

The Conglomerate

Newsletter of the Baltimore Mineral Society
<www.baltimoremineralsociety.org>

Volume 7, Number 9
November 2011



November Program

from Jake Slagle, Program Chair

The next meeting of the BMS will take place November 23rd at the Cockeysville Fire Hall beginning at 7:30 p.m. The program will be a DVD lecture given at the Rochester Mineralogical Symposium in 2008 by John Betts and is entitled "Diamonds: Myths and Misconceptions".



John Betts is a Manhattan dealer (www.johnbetts-fineminerals.com/) in fine minerals who specializes in collectable diamonds. Did you know that some diamonds come in spheres? John will explain.

Board of Directors Meeting

from Brad Grant

I need to meet with the Board of Directors for about 10 minutes before our November 23rd meeting. Let's get together at 7:15 at the Fire Hall.

Write for the Conglomerate

Mike is always eager to receive contributions from YOU for the Conglomerate. You don't have to be a professional writer -- he'll gladly help you edit your article if you need some help.

Please consider sharing something about your favorite aspect of the hobby, mineral, cataloging methods, favorite collecting experience, book, etc. with the members.

Annual Holiday Party • December 19

from Brad Grant

Our December meeting will be the annual Holiday Party, scheduled this year from December 17 at the home of Alice Cherbonnier, 1106 Gypsy Lane West in Towson. We'll begin the pot luck dinner at 6 p.m.



The club will provide ham, lasagna, turkey breast, rolls, condiments and beverages. If everyone who attends brings the same dish that they brought last year (or a variant thereof, we'll have a wonderful feast (examples of what to bring: chili, a vegetable dish, fruit, dessert). Please e-mail Alice at <octahedron1@mac.com> or call her at 410-828-0024 to let her know you are coming, what you're going to bring or if you have questions or want a suggestions. Alice promises some door prizes too.

This event serves as our annual meeting for election of officers. The Nominating Committee reports the following list of nominees for BMS officers for 2012. Further nominations will be accepted at the holiday party.

President: Brad Grant

Vice President: Jim Hooper

Treasurer: Carolyn Weinberger

Secretary: Jake Slagle

At-Large Board Members: Bernie Emery, Al Pribula and Steve Weinberger

Note that the Field Trip chair and the Symposium Chair are ex-officio members of the board.

BMS dues for 2012 may be paid at the party.

Baltimore Mineral Society

The BMS was established in order to allow its members the opportunity to promote the study of mineralogy and to act as a source of information and inspiration for the mineral collector. We are members of the Eastern Federation of Mineralogical Societies and affiliated with the American Federation of Mineralogical Societies.

Meetings are held the 4th Wednesday of each month (except October, December and June) at the Cockeysville Volunteer Fire Hall beginning at 7:15 p.m. Visit the club website <www.baltimoremineralsociety.com> for directions.

Yearly dues are \$10 for individual members and \$15 for family memberships. Send payment along with your name, list of family members, if applicable, address, phone and e-mail to: Bob Hudgins, 6713 Balmoral Overlook, New Market, MD 21774.

Officers:

President.....Bradley Grant
<bgrant@aberdeen-md.org>

Vice PresidentJim Hooper
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TreasurerCarolyn Weinberger
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Directors:

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Ed Goldberg
Steve Weinberger

EditorMike Seeds
<mseeds@fandm.edu>

Write for "The Conglomerate"!

Send news, announcements, comments, observations, or articles to <mseeds@fandm.edu>. No e-mail? Hand in your submission at a meeting.

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Rubble From the President

by Brad Grant



So far it has been a good fall season for your intrepid leader. Patty and I went to the Desautels Symposium and had a wonderful time. The presentations on all three days were fantastic.

The Hall of Fame induction ceremonies for Jim Hurlburt and Pete Richards were very good and they both gave very good presentations. I want to thank everyone who helped set up and clean up the symposium. I also want to send a special thanks to Carolyn and Steve Weinberger for their efforts on this weekend. If you have never been to the symposium, you really should make an effort to attend.

BMS went to the Havre De Grace quarry and had a very good trip. While we had fewer people than normal, we did find some fantastic pyrite specimens. I also found some wonderful material to try my hand at micromounting.

While the club is looking for a new field trip coordinator, I am continuing to try to set up a more trips. With school and scouts underway, if anyone knows of a group that would like to have our club do a presentation, please let me know. This is something I really want to try improving on for the next year.

There was no October meeting so I will see everyone in November and if you are interested in running for an office, please let me know. If you would like to nominate someone else (please get their consent before you do) and just speak up at the meeting.

I need to have a 10 minute board meeting before our November meeting. We'll have it at the Fire Hall at 7:15. The meeting should not last more than 10 minutes.

I'm looking forward to seeing everyone at our next meeting.

September Meeting Minutes

from Jake Slagle, Secretary

President Bradley Grant called the September 28th meeting to order at 7:30 p.m. at the Cockeysville Volunteer Fire Department. He reminded members that the Desautels Micromount Symposium is taking place on September 30, October 1, and October 2, and requested that members volunteer to help with set up, break down, and possibly other functions.

With further details yet to be announced, President Brad announced the scheduling of two field trips: the Vulcan Quarry at Havre de Grace on October 15 and the Churchville Quarry on October 29. He noted most likely that he personally would not be able to attend either trip, and urged all who would attend to adhere strictly to regulations. According to current plans, the Havre

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• Other Local Clubs

♦ **American Fossil Federation.** Meetings are held the 2nd Sunday of alternate months (Jan., March etc.) at 10:30 am at the Bowie Community Center, Bowie, MD. <americanfossilfederation.com>

♦ **Chesapeake Gem & Mineral Society.** Meetings are held the 2nd Friday of each month (except August) beginning at 7:30 pm at the Woman's Club of Catonsville, 10 St. Timothy's Lane. Catonsville, MD.

♦ **Gem Cutters Guild of Baltimore.** Meetings are held the 1st Tuesday of each month except January, July and August beginning at 7:30 pm at Meadow Mill at Woodberry, 3600 Clipper Mill Rd, Suite 116; Baltimore, MD 21211. <gemcuttersguild.com>

♦ **Maryland Geological Society.** Meetings are held the 3rd Sunday of alternate months (January, March etc.) beginning at 11 am at the South Bowie Community Center. <www.ecphora.net/mgs>

♦ **Patuxent Lapidary Guild.** Meetings are held the 3rd Monday of each month at 7 pm. at 169 Defense Highway, Annapolis, MD. <www.patuxentlapidary.org>

Minutes

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de Grace excursion would be for BMS members only; the Churchville trip would most likely include another club. It was pointed out that notice of all trips first be published in the Conglomerate. Bob Eberle offered also to place phone calls that would attempt to line up trips to other localities.

Brad announced that elections for BMS officers and Board would take place at the Holiday Party on December 17th and requested that nominations be submitted.

General discussion that followed focused on how BMS might better present itself at shows. Recommendations were to be make clear that the Club's activities extended beyond simply micromounting, and that it should have a sign announcing its presence, more literature to hand out (specifically Conglomerates), as well as a projector and screen. Jim Hooper suggested that the Club consider exhibiting minerals in display cases.

At approximately 8 p.m., Jake Slagle introduced our speaker, Jeff Nagy, of Damascus, Maryland. Jeff narrated a PowerPoint program that he had put together regarding the history of gold mining in Maryland, most specifically the Maryland Mine near Potomac. Among numerous slides were some picturing native Maryland gold specimens as well as artifacts from the Maryland Mine. These were from the "Ingalls Collection," which was "rescued" after having been all but lost since the early 1970's, while stored in various locations by the National Park Service. The meeting ended at approximately 9 p.m.

Respectfully submitted,
Jake Slagle
Secretary

Desautels Symposium Wrap Up

by Mike Seeds
photos from Willow Wight

The 55th annual Paul Desautels Micromount Symposium, the oldest in the world, got underway Friday afternoon at the MHA Cal Pierson Conference Center in Elkridge, Maryland just south of Baltimore as BMS members arrived to set up tables and chairs, run drop cords, and other tasks. The BMS team was impressive as everyone knew what needed to be done and how to do it.

As our guests began to arrive, Carolyn Weinberger set out a buffet supper and everyone began to talk minerals. Evening digital slide presentations included natural diamond crystals from the Paul Seel collection given by Jim Hurlbut, Ohio minerals shown by Pete Richards, striking photos of fluorescent minerals shown by Dan Behnke, and a short program on radioactive minerals by Mike Seeds.

Saturday morning attendees swarmed over the dealer tables in the hallway. Four dealers covered their tables with unusual minerals in micromount to thumbnail boxes and covered their floor space with flats of fist size minerals. One dealer displayed two tables of tools and supplies. Those not studying the dealer offerings were grazing the giveaway tables. Back in the main room, collectors were busy trading minerals and talking minerals, or hovering over the tables of minerals offered in the silent auction. Many collectors spent time studying John Ebner's impressive display of historic micromounts spread in cases across the front of the room.

After lunch, again prepared by Carolyn Weinberger, attendees returned to mineral business but took time out at 2:30 p.m. for the voice auction assembled and conducted by Al Pribula. A sur-

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Desautels Symposium Wrap Up

by Mike Seeds with photos from Willow Wight

prising array of minerals was knocked down including 17 in some way connected to members of the Micromounters Hall of Fame. Those historic minerals attracted a lot of attention.

At 3:30 everyone gathered in the main room as Quintin Wight inducted two new members into the Micromounters Hall of Fame. Jim Hurlbut of Colorado, a long time collector, has worked for many years curating the Paul Seel micromount collection now at the Denver Museum of Natural History and Science. Pete Richards of Ohio is a well known author of articles on minerals of all sizes in *Rocks and Minerals* and in *The Mineralogical Record*. After the induction, Quintin announced that the BMS Board had elected two new members to be inducted in October 2012 -- Arnold Hampson of Colorado and Rod Martin of New Zealand. Jim Hurlbut then gave a presentation on the minerals of Breckinridge, Colorado.

After supper at nearby restaurants, everyone returned for more minerals and for an evening presentation. Pete Richards showed digital slides of unusual minerals recovered from a naturally occurring shale fire in northern Ohio.

Sunday morning brought collectors back to dealer tables, giveaway tables, and their microscopes, and at 10:30 am, Dan Behnke gave a digital slide presentation "Clark Mine, Keweenaw County, Michigan."

After a buffet luncheon, attendees packed their 'scopes and headed home, and the BMS team went to work in an impressive choreography. One again, everyone knew what had to be done and soon the room was restored, bits of rock were vacuumed up, the trash was out and everyone bid goodbye till next year. Thanks to everyone who helped: Steve Dyer, Bernie Emery, Brad and Patty Grant, Lynne Luger, Robert and Stephanie Miller, Cal Pierson, Al Pribula, Mike Seeds, Rod Tower, and special thanks to Carolyn and Steve Weinberger for all of their help organizing the weekend and supervising the food.

It was a great weekend, one BMS can be proud of. I hope you were there.



New Hall of Fame Inductees Jim Hurlbut (left) and Pete Richards (right) with Quintin Wight.



Hall of Famers in Attendance
From left: Dan Behnke, Cynthia Payne,
Dick Thompsen, Pete Richards, Quintin Wight,
John Ebner, Jim Hurlbut

Gypsum and Anhydrite

Lawrence H. Skelton, via *Strata Gem*, April-May, 2011

The mineral gypsum and its waterless companion, anhydrite, are among the more often encountered minerals found in the earth's crust. Together, they are the earth's most common sulfate mineral. Gypsum is calcium sulfate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ and anhydrite is calcium sulfate or CaSO_4 . Both minerals principally form as sedimentary rocks from the evaporation of seawater. The name derives from the Greek word *gypos* that means chalk or plaster. In 2008, gypsum was mined from 51 mines located in 29 different states. U. S. estimated production that year was 12.9 million tons. The world's leading producer is the Peoples Republic of China, which is followed by 88 other nations.

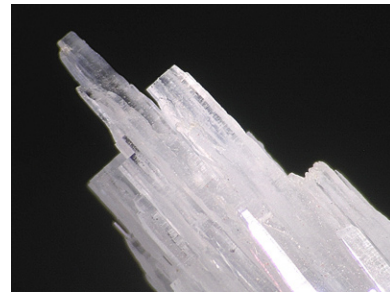
Gypsum was used as mortar in construction of the pyramids in ancient Egypt and has a variety of modern uses. Among them are: drywall, plaster-of-Paris which is used both for art and medical purposes, fertilizer and soil conditioner for alkaline soils, in foods (a coagulant in tofu and look for "calcium sulfate" in food ingredients), glass making, smelting, as a filler in paper products, in toothpaste, blackboard "chalk," in foot creams, shampoos and other hair-care products. Gypsum processing factories usually are located near the mines, both being centrally located within a given marketing area and in order to economize in transporting a heavy, bulky product of relatively low cash value.

Gypsum has a Mohs hardness of 2.0, specific gravity of 2.2 to 2.4 and crystallizes in the monoclinic system. Anhydrite displays Mohs hardness of 3.0 to 3.5, specific gravity of 2.7 to 3.0 and crystallizes in the orthorhombic system. Anhydrite can naturally absorb groundwater and convert to gypsum. When it does so, it expands 33% to 62% its original volume and distorts overlying strata. Both minerals are soluble in ground water causing creation of a karst topography of sinkholes and caverns.

Gypsum may occur in any of five natural forms: selenite, satin spar, alabaster, gypsite and rock gypsum. Selenite is the transparent, crystalline form, which occurs in clay or shale as single crystals, rosettes, or fishtail twins. Its exterior surface usually is pitted or striated and the interior



Bladed Gypsum (var Selenite) from Estacada, Oregon. Randy Rothschild Mount, Dec. 1994. Specimen 3 mm.



Anhydrite from Naica, Chihuahua, Mexico. Field of view 5

often contains shale or clay inclusions. Satin spar has a fibrous, crystalline form and occurs in layers that sometimes are several inches thick. The fibers are oriented at right angles to the layering. Satin spar may form as layers within rock gypsum and is sometimes replaced by calcite forming a pseudomorph after satin spar. Alabaster is a massive, fine-grained, white to pinkish, translucent form of gypsum. It is used for sculptures and as a building stone in arid zones. Gypsite is an earthy, granular form of gypsum that may form at the earth's surface or in low, marshy areas. It is formed by the evaporation of ground water that has become saturated with calcium sulfate. It is non-coherent, light gray in color and can be excavated with a shovel. Gypsite deposits may be several feet thick. Rock gypsum is massive, thick-bedded, gray to white or rarely pink, coarsely crystalline rock. It forms deposits ranging in thickness from a few inches to as much as 1,325 feet (in New Mexico). The 275 square mile White Sands desert in New Mexico is composed of sand-sized gypsum grains.

Gypsum and anhydrite both are precipitated by evaporation of seawater. The average concentration of all dissolved minerals in seawater is 35,000 parts per million (3.5%) of which calcium sulfate comprises 3.60%. Evaporation of 1,428 feet of sea-water is required to precipitate one foot of gypsum. Gypsum also may be deposited by hot springs, volcanic vapors and sulfate solutions reacting with limestone or other calcium-bearing minerals. Whether gypsum or anhydrite is precipitated in a sedimentary basin depends on water temperature and degree of salinity. When evaporation results in salinity 3.35 times that of normal seawater, gypsum forms and will continue to do so until a concentration of 4.8 times normal concentration. Above that, anhydrite forms. Once halite precipitation begins, only anhydrite will form. Water temperature exceeding 42°C. (ca. 105°F.) causes precipitation of anhydrite. Cooler temperatures result in formation of gypsum. Subsequent hydration or dehydration may result in one changing to the other.

Gypsum presently mined in Kansas averages 8 to 9 feet in thickness in the Blue Rapids area in Marshall County and ranges from 10 to 30 feet in thickness in the Medicine Lodge area in Barber County. Anhydrite ranges in thick-

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ness from 100 to 150 feet or more beneath the salt beds in a section extending from eastern Dickinson to western Ellis counties. Obviously, the Permian age deposition basin holding these rocks was not sufficiently deep (over 14,000 feet) to precipitate such quantities in a single evaporation phase. There were in fact, several phases of flooding and subsequent evaporation of this Permian inland sea. A connection to the ocean is thought to have existed in the West Texas/ New Mexico area where high tides and severe storms repeatedly refilled the evaporative basin in what is now Kansas and Oklahoma. Dry periods permitted the deposition of thin layers of red clay and mud on the surface of the exposed beds of evaporite minerals, layers which were covered by more gypsum, anhydrite or salt during the next flooding phase. These clay and mud deposits formed red or gray lines visible in gypsum mines.

Kansas' gypsum deposits occur in strata of Permian age and in the Oaks shale, the uppermost member of the Admire group which recent research has re-designated to be of upper Pennsylvanian age. Gypsum seams and selenite crystals are found in Cretaceous age shale formations in western Kansas. Gypsum and anhydrite are widely distributed in the Permian age (in descending order) Blaine, Wellington and Easley Creek formations. At present, commercial mining is carried on in the Blaine Formation in the Medicine Lodge area of Barber County and in the Easley Creek Shale Formation at Blue Rapids, Marshall County. Gypsum was mined from the Wellington formation early in the past century. Gypsite was excavated at a site (no longer to be found) north of Mulvane. Since gypsum is soluble in ground water, collapsed and/or crumbled layers of gypsum form an aquifer, which supplies water to parts of the eastern Wichita area. The calcium and sulfate contribute to the hardness and sometimes sulfuric taste and odor of that water.

Potentially useful gypsum deposits in Kansas were first identified in 1854, along the Smoky Hill River probably in present Saline County. During the following century, gypsum or gypsite was mined at some time in 19 different locations in 10 different counties: Barber, Butler, Clay, Dickinson, Harvey, Marion, Marshall, Saline, Sedgwick and Sumner. During the 67 years from 1889, when the state began keeping mineral production records until 1956, Kansas produced 8.4 million tons of gypsum. Later production has been rolled in to total amounts of "rock products" in order to avoid release of "proprietary (e.g. economic) data" submitted by very competitive companies and industries.

Gypsum is and has been an important contributor to the economy of Kansas and other producing states. Although supplies are not infinite, the volume of this important resource is sufficient for centuries to come. In use at least since the pyramids were constructed, gypsum truly is the "rock of ages."

Recommended reading:

- Bates, R. L., 1960, *Geology of the Industrial Rocks and Minerals*: New York, Harper and Brothers, pp. 201-212.
- Kulstad, R. O., Fairchild, P., McGregor, D., 1956, *Gypsum in Kansas*: Kansas Geological Survey, Bulletin no. 113, 110 p.
- Schoewe, W. H., 1958, *The Geography of Kansas, Part IV: Economic Geography*: Mineral Resources: Kansas Academy of Science, Transactions, Vol. 61, No. 4, pp. 434-437.
- Ver Wiebe, W. A., 1937, *The Wellington Formation of Central Kansas*: Municipal University of Wichita, Vol. XII, No. 5, 18 p

EFMLS Wildacres Workshops

from Steve Weinberger

Our Eastern Federation sponsors two week-long workshops at the Wildacres Retreat in Little Switzerland, NC. Each session features a variety of classes to choose from and a guest speaker who gives six talks during the session. In addition, for those who have never attended an EFMLS Wildacres session, two scholarships are being awarded this year.

Dates for the 2012 sessions are April 10 - 15 and September 3-9. In April, renowned mineral photographer Jeff Scovil will be the "Speaker-in-Residence" and fall Julian Gray, Curator at the Tellus Museum in Georgia will join the fun. Both are excellent speakers and because they will be with the group for the entire week, you'll be able to talk minerals with them!

Details and applications for both sessions and the scholarships can be found at <www.amfed.org/efmls>. Just click on the Wildacres tab.

Bernie, Lynne, Steve and I will be there in spring and would love to have you join us for a week of fun in an absolutely fabulous place.

Shoobox Adventures: Old Friends

by Mike Seeds

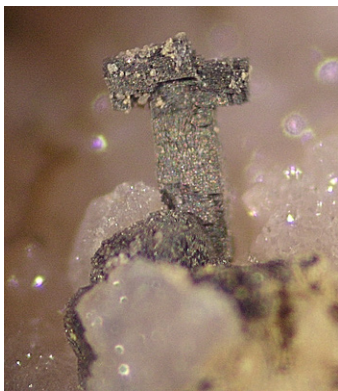
Some minerals are common and some are old friends. They are common, but they take on such interesting forms that they are always welcome. Recently I pulled two specimens out of my shoebox and found that they were old friends. Kidwellite and pyrite are common, but they are always interesting, so they went into microboxes and then into the collection.

Kidwellite is a sodium iron phosphate, and it takes on a number of different forms. One of the most interesting is spheres of radiating acicular needles, which can give it a botryoidal form. If those spheres form in a narrow crack, or if the spheres are broken, the form can be radiating targets of green needles. My specimen was so pretty there was no way to reject it. And it came from Indian Mountain in Alabama, a well known site for phosphate minerals.



Kidwellite
Indian Mountain, AL
Field of view 6 mm

Pyrite, is just pyrite, but it seems determined to attract attention to itself by taking on strange forms. The specimen out of the shoebox was a small piece of quartz labeled (Pyrite hairs, Halls Gap). Yes, there are tiny hairs down among the quartz crystals, but they aren't really pyrite, which is FeS₂. The hairs from Halls Gap are Millerite NiS. They are very fine so you need maximum magnification to find them. But looming in the foreground of this specimen is a strange pyrite cross. It looks like something from Stonehenge, and like Stonehenge it is a bit mysterious.



Pyrite cross
Hall's Gap, KY
Cross: 0.6 mm across

The cross does not have the brassy finish of pyrite but it does have the cubic appearance. It could be chalcopyrite, which is CuFeS₂ and is also found at Halls Gap. The straight edges and right-angle corners suggest pyrite, so the specimen gets labeled pyrite. That could be wrong, but we only do this for fun, right?

Hard Hat Service Life

by Al DeHart

Via The Collecting Bag, November 2011

As part of the Safety Brief for the recent Field Trip to the US Silica Quarry in Montpelier, VA, the Mine representative provided some information on hard hat service life. According to ANSI Z89.1, hard hats must be marked appropriately and should meet this standard.



The manufacturer's date of manufacture for the hard hat is stamped on the underside of the hat, typically near the brim. The arrow points to the year that the hard hat was made. According to the Mine rep, if this year is more than five years old, you need a new hard hat to get into their mine. This is because OSHA incorporates the ANSI standard by reference and mine employers must follow its recommendations.

Since hard hats do break down over time, most manufacturers state that the hard hat's service life will expire in four to five years. Eight to ten field trip participants had to use Mine hard hats due to their own hard hats have exceeded the five year service life. We were lucky that they had the spare ones available to use. This was the first that I have ever heard of this and wanted to pass this on. So check out your hard hat for the date made. Damage such as cracks or damage to the interior suspension is grounds for needing to replace your hard hat. One other aspect is that hard hats constructed of plastic materials will degrade in sunlight due to the ultraviolet (UV) radiation. UV radiation will cause the hat to lose its glossy finish and eventually take on a chalky appearance. If you notice this happening to your hard hat, replace it immediately!

Halls Gap might be an interesting place to collect. It is a road cut in US 27, and in the old days you could pick up quartz nodules that, when broken, contained millerite, pyrite and lots of other minerals. Those easy nodules are long gone, but there are more imbedded in the cut. A report some years ago said that the road cut was now posted, and police were chasing away collectors. A more recent report says the cut is open to collecting again. It would be fun to go there and pick up a few rocks. There is probably nothing really new inside them, but you would certainly find some old friends.

The Conglomerate

Mike Seeds, Editor
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Upcoming Shows

For the latest information, check out the web site of the Eastern Federation of Mineral and Lapidary Societies: <http://www.amfed.org/efmls>.

December

10: 21st Annual "Fall Festival" mineral, Fossil & Jewelry Sale. Holiday Inn, 9615 Deercro Rd; Timonium, MD. Hours 10 am - 4:30 p.m. Dealers who will be there include: Highland Rock & Fossils, Mike's Minerals, Parker Minerals, and Octahedron Minerals.

March:

17-18: 48th Annual show sponsored by the Gem, Lapidary & Mineral Society of Montgomery Co., MD. Montgomery Co. Fairgrounds, Gaithersburg, MD.

April:

10 - 15: EFMLS Wildacres Workshop. Details <www.amed.org/efmls>

19-22: 39th Rochester Mineralogical Symposium

27-29: Atlantic Micromounters Conference, MHA Conference Center; Elkridge, MD.

Sorry About These, But There Was A Space to Fill from Ye Olde Publisher

Do clogged Arterites give geologists heart Atacmites?

Did Anna Bergite get jealous when Bruce had some syncline with Kim Berlite?

Is a micromount a premature eruption?

Can a Cubanite be admitted on the U.S. continental shelf?

Do 8 year old sisters on bikes perform cyclic twinning?

If you use a ladder-vein to climb out of a glory-hole, will you fall on your tuff?

Isn't a normal fault a contradiction in terms?

Do geologists take Alkali seltzer for acid-rock stomach from eating pudding stone?

