



Volume 57 ♦ Number 07 ♦ July 2011 ♦ A monthly newsletter for and by the members of MAGS

Proposal: Special Field Trip

Charles Hill



Hello, my fellow rockhounds. I have an idea that I hope most of you like. What I want to do is have a once-a-year field trip. This field trip will last a week, and it will be to places that we can't cover in a weekend. The dates for this first trip will be June 16

through June 24, 2012. The location will be North Carolina. Between now and then, I will be highlighting places we will visit and possible exhibits we can see. I will be asking for feedback from all who plan to go. I also need an early *Continued, P. 3*

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"THIS IS A SHOW I WOULD

W. C. McDaniel

"China—Gleaming with mouth-watering perfection, a 'banquet' of stones resembling food adorns a table at the sixth International Rare Stone Festival in Liuzhou. About 3,000 specimens were on show."



LIKE TO ATTEND"

National Geographic, May, 2011

July Field Trip

Watch for an announcement about an upcoming field trip to Turkey Creek, to collect pyrite.

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

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GREETINGS FROM THE PREZ

As Daddy-O Dewey Phillips would say, it is too hot to smooch, and he would be right this summer. I say it is too hot to collect. So be safe whatever you do.

We're going to have a good time at the August 12 indoor rock swap. Members, bring some delicious food to share. So we can have a balanced picnic, please bring an item in one of three areas:

Entrees	Last Names A-J
Side Dishes	Last Names K-S
Desserts	Last Names T-Z

That is all I have to say.

The Prez



Fellow MAGSters,

If you received a black & white copy of the MAGS Rockhound News in the mail, I don't have your email address. If you have email but I just don't know the address, please send it to me. Benefits:

- ➔ You will get the newsletter sooner.
- ➔ You will get the newsletter in color.
- ➔ You will save the club a significant expense.

All you have to do is send your email address to lybanon@earthlink.net, or call (901) 757-2144.

Thanks for your consideration.

July Program: Ryan Parish, Ph.D candidate in the University of Memphis Department of Earth Sciences, will present a program on Dover Chert.

July Display Theme: Petrified Wood

Continued from P. 1 sign up to ensure that I can cover all the variables. If you cannot go for the entire week, maybe you can sign up for two or three days. I plan to keep this as flexible as I can. I have been vacationing in North Carolina for years, so I am the best choice to sponsor this trip. I will need your help in the form of any input you can give me.

If everything goes well with this trip, the hope is to have a trip a year. Perhaps someone else would be willing to sponsor a second trip for the following year. New Mexico has been mentioned as a possibility. I know little about sites in New Mexico; but W. C. does; so maybe he could sponsor that trip.



In coming editions of the newsletter, I will be highlighting sites for the trip to the mountains of North Carolina. The site I will be covering next month is Sheffield Mine, so be on the lookout for the next newsletter. In case you need to contact me with feedback, my e-mail address is hunter3006@aol.com. If you send me an e-mail, please put something in the subject line like "MAGS," "rocks," "North Carolina," or "field trip." If you need to call, the number is (901) 626-4232. Please call between 7:00 P. M. and

9:00 P. M. on both weekdays and weekends.

MTSU Museum An Obscure Gem

Ezell Hall at Middle Tennessee State University in Murfreesboro has an old-time feel with tinges of dilapidation. Out front, there's a small sign that reads, "Mineral, Gem and Fossil Museum."

Can there be anything close to resembling a museum inside these scarred walls? Yes, there can. The building houses an amazing and overwhelming collection that is billed as "one of the world's finest displays of exquisite calcite, fluorite, barite, and sphalerite specimens from the Tennessee Elmwood zinc mine."

There are two main exhibit rooms and a black light room displaying fluorescent minerals. One exhibit room consists of mineral specimens arranged in family groups, while the other has fossils, birthstones, figurines carved from minerals, and jewelry made from semi-precious materials.



The collection includes a mammoth tooth and a mastodon tooth, each found in Rutherford County. The museum "probably has the world's best display of Elmwood minerals." It also has several real dinosaur bones and

two dinosaur eggs, excavated in Montana.

Seems like it's worth a visit, right? But hurry. Ezell Hall has been scheduled for demolition, a process that has already begun for its adjacent neighbor, Abernathy Hall. The future location of the museum is up in the air.

Editor's Note: Thanks to David Day for the tip about this article.

Juniors Corner

Carol Lybanon

W. C. McDaniel will give the July program, on megalodons. The Juniors will be part of the August indoor rock swap, and in September Charles Hill will tell us all about crystals.

Plan to attend each month. Your presence is appreciated and we might even learn a thing or two. And it is always fun.

Bring empty coffee cans if you have any. Win a prize in July for just being there—one name will be drawn.

See you there.

And Did You Know?



Did you know that the average automobile contains more than a ton of iron and steel, 240 lbs of aluminum, 50 lbs of carbon, 42 lbs of copper, 41 lbs of silicon, 22 lbs of zinc, and more than thirty other mineral commodities, including titanium, platinum, and gold?

Minerals are all around us.

Do Not Try This At Home

David Day



I **could** say these were pictures of a very successful crystal growing project. In reality however, they illustrate what not to do when using oxalic acid to clean quartz crystals in a crock-pot. My normal safety precautions, other than remembering to turn it off before all the water evaporated and formed these beautiful crystals, probably prevented this from being an opportunity to meet my neighborhood firemen.

Some years ago a friend on her first try at cleaning the iron oxide or limonite from her crystals did the same thing only with completely different results. After her water boiled away, **all** of her fine clear crystals cracked looking

much like some of those intentionally crazed craft marbles. They were most “interesting” or really embarrassing depending on your point of view.

Before I started using a crock-pot, I used a hotplate. This enables you to use a much larger pot and clean bigger rocks, but the near-disaster list using that method would be too long to get into here. So, I do not recommend a hotplate unless it is seriously attended, which makes it one of those “do not try this at home” things unless you really know what you are doing or are an expert electrician, fireman, disaster response personnel, work in an

emergency room, or preferably all the above.

Heated vapor from this process is toxic, so whatever method you use should be done outdoors or in a very **well** ventilated space.

Fortunately for us, especially this time of year, all you really need to remove the iron from your quartz crystal is a large covered plastic container, water, oxalic acid, sunshine, Memphis heat and some patience, making it relatively safe, ideal for the beginner, and unlikely to ruin your carefully collected treasures.

Despite its appearance after about a year soaking I still use the crock-pot on crystals.

Selected Show Pictures



Special Request

MAGS received the following request for assistance from a Smithsonian Institution researcher. If anyone would like to see the brief articles he mentions, please contact the editor.

June 26, 2011

Dear Mineralogical Club:

Dr. Joseph Lambert (Department of Chemistry, Northwestern University, Evanston, Illinois, jlambert@northwestern.edu) and I have been collaborating in the chemical characterization of plant exudates for years (see brief articles, attached). This is a request for amber, copal and/or solid, natural exudates (not leaves or twigs) weighing at least 50 mg (roughly, the volume of an unused eraser on a pencil). We do not make a profit from our research. If you would like to help us and may have easy personal access to any of such materials, please feel free to contact us. Thank you.

Sincerely and gratefully,

Jorge Santiago-Blay

Department of Paleobiology, MRC-121

National Museum of Natural History

Smithsonian Institution, P. O. Box 37012

Washington, D.C. 20013-7012 USA

For packages sent via a fast courier (e.g. FedEx, UPS, DHL, etc.), please use the following address:

Jorge A. Santiago-Blay, Research Associate

Department of Paleobiology, MRC-121, 10th and Constitution Avenue

National Museum of Natural History

Smithsonian Institution, West Loading Dock, Washington, D.C. 20560 USA

May 2011 Board Minutes, Marc Mueller

The MAGS Board of Directors met May 5 at the St. Clare Room in St. Francis Hospital, 5959 Park Avenue. The meeting was called to order at 6:30 P. M. Present were: Lou White, Mike Baldwin, Carol and Matthew Lybanon, Marc Mueller, Alan Schaeffer, Ron Brister, Neville Mayfield, Nannett McDougal-Dykes, Doris Jones, Charles Hill.

Secretary: April minutes were approved as corrected.

Treasurer: Approved as submitted, subject to audit. Doris Jones was asked to remind the Board Members that they need to bring 2-liter sodas to the Membership Meetings.

Membership: Neville Mayfield reported that there were several new members, but all he had were their names--no other information. He will attempt to retrieve the missing information.

Field Trips: Trip planned for Memorial Day Weekend, May 28 & 29 to Fiddler's Ridge Mine. Highly recommended by the Arkansas club. For June, trip planned to Marion, KY. Fluorite mine June 4 & 5.

Adult Programs: Paul Sides was not at the meeting. Lou White reported that the May program will be given by Mike Howard; subject quartz. There is no speaker for the June meeting yet.

Junior Programs: Matthew Lybanon will give the May program, on magnetism. In June Carol Ly-

banon will present a program on coal/fossil fuel. In July W. C. McDaniel will present a program on megalodons. In August the Juniors will join the adults for the indoor picnic.

Show: No report.

Library: Ron Brister reported that the library will be closed at the June meeting because he will not be able to attend that meeting.

Newsletter: Matthew Lybanon said he did not get much input from the Board, and would appreciate more cooperation.

Webmaster: The website is ready to be updated. Mike Baldwin hopes to get to it tonight. The pictures of people in front of the dinosaur from the Show will be linked to the Show website; people can down-

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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Continued from P. 5 load them from there.

Historian/Rock Swap: Nannett McDougal-Dykes has arranged for the first rock swap of the year. It will be on June 18, 9:00-1:00, at the McNeill home.

Old Business: Alan Schaeffer reported that he bought some really good items at the Show to give away as display prizes.

New Business: Ron Brister recommends the Show Committee should present a formal written

report to the Board each year, including details of expenses and receipts, so the Board will have a clear picture of the Show's performance. Some questions have come up that could have been answered by such a

Continued, P. 7

2011 Memphis Mineral, Fossil, & Jewelry Show, Dealer Survey

W. C. McDaniel

Each year the Show requests dealers to provide feedback. 23 dealers completed and returned the feedback forms. 21 of these completed the complete form; their ratings/comments are reported.

Please rate our show in the following areas on a scale of 5 to 1 with 5 being the highest/best and 1 the lowest/worst:			
area	Score by total points out of 105	Average by percent	by average out of 5
Facility--(21)	102	97	4.8
Show layout (aisles, booth arrangements etc.)--(21)	98	93	4.6
Show advertisement/promotion	104	99	4.9
Show committee communication to dealers	103	98	4.8
Hospitality -21	103	98	4.8
Attendance by customers-(21)	96	91	4.6
Sales- 21	85	80	4.0
Average	98	94	4.6
<u>Positive comments/observations</u>	<u>negative comments/observations</u>		
1. Thank you ,Great	1. food fair		
2. We were wonderfully treated by staff members	2. no coffee=X3		
3. Good assortment of beverages	3. to many bead dealers		
4. nice interactive displays	4. sound system was bad		
5. Best show I have had with club	5. needs to be a 3 day show		
6. We are finally getting the public educated to crystals	6. Always more sales		
7. The club did a great job of putting on the show	7. If held on Easter , expand Sunday to 6:00 pm		
8. Good job by all ,show chair great job	8. Instead of private security, could you not have off-duty police officers, here overnight. People have a big investment left here overnight		
9. We enjoyed all the years of doing this show	9. Air		
10. Good dealers	10. Isles narrow		
11. lots of activities for kids	11. Easter weekend makes things slow		
12. Great show especially for Easter weekend			
13. Keep up the Good., Nay Great, work			
14. great people. good to see young people			
15. fun show			
16. great food; great dinner, drinks delivered during set-up really appreciated			
17. Great job getting in the customers			
18. Club members friendly			
19. excellent show, Best show ever Very will run show			

Continued from P. 6 report.

Ron Brister would like the Board to consider making an annual contribution to Chucalissa. He will obtain a formal list of their needs, which we can consider at the next Board Meeting.

Neville Mayfield wants to print new membership cards. There was much discussion about a new design (black & white or color, should each year be printed on the card, etc.). A motion was made and carried to use the old design (with blue circle logo) with no date printed on the card; we will use adhesive dots to specify the year. Mike Baldwin said that he has the layout for both the membership and library cards with that design. He and Neville will get together work out the details.

May 2010 Membership Meeting Notes, Marc Mueller

The MAGS Membership Meeting was held at Shady Grove Presbyterian Church on May 13, 2011. Lou White called order at 7:30 PM

Neville Mayfield introduced the guests: John Luther, Judy Buckholdt and Michael Foppiano, who wanted to be a guest again. Forty-nine members were in attendance.

Trips: Trip planned for Memorial Day Weekend, May 28 & 29, to Fiddler's Ridge Mine. Highly recommended by the Arkansas club. For June, trip planned to Marion, KY. Fluorite mine June 4 & 5.

Rock Swap: June 18, 9:00-1:00, at the McNeill home in Olive Branch. Please bring a side dish.

Juniors adjourned to attend the lecture on magnetism.

Due to the flooding of I-40, Mike Howard could not give his Arkansas Crystal presentation. Lou White presented the native American and Civil War items that he began collecting since the age of 8. From arrowheads to artillery shells to old pop bottles, Lou has collected it all. Lou became interested in gems and minerals when his wife dragged him to a cat show. Allergic to cats, Lou walked over to the MAGS Gem and Mineral show and he caught rock fever.

Presentations were made of Geodes from Livingston, TN, and future door prizes.

D-Day's Legacy: Omaha Beach Sands

Before dawn on June 6, 1944, more than 160,000 Allied troops began storming the shores of Normandy, France, in what would be the turning point of World War II. Less than a year later, the Germans surrendered, and the Western Front of World War II came to an end.

Omaha Beach was the code name for one of the five Allied landing points on D-Day. Today, the only visible indications of the horrific battles fought at Omaha Beach are some concrete casements above the beach and nearby cemeteries that quietly mark the thousands of lives lost. If you look a little closer, however, you will see that there is more to the legacy than just the memorials: The sand at Omaha Beach retains remnants of the devastation. A study of the sands by sedimentary petrologists revealed bits of shrapnel, and iron and glass beads that have been re-

worked by the English Channel's waters over time—a microscopic record of the battle.

Strategically, this landing was necessary to join American forces at Utah Beach to the west and British forces at Gold Beach to the east. In early June 1944, German forces under the overall command of Field Marshal Erwin Rommel occupied strong points along the northwest coast of France, entrenched in high ground above the beaches of Normandy. At Omaha Beach, arching bluffs as high as 60 m offered strategic positions, and the Germans left no part of the beach uncovered. The entrances of gullies, running from the shore to the bluffs, were especially fortified with soldiers—7,800 men of the German 352nd Infantry Division, commanded by Gen. Dietrich Kraiss. Rommel's plan was to stop any invasion at the water line, which he and Kraiss believed was possible.



American troops in a landing craft approaching a beach in northern France on D-Day.

Most of the landing craft missed their target; many of them never reached the beach at all. The pre-landing Naval bombardment was ineffective and likely inadequate, killing

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Dixie Mineral Council Field Trips The Southeast Federation of Mineralogical Societies, Inc

DMC Program of the SFMS Field Trip Committee - Copyright © All rights reserved.



An Official Field Trip of Gem and Mineral Society of Franklin, NC (Franklin, NC) (HOST)
An Official Field Trip of the Memphis Archaeological & Geological Society

10:00 AM to 2:00PM Saturday, July 9, 2011 Pacesetters Camp, Marble, North Carolina

WHERE: Pacesetters Camp; 562 Fairview Road; Marble, NC (Please see attached map.)

WHEN: Saturday, July 9, 2011; 10 a.m. to 2 p.m.

COLLECTING: Staurolite crystals (some maybe be twinned)

EQUIPMENT: Shovel, bucket, half-inch screen (crystals will be in the river).

GENERAL INFORMATION: No admission fee. This site is being made available by the pacesetter organization and has agreed to allow us to use the restrooms and parking area. Bring a lunch and beverage (no alcohol). Dress according to working in a river; high boots would be handy.

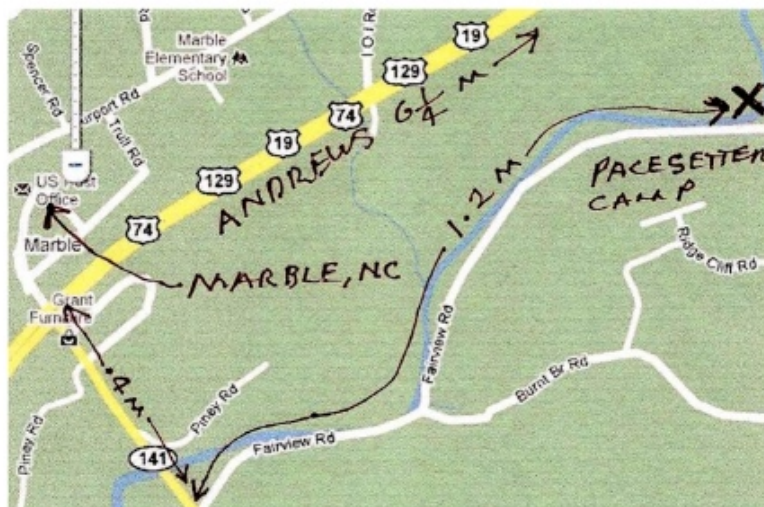
Contact Info.:

John Hayes, Field Trip Chair

jfhayes@dnet.net

828-524-8062

The Gem & Mineral Society of Franklin, North Carolina, Inc.



Continued from P. 7 few Germans (but many cattle). At Omaha Beach, for many hours, Allied troops could not get off the beach, and the landing nearly failed. Despite losing more than 9,000 Allied forces on D-Day, the invasions opened up a path for 100,000 Allied troops to march across Europe, pushing back the Germans as they went.



The D-Day Invasion.

Earle F. McBride and Dane Picard (professors emeriti at the University of Texas and the University of Utah, respectively) visited Omaha Beach recently. As collectors of sand and sandstone around the world for more than five decades, they never miss an opportunity to gather sand. When they returned to their labs, they examined the sand using several microscopes: a binocular optical microscope, a polarizing optical microscope, and a JEOL scanning electron microscope—each of which provides different information on grain size, shape, roundness and composition.

The sand is light-gray, well-sorted, subangular to subrounded, fine- to medium-grained and dominantly detrital quartz (78 percent), with about 9 percent feldspar, 4 percent carbonate grains (bioclasts and limestone clasts), 3

percent heavy minerals, and 2 percent chert and other rock fragments: Although beach sand varies widely, the sand composition of Omaha Beach reflects typical sand eroded from sedimentary rocks inland and carried to the shore by the Seine and several small rivers.

The sand also contained small spherical beads of iron and glass, as well as magnetic, slightly rounded angular opaque grains, some well-laminated. In a few days McBride and Picard concluded that those were human-made—particles generated from the explosions of munitions during the Normandy landings.

They found that the shrapnel grains range from very fine to coarse sand size (0.06 to 1.0 mm) and display a variety of shapes and degrees of roundness. Nearly all of them retain their original nonspherical shapes, but all grains, even the most shard-like, have had some of their sharp edges blunted—as can be expected by abrasion in the swash zone of a beach (the area where waves break, carrying sediment up onto the beach and dragging it back into the water).

But what's interesting is that the disparity in degree of rounding of shrapnel grains of the same size shows that, although originating on the same day and barring no major differences in hardness, the grains have not all had the same abrasion history and have not undergone continuous abrasion on the beach.

The explosions on their own probably wouldn't have been enough to melt the quartz and

form glass, but sodium and calcium present in seawater would have lowered the quartz's melting temperature, allowing it to melt along with the iron upon explosion. It is likely that scratches on the exterior of the glass beads formed while the beads were soft and undergoing turbulent rotation and impact with other particles just milliseconds after the explosion that generated them. Divots and chips formed from impacts with other particles after the glass had solidified, although whether this occurred in the air following the explosion (most likely), or on the beach, is uncertain.



Relics left over from the D-Day Invasion at Omaha Beach.

It is of course not surprising that shrapnel was added to the Omaha Beach sand at the time of the battle, but it is surprising that it survived 40-plus years and is doubtless still there today. The combination of chemical corrosion and abrasion will likely destroy the grains in a century or so, leaving only the memorials and people's memories to recall the extent of devastation suffered by those directly engaged in World War II.



How Much Water Is There?



A large part of the Earth is water, right? More than $\frac{2}{3}$ of our surface is ocean. Then there are the rivers, the lakes, plus water in the atmosphere (clouds, fog, humidity). Beneath us in the ground are aquifers. Below that, the upper mantle contains water in hydrous minerals. The lower mantle and the core may also have water.

Mike Mottl, an oceanographer at the University of Hawaii, made estimates of all these different “pieces.” His estimate is that the total is about 3 global oceans of water. That’s lots, right?

Let’s step off the planet and look. The total of all the water is less than 0.1% of the Earth’s total mass. The figure above is conceptual computer artwork that shows (left) the total volume of water and (right) air, compared to the entire Earth. Mottl’s calculation gives us a different perspective.

Citation: Mottl et al, Chemie der Erde - Geochemistry, Volume 67, Issue 4, 21 December 2007, Pages 253-282

Calendar

July 8, 2011

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

Adult Program: Dover Chert (Ryan Parish)

Junior Program: Megalodons (W. C. McDaniel)

August 12, 2011

Indoor Rock Swap—see President’s Message

September 17 & 18, 2011

Falls Fossil Festival, Falls of the Ohio State Park, Clarksville, IN

October 9-15, 2011

Earth Science Week

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

