## Southern Maryland Rock and Mineral Club



# Rock Talk





## Message from the Acting President

**Bob Davison** 

Since we were snowed-out in January, this will be our first meeting of the year. Our Officers have been working on ideas to make this a great year. Dave will be talking about some of the Field Trips he is planning and about ideas he has for an EFMLS Region IV Picnic and Swap/Sale. He also went to Quartzite this month and will be talking about his trip. Carole has some ideas for Programs she is planning including a college-level course titled "An Introduction to Geology". (We could all get a little smarter about our hobby).

I hope to see you at the meeting on Tuesday.

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Next Meeting: February 23, 2016@7:00 PM

#### **Program:**

Al and Carole Raucheisen
"Western Wanderings: A Show and Tell on Collecting
in the Canadian Rockies and Western U.S."

#### **Refreshments:**

Harry and Tina League

The minutes for the January's meeting were not recorded due to weather-related cancellation.

# Upcoming Shows and Events: 2016

March 5-6-- Newark, DE—53<sup>rd</sup> Annual Earth Science Gem and Mineral Show, hosted by the Delaware Mineralogical Society, Delaware Technical and Community College, 400 Stanton-Christiana Road (@I-95 Exit 4B)

March 13-- Bowie, MD—5<sup>th</sup> Annual Fossil Auction, hosted by the American Fossil Federation North Bowie Community Center (3209 Stonybrook Dr., Bowie, MD). Doors open at 11 AM. Business meeting begins at noon. Auction begins between 12:45 and 1:00. All sales are cash only.

March 19-20-- Gaithersburg, MD - Gem Lapidary, and Mineral Society of Montgomery County MD., Inc. 52<sup>nd</sup> Annual GLMSMC Gem, Mineral and Fossil Show At the Montgomery County Fairgrounds , 16 Chestnut Street, Gaithersburg, MD

March 19-20-- Sayer, PA—47<sup>th</sup> Annual Che-Hanna Rock and Mineral Club Show, Athens Twp. Volunteer Fire Hall, 211 Herrick Avenue

### EFMLS/AFMS NEWS by Timothy Foard



The December/January newsletter recognizes the AFMS rockhounds of the year from the various region federations. The Austin convention recap and the changes to the AFMA Uniform Rues are also present in this issue.

In addition, the results of the competitive exhibit, web site competition, editors contest, and the All American awards are published in this issue.

For these and other information, visit www.amfed.org



The EFMLS Newsletter for February has is a list and description of spring and fall classes available at the 2016 EFMLS Wildacres in North Carolina. There is an announcement of the annual web site competition. The "Junior Activities" article suggests the use of museum field trips as an alternative to collecting field trips. There is a reminder to renew club dues and insurance for 2016. There For these and other information, visit www.amfed.org.efmls

# Rocks, Minerals, and Fossils in the News

# Earth's rarest minerals could hint at life on other planets

https://www.newscientist.com/article/2077359-earths-rarest-minerals-could-hint-at-life-on-other-planets/



Tellurium has a rare old time with germanium to form alburnit (Susan E. Degginger / Alamy Stock Photo)

Some are buried in volcanoes or hyper-saline lakes, others exist only in nano-quantities or disappear in a puff of smoke when exposed to the air.

The world's 2500 rarest minerals have now been categorised for the first time, revealing intriguing implications. Most have been formed in processes directly or indirectly related to living organisms, and so they may serve as a signature of life on other planets, the authors suggest.

"Rare minerals represent Earth's truest distinction from all other planets, reveal the sub-surface conditions that created them and offer insights into our planet's past biological upheavals," says Robert Hazen of the Carnegie Institution in Washington DC, who compiled the list with Jesse Ausubel of Rockefeller University, New York.

Half of the 5000 known minerals on the planet are each found in five or fewer locations, and the entire known volume of some is less than one cubic centimeter, small enough to fit into a matchbox.

And far from all being rock solid and unchanging, many are highly ephemeral. Some minerals evaporate on contact with air, others decompose in sunlight.

These rocks are far rarer than the minerals known as rare earths, such as scandium and yttrium that are used in modern electronics.

Hiding in plain sight

Some only turn up in minute quantities. Such minerals hiding in plain sight include ottoite and a number of others containing tellurium spotted under the microscope in rocks from Otto Mountain, near San Bernadino in California.

So why is the planet stocked with so many rare minerals? Sometimes it is because the elements that comprise them can only get together under highly unusual conditions. Geologists have only found hazenite, a hydrous phosphate, in the extremely alkaline Mono Lake, again in California, where it is precipitated out by microbes at a pH of 10.

Fingerite, a combination of copper and vanadium, is only known in the fumaroles of the Izaico volcano in El Salvador. Other minerals are rare because they are unstable under most conditions. Harmunite may be made of common elements — calcium, iron and oxygen — but it is destroyed on contact by one of the commonest minerals of all: silica. So far it has only been found in two places.

And hatrurite, discovered in the Hatrurim Formation, in Israel, is made up of super-abundant silicon,

calcium and oxygen, but forms only above 1250 °C, and in the absence of aluminium.

Other rare rocks are made of rare elements that don't often come together. So beryllium and antimony get together in a crystal called swedenborgite, and germanium and tellurium in alburnite, a mineral that was first discovered in 2014 in the mountains of Romania.

A few rocks on the list only exist in theory at present. Nobody has ever found carbon dioxide in a crystalline form, says Hazen, because it is only stable below -78.5 °C, which would restrict it to a few places in Antarctica, though it's been spotted on Mars.

Sidelined by geologists because they are apparently insignificant in the big picture of Earth sciences, these novel minerals are no mere novelties, Hazen insists.

Often created under extreme conditions, they could yield important secrets about both the creation of the Earth and its crust, and of life itself. Indeed, some theories of origins of life, suggest the involvement of sulfates, borates and molybdates.

Two-thirds of rare minerals arise as a consequence of biological processes, such as biomineralisation, the authors say. These minerals could shed light on the co-evolution of biology and geology. And looking for them in space could be a good way to seek out the presence of life on other worlds, says Ausubel.

Journal reference: *American Mineralogist*, DOI: 10.2138/am-2016-5601CCBY

# Minerals of Georgia' provides a comprehensive geological record

http://www.examiner.com/review/minerals-of-georgia-provides-a-comprensive-geological-record

February 4, 20163:05 PM MST



The geological trio of Jose Santamaria, Julian C. Gray and Dr. Robert B. Cook celebrate their new book, 'Minerals of Georgia'. *Charles A Atkeison (used with permission)* 

A new book designed to showcase Georgia's geological beauty while educating amateur geologists on the scientific makeup and locations of the minerals found in the state was released on Thursday during a public event at the Tellus Science Museum.

Minerals of Georgia (University of Georgia Press) by Dr. Robert B. Cook and Julian C. Gray, and edited by Jose Santamaria, accounts for every type of rock, mineral and gem discovered in the Peach State and places them on display using high definition photography. The beautiful imagery spotlights the minerals detailed information and their known locations.

Dr. Cook is a professor emeritus of the Department of Geology and Geography at Auburn University. Gray is executive director of the Rice Northwestern Museum of Rocks and Minerals in Hillsboro, Oregon and a former curator at Tellus. Santamaria is Tellus' executive director and penned an informative Forward for this book.

"The three of us got the mineral collecting bug early when we were kids," Santamaria said as he, Cook and Gray sat down for a candid discussion on Thursday. "We have pursued that interest in various manners, but I think it circles back to this book - a passion of

love and interest. Getting it done and getting it into peoples hands was our goal."

This updated project to Dr. Cook's original book of the same name published in 1978 digs deeper into new mineral discoveries; includes a strong scientific narrative of each classification; and adds photographs not included in the first edition. Cook offers this book as his legacy, while Santamaria refers to both editions as "the bible of Georgia mineralogy to mineral collectors."

Minerals of Georgia is a backpack explorers connection to the hidden treasures embedded within Georgia's vast mountains, grounds and rivers. The nature enthusiast and trail hiker will appreciate the information contained within its beautifully designed and easy to reference layout.

"The section on gold has been expanded as there had been so many questions about Georgia gold that I went back and I was able to document the gold specimens that were donated to the state of Georgia starting back about 1880," Dr. Cook explained. "There were good gold collections, large numbers of nuggets, and we've added all that into the section of gold."

Laughing and relaxed prior to the books official release, the geological trio offered up what they enjoyed about the book itself. Their conversations drew up new remembrances over the past 15 years in which they collaborated to create this expanded new edition.

"To me the most exciting and important thing is the fact that since the original book was published, doing more through collecting and finding new minerals from sites which were already mention," said Santamaria. "There's a chapter were we added new minerals to Graves Mountain. There were originally around 20 listed and now it's close to 50. This is through not only diligent collecting, but the passion of some mineralogists that put them under a

microscope to find out what are those minerals that exist only in that area."

"Jacksons Crossroads in Wilkes County is one of the most famous amethyst locations in the world," Gray jumped in to offer. "A band of collectors from Athens went out there with hand tools and began to find some amazing things. Following a commercial mining effort, they began pulling out some world class crystals. They're in museums and collections all over the world. This discovery at Jacksons Crossroads was not known about when the original book was written."

The soft cover book includes several indexes, and is laid out to support quick research for the average user. "An important aspect for this book is there are three indexes beginning with minerals, locality and there is an index of counties," Santamaria continued. "If you have a family trip to Heard County, and you think about what could be found there, you can actually look up on the index and it will refer you to all of the different minerals and the pages."

Cook, Gray and Santamaria expressed that they each signed over their royalties of the book over to support the museum. Santamaria has served as the museum's director since 1996 when the then Weinman Mineral Museum expanded to become Tellus in 2009.

Minerals of Georgia is available at the Tellus Science Museum gift shop and available internationally for order online for the \$32.95 price plus shipping. The museum notes that members will receive a discount in the store.

Minerals of Georgia, Their Properties and Occurrences by Dr. Robert B. Cook, Julian C. Gray and Jose Santamaria Illustrated. 344 pp. University of Georgia Press; 2nd edition (2016) ISBN 978-0-8203-4558-1

### Sycamores dig fluorescent minerals on weekend camping trip

http://www2.indstate.edu/news/news.php?newsid=46 Indiana State University Newsroom 20



Indiana State University students pose at the Garden of the Gods in Shawnee National Forest during a recent trip.

Indiana State University's Environmental Science Club broke free of the classroom for a mixture of fun and hands-on learning.

The group spent a weekend camping across the Midwest this fall, visiting Cave-in-Rock State Park in Southern Illinois, the Ben E. Clement Mineral Museum in Marion, Ky., and the Garden on the Gods in Shawnee National Forest. The semesterly planned trips were finally able to begin this year thanks to agreeable weather, said club president Natalie Erlenbaugh.

"Each trip is supposed to be environmentallyfocused, dealing with nature, so it gives our students -

- most of them who are environmental science majors
- an opportunity for hands-on experience while also having fun," she said.

Erlenbaugh is a junior environmental and human systems major from Indianapolis with a minor in sustainability. The camping group consisted of 10 students and faculty adviser Jeffery Stone.

The name of Cave-in Rock State Park may sound strange initially, but Erlenbaugh said the park is a "large limestone cave that was carved out by hightide by the Ohio. Bandits used to stow away their treasure along there, so I thought it would be really cool to stop and look at it along the way. We have a lot of geologists in the club."

After setting up camp, Erlenbaugh and her group traveled to the Ben E. Clement Mineral Museum in Marion, Ky., which offers tours and rock digs. The campers arrived in the afternoon and participated in an hour-long tour of the museum, which is home to more than 500 minerals and fluorescent rocks. Each room had a theme, said Erlenbaugh -- a room full of quartz, a room for glow-in-the-dark rocks and ones that she found had interested patterns when lit from below that revealed the rock's structure.

The students were taken to the dig site and given hand-held U.V. lights, which made rocks shine in purples, greens, oranges and blues from the minerals within. Erlenbaugh said the group was able to collect a five-gallon bucket of these rocks, half of which will be featured in an ultraviolet display in the science building.



Minerals are seen at the Ben E. Clement Mineral Museum in Marion, Ky.

Stone said the night "mining" for fluorescent minerals was the most fun.

"Everyone was engaged and excited to be there. The students would yell out every time someone found some new rock glowing an unusual color under the UV light, or when they came across a nest of spiders -- there were a lot of spiders there," Stone said. He said the students did not mind the cold, damp or darkness. "They just cared about what we found and how we could find more."

Stone not only found importance in the fun aspects of the trip, but also he noted the students seemed more willing to ask questions than in the classroom, possibly because of the casual environment or increased curiosity.

"If you want to encourage students to become engaged and enthusiastic about nature, you have to go into the world and experience it firsthand," Stone said. "More than just the experience, I think learning something on a trip like this sticks with students -- they won't forget what they learned two weeks after they take a test over it."

Andrew Rettig, a senior construction management major from Indianapolis, joined the club his freshman year because of his passion for the environment and his desire to explore it. "My favorite part of the trip was the night dig after we looked at the museum," Rettig said. "On the trip, I saw a lot of the topics covered in my ENVI 170 class. The hands-on experience of seeing the topics was a great, memorable experience."

On the campers' way back to Terre Haute, they stopped to enjoy the pleasant weather with a hike along the 320 million-year-old sandstone cliffs of the Garden of the Gods in Shawnee National Forest.

"My favorite place was probably the Garden of the Gods," said Erlenbaugh. "The views were spectacular and it was just a time in the fall when all the trees are starting to change colors. It was just beautiful."

The Environmental Science Club is already excited for this semester's trip, whatever that may be. Rettig said he formed friendships through the club and that the trip allowed the group to grow closer as friends. The environmental science majors on the trip taught Rettig about the minerals studied on the trip.

"Our next planned field trip is to the Indiana Museum," said Stone. "But for the next big outdoor field trip, we've talked about going to explore some of the caves in southern Indiana, I think."

The club is made up of majors in geology, environmental science and related majors, but also includes students who enjoy the environment through hiking or other activities or want to help in the community.

"We're a fun group, with lots of fun people," said Erlenbaugh.

The group meets at 5:30 p.m. Thursdays in room 164 of the science building.

# 100-million-year-old amber preserves oldest animal societies

http://www.heritagedaily.com/2016/02/100-mllion-year-old-amber-preserves-oldest-animal-societies/109678 Byheritagedaily

Posted on February 11, 2016



Fighting ants, giant solider termites, and foraging worker ants recently discovered in 100-million-year-old amber provide direct evidence for advanced social behavior in ancient ants and termites—two groups that are immensely successful because of their ability to organize into hierarchies.

The new work, led by scientists at the American Museum of Natural History and the University of Kansas, and published today in two papers in the journal *Current Biology*, proves that advanced sociality in ants and termites was present tens of millions of years earlier than indicated by the previous fossil record.

"Ecologically, advanced sociality is one of the most important adaptive features for animals," said co-author Dave Grimaldi, a curator in the Museum's Division of Invertebrate Zoology. "All ants and termites are social, and they are ubiquitous across terrestrial landscapes, with thousands of described species and probably even more that we haven't yet found."

Advanced sociality, or eusociality, a hallmark of which is reproductive specialization into worker and queen castes, is essentially a phenomenon of the group of invertebrates known as arthropods. Queens and reproductive males take the roles as the sole reproducers while the soldiers and workers defend and care for the colony. Eusociality occurs in a range of arthropods, from some shrimp, beetles, and aphids, to various wasps, though the phenomenon is nowhere more pronounced than in honey bees, ants, and termites. (Among vertebrates, eusociality is found in just two species of African mole rats.)



A reproductive termite Krishnatermes yoddha is in amber. CREDIT © AMNH/D. Grimaldi and P. Barden

Eusociality is thought to have appeared first in termites in the Late Jurassic, about 150-160 million years ago. However, before the new work, the earliest termites ever found that could definitively be tied to a caste system were from the Miocene, a mere 20 to 17 million years ago. A similar story held true for ants, whose evolutionary history with eusociality was also

thought to be long, but only weakly supported by the fossil record.

"In the Cretaceous amber we examine, the ants and termites represent the earliest branches of each evolutionary tree, and the species are wildly different from what their modern relatives look like today," said co-author Phillip Barden, a recent graduate of the comparative biology doctoral program at the Museum's Richard Gilder Graduate School and a National Science Foundation Postdoctoral Fellow at Rutgers University. "We wanted to know how social these creatures were, if they were social at all."

A number of spectacular pieces of amber recently recovered from Myanmar gave Barden, Grimaldi, and their colleagues a clear answer: Eusociality was going strong in both groups during the Cretaceous.

In termites, the researchers made this determination based on the diverse anatomy of the animals, indicating the presence of castes. They found six different termite species preserved in the amber, two of which are new to science: Krishnatermes yoddha, comprising workers, reproductives, and soldiers; and Gigantotermes rex, based on one of the largest soldier termites ever found—about an inch in length, half of it being its head, with scissor-like jaws.

The amber ant fossils froze a number of eusocial behaviors in time. Those include: the presence of different castes, including queen ants and workers; groups of worker ants in single pieces of amber, probably nestmates foraging together; and two workers of different ant species engaging in combat.

"We know that wingless solitary relatives of ants don't fight or defend territories against other species," Barden said. "But modern ants war all of the time. The behavior of these fossil ants, frozen for 100 million years, resolves any ambiguity regarding sociality and diversity in the earliest ants."

We're still trying to figure out how this happened."

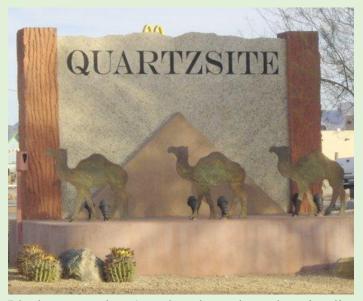
### **Arizona is the Place to Be (In January!)**

Photos and Article By Dave Lines

On the weekend of January 23, 2016 when we were having a blizzard around here, a little voice in the back of my head reminded me that we were trapped by several feet of snow drifted across our driveway -- a half a mile from the paved road. No matter that we had reservations to leave on a flight from BWI on Tuesday two days away, we were not going anywhere until we dug out.

Thus began our odyssey. On Sunday, I spent 9 straight hours on our tractor pushing snow to clear a path to the highway across our field. And because every parking space at or near BWI was covered with 29 inches of snow, we decided on Monday to drive to a motel and spend the night near BWI. Good decision. We departed BWI on time arriving in Phoenix that afternoon. What a change! A balmy 72 degrees and sunny. Very nice. I could take more of this. We found our rental car and drove off --- reaching our room at the Bluewater Resort and Casino overlooking the Colorado River in Parker in time for supper. Wow --- what a difference 24 hours can make.

After a great night's sleep, Ann and I headed to an iconic little restaurant in Parker for breakfast. "Coffee Ern's" is where I had eaten many delicious breakfasts with my rockhound buddies from California before we spent the days rock collecting in or around Quartzsite. We loved it. What's not to love about a stack of thick pancakes with eggs and bacon? Then we went south about 25 miles for Ann's very first visit to Quartzsite --- a mecca in the middle of the Arizona desert for thousands of "snowbirds" living in RV's and trailers from every state as well as Canada.



I had suggested to Ann that she make a shopping list of whatever she wanted and try to buy the items from the thousands of vendors there. We first made a practice run with the vendors along the north side of I-10. You have never seen such a conglomeration of stuff for sale. Plus I saw plenty of rocks --- mostly junk. Then we drove across I-10 to the Tyson Wells show and found a great place to park in front of Coleman's (Arkansas quartz crystals galore with prices from \$1 to \$35,000.) We spent the next 2 hours shopping --- Ann with her list and me just looking for rocks. I didn't find much that I wanted – but Ann found a nice pocketbook that she needed at a good price. After a lunch from one of the food vendors, we headed over to the Desert Gardens show about a mile away. It was deserted. 80% of the vendors had left town because most their customers were now headed for Tucson. While Ann elected to stay in the car and take a nap, I went straight to the first vendor I saw and asked if there was a vendor couple there named "Dave and Amy"? YES --- about 10 spots away on the left side behind the 55 gallon barrels of rocks. Whoa!! They had really expanded their operation since I had seen them in 2011. I walked straight to their trailer and --- seeing no one around - knocked on the door. Out popped Amy who welcomed me with a big hug and a big smile. We spent the next few minutes catching up on the

last 5 years. I had originally met David and Amy Walker in 2008 at the World Championship Quartz Crystal Dig in Mt. Ida Arkansas. Dave has been a perennial winner since the contest began 30 some years ago. Their latest news was that Dave was now helping to <u>RUN</u> the Desert Gardens Show. He was in charge of all the facilities --- water, electricity, showers, restrooms, etc. The place looked great --- very clean and organized.

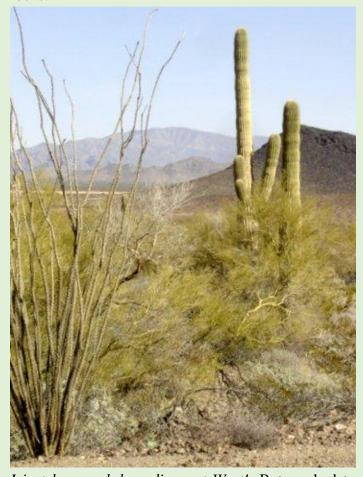
Dave and Amy had participated in the Championship Dig back in October 2014 and it seems that Bobby Fecho (featured in my 2008 RockTalk article) had remarried and opened his own mine called "Twin Creek" very near Fiddler's Ridge and he was doing well. Of course, we were invited to return to Mt. Ida for the 2016 Dig.

I spent about an hour checking out the rest of the vendors and buying a few rocks. Then we headed to Love's Truck Stop for gas and some postcards. Then back across I-10 to more rock shops and to a huge building called Gem World --- again for a few more treasures including some "zingers" – those pairs of magnetic little balls that "buzz" (alternatively repelling and attracting) when you throw them up into the air.

We left Quartzsite by 5 p.m. and headed back to Parker where we enjoyed a delicious dinner at a nice local Mexican restaurant called "El Sarape". We returned to our hotel and turned in early – very tired but happy.

The next morning we departed early and stopped by Safeway to pick up some snacks, bottled water and some wine and flowers for our future hosts in Sonoita about 300 miles to the southeast. After another great breakfast at Coffee Ern's, we headed east admiring the desert scenery --- all so much different from Southern Maryland. After an hour or so, we pulled off on a random dirt road to stretch our legs and to show Ann some of the local plants and rocks while explaining things like "desert varnish" --- the shiny black coating on rocks which were exposed to years and years of harsh desert sun and wind. We stopped

again about 30 minutes later at an old copper prospect near I-10. The plants were totally different and included three different kinds of cactus --- ocotillo (oc-tee-o), saguaro (sa-war-ro) and cholla (choy-ya). Ann had fun taking lots of pictures while I scratched around the old dumps finding blue-green rocks.



I just love rock hounding out West! But we had to get on the road again. We passed through Phoenix and when we reached Tucson, we called our son Jeff and rendezvoused at the "Carl Jr's" restaurant adjacent to I-10. I did a quick walk through vendors at the nearby Howard Johnson's Show and picked up a couple of different Tucson Show Guide books. Gosh --- the number of shows had really increased. When I first visited Tucson in 2002, there were 30 shows --- now there were 43 listed shows --- each with 200 to 500 vendors --- that's probably over 15,000 vendors --- from all over the world! It is hard to comprehend. And even harder to take it all in.

Impossible actually. Anyway, I started with a purchase of a couple of nice rose quartz spheres that had great 6 pointed stars in the sunlight. After Jeff arrived, we headed south for Sonoita to stay with dear old friends from La Plata. We arrived just in time for a great supper and spent the evening catching up. After supper, we capped off the day with several serious games of RummiKub --- an every night ritual with our hosts. We love it! Believe me, the bed felt great when we crashed sometime after 10 p.m. (End of Part 1 --- to be continued)

### **Member's Finds**

Jeff Lines Wins at the 2016 Tucson "Main Show"

Jeff Lines – Dave's son – is a Mining Engineer who lives in California. When he was a kid, he helped Dave at our annual show and he even gave a program to our club about some gem boxes he made. He is an avid rock and mineral collector as well as a small dealer. Every year, the Tucson Gem and Mineral Society hosts has separate show --- the Tucson Gem and Mineral Show, affectionately called the "Main Show" --- at the very end of the 2-1/2 weeks of the other shows. Except it is a really BIG DEAL in the rock world. The show theme this year was "Shades of Blue" so Jeff entered a caledonite crystal he found this past summer. It's a small crystal at 12mm, but that is HUGE for the mineral. Jeff said, "Everyone loved it and wanted to buy it. That's when you know you have a good rock!" Jeff's entry won the Best Self Collected Mineral award for 2016 --- that is the best self-collected mineral in the entire show. He hopes that his specimen makes the cover of the Mineralogical Record issue later this year." (submitted by Dave Lines).



Collected any interesting specimens? Send a photo or two to the editor at <a href="mailto:bmorebugman@yahoo.com">bmorebugman@yahoo.com</a> for inclusion in the next issue of Rock Talk.

### **An Upcoming SMRMC Event**

June 18: La Plata, MD - Southern Maryland Rock and Mineral Club (SMRMC.org) will host a free POTLUCK PICNIC AND ROCK SWAP/SALE for all Eastern Federation (EFMLS) clubs and their families/friends. 9-5 on Saturday June 18th at Gilbert Run Recreational Park located at 13140 Charles Street, Charlotte Hall, MD 20622 which is 8.8 miles east of La Plata, MD. In addition to minerals, fossils and lapidary for swap/sale, each attendee family is asked to bring a potluck dish to share and one (1) labeled specimen donation for an auction after lunch to help defray expenses. Ample parking for tailgate swapping/selling as well as 15 picnic tables under a covered pavilion. Onsite restrooms and handicap access. "Treasure Box" (donations welcome) of excess rocks and related tools for free for anyone to take. **SMRMC** will provide plates/cups/plasticware/sodas/bottled water (no alcohol). \$5 per carload Park Entry Fee for all vehicles. Park has a 60 acre lake and many recreational facilities (playgrounds, boat rentals, trails, etc.) for kids and adults. SMRMC.org for further details. Or contact Dave Lines at dave.lines@earthlink.net or 240-427-7062.



# The Southern Maryland Rock and Mineral Club

Meetings take place on the 4<sup>th</sup>
Tuesday of each month at 7:00pm

Clearwater Nature Center, 11000
Thrift Road, Clinton, MD.

For More information, call:

(301) 297-4575

We're on the web: SMRMC.org

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