MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News

Volume 62 ◊ Number 09 ◊ September 2016 ◊ A monthly newsletter for and by the members of MAGS

Hernando DeSoto

Brian Hicks, DeSoto County Museum Director

The September MAGS program will be conducted by the DeSoto County Museum Director, Brian Hicks. Brian Hicks was raised in Hernando, Mississippi. He received an honors anthropology degree from the University of Memphis and a Masters in Archaeology from the University of Memphis. He has worked at the Memphis Pink Palace Museum and at Chucalissa Native American Museum. He was hired in 1998 as the director of the St. Francis County Museum in Forrest City, Arkansas, and later as the director of the Tunica County Museum. In July 2001, Brian returned to DeSoto County to serve as Director of

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In this issue

UPCOMING FIELD TRIPS AND PROGRAMS

Our September 10 field trip will be to a quarry in Batesville, Arkansas, that is a new site for MAGS. Bill Prior of the Arkansas Geological Survey will lead the trip. More details will be available at the September 9 meeting. On October 15 MAGS will host the DMC field trip, to a Memphis Stone & Gravel site, led by Alan Parks. Our November field trip is still in the planning stage, but it will go to the Livingston/Dale Hollow Lake area.

In October, Ashley Allen will give a program on the Union Chapel Mine site. Bill Prior will present our November program. Our December Holiday Party will close out the year.

2015-2016 MAGS BOARD

MAGS AND FEDERATION NOTES

President's Message

The August indoor rock swap and picnic was a big success with good attendance, lots of good food, abundant swappers, sellers and buyers which made for a nice evening. In August MAGS was invited to participate in the Ronald McDonald House of Memphis's 25th anniversary celebration. *Continued, P. 9*

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

MAGS Show Website: 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.

September DMC Field Trip

WHERE: Clarksville, GA (fee site, $10 per person)

WHEN: Saturday, September 10, 10:00 A. M.

COLLECTING: Kyanite blades and cobbles, small mica books, and graphite specimens.

INFORMATION: Kim Cochran, (770) 979-8331, or Charles Carter, fieldtrips@gamineral.org

Links to Federation News

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

Hernando DeSoto Continued from P. 1 the new DeSoto County Museum. He has brought to this position experience in museum and collections management, exhibit development, tourism development, and historic structure renovation. Brian is a graduate of the Jekyll Island Museum Management Institute and the Mid-south Delta Leaders Program. He has served as the President of the Mississippi Museums Association and serves as the state representative on the governing board of the Southeastern Museum Association. In 2011, he was awarded the Southeastern Museums Association Museum Leadership award, and in 2013, he was chosen to serve on the State of Mississippi's Bicentennial Commission. Brian is married to Margaret Hicks, a DeSoto County school teacher, and they have four children, Emily, Jack, Will, and Geneva.

The subject of this month's program will be Hernando DeSoto and the Mississippian Culture that he came upon in 1541, as he traveled with 650 conquistadors through the Mid-South.

September Birthdays

1 Tandi Heger
Debbie Greusel

2 Eric Marbury

5 John Smrt
Emily Fox-Hill
Richard Hill

7 Elana Von Boeckman

8 Graham Marcantel
Peggy Barbee

10 Clara Mueller
Alshia Parks

11 Belinda Loyd

13 Larry Dunn

14 Linda Goossens

16 Cormac Stockwell
Michael Montgomery

18 Logan Parish

19 Karen Schaeffer

20 Bentley Siems

21 Tayvon Williams

22 Grace Day
Dominik Suarez

23 Park Noyes
Mildred Schiff

26 Ulisis Gonzalez
Lucia Clarke

28 Bonnie Cooper

30 Caroline Cox
Vicki Sanders

Accidental Museum of Paleontology

Fossils in Washington, D. C.? Sure, just go to the Smithsonian.

But a fun article in the *Washington Post* tells about one man who finds them all over town, not just in the Smithsonian Institution's National Museum of Natural History. How can this be—how can you dig for fossils in a big city? And who is this productive scientist?

Christopher Barr is an amateur: a lawyer, not a paleontologist. He walks to and from work (anybody who has dealt with Washington's traffic will think he has the right idea), even though it amounts to around 12 miles a day.

And he finds fossils. The article mentions several: burrows of unidentified Cambrian-period marine animals, a nautiloid (Ordovician), brachiopods (Devonian), crinoids (Jurassic), and marks made by algae in a Utah lake between 58 million and 65 million years ago.

Utah? Weren't we talking about Washington, D. C.? If you caught that, good for you. Barr doesn't find the fossils by digging; most of D. C.'s fossil-bearing stones eroded away millions of years ago. But he finds the preserved remains of long-dead animals from every geological period, and from all over the world, in the stone-clad walls of the city's many grand buildings.

The fossils mentioned above were found in the walls of the Lincoln Memorial, the National Gallery of Art, and places like that. If you look carefully (as Barr does), you can find fossils embedded in some of the building stones.

Since 2002, Barr has dedicated hundreds of hours to tracking down noteworthy fossils. Once he's found an interesting impression, he tracks down the origin of the stone around it, and consults with scientists about the animal it represents. He then posts his findings on his website, dcfossils.org.

Is this just limited to Washington? Dr. Michael Gibson commented, "I have similar tours for Nashville and even Martin... building stones are one of the best ways to teach geology." We amateurs just have to look around.

You can read that article (which includes pictures) on www.washingtonpost.com/express/wp/2016/08/18/heres-how-to-find-d-c-s-accidental-museum-of-paleontology/.

Fabulous Tennessee Fossils

Dr. Michael A. Gibson,

University of Tennessee at Martin

Biostratigraphy Part 4

Over the past couple of essays, we originated a new species, allowed it to expand its geographic and stratigraphic range and establish its acme (with the occasional restriction followed by expansion), but alas, it is time to place our species into decline and kill it off! The ultimate fate of all species is extinction...the termination of the entire genetic line. The conservative estimate for life on Earth is that over 99.9% of all of life that has ever been on Earth is now extinct. Yes, I wrote conservative, because we can only base our statistics on what was preserved and we know that not all species left behind fossils. The diversity of life on Earth today (~8.7 million species) makes up less than 1% of all of the life we have documented through time. Referring back to our diagram in Figure 1, notice that the top part of the diagram constricts down to a narrow region that gets ever smaller until it finally ends at a point. The nearly flat topped constriction of the bubble (A) represents the rapid decline in geographic range of the species over a large are in a relatively short time. Such events can be due to environmental changes of a regional or global nature (e. g., climate change, etc.) or a nearly instantaneous catastrophic event such as an asteroid impact. For most localities this top flat surface (A) of the bubble is the last occurrence of a species at that locality, so it looks like the species goes extinct. But notice region B where the species still persists through time near stratigraphic column C. So the flat surface of A is not the true point of extinction, but an apparent loss over most of the range, with a local population of survivors. Paleontologists refer to that pattern of extinction as a local or regional extinction. The point (Z) of region B is the position in time and space where and when the last individual of a species dies out, and the species is truly gone forever. Point (Z) is thus referred to as a terminal extinction and its position stratigraphically marks

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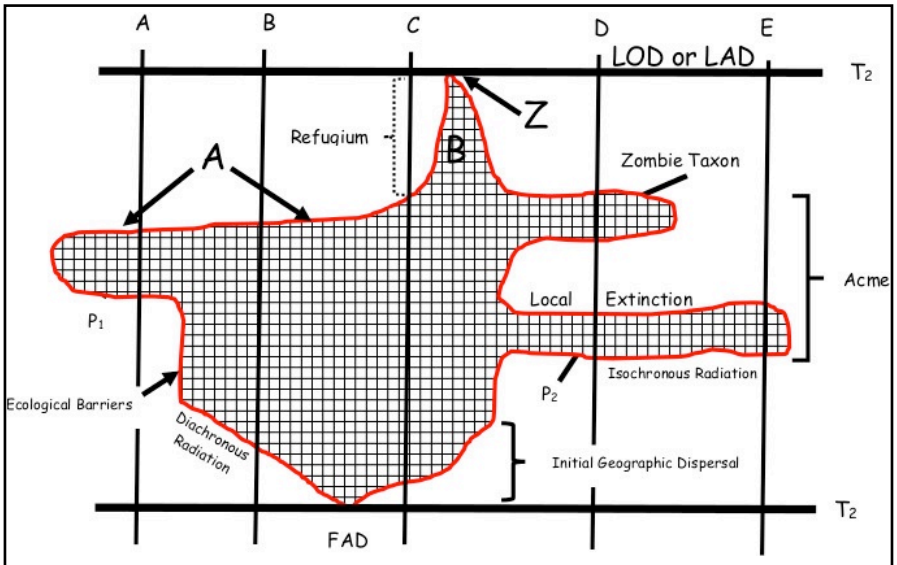


Figure 1. Diagram depicting the distribution of a new species in time (vertically) and geography (width). A-E—Geographic locations of measured sections. FAD—First Appearance Datum, T1—Timeline FAD. The time frame of the widest geographic range is referred to as the "acme" of a species and represents 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". P1 and P2 represent local stratigraphic ranges that are within, but not as long as the total stratigraphic time range of the species. A is the upper surface of the bubble represents extinction at the locality. The flat nature of this surface indicated extinction occurred within a short time interval. B is the refugium of the species where a breeding population persisted after the main extinction event. Z is the terminal extinction point in space and time where the last member of the species died, thus terminating the genetic code of that species. Refer to text for detailed explanation (diagram by Michael Gibson)

Fabulous Tennessee Fossils Continued from P. 4

the real last occurrence datum (LOD), sometimes also written as the last appearance datum (LAD), of the species and is coincident with the upper boundary in time for the stratigraphic range of a species. The time between the FOD and LOD is the "stratigraphic range" of an organism in time. As you might expect, region B is represented by some lucky survivors of whatever process is causing the extinction and this place is similar to a wildlife refuge or refugium, much like we put animals in zoos or preserves as they approach extinction. Region B is therefore called a refugium (I only show one on my diagram, but there can be more than one region at first, which then independently disappear, until only one refugium exists, and then that one eventually ends as well as a terminal extinction).

The refugium region would preserve fossils of a species that are actually younger than most of the fossils found in other areas. This apparent younger age is referred to as the Signor-Lipps Effect, named after the two California paleontologists who documented its occurrence in the fossil record. One example of this would be the extinction of the pygmy mammoth. In nearly all areas globally pygmy mammoths went extinct roughly 11,000 years ago when Earth's climate shifted to its current warm phase and humans became efficient hunters of mammoths. However, there is an island in the Aleutians where many pygmy mammoth fossils have been discovered in sediments as recent as 6,000 years old. This island area appears to have been a safe-haven (refugium) for the species for an extra 5,000 years or so. The best biostratigraphic fossils are those that do not show much refugium development, so that the terminal last occurrence datum (LOD) closely coincides with the actual extinction event globally.

So there we have it....the entire life history of a species from evolutionary origination (FAD) through its expansion and existence in the biosphere, followed by the final termination of the gene code at terminal extinction (LOD). Species that are living today, so are only partway through the diagram's stages, are referred to as being extant. Most species persist anywhere from 1-6 million years before eventually going extinct. Once the last individual of a species dies, it is considered extinct. Prior to the 1980s, paleontologists only recognized one type of extinction, but the disappearance of the dinosaurs, and other organisms, led to considerable research into the mechanisms and patterns of life's terminations. We now recognizes several types of extinction. Background extinction is the normal attrition of species due to interaction of that species with normal environmental conditions (it can be viewed as opposite of speciation at individual taxon level). This is kind of like aging for organisms in a population. Births and deaths at each end of the existence roughly balance and are confined to individuals; individuals die, but species go extinct. Local or regional extinctions are the permanent loss of species within a defined geographic area (i. e., continent, island, region); but the species may survive elsewhere. Terminal extinctions are when all members of species die out everywhere, thus ending genetic codes of that species permanently. This is the status of the 99% of all life on Earth (e.g., dinosaurs, Neanderthals, trilobites, passenger pigeon, etc.) that are now only represented by fossils. Mass extinctions are the large-scale extinction of many species of organisms within a geologically short time (few thousand years at most). There have been six global mass extinction events in Earth's history, which we will explore in later essays, but the surprise is that we are in the 6th extinction event right now! Yes! At the current rate at which we are losing species, this event, now called the "6th Extinction, will become the largest mass extinction event in the history of Earth. Something to think about!

July Board Minutes

Mike Baldwin

Called to order 6:30. Present: W. C. McDaniel, Jane Brandon, Eric Mueller, Michael Montgomery, James Butchko, Matthew Lybanon, Charles Hill, Kim Hill, Mike Baldwin.

Secretary: Minutes approved with minor corrections.

Treasurer, Membership: No reports.

Field Trips: Our trip to the Jonesboro gravel mine will be on July 9. Suggestion: move the start time to 8:00. We discussed the possibility of allowing another club to join us for the Parsons trip. W. C. reminded Charles that we need to send out DMC trip information in September for the October trip to one of Memphis

Continued, P. 7

MAGS August Indoor Picnic and Rock Swap

Socializing

Rock Swapping

Buying and Selling

Bingo

Sharing Information

Food

July Board Minutes Continued from P. 5 Stone and Gravel's mines in Mississippi. Kim reported that 20 Mile Creek was a good trip.

Adult Programs: Programs set for the remainder of 2016. July, Dr. Roy Van Arsdale. August, indoor picnic/ rock swap.

Junior Programs: July, space rocks. September-November programs not set yet. We are getting a lot of new kids, many of them under 5 years old. Do we need to address age constraints? Leah has volunteered to help with the younger ones. Maybe a parent could stay with the ones under 5.

Rock Swaps: Leah has info for the newsletter about the program and procedures for the August rock swap.

Web: No updates yet.

Newsletter: The July newsletter will be out tomorrow. Next month's deadline will be early because the Lybanons will be out of town.

Show: We've received the $1000 refund from the Agricenter. The Show balance is currently over $16,000.00. $9500 will be kept in the Show account; remainder will be transferred to the club. 4 members have outstanding Show tickets.

New Business:

- FedEx recently enlisted W. C.'s help to identify the contents of a broken pyrite package.
- Mike distributed the rules for the MAGS Logo Contest. Discussion on the way the contest will be conducted.

Old Business:

- Brief discussion of club liability issues and how they affect Members at meetings, events, and field trips.
- Tumbled Stones: Village Originals is currently having a sale on Brazilian large to extra large agates.: $1.15/lb., shipped in 55 lb. cases. W. C. has placed an order 6 cases—2 for himself, 1 for Mike, 4 for the club.
- Discussion about Big Scoop [we aren't doing that event any longer] and other potential events.
- W. C. asked Mike to design and print signs to be used on the door on meeting nights. Mike will design them after the new logo is chosen.
- W. C. would like to have a Powerpoint of program schedule and upcoming events before each Membership Meeting program begins.
- Charles asked for contact information for the property owner in Nameless. We can decide about going to collect geodes after Charles calls him.
- The new PA system didn't work at the last meeting but it worked fine when the Lybanons got home and changed the batteries. We need to have extra batteries at each event and also ensure the batteries are taken out after each event.

Adjourned 7:10.

July Meeting Minutes

Mike Baldwin

Called to order at 7:12. 2 visitors. Mike Baldwin announced the MAGS Logo contest and presented its rules to the membership. Reports: Field Trips, Adult Programs. Announcements: The club just purchased 220 lb. of tumbled stones (Brazilian agates) for Show grab bags and other events. These stones are agates from Brazil. We have a large variety of agates collected by MAGS members on display tonight. Some Member Show tickets still have not been cashed in; $3/ticket due.

Juniors were dismissed to their Space Rocks program. Dr. Roy Van Arsdale gave the adult program, "Geologic History of the Mississippi River."

Adjourned 8:50.

New Members

Chris Carpenter

Hope and Pete Johnson

Anne Pinkerton

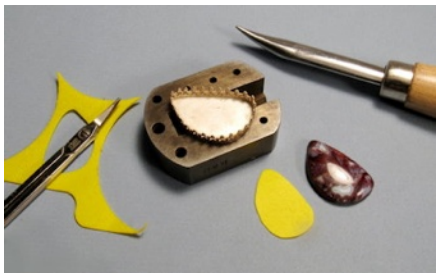
Jewelry Bench Tips by *Brad Smith*

RAISING A CABOCHON

When a cabochon sits too low in a bezel, the bezel hides a lot of the stone. The solution is to either sand down the bezel height or boost up the stone. If you're going to raise it up, question is what is the best material to use ?

I was taught to use fine sawdust but now think that might be a problem when used in rings. I reason that rings will frequently get wet, which would cause the sawdust to swell in size and push the stone against the bezel. Then when the sawdust dries out, the stone would be a little loose.

In any case, I now prefer pieces of plastic sheet to boost up my stones. Pieces are readily available from product packaging or from old credit cards. I just cut a piece to loosely fit the bezel and drop in the stone (with some dental floss) to check its height.



TRANSPARENT CAB

When bezel setting a transparent cabochon in silver, I usually cut out the back of the bezel to allow background light to show off the colors and patterns in the stone. If this is not possible or appropriate, I worry that the silver bezel will tarnish under the stone and will ruin its

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North Carolina Field Trip

Jim Butchko

Driving over eight hours each way for a weekend rock hunt can be very exhausting. There has to be some reward to motivate you to work that many hours. Some rockhounds from MAGS and the Georgia Mineral Society traveled to Marion, North Carolina, to search for gold, garnets, and other treasures. I didn't find any gold as the water was rushing hard in the Little Broad River and I didn't have the right panning tools, but I still enjoyed the water and the gems I did find on Saturday. Sunday morning we went to the Bridal Veil Falls site first and found the garnets to be easy picking. It was a beautiful drive through the mountains and my grandson and I decided we would hit the road while it was still daylight. We drove up through the Smoky Mountains through Gatlinburg, enjoying the journey as much as the destinations. Thanks to Charles Hill for arranging such a wonderful weekend.

Charles Hill

Hello, MAGSters. We just returned from the wilds of North Carolina, where I believe that most everyone who went had fun. The trip to Marion, our first site, was almost 500 miles. That is a long drive for anyone, but a stop at my son's home in Knoxville made it easier for Emily and me. Afterwards, we proceeded to our hotel in Marion.

Saturday morning we met in the parking lot of our hotel at 8:30 A. M., Eastern time–an early start designed to try to beat the rain. I saw some familiar faces, but most were new. Five new families joined MAGS that morning. We also had a new family sign up on Sunday. Our host for Saturday arrived a little late, but bright eyed and ready to go. We made our introductions and drove about 11 miles to the site. The land was overgrown and not well traveled, but we did find the river. After the sweltering heat we have had in Memphis, the cooler North Carolina temperatures were welcome. Honestly, we didn't find a lot of gold or garnets, but we all learned a few things. Some of us learned how to pan for gold, and some learned the importance of finding black sand when prospecting. Also, most now know where in a river to look for gold and how to tell the difference between mica and gold in a pan.

After the gold hunt, we made a couple of stops. First we went to the Lucky Strike Campground to return some borrowed mining equipment. The Lucky Strike is a great place to visit. The Second Broad River runs through it, and you can pan for gold there. The next place we stopped was Thermal City, a gold outfitters store. They will help you learn how to pan for gold in the river, and you get to keep what you find there. Sherry Bright went up a day early, visited Thermal City, bought her gold pan there, and found some gold. From there we went to our hotel in Franklin, North Carolina.

The Sunday trip began at Bridal Veil Falls looking for garnets, and garnets we found! The falls flow down over a ledge of biotite-muscovite schist containing garnets, which wash out onto the rocks below. One group of brave climbers set out to find the source of the falls, but the trail had been obscured by overgrowth. However, they did locate a tributary stream that contained garnets. After finding garnets and garnet schist, some of the group started the long trek back to Memphis. The rest of us went on to Chunky Gal Mountain, which has always been a favorite of mine and of many others. Basically, this mountain is corundum central. What I go for is the rubies and sapphires in matrix. The

Continued, P. 9

NC Trip–Charles Hill
Continued from P. 8

matrix is zoisite or smaragdite, "pretty rocks," even without the corundum. I saw a lot of specimens of the matrix with corunduminium found by different people, and boy, am I jealous!

Next we went to Buck Creek, which flows at the base of Chunky Gal Mountain. The camping area is one of the better spots to hunt, but I don't like to go there when people are camping. Charles Carter, who helped me tremendously on this trip, went down to the camping area and found it occupied. In Buck Creek we sifted the gravel looking for garnets and sapphires. In most cases when working a waterway, you dig behind an obstacle to find the heavies; and the deeper you go, the better your prospects are. Well, we tried that, but we had little luck. Garnet chips were found–lots of them. Some of the chips were bigger than others, but I wouldn't say we found any big ones. They were gorgeous, cherry red in color, but just not large enough. I tried to get us to a better spot, but it was so overgrown and we were all so tired that I called an end to our adventure. We all had fun, we all learned something, and we went home with some new treasures. Thanks to all who came. You guys were great; I so enjoyed your company! For those of you who could not come, I hope you will make it the next time. How about 2018?

Bridal Veil Falls

More pics from North Carolina

Photo Credits:
Jim Butchko
Charles Hill

Jewelry Bench Tips
Continued from P. 7

brilliance. What to do?

My solution is one extra step before setting the stone. I place a piece of thin silver Mylar plastic under the stone to act as a mirror that will never tarnish. Mylar is readily available in craft and gift wrap stores, or in a pinch from a party balloon supplier. You may even want to experiment with using colored or patterned Mylar (i. e. diffraction pattern) under some stones.

See all Brad's jewelry books at Amazon.com/author/BradfordSmith.

President's Message
Continued from P. 2

We set up a table with our Rocks Around the Clock activity. We gave away about 33 pounds of rocks plus other stones and decorative items. Thanks to James Butchko, Leah Gloyd, Sonya Williams, and Cornelia McDaniel for making the day a success.

Continued,P. 10

President's Message *Continued from P. 9*

Over the past several months MAGS has added several new members and I like to remind all members of some basic MAGS field trip rules. You should also be aware of and follow Dixie Mineral Council (DMC) and American Federation of Mineral Society (AFMS) rules and Code of Conduct.

1. Field trips are open only to current MAGS Members. Exception: if MAGS participates in any field trip sharing program with other clubs those members may participate if it is a shared trip.
2. All Juniors must be accompanied by a MAGS adult Member on all field trips.
3. A field trip bulletin will be published by MAGS providing all required trip information. Bulletins will be distributed via email or at Membership Meetings. They will not be posted on web or newsletter.
4. Each Member will be responsible for obtaining, reading, and following all information and guidelines provided in the field trip bulletin.
5. MAGS Members will not contact private landowners to obtain permission to collect on sites where the owner has granted the club permission to collect. If a Member is unsure of the location they will seek a decision by the Board of Directors.
6. MAGS Members will not visit (prior to) a collecting site once it is scheduled and published as a club field trip. Exceptions are to public and/or fee places or locations with multiple collecting sites. If a Member is unsure of the location they will seek a decision by the Board of Directors.
7. Do not go to a site ahead of the group on the day of the field trip. Meet and convoy with the rest of the group so that everyone will have equal access to the site.

W. C. McDaniel

FOSSIL Project Webinar Series

In partnership with the Paleontological Society and with technical support from iDigBio, the FOSSIL (Fostering Opportunities for Synergistic STEM with Informal Learners) Project will host a four-part webinar series throughout Fall 2016. All are welcome to attend these free webinars. Just connect at idigbio.adobeconnect.com/fossil-webinars/. Connect time will begin at 6:45 pm ET, allowing for 15 minutes to address any technical problems. If you are unfamiliar with AdobeConnect online conferencing software, don't worry! All you need is an internet connection and the webinar link above. There is no sign-up or installation. (Unless you wish to use a mobile device—then you will have to download the AdobeConnect app for either Android or iPhone/iPad.) And here is a helpful "quick start guide" for connecting!

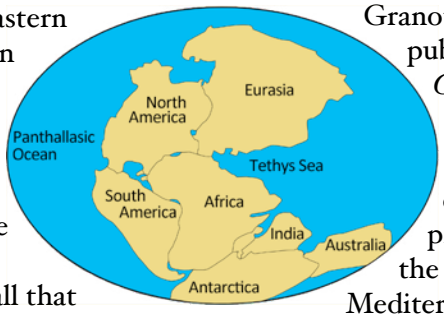
The schedule follows. The first webinar will be broadcast before the publication date for this newsletter, but the information arrived too late to be published in the August issue.

Earth's Oldest Oceanic Crust

Earth's crust is a constantly recycling and evolving. As plates slip beneath others into the mantle of hot rock below, new crust is formed at oceanic ridges. But this means that most oceanic crust today is less than 200 million years old. However, a researcher in Israel analyzed patterns of Earth's magnetic field locked in submerged rocks and, working backwards, calculated a patch to have formed when the supercontinent Pangaea broke apart during the Palaeozoic era.

Roi Granot, a member of the Department of Geological and Environmental Sciences at the Ben-Gurion University of the Negev, Beersheba, analyzed sediment from a site in the Herodotus Basin. *Continued, P. 11*

Earth's Oldest Oceanic Crust Continued from P. 10 The basin is where the northeastern edge of the African plate sits under the eastern Mediterranean Sea; the crust is buried under more than 10 km of silt. Digging through all that sediment would be an expensive, time-consuming exercise. So Granot took advantage of the Earth's changing magnetic field.



As hot rock pours from volcanic rifts, it cools. While the rock is still soft, magnetic compounds align with the planet's magnetic field at the time, then set in place. Over millions of years, Earth's magnetic field has wandered around. This creates magnetic strips in the crust. Between 2012 and 2014, Granot collected data from a magnetometer, a sensor that measured these magnetic stripes, which was towed behind a boat.

He covered 7,000 km and created a map of the eastern Mediterranean Sea floor. He saw 250-km-long striations in the Herodotus Basin consistent with volcanic oceanic ridges. And by tracing the skewed patterns in the stripes, he calculated the seafloor to have formed roughly 340 million years ago (plus or minus 25 million years).

If the basin is a remnant of the Tethys Sea (which formed when the Pangaea supercontinent tore apart), this means the ocean formed around 100 million years earlier than previously thought. And chunks of the ancient crust lie under the Mediterranean Sea.

Granot's work was published in *Nature Geoscience*.

Ref: Roi Granot, Palaeozoic oceanic crust preserved beneath the eastern Mediterranean, Nature Geoscience (2016) doi:10.1038/ngeo2784, nature.com/articles/doi:10.1038/ngeo2784.

MAGS to Host October 2016 DMC Field Trip

"The Dixie Mineral Council is an official program of the SFMS. We are an association of field trip leaders within the Southeastern Federation of Mineralogical Societies who have agreed to join together and share one of our mineral or fossil field trips."

That quotation comes from a page on the MAGS website, www.memphisgeology.org/dmc.htm. Each member club of the DMC hosts periodic field trips, and our turn will come up in October 2016. People from clubs all over the southeast will join MAGS on a field trip to a Memphis Stone & Gravel Co. quarry. Alan Parks will be the leader. Door prizes and other surprises are in the works.

Let's be good hosts, and let's have a good turnout for what should be an outstanding field trip. The pickings are always good at MS&G sites. We can't do anything about the weather, but we can do our best to make this field trip enjoyable for all.

The Ice Man's Clothes

Eugene O'Neill's award-winning play, "The Iceman Cometh," premiered on Broadway in 1946. This iceman lived earlier.

In 1991 two hikers found a body in ice melt in the Ötzal region of the Alps, at the border of Austria and Italy. It was identified as that of a man killed about 5,300 years ago, whose body was preserved in a glacier. The man, who became known as Ötzi, had a wound from an arrow to the shoulder, and had suffered a blow to the head and a cut—perhaps a defensive wound—to one hand.

The Ice Man became an object of study. Among other things, his clothes were a great mystery. Clearly made of some kind of leather, they appear to be a patchwork of different hides stitched together at different times, suggesting regular patching and repatching. But what species of animals gave up their hides to clothe Ötzi?

Just as if it was an episode of *CSI*, researchers harvested mitochondrial DNA from Ötzi's coat, leggings, hat, shoelaces, quiver and loincloth. They found his shoelaces came from cattle and the quiver was roe deer. The hat came from a brown bear. The genomes of the various animals are consistent with present day animals across most of Europe.

Ref:: Niall J. O'Sullivan et al, A whole mitochondria analysis of the Tyrolean Iceman's leather provides insights into the animal sources of Copper Age clothing, Scientific Reports 6:31279 DOI: 10.1038/srep31279.

MAGS At A Glance

September 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	31	1 Board Meeting, 6:30 pm, St. Francis Hospital	2	3
4	5	6	7	8	9 Membership Meeting, 7:00 pm, "Hernando DeSoto"	10 MAGS Field Trip, Batesville, AR/ DMC Field Trip, Clarksville, GA
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1 Oct. 15: MAGS hosts DMC Field Trip

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