

## INSIDE THIS ISSUE

### FEATURE ARTICLES

- Rocks in Your Gas Tank ..... 1
- Gold Properties ..... 8
- 1200-Year-Old Village Found .... 10

### MEMBER PAGES

- From The President ..... 2
- Board Members ..... 2
- Lapidary Journal* Subscriptions ..... 2
- Directory Additions/Changes ..... 2
- MAGS Field Trip: Potosi, MO ..... 3
- May Birthdays ..... 3
- Sunshine Report ..... 3
- Mar Board Meeting Notes ..... 7
- Mar General Meeting Notes ..... 7
- Written in Stone: Glossary ..... 7
- Web Statistics ..... 9

### MICROMOUNTERS [M<sup>3</sup>]

- Oldest Human Footprints Found .. 4
- April M<sup>3</sup> Meeting Notes ..... 4

### ROCK SWAPS

- Rock Swap @ Carolyn Hays ..... 10

### MINI MAGS [MAGS YOUTH]

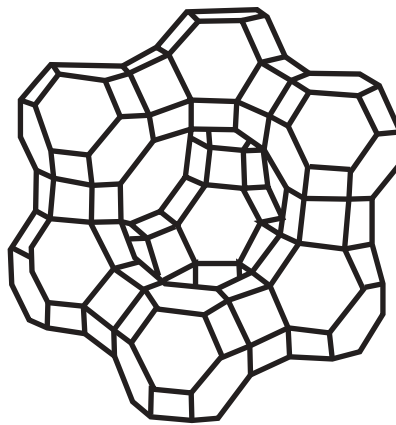
- Fossils: What Were They First? ..... 9
- What's Up With The Kids ..... 9
- Dino Card: Majungatholus ..... 9
- Specimen Card: Petrified Wood ... 9

### FEDERATION NEWS

- DMC Field Trip: Woodleaf, NC .... 6
- SFMS Clubs/Events ..... 6
- Missouri Mines Rock Swap ..... 8



## ROCKS IN YOUR GAS TANK THE DRIVE TOWARD HYDROGEN-BASED FUELS



**Zeolite crystals** form in a number of complex shapes that make them highly absorbent. Illustration courtesy of Science@NASA.

NASA: APRIL 17, 2003: Imagine pulling up to a filling station, inserting the nozzle into the tank and the gas flowing into your tank is ... hydrogen. It's colorless, odorless and the by-product of burning hydrogen is water vapor, quickly and safely absorbed by the environment. One pound of hydrogen supplies three times as much energy as a pound of gasoline. And it's the most abundant element in the universe! No wonder scientists are trying to figure out how to make hydrogen work as a practical fuel.

"Dozens of companies, including all the major automobile manufacturers, have designed engines that burn hydrogen--they're a lot like the internal combustion engines we have in cars today," says Al Sacco, director of the NASA-supported Center

for Advanced Microgravity Materials Processing (CAMMP) at Northeastern University in Boston. "Fuel cells [another possible source of power for cars] use hydrogen, too. To make these technologies work in the real world, scientists must find a way to store and transport hydrogen safely at a cost comparable to that of gasoline."

Tiny H<sub>2</sub> molecules like to sneak through cracks and seals, and once free they quickly disperse. Hydrogen diffuses four times faster than methane and ten times faster than gasoline vapors. This is great for safety because a leak is quickly diluted and rendered harmless. It's a

(see Rocks in Your Gas Tank on page five)

## MAY EVENTS

- May 01 6:30p Board Meeting: Blue Plate Café, 5469 Poplar Avenue
- May 09 7:30p General Meeting: Shady Grove Presbyterian Church, 5535 Shady Grove Rd., Memphis [bring displays & refreshments]  
Adult Program: "The Process of Gold Mining" presented by Terry Panhorst, University of Mississippi  
MAGS Youth [Mini-MAGS] Program: "Fossils: What Were They Before They Turned to Stone?" with Idajeane Jordan
- May 10 10:00a MAGS Rock Swap @ Carolyn Hays' home [see page 8]
- May 15 7:00p M<sup>3</sup> Micromounters Meeting @ Roger Van Cleef's home
- May 17 8:00a DMC Field Trip: Woodleaf, NC [see page 6]
- May 24-26 8:00a MAGS Field Trip: Potosi, MO/Hamilton, IL [page 3]

## 2003-2004 MAGS BOARD

### President--W.C. McDaniel

2038 Central Ave, Memphis, TN 38104  
901-274-7706 • cfmcdaniel@worldnet.att.net

### 1st VP (Field Trips)--David McIlwain

305 Catlin Dr, Oakland, TN 38060  
901-465-7388 • djmclwain@earthlink.net

### 2nd VP (Programs)--Paul Sides

1062 CR 739, Wynne, AR 72396  
870-238-8078 • rockclub@earthlink.net

### Secretary--Raynee Randolph

6578 Birch Walk Dr, Memphis, TN 38117  
901-367-9329 • wrandol1@midsouth.rr.com

### Treasurer/Co-Editor--Bill Scheffer

2959 Sky Way Dr, Memphis, TN 38127  
901-358-1194 • schefwb@midsouth.rr.com

### Director--Idajean Jordan

104 Plainview, Memphis, TN 38111  
901-452-4286 • rockclub@earthlink.net

### Director--Terry Noyes

3366 Rosita Circle W, Memphis, TN 38116  
901-396-5835 • RNJ1958TLE@aol.com

### Director--Kim Prudhomme

3870 Robin Hill Dr, Bartlett, TN 38135  
901-266-5848 • dvdandkm@midsouth.rr.com

### Director--Dennis Sanders

2261 Scenic View Dr, Nesbit, MS 38651  
662-449-5199 • rockclub@earthlink.net

### Director--Lou White

3805 Melanie June, Bartlett, TN 38135  
901-937-8522 • Axelrod300@aol.com

### Editor/Web Coordinator--Mike Baldwin

367 N Main St, Collierville, TN 38017  
901-853-3603 • rockclub@earthlink.net

### Librarian--Nancy Folden

379 McDermit, Memphis, TN 38120  
901-683-8497 • nfolden@kroger.com

### Membership--Cornelia McDaniel

2038 Central Ave, Memphis, TN 38104  
901-274-7706 • cfmcdaniel@worldnet.att.net

### Show Chairperson--W.C. McDaniel

2038 Central Ave, Memphis, TN 38104  
901-274-7706 • cfmcdaniel@worldnet.att.net

### Youth Program--Idajean Jordan

104 Plainview, Memphis, TN 38111  
901-452-4286 • rockclub@earthlink.net

MAGS Rockhound News is published monthly by and for the members of the Memphis Archaeological and Geological Society. Please send your comments and articles to Mike Baldwin, 367 N. Main St., Collierville, TN 38017 or email them to rockclub@earthlink.net .

## From the President

As our newsletter goes to the press the show is underway. Look for a show update in a future edition. However, just because the show has passed doesn't mean MAGS' members will have nothing to do. We have field trips to Missouri and Arkansas coming up and rock swaps starting on May 10. At our rock swaps we will have the usual good food, rocks, door prizes, swapping and selling and a new feature: A roundtable discussion of a specific topic to provide MAGS members information and skills about rocks and lapidary. Come on down. At the May swap we will be having a roundtable discussion titled "MAGS: Rockhounds' Home Remedies" where club members will be asked to talk about and show examples of material that they have changed/modified using some type of product from the home, hardware store or grocery store. For example, what is a good use for Spic and Span washing powder? Come to the swap and find out.

In the past month MAGS lost two members. Joe Devine passed away on March 31. Our condolences and thoughts go out to Connie, Michael and Carol Ann and family members On April 17 Walter Mewborn, a life member, passed away. Our thoughts and condolences go out to Lenette Mewborn and family members.

Congratulations to Lou White for his winning display of Druse Quartz from Missouri. Bring those displays, especially the juniors. Remember in December winners have the chance to win a very nice prize.

W.C. McDaniel

## LAPIDARY JOURNAL

*MAGS Members:* Did you know that you can order a subscription to *Lapidary Journal* magazine through MAGS? Through a special arrangement with *Lapidary Journal* part of the subscription fee will be rebated back to MAGS ... so you get a year's subscription to the magazine and MAGS gets a little bit of extra funds. To take advantage of this great offer, please send a check [made out to MAGS] for \$29.95 to Bill Scheffer, 2959 Sky Way Drive, Memphis, TN 38127. Please include a note [with your check] that this is for a *Lapidary Journal* subscription.

*Bill Scheffer, Treasurer, MAGS*

## DIRECTORY ADDITIONS/CHANGES

Please make these changes in your 2003 MAGS directory:

[1] Address change for Melinda Warren • 2038 Higbee • Memphis, TN 38104

[2] Name correction for Carol [not Myrna] Lybanon

Please add these to your directory:

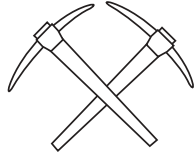
[1] Butterick, Richard & William • 4864 Dee Rd • Memphis 38117 • 685-9881

[2] Crumpton, Clay & Pam • 1323 Broadmoor • Memphis 38111 • 745-4579

[3] Ethridge, Steven, Kathy, Laura Lee & Julia • 113 Walnut Ridge Ln • Cordova 38018 • 755-6874

[4] Long, Tim, Celeste, Patrick & Michael • 6903 Great Oaks • Germantown 38138 • 753-3891

*Note: The 2003 MAGS directories are available. If you have not received yours, or if you cannot pick up your directory at a MAGS meeting, please send \$1.00 [to cover postage and shipping] to Bill Scheffer, 2959 Sky Way Drive, Memphis, TN 38127 and he will mail it to you.*



## MAGS FIELD TRIP POTOSI MO/HANNIBAL MO

SATURDAY MAY 24 - MONDAY MAY 26, 2003  
FIELD TRIP LEADER, DAVID McILWAIN, 901-456-7388

**COLLECTING SITE:** Missouri Mark Twain National Forest, located near Potosi in Washington County, Missouri. Also, a road cut located near Hannibal, Missouri.

**MINERALS:** We will be collecting calcite crystals, druse quartz, bladed barite and crystal.

**MOTEL ACCOMMODATIONS:** Friday & Saturday at Rosener's Motor Lodge & Restaurant, 3411 Rosener Rd. & Highway 67, Park Hills, MO 63601. Phone: 1-800-888-4241 or 573-431-4244. Please make your reservations ASAP! A group rate of \$25.00+tax for Single, \$31.95+tax for queen size bed (based on double occupancy) and \$40.50+tax for 2 queen size beds (based on double occupancy) will be available for all MAGS members. Monday at Econo Lodge Hannibal, 3604 McMasters Ave, Hannibal, MO 63401. Phone: (573) 221-0422 Fax: (573) 221-0696. Located just south intersection of US-36 on US-61. For double bed (based on double occupancy) \$49.99+tax and for 2 double beds (based on double occupancy) \$52.99.

**MEETING PLACE:** Saturday at 8:30 a.m. & Sunday at 8:30 a.m. at Rosener's. Monday at 8:30 a.m. at Country Kitchen, 4803 McMasters Ave, Hannibal, MO 63401-2247. Phone: (573) 221-8441 Please come earlier if you plan to have breakfast. We will be leaving promptly at 9:00 a.m. for the collecting site each morning.

**DRIVING DIRECTIONS:** From Memphis take I-40 West towards Little Rock, then take the I-55 North exit number 277, towards Blytheville/Jonesboro. Take the MO-32 West exit number 150, then go left towards Farmington. Go straight onto US-67 North, then go right onto Rosener Road, the restaurant and motor lodge is on the left. Allow approximately 5 to 5-1/2 hours driving time. Collecting area maps are available upon request.

From Park Hills take US-67 North towards Fesus/Crystal City then take I-55 N toward St. Louis. Take I-170 N toward Kansas City, then take I-70 W toward Kansas City. Take US-61N exit number 210B toward Wentzville/Hannibal. Approximately 3 to 3-1/2 hours driving time.

**TOOLS:** We will be surface collecting and materials are abundant. Bring leather gloves and buckets. If desired, rock hammer and chisels for breaking specimens, also shovel and small pry bar as some digging may produce some interesting specimens. Small wagon or two-wheel cart for transporting larger specimens would be helpful. *Special Note: No digging or digging tools are allowed in the national forest, this site is restricted to surface collecting only.*

**DIFFICULTY LEVEL:** 1 to 3 on a scale of 1 (easy) to 10 (hard). Please be advised that there is always a possibility for injury, also poisonous snakes at this site. So, any young members must be supervised at all times.

**FIELD TRIP AGENDA:** *Saturday & Sunday*—We will be driving to the Mark Twain National Forest to collect druse quartz and bladed barite just off MO-Z near the Palmer Chapel area. Break for lunch around noon. Please bring a sack or picnic lunch, as we will be about 15 miles from the nearest town. We may drive to a second location to collect more druse quartz and Missouri lace agate. We may drive to the Cadet area for more druse quartz, Missouri lace agate and bladed barite. *Monday (Optional)*—We will be driving to the a road cut north of Hannibal along US-61 to collect quartz crystal geodes and then to go prospecting for other other collecting sites. (For the serious rockhound)

**FIELD TRIP LEADER:** David McIlwain: Home: (901) 465-7388 • Cellular: (901) 266-1446 • email: davidmcilwain@netscape.net. If you sign up and cannot go, please contact David ASAP. *Please Note: This field trip is open only to MAGS members and their guests.*



## MAY BIRTHDAYS

May Birthstone is EMERALD

- 2 - Kathy Hemingway
- 4 - Theodore Muir
- 4 - Kevan Seamans
- 6 - Ellen Everett
- 8 - Jean Helt
- 8 - Paula Holliday
- 9 - Carol Lybanon
- 9 - Erin Parker
- 10 - Caitlin Cannito
- 12 - Pam Cranford
- 17 - Dr. Darrell Richardson
- 19 - William Butterick
- 22 - James Parker
- 25 - Mark Barton
- 25 - Doris Latham
- 27 - Kelly Baldwin
- 28 - Carl Warren
- 29 - Faye Smith
- 30 - Michael Cannito



## SUNSHINE REPORT

CORNELIA McDANIEL—Best wishes to Debbie Butchko [recovering from pneumonia], Breezy Levitch [recovering from a recent fall], and George Fulghum [recovering from recent surgery]. Our thoughts and prayers are with Connie, Michael, and Carol Ann Devine in the recent loss of Joe Devine. Our thoughts and prayers are with Lenette Mewborn in the recent loss of Walter Mewborn, a life-time member of MAGS. Connie and Lenette, your friends in MAGS wish you well, and we want you to know that we're thinking about you.

A sure cure for your spring fever is the MAGS field trip to Missouri in May!

*If you, or a MAGS member you know, becomes ill, please call Cornelia McDaniel at 274-7706 and let her know.*

PALEO NOTES BROUGHT TO YOU BY M<sup>3</sup>

## OLDEST HUMAN FOOTPRINTS FOUND

ROGER VAN CLEEF: In the lava field along side the Roccamonfina volcano in the Campania region of Italy, the oldest known human footprints have been found. The footprints have been known by the locals for many years. The pathways and footprints were known as the “devils’ trails.” After detailed investigations by Italian researchers they determined that the footprints and pathways were not that of devils, but prints of the oldest hominids found to date. These prints indicate that the individuals were fully bipedal with a freestanding gait. They used their hands to steady themselves on the steep descent down the volcanic side. There are several hand prints beside the footprints, with open palms to keep their balance. The tracks apparently were left by more than one individual along three different paths. The slope on which they traveled was covered by lava 325,000 to 385,000 years ago.

Paolo Mietto, researcher at the University of Padua, Italy: “To our knowledge they are the first human tracks discovered from the Middle Pleistocene (Stone Age) period and are therefore the oldest to be found so far.” The next oldest footprints were found in a raised lagoon on the Atlantic coast of South Africa in 1997. Those tracks were dated to 117,000 years ago.

Using the modern ratio of foot length to height, it was determined that the individuals were no taller than 5 feet. Some of the impressions show the heel and ball of the foot and a number of the prints show toes. With more and more discoveries, the history of man is pushed further back, indicating what a remarkable group we are.

Reference: Scripps Howard News Service: Lee Brown.



These footprints were made in the pyroclastic flow (ash, pumice, and rock fragments) dated to 385,000 to 325,000 years ago on the slopes of the Roccamonfina volcano in southern Italy. Known locally as “devils’ trails,” the tracks are the oldest human footprints found so far, according to researchers.

Caption from [http://news.nationalgeographic.com/news/2003/03/0312\\_030312\\_firsttracks.html](http://news.nationalgeographic.com/news/2003/03/0312_030312_firsttracks.html)  
Photograph by Paolo Mietto & Marco Avanzini

Information gathered for educational purposes under the provisions of the “Fair Use Act of 1976”.

## APRIL M<sup>3</sup> MEETING

JENNIFER BALDWIN—Roger Van Cleef, Nancy Folden, Idajean Jordan, Cornelia McDaniel, WC McDaniel, Sherri Baldwin, Mike Baldwin, Jennifer Baldwin, and Kelly Baldwin attended the April 17 M<sup>3</sup> meeting at the home of Roger Van Cleef. Thanks to Nancy for sharing her Raspberry Chocolate Chip Cookies ... um, um, good! We got right down to business by taking a look at several specimens. Roger shared his fish fossils [Camron, WY], red fibrous salt [Kanopolis, KS], and some spectacular, finely-detailed crinoids [in matrix from Aldmore, OK]. Mike showed M<sup>3</sup> a fortification agate he found at the Green T Mine, MS last weekend, which he had polished with mink oil. We had two binocular microscopes set up for viewing the specimens for the night: [1] Chrysocolla—green; [2] Mimetite—yellow; [3] Ooid sand from Joulters Cays, Great Bahama Bank—thanks to last week’s guest speaker RP Major; [4] Wulfenite—brown blades; [5] Chalcedony geode from Green T Mine—red; [6] Smithsonite from Rush, AR—brown; [7] dinosaur egg containing bone fragments; [8] cracked garnet—rusty red; [9] fish fossil from WY; [10] Archimedes from Gray’s Farm, AL; [11] red fibrous salt from KS; [12] fluorite—blue green; [13] sponge; [14] ammonite—pearlized; [15] Brilliantwood from AL; [16] Wavellite from Rush, AR—green; and my favorite [17] fluorite cubes—purple. Our next meeting will be May 15. See you there!

## NOTES FROM MAGS MICRO-MOUNTERS

## ROCKS IN YOUR GAS TANK

(continued from page one)

headache for anyone who wants to store the gas.

Liquid hydrogen is more compact and easier to contain, but it can be troublesome, too. Hydrogen liquefies at a temperature of about 20°K (-253°C). Maintaining a tank full of liquefied hydrogen requires a heavy cryogenic support system, which may not be practical for passenger cars. Liquid hydrogen is actually cold enough to freeze air. This could cause plugged valves and unwanted pressure buildups. Insulation to prevent such problems adds to the weight of the storage system.

### How can we overcome these obstacles?

**Simple: put rocks in your gas tank.**

Not ordinary rocks—Zeolites. Sacco explains: “Zeolites are porous, rocky substances that act like molecular sponges. In their crystalline form, zeolites are threaded by a network of interconnected tunnels and cages, similar to a honeycomb [see illustration on page one].” A fuel tank lined with such crystals might be able to trap and store hydrogen gas “in a liquid-like state [without heavy cryogenics].” With support from NASA’s Space Product Development program at the Marshall Space Flight Center, Sacco and colleagues at CAMMP are working to make zeolite gas tanks a reality.

“Zeolite” comes from the Greek words “zeo” (to boil) and “lithos” (stone), literally meaning “the rock that boils.” This is because zeolites give up their contents when heated.

Sacco described how a temperature-controlled zeolite gas tank might work: “We would add some negatively-charged ions (‘cations’) to the zeolite. These ions act like caps, just like caps on an ink bottle; they block the zeolite’s crystalline pores. By heating the tank [just a little] we can make the ions move away from the pores. We fill the zeolite with hydrogen, drop the temperature back to normal, and the ions slide back in place, sealing off the exits.”

Nearly 50 kinds of zeolites with different chemical compositions and crystal-structures are found in nature, and chemists have figured

out how to synthesize many more. Anyone with a cat has seen some: they act as odor-absorbers in kitty litter. “The zeolites we have now can store quite a bit of hydrogen,” notes Sacco. “But not enough.”

### How much is enough?

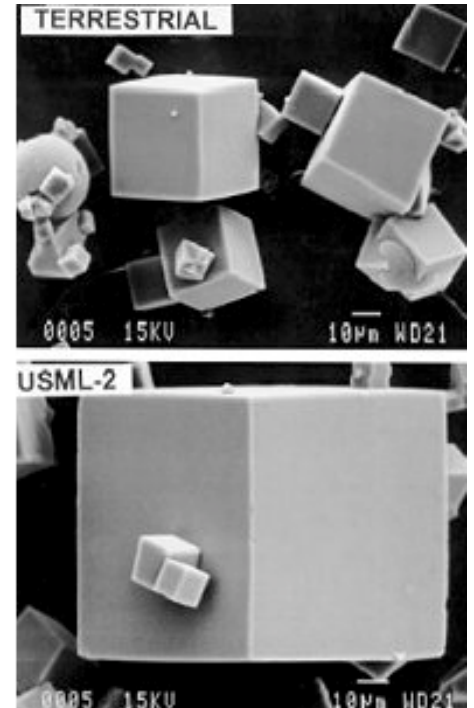
Imagine this: Your car’s fuel tank is lined with crystallized, porous rock and that “rock” weighs 93 pounds. You pull into a hydrogen fueling station and the attendant forces 7 pounds of hydrogen into the zeolite-lined walls of the tank. This, theoretically, would be the hydrogen equivalent to a full tank of gasoline [in both total weight and energy content].

“If we can grow zeolite crystals that hold 7% of their own weight in hydrogen,” says Sacco, “then a zeolite tankful of hydrogen would be competitive with an ordinary tankful of gasoline.” The best existing zeolites can hold only 2% to 3%, however.

In 1995, Sacco traveled to space as a mission specialist onboard the space shuttle Columbia (STS-73). His purpose: to grow better zeolite crystals. “In low-gravity, materials come together more slowly, allowing zeolite crystals to form that are both larger and more orderly.” Zeolite crystals produced on Earth are small, roughly 2 to 8 microns across. “That’s about one-tenth the thickness of a human hair.” The ones he grew on the space shuttle were not only 10 times bigger, but also better organized internally.

“The next step is the International Space Station,” says Sacco. He and others at CAMMP have built a Zeolite Crystal Growth Furnace, which was installed on the ISS in early 2002. “Ken Bowersox, the ISS Expedition 6 commander, has used the furnace to grow some crystals for us. Ken had to correct some unexpected problems with the mixing of the crystal growth solution [this shows the values of humans in space] but after that the experiment went smoothly.”

“Now we need to get those crystals back to Earth where we can examine them. A few might come down in May,” when the Expedi-



**Zeolite Crystals** grown on Earth (above) and zeolite crystals grown onboard the shuttle Columbia in 1995 (below). Illustration courtesy of Science@NASA.

tion 6 crew leaves the ISS in an Soyuz capsule. “I’d really like to see them,” says Sacco.

The goal, he says, is not to mass produce zeolite crystals in space. That’s not economical [at least not yet]. “We simply want to find out if it’s possible to grow zeolite crystals that can reach the 7% threshold. If we can do that in space, we’ll figure out how to reproduce the process on the ground.”

Throughout his career, Sacco has envisioned a worldwide transition from fossil to hydrogen fuels. It’s a big dream, but it could happen. “Zeolites may be the key to hydrogen fuel as a leapfrog technology.”

### Coming soon... a hydrogen fueling station near you?

Ref: Dr. Tony Phillips, Steve Price; *Rocks in Your Gas Tank*; Science@NASA; 17 April 2003. Information gathered for educational purposes under the provisions of the “Fair Use Act of 1976”.

The Science Directorate at NASA’s Marshall Space Flight Center sponsors the Science@NASA web sites. The mission of Science@NASA is to help the public understand how exciting NASA research is and to help NASA scientists fulfill their outreach responsibilities.

## SFMS CLUBS SHOWS/EVENTS

MAY 4 • 10am-6pm

MAY 5 • 10am-5pm

Lowcountry Gem, Mineral and Fossil Show • Lowcountry Gem and Mineral Society • North Charleston Convention Center, 5000 Coliseum Dr., North Charleston, SC • Contact: Karen Havenstein, 843-795-2956, fossils@home.com

MAY 9-10 • 10am-7pm

MAY 11 • Noon-5pm

35th Annual Gem and Mineral Show and Auction Georgia Mineral Society • Cobb County Civic Center, 548 S. Marietta Pkwy. and Fairground St., Marietta, GA • Contact; Jay Gorday 770-986-0822, or email jgorday@earthlink.net • Web link www.gaminer.org/may-show.htm

MAY 9 • 1pm-6pm

MAY 10-11 • 10am-6pm

MAY 12 • Noon-5pm

Mother's Day Gemoboree Franklin Gem & Mineral Society • Macon County Community Building, Rte. 441 S., Franklin, NC • 800-336-7829

JUNE 20-21 • 9am-6pm

JUNE 22 • 9am-5pm

June 20-22, 2003

Gem and Mineral Show Harrison County Gem & Mineral Society, Inc. • Rice Pavilion, Intersection of U.S.90 and Highway 49, Gulfport, Ms 30501 • Dealer Chairman: Billy Wood 228-863-6312

## SFMS FEDERATION NEWS



**Dixie Mineral Council Field Trip: Hosted by Western Piedmont Mineral & Gem Society 8:00am [EST], Saturday, May 17, 2003 Woodleaf Quarry, Woodleaf, North Carolina**

**WHAT:** Mineral Collecting Field Trip. The WPM&GS is planning a Saturday afternoon Rock Swap/Cook-Out and would like to invite all delegates to bring an extra box of rocks to trade.

**WHEN:** Saturday, May 17th, 2003 at 8:00 am

**MINERALS:** Calcite, Chabazite, Chalcopyrite, Epidote, Feldspar, Fluorite, Hornblende, Molybdenite, Natrolite, Prehnite, Pyrite, Quartz and many micro-minerals still to be listed.

**MEET:** At 7:30am at Woodleaf BP, 3335 801 & Parks Rd. This is a 5pt intersection of 801, Parks Rd, Woodleaf Rd, Cool Springs Rd and Woodleaf-Barber Rd. If you plan to attend this field trip, please call Mike Baldwin [901-853-3603] or email rockclub@earthlink.net for complete directions and a list of accommodations in the area.

**COLLECTING HOURS:** We will need to meet at 730a to receive a safety briefing and check-in by 8:00 a.m. The quarry will be open to the DMC for specimen collecting till 4:30p and the Rock Swap will end at 5:00pm.

**FEE:** There will be no fees for mineral collecting at this location. Our thanks to Martin Marietta and the Woodleaf Staff for helping to make this event possible.

**SPECIAL CONDITIONS:** [1] It is MSHA required that you wear a Hard Hat, Safety Eye Wear and Steel Toe Boots at this site. [2] This site is an active quarry with high vertical walls and attendant hazards. Safety should be a primary concern. Be aware of those above and below you when near high walls and unstable areas. [3] You must provide your own shuttle to/from the quarry bottom—4X4 not necessary. DMC members are requested to yield to any quarry traffic and drive cautiously around pedestrians and mineral collectors. [4] Children of all ages will be allowed but it will be the parents responsibility to insure they will be kept close and under adult supervision at all times while on quarry property and see that they are mindful and obey all the safety requirements and special conditions established by the quarry for this event. [5] Pets will not be allowed to roam free and will be allowed only if their attendance is necessary.

**EQUIPMENT:** Gloves, Buckets or Collection Containers, Paper to wrap nice specimens, Crack Hammers, Sledge Hammers, Chisels, Gads, Water Spray Bottles, UV Lights/Sunshields, Sunscreen, Chair for Rock Swap Plenty of fluids. Water will be available in the "Quarry Bottom". Good protective clothing should be worn (no shorts). Dress appropriately for the weather, this event will be held "RAIN or SHINE". Lunch—hamburgers and hot dogs will be offered for sale at the quarry [bring your own beverage] or bring your own lunch.

**INFORMATION/SIGN-UP:** Wayne Bowman, (828) 397-5222 • email WPMGS@Go.Com • visit <http://community.webtv.net/LynnFlintstone/MAY2003DMC>. MAGS—if you need additional information, please contact MAGS member, Mike Baldwin.

*DMC Field Trips are open to all members of associated clubs of the DMC program of the SFMS Field Trip Committee and to all members of SFMS member clubs who have provided their membership with SFMS liability insurance. Because of insurance requirements, members of the GENERAL PUBLIC are NOT invited on this or any DMC program field trips!*

# MAGS REVIEW

Written in Stone  
A MAGS Glossary of Terms

## BOARD MEETING MAR 6, 2003; 6:30pm

**RAYNEE RANDOLPH:** March board meeting of MAGS was held 03/06/03 at Blue Plate Café, 5469 Poplar Avenue. Attending were Mike Baldwin, W.C. and Cornelia McDaniel, David McIlwain, Park and Terry Noyes, Raynee Randolph, Bill Scheffer, Roger Van Cleef, and Lou White.

**TREASURER:** 19 members have outstanding dues to be paid.

**FIRST VP:** Field trips will be March 22nd, Florence, AL. April 19th, Memphis Stone and Gravel. May 24-26, Potosi MO and Hamilton, IL for geodes.

**SECOND VP:** Adult program—"Machu Picchu" presented by Roger Van Cleef. Junior program—gemstones, birthstones, state stones presented by Idajean Jordan.

**MEMBERSHIP:** 26 mailings for delinquent dues have been sent. New members—McKinnon, Butchko, and Slesinger.

**SUNSHINE:** Card has been sent to Charlie McPherson.

**SHOW:** Contracts are sold out with 5 on the waiting list. Club contracts will be available at the next membership meeting. T-shirts will be sold at the next meeting also.

**OLD BUSINESS:** (1) Our five-year strategic plan postponed until April. (2) Science fair awards ceremony will be at CBU, March 18th. See page 10 of the newsletter.

**NEW BUSINESS:** (1) Directors to help at membership meetings with displays, tables, chairs, refreshments, etc. (2) TEST (Tennessee Earth Science Teachers) has approached our club for a grant. Discussion of this grant deferred to April meeting. Meeting adjourned at 7:30pm

## GENERAL MEETING MAR 14, 2003; 7:35pm

**RAYNEE RANDOLPH:** MAGS March General Membership meeting, held at Shady Grove Presbyterian Church, was called to order by President W.C. McDaniel at 7:35pm on Friday, March 15, 2003. There were 47 members and 13 visitors present. Visitors were Nola, Shelby, and Kelsey Beckum, Rick and Haley Bethune, Lee Cole, Kathy Hemingway, Brittany Goforth, Rebecca Wood, Patti Jelinek, Kathy and Matthew Lybanon and Naaida Wright.

**PRESIDENT:** (1) March 22nd we will be going to Florence AL. for fossils. (2) If you have not paid your dues for this year, you will not be receiving the club directory and March will be your last newsletter. William Holland offers classes through the Southeast Federation. Fees include food, lodging, and classes for one week. Check the newsletter for details.

**SUNSHINE:** Cards were sent to Charlie McPherson and Joe Devine.

**SHOW:** 42 days left 30 dealers, 12 demos, and 5 classes. Volunteer sign-up sheets will be on the tables. There is a food sign-up sheet for the dinner Friday evening. This show is run entirely by MAGS volunteers. Your names can be on more than one sheet. Sign often, we need you! There will be 2 great door prizes. A collection of minerals from the United States, and jewelry pieces with the jewelry box. Chances on the door prizes will be \$3.00. T-shirts are on sale; you have two color choices—orange or blue. T-shirts are great for field trips and the show.

**JUNIORS:** Gemstones will be the program for April. Hint—All minerals are not gemstones but all gemstones are minerals.

**PROGRAM:** Our program tonight will be given by Roger Van Cleef about his adventure to South America's Machu Picchu.

**DISPLAYS:** [1] George and Rena Everett—items from South America; [2] W.C. McDaniel—Brazilian Agate; [3] Sherri Baldwin—material from Nonconnah Creek and Birmingham Ridge.

**DISPLAY WINNERS:** George and Rena Everett

**DOOR PRIZES:** Doris Parsons, Carl Warren, and Melinda Warren  
Meeting adjourned at 8:50pm followed by refreshments.

This month's glossary terms are from *Merriam-Webster Online Language Center*, <http://www.m-w.com/home.htm>; 21 April 2003.

**AMPHIBOLE:** any of a group of complex silicate minerals with like crystal structures that contain calcium, sodium, magnesium, aluminum, and iron ions or a combination of them

**HORNBLLENDE:** a mineral that is the common dark variety of aluminous amphibole

**MOUND BUILDER:** a member of a prehistoric American Indian people whose extensive earthworks are found from the Great Lakes down the Mississippi valley to the Gulf of Mexico

**PALEO-INDIAN:** one of the early American hunting people of Asian origin extant in the late Pleistocene

**SUBTERRANEAN:** being, lying, or operating under the surface of the earth

**ZEOLITE:** [1] any of various hydrous silicates that are analogous in composition to the feldspars, occur as secondary minerals in cavities of lavas, and can act as ion-exchangers; [2] any of various natural or synthesized silicates of similar structure used especially in water softening and as adsorbents and catalysts

*If you have entries [5 or 6 glossary terms] that you would like to see included in the MAGS Glossary, email them to [editor@memphisgeology.org](mailto:editor@memphisgeology.org) or mail them to Mike Baldwin, 367 N. Main Street, Collierville, TN 38017. Send as many entries and as often as you like. Don't forget to include your sources.*

SIXTH ANNUAL  
MISSOURI  
MINES  
ROCK SWAP  
JUNE 13-15, 2003

Missouri Mines State Historic  
Site • Park Hills, Missouri •  
South Side of Hwy. 32, 1.5 miles  
west of US Hwy. 67

**SWAP – SELL – BUY  
ROCKS – MINERALS –  
FOSSILS – ROCKS –  
JEWELRY/CRAFTS**

- Modest Space Fee
- Bring Your Own Tables
- Limited Area Under Canopy
- Primitive On-Site Camping
- Nearby Motels and Campgrounds
- Anticipate Big Local Attendance
- Potluck Dinner Sat. Evening
- Tour Mining – Mineral Museum Free
- Auction – To Benefit Museum

**FOR MORE INFORMATION  
OR SPACE RESERVATION:**

Missouri Mines  
P.O. Box 492  
Park Hills, MO 63601

Or call: Missouri Mines State  
Historic Site – 573-431-6226;  
Lloyd & Betty Marlar –  
573-431-2951 (chairman);  
Allys Bell – 573-756-7710; or  
Willis Smith (St. Louis) –  
314-521-8896

**SPONSORED BY:**

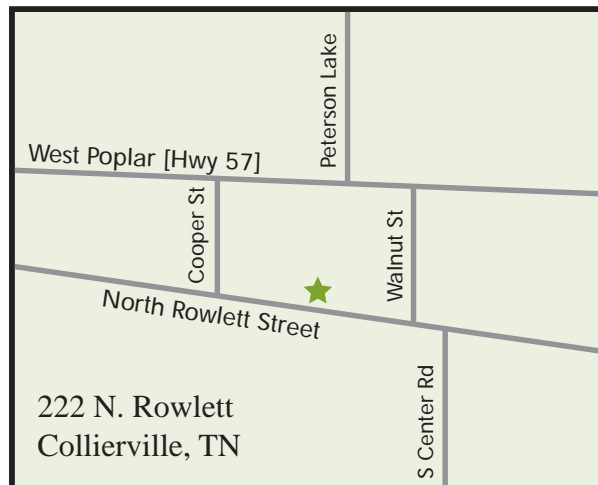
Mineral Area Gem and Mineral  
Society, the Greater St. Louis  
Association of Earth Science  
Clubs, Missouri Mines State  
Historic Site, and the Missouri  
Department of Natural Resources

# ROCK SWAP

*MAGS Rock Swaps are times for members to come together to eat, visit and talk about, sell, buy and swap rocks. Come join us. You do not have to have material to swap in order to come to the swap. It's a picnic, minus the ants, but with plenty of rocks, fossils and materials.*

**Saturday, May 10, 10-2 p.m. • Carolyn Hays, 222 N Rowlett, Collierville**

MAGS provides all the cutlery, plates and napkins. Members bring a potluck dish to share, drinks, lawn chairs and a table [if you plan to swap rocks]. We eat around noon. At 1:00 p.m. we will have a round table discussion “MAGS: Rockhounds’ Home Remedies” where club members will be asked to talk about and show examples of material that they have changed/modified using some type of product from the home, hardware store or grocery store. Share your experiences and knowledge.



*To get to the home of Carolyn Hays from Memphis, drive east on Poplar Avenue (Hwy. 57) to Cooper Street in Collierville. Turn south on Cooper, then east (left) onto Rowlett. Carolyn's house is located between Cooper and Rowlett on the left.*

Map by Mike Baldwin

## GOLD PROPERTIES

MIKE BALDWIN: The program for May, “The Process of Gold Mining” will be presented by Terry Panhurst, University of Mississippi. In the event that you decide to take up the task of gold prospecting, here are few interesting things about gold that you might need to know:

- [1] Gold is a very heavy, yellow metal, with a specific gravity of 19.3 [19.3 times as heavy as water]. By comparison, lead has a specific gravity of 11. Gold is almost twice as heavy.
- [2] Gold is resistant to most naturally occurring chemicals, so it doesn't tarnish or deteriorate.
- [3] Gold is very malleable and ductile. It can be hammered so thin that 250,000 sheets would make a stack one inch high. One ounce can be drawn into a wire thirty five miles long.
- [4] Gold is never found pure in nature. It is usually alloyed with copper, silver and/or platinum.
- [5] When you pan for gold, it will be found at the bottom of the pan. Gently swirl water around in your pan. Gold acts differently than the other material—it doesn't move as easily.
- [6] Because gold doesn't have much of a crystalline structure, it doesn't sparkle or glitter—it shines. It looks the same in sunlight or in shade.
- [7] If in doubt, bang it with a hammer. If it flattens, it is probably gold. If it shatters, it isn't.

*To learn more about recreational gold prospecting, visit <http://miningold.com/>*



# MINI MAGS

## FOSSILS: WHAT WERE THEY BEFORE THEY TURNED TO STONE?

Kids, join us on May 9, and explore the world of fossils. Idajeon Jordan will show just what some of these creatures looked like millions of years ago.

**COLLECTOR'S CARDS:** Cut out the Dinosaur Card, and the Specimen-of-the-Month card, fold on the dotted lines, tape them closed and add them to your collection.

## [M&M's] WHAT'S UP WITH THE KIDS

MAY: Bring your favorite fossil finds to the May meeting. You will be fascinated when you discover how these creatures ate, traveled and lived millions of years ago. Idajeon Jordan will answer your questions about the fossils in your collection. Don't miss this one ... and bring a friend. The MAGS field trip to Missouri will be a fun one. We'll be collecting minerals in the Potosi area on Saturday and Sunday, and maybe a visit to the museum in Park Hill. But that's not all ... we'll be going to southern Illinois to collect geodes on Monday. So sign your family up and put on your traveling shoes .... *ROAD TRIP!*

### YOUTH NEWSLETTER:

You will receive your copy of the *May MAGS Explorer* at the May meeting. If you miss the meeting, you can read it online or download it from our website at <http://www.memphisgeology.org/images/explorer0503.pdf>. Send your articles to [rockclub@earthlink.net](mailto:rockclub@earthlink.net). *MAGS Rocks!*

## WEB STATISTICS

Here's a brief look at our website ([www.memphisgeology.org](http://www.memphisgeology.org)) from 01.21.02 through 04.23.03:

Visits\* ..... 50,568  
Hits\*\* ..... 305,640


### Top pages in April


RockNews0203.pdf ..... 311 hits  
RockNews0403.pdf ..... 281 hits  
RockNews1202.pdf ..... 223 hits

Average visits per day in April ... 255

\* visit= every time someone comes to the site

\*\* hit= every page viewed on the site

Did You Know . . .	Majungatholus
<p>Paleontologists are still not certain what type of dinosaur Majungatholus was because they have only found number of skull parts. For many years it was thought to be a relative of Pachycephalosaurus. Recently, scientists have begun to think it was a large meat-eater. The general consensus among researchers is that the quality of the fossil material is too poor to make any certain classification for this dinosaur. Hopefully, future discoveries and research will shed more light on this mysterious dinosaur.</p> <p>Majungatholus was discovered in Madagascar, an island nation that scientists are finding is rich in fossils. Many new fossil hunting expeditions are turning up lots of new dinosaur discoveries.</p> <p><small>©2003 Memphis Archaeological and Geological Society</small></p>	<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: small;">MAGS DINOSAUR CARD</div> <div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; font-size: small;"> <p><i>Majungatholus atopus</i> Pronounced:mah-Jung-ah-Tho-luss Diet: Carnivore (meat-eater) Name Means: "Majunga Dome" Length: 26 ft. (8 meters) Height: 9ft. (2.5 meters) Weight: unknown Time: Late Cretaceous-80 MYA</p> </div>

Did You Know . . .	Petrified Wood
<p>Many fossils are preserved by silicification of their soft parts, or of their calcareous shells and bones. The Petrified Wood found near Brilliant, Alabama has been replaced by smoky quartz.</p> <p>As the name suggests, smoky quartz is a smoky/ grey-black variety of the common mineral species, quartz. It may also vary in its color from a transparent, citrine-brown through brown to black.</p> <p>Entirely black examples are sometimes referred to as "Morion". This genuine coloring is normally the result of natural irradiation of the quartz from associated minerals or from those occurring in the host rock.</p> <p><small>©2003 Memphis Archaeological and Geological Society</small></p>	<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: small;">MAGS SPECIMEN CARD</div> <div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; font-size: small;"> <p>Composition: SiO<sub>2</sub> Hardness: 7 Crystal form: prismatic Cleavage: none Fracture: conchoidal Streak: white Color: brown to black Location: Brilliant, Alabama</p> </div>

# 1,200-YEAR-OLD VILLAGE FOUND IN ILLINOIS

MIKE BALDWIN—Hundreds of points and pottery fragments [pochards] from the Late Woodland Period [500-1,200ad] of paleo-Indian history were unearthed in April 2003, in a hillside near Damiansville, Illinois, about 35 miles east of St. Louis.

This is one of several significant finds in this area in recent years. This particular site is significant in that evidence of a ‘keyhole’ house [part of a small village dated around 800ad] was also discovered. ‘Keyhole’ houses were so-named because their shape resembled that

of a keyhole. These houses were constructed of clay and logs, whose rooms were partially subterranean. A dome-covered living area was accessible through a long, straight, covered entryway.

Several ‘keyhole’ houses from the Late Woodland Period were discovered near Middleton, Wisconsin in 2000. These houses were built around 1,000-1,200ad and were associated with the mound-builders of that period. ‘Keyhole’ sweatlodges from this period have been found in Maryland and Pennsylvania.

Except for items that are specifically copyrighted by their authors, other societies may use material published in MAGS Rockhound News provided that proper credit is given and the sense or meaning of the material is not changed. Editor: Mike Baldwin, 367 North Main Street, Collierville, TN 38017. ©2003 Memphis Archaeological and Geological Society.



**AFMS NEWSLETTER AWARDS:**

New Editor 7th Place-95 • Junior Article 3rd Place-98

**SFMS NEWSLETTER AWARDS:**

New Editor 1st Place-86 • New Editor 2nd Place-88, 97

Certificate of Excellence-89, 90, 91, 92, 93 • Large Bulletin-87

Art-77, 80, 81, 82, 86 • Original Articles-(4) 85, (6) 87, (2) 89, (2) 90, (5) 91, (3) 92

**DUES:**

Family-\$20.00

Single-\$16.00

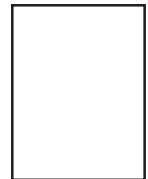
Junior-\$8.00

Associate: \$13.00

The Memphis Archaeological and Geological Society’s main purpose is to promote and advance the knowledge of the Lapidary Sciences in the mining, identification, cutting, polishing and mounting of gems, minerals and fossils to the utmost of our geological and lapidary capabilities.

MAGS Rockhound News is printed on Hammermill Jet Print, 24 lb., Radiant White. Typefaces are Futura, Univers, Stone, Times New Roman.

MAGS Rockhound News  
367 North Main Street  
Collierville, TN 38017-2301



## MARK YOUR CALENDAR

Board Meeting  
May 1

General Meeting  
May 9

MAGS Rock Swap  
May 10

M<sup>3</sup> Meeting  
May 15

DMC Field Trip  
May 17

MAGS Field Trip  
May 24-26

