beyond the space limitations of this article, so I make no attempt to provide the identifying features to distinguish each index

fossil. I will devote a future article to this topic. I merely want to share the variety and popularity of West Tennessee echinoderm fossils as worthy of Tennessee namesakes.

Centrocrinus tennesseensis appears in the *Index* under *Hormocrinus tennesseensis* as a synonym. *Centrocrinus* is the original genotype named by Illinois paleontologist Amos H. Worthen in 1890, but later this crinoid, which belongs to the Subclass Flexibilia, was reclassified by the famous echinoderm attorney-turned-paleontologist Frank Springer (1848-1927) in 1920 into the genus *Hormocrinus*. It is an index to the Silurian Brownsport Formation in Decatur County. Oddly, Ray Bassler, in his 1915 *Bibliography and Index of Ordovician and Silurian Fossils*, lists another new species, *Ormocrinus tennesseensis* from Brownsport Formation (Silurian) exposures near Clifton, Tennessee, as being “in press” by Frank Springer. This species never made it into the *Index* and presumably was renamed by Springer prior to publishing his manuscript.

Lampteroocrinus tennesseensis predates the work of Frank Springer. Ferdinand Roemer named this species in his 1860 *Die Silurische Fauna Des Westlichen Tennessee*, Breslau (see FTF 3 for more on this famous publication). As with most western Tennessee crinoids, it is from the Brownsport

Formation (Silurian) in Decatur County. Also of note is that Frank Springer later identified another *Lampteroocrinus* index species from the Brownsport Formation in Decatur County, *L. roemeri*, which he named in Ferdinand Roemer’s honor. The plates are readily identified by the raised ridges radiating from the center of each plate. The Museum of the Earth contains an excellently preserved cup specimen (www.museumoftheearth.org/collections/collections_itemDetails.php?catItemID=68).

Periechocrinites tennesseensis was originally named by James Hall for specimens collected from the Brownsport Formation in Decatur County. This genus has a long history of being modified in the literature.

In contrast to the previous crinoids, which are all “flexible” crinoids in the Subclass Flexibilia, *Pisocrinus tennesseensis* belongs to the Subclass Inadunata and is an isocrinid. The primary difference is the number and arrangement of plates in the lower cup of the crown (again more on crinoid morphology and taxonomy in a later article devoted solely to crinoid groups). *P. tennesseensis* was also described by Roemer in 1860 from the Brownsport Formation, but also occurs within the Bainbridge Formation of Missouri.

While most of the *Continued, P. 7*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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Fabulous Tennessee Fossils previous
Continued from P. 6 crinoids
within the
Brownsport occur in the Beech
River Member, *P. tennesseensis* is an
anomaly in that it occurs in the
Dixon Member.

The one Tennessee namesake
crinoid not from the Brownsport
of western Tennessee is *Euryocrinus*
tennesseensis, which was neverthe-
less named by Frank Springer in
his *The Crinoidea Flexibilia*, also
published in 1920 as a Smithsonian
Institution publication, but *E.*
tennesseensis is an index fossil for
Mississippian strata exposed in
the highland rims of Middle

Tennessee at White Springs and
Ridge Top and in Kentucky. *E.*
tennesseensis also occurs in Indiana
from the New Providence Shale
(and may well occur in Tennessee
New Providence).

Frank Springer was an
interesting individual, who spent
most of his career as a lawyer in
New Mexico. His tome *American*
Silurian Crinoids (1926, Smithson-
ian Institution Press) is a must
read classic for Tennessee crinoid
collectors and highly sought-after
book for any library. I also
recommend *Frank Springer and New*
Mexico: From the Colfax County War
to the Emergence of Modern Santa Fe

by David L. Caffey (Texas A&M
University Press, 2007) for more
on Springer the man. So you
might ask, what is a good up-to-
date, current publication that will
help crinoid collectors correctly
identify Tennessee namesake
crinoids from the many other
Silurian and Devonian crinoids in
West Tennessee? I have that
answer, to be sure, so check into
FTF 24 next issue where I will
share that publication and provide
personal insight into its
background. It is inexpensive, hot
off the press in 2015, and will make
a great Christmas gift idea for the
ardent crinoid collector!

December Birthdays *Continued from P. 5*

- 21 Cheri Crews
Yeh Hsueh
- 23 Laurel Christenson
Jim McNeil
- 24 Tyler Smrt
Allen Grewe
- 28 Walter Heger
- 29 Mark Bishop
Bebe Buck
Madeline Marcantel
Brandon Mayer
- 30 Hope Johnson
- 31 Rebecca Smrt
Bernita Willis
Lynn Reed

December Field Trip

Charles Hill

Hello, all. It's me again. I
want to tell you about the last field
trip of the year. On December
17th we will travel to Middle
Tennessee to hunt for geodes and
fossils. First we will hunt for
fossils at Dale Hollow Lake. Here

the fossils will be mostly crinoids
[**Editor's Note:** "*Fabulous Tennessee*
Fossils" (P. 6) has considerable
information on crinoids found in
Tennessee.], both loose and in
plates. The best thing about these
is that they have a blue hue. We
will find other fossils there, as
well, and if the water is down we
will find them in great abundance.

We will meet at the Dairy
Queen in Byrdstown, Tennessee,
located at 1245 Livingston Hwy.
38549-4595. Livingston Hwy is
Hwy 111. The GPS location is
36.560443, -85.166467. Thank you,
Bob Cooper, for the coordinates.
From there we will travel to a boat
landing at Dale Hollow Lake.
Coordinates for the boat ramp are
36.546514, -85.212340. Once again,
thank you, Bob.

After a yet undetermined
period of time, we will go to the
Ledbetter farm for a geode hunt.
If it is wet at the farm, be pre-
pared to load up with someone
with a 4X4, or else do some

walking. The fallen leaves will
cover the ground, so bring a rake
and digging tools. From Ledbet-
ter's we will be going home. This
will be my last field trip as your
field trip director. It has been fun,
and I have learned a great deal.
Thank you! Hope to see you
there.

Charles

Welcome, New Members

Cynthia Alford
Earl Reyer

Editor's Note: Space limitations
prevented the September Membership
Meeting Minutes from being published
in the November issue. Here they are.

September Meeting Minutes

Mike Baldwin

Called to order at 7:09. 1 visitor and
36 Members attended. Members
approved new dues structure for 2017.
Tomorrow's field trip
will be to a limestone *Continued, P. 8*

September Meeting Minutes quarry
Continued from P. 7 near
Batesville, Arkansas. Charles Hill reminded Members that they should wear hard-toed shoes and have goggles. October—MAGS-sponsored DMC field trip to a Memphis Stone & Gravel gravel mine in north Mississippi. November—field trip to Dale Hollow and Livingston, Tennessee. December—field trip to Vulcan Quarry in Parsons, Tennessee. Matthew Lybanon, James Butchko, and Bonnie Cooper presented a check for \$6719 to MAGS from proceeds of 2016 Show. James asked for volunteers for 2017 Show Committee. Leah Gloyd told Members about the new MAGS Facebook page.

There was one display by Junior Member Angelina Wang. Juniors were dismissed to their program and Carol Lybanon introduced tonight's speaker, Brian Hicks from the DeSoto County Museum, Hernando, Mississippi. His topic was the Spanish explorer Hernando DeSoto and his travels through the area.

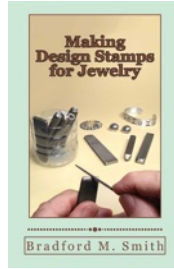
Adjourned at 7:32.

Jewelry Bench Tips by Brad Smith

Announcing Brad's latest jewelry techniques book for those who like Southwest-style stamped jewelry.

"Making Design Stamps For Jewelry" covers the step-by-step process of selecting best steels, carving the design, hardening the steel, and tempering the completed stamp to ensure a long service life. It describes the tools to use, gives examples for how to make several design stamps, and 78 close-up photos that illustrate the important details. Both Kindle and paperback editions are on

Amazon amzn.to/2fvf58T.



LOOSE HEADS

Flying off the handle is never good, particularly if it's a hammer head. The traditional way to tighten a loose hammer head is a bit of work with wedges, but if the head is basically secure, there's a fast and easy way to tighten a loose head for about 50 cents—superglue.

Simply put a couple drops in from the handle side, let it set up, and then a few drops from the top side. Be sure to get the thin superglue, not gel. It penetrates better. Packages of two superglues are usually available at the 99 cent store.

Note that this is only a safe practice if the hammer head is just a little loose but is basically secured onto the handle. Gluing is not a fix for a hammer head that has come off the handle or is at risk of coming off.



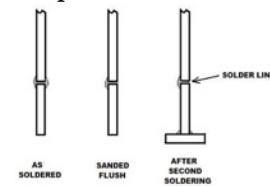
AVOIDING SOLDER LINES

After finishing a soldered joint on say a bezel, have you ever seen it reappear after you've soldered

the bezel to a base plate? What's happening is that every time you heat a soldered piece to the temperature where solder flows, the liquid solder seeps a little more into the surrounding metal. This leaves a small furrow where the solder had been sanded off flush at the joint. To get rid of the furrow, you have to re-sand the joint area down to the bottom of the furrow.

To avoid this when I have another soldering operation to follow, I try to leave a little extra solder on my joints. For instance, when trimming off excess base plate from around a bezel, I leave a paper thickness of excess plate material whenever possible until I'm done with all soldering.

Of course, this isn't always possible as when a soldering operation will prevent you from gaining access to an area for final sanding and polishing. Coating the finished solder joint with ochre seems to help a bit but is not a complete solution.



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

October Board Minutes

Mike Baldwin

Called to order 6:32. Paul Sides, Kim Hill, Charles Hill, Mike Baldwin, Leah Gloyd, Leigh Butchko, James Butchko, Carol Lybanon, Matthew Lybanon, W. C. McDaniel.

Secretary: Minutes approved subject to *Continued, P. 9*

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October Board Minutes *Continued from P. 8*

standing rules correction.

Treasurer: August bank statement received. Bonnie distributed summary of September expenses. She asked the bank about our outstanding checks. Stop payment would cost \$37 each and checks could still be cashed. We have \$14,000+ in our account. We discussed what to do with the excess. Report approved as presented.

Field Trips: Charles hasn't been able to get in touch with Norman Ledbetter but the field trip is still on. He's concerned about the number of hamburgers and hot dogs needed for the October DMC trip. Need to buy buns, chips, condiments, potato salad, cheese, and garnishments. Plan on 75 hot dogs and hamburgers. Discussion followed concerning exactly what we need and how we are going to prepare for the meal. W. C. will pick out door prizes, and best rock and ugliest rock awards. Several people from the Georgia Club will be at the Friday MAGS meeting. Carol suggested sending out a reminder requesting members to bring refreshments. Matthew mentioned that the Arkansas Club will go to Black Rock and the Hot Springs club will go to Mt. Ida and Mountain Home.

Membership: One new member since last Board Meeting. Bob reviewed new pro-rated dues: single membership will be \$15 for joining first quarter, \$12 second quarter, \$8 third quarter, and \$5 fourth quarter. Lifetime membership will begin the year they join. This will be added to the standing rules. Pro-rated fees plan approved. Bob distributed membership card design based on new logo. Bonnie has already started printed cards for 2017.

Adult Programs: Bill Prior will be

here in October. He will talk about Arkansas fossils. November will be Ashley Allen talking about the track site in Walker County. We'll form a committee in November to plan Holiday Party.

Junior Programs: October, costumes for mummies of the Cleveland Indians. November, crafts for the holidays. Carol talked about crafts using no glue and she can share her gem-tree supplies.

Historian: Leah is still scanning documents; up to 68 thus far. She will wait until Black Friday to purchase a removable drive, and use her drive until then to save money.

Library: No report.

Web: Website is updated and current. Mike will add our Facebook link to the home page.

Newsletter: It would be nice to have an article on the DMC field trip, a book report, or any other topic.

Show: Jim and W. C. will meet soon to plan the 2017 committee. Discussed Agricenter fire code, which limits the size of an enclosed tent to 5x5. Bob, Bonnie, and Mike are working on a solution for the fluorescent display.

Old Business:

- New logo has been approved. Now we need new collateral materials: business cards, post cards, letterheads, information sheets, etc.
- Club distribution of funds: W. C. suggested putting approximately \$2500 of show distribution in a CD. Matthew asked if we need to put any into operating expenses. Bonnie shared that we have around \$11,000 in CDs. Carol suggested Nonconnah Conservancy as a possible donation recipient. Motion made to donate \$1000 to Chucalissa, \$500 to Ronald McDonald House, and remainder be placed in operating

expenses. Motion carried.

- Facebook pages: We have the TEWO and the Memphis Geology pages currently. Kim Hill moderates the TEWO group and Leah moderates the Memphis Geology page. There's also a Friends of MAGS closed page.

New Business:

- 901Rocks: Leah summarized how this works. Perhaps we could paint rocks near the first of the year as a push for membership and Show advertising. "Rocks is what we do," so we should be involved. Carol suggested we sponsor an event and supply the rocks. A brief discussion followed about ideas for promoting the Show. One suggestion: rocks with free admission to the Show written on the rock.
- Current nominees for 2017-18 officers include: Charles Hill, President; Leah Gloyd, Historian and Librarian; James Butchko, Field Trips; W. C. McDaniel, Programs; Mike Baldwin, Secretary; Bob Cooper, Membership; Bonnie Cooper, Treasurer. We need a Junior Director and an Assistant Junior Director.

Adjourned 7:52.

October Meeting Minutes

Mike Baldwin

Called to order at 7:00 P. M. 63 Members and 3 visitors present. W. C. McDaniel welcomed everyone. Out-of-town visitors attended the meeting, will participate in the DMC field trip tomorrow. Charles Hill told us what is found there and what tools we need to bring. The November field trip was canceled because hunting season will have started. The December 17 field trip will be to Vulcan Quarry. W. C. directed attention to the

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

October Meeting Minutes Continued from P. 5 silent auction, and said a number of the minerals are from our permanent collection. Leah Gloyd reminded us that we have a new Facebook page that everyone should "like."

W. C. announced the nominations for the 2017-2018 Board: President, Charles Hill; 1st Vice President (Field Trips), Jim Butchko; 2nd Vice President (Programs), W. C. Mc-

Daniel; Secretary, Mike Baldwin; Treasurer, Bonnie Cooper; Assistant Field Trips, Kim Hill; Assistant Programs Juniors, Assistant Juniors, Open; Librarian, Leah Gloyd; Membership, Bob Cooper; Rock Swaps/Historian: Carol Lybanon. Remaining Board positions are appointed. W. C. asked if anyone is interested in any of the open positions.

Bob Cooper said he is ready to begin accepting 2017 dues. Family Membership remains the same but

the Single Membership rate has been lowered to \$15 per year. W. C. announced that the club has a new logo. He announced that Jim Butchko will be Show Chair. 2017 Show dates are April 22 and 23. Kim Hill, Matthew Lybanon, & Diana Poppelreuter brought displays. Meeting adjourned and turned over to the program. Carol Lybanon introduced Bill Prior. His talk was on "Fossils of Arkansas."

November Meeting

Some pictures from the November meeting: displays, and Carol presenting the speaker gift to program presenter ("Alabama, A Paleozoic Paradise") Ashley Allen.



Unearthing Israel's History

Israel has a long history, important to many people around the world. Visitors to Jerusalem will soon be able to walk through a history of the city's archaeological heritage at a new building in the capital's Museum Hill quarter. The Jay and Jeanie Schottenstein

National Campus for the Archaeology of Israel, expected to open to the public in about a year, is under construction in a location between the Israel Museum and the Bible Lands Museum. Treasures never before seen by the public will be just one attraction.

The 36,000-sq.-m. building will house archaeology laborator-

ies, hundreds of thousands of artifacts, and the National Library for the Archaeology of Israel, according to a statement from the Antiquities Authority. "Just a small hop, skip and a jump over to the archaeology campus will allow every one of us to make a gigantic leap back in time, to the history of mankind and the

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Unearthing Israel's History Continued from P. 10

country," Antiquities Authority director Israel Hasson said.

Once complete, the campus will be the world's largest facility to document the archaeological heritage of the Land of Israel, and will serve as a national center for the collection, conservation, study and presentation of the country's antiquities. "On this campus, visitors will be able to take part for the very first time in the fascinating process of archaeological conservation that up till now was carried out behind the scenes, and experience the rich past of the country firsthand as it takes shape before their eyes," Hasson said.



The building itself, designed by architect Moshe Safdie, will be a unique specimen, with a tensile transparent roof that will simulate the tentlike canopies used to shade excavations, according to a description from the Antiquities Authority. The campus will also house the World Center for the Dead Sea Scrolls that will include a section where scrolls undergo conservation, a climate-controlled center for more than 15,000 scroll fragments, a library, and gallery.

According to the Antiquities Authority, "The campus will serve as an open, active house endeavoring to make the cultural heritage that belongs to all of us accessible

to the general public: millions of archaeological treasures of the societies and religions that lived in Israel which were excavated and that will be excavated in the future in archaeological excavations."

Fossils On Mars?

Soon, a NASA robot will arrive at Mars with the goal of collecting rock samples that might contain ancient fossils. Nearly four billion years ago, when Earth was coming alive, Mars was gradually choking to death. The thick atmosphere that had warmed the red planet was leaking into space, and plummeting temperatures caused Martian lakes and rivers to freeze, turning the wet surface into a dry wasteland.

But it's possible life took root in those early years. Currently known as Mars 2020, the next-generation rover will carry a sophisticated mobile geology lab designed to search for signs of single-celled algae and bacteria that are the planet's most likely ancient inhabitants.

Because Mars is not seismically active, some 50% of the Martian surface contains intact rocks dating back to those crucial first billion years of the planet's formation, according to Jack Mustard of Brown University. Geoscientist Mustard was chair of the Science Definition Team for the Mars 2020 Rover, and played a key role in formulating the mission's science goals.

Twenty years ago, a research team led by NASA scientist David McKay announced that they had found microscopic fossils. The

primitive, bacteria-like organisms showed up inside a four-billion-year-old Martian meteorite that fell to Earth 13,000 years ago.

That meteorite became one of the most extensively studied rocks in history, and whether or not the formations that were seen are evidence of life is inconclusive. Geologists will face the same burden of proof when they get their hands on rock samples collected using the Mars 2020 Rover. But unlike a random chunk of Mars hurled into space, these rocks will be selectively chosen based on qualities that make them strong candidates for preserving identifiable remnants of Martian life.

The Mars 2020 fossil hunters will look for chert and silica—two types of minerals that, on Earth, are ideal for entombing and preserving biological material. Clay mineral deposits are also good candidates, since their presence implies there was once a lot of standing water that existed over a long period of time. And geologists will pay special attention to distinctive rock formations.

The choice of a landing site is crucial, given the rover's limited range. "On Earth, you could have 50 graduate students walking all over western Australia looking for just the right place for ancient fossils," says project scientist and Caltech geochemist Ken Farley. "We're not going to get that luxury. We're going to land in one place and cruise around an area that might be over a 15-km linear distance." You can find more information about that choice at <https://news.brown.edu/articles/2015/08/mars2020>.

MAGS At A Glance

December 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27	28	29	30	1 Board Meeting, 6:30 pm, St. Francis Hospital	2	3
4	5	6	7	8	9  Membership Meeting, 7:00 pm, Holiday Party	10 MTGMS Show, Franklin, Tennessee, 9:00 am-6:00 pm
11 MTGMS Show, Franklin, Tennessee, 10:00 am-5:00 pm	12	13	14	15	16	17 MAGS Field Trip, Livingston, TN & Dale Hollow Lake
18	19	20	21	22	23	24 
25 	26	27	28	29	30	31 

Memphis Archaeological and Geological Society
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