



Volume 60 ♦ Number 07 ♦ July 2014 ♦ A monthly newsletter for and by the members of MAGS

Discovery Park of America

Don't miss the July 12 MAGS field trip to Discovery Park



Polly Brasher, Education Director for Discovery Park of America, will present a program about the park at the MAGS July meeting. Polly was originally a volunteer and has been associated with the building of Discovery Park since the very beginning. A

former educator, she moved into the role of Education Director when the park opened last November. Having been involved in practically every decision that was made during the planning and building of this multi-million dollar educational

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AMETHYST CATHEDRAL RING RAFFLE

MAGS will raffle this Amethyst Cathedral Ring at our Indoor Picnic on August 8.

Tickets will be on sale at our June, July, and August Membership Meetings only. Cost: \$1 each or 6 for \$5.

You must be present to win (or send your ticket to the Indoor Picnic with a friend).



Imagine your face being seen through the opening. The ring is approximately 16 x 16 inches, so the opening is big enough for your face. If you are the lucky winner your friends will appreciate the photo opportunities.

Remember: you can't win if you don't buy a ticket.

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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MAGS AND FEDERATION NOTES

Hey, Rockhounds,

Greetings to the Memphis Archaeological and Geological Society, also known as MAGS. Today feels a lot like summer—nice, sunny, hot, and humid. Perfect for the pool or snorkeling for gemstones and minerals or fossils.

Saturday, June 21, at 6:51 A. M. Eastern Standard Time is the beginning of summer in the northern hemisphere. The longest day of the year, so that means more hours collecting. When a rockhound goes hunting when do you expect she or he will be back? Not just when the sun goes down. Not when it's even dark!!! When the batteries in their lights are completely dead. Then they will think, did I bring extra batteries?

Origin-Ally yours,
W. Paul Sides
MAGS President

MAGS General Membership Meetings and MAGS Youth Meetings are held at 7:30 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

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.

July DMC Field Trip

WHERE: Bayou Pierre River, Copiah County, MS

WHEN: Saturday, July 26, 2014, 8:00 A. M.-3:00 P. M.

COLLECTING: Agates and marine fossils in chert

INFORMATION: Brenda Hankins, (601) 259-9979 or agatesbjh@aol.com.

Links to Federation News

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

Archaeological Refugee

Glenn Schwartz

Reprinted with permission from the Johns Hopkins Arts & Sciences magazine, Spring 2014.



Glenn Schwartz is the Whiting Professor of Archaeology in the Department of Near Eastern Studies, Johns Hopkins University.

Since the Middle East is such an unpredictable place, archaeologists carrying out fieldwork in Syria often advise one another to conduct each field season as if it were the last. But having directed archaeological excavations in Syria since 1987, I had become complacent, accustomed to the country's stability and the people's warm hospitality. I visited Syria for two months almost every summer and directed work at the site of Tell Umm el-Marra (<http://neareast.jhu.edu/uem/>), which had yielded a fascinating complex of "royal" tombs and ritual facilities from the third millennium BC. But my sunny attitude was challenged in 2011, when civil strife began and I realized that the disaster archaeologists had long feared might be taking place.

As the situation worsened, I faced a major decision. Should I put an end to my fieldwork career

and concentrate on analyzing and publishing the results of my many years of excavations in Syria? Some might have considered this the responsible thing to do, since archaeologists are often accused of spending more time digging than publishing their results. Or should I begin a new field project in a different country? This would be a daunting prospect at my advanced stage of career, since I would have to learn how to deal with a new culture, a new government, a new language, and new types of ancient materials. But having spent so many years developing my skills as a dig director and field archaeologist, it seemed wasteful to put that expertise and experience to rest. Moreover, part of my job is to train students in fieldwork, and this requires a field project. So, after much deliberation, I decided to take the plunge and start a new project.

The question was: where? Opportunities for American archaeologists in the Middle East have diminished considerably in recent years. Countries like Iran, Lebanon, Syria, and even Turkey are difficult or impossible to work in, due to political or other reasons. But while many places were becoming inhospitable, one area was newly receptive to foreign researchers. The autonomous Kurdistan Region of Iraq has recently welcomed archaeologists from other countries, and numerous projects have been initiated. This northern Mesopotamian re-

gion, part of ancient Assyria, is rich in archaeological sites relevant to the understanding of humanity's first urban civilization, yet it was archaeological terra incognita until just a few years ago.

Most new archaeological projects in the Kurdistan Region of Iraq had been spearheaded by European archaeologists, and the Kurds wondered why Americans had yet to join in. This situation changed in 2012 when Jason Ur from Harvard University started an archaeological survey near Erbil, the capital of Kurdistan. Later that year, he filled me in on his results and told me about an interesting site that he had discovered called Kurd Qaburstan. An immense urban-sized mound dating to the second millennium BC (a date that Ur knew from the style of the broken pottery on the site surface), Kurd Qaburstan may be ancient Qabra, a powerful city well-known from Mesopotamian texts. Work at Kurd Qaburstan promised an opportunity to study the nature of urban life and organization in northern Mesopotamia.

The next problem was getting permission to excavate. I contacted Mr. Najat Abdullah in the office of the Kurdistan Regional Government in Washington, D.C., and he was very enthusiastic about the prospect of Johns Hopkins starting a field project in his homeland. He put me in touch with the director of antiquities, Mr. Mala Awat, who *Continued, P. 4*

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Archaeological Refugee was likewise interested. *Continued from P. 3*

Thanks to their help and that of many others, I was able to get the project off the ground quickly. In fact, it seemed little short of a miracle that in June 2013, only eight months after I first learned about Kurd Qaburstan, I had a permit in hand and was digging with a crew of graduate students and specialists from Hopkins and elsewhere. As I had expected, working in a culture that was unfamiliar posed its challenges, but new colleagues and friends in Kurdistan helped us immensely. We had a successful first season and are returning in May.

Despite my excitement about beginning a new project in a new country, I haven't forgotten about

Discovery Park of America complex in Union City, Tennessee, Polly has an interesting perspective on practically every aspect of the park. *Continued from P. 1*

Tennessee, Polly has an interesting perspective on practically every aspect of the park.



Polly will begin the program with a bit of Discovery Park history. You will learn about Robert Kirkland who founded Discovery Park and spent over one-hundred-million dollars of his own money making this "dream come true" in Union City. MAGS members will then see about a 15 to 20 minute PowerPoint presentation about the park. Members will see the 100,000 square foot Discovery Center and take a peek at each of

my old archaeological home in Syria. Hearing the news every day about violence and destruction is heartbreaking, especially when I remember the fascinating country and warmhearted people I came to appreciate. It is particularly agonizing to hear about the disasters occurring in Aleppo, the main city of the north, since Aleppo was near my site, and I came to know it well. I became attached to its awe-inspiring historic architecture, old-fashioned ambience, and friendly people. Every time I drove down into the great bowl that the city is located in, it felt like going to a party. Having gotten to know Aleppo so well—and even learning to enjoy driving there despite its crazy traffic—I am saddened and dismayed by the

the nine galleries. The presentation also includes up-to-date photos of the grounds and gardens, and listeners will get-a-glimpse of the 50-acre park with multiple historical areas and three distinct garden areas. At the end of the presentation, Polly will be happy to answer questions.



Discovery Park of America's mission is education and entertainment. The goal is to enhance children and adults' educational experiences and to inspire them to reach their full potential. Guests learn, engage, play and explore Tuesdays through Sundays from 10:00 A. M. until 5:00 P. M. Having opened on November 1st, 2013,

suffering the city and its people have endured.

As an archaeologist, I am also aware of the damage being done to the cultural heritage of Syria. This comes both as a result of the violence and from the looting of archaeological sites and museums that occurs during confusion and civil unrest. The Syrian Directorate-General of Antiquities has been valiantly attempting to monitor the situation and protect the sites and monuments, but this task is extremely challenging. Fortunately for me, my site guard, who lives with his family in the house we built for the expedition, reports that Umm el-Marra is still in good shape. I can only hope that this situation continues and that somehow peace will return to Syria.

Discovery Park has already had over 170,000 visitors and is exceeding all goals and expectations. The park is located in Union City, Tennessee, population around 11,000 in the northwest corner of the state. You can see additional photos and learn more about the park, including admission prices and special events, by visiting the website at

www.discoveryparkofamerica.com.

Editor's note: The July 12 MAGS field trip will go to Discovery Park. Contact field trip chair W. C. McDaniel at (901) 274-7706 or w.c.mcd@att.net for more information. MAGS will subsidize your admission charge. And you can read more about Discovery Park of America in the August 2013, October 2013, and November 2013 issues of *MAGS Rockhound News*.

Geology



Country music has come a long way. Grand Ole Opry star Brad Paisley appeared on the National Public Radio show *A Prairie Home Companion* on May 10, and sang one of his own compositions: “Geology” (no, we aren’t kidding). You can see and hear it on YouTube: <https://www.youtube.com/watch?v=qF0iC6DXMQ8>.

What’s Happening At Chucalissa?

Dr. Robert Connolly

This summer at the C. H. Nash Museum we will once again offer our Family Day Activities every Tuesday, Thursday, and Saturday at 10:00 A. M. and 1:00 P.M. For the price of regular admission, Family Day activities consist of a tour of the museum, throwing darts with an atlatl (prehistoric hunting tool), conduct a scavenger hunt in our main exhibit hall, tour our hands-on archaeology lab, and participate in special fun program and make a craft to take home. No reservations are necessary!

Our special Volunteer Saturday for July will be held on the 19th, 9:00 A. M. to 1:00 P. M. Come out and help us process prehistoric

artifacts, help with landscaping in our outdoor gardens or other activities. Children are welcome under parental supervision.

Or step out for a walk along our nature trail and see the progress of the corn, beans, and squash growing in our Three Sisters Garden or check out our brand new butterfly garden in the main plaza!

For the price of regular Museum admission:

- * Take a tour of the museum
- * Throw darts with an atlatl
- * Conduct a Scavenger Hunt in our Main Hall
- * Tour our Hands-on Archaeology Lab
- * and participate in a special fun program and create a craft to take home.

MAGS In The Community

When the Orpheum wanted a program on archaeology prior to their June 13 showing of *Indiana Jones and the Temple of Doom*, they turned to MAGS. Carol and Matthew Lybanon may not be world-famous archaeologists like Indy, but they manned a table in the Orpheum’s lobby and fielded questions. They even had a real Shiva-Linga (the Sankara Stone that Indy searched for in the movie) to show moviegoers. And, of course, they handed out MAGS information to those who were interested.

MAGS was also represented at the Union County Heritage Museum’s Fossil Road Show, held at the museum in New Albany, Mis-

issippi, on June 14. Carol Lybanon, Mike and Sherri Baldwin, and W. C. McDaniel were all there, joining members of the North Mississippi Gem and Mineral Society, and local artifact and fossil collectors.

Eureka Was The Best

Daniel McMahan

June 7 and 8 this year marked a rainy weekend, at least in Marion, Kentucky. The Ben E. Clement Mineral Museum held their annual rock show and dig. This being our first time to the museum and dig, I would like to give you our experience.

First let me say I like to collect, but our family consists of my wife, our 3-year-old boy, and 8-year-old daughter. So though my wife is all about getting out, getting dirty, and roughing it, we have to temper the trips we take to those that we can take our 3-year-old son. He is all boy and I am sure he would try to find the open mine shaft, deep water-filled hole, fast stream, or cliff to jump from. ... Okay, maybe we are a bit over-protective, but it does rule out road cuts, and many mines or long hikes to tailings piles. This was a safe, easy trip from everything I had read, and the museum had been giving tours for a long time. So safe but also probably well picked over is what we thought going into this at, least (not true).

We started the day at the Eureka mine, after paying at the museum, where we all picked up several hand size pieces with cubes from the recently turned very muddy tailings pile.

Now everything *Continued, P. 6*

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Eureka Was The Best was covered in *Continued from P. 5* mud, as it had rained the day before and looked like it would any minute while we collected. So an hour or two into the day and I had two kids covered in mud, and my boy wanted to go into the water-filled pit at the center of the Eureka mine (told you). We learned later that after the piles were turned heavy rains had washed enough dirt back into the pit to cover the screened pump in six feet of mud.



Well, we have done this before, so we took the kids to the car, washed them up, clean clothes, snacks, and traded off who could keep digging. All in all we collected two 5-gallon buckets from the Eureka mine. I would find out later it was one bucket of rocks (with varying quality fluorite, galena, sphalerite, and quartz) and a bucket of mud. I did find a nice large rock with a vein of fluorite that just was asking to be broken, so I went after it with crack hammer and chisel. But after 15 minutes without much headway a nice guy let me use his large sledge hammer, which I broke in three swings and had to purchase (I hate wooden handle tools; this is the third sledge I have broken in 5 years).

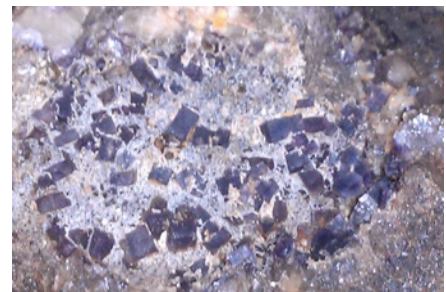
After the Eureka Mine we went to the Hickory Cane Mine, just a short distance up the road. There was also no one here, but a single car at the pull-in so you knew where to go. The Eureka, on the other hand, had probably 40 people or more by the time we left. Larger rocks here had sphalerite (ruby jack) and smoky quartz—almost black but with small crystals (only 1 or 2 mm).



It was now two o'clock and we had snacked a lot but really needed to eat. So we went to the hotel, got everyone really cleaned up, and had lunch. We then went back to the museum and took the tour. The Clement Museum is in an older building that is showing its age, and the displays make use of salvaged material, but the mineral specimens that are housed are amazing. It's been years since I have been to the Smithsonian but the minerals at Clement are of the same quality.

There was a smaller display in the back showing fluorescence. The fluorescent display was more of a "hey, rocks can glow" display. The minerals were not identified and locations were not labeled. This was a bit of a letdown, as

later that night I went back to the evening dig at the Columbia Mine led by the property owner, Bill Frazier. The night dig was 2 hours but I had filled a 5-gallon bucket within 45 minutes and picked up a 45 pound rock showing red, yellow, and ever-present blue of hydrozincite which covered everything the shortwave hit. Only two other families showed up for the night dig, maybe because between the end of the minerals show at 5:00 and start of the evening dig it had rained on and off a few times. ... It was such a nice night I almost wish the rest of the family had opted for the night dig over more hotel pool time—almost.



In closing, if anyone hasn't made the trip to the Ben Clement Museum in Marion, Kentucky, I would recommend it. We found the best material at the Eureka Mine.

May Board Minutes

Carol Lybanon

The MAGS Board of Directors met May 1 at St. Francis Hospital, 5959 Park Avenue. The meeting was called to order at 6:40 P. M. Present were: James Butchko, Bonnie Cooper, Bill Gilbert, Carol Lybanon, Matthew Lybanon, W. C. McDaniel, Paul Sides, Bob Cooper, and Marc Mueller.

Secretary: The minutes were accepted as presented.

Treasurer: The

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May Board Minutes report was approved as submitted, subject to audit.

Membership: Paul asked for volunteers to assume the vacant Membership position. As yet he doesn't have a replacement. We have about 15 new Members and six renewals. W. C. asked Matthew to send him the list of email bounces. He will call to find out their correct email addresses. Bob volunteered to bring the sign-in sheet at Membership Meetings until we have a new Membership Chair.

Field Trips: Charles Hill will lead the Memorial Day weekend trip to the Hot Springs area. On May 31 there will be a field trip to Black Rock Quarry. It is the first trip to that site in 4 years so we must make sure to follow all their rules. W. C. will bring a first aid kit. The June field trip will be a concrete project at the home of W. C. McDaniel. The July and August field trips will be indoor events. W. C. is looking for some new sites in Magnet Cove for the Fall.

Adult Programs: Dr. Patricia Podzorski will give the May program.

Junior Programs: Jim said that the Juniors will make Mother's Day gifts, bead necklaces.

Show: Jim reported that we had a good Show. There was a lot of competition so we didn't get the numbers we had hoped for. A Show Committee followup meeting will be scheduled soon, possibly on May 19.

Library: No report.

Newsletter: Matthew said that the newsletter will be sent out tonight.

Webmaster: No report.

Historian/Rock Swap: Marc reminded everybody that the rock swap will be on May 10.

Old Business:

- ▶ W. C. reminded the Board about the recently passed policy on subsidizing Member payments for admission

fees on some field trips. The first time will be on the Discovery Park field trip.

- ▶ We need to figure out how to make the Membership Meeting Hospitality program work. Carol has no hosts for July or September, and she does not plan to continue her efforts. Several other ideas were brought up but no one volunteered to implement them.
- ▶ Committee to set up rules for expense reports: Paul and Jim talked this over and decided there was no need to set up specific rules. The Board didn't agree. After some discussion a motion was passed to table this item and come up with some ideas to present at the June Board Meeting. W. C. suggested that the policy should be about three sentences long, and general enough to cover all club expense reimbursements.

New Business:

- ▶ We should spend some time this Summer working on a formal presentation to give at schools and Scout meetings. Paul mentioned that the Southeast Federation has program DVDs that can be borrowed.

Meeting adjourned at 8:30 P. M.

May Meeting Minutes

Carol Lybanon

The MAGS Membership Meeting was held at Shady Grove Presbyterian Church on May 9. The meeting was called to order at 7:30 P. M.

BUSINESS: President Paul Sides called for reports from all Directors. W. C. McDaniel reminded the club of the implementation of the new policy to subsidize admission charges for Members attending certain field trips. There was an announcement of tomorrow's rock swap at the home of Jimmy McNeil. The newsletter editor asked for Show pictures. The library report said that there were several new books ready to be checked out by

Members, most of them on archaeology. Jim Butchko reported that the Show was a success. He thanked everyone for their help.

DISPLAYS: There was one adult display and one Junior display.

PROGRAM: The meeting was adjourned and turned over to the program at 8:10 P. M.

20 Mile Creek



On June 21 MAGS joined the North Mississippi Gem and Mineral Society on a field trip to 20 Mile Creek (near Frankstown, Mississippi). Thanks to Bob Cooper for the picture, which shows that he and Bonnie had a pretty productive day.

Falls Fossil Symposium

Alan Goldstein

The Falls of the Ohio State Park announces the second Falls Fossil Symposium on August 23 and 24. Details about the Mississippian-themed weekend event are at www.falloftheohio.org/Fossil_Symposium.html. Space is limited to 35 participants, on a first-registered basis. We have a good lineup of speakers. The keynoter, Dr. William I. Ausich, is one of the best known paleontologists in the world on the evolution of crinoids and Mississippian crinoids in general.

Contact Alan Goldstein for registration - *Continued, P. 8*

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MAGS2014—Upcoming Field Trips

Dates	Location	Trip status
July 12	A/C Appreciation Day, Part I Discovery Park, Union City, Tennessee <i>See new program note</i>	trip bulletin to be published
August 9	A/C Appreciation Day, Part II Belz Museum, Memphis, Tennessee <i>See new program note</i>	trip bulletin to be published
September -December	Fall field trips to Vulcan Quarry Parsons, Memphis Stone and Gravel, and Jonesboro, Arkansas, gravel pits are planned.	trip bulletins to be published SEE P. 10

New Program

A new benefit of your membership in MAGS. MAGS will pay 50% of the cost of an admission to a museum or event for each member attending an official published trip of the club. Collecting trips are not included in this program.

Falls Fossil Symposium tation
Continued from P. 7 forms at
(812) 280-
9970, ext. 403 or email
AGoldstein@dnr.in.gov. Regis-
tration includes the program and
field trip to Middle and Upper
Mississippian localities. The \$15
fee will allow us to provide re-
freshments; meals are “on own.”

***Alan Goldstein is Interpretive
Naturalist at Falls of the Ohio
State Park, Clarksville,
Indiana.***

Jewelry Bench Tips by *Brad Smith*

SAWING SMALL TUBING

When making a hinged brace-
let, I needed to cut 16 pieces of
small diameter silver tubing.
These were to be just approximate
lengths and trimmed to final size
after soldering. Not having a tube
cutter, I had trouble holding the
tubing on the bench pin while try-
ing to saw through it.

So here's what I did. I drilled a
hole in the side of the bench pin

just large enough for the tubing to
slide into and almost as deep as
the length of cut tubing I wanted.
Sawing became quick and easy.
With my free hand, I inserted the
tubing and held it from rotating
while sawing off each length.



SECRET INGREDIENT

Those of us who use paste sol-
ders sometimes find an old tube
has dried out. There should be
some way to recondition it, but
what to use? Calling tech support
at the suppliers didn't work for
me. Either they don't know what
the ingredient is or won't tell you
the secret.

None of us likes to waste an
expensive material, especially at

\$16-20 a tube, so I've often ex-
perimented with ways to rejuve-
nate it. Mixing in a liquid flux
doesn't work. When the liquid
starts to boil off, it spatters the
solder in all directions.

But after several failed ex-
periments I finally found a way
that does work. My secret ingre-
dient is Vaseline® petroleum jelly.
Mix in just enough to restore the
consistency to something that's
usable. If you use too much, the
lump of solder will flow over a
wide area as soon as the torch
starts heating it.



If your solder is in a syringe, it
can be a little difficult to get the
plunger out. I find the easiest way
is to poke a hole
through the solder *Continued, P. 9*

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Jewelry Bench Tips from the tip to the rubber plunger (a bur shaft was the right size for my tube). The hole allows air to enter between the solder and the plunger, allowing the plunger to be slowly withdrawn. Once the solder is out of tube, you can easily add the vaseline, mix it up, and spoon it back into the syringe.

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Get all 101 of Brad's bench tips in "Bench Tips for Jewelry Making" on [Amazon](#).

The Great Geobakeoff

MAGSters are generally interested in geology, and we definitely enjoy eating. So what could be better than combining the two?

That's just what the Geological Society of London did. They posed a challenge to their members, and the pictures below show some of the results. You can get more of the details from their blog, and see pictures of all the entries on <https://www.flickr.com/photos/geolsoc/sets/72157644551255832/>.



Cave Digger

David Day



I know this is a rather unusual place to suggest a movie, but the subject of this 2013 OSCAR® NOMINATED documentary

short "CAVE DIGGER" really struck a loud chord with me not only as a stone carving sculptor but also as a lover of rocks, geology, and archeology. I think any rockhound will find it well worth watching. The film is available to rent online for \$2.50 but it only cost \$2.99 to buy. So, go ahead and buy it, you will no doubt want to watch it more than once. It is the type of movie that almost never shows at local theaters and you will rarely if ever find on any broadcast schedule. Here is the link:

cavediggerdocumentary.com/



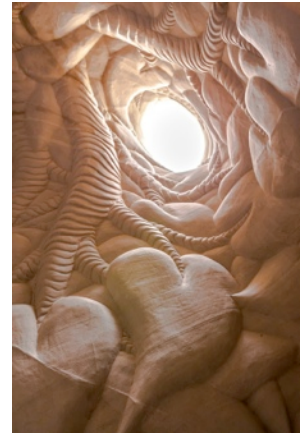
While the film is primarily about the artist Ra Paulette's personal and artistic struggles as his

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

Cave Digger patrons cut off projects over money or design differences, the struggle to create these magnificently stylized caves by himself using only a pick, shovel, and a wheelbarrow while often clinging to a ladder is to say the least incredibly phenomenal. The remote New Mexico desert sandstone formations where he creates these marvels make for a very scenic background as he tells his tale while laboriously and methodically transforming the ancient sandstone seabed into truly spiritual works of art/architecture. Most of us would find just getting to these locations on foot with the necessary tools a challenge but the amazing amount of material that has to be removed before the real artistry begins is staggering. It is incredible that he is doing this all by himself while in his mid sixties. His many, many years of moving stone will no doubt come to mind and perhaps inspire you one day as you struggle back to your car with a bucket or two of collected rocks after a hard day of digging. Realizing how much a single individual manages to accomplish should also change your perspective when considering the archaeological past as well. This is a most informative, inspiring, and thought-provoking documentary. I highly recommend it to any lover of rocks.



Member Show Tickets

We would like to close the books on the 2014 Memphis Mineral, Fossil, and Jewelry Show. But a few Members still have not paid for their Member Show Tickets. All those who have not paid have been notified by email. Please send your checks, made out to "MAGS Show," to Matthew Lybannon, Show Treasurer, 2019 Littlemore Drive, Memphis, TN 38016.

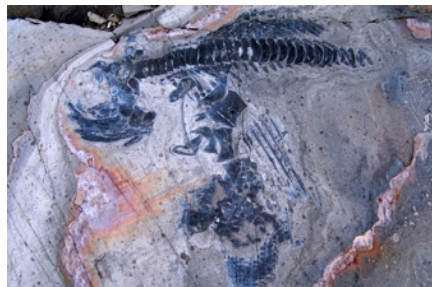
Fall Field Trips

Here is the preliminary schedule of September-December MAGS field trips. More information in future issues.

- ✓ September 27, Vulcan Quarry, Parsons, TN
- ✓ October 11, Memphis Stone & Gravel Co. Mine
- ✓ November 8, Vulcan Quarry, Black Rock, AR
- ✓ November 29, Richardson Landing
- ✓ December 13, Hedger Aggregate, Jonesboro AR

Fish Lizards

Live Science reported that dozens of nearly complete skeletons of prehistoric marine reptiles have been uncovered near a melting glacier in southern Chile. Scientists found 46 specimens from four different species of extinct ichthyosaurs. These creatures, whose Greek name means "fish lizards," were a group of large, fast-swimming marine reptiles that lived during the Mesozoic Era, about 245 million to 90 million years ago.



The newly discovered skeletons are from both embryos and adults. The creatures, likely killed during a series of catastrophic mudslides, were preserved in deep-sea sediments that were later exposed by the melting glacier, the

researchers said in the study, published May 22 in *Geological Society of America Bulletin*.

Ichthyosaurs had torpedo-shaped bodies with vertical flippers, and long snouts with teeth. "They look a lot like dolphins today," said Wolfgang Stinnesbeck, a paleontologist at the University of Heidelberg in Germany and the leader of the study.

Stinnesbeck and his team found the Early Cretaceous (150 million to 100 million years old) specimens near the Tyndall Glacier in the Torres del Paine National Park in Chile. As the glacier melted, the rock containing the fossils became exposed. Very few of the ancient reptiles have been found in South America before; only a few remnants of rib cages and vertebrae had been found.

The largest ichthyosaur skeleton unearthed in Chile measures more than 5 meters long. The skeletons were extremely well preserved—some even retained soft tissues. The re-

Continued, P. 11

Fish Lizards searchers also
Continued from P. 10 found fossil
embryos inside a female specimen. They assigned the fossils to the family Ophthalmosauridae.

These "fish lizards" probably hunted in an underwater canyon near the coastline, pursuing a diet of squidlike animals and fish, the researchers said. Occasionally, there would have been mudflows that cascaded into the water like an avalanche, and the researchers think these mudflows killed the ichthyosaurs. The animals likely became disoriented and drowned, getting sucked into the deep sea, where their bodies were entombed in the sediment, the researchers said.

The discovery of these creatures establishes the Chilean glacier as one of the prime sites for Early Cretaceous marine reptiles worldwide, the researchers said. But getting to the fossil site is half the battle. To reach it, the team had to drive for five hours, hike for 10 to 12 hours to camp and then hike another two hours, sometimes in heavy rain, hail or snow.

Ref.: Wolfgang Stinnesbeck, et al, *A Lower Cretaceous ichthyosaur graveyard in deep marine slope channel deposits at Torres del Paine National Park, south-*

ern Chile, Geological Society of America Bulletin, B30964.1, first published on May 22, 2014, doi:10.1130/B30964.1

Reminder: the August Board Meeting will be on July 31, and the August 8 Membership Meeting will be the Indoor Picnic and Rock Swap.

Desert Blocked Dinos

A huge desert likely prevented early dinosaurs from migrating out of South America for millions of years, suggests an analysis of ancient rocks. At that time, during the Triassic period, the world's continents were bound together in a supercontinent called Pangaea, home to the first dinosaurs. But as dinosaurs spread, they didn't become evenly distributed across this landmass, suggests a team led by Columbia University geophysicist Dennis Kent.

In a *Proceedings of the National Academy of Sciences* report Kent and colleagues note that there's an extraordinarily long time between when dinosaur fossils begin showing up in rocks in what is now South America, dated to 231 million years ago, and when they begin showing up in rocks in North America, dated to 218 million to 212 million years ago.



The Ischigualasto formation in Argentina's Ischigualasto Provincial Park contains the earliest documented dinosaurs.

"Dinosaurs seemed to have been corralled for a long time down there, even with no obvious mountains or seaways to stop them from dispersing north over the Americas," Kent says. Most likely, he says, there was "a vast, hyperarid Sahara-like desert across Pangea" that blocked the dinosaurs from heading north.

High levels of carbon dioxide, a greenhouse gas, had melted the Poles and led to global warming during the Triassic, the study notes. The resulting desert eventually shrank as the climate cooled heading into the Jurassic period, allowing dinosaurs to spread across the world.

Ref: Dennis V. Kent et al, doi: 10.1073/pnas.1402369111, doi: 10.1073/pnas.1402369111

Pictures From MAGS Black Rock Field Trip, May 31, 2014



Good Day At Black Rock



Spencer Tracy was nominated for a Best Actor Oscar for his role in the 1955 movie *Bad Day at Black Rock* (Tracy won the Best Actor award at the Cannes Film Festival, and the movie had two other Oscar nominations). It was a very bad day at the fictional desert town of Black Rock in the movie,

but May 31, 2014, was a good day for MAGS at the real town of Black Rock, Arkansas.

That was the date of the MAGS field trip to Vulcan Quarry in Black Rock, to collect pink dolomite and other goodies. The weather cooperated, and the pictures on P. 11 illustrate that the people who went had a great time.



Calendar

July 11, 2014

Board Meeting, Shady Grove Presbyterian Church, 6:30 P.M.

July 11, 2014

Membership Meeting, Shady Grove Presbyterian Church, 7:30 P.M.

July 12, 2014

MAGS Field Trip, Discovery Park of America, Union City, TN

July 26, 2014

DMC Field Trip, Bayou Pierre River, Copiah County, MS

July 31, 2014

August Board Meeting, St. Francis Hospital, 6:30 P.M.

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