



Volume 62 ◊ Number 08 ◊ August 2016 ◊ A monthly newsletter for and by the members of MAGS

# Summer Fun

MAGS Summer 2016 Picnic and Rock Swap



**Editor's Note:** You saw this article last month so you could save the date. Now that date is almost here.

Stay cool and trade your collection with us INDOORS at our August 12 Meeting. We will be having a Potluck dinner as well (\*details on P. 3.) So, load up selections from your collection to sell/

trade and your own table to display them on, pile your friends and family in the car, bring along a food dish to share and join us as we swap some rocks, minerals and knowledge.

Members and non-members welcome! If you know someone who is a "closet"

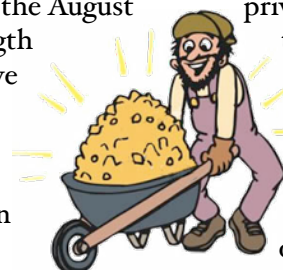
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## NORTH CAROLINA FIELD TRIP

Hi again, all. Here are the details on the August North Carolina trip. After talking at length to Carl, our host at the gold mine, we have decided that we will switch days for the two sites. Carl can only stay until noon on Sunday the 21st; so we will be visiting the gold mine on Saturday the 20th, when he can stay all day. This gold mine is on



## CHARLES HILL

private property and has never been accessible to the public. It has two gold-bearing streams. Garnets, tourmalines, and sapphires have been found in both of those waterways. Carl tells me that there are tons of garnets there. This mine is next door to the original site where gold was first discovered in North Carolina

*Continued, P. 3*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## MAGS AND FEDERATION NOTES

### President's Message

August is more than heat and humidity. The month starts our prep for the next two years. A nominating committee is in the process of being formed, and they are charged with recruiting and placing before the membership a slate of officers for 2017/18.

*Continued, P. 4*

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](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. 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](mailto:lybanon@earthlink.net).

### August DMC Field Trip

WHERE: Cowee Mountain Ruby Mine, Franklin, NC

WHEN: Saturday, August 20, 9:00 A. M.-6:00 P. M.

COLLECTING: Ruby, sapphire, garnet, amethyst, topaz, smoky and rose quartz

INFORMATION: Marsha Harmon, (828) 369-7831 or [marsha.harmon@frontier.com](mailto:marsha.harmon@frontier.com)

### 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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*Summer Fun* rockhound,  
*Continued from P. 1* bring them  
along! This  
event is free and a great opportu-  
nity to show everyone what we do!  
We will have games, door prizes  
and, as usual, LOADS of fun!  
There will also be information on  
joining our club available for those  
interested.

*\*Potluck Dinner*—To make sure  
we have a variety of food options,  
please bring a dish corresponding  
to the letter your last name begins  
with. Feel free to bring more if  
you wish!

**A-G** Appetizers/Side Dishes

**H-N** Main Course Dishes

**O-Z** Desserts

Check out the event on Face-  
book! Simply search for: MAGS  
Summer 2016 Picnic and Rock  
Swap. Share to invite all your  
friends! Post it on your Timeline  
and earn an extra chance to win  
one of our excellent door prizes!

See you there!

*North Carolina Field Trip* and is  
*Continued from P. 1* part of  
Vein  
Mountain. There are places where  
a back-hoe has piled up what the  
owner believes to be gold bearing  
dirt. We will be allowed to dig  
anywhere on the 20-acre site, as  
long as we fill in our holes. I plan  
on working the streams.

The closest town with accom-  
modations is Marion, North Caro-  
lina. There are two hotels in Mar-  
ion and six more within 30 miles.  
I will be staying in Marion at the  
American Best Value Inn, which is  
the place we will meet on the  
morning of the dig. On the 20th,

we will meet in the hotel's parking  
area at 8:30 A. M. At 9:00, we will  
travel by caravan to the gold mine,  
about 11 miles away. The Lucky  
Strike Campground is almost  
across the street from the hotel.

Saturday after the dig, our  
family will move our base of  
operations to Franklin, North  
Carolina, to be closer to the sites  
planned for the Sunday digs.  
Franklin has a lot of hotels and  
camping available. We will be  
staying in the Sapphire Inn. The  
first place we will go on Sunday is  
to Chunky Gal Mountain, where  
we will be looking for sapphires  
and rubies in matrix. I have

**New Members**

17	Sophia Coulson
19	Brooklyn Alexander
22	Joseph Blodgett
	Idajean Jordan
23	Marion Coulson
	Stephanie Blandin
24	William Childress
25	Ellie Hsueh
	Sherri Baldwin
	Justin McGregor
	Lenora Murray
27	Ricardo Ortiz
	Donald Leighton
28	Iris Leighton
	Beth Day
30	Paige Marcantel

## August Birthdays

2	Marvin Stockwell
3	Mike Coulson
	Jane Brandon
6	Leah Gloyd
8	Jeff Siems
11	Paul Sides
	Konrad Von Boeckman
12	Ron Brister
	David Murray
13	Emelia Blodgett
	George Krasle
14	Rommel Childress
15	Grace Broadway
16	Madra Little
	George Loud
	Letitia Brister

## Upcoming Programs

**August:** Indoor Picnic and Rock  
Swap (see P. 1)

**September:** Brian Hicks,  
Hernando de Soto

**October:** Ashley Allen, Union  
Chapel Mine

camped on this mountain, and  
primitive camping is permitted  
there. We will also visit Buck  
Creek for garnets and sapphires.  
The last place on the list is Bridal  
Veil Falls for garnets and mica  
schist with garnets. If you have  
any questions, come to the August  
12th Membership Meeting. I hope  
to see you there,

*Charles*

## Destroyed!

For years, geologists, science  
classes, and "geopilgrims" ven-  
tured to a split in a sidewalk curb  
in Hayward,  
California. Two *Continued, P. 4*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*Destroyed!* sections of sidewalk have been slowly drifting askew for several decades, creating a striking visual portrayal of something geologists call creep—the slow steady movement of earth along a fault, in different directions.

Unlike earthquakes, creep is seismic movement that is so slow and subtle it is typically not felt. But it shows up in structures made by humans, such as concrete roads and buildings, which are too brittle to adapt to the slow movement of the ground below.



The picture shows the curb, which sits on the Hayward fault, one of seven significant faults in the San Francisco Bay area. It runs nearly parallel to the more famous San Andreas fault, and is part of that fault system (which forms the boundary of the North American and Pacific plates).

Pictures of the curb throughout the years can be seen on

[United States Geological Survey](#) web pages, and there is a [gallery](#) of photos (*worth a look!*) of the curb in the 1970s on the website of former California State University geology professor Sue Ellen Hirschfield, who gave local geological walking tours in the area.

When it was first made, the curb formed a solid straight line. But over time the curb split, with one end drifting south, and the other drifting north.

But no more; it's gone. The city of Hayward removed the offset curb, which lies at an intersection, to make way for a wheelchair accessible ramp. Apparently, city officials were unaware of the curb's significance to geologists and science buffs.

Had they known of its significance, assistant city manager Kelly McAdoo told the *Los Angeles Times*, the city "probably would have looked at it differently, or we would have tried to help them document it."

There's a lesson here.

## MAGS Logo Contest

It has been many years since our logo has been updated. We need your help designing a new logo that can be used on everything: t-shirts, posters, letterheads,

etc. If your design wins, you will receive your choice of either a paid 2017 MAGS membership or one of the first t-shirts with the new logo printed on it.



Here are rules for designing our new logo.

(1) Members only. You must be a MAGS Member in order to create and submit art for the contest.

(2) Keep it simple: clean lines, bold lines, no intricate details.

(3) If your design is multi-color, submit a one-color version as well. Multi-color designs work well on printed and online materials, but there are instances when one-color or black-only works best—like art for t-shirts. So submit two versions of your art.

(4) Identify who we are. The words "Memphis Archaeological and Geological Society" must be included. *Continued, P. 5*

*President's Message* Want to go on a field trip? Want to read the newsletter? Want to have a good program at the Membership Meeting? Want someone to accept your dues and pay the rent for the Membership Meeting? Want someone to manage the website? Want someone to organize the Show? Want someone to make sure all these components are organized and performed in a timely and efficient manner? Sure you do, and I bet you want to help and be directly involved. So if you are reading this newsletter it is confirmation that you are ready, set, and go. We will be calling.

In addition to August's starting our officer selecting process, it also continues to be an active time for the club and its activities. Rock Swap/Picnic to Holiday Party in December, and field trips from North Carolina to Parsons, Tennessee, in December will keep us going to the New Year.

*W. C. McDaniel*

# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*MAGS Logo Contest* Geological Society" **must** be part of your design. Your art should represent our interests, i.e. rocks, fossils, gems, minerals, artifacts, etc.

(5) Submit your design on time. **Deadline is August 30, 2016.** When you have your artwork ready, send it via email to [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com) or mail it to Mike Baldwin, 367 North Main Street, Collierville, TN 38017. If you send it by mail, make sure you allow enough time for it to get to Mike on or before August 30.

(6) Winner will be chosen at the September Membership Meeting. All entries will be considered. A panel of judges will be appointed by President W. C. McDaniel. The panel will narrow the field of entries to the top three designs. At the September Membership Meeting, Members will choose the winning entry by secret ballot.

If you have questions about the contest or the rules, please contact Mike Baldwin at [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com) or (901) 494-9262, or contact any of the other MAGS Board Members. Have fun and may the best entry win.

## June Board Minutes

*Mike Baldwin*

Called to order at 6:30. Present: W. C. McDaniel, Charles Hill, Kim Hill, Bonnie Cooper, Bob Cooper, Carol Lybanon, Matthew Lybanon, Mike Baldwin, Leigh Scott, James Butchko, Leah Gloyd, Marc Mueller, Jane Brandon.

**Secretary:** Minutes approved with one correction.

**Treasurer:** Bonnie will pay church

rent for the next 6 months in June. Report approved.

**Membership:** 5 new Members and 2 renewals (1 a gift)

**Field Trips:** Kim Hill will lead the June 11 trip to 20 Mile Creek. July 9 to Jonesboro. NC trip is set for August 20-24: one day will be at an active gold mine. October 15 DMC field trip will be to one of Memphis Stone and Gravel's mines. November 19-20 will be to Livingston for geodes, and Cove Creek. December 17-18 will be a return trip to Parsons for Devonian fossils. Discussion followed about Mousetail Landing State Park and Melba Cole's selenite property.

**Adult Programs:** June, George Phillips. July, Dr. Roy Van Arsdale. August, indoor picnic/rock swap. September, Brian Hicks. October, Ashley Allen. November, Bill Prior. December, Holiday Party.

**Junior Programs:** June, Electricity. July, Space Rocks.

**Rock Swaps/Historian:** August 12, Indoor Swap: a brief business session and then on to food and fun. Visitors, Members, & guests are invited. (May rock swap was one of the best in club history.) Leah will take care of cups, cutlery, plates, and napkins. Members will bring potluck according to alphabetical listing of Member's last name.

**Library:** Received a number of books from Jimmy McNeil.

**Web:** Will be updated after tonight's Board Meeting.

**Newsletter:** A loose-leaf volume of Michael Gibson's "Fabulous Tennessee Fossils" articles will be placed in the library.

**Show:** Close to closing the books on the 2016 Show. Will start on 2017 Show in September. We will receive a \$1,000 refund check from the Agricenter for 2016. Member show ticket receipts are due and payable.

**Old Business:**

- Auction at the June meeting will

include a silent auction.

- W. C. talked about marketing strategies for the club. Discussion followed about new business cards.

- Leah is working on a new club Facebook page.

**New Business:**

- Kim Hill led discussion about new t-shirt design and distribution. Leah suggested having basic and deluxe membership; latter would include a t-shirt. Maybe have a club graphic design contest. Discussed using on-demand t-shirt ordering. Leah has a source for hand screen-printing. Board decided on a design contest which could launch next Friday at the Membership Meeting.
- Bonnie discussed the liability of our members and suggested that we have a form that each field trip participant would sign. W. C. stated that the current membership form has a liability clause that each new Member signs. Members who have been members longer than 5-6 years haven't signed this form.
- Mike read the nominating committee section of the MAGS by-laws to inform the Board that the 2017-2018 nominating committee must be formed by the August Board Meeting.
- Charles has every field trip for his term loaded on a thumb drive to pass along to the next Field Trip Director.

Adjourned at 8:00.

## June Meeting Minutes

*Mike Baldwin*

Called to order at 7:13. 41 Members present. Called attention to silent auction currently underway.

20-Mile Creek is set for tomorrow. July trip, AR; August trip, NC; September trip, Batesville; October, DMC/MAGS-sponsored trip to a new gravel mine in South-aven. November, *Continued, P. 7*

**Fabulous Tennessee Fossils**

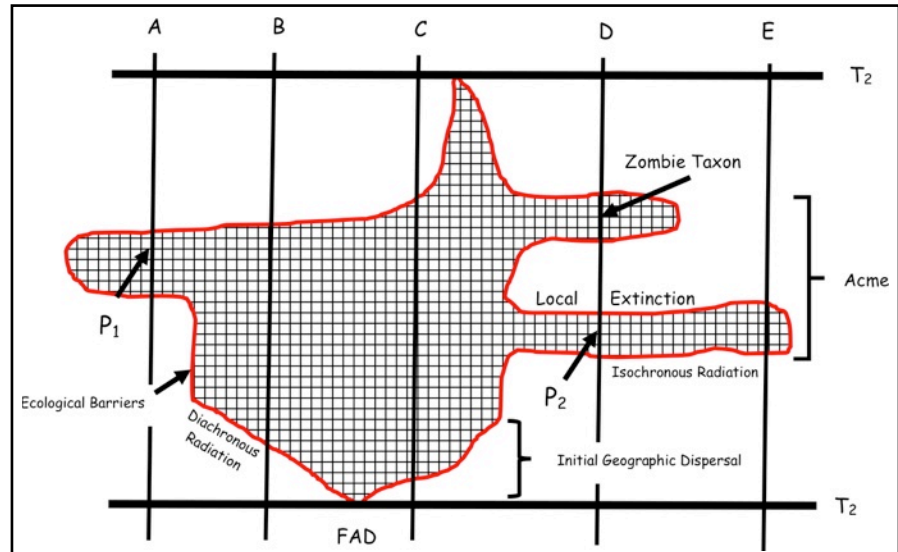
*Dr. Michael A. Gibson,*

*University of Tennessee at Martin*

**Biostratigraphy Part 3**



At the end of Biostratigraphy Part 2, our fossil species had expanded its geographic range away from its geographic point of origination, bound only by the ecological barriers the species could not defeat. At some point in the history of the species, it will reach the maximum geographic distribution that it can. It will have pushed the ecological barriers by evolving and adapting to the environmental conditions and become as widespread as it possibly can. The “heyday” of a species, in which it is at its widest geographic distribution for some extended time frame, is best fit for the environment in which it is living, is called a species “acme”. The word “acme” comes from the Greek akme, which means “highest point”, another way of saying “the best”. Baby boomers might remember that iconic Looney Tunes cartoon series “The Road Runner”, in which Wile E. Coyote was always trying to catch Road Runner (“beep, beep”) with various contraptions he purchased from Acme, presumably the best trapping equipment he could obtain. In Figure 1, the acme for our species is represented by the widest portions of the “cloud”, which also corresponds to the most measured section localities that the species occurs and coexists. For fossil collectors, the acme of a species will be the time frame from which we are most likely to find fossils of the species as they are widespread.



**Figure 1.** Diagram depicting the distribution of a new species in time (vertically) and geography (width). A-E—Geographic locations of measured sections. FAD—First Appearance Datum, T<sub>1</sub>—Timeline FAD. The time frame of the widest geographic range is referred to as the “acme” of a species and represents its heyday. Constrictions are local extinction events, but not terminal. Species that reappear in a section after a local extinction event are called “zombie taxa”. P<sub>1</sub> and P<sub>2</sub> represent local stratigraphic ranges that are within, but not as long as, the total stratigraphic time range of the species. These can reflect migration into and out of an area during expansion, or they can represent effects of extinction. Refer to text for detailed explanation (diagram by Michael Gibson)

For geologists wanting to use fossils to recognize a particular geologic formation, or time frame, the acme of a species becomes useful. Later, when we define the various time of biostratigraphic zones used to tell time and correlate geologic strata, we will see there is a zone referred to as the “acme zone”. For evolutionary biologists, the acme also represents the “stasis” period of the species during which it is best fit for its environment and conserves morphological

variation.

Notice in Figure 1 that there is a constriction of geographic range in sections D & E that indicates a reduction in geographic distribution during the overall acme period. Notice also that the restriction occurs quickly (horizontal line) that is essentially isochronous. Perhaps the environment changed suddenly such that the species’ ecological barriers were reestablished to

*Continued, P. 7*

*Fabulous Tennessee Fossils* earlier locations? Perhaps there was some cataclysmic event that killed-off the species locally? The result is that the species either migrated out of the area or died off in those locations. Disappearances of species from locations they once lived in is now termed a “local extinction” (as opposed to “terminal extinction” or “mass extinction”). We will have to delve deeper into the concept of extinction in later essays as research since the 1980s had demonstrated that there are different types of extinction and the processes are much more complex than originally thought when the concept was first formulated. For our current purposes, when species disappear suddenly in a large portion of the overall geographic range of a species, generally during the acme, the species is said to have experienced a “local extinction” event. For example, camels first evolved in North America (as did horses) and spread to Asia and Africa. Later camels went extinct in North America (as did the horse). These extinction would be considered “local” in that the disappearances were confined to

North America. Now notice in Figure 1 that our species reappears in sections D & E at a later date. This is a common phenomenon that can be confusing for biostratigraphers. Perhaps the environmental conditions that caused the initial local extinction reversed itself, allowing the species to recolonize the original geographic range. The result is that a species that was locally extinct now once again occurs higher up in the same stratigraphic section, and there is a “barren interval” separating the vertical stratigraphic ranges of the species in each of these localities. It appears like a species that was thought extinct has “risen from the grave to walk again”. Taxa that reappear in a section, higher in the section and later in time, but are essentially the same taxa as before, are called “zombie taxa”. There is also “Elvis taxa”, which is a fossil species that seemed to disappear only to later be replaced by unrelated, but strikingly similar looking, taxon, thus the species is reportedly seen when it cannot have actually existed, much like people claimed to have seen a living Elvis years after his death. Who said paleontologists don’t

have a sense of humor? Now focus on P1 and P2 in Figure 1. The vertical range of a species (vertical straight line within the cloud) is referred to as its “stratigraphic range” of a fossil and a specific category of biostratigraphic unit is defined using the total length of this range (the “taxon range zone”) compiled by adding the ranges from all sections; more about that later. What is important here is that P1 and P2 represent shorter than maximum stratigraphic ranges of the species and that these can occur at different times. Note that P1 and P2 are not at the same stratigraphic (vertical) level. Vagaries in preservation, migration patterns, and local extinctions can complicate reading the biostratigraphic history of a species. Care must be taken to fully document both the geographic and stratigraphic distribution of species. Ideally biostratigraphy is only attempted with species that have very short overall stratigraphic ranges to reduce the time of non-overlap between measured sections. Next time we will focus on the top of the cloud and how species ultimately meet their demise.

*June Meeting Minutes*  
Continued from P. 5

geodes and fossils in middle TN; December, Parsons. Reports from Newsletter, Show. Four displays. **Program:** George Phillips, Mississippi Museum of Natural History; presented a program on “A Late Oligocene Coastal Ecosystem from Wayne County, Mississippi.” Adjourned 8:35.

**July Meeting: Agates**

David Day took some really good pictures. Here are a couple.



## July Field Trip

*to Hedger Aggregate in Jonesboro, Arkansas*

*Charles Hill*

If you didn't go on the July 9th field trip to Hedger Aggregate in Jonesboro, Arkansas, you really missed a great dig! Our day went like this: We got up around 4:00 A. M. Emily started coffee, and I started to go back to bed. That didn't work; so I tried the coffee, which did work. I had pre-loaded the truck the day before with buckets and tools, so that part was done. Emily put together the food, and we were ready to go. Jonesboro, Arkansas, is over 200 miles from Grand Junction, Tennessee, so I knew this was going to be a long day.

The night before, at the MAGS monthly Membership Meeting, I had provided flyers for Members going on the trip. The flyers contained information one might need on the trip, what we would be collecting, what to bring, how to get there, etc. We had such a good turnout that all the flyers were scooped up by Members. I didn't keep one for myself because I did not believe I would need one. Well, as it turned out, in Jonesboro I went the wrong way on the right road, so we arrived late. Some of the diggers on this safari were already hunting for keepers! We had been concerned about the weather's being either stiflingly hot or else pouring down rain. However, what we got was cool, overcast skies with a periodic, very light drizzle—ideal weather for rock hunting. The weather was a big help, but so was a heavy equipment operator named Pete. Once he discovered what we were looking for, he drove up on an enormous piece of equipment called a reticulated bucket loader and leveled out some of the over-sized piles. Then he brought up more rocks from another pile. Thank you, Pete!

This gravel pit is arranged with a huge oversize pile in the back—and I do mean huge—so we had lots of room for everyone. There was a lot of variety at this site and I am betting everyone found something nice. The banded river agate seemed to be everywhere we looked. Some of the agates are good and some not so good; but I saw three, found by three different people, that were remarkable. We found petrified wood, large and small: I saw some really good pieces found by Cari Brose. There were jaspers of various colors. We found banded chert, about as good as it gets: beautiful stuff. There were also some fossils, with the best that I saw being found by Bob Cooper and Carol Lybanon. Kim Hill, by the way, brought back the better part of Arkansas! All and all, we had an exceptional hunt.

*Daryl Wallace*

My wife and I just rejoined MAGS at the July 8th meeting and decided to attend the field trip to a gravel mine near Jonesboro. The weather was great because there was an overcast which kept the heat down, and we got periodic showers throughout the day to keep gravel wet. When we first got there agates were everywhere; as soon as you looked down there was another one. The agates here are much larger than what we find in Nonconnah Creek, so I enjoying cutting several of them to see what surprise is inside. I found several pieces of petrified wood and some nice banded chert. We completely wore ourselves out Saturday but woke up Sunday fresh and ready to admire and clean the pile we collected.

**Editor's Note:** *Thanks to Fred Solang and Daryl Wallace for the pictures.*





**Jewelry Bench Tips** by Brad Smith

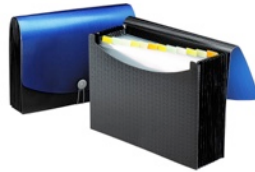
**SHEET & WIRE STORAGE**

The more you work with jewelry, the more problems you have finding the piece of metal you need. My pieces of sheet were generally stored in various plastic bags, and the wire was in separate coils. Few were marked, so it often took me a while to locate that piece of 26 ga fine sheet I bought last year, especially since I usually take my supplies back and forth to classes.

A tip from a friend helped me organize everything. I bought an expanding file folder from the office supplies store (the kind that has 13 slots and a folding cover) and marked the tabs for each gauge of metal I use. Then I marked all my pieces of sheet with their gauge, put them in plastic bags, marked the gauge on the bag, and popped them into the folder. I usually store coils of wire loose in the folder, but they can also be bagged if you prefer. I use

one tab for bezel wire and one for the odd, miscellaneous items.

The resulting folder is really convenient when I want to take my metal out to a class or workshop, and it's colorful enough for me to easily find in the clutter of the shop!



**LITTLE BALLS**

I often use little balls of silver and gold as accent pieces on my designs. They can be made as needed from pieces of scrap. Cut the scrap into little pieces, put them on a solder pad, and melt them with a torch. Then throw the balls into a small cup of pickle.



If you need to make all the balls the same size, you need the same amount of metal to melt each time. The best way to do that is to clip equal lengths of wire.



But there's an easier way to get a good supply of balls. Some casting grain comes in near perfect ball form. Just grab your tweezers and pick out the ones you need. When you need larger quantities of balls, pour the casting grain out onto a baking pan, tilt the pan a bit, and let all the round pieces roll to the bottom. Bag the good ones, and pour the rest back into your bag for casting. Balls can be sorted into different sizes using multiple screens.

*Bench Tips for Jewelry Making and Broom Casting for Creative Jewelry* are available on Amazon.

**Prize-Winners**

W. C. McDaniel forwarded these photos of lapidary/rocks pieces that have won prizes in various contests. Names are those of the artists.



L-R: Amy Zhou, Best of Ceramics Award, West Tennessee Regional Art Contest; Lilly He, Gold Key Award, Scholastic Contest, Brooks Museum; Sarah Grace Browning,, Best In Show Junior Division, Scholastic Contest, Brooks Museum; Jake Pritchard, Silver Key Award, Scholastic Contest, Brooks Museum

### A MAGS Member's July 4 Weekend



MAGSter James Johnson took a small group of people to two quartz mines in Mt. Ida, Arkansas, over the July 4 weekend (the photo at left shows fireworks over Lake Hamilton, in nearby Hot Springs). It was hot, but there was some shade, and the sight of crystals coaxed members of the group out of the shade as well.



The pictures below show some of the finds from the trip (James took all of the pictures in this article). He may go back in the Fall. Interested?



### More South African Fossils

**Editor's Note:** Last month's issue had an article about the discovery in South Africa of **Homo naledi**, possibly the earliest **Homo** species. These South African fossils are older.

Roadworks near the South African town of Grahamstown have uncovered a large number of well-preserved fossils, some previously unknown to palaeontolo-

gists, the South African National Roads Agency (Sanral) has announced. Located on an ancient river mouth ecosystem, the site hosts an incredible variety of fossils, dating back to the Devonian era. Scientists from the Albany Museum in Grahamstown assisted Sanral with the excavation

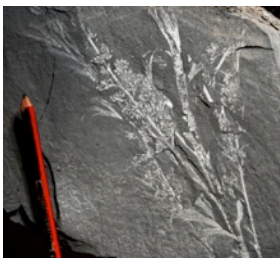
Around 360 million years ago, South Africa's marine coastline was very different, as the country was part of the super-continent

Gondwana. The fossils are from that era, and include some invertebrate species that had so far never been documented. Comparing the fossils they have collected to the ones found in a major discovery at a site called Waterloo Farm, the palaeontologists have identified unique fossils of plants that appear to be the ancestors of modern species.

They collected the remains of a *Continued, P. 11*

*More South African Fossils* shrub  
*Continued from P. 10* sized

*Iridopterid* plant, from the group that was ancestral to modern horsetail plants. While *Iridopter-aliens* were located both at Waterloo Farm and the current fossil excavation site, they are different, though both are undescribed species. The team also unearthed the most complete specimens of the fronds of an ancient tree known as *Archaeopteris notosaria*. In terms of fauna, the scientists collected different fossils of invertebrate species, including some—called lingu-loid brachiopods—that had never been associated to this era before.



The new discovery will not only be enjoyed by the scientific community. Sanral plans to include an area near the road that will be open to the public to allow them to discover panels and information boards about the fossils. You can see more pictures and a video concerning this discovery at [www.nra.co.za/live/content.php?Session\\_ID=08a35d4d213985059e8855620c8e100d&Item\\_ID=4967](http://www.nra.co.za/live/content.php?Session_ID=08a35d4d213985059e8855620c8e100d&Item_ID=4967).

## Federation Tidbits

In the July issue of *Lodestar*, the monthly newsletter of the Southeast Federation of Mineralogical Societies (SFMS), SFMS Education Chair Danny Griffin has a nice article on his visit to the Petrified Forest National Park in

Arizona, complete with some gorgeous pictures. Check it out. The issue is posted on the SFMS website, which you can access through the link on P. 2 of this (and every) issue of *MAGS Rockhound News*.

## Dagger From Space

In November 1922, English archaeologist Howard Carter discovered the nearly intact tomb of the 18th Dynasty Pharaoh, Tutankhamun (better known as "King Tut," or "the boy king"). Much more recently, in February 2010, the results of DNA tests confirmed that Tut was the son of Akhenaten, another Eighteenth Dynasty Egyptian Pharaoh

Carter spent months cataloging the contents of the antechamber, and eventually opened the sealed door to the burial chamber. Exhibits of artifacts from the tomb have toured the world.

In 1925, Carter found two daggers, one iron and one with a blade of gold, within the wrapping of the teenage king. The iron blade, which had a gold handle, rock crystal pommel and lily and jackal-decorated sheath, has puzzled researchers in the decades since Carter's discovery: ironwork was rare in ancient Egypt, and the dagger's metal had not rusted.

Italian and Egyptian researchers analyzed the metal with an x-ray fluorescence spectrometer to determine its chemical composition, and found its high nickel content, along with its levels of

cobalt, "strongly suggests an extraterrestrial origin." They compared the composition with known meteorites within 2,000 km around the Red Sea coast of Egypt, and found similar levels in one meteorite. That meteorite, named Kharga, was found 240 km west of Alexandria, at the seaport city of Mersa Matruh, which in the age of Alexander the Great was known as Amunia.

Although people have worked with copper, bronze and gold since 4,000 BC, ironwork came much later, and was rare in ancient Egypt. In 2013, nine blackened iron beads, excavated from a cemetery near the Nile in northern Egypt, were found to have been beaten out of meteorite fragments, and also a nickel-iron alloy. The beads are far older than the young pharaoh, dating to 3,200 BC.

The researchers also stood with a hypothesis that ancient Egyptians placed great importance on rocks falling from the sky. They suggested that the finding of a meteorite-made dagger adds meaning to the use of the term "iron" in ancient texts, and noted around the 13th century BC, a term "literally translated as 'iron of the sky' came into use ... to describe all types of iron".

One of the researchers stated that other objects from Tutankhamun's tomb, including jewelry and miniature daggers, are believed to be made from meteorite iron.

**Ref:** Comelli, D., et al (2016), *The meteoritic origin of Tutankhamun's iron dagger blade. Meteorit Planet Sci*, 51: 1301–1309. doi:10.1111/maps.12664



# MAGS At A Glance

## August 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1	2	3	4 Board Meeting, 6:30 pm, St. Francis Hospital	5	6
7	8	9	10	11	12 Membership Meeting, 7:00 pm, Indoor picnic and rock swap	13
14	15	16	17	18	19	20 MAGS Field Trip, NC (gold mine)/DMC Field Trip, Franklin, NC
21 MAGS Field Trip, NC (several sites)	22	23	24	25	26	27
28	29	30 MAGS Logo Contest deadline	31	1	2	3

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