



Volume 64 ♦ Number 01 ♦ January 2018 ♦ A monthly newsletter for and by the members of MAGS

# MAGSters Travel The World

*Iceland and South America*

*January Program*



**Editor's Note:** Numbers in parentheses are keyed to the list of websites at the end of this section.

Iceland is known as the land of fire and ice. Because of its breathtaking beauty and dramatic landscapes, Iceland has become a popular tourist destination. We were

fortunate to visit this beautiful country last September. Iceland is also a unique geological site. It was formed by volcanic eruptions along the Mid-Atlantic ridge. "Iceland's landscapes forged by the processes of volcanism include rift valleys, geysers, hot

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## DECEMBER 2017 HOLIDAY PARTY

Sherri and I planned the MAGS Party into our vacation. We drove through a snowstorm to get back in time. We arrived home with barely enough time left to make a pumpkin crisp and rush out the door to get to the church. We were not disappointed. We talked about it off and on all weekend. I believe this is the best



MAGS Holiday Party in at least ten years.

Lots of people were there (approximately 100) with only four visitors. The food was abundant and delicious. Lots of children were in attendance and they were all having a great time. MAGS bingo was tons of fun. The gifts and prizes were great. We loved the table trees. Ours is

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# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

## 2017-2018 MAGS BOARD

### President—Charles Hill

1070 Park Swain Road, Grand Junction, TN 38039  
♦ (901) 626-4232 ♦ [hunter3006@aol.com](mailto:hunter3006@aol.com)

### 1st VP (Field Trips)—James Butchko

4220 Dunn, Memphis, TN 38111 ♦ (901) 743-0058 ♦  
[butch513j@yahoo.com](mailto:butch513j@yahoo.com)

### 2nd VP (Adult Programs)—W. C. McDaniel

2038 Central Avenue, Memphis, TN 38104 ♦ (901)  
274-7706 ♦ [w.c.mcd@att.net](mailto:w.c.mcd@att.net)

### Secretary—Mike Baldwin

367 North Main Street, Collierville, TN 38017 ♦  
(901) 853-3603 ♦ [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com)

### Treasurer—Bonnie Cooper

8695 Baylor Road, Arlington, TN 38002 ♦ (901)  
444-0967 ♦ [rocks4us@hotmail.com](mailto:rocks4us@hotmail.com)

### Director (Asst. Field Trips)—Kim Hill

4755 Royal Elm Cove, Memphis, TN 38128 ♦ (901)  
388-7572 ♦ [earthsis@aol.com](mailto:earthsis@aol.com)

### Director (Asst. Adult Programs)—Dave Clarke ♦

456 North White Station Road, Memphis TN 38117  
♦ (901) 308-0334 ♦ [dclarke@fieldmuseum.org](mailto: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](mailto:leahgloyd@outlook.com)

### Director (Asst. Librarian)—Jane Brandon

4384 Castle Avenue, Memphis, TN 38122 ♦ (901)  
374-0366 ♦ [jjbrandon@yahoo.com](mailto:jjbrandon@yahoo.com)

### Director (Membership Services)—Bob Cooper

8695 Baylor Road, Arlington, TN 38002 ♦ (901)  
444-0967 ♦ [rocks4us@hotmail.com](mailto:rocks4us@hotmail.com)

### Director (Historian)—Carol Lybanon

2019 Littlemore Drive. Memphis, TN 38016 ♦ (901)  
757-2144 ♦ [sgcarol@earthlink.net](mailto:sgcarol@earthlink.net)

### Newsletter Editor—Matthew Lybanon

2019 Littlemore Drive. Memphis, TN 38016 ♦ (901)  
757-2144 ♦ [lybanon@earthlink.net](mailto:lybanon@earthlink.net)

### Webmaster—Mike Baldwin

367 North Main Street, Collierville, TN 38017 ♦  
(901) 853-3603 ♦ [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com)

### Show Chairman—James Butchko

4220 Dunn, Memphis, TN 38111 ♦ (901) 743-0058 ♦  
[butch513j@yahoo.com](mailto:butch513j@yahoo.com)

### Past President—W. C. McDaniel

2038 Central Avenue, Memphis, TN 38104 ♦ (901)  
274-7706 ♦ [w.c.mcd@att.net](mailto: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](http://memphisgeology.org)

MAGS Show Website: [www.theearthwideopen.com](http://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](mailto:lybanon@earthlink.net).

### January 2018 DMC Field Trip

WHERE: Vulcan Limestone Mine, Brooksville, FL

WHEN: Saturday, January 13, 2018

COLLECTING: Echinoids, druzy calcite crystals, chert

INFORMATION: Fred Hendershot, (813) 892-5864

### Links to Federation News

- ➔ AFMS: [www.amfed.org/afms\\_news.htm](http://www.amfed.org/afms_news.htm)
- ➔ SFMS: [www.amfed.org/sfms/](http://www.amfed.org/sfms/)
- ➔ DMC: [www.amfed.org/sfms/dmc/dmc.htm](http://www.amfed.org/sfms/dmc/dmc.htm)

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## *MAGSters Travel The World* *Continued from P. 1*

springs, rhyolite mountains, columnar basalt formations, lava fields, and lunar-like craters." (2) Iceland is one of the most active volcano regions on earth. It is estimated that about one-third of all lava eruptions since 1500 have occurred in Iceland. (4) During the last Ice Age, Iceland was buried under ice resulting in the numerous glaciers that still make up a large percentage of the landscape. During the Ice Age, the volcanic eruptions were subglacial. Since many of the ice caps remain, Iceland continues to have many subglacial eruptions. (4)

The Mid- Atlantic Ridge which separates the Eurasian and North American Plates runs through Iceland. Iceland is the only place on earth where you are able to stand on the ridge between the two plates on dry land. (3) The continued separation of these plates is responsible for the prolific seismic and volcanic activity of Iceland.

Because it is straddling the Mid-Atlantic Ridge, heat and magma come close to the surface of the earth and provide enormous geothermal resources for Iceland. (5) Driving around the south part of Iceland it is common to see steam rising from colorful, mineral rich pools and mud formations. This geothermal activity formed a number of hot springs around Iceland that attract visitors and natives alike. A number of geysers are also found in Iceland making them a popular tourist destination.

Here are some helpful websites that you can visit if you

would like to learn more.

1. <http://exploringtheearth.com/2016/07/05/geological-journey-iceland-land-fire-ice-part-1/>
2. <https://www.icelandontheweb.com/articles-on-iceland/nature/geology>
3. <https://waterfire.fas.is/Iceland/Geology.php>
4. <https://www.icelandontheweb.com/articles-on-iceland/nature/geology/volcanism>
5. <https://www.icelandontheweb.com/articles-on-iceland/nature/geology/geothermal-heat>

*Debbie and Alan Schaeffer*



The South American continent stretches from north of the equator almost to Antarctica. There are 12 countries and three territories. We didn't see all of South America. But we journeyed from Buenos Aires around Cape Horn and up to Santiago. Unlike Debbie and Alan's trip, we visited many geological and climate zones.

We followed some of the route Darwin took when he visited South America in the early 1830s. We saw beautiful beaches, volcanos, glaciers, spectacular waterfalls, relics of the last Ice

Age, enormous dinosaurs and other fossils—and had a good time. We also tapped into a good bit of history and culture. We will show some of what we saw on two visits to South America, primarily pictures from a cruise we took almost a year ago.

Remember the Falklands War? In 1982 Margaret Thatcher's England fought Argentina for control of the Falkland Islands, South Georgia, and the South Sandwich Islands. We spent some quality time with some of the Falklanders; some of them spoke English while others didn't speak at all.

We saw many natural wonders, as well as big cities and small towns. Take both these trips with us at the January meeting.

You can get more information from these websites.

1. [https://www.jstor.org/stable/2451733?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/2451733?seq=1#page_scan_tab_contents)  
Geology of South America
2. [https://en.wikipedia.org/wiki/Geology\\_of\\_the\\_Falkland\\_Islands](https://en.wikipedia.org/wiki/Geology_of_the_Falkland_Islands)  
Geology of the Falkland Islands
3. [http://darwin-online.org.uk/EditorialIntroductions/Chancellor\\_South\\_America.html](http://darwin-online.org.uk/EditorialIntroductions/Chancellor_South_America.html)  
Darwin in South America

*Carol and Matthew Lybanon*



# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## December 2017 Holiday Party Continued from P. 1

prominently displayed in the foyer of our house. But the best part of all this was the fellowship. I just sat back a few times and listened to all the conversations and laughter taking place. The MAGS Party was a warm place to be Friday night. Thank you all very much.

*Mike Baldwin*

Many of our Members helped to make our Holiday Party a success. There are a few people for special thanks but many more lent a hand. There were the holiday tree helpers: Mildred, Bonnie, Dee Dee, Cornelia, W. C., and Debbie. And the food helpers: Bonnie, Bob, Matthew, Carol, and all our Members who brought delicious food and

desserts. We had a great crowd, wonderful gifts, and lots of bingo fun. Thanks for calling bingo, Nannett. And thanks, Charles, for table and chair setup. Thanks to all who helped with the cleanup. We hope our Members agree that we had a fun and fabulous time for all.

*Carol Lybanon*



Everyone loved their

MAGS holiday gifts.

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## Hospitality

Thanks to all who signed up to work hospitality at the Membership Meetings. You make that part of the meeting work better.

The duties are simple:

1. Before Meeting: Arrive around 6:30. Help set up and organize tables. All items are located in a rolling cabinet.
2. Monitor snacks, drinks, ice
3. After Meeting: Clean up, put all items back in cabinet.
4. Two Members per meeting.

Here is the schedule for the next three months:

*January 12:* **Kim Hill, Amy Smith**

*February 9:* **Charles and Emily Hill, Christine Lemons**

*March 9:* **Sherri Baldwin** (need one more volunteer)

If you would like to volunteer, or if you can't come when scheduled, contact Charles Hill.

## 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.

## Show News

We (that means all of us) have committed to 3 more years of having the annual Earth Wide Open Show at the Agricenter. This locks in the dates and the price of rent. Thanks to James Johnson for a big donation of specimens for the grab bags and prizes. We now need volunteers to clean and sort the specimens and fill the grab bags. We will probably fill them at Cooper Moving & Storage in Bartlett in March. If you can take a bucket or two home to clean, contact Jim Butchko at (692) 7518 or [j.butchko@yahoo.com](mailto:j.butchko@yahoo.com). Also, we have cards printed to advertise the Show. Spread the word by passing these out wherever and whenever you can.

*Jim Butchko*

- The Show Committee is up and running, meeting once a month and planning the 2018 Show.
- Members are *Continued, P. 6*

### Memphis Mineral, Fossil and Jewelry Show

#### THE EARTH WIDE OPEN

Rocks, Fossils,  
Minerals, Gems,  
Jewelry,  
Lapidary Equipment  
and Beads

Sat. April 28, 9-6 Sun. April 29, 10-5  
Agricenter- 7777 Walnut Grove, Memphis

Presented by the  
Memphis Archaeological  
and Geological Society

Adults - \$5, 2 day pass - \$8, 12 & under - \$2  
Scouts in Uniform - Free

[www.theearthwideopen.com](http://www.theearthwideopen.com) [info@theearthwideopen.com](mailto:info@theearthwideopen.com) 901-692-7518 / 901-490-3575



2018 Show Notecard

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*Show News* requested and encouraged to mark off the dates of April 27-29. We need lots of help, volunteers and work. Support **your** club. Please note we will not be able to move in and set up on Thursday. **WE DO IT ALL ON FRIDAY.**

- Dealer contracts have been extended and most spaces have been contracted.
- Exhibits and demonstrators invitations will be issued in early January.
- Donations for the Rockzone and Grab Bags are encouraged and really needed. Please note these activities are very popular with our attendees and produce good and necessary income
- 5000 notecards have been printed and available for distribution; they will be available at all Membership Meetings. Promote the Show by distributing them all over town and out of town.

*W. C. McDaniel*

## Field Trip Report

*Jim Butchko*

Only 3 MAGsters broke through the ice at Crow Creek in December. Why go out on a cold rainy day when you can go any-time? However, Vulcan Quarry near Parsons, Tennessee, is only open to geology clubs by appointment. Our turn is on Saturday, January 20, 2018. If you like Devonian Age fossils, this is the place to go. This trip is limited to 25 Members who

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A group of MAGS Members got together and helped to decorate our Holiday Party trees. Thanks go to Bonnie Cooper, Carol Lybanon, Cornelia McDaniel, and Dee Dee Goossens. Not pictured but lots of help: Debbie Schaeffer (photographer), Mildred Schiff, and Arlene Oleartchick.

## MAGS2018—Adult Membership Programs

Date	Program
January 12	"Iceland," Schaeffers;"South America," Lybanons
February 9	G. F.T. P (more later); live auction of MAGS stuff
March 9	Treasure Hunting with Lou White
April 13	MAGS History AND "15 Days to the Show"
May 11	TBA
June 8	"Mount Kilimanjaro," Keith Riding
July 13	"Minerals of South Africa," Jimmy McNeil
August 10	Indoor Rock Swap and Picnic
September 14	"Lonnie Looper Fossil Collection," Dr. Nina Baghai-Riding
October 12	"Amber," David Clarke (need to confirm)
November 9	MAGS Members: Make It, Give It, or Take It
December 14	Holiday Party

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*Field Trip Report* have paid their  
*Continued from P. 6* dues by then.  
We will meet at  
7:30 A. M. and collect until noon.  
Email [j.butchko@yahoo.com](mailto:j.butchko@yahoo.com) or  
sign up at the meeting January 12.

## Fabulous Tennessee Fossils

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

FTF 36

*The Brachiopod Platystrophia, now  
Vinlandostrophia*



## January Birthdays

- 2 Justin Coulson
- 3 Mary Kratz
- 6 Nick Fowler
- 10 Noa Parks
- 11 Sarah Stockwell  
Grayson Hebert
- 12 Angie Menne
- 13 Vincent Schultz
- 16 Francis "Mitch" Mitchell  
Brandon Hubble
- 18 Ricky Waters
- 21 Brooke Ledbetter  
Richard Gunter
- 24 Dr. Jon Stanford
- 28 Lannah Ferri
- 31 Teresa Noyes  
Abigail Loyd  
Ivie Tully

*Platystrophia* (Fig. 1) is one of the most recognized Middle to Upper Ordovician brachiopod fossils from Tennessee and from Kentucky. For those paleontologists that are either inclined to delve into the minutia of taxonomy or like to use a real situation of taxonomic revisions to teach the rules of taxonomy to budding students, *Platystrophia* is the ideal poster child. In my paleontology course at UT Martin, I use *Platystrophia* naming history as the case study for all of the possible changes and revisions in nomenclature that are possible and the rules established to govern

Kingdom Animalia  
Phylum Brachiopoda  
Class Rhynchonellata  
Order Orthida  
Family Plectorthidae  
Genus *Platystrophia* King, 1850  
Genus: *Vinlandostrophia* Zuykov and Harper, 2007  
Species: *Vinlandostrophia ponderosa* (Foerste, 1909)

these changes. And boy is it complicated, so I will only summarize the most important highlights below.

The genus *Platystrophia* was erected in 1850 by the British Queens College paleontologist William King (1809-1886) for specimens in Permian strata of Europe by assigning specimens of *Orthis biforata* to his new genus, for which the type species in the new genus was *Platystrophia biforata*. Later, August F. Foerste (1862-1936) described what he called *Platystrophia ponderosa* in 1909 for specimens in the Ordovician of the Eastern United States. Foerste was a pioneering paleontologist who grew up and worked in the Dayton area and I introduced him to you in Famous Tennessee Fossils #2 in 2015. Foerste went to Denison University where he was a very successful undergraduate, publishing several geological papers. He returned to Dayton after graduation with a Ph. D. from Harvard, teaching high school for 38 years. When he retired he was

*Continued, P. 8*

## Memphis Finds

Dan Baker sent some nice pictures of stuff he found in and near Memphis. Thanks, Dan. We'll go with you next time.



*Fabulous Tennessee Fossils* offered a teaching position at the University of Chicago, but instead went to work at the Smithsonian Institution until the end of his life. It is at this point that the naming begins to get complicated because the "type" specimen for *Platystrophia* was later lost and there was disagreement over which specimens to use.

In 1919 Eula Davis McEwan (1919) from Northwestern University in Illinois re-evaluated *Platystrophia* as U. S. National Museum Proceedings 2297, which became the "standard" reference for the systematics of this common fossil. Then in 1973 and 1979, Vanderbilt paleontologist Leonard Alberstadt expanded our understanding of *Platystrophia* by recognizing that there are no fewer than three morphology variations at the genus level for this common spiriferid brachiopod and revised many taxa. The number of species quickly ballooned to over twelve for the Tennessee and Kentucky regions alone, with the "*ponderosa*" species group being the most recognizable and well-known. Alberstadt's 1979 U.S. Geological Survey Professional Paper 1066-B remains the best resource for identifying the many species of *Platystrophia* in our region because of its numerous illustrations. While the type specimens in this study remain at their repositories, UT Martin's Vanderbilt Collection now houses all of the other specimens used by Alberstadt in that study...literally hundreds of them (Fig. 1). As an aside, now professor emeritus Len Alberstadt, along with UT Knoxville paleontologist

Kenneth R. Walker, made history in the 1970's by pioneering many concepts of paleoecological reconstruction, especially the application of community succession to bryozoan reef build-ups in the middle and east Tennessee.

As good as Len Alberstadt's 1979 contribution was to the taxonomy and systematics of this iconoclastic Paleozoic brachiopod, more work ensued. Over the next several years there was considerable work attempting to determine the taxonomic relationships of this group of brachiopod that led to much confusion in the literature, and in 1999 the International Commission on Zoological Nomenclature (ICZN) formalization of a type species to replace the original type that was lost. Then, in 2007 newer nomenclature was proposed by the Russian paleontologist Michael A. Zuykov and the Danish paleontologist David A. T. Harper that moved the *ponderosa* species into a their newly erected genus *Vinlandostrophia*. Now our beloved *Platystrophia ponderosa* is more properly identified as *Vinlandostrophia ponderosa*, so you will need to revise your specimen tags and put notes in your identification books. Even though there are many species variations within the *Platystrophia-Vinlandostrophia* brachiopod taxonomy, specimens remain readily identifiable to genus level by their strong straight hingeline, pronounced biconvex shape with distinct fold and sulcus with four plications on the central fold, three in the sulcus, and seven to nine on the lateral sides. Science marches on. Merry Christmas fellow fossickers!



**Figure 1.** *Vinlandostrophia ponderosa* specimens used by Vanderbilt paleontologist Len Alberstadt to revise Kentucky and Tennessee species of *Platystrophia* in 1979 illustrating the basic morphology (photo by Michael A. Gibson; scale in cm). Alberstadt's specimens are housed at UT Martin in their Vanderbilt Fossil Collection.

## Jewelry Bench Tips by Brad Smith

### MINI DRILL PRESS

If you find yourself drilling a number of small holes for your work, you might want to look at the small, inexpensive drill presses now available. They take up just minimal space on your bench and are always ready to give you nice straight holes. Some models even have a variable speed control. I've been very pleased with a low-priced one that's been well-used in my classes for over a year.

Because these machines are only a foot high, they're limited as to the size of workpieces that can fit into the machine and the size of the drill bits you can use. But I've had no problems with drill bits up to about 3/16" (4.5mm), even drilling steel.

The machines are sold by a number of companies. If you do get one, be sure to *Continued, P. 9*



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*Jewelry Bench Tips* buy a spare belt because they are generally not available at local hardware stores.



## LASER WELDING

A question came up recently about how to solder some jump rings to hold blue topaz briolettes onto a necklace. We've all heard about ways to do some soldering close to a stone, and some of us have sized a ring without taking the stones out of their mounts. We've used wet paper towels, garnet sand, cooling gels, and my favorite of suspending the stone in a dish of water. All techniques bank on the principle of using a small, hot flame to do the job quickly before the stone gets hot enough to crack or change color.

But each job is somewhat of a gamble. Some stones are hardy and some are frail. Jades and jaspers will generally take some heat, but I'd never chance it with the likes of topaz or opal. Trying to shield a stone from the torch is always a betting game, and sometimes you lose.

If soldering something close to a stone is too risky, perhaps it's time to consider a no-heat method like laser welding. Most jewelry

stores have laser welders these days, and the cost of having it done is quite affordable. They used to have problems doing silver, but now seem to do it routinely.

I've used a local shop twice recently, once for a piece with little emeralds that a "friend" asked me to repair and for a second piece where I needed a safety catch and didn't want the torch heat to expose all the solder lines again.

## November Board Minutes

*Mike Baldwin*

Called to order 6:35 P. M. Present: Charles Hill, Bob Cooper, Bonnie Cooper, Kim Hill, W. C. McDaniel, David Clarke, James Butchko, Ron Brister, Carol Lybanon, Matthew Lybanon.

**Secretary:** October minutes distributed electronically; Hard copies also distributed. Minutes were reviewed and approved (two corrections).

**Treasurer:** Bonnie circulated the checking summary. She reminded the Board that the Members who have check-signing authority need to get together to take care of a little bit of banking. Board approved a total of \$5000 in donations at the last Board Meeting. Bonnie will find out the contact for Ronald McDonald House. Carol suggested that we discuss our donation to Chucalissa at this point in the meeting, since Ron Brister is with us tonight. Ron addressed the Board with thanks for the donation to Chucalissa. He suggested that the funds be used for improvements in the hands-on lab, either an AV System or a specimen cabinet. Ron stated that Chucalissa would like to offer a MAGS Day at the museum. Carol recommended that MAGS donate \$1000 to be used for the AV system.

**Membership:** Two new Members

have joined since the last Board Meeting. Bob picked up a specimen to be given as the prize for the membership drawing in December.

**Library:** Leah now lives in Kentucky. Jane Brandon is assistant. W. C. suggested that we ask Michael Montgomery to be the librarian if Leah determines she cannot fulfill the responsibilities of librarian.

**Field Trips:** 25 people went to Richardson's Landing. November 18 field trip will be to Livingston (morning) and Dale Hollow (afternoon). Delta State Geology Museum or Parsons would be a good field trip for February. David reported that there was a group of men shooting rifles during the Richardson's Landing field trip. Carol suggested that we wear orange vests and perhaps MAGS could purchase some to take on field trips and be available for Members to borrow. David suggested that we mention this prior to future trips during hunting season[s] to areas like Richardson's Landing. James will research bulk rate vests on U-line. Board authorized James to purchase some if he finds a good price point.

**Newsletter:** Matthew reminded Board Members to provide three months of information for the newsletter. David volunteered to be the point person to collect meeting/event information and send it to the membership. Matthew will send Mike the November newsletter, to post online and mail to the non-email Members.

**Programs:** Next Friday's program will be "The Truth About Radiation" by Konrad Armstrong. MAGS will present Konrad with \$100 for travel expenses. W. C. asked if there is a November junior program. Juniors will join the adults for the Radioactive Minerals program. December will be the Holiday Party.

**Rock Swaps:** The weather held off for the rock swap at the park in Bartlett. All those *Continued, P. 10*

*November Board Minutes* who  
*Continued from P. 9* attended  
had a good  
time. Now we will start on next year's  
swaps.

**Show:** James is looking for Members to be on the Show Committee. Rent for the 2018 has been paid. November 27 is the next Show Committee meeting. W. C. suggested that Debbie send the Show Committee minutes to Matthew for the newsletter each month.

**Old Business:**

- T-shirt discussion. Mike will work on several versions of the mastodon for the back of the shirt. The volunteer t-shirt was tabled.
- Holiday Party: All the holiday gifts are in the shed. Members will be asked to bring food according to their last name first initial. We need to check to make sure we have heavy duty plates, cutlery, napkins, etc. We need to check the dating on the drinks and water in storage at the church. Instead of poinsettias, Carol suggested that we use miniature fir trees as table center pieces. W. C. will get round tablecloths for the 70" tables. The Lybanons will put together a short video of past holiday parties. We would like to get into the fellowship hall very early to get everything all set. Charles will call Nannett to ask her to be our bingo caller.

Adjourned 8:08 P. M.

**November Meeting Minutes**

*Mike Baldwin*

Called to order by First Vice President W. C. McDaniel at 7:03 P. M. One visitor.

**Membership:** Bob showed a calcite and pyrite specimen that was once owned by idajean Jordan. It will be the Membership Renewal Prize. Dues must be paid by December in order to

be entered for the drawing.

**Holiday Party:** We've created an invitation for the December 8 party. It will be emailed and will also be in the December newsletter. The club provides a nice holiday gift for all attendees. If you would like to make some holiday decorations after the program tonight, there are supplies up front. Anyone who would like to sign up to come early before the party to help set up should let Carol know.

**Library:** Leah has moved back home to Kentucky, but she is still coming to the Membership Meetings.

**Field Trips:** Our trip to Livingston and Dale Hollow will be a week from tomorrow. We are thinking about a trip to Potosi over the New Year's weekend.

**Show:** The grand door prize is on display tonight at the back of the room. We need to do a lot of little things to plan the Show (April 28 and 29). We can't move in on Thursday this year so we will need a lot of help setting up on Friday.

Two displays. Junior Member Konrad Armstrong presented the program, "The Truth About Radiation."



**Footprint In The Sand**

*Matthew Lybanon, Editor*



This August, researchers from Okayama University of Science and the Mongolian Academy of Science discovered one of the largest dinosaur footprints in recorded history. The footprint is believed to have belonged to Titanosaur, a long-necked dinosaur that could have been more than 30 m long and 20 m tall, according to the researchers.

The dinosaur left the footprint behind roughly 70 to 90 million years ago in what is now the Gobi desert. The footprint measures 106 cm long and 77 cm. wide The biggest of several footprints discovered in the vast Mongolian desert, the huge trace fossil was discovered in a geologic layer formed between 70 million and 90 million years ago, researchers said.

"This is a very rare discovery as it's a well-preserved fossil footprint that is more than a meter long with imprints of its claws," said a statement issued by Okayama University of Science.

The Titanosaur is one of the largest dinosaurs paleontologists have ever uncovered, and estimates of its size go up to 65 feet in height and 100 feet in length. As part of the sauropod family, the Titanosaur has a characteristically long neck most associate with the

*Continued, P. 11*

*Footprint In The Sand* Brachiosaurus (a dinosaur depicted in *Jurassic Park*). Despite its cousin's pop culture depiction as a treetop eating menace, sauropods such as the Titanosaur got most of their food from the ground, eating mostly ferns and conifers.

Paleontologists believe the dinosaur held the tail out straight above the ground, rather than wagging its tail from side to side as shown in the movie. "They were big lawnmowers," Mark Norell, the chair of the American Museum of Natural History's paleontology division, said in an interview. "They would take a step, then eat everything on the ground in a giant semicircle in front of them."

The Titanosaur is thought to have weighed around 70 tons, or eleven times the average weight of a *Tyrannosaurus rex*. The dinosaur fossil skeleton discovered in Argentina (see "Argentine Discoveries" in the June 2014 issue of *MAGS Rockhound News*) is that of a Titanosaur. That dinosaur was recently given the name *Patagotitan mayorum*.

**Ref:** José L. Carballido et al., A new giant titanosaur sheds light on body mass evolution among sauropod dinosaurs, *Proc. R. Soc. B* 2017 284 20171219; DOI: 10.1098/rspb.2017.1219. Published 9 August 2017.

**Have you renewed your membership?**

**See P. 5.**

## Long and Mysterious

Matthew Lybanon (Editor)

Indiana Jones could have had a quieter life if a certain computer program had been around. For years, amateur and professional archaeologists have used Google Earth's satellite imagery to discover mysterious earthworks in Kazakhstan, Roman ruins, a forgotten fortress in Afghanistan, and more. In the past decade, it also has helped identify thousands of burial sites and other "works of the old men," as they're called, scattered across Saudi Arabia.

Now, archaeologists have uncovered nearly 400 previously undocumented stone structures they call "gates" in the Arabian desert that they believe may have been built by nomadic tribes thousands of years ago, with a few of these wall-like formations draping across old lava domes. Many of the gates were found in clusters in a region in west-central Saudi Arabia called Harrat Khaybar.

"We tend to think of Saudi Arabia as desert, but in practice there's a huge archaeological treasure trove out there and it needs to be identified and mapped," said David Kennedy, an archaeologist at the University of Western Australia. "You can't see them very well from the ground level, but once you get up a few hundred feet, or with a satellite even higher, they stand out beautifully."

Since 1997, Dr. Kennedy has flown planes and helicopters over Saudi Arabia's neighbor Jordan, photographing the angular and wheel-like structures scattered

over its lava field or harrat. The Saudi Arabian structures were discovered mainly through satellite images. A few of the gates are actually located on the side of a volcanic dome that once spewed basaltic lava, researchers found.



The gates "are stone-built, the walls roughly made and low," according to Kennedy. The gates "appear to be the oldest man-made structures in the landscape," Kennedy noted, adding that "no obvious explanation of their purpose can be discerned."

The smallest of the gates extends about 13 m, while the longest is 518 m long, or longer than a football field. Many have multiple stone walls that, in some instances, form a rectangular design; others, called "I" type gates, have only one stone wall with heaps of stone at each end.

Thousands of years ago, the researchers note, the landscape was more hospitable to human life. Archaeological fieldwork is necessary to determine what the gates are and when, exactly, they date to, Kennedy said.

You can see much more detail in Dr. Kennedy's 2:33 YouTube video: <https://www.youtube.com/watch?v=7hakGJU9xco>.

**Ref:** Kennedy D. 'Gates': a new archaeological site type in Saudi Arabia. *Arab Arch Epig.* 2017;28:153-174.

# MAGS At A Glance

## January 2018

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	 1	2	3	4 Board Meeting, 6:30 pm, St. Francis Hospital	5	6
7	8 Show Committee Meeting, 6:30 pm, Agricenter, Members welcome	9	10	11	12 Membership Meeting, 7:00 pm, prize drawing, "Iceland and South America"	13 DMC Field Trip, Vulcan Limestone Mine, Brooksville, FL
14	15	16	17	18	19	20 MAGS Field Trip, Vulcan Quarry, Parsons, TN
21	22	23	24	25	26	27
28	29 Show Committee Meeting, 6:30 pm, Agricenter, Members welcome	30	31	1	2	3

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

