

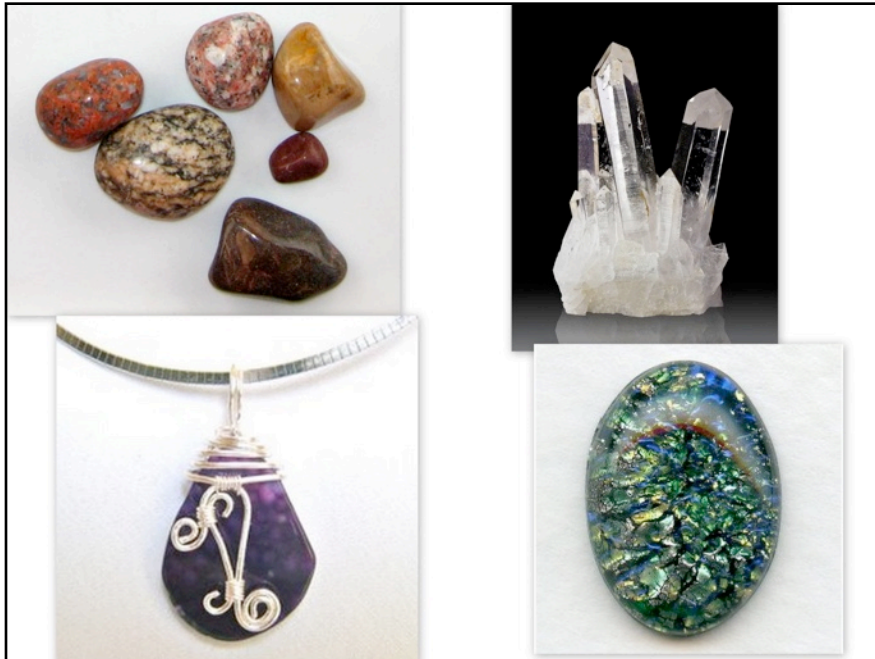
MAGS  Rockhound News

Volume 61 ♦ Number 06 ♦ June 2015 ♦ A monthly newsletter for and by the members of MAGS

Join MAGS In June

June Program

Carol Lybanon



Our June meeting will be a little different. We are planning to have several of our Members tell you what they do with their field trip finds.

- ★ Ron Brister will show us proper labeling for our collections.
- ★ David McAlister will help us learn about rock tumbling.
- ★ Does everyone know what a cabochon is? Bill Gilbert will talk about how to make a cab.
- ★ W. C. McDaniel will talk about cleaning minerals.

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MAY ROCK SWAP

Jim and Hisami McNeil hosted the first MAGS rock swap of 2015 on May 9, at their beautiful home in Olive Branch, Mississippi. A few rocks got swapped, but mostly it was just an occasion for MAGSters to get together in pleasant surroundings and enjoy a potluck lunch.

Even the weather cooperated. The rain



that threatened early disappeared.

If you missed this, be sure to join MAGS at our indoor picnic in August—it's the August meeting—and at our outdoor picnic at Shelby Farms in October.

You can see a few pictures from the rock swap on P. 9

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

Sun Safety

We weren't sure for a while, but hot weather is finally coming. That won't stop rockhounds from taking field trips, but that perfect specimen isn't worth your life or health. The AFMS has a good collection of safety articles

www.amfed.org/a_safetyAFMS1.htm ,

and the one on sun safety is a good one. It has information on heat cramps, heat exhaustion, heat stroke, and tips on first aid for those conditions. Check it out.

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

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.

June DMC Field Trip

WHERE: Patty Construction Quarry, Chattooga County, GA

WHEN: Saturday, June 6, 9:00 A. M.-3:00 P. M.

COLLECTING: Summerville Lace Agate

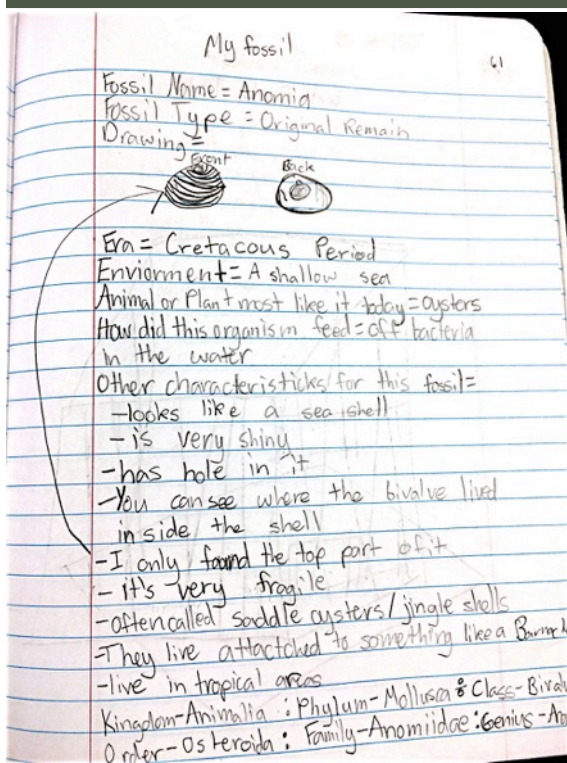
INFORMATION: Larry Landry, (251) 591-5282 or maryloulandry@aol.com

Links to Federation News

➔ AFMS: www.amfed.org/afms_news.htm

➔ SFMS: www.amfed.org/sfms/

➔ DMC: www.amfed.org/sfms/_dmc/dmc.htm



Ptero Goes to Hutchison

Donna Budynas

As a part of a unit in their earth science class, Hutchison sixth graders became paleontologists at work; digging through and excavating fossils from the Coon Creek Formation. In doing so, they discovered the amazing world of the Cretaceous period right in their own classroom.

Their teacher and Middle School Science Department Head, Donna Budynas, was a participant in *Something's Missing Here; Fossils and Taphonomy*, a professional development course for teachers presented by Dr. Michael Gibson, professor of geology at the University of Tennessee at Martin. Armed with knowledge and buckets of Coon Creek matrix filled with mystery fossils from her trip, Mrs. Budynas returned to school to create an experience her students would not soon forget.

Hutchison, an independent all girls school in Memphis for grades PK2-12, provides a challenging academic curriculum in a culture that encourages critical thinking and cultivates strong leaders. A study of paleontology correlates with the goals of Hutchison's STEM program and belief in the importance of relevant, hands-on, real-life learning.



After first studying fossils from all over the world, the Hutchison girls then focused their attention on fossils from the Coon Creek Formation in McNairy County, Tennessee. They learned that Coon Creek, which is now managed by the Memphis Pink Palace Museum, was once part of a shallow sea. Girls discovered through Internet research that these fossils are original remains of sea organisms who lived near their homes in Memphis. They were amazed at the fact that Memphis was once part of what we know today as the Gulf of Mexico.

For several days, girls dug through their blocks of matrix slowly uncovering a large variety of clam, oyster, and scaphopod shells. Girls could be heard chattering about what they found and imagining what kind of organism had once lived in the shells. Several girls discovered shells of the Tennessee State Fossil, *Pterotrigonia thoracica*, which helped them make great connections with studies they've recently conducted in their humanities class.



Once the fossils were cleaned, girls again turned to the Internet to research information about the ancient organisms they had uncovered. Many were surprised to find that the organisms, or a very near relative, still live in the ocean today. Girls used their science notebooks to record observations, create illustrations and log information about the fossils. Then girls cleaned and preserved their fossils using dental tools, paintbrushes, water, and a glue/water mixture.

Armed with their prized fossils, a deeper understanding of their region's history, and a new appreciation for paleontologists, girls headed home to share their new discoveries with families and friends.



Massive Increase In Oklahoma Earthquakes

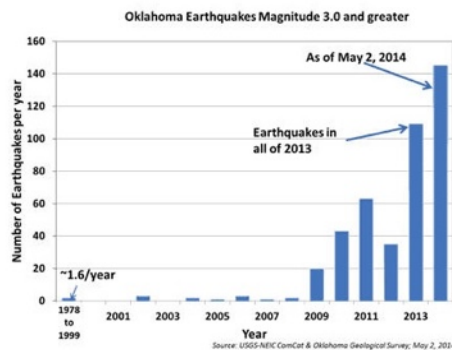
Just a coincidence?

During his talk at the May MAGS meeting, Gary Patterson of the University of Memphis Center for Earthquake Research and Information (CERI) referred to the recent tremendous increase in the frequency of significant earthquakes in Oklahoma (some also in Arkansas, which is dealing with the problem). This article explores some of the research into the cause.

Prior to 2008, Oklahoma averaged about two earthquakes per year with a magnitude of 3.0 or greater, according to the U. S. Geological Survey. In the first five months of 2014 there were 145. That huge increase in seismic activity comes at the same time as the boom in fracking in Oklahoma, which can generate a large amount of wastewater that is often disposed of deep underground.

Researchers at Cornell University, University of Colorado Boulder, and the U. S. Geological Survey analyzed Oklahoma earthquakes known as the Jones Swarm, which accounted for a fifth of all seismic activity in the region. They collected data from 89 injection wells, including four wells that receive about a million barrels of wastewater a month. The results are unique because the Jones Swarm is relatively far from the four high-rate injection wells.

The research was led by Dr. Katie Keranen at the Department of Earth and Atmospheric Sciences, Cornell University. Prior



to moving to Cornell, Dr. Keranen was at the University of Oklahoma. In the fall of 2011, students from her OU seismology course buried portable seismograph stations around the campus, to see if the instruments could detect the rumble of 82,000 fans at a football game between Oklahoma and Texas A&M. At 2:12 A. M. on November 5, people in 17 states felt a 4.8 magnitude earthquake, centered near Prague, Oklahoma, about an hour's drive from the OU campus in Norman.

The students packed up the seismographs and headed to Prague, hoping to measure the aftershocks. They joined Austin Holland, head seismologist of the Oklahoma Geological Survey. The instruments recorded another earthquake, this time a 5.6, followed two days later by a 4.7. Fortunately no one was killed, but at least 16 houses were destroyed and a spire on the historic Benedictine Hall at St. Gregory's University, in Shawnee, near Prague, collapsed.

In his May MAGS talk, Gary Patterson explained how the sudden injection of millions of pounds of water in certain areas could produce the conditions that can trigger an earthquake. He told

us that, in Arkansas, after stopping the use of just four injection wells, the earthquakes (in an area which is not historically earthquake-prone) also stopped.

Unconventional oil and gas production provides a rapidly growing energy source; however high production states in the United States, such as Oklahoma, face sharply rising numbers of earthquakes. Oklahoma earthquakes in areas of high-rate water disposal constitute nearly half of all central and eastern U. S. seismicity from 2008 to 2013.

Keranen's *Science* article points out that subsurface pressure data required to unequivocally link earthquakes to wastewater injection are rarely accessible, however seismicity and hydrogeological models show that fluid migration from high-rate disposal wells in Oklahoma is potentially responsible for the increased incidence of earthquakes. Also, work by Austin Holland, Todd Halihan of Oklahoma State University, and others draws similar conclusions about the link between waste water injection and earthquakes.

The Oklahoma Corporation Commission, in consultation with the Oklahoma Geological Survey, developed a set of "best practices" that request data from disposal wells within a 10-km radius of earthquakes of magnitude 4.0 or greater.

Ref: K. M. Keranen et al., *Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection, Science 25 July 2014: Vol. 345 no. 6195 pp. 448-451, DOI: 10.1126/science.1255802*

Join MAGS In June
Continued from P. 1

★ Mildred Schiff and DeeDee Goossens will demonstrate wire wrapping.

Everyone will get to take home a small prize.

In July Jimmy McNeil will be our presenter. He will talk about quartz mining and his mineral selling business. August will bring us to our Indoor Picnic.

June Field Trip

Charles Hill

On June the 20th we are going to Turkey Creek in northern Mississippi. This trip will be led by Bob and Bonnie Cooper. We will be looking for marcasite, pyrite, and fossils. Bonnie found a mosasaurus vertebra at Turkey Creek the last time the club went there, so be sure to follow her lead.

Clement Museum Show

The Clement Gem, Mineral, Fossil, and Jewelry Show with digs is coming up on June 6th and 7th in Marion, Kentucky, at Fohs Hall. The show has vendors, silent auctions, free children's activities, bake sale, Indian artifact display, museum tours, beading class at 2 P. M. Saturday, and digs. Admission to the show is free. There is a charge for the digs, museum tours, and the beading class. Hope you can come!!! If you should have additional questions, please call the Ben E. Clement Mineral Museum at (270) 965-4263.

Tina Walker
Director
Ben E. Clement Mineral Museum

(270) 965-4263
www.clementmineralmuseum.org

Jewelry Bench Tips by Brad Smith

SMALL PARTS CONTAINERS

I'm always on the lookout for small containers to use for holding all those little parts and tools we deal with in making jewelry, especially since I'm always traveling to classes and workshops.



My latest find is some plastic vials about 15 mm in diameter and 75 mm long. Best part is they are free. The vials are used in the doctor's office to draw blood samples. They cannot be used after their expiration date, and are thrown out. On my last doctor's visit, I asked the nurse if she had any expired vials. She replied "How many do you want?" and tried to give me 400 of them. (We settled on 200).

The ones I have are called "Vacutainers", but there are probably many other names. They are clear plastic with a rubber stopper and a paper label all ready to write on. I find them really handy for small parts like jump rings, prong settings, small drills, nuts & bolts, faceted stones, and precious metal filings.

TRY A TOOTHPICK

The round, stronger toothpicks have a multitude of uses on the jewelry bench. I use them for mixing epoxy resin, for applying paste solder, and with Zam for polishing in tight spots. Toothpicks are also handy for holding the stone while stone setting. Just break off the sharp tip, mold a little beeswax over it, and press it onto the table of your stone.

Get all 101 of Brad's bench tips in "Bench Tips for Jewelry Making" on Amazon.



Fabulous Tennessee Fossils

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

The Blastoid Echinoderm Pentremites

Kingdom Animalia
Phylum Echinodermata
Class Blastoidea
Order Spiraculata
Family Pentremitidae
Genus *Pentremites*
Species *robustus*

It is common for me to get calls or e-mails from collectors and people who want *Continued, P. 6*

Fabulous Tennessee Fossils help identifying their fossil

Continued from P. 5 finds or to let me know of interesting sites that they feel should be investigated. I relish these contacts as many of them come from you MAGsters as well. Many pan out to be legitimate and important geologic finds; others end up being mimetoliths or other “non-fossil” finds (e.g., modern deer bones mistaken for human, etc.). I also get many calls that are more on the “crackpot” side as well (e.g., miniature race of people, oily lawn seepages that can run a lawnmower for an entire year on 1 thimbleful, Bigfoot bones, ... yes, I really did get these). Some of those “finds” would make interesting articles for later columns! In August of 2002 I received a phone call from an amateur fossil collector who lived in Petersburg, Tennessee, and had become aware of my work through other collectors in Middle Tennessee. He wanted to show me his vast fossil collection, and more importantly, wanted me to see his collection of “fossil mutants”. Well, naturally my “caution radar” was immediately up, but I traveled to Petersburg anyway to see the collection, and what a wonderful collection it turned out to be.

The collector was Ernest B. Hammon (Figure 1) who became a dear friend as a result of that phone call and my first visit until his death in 2004. As it turned out, Ernest was more of a “professional amateur paleontologist”, well-known to other paleontologists. When I visited him I was struck by his devotion to teaching paleontology and his love of fos-



Figure 1. Ernest B. Hammon (1908-2004) displaying his 1999 Harrell L. Strimple Award from the Paleontological Society (photo by Michael Gibson, 2002)

sils. He and his wife, Onsbly, lived in a modest 1940s house in farm country. On that first visit, I got out of my car and stepped onto his gravel driveway immediately looking down at the gravel as any geologist would, and was awestruck to find that his entire gravel driveway was one long fossil bed of his own making—how eccentric! His flower and vegetable garden was ornamented with a trove of excellent fossils from many places, all of which would be fine additions to any teaching collection. As I learned that day, Ernest was the 1989 Harrell L. Strimple Award winner from the Paleontological Society (*Journal of Paleontology*, 1990, v. 64, no. 4, pp. 679-70), which is the highest recognition possible from the Society to amateurs. He also had received a Citation of Merit from the Governor of Tennessee for his education efforts. Ernest Hammon used his long years of collecting throughout the United States and his active participation in the Mid-America Paleontological Society (MAPS) to stock his home with fossils, rocks, and minerals. He turned his entire home and farm

into the Eon Museum, which was open daily for visitation at no charge. His farm shed contained lapidary equipment and a truckload of large fossils from all across the country. He “salted” his driveway and gardens with fossil crinoids, brachiopods, large corals, and much more so that students could “find” fossils to keep with every visit. The Eon Museum became a frequent stop during my yearly GeoCamps of the 1990’s, which were traveling field courses for K-12 teachers across Tennessee, and later the Tennessee Earth Science Teachers (TEST) awarded him “Ptero” Certificate of Appreciation for his contributions to local teachers and K-12 students.



Figure 2. *Pentremites robustus calyx (head)* from UT Martin teaching collection (photo by Michael Gibson; Each scale block 1 cm)

Now, about that mutant fossil itself. Ernest had called me not to just see his wonderful collection, but because he wanted UT Martin to be one of only two places to house his two favorite fossils: a mutant blastoid *Pentremites* and specimens of the

Continued, P. 7

Fabulous Tennessee Fossils crinoid
Continued from P. 6 *Caryocrin-*

ites onsbei,

named in honor of his deceased wife Onsby. *Pentremites* (Figure 2) belongs to an extinct order of stalked echinoderm called blastoids (Figure 3).

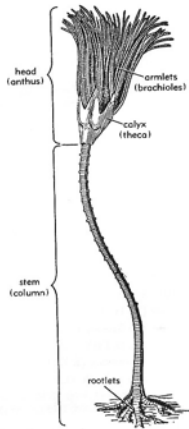


Figure 3. Typical Blastoid. (from Fay, Robert O. 1967. Introduction. in *Treatise on Invertebrate Paleontology: Echinodermata, 1. The University of Kansas and the Geological Society of America. Part S., Vol. 2: pp. 298-300*)

These are sometimes also referred to as “sea buds”. I have had others bring them to me thinking they were fossilized tree nuts. Echinoderms (“spiny skin”) are familiar to you as crinoids (sea lilies), starfish, sand dollars, and sea urchins of the modern oceans. A distinct feature of echinoderms is their pentamer- al (five-fold) symmetry, most no- table in starfish, but also visible are the five feeding and respiratory grooves, called ambulachra. The most recognized blastoid is the genus *Pentremites*, which is also a guide fossil to the Mississippian Period, hence the fossils are com- monly found weathering out of limestone beds of the Highland Rim areas of Tennessee. Mr. Hammon discovered a population



Figure 4. UT Martin specimen of mutant *Pentremites robustus* with only four ambulachral arms (photo by Michael Gibson)

of *P. robustus* displaying a mutation in which the animal had developed only four ambulachra rather than the standard five (Figure 4). This phenomenon is not new, but is rare and potentially significant in that multiple specimens exist at the locality in White County, Ten- nessee, all from a single bed. Ge- netic mutation studies are rare in Paleozoic invertebrates as DNA rarely survives fossilization, so Hammon’s finds have great poten- tial for a student research projects. Check your collections for these aberrant forms because perhaps yours may have scientific value as “genetic proxies” of the deep past.

June Birthdays

- 1 Michael Austen
- Gabe Dean
- 7 Diane Wade
- 12 Chris Thomas
- Angeline Heger
- 15 Gabe Wheeler
- 16 Ann Williams
- 17 Dean Pere
- 18 Debbie Schaeffer
- 19 William Kratz

- 20 Roger Lambert
- 22 Linda Ross
- Daniel McMillan
- 25 Danielle Schaeffer
- Lauren Schaeffer
- Doris Johnston
- 29 Zachary Loyd
- Cornelia McDaniel

April Board Minutes

Mike Baldwin

Called to order at 6:32 pm. In atten- dance: Charles Hill, Mike Baldwin, Bonnie Cooper, Bob Cooper, James Butchko, Kim Hill, and Paul Sides.

Secretary: March minutes were elec- tronically distributed earlier in the month. Hard copies were provided for review. Minutes approved.

Treasurer: Doris Johnston for- warded CD renewal information. Confirmation of one recent CD re- newal was provided along with infor- mation on another CD. After distri- bution of 2015 actual charges, check registry and current balance sheets, a short discussion followed. Report approved subject to audit.

Membership: Since the March membership meeting, six new mem- berships and three renewals have been received. The 2015 Membership Di- rectory was distributed electronically to all members with email on March 15. Hard copies were mailed to 16 members without email. Updates will be distributed in June, September, and December. An invoice for Institu- tional Membership has been sent to Chucalissa. W. C. contacted past due Members, asking for renewals.

Field Trips: The upcoming field trip on May 5 to Clear Creek is actually going to be to Canal Creek. Charles talked to Alan Parks about the possi- bility of Memphis Stone & Gravel sponsoring the October 2016 DMC field trip. W. C. reminded Charles that the DMC form should be submitted *Continued, P. 8*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

April Board Minutes by mid-September 2016. Charles informed the Board that he is going to Pickwick on Saturday, April 4, and he offered an open invitation to anyone who wanted to join him. He would like to set a club trip to Pickwick at some point. October field trip will be to Nonconah Creek behind Halle Stadium. Charles stated that a carpool sign-up sheet would become a regular part of MAGS field trips. W. C. stated that field trip attendees should let the leader know if they leave early.

Adult Programs: Programs are set through August. Kim needs display ideas. She has been basing them on themes. The Board offered several ideas: egg-shaped minerals, ugly rock contest, and meteorites on the night we have a meteorite program. A discussion on meteorites followed.

Junior Programs: April program will be Show related. In May Herb Nicholson will do the Junior program and in June Mike will present a program on Native American culture. The July program might be a social in the church front yard. Chris Scott has resigned as Youth Programs Assistant. We are looking for a candidate.

Library: No report.

Web: The April newsletter has been added to the website. Several pages have been updated and are ready to be uploaded to the server tonight.

Newsletter: No report. Deadline for May articles is April 15.

Historian: No report. The first club rock swap will be May 9 at Jimmy and Hisami McNeil's home. This will be a potluck, not a cookout. The McNeils will have new petrified wood for viewing at their house on May 9. Contact W. C. if you are interested in ordering Arizona wood to be delivered to you from Nebraska.

Show: The next Show Committee meeting will be Monday, April 6, 6:30,

at the Agricenter. Rent and insurance is due. Several scout troops have been asking about the geology programs. Grab bag filling will be Thursday before the show. Memphis Stone & Gravel has paid to sponsor the Show. We need to check with Marc on the status of TEWO website updates. Homepage needs revision. The April club meeting will be all about the Show with a new DVD (a world premiere produced by the Lybanons) and a Show chairmen's roundtable.

Old Business: The Shelby County Science Fair will be on Wednesday, April 8, at The Great Hall in Germantown. Mike Baldwin, Matthew Lybanon, and W. C. McDaniel will judge earth science projects. Nannett McDougal-Dykes will judge all science projects. Bonnie wrote checks to be presented to the earth science winners: \$100 for first place, \$50 for second place and \$25 for third place. Mike will design and print certificates to be presented to the winners. * Meeting adjourned at 7:23pm.

*Science Fair Update

The MAGS science fair judges met at The Great Hall at 8:00 am, Wednesday, April 8. At least eight projects were considered for the MAGS awards. The top three projects each received a certificate, four tickets to the MAGS show, and a monetary award. Results: \$100 first place to Khamari McElroy of Dunbar Elementary for "Did I Eat A Magnet?"; \$50 second place to Sahil Shaikh of Germantown Elementary for "Purifying Water with Natural Resources"; and \$25 third place to Laila Johnson of Balmoral-Ridgeway Elementary for "We Rocking".



April Meeting Minutes

Mike Baldwin

Called to order at 7:30 pm with 55 Members and 2 visitors in attendance.

Field Trips: Charles Hill gave the membership a recap of upcoming field trips and changes. The May 5 field trip will be Canal Creek rather than Clear Creek, as previously announced.

Displays: W. C. introduced the displays for April. They included displays on wire wrapping, Texas fossil field trip specimens, mineral eggs, Pickwick fossils, an ammonite bowl, fluorescent green aragonite, more fossils and casts from Texas, and Ron Coleman quartz crystals.

Program: Carol Lybanon introduced the world premiere of "MAGS Show History" complete with popcorn. Following the video, Carol introduced present and past show chairpersons who were present at tonight's meeting: Idajean Jordan, W. C. McDaniel, Alan Parks and James Butchko. W. C. has been show chair at both the Pipkin Building and the Agricenter. The move to the Agricenter was a challenging and exciting time, although it was an anxious time since we were moving from a tried and true location to a new location in a new neighborhood with new patrons. Alan talked about the 10-year struggle to decide whether to move the show to the Agricenter or not. Since he was the leading advocate for moving the show, Alan volunteered to chair the first show at the new location. He said he learned a lot about the business of developing a successful show. He first attended the show in 2003, liked what he saw and joined the club. He encouraged members to sign-up to work the show, to volunteer and enjoy it. W. C. mentioned that there are two additional shows going on at the Agricenter at the same time as ours: a Gun Show and the American Gem and Bead Show.

The meeting adjourned at 8:55 followed by refreshments and a work session to put TEWO stickers on bags to be given to Show patrons.

May Rock Swap Pictures



Earlier Than You Thought

Some recent research has provided new information about the early days of *Homo*, the genus whose latest version, *Homo sapiens*, includes us. The new results, from Europe and Africa, concern earlier branches of the evolutionary tree.

A paper in *PLoS ONE* (reference 1) describes investigations at Happisburgh, UK (a coastal village in the English county of Norfolk), that revealed the oldest known early human footprint surface outside Africa. Preserved for hundreds of millennia before being exposed by the tide in May 2013, the prints give a vivid glimpse of some of our most ancient ancestors. They were left by a group, estimated at five individuals, in-

cluding at least two children and one adult male. Scientists dated the footprints by studying their geological position and from nearby fossils of long-extinct animals including mammoth, ancient horse, and early vole. The footprints are estimated as being between 1 million and 0.78 million years old.

The site has long been recognized for the preservation of sediments containing Early Pleistocene fauna and flora, but since 2005 has also yielded humanly made flint artifacts, extending the record of human occupation of northern Europe by at least 350,000 years. The footprints are by far the oldest ever found in Britain, at least 100,000 years older than scientists' earlier estimate of the first human habitation

in that country. The sediments consist of sands, gravels, and laminated silts laid down by a large river within the upper reaches of its estuary.

In May 2013 extensive areas of the laminated sediments were exposed on the foreshore. A series of hollows was revealed in an area of approximately 12 m². The surface was recorded using multi-image photogrammetry which showed that the hollows are distinctly elongated and the majority fall within the range of juvenile to adult hominin foot sizes. In many cases the arch and front/back of the foot can be identified and in one case the impression of toes can be seen. Foot length to stature ratios suggest the individuals who made the footprints were between 0.93 and 1.73 *Continued, P. 10*

Earlier Than You Thought *Continued from P. 9*

m in height, suggestive of a group of mixed ages.

Early Pleistocene human fossils are extremely rare in Europe, with no evidence from the UK. The only known species in western Europe of a similar age is *Homo antecessor*, whose fossil remains have been found at Atapuerca, Spain. The data from Happisburgh fall within the range derived from the fossil evidence of *Homo antecessor*.

The footprints themselves, which survived for almost 1 million years, are no longer there. Two weeks after they were uncovered, North Sea tides had washed them away.

Two papers in *Science* (references 2 and 3) document what may be the oldest hominid fossil in existence. The new evidence suggests that the genus *Homo* may date back at least 400,000 years earlier than previously thought.

The fossil, LD 350-1, is the left side of a lower jaw with five teeth. It was found in the Ledi-Geraru research area, Afar Regional State, Ethiopia. Geological analyses constrain depositional and structural models of the Afar and date the LD 350-1 *Homo* mandible to 2.80-2.75 million years ago.

For decades scientists have searched through Africa for ancient human remains. Sedimentary basins in east Africa preserve a record of continental rifting and contain important fossil assemblages for interpreting hominin evolution. However, the record of hominin evolution between 3 and

2.5 million years ago has been poorly documented in surface outcrops. So this discovery provides valuable new evidence.

Archaeologists think *Homo habilis*, the first truly “human-like” primate, lived about 2.5 million years ago, and Lucy, the *Australopithecus afarensis* who is perhaps our most famous ancestor, lived about 3.2 million years ago. This specimen combines primitive traits seen in early *Australopithecus* with derived morphology observed in later *Homo*. In other words, LD 350-1 appears to be a new type of *Homo* that falls right between Lucy and *Homo habilis*.

References:

- 1) Ashton N, Lewis SG, De Groote I, Duffy SM, Bates M, et al. (2014) Hominin Footprints from Early Pleistocene Deposits at Happisburgh, UK. *PLoS ONE* 9(2): e88329. doi:10.1371/journal.pone.0088329
- 2) Villmoare, B. et al (2015) Early *Homo* at 2.8 Ma from Ledi-Geraru, Afar, Ethiopia. *Science* 20 March 2015: 1352-1355. Published online 4 March 2015
- 3) DiMaggio, E. N. et al (2015) Late Pliocene fossiliferous sedimentary record and the environmental context of early *Homo* from Afar, Ethiopia. *Science* 20 March 2015: 1355-1359. Published online 4 March 2015

2015 SFMS William Holland Workshops

Our first session of the SFMS annual workshops at William Holland School of Lapidary Arts is fast approaching. The classes are

conducted at a beautiful location in northeast Georgia. They provide a fun filled vacation which includes lodging, food, and instruction for less than the cost of a hotel! Our website sfmsworkshops.com provides schedules, class details, instructor information and registration forms.

In addition to the classes, we have many other activities associated with this workshop. These include an exciting auction, tailgating, and many other fun activities. Our much-anticipated auction is always a hit and offers an opportunity to pick up some nice items at a great price. If this sounds like a great week, it is! We invite you to join us and spread the word about this and the other SFMS workshops.

Our WH June 7-13 session is very close at hand and we have openings in most of our classes. If you are interested in a class or know someone who is, please call the William Holland registrar: Rosemary van Wandelen (386-860-5586 home or 386-479-1509 cell) immediately to reserve a class and a room. It is extremely important that you do not wait. The following is a list of the remaining classes that have openings. All others are full or have been cancelled.

- ✓ **Cabochons**, Instructor Pat Davis
- ✓ **Casting**, Instructor Bill Harr
- ✓ **Chain-Maille**, Instructor Kathy Morris
- ✓ **Channel Inlay**, Instructor Dave Wayment

Continued, P. 11

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

- William Holland Workshops* ✓ **Faceting**, Instructor Bill Roberts
Continued from P. 10
- ✓ **Opals**, Instructor Sara Lee Boyce
 - ✓ **Seed Beading**, Instructor Barbara Green
 - ✓ **Silver I**, Instructor Nancy English
 - ✓ **Wire for Beaders**, Instructor Leslie Wayment

For more details on all the available classes contact the Registrar or Director listed below. For applications visit the website at WWW.SFMSWORKSHOPS.COM. The website is being updated to reflect the recent changes.

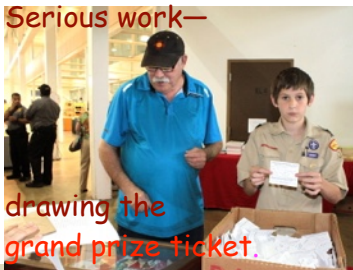
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Director
Cindy Reed
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cdreed@tampabay.rr.com

Thanks!!
Danny Griffin, Education Co-Chair



Another Great Show



MAGS At A Glance

June 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1	2	3	4 Board Meeting, 6:30 pm, St. Francis Hospital	5	6 DMC Field Trip, Chattooga County GA
7	8	9	10	11	12 Membership Meeting, 7:30 pm, "What to Do With Your Finds"	13
14	15 Newsletter deadline	16	17	18	19	20 MAGS Field Trip, Turkey Creek/ Archaeology Group, 10 am, Chucalissa
21	22	23	24	25	26	27
28	29	30	1	2	3	4

Memphis Archaeological and Geological Society
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