



Volume 65 ♦ Number 10 ♦ October 2019 ♦ A monthly newsletter for and by the members of MAGS

# Spring River Sinkhole

Investigation by Arkansas Geological Survey

Bill Prior



On June 9, 2018, an accident at a “sinkhole” at Saddler Falls along the Spring River in Fulton County, Arkansas, involving three people, resulted in one person escaping, one person seriously injured, and one fatality. Following an onsite inspection by Arkansas Geological

Survey staff it was realized that the sinkhole was not formed in the carbonate bedrock as expected but was formed in a carbonate structure which had formed in the river itself. This tufa structure is similar to what is normally found in caves as speleothems. *Continued, P. 3*

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## WORLD'S BIGGEST BORAX MINE

While in California last December, I discovered a hidden gem!

Buried deep in the Mojave Desert is one of Southern California's best-kept secrets, one of the largest and richest deposits of borax on the planet.

The Rio Tinto Boron Mine in Boron, California, is California's largest



## BEBE BUCK

open-pit mine and the largest borax mine in the world, producing nearly half the world's borates.

The borax deposit at this location was discovered in 1913, by John K. Sukow, who when drilling for water found a deposit of what he believed to be gypsum, but further testing revealed that it *Continued, P. 3*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

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## MAGS AND FEDERATION NOTES

### Memphis Archaeological and Geological Society, Memphis, Tennessee

The objectives of this society shall be as set out in the Charter of Incorporation issued by the State of Tennessee on September 29, 1958, as follows: for the purpose of promoting an active interest in the geological finds and data by scientific methods; to offer possible assistance to any archaeologist or geologist in the general area covered by the work and purposes of this society; to discourage commercialization of archaeology and work to its elimination and to assist in the younger members of the society; to publicize and create further public interest in the archaeological and geological field in the general area of the Mid-South and conduct means of displaying, publishing and conducting public forums for scientific and educational purposes.

MAGS 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).

### October DMC Field Trip

WHERE: Memphis Stone and Gravel, Perry Plant

WHEN: Saturday, October 12, 8:30 A. M.-3:00 P. M.

COLLECTING: Chert gravels with fossils and more

CONTACT: W. C. McDaniel, (901) 490-3675, [w.c.mcd@att.net](mailto:w.c.mcd@att.net), or Kim Hill, (901) 585-2268.

### 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)

MAGS  
is the  
host  
club

*Spring River Sinkhole* These calcite(?) cemented structures occur from bank to bank in the river and form most all of the “falls” along the river. Some are 4-5 feet high and are composed of carbonate cemented gravel. Some structures are so large they formed permanent islands in the river with grasses and trees growing on them. It was at one of these islands that the accident occurred.

It turns out there are dozens of these structures in the Spring River below Mammoth Springs all the way to Williford in Sharp County. Why do these structures occur in the Spring River and not in other spring fed rivers in the Ozarks? New studies by the Arkansas Geological Survey and Missouri State University hope to determine why these structures formed and how old they are.

*World’s Biggest Borax Mine* was the colemanite form of borax. Francis Marion "Borax" Smith quickly bought the claim for his Pacific Coast Borax Company. Mining at the site by shafts began in the 1920s.

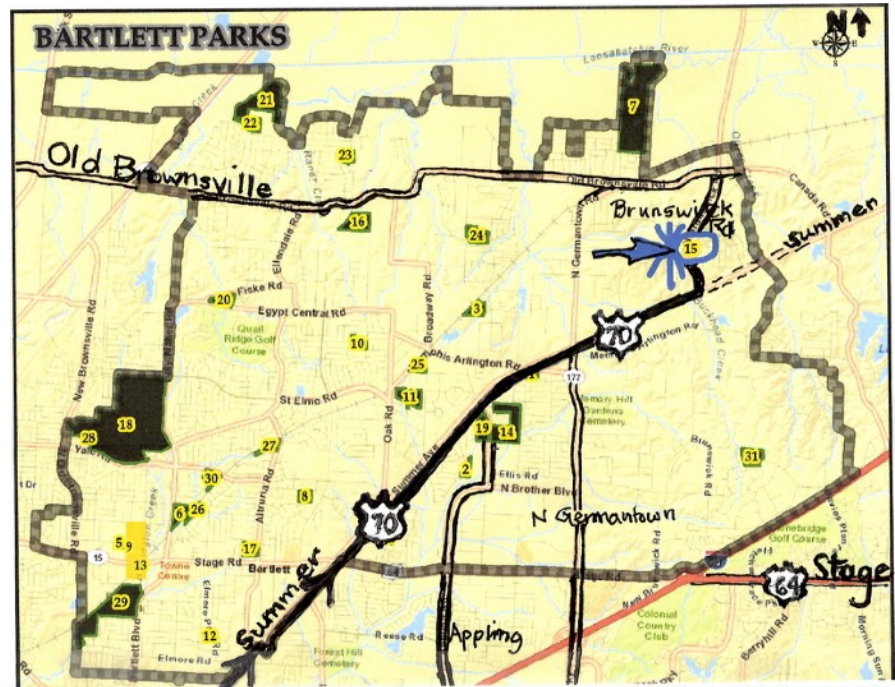
As one of the chemical elements that make up our planet, boron is all around us—in soil and water, plants and animals—in trace amounts. Aside from being a vital component in numerous indus-



## Fall Picnic and Rock Swap

Jane Coop

Saturday, October 19th at Freeman Smith Pavilion. See 15 on map. MAGS will provide ice and drinks. See P. 5 for more information.



tries, boron and borates are an integral part of the natural world.

The first Borax 20 mule team hauled borax a sweeping 165 miles through Death Valley in 1883. Fully loaded with two ore wagons and a 1,200-gallon water wagon, the rig weighed 36.5 tons. Though the expansion of railways led to the 20-mule team’s retirement, the team has lived on for more than a century as a trademark for U.S. Borax.

The 20 Mule Team® Borax

brand originally became a household name through the radio program *Death Valley Days*, which evolved into a TV show starring Ronald Reagan.

Since the discovery of borates in California’s Death Valley in 1881, Borax has come a long way. Over their 145-year history as a leading supplier of boron, many things have changed. Today, the boron they mine is used in everything from soap to fertilizers to cell-phone glass.

On the rim of the open-pit mine is the Borax Visitor Center, where the story of borax and the local community is told. On the edge of the parking lot are piles of borate crystal samples to be taken as souvenirs, free!

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## MAGS/DMC Field Trip

*Kim Hill*

Here's information on the upcoming October DMC Field Trip we are hosting. Our great friends from Memphis Stone and Gravel are helping us with this trip. We will have it at one of their sites and there will be lunch.



Memphis Stone and Gravel sites have always produced great specimens of coral, agates, petrified wood, and banded chert, without all that walking in creek beds. I love being in creeks but sometimes it's nice to just sit and sift through the pile

The trip will be on October 12 from 8:30 to 3:30 at Memphis Stone and Gravel's Perry Plant, 4053 Hogsfoot Road, Senatobia, Mississippi.

We will meet in the parking lot, where we will sign in and wait for the safety talk.

Dress for the weather—no sandals or open toed shoes.

We will be collecting from the piles—no digging—so you will only really need a bucket or 3, 4, or so, but you might want a hand rake.

There will be more information at the October 11 meeting and sent out in email.

Hope to see you and looking forward to meeting new friends!

*Kim Hill*

[earthsis@aol.com](mailto:earthsis@aol.com)

(901) 585-2268

Get Up, Get Out, Hunt Rocks

## Archaeology Day Extravaganza

*Christine Wunrow*

*C. H. Nash Museum*

Come out to the C. H. Nash Museum at Chucalissa for our Archaeology Day extravaganza! It's Saturday, October 19th from 10:00 am to 3:00 pm.

In addition to scavenger hunts in the museum and access to real artifacts in the Hands-on Lab, crafts like pottery making will be ongoing. And you won't want to miss the last time this year you'll be able to see the real archaeology excavation trench in the late-morning! All day, visitors can try their hand at throwing darts with an atlatl, and compete for the best shot in the afternoon.



Explore the mound site and enjoy face painting, a guided nature walk, flintknapping, and more!

Admission to the C. H. Nash Museum is free for this event!

For more information and directions, see our website at:

<http://www.memphis.edu/chucalissa/>

And watch our Facebook page for the flyer and schedule at:

<https://www.facebook.com/Chucalissa/>

## Ring



MAGS Member Cahdlah Forsythe-Barrie sent this photo of a beautiful emerald pinky ring she had made from a stone purchased at the 2019 Memphis Mineral Fossil, and Jewelry Show. Very nice!

## Cahokia Mounds State Historic Site

*Bebe Buck*

Just four hours north of Memphis in Collinsville, Illinois (east of St. Louis), you will find Cahokia Mounds State Historic Site.

It is the largest prehistoric Indian site north of Mexico. The site covers 4000 acres and includes at least 120 mounds. Nearly 2200 acres of the central portion is now protected by the State of Illinois, as well as 70 of the 80 remaining mounds. The site was named a U. S. National Landmark in 1965 and in 1982 a UNESCO World Heritage site for its significance in the prehistory of North America!

The first settlements at Cahokia were around AD 700 by Late Woodland Indians. It peaked from AD 1050-1200 with a population of 10-20,000 *Continued, P. 5*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## *Cabokia Mounds State Historic Site Continued from P. 4*

people; the largest community north of Mexico. Their trade spread from copper in Michigan to shells from the Gulf Coast.

Monks Mound is the largest prehistoric earthen construction in the Americas, containing 22 million cubic feet of earth. The base covers more than 14 acres and it rises to a height of 100 feet. A massive building once stood on the summit where the principal chief would live, conduct ceremonies, and govern. On a clear

day you can see the St. Louis Arch. Luckily, my travel buddy and I were there on a cool, foggy morning, because I was determined to climb the 158 steps to the top!

A mile down the road is Woodhenge, a circular sun calendar made from red cedar timbers. This unique area is the first of its kind that I have seen.

The Interpretive Center is absolutely world-class. The oddest item I found was a toe pipe! If you enjoy the Indian culture and haven't been, it is a fantastic site to visit!



## Save The Date

Estate sale  
Paul Sides collection  
Rocks, Minerals, Fossils,  
Collectibles  
Saturday, November 2, 2019  
9:00 am to 2:00 pm  
Near Wynne, Arkansas  
*More details to be announced*

## October 19 Rock Swap/Picnic

*Jane Coop*

Come one! Come all! To the annual Fall picnic/rock swap.

Bring a picnic-type dish for lunch, money for purchasing, and your merry self. If you are selling/swapping, bring a table/chairs for display.

Saturday, October 19, 11:00 A.M.-3:00 P. M., at Freeman Smith Pavilion in Bartlett. **See P. 3 for map.** More details at the October 11 Membership Meeting.

Let's enjoy the Fall fresh air!

## Vacation Snaps

MAGS Member Danny Baker did more than just go to the lake on his vacation. The pictures below came from Africa. At Olduvai Gorge in Tanzania, the "Cradle of Life," internationally recognized for Louis and Mary Leakey's famous discoveries of early humans, he saw some of the earliest evidence of the existence of human ancestors.



## SFMS Meeting

The 31st Annual Meeting will take place October 11-13 in Huntsville, Alabama (hosted by Huntsville Gem and Mineral Society). Details: Jerri Heer, S.F.M.S. Secretary, [jheerx6@aol.com](mailto:jheerx6@aol.com), (419) 344-9999.

**Fabulous Tennessee Fossils**

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

**FTF 57**

*Dalmanites purduei*



Last essay I summarized Carl O. Dunbar’s erection of the trilobite *Dalmanites retusus*, which he listed in his 1919 Tennessee Geological Survey Bulletin 21 on the *Stratigraphy and Correlation of the Devonian of West Tennessee*, but did not actually formally describe until 1920 in the *Transactions of the Connecticut Academy of Sciences* (volume 23, pages 109-158). He also listed many of his new species in a paper in the 1918 46th volume of the *American Journal of Science*, without description. In this essay, I will introduce you to the second trilobite named by Dunbar, *Dalmanites purduei* (Fig. 1) and its long evolution in naming to become a genus (subgenus) species (subspecies) taxon with the wrong date!

Dunbar reported finding portions of the cephalon and pygidium of this trilobite within the Ross Limestone in exposures near Olive Hill and Pyburn’s Bluff in southern Tennessee, near Savannah. He named this species of trilobite in honor of Albert Homer Purdue (1861-1917), who became Tennessee State Geologist in 1912 and who provided support for Dunbar to spend an additional five weeks doing fieldwork for his dissertation in 1917. Purdue died before any of Dunbar’s works were published. As a side note, A.H. Purdue has the distinction of being the first geology student to attend Stanford University in California, and was Stanford’s first ge-

Kingdom Animalia  
Phylum Arthropoda  
Class Trilobita  
Order Phacopida  
Suborder Phacopina  
Superfamily Dalmanitoidea  
Family Dalmanitidae  
Genus *Dalmanites* Barrande, 1852  
Species *purduei* Dunbar, 1920  
Now: *Huntonia (Huntonia) purduei purduei* (Dunbar, 1919)

ology graduate. While at Stanford, Purdue operated a laundry business. His partner in this business was another geology student whose name you should recognize—Herbert Clark Hoover, who became POTUS number 31. That’s right, Herbert Hoover was President of the United States from 1929 to 1933. In 1896, Purdue had become a professor of geology at the University of Arkansas and by 1902 he was State Geologist of Arkansas. In 1912, Purdue resigned from Arkansas because the state had cut support for its survey. It was then that he accepted the position of State Geologist of Tennessee, holding that position until his death in 1917.

In his 1920 description of this new trilobite, Dunbar noted that his specimens differed from other species of dalmanitid trilobite primarily by being very large (the cephalon was 8.1 cm and the pygidium was 10 cm in size), but he also cited that the trilobite possessed well-developed genal

spines, and most importantly to him, the observation that several of the glabella lobes (the swelled area on the cephalon) were fused. In his figure, Dunbar drew a reconstructed margin for the pygidium, which in my view was not correctly positioned, something I originally noticed when doing my dissertation work in the 1980’s. It was not until the 1990’s that I actually found a specimen in the field to assign to this taxon. As we will see below, this “error” will figure prominently in the renaming of the taxon by later workers.

In 1940, *D. purduei* is re-evaluated by the trilobite specialist David M. Delo, who published an extensive review of phacopid trilobites of North America in which he removed *purduei* from the genus *Dalmanites* and placed it within the genus *Odontochile*, thus the taxon changed in his printed Geological Society of America Special Paper 29 to *Odontochile purduei* (Dunbar, 1919). The genus *Odontochile* had originally been erected in 1847 by Ignaz Hawle and A. J. C Corda who were studying dalmanitid trilobites in Bohemia, but was considered by other paleontologists to be an invalid name until 1888. In his 1940 GSA monograph, Delo considered *Odontochile* to be a valid genus group, so he resurrected it. He also considered that genus to be the culmination of the dalmanitid lineage. After evalu-

*Continued, P. 7*

*Fabulous Tennessee Fossils* at-  
*Continued from P. 6* Dunbar's  
specimen  
at Yale, he also considered Dun-  
bar's *purduei* specimen to be mor-  
phologically more closely related  
to *Odontochile* than to *Dalmanites*.  
Interestingly, he incorrectly noted  
the date of Dunbar's naming as  
1919, when in fact it was not until  
1920. I should also point out that  
Delo also erected several new taxa  
of local trilobites, including *Odon-*  
*tochile lindenensis* Delo 1940 for a  
single pygidium collected from the  
Birdsong Shale near Pace, Ten-  
nessee, and other trilobites from  
coeval stratigraphy of Missouri  
(*Dalmanites dunbari* in honor of C.  
O. Dunbar) and of Mississippi  
(*Dalmanites mississippiensis*).

The final change in taxonomic  
position for Dunbar's *Dalmanites*  
*purduei* occurs in 1977 when Okla-  
homa Geological Survey paleon-  
tologist K. S. W. "Ken" Campbell  
(1927-2017) published his mono-  
graph on the trilobites of the  
Haragan, Bois d'Arc, and Frisco  
formations, all Early Devonian, of  
the Arbuckle Mountains in Okla-  
homa, which are stratigraphic  
equivalents to the Ross in Ten-  
nessee. This publication is impor-  
tant for West Tennessee trilobites  
because Campbell made many  
changes to trilobite taxonomy,  
supplementing his collections with  
material he gathered from Ten-  
nessee. He erected a new genus in  
this monograph, *Huntonia*, for  
dalmanitid trilobites with pro-  
nounced cephalic processes, which  
he believed was used as a way to  
handle increased water flow over  
the head region. Although Camp-  
bell does not specifically explain  
the etymology of his *Huntonia*

name, it is presumably from the  
"Hunton Group", to which these  
formations belong. Not only did  
Campbell erect a new genus, but  
he erected subgenera as well, in  
this case, *Huntonia (Huntonia)*, the  
subgenus name occurring in  
parentheses and capitalized. Pale-  
ontologists erect subgenera and  
subspecies when they feel that  
there is sufficient identifying vari-  
ations within taxa that can be rec-  
ognized as distinct and when  
those same features are genus-lev-  
el features (i. e., features used to  
identify genera only). To make  
matters more difficult, Campbell  
also erected subspecies! There is  
considerable controversy in the  
paleontological community over  
the use of subspecies, which are  
erected to denote recognizable  
varieties within a species that are  
useful locally, but maybe not  
enough difference to warrant a  
new species, as to whether or not  
they are actually valid. I will de-  
voted an entire essay to this later,  
along with a discussion of what we  
call "lumpers" and "splitters" in  
taxonomy, but for now, we will just  
accept it.

So, what happened to the *pur-*  
*duei* species with Campbell's revi-  
sion? Well, Campbell decided it  
needed a subspecies of *purduei*.  
When subspecies are erected, the  
taxonomist must have a namesake  
species, which Campbell used  
Dunbar's original specimen to be,  
and changed Dunbar's specimens  
to *Huntonia (Huntonia) purduei pur-*  
*duei*—quite a mouthful! It also  
means that Campbell had to erect  
at least one different subspecies of  
*H.(H.) purduei*, in this case he also  
named *Huntonia (Huntonia) purduei*  
*fittstownensis* for specimens from

the Fittstown Member of the Bois  
d'Arc Formation in Oklahoma. In  
justifying the need for a sub-  
species, Campbell concluded that  
Dunbar had erred when he drew a  
reconstruction of the pygidium,  
which I personally must agree that  
he did err, as I mentioned at the  
beginning of the essay. Campbell  
used this to partly justify his revi-  
sion, although he added greater  
detail to support his splitting. One  
last point, oddly enough, Camp-  
bell also misdated the author's  
date for the revision by using the  
Dunbar 1919 date instead of the  
correct Dunbar 1920 date, even  
though he cited the correct date in  
the synonymy of the specimens he  
studied. Additionally, Campbell  
mentions the "*lindenensis*" speci-  
men of Delo in discussion, but  
nowhere does he actually list its  
complete name or give a detailed  
evaluation, leaving confusion as to  
whether or not "*lindenensis*" should  
be *Odontochile lindenensis* or some  
new taxon within the genus  
*Huntonia*. So for now, it should  
probably remain as *O. lindenensis*.  
Well, nobody is perfect.



**Figure 1.** The trilobite *Huntonia (Huntonia) purduei purduei* from the Univer-

sity of Tennessee at Martin collec-  
tions, which was originally named  
*Dalmanites purduei* by Dunbar in  
1920, changed to *Odontochile purduei*  
by Delo in 1940, and finally became  
*H.(H.) purduei purduei* in 1977 (pho-  
to by Michael Gibson, scale in cm).

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## Adult Programs

October: Bill Prior, "Sinkhole In Arkansas"

November: TBA

December: Holiday Party

## Junior Programs

October: W. C. McDaniel, "Everyday Uses of Minerals"

November: Mike Baldwin, "Who Are the Native Americans and Where Did They Come From?"

December: Holiday Party

## Field Trips

Oct. 12: DMC Field Trip (MAGS-Sponsored), Memphis Stone & Gravel Co.

Nov. 16: Vulcan Quarry (Parsons)

December: No field trip

## October Birthdays

- 1 Dave Shiffman
- 3 Sarah Manns Baker
- 5 Michala Demo  
Matthew Lybanon
- 7 Connor Smith  
Alan Jacobs  
Chris Vaughn
- 9 Charles Hill
- 10 Deborah Crowder  
Fulton Ledbetter
- 12 Mary Katherine Stout
- 13 Michael Baldwin

## The Huntsville Gem & Mineral Society Presents Annual Gem, Jewelry & Mineral Show

In conjunction with  
SFMS Annual Meeting

featuring

### APOLLO MOON ROCK ON DISPLAY

Fine Gold and Silver Jewelry, Crystals, Minerals, Fossils, Beads, Lapidary Supplies, Children's Gem Dig and Mining Flume (panning for gem stones), Also Lapidary Demonstration, Displays, Hourly Door Prize Drawing, and Raffle.



### Free Parking

Jaycees Community Building, Airport Road, Huntsville, AL

October 11-12, 2019 10 AM to 6 PM

October 13, 2019 Noon to 5 PM

\$3 donation at the door - children under 5 free

\$1 Students - \$5 Weekend Pass (3 Days)

- 15 Richard Manns
- 24 Keith Riding  
Ann Austin
- 25 Damien Levy
- 27 Arlene Oleartchick
- ? Elsie Bolton

## New Members

Chuck and Lynn Reed and children

## Want to Be a Member?

To become a MAGS Member, just go to our website at

[www.memphisgeology.org](http://www.memphisgeology.org) and print out an application form. There is a prorated fee schedule for new Members only. Mail the completed application along with the dues payment to the Membership Director shown on the form. If you are unable to print the application, you can pick one up at the sign-in desk at any of our Friday night Membership Meetings, or simply join at the meeting. Visitors are always welcome at our Membership Meetings but membership is re- *Continued, P. 9*



MAGS Notes required to attend  
Continued from P. 8 our field trips.

The most important benefit of being a MAGS Member is getting to know and make friends with other Members who have similar interest in rocks, minerals, fossils, and archaeology. All new Members will receive a New Member Packet, a MAGS ID card, and a monthly newsletter via email. Members are entitled to go on our monthly field trips and get free admission to our annual Show.

**Jewelry Bench Tips** by Brad Smith

**TAPERED REAMERS**

A tool you don't see often these days is a tapered reamer. They're particularly useful for making an irregular hole round or for enlarging a hole to an exact diameter. For example, the small set in the yellow pouch is for holes in the range of 0.3mm to 2.5mm. They are great for sizing a tube to fit a hinge pin. Other times when I'm drilling a hole for riveting sheet metal and can't find the exact size drill, I simply drill the holes with a slightly smaller bit and enlarge them with a reamer until the wire just fits.

For larger hole sizes in sheet metal up to 14 ga, I really like the reamer with the black handle. It makes quick work of sizing holes from about 3mm to 12mm. You can find them in well-equipped hardware stores.

You may never use the large diameter reamers, but when sawing out some rings from 4 mm thick sheet, I found they worked

well for rounding and sizing the hole.



**TESTING FOR SILVER**

Often you need to identify some of those unknown "silvery" pieces in the bottom of the toolbox or some piece of old jewelry. Is it silver or something else?

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

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

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

If you suspect the object is silver plated, you should file a little notch somewhere inconspicuous to expose what metal is below the

surface. Otherwise, all you test will be the surface plating.

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

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

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

- ✓ Wear safety glasses.
- ✓ Do not get any testing solution on your skin.
- ✓ Use a solution of baking soda and water to neutralize acid.
- ✓ Wash and clean up well when you're done.

Work Smarter & Be More Productive With Brad's "How To" Jewelry Books  
[amazon.com/author/bradfordsmith](https://amazon.com/author/bradfordsmith)

**August Board Minutes**

Mike Coulson

Called to order 6:34. Present: W. C. McDaniel, Charles Hill, Kim Hill, Bonnie Cooper, Bob Cooper, James Butchko, Nannett McDougal-Dykes, Mike Coulson, Jane Coop.

**Secretary:** Distributed copies of the July Minutes. Report reviewed and approved.

*Continued, P. 10*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

MAGS UPCOMING EVENT SCHEDULE				
Month	Membership Meeting Programs	Hospitality & Featured Display	Field Trips	Other Events
October	<b>October 11</b> • Adult–Bill Prior (Arkansas Geological Survey), Sinkholes, particularly the one in Arkansas that was in the news recently. • Youth–How Minerals Play a Part In Our Daily Lives, W. C. McDaniel	<b>Hospitality</b> 1. DeeDee Goossens 2. Need one more <b>Featured Display</b> Agate from a gravel pit/mine	<b>October 12</b> DMC Field Trip (MAGS sponsored), Memphis Stone & Gravel Co.	• <b>October 5 &amp; 6</b> –Rock show in Greater Little Rock area • <b>October 19</b> –MAGS rock swap
November	<b>November 8</b> • Adult–TBA • Youth–Mike Baldwin, Who Are the Native Americans and Where Did They Come From?	<b>Hospitality</b> 1. Mildred Schiff 2. Need one more <b>Featured Display</b> Vulcan Quarry fossil	<b>November 16</b> Vulcan Quarry	
December	<b>December 13</b> Holiday Party	<b>No Displays</b>	<b>No Field Trip</b>	

*August Board Minutes Continued from P. 9*

**Treasurer:** Received CD interest, rent paid through end of year. Motion to transfer money from checking to a CD. Report reviewed and approved. W. C. asked Melissa if there was a project she could identify and the club could make a donation to Chucalissa. Motion made to approve donation to Chucalissa and not Clement Museum in Missouri. Pause on Ronald McDonald House donation and wait till after Parkin trip to see if we want to donate. Motion made and approved.

**Membership:** One renewal since last meeting and one new family has joined.

**Field Trips:** Alan will give us a DMC date next week. Issue: in Missouri some Members went to collecting site before group arrived. W. C. will clarify rules and consequences if violated and send out in an email. Start promoting the 2020 Florida trip. Upcoming field trips: August 17, Parkin Museum. Club paying for admission. Sept 27-29, Ge-

ode Fest in Illinois. Need to register by Sept. 15. October 12, DMC trip: Memphis Stone and Gravel, Perry Plant, Senatobia, Mississippi. November, Parsons. December, No out- ing Contacted company with novaculite, nothing confirmed.

**Adult Programs:** Upcoming adult programs: August 9, Rock Swap. September 13, Dr. Elizabeth Rhenberg (University of Memphis) on crinoid fossils. October 11, Bill Prior (Arkansas Geological Survey), sinkholes, particularly the one in Arkansas that was in the news recently. November 8, Michael Gibson, Vulcan quarry. December 13, Holiday Party.

**Junior Programs:** August, indoor picnic/rock swap with the adults. September, “Native American Artifacts and Lore” with Kim Hill. October, “Everyday Uses of Minerals” with W. C. McDaniel. November, “Origins of the Native Americans” with Mike Baldwin. December, Holiday Party. 2020 programs: Jan 10, The Art of Collecting w/Mike Baldwin. Feb 14, Lunar Geology w/Mike Baldwin. Mar 13, Geology Along I-40 w/Mike Bald-

win. Apr 10, Preparations for the Rock Show w/adults. May 08, Making Paint from Minerals w/Mike Baldwin. Jun 12, How Caves Form w/Mike Baldwin. Jul 10, MOHS Hardness Scale w/Mike Baldwin. Aug 14, Indoor Rock Swap w/adults. Sep 11, Making Crystals w/Mike Baldwin. Oct 09, Fluorescent Minerals w/Mike Baldwin. Nov 13, Native Peoples of North America w/Mike Baldwin. Dec 11, Holiday Party w/adults. Jan 08, 2021: first program with the next director.

**Library:** Book Ava mistakenly donated to Good Will repurchased.

**Show:** Jim Butchko appointed show chairman for 2020. Contract Agreement for vendors reviewed and approved. Jim will send out email for meeting to begin process.

**Rock Swaps:** Jane hopes WIFI is strong enough to support music program. Choosing music for rock swap. August 9, Membership Meeting is rock swap. Get notice in newsletter, Nannett will do 901 Rocks. Bonnie will provide the tablecloths for round tables and food ta-

*Continued, P. 11*

*August Board Meeting Continued from P. 10*

bles. W. C. is bringing jar to guess what is inside. October 13, Freeman Smith Park (small one on Brunswick), in Bartlett. Carol said Sunday may have low attendance so consider Saturday instead. Move to the weekend after.

**Editor:** Get those articles and schedules to Matthew. He is in Florida but took his work with him.

**Web:** August newsletter has been added to the website. The home page, calendar page, newsletter, and newsletter index pages have been added.

**Old Business:** Class at College of Art. Got insurance over to College. Around 11 people signed up.

**New Business** None.

Adjourned 7:15.

## August Meeting Minutes

Mike Coulson

Called to order 7:10.

The regular meeting was a rock swap. Several Members had tables set up with rocks and minerals for sale. **Activities:** Mike Baldwin cracked geodes.. W. C. had a rock on display and Members were to guess how it is different from other rocks. Winning answer—it is flexible and bends. Question: Guess what was traded for a Lake Superior Agate? Winning answer—a motorcycle. Members were to guess what was in the jar filled with sand. Winning answer—petrified poop.

**Field Trips:** Sign up sheet for Parkin. Club will pay for admission if Member is signed up. Keep in mind May 2020 for Gainesville, Florida, trip hunting for Megalodon teeth and other shark teeth.

**Junior Program:** Sep 13, 2019, Native American Lore/Artifacts w/Kim Hill.

**Adult Program:** September 13: Elizabeth Rhenberg, Crinoids talk

Adjourned 8:36



## Canadian Predator

Matthew Lybanon, Editor

Hundreds of fossils of a primordial sea creature with rake-like claws have been unearthed in Canada, providing a wealth of information about an important predator from a key time in the evolution of life on Earth.

Scientists said the creature, *Cambroraster falcatus*, was a distant relative of today's arthropods—a diverse group of animals including insects, spiders, and crabs—and lived during the Cambrian Period 506 million years ago, when all animal life lived in the oceans.

Paleontologist Joe Moysiuk of the Royal Ontario Museum and University of Toronto, lead author of the research published in the journal *Proceedings of the Royal Society B*, pointed out that this creature was a giant for its time, up to 30 cm long, compared to most other Cambrian animals which were only a few cm at most.

*Cambroraster* was excavated in Kootenay National Park in the Canadian Rockies from a rock formation, the Burgess Shale, that has yielded fossils of a wide array of Cambrian animals. The Cambrian was a time of evolutionary experimentation when nearly all

major animal groups first appeared and numerous oddballs came and went.

Superficially *Cambroraster* resembled a horseshoe crab, although it was a quite different animal. Its large head was covered by a

shield-like carapace whose shape reminded the scientists of the Millennium Falcon spaceship of “Star Wars” fame. At the front of its body were two large claws with a succession of parallel outgrowths like a series of rakes, letting it sift through seafloor mud and strain out any prey. Tooth-like plates surrounded its circular mouth. It may have fed upon worms, small fish, and larvae.

It belonged to the same group—radiodonts—as the apex predator of the time, called *Anomalocaris*, a dangerous hunter reaching 1 m long that may even have targeted *Cambroraster*.

Radiodonts, among the earliest offshoots of the arthropod lineage, are usually known from fragmentary remains. But the scientists found such a large number of beautifully preserved and complete *Cambroraster* fossils that they achieved a breakthrough in the understanding of this significant extinct group.

**Ref:** Moysiuk J. and Caron J.-B. A new hurdiid radiodont from the Burgess Shale evinces the exploitation of Cambrian infaunal food sources. **286**. *Proc. R. Soc. B*.

<http://doi.org/10.1098/rspb.2019.1079>

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# MAGS At A Glance

## October 2019



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30	1	2	3 Board Meeting, 6:30 pm, Jane Coop's residence	4	5
6	7	8	9	10	11 Membership Meeting, 7:00 pm, "Spring River Sinkhole"	12 MAGS/DMC Field Trip, Memphis Stone & Gravel Co. Perry Plant, 8:30-3:00
13	14	15	16	17	18	19 MAGS Fall Picnic/Rock Swap, Freeman Smith Park, 11:00-3:00
20	21	22	23	24	25	26
27	28	29	30	31 November Board Meeting/Halloween	1	2

Memphis Archaeological and Geological Society  
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