

The Conglomerate

Newsletter of the Baltimore Mineral Society

www.baltimoremineralsociety.org

Volume 12, No. 9

November - December 2017

December 9: Holiday Party

The December meeting of the Baltimore Mineral Society will be our Holiday Party. Chris Altizer are hosting the party to begin at 4 pm, December 9th, at her home.



Chris lives near the Natural History Society and directions to her home are on our "Members Only" page of the website. Please also contact her (calamituschris42 at gmail.com) to let her know what food item you plan to bring.

BMS will supply both ham and either turkey or lasagna as well as wine and soft drinks. We're counting on you to bring the veggies, starches, chile, noodle kugle and deserts to round out our meal. It would be more festive if you could bring your special item in a nice serving dish...and please don't forget to bring a serving utensil.

There is no program at the Holiday Party, but there will be a very short business meeting when we hold the annual election of officers. If you would like to serve BMS as an officer, please contact BMS President Jim Hooper.

You can also take the opportunity to renew your membership in BMS (and save the postage). Dues are \$10 per member or \$15 per family (2 adults living in the same home, plus any children residing there under 18 years of age).

We'll be sending out an e-vite asking you to RSVP so Chris knows how many to prepare for. Please respond no later than Tuesday, December 5th so Chris has enough time to shop and prepare.

See you at the party!

A Surprise in Cleveland

by Mike Seeds photo by Pete Richards

A few weeks ago, BMS member Al Pribula drove to Cleveland to attend the Cleveland Micromineral Symposium on November 3-5, 2017. He took some rocks with him, but he also carried a happy surprise.

Pat Haynes was the guest speaker and he gave three talks about his collecting adventures. He also brought along a lot of rocks for attendees. There were also extensive giveaway tables filled with rock free for the taking. Add in lively auctions and the customary trading, and there was a lot of rock in circulation. But that wasn't the big surprise.

Early in the proceedings, Al Pribula asked to speak, and he began by pointing out the rock that he had brought. He mentioned the Baltimore Mineral Society and the Micromounters Hall of Fame, which was founded and has been administered for many years by BMS. At that point, no doubt with a bit of a smile, Al unfolded a letter from Quintin Wight, Corordinator for



the Hall of Fame, and began reading. The letter was addressed to Janet Clifford and the first paragraph informed her that she had been elected to the Micromounters Hall of Fame. The surprise was complete as shown by the audience reaction as Janet came forward to accept the letter.

Janet will be inducted along with "old timer" Philip Foster during the Desautels Micromount Symposium here in Baltimore in October 2018

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 November, December, June & August) at the Natural History Society of Maryland beginning at 7:30 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: BMS, PO Box 302; Glyndon, MD 21071-0302.

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Write for "The Conglomerate"!

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

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President's Postings

by Jim Hooper, BMS President



Well here we are in November and it seems to me we got here by missing part of October, but I guess in reality we got here in the same tried and true manner we always do. The tree foliage seems a little muted this season so far. Maybe some more color may come about.. Seems to me too that I'm seeing more acorns and walnuts on the ground than last year and I don't know if that predicts a more wintry winter, but I'll be paying attention. And on that note let's once again visit The Poetry Corner where in terms of the November birthstone I found the following ditty from my close companion, 'The Curious Lore of Precious Stones' by George Frederick Kunz :

'Who first comes to this world below
with drear November's fog and snow
Should prize the Topaz's amber hue --
Emblem of friends and lovers true.

His research on the history of uses and fascination with precious stones over the millennia is quite remarkable. If you stumble over a copy at a book sale, I recommend you take a look.

I would like to thank all those who made the October meeting as lively and enlightening as it was all by those who brought examples of forms of isometric crystal forms, Phil Greenberg for his presentation on industrial and commercial uses of metal elements in history and modern day applications, and Jat and Steve Dyer for pitching in on providing snacks for the meeting. Thank you all.

We touched on the subject of the election of BMS Officers and Directors and have assembled the following slate of candidates:

Officers

President – 'Open for nomination and/or volunteer'
Vice President – Al Pribula
Recording Secretary – Jake Slagle
Treasurer – Carolyn Weinberger

Board Members:

Jim Hooper – incumbent as past president
Steve Weinberger - has graciously volunteered to serve another term
Mike Seeds - has graciously volunteered to serve another term
Bernie Emery - has graciously volunteered to serve another term

If you have thoughts or questions regarding volunteering or nominating for the President, please contact me or Mike Seeds.

The clouds gather outdoors. Looks like more rain. I think I'll go gaze at my Topaz. Remember; no formal meeting in November. Hope you had a happy Thanksgiving and are looking forward to the party on December 9th..

Minutes From our Last Meeting

by Carolyn Weinberger, Secretary pro tem

BMS president Jim Hooper called the October 25th meeting of the Baltimore Mineral Society to order at 7:32 pm. Minutes of the September meeting were approved as printed in the Conglomerate. Treasurer Carolyn Weinberger indicated that the club remains solvent and that she would accept dues renewals. All dues need to be paid by the February meeting.

Unfinished Business

Desautels Symposium – Chair Mike Seeds reported that 48 individuals had attended and that the Symposium was a great success. Five excellent talks were presented – two on Friday evening, two on Saturday and one on Sunday morning. All were very informative and had interesting pictures to accompany them. Next year the inductees will be Janet Clifford of Cleveland Heights, OH and (deceased) Philip Foster of New Hampshire.

The Holiday Party will be at the home of Chris Altizer on Saturday, December 9th. Details in the Conglomerate and via e-vite in November. Directions will be on the “members only” page of the website.

New Business

•Nominating Committee – Jim indicated that no one had responded to his request for volunteers for the nominating committee and thus would take on the task of assembling a slate of candidates himself. Jim indicated that he would not be a candidate for president in the coming year and polled the remaining board members present to see if they would be willing to continue in 2018.

Jim polled the current officers, and those present agreed to continue their service for another year. Secretary Jake Slagle and Director Bernie Emery were not present and will be contacted prior to the printing of the slate in the November Conglomerate. A candidate for President is still needed.

The slate thus far:

President –

Vice President – Al Pribula

Secretary – perhaps Jake Slagle If he accepts

Treasurer – Carolyn Weinberger

Directors – Jim Hooper (past president), Mike Seeds (Desautels Chair), Steve Weinberger and Bernie Emery if he accepts.

Additional nominations will be accepted at the time of the election at the December Holiday party.

Mineral of the Month

Following John Vanko’s September talk, this month highlighted minerals of the isometric system. Al Pribula and Steve Weinberger displayed and spoke about a wide array of minerals from their collections.

Awards

Carolyn Weinberger presented awards garnered by several BMS members in the 2016 EFMLS article contest. Those receiving awards were:

Steve Weinberger – 9th place, “Mineral of the Month”, Original Educational Articles

Alice Cherbonnier – 10th place, “Minerals of South America: Rohodochrosite and...Icebergs”, Original Educational Articles

John Vanko – Honorable Mention, “The Mystery of Rose Quartz”, Original Educational Articles

Carolyn Weinberger – Honorable Mention, “Rochester Recap”, Written Features

Steve Weinberger – Honorable Mention - “The Micro-mountain Museum”, Written Features

Mike will again submit articles from the 2017 issues to the contest shortly.

Following a brief social break, member Phil Greenberg presented an excellent program on metallic minerals including metallic elements and explained how they are used in industry. His talk featured a number of specimens from his personal collection.

The meeting was adjourned at 9:05 pm.

Submitted by
Carolyn Weinberger
Secretary pro tem



Dues are due!

See page 11 for the
renewal form

To bring this series (almost) to a close, I'd like to discuss another well-known (but relatively uncommon) mineral which is found in a wide range of colors. Chemically and mineralogically, diamond is simply the element carbon (C), with the atoms arranged so that each one is bonded to four nearest-neighbor atoms at the corners of a regular tetrahedron (a three-dimensional figure with four equilateral triangular faces of equal size). This forms a very rigid infinite three-dimensional array of atoms. The strength of the carbon-carbon bonds and the rigidity of the structure make it the hardest substance known, natural or artificial. I discussed many aspects of the mineralogy of diamond in my article on the carbon group of minerals in the December, 2015 issue of the *Conglomerate*.

One thing that was not discussed in that article, however, was the origin of the colors which diamond can exhibit. When completely pure, diamond is colorless. Diamond is a semiconductor (see Part IX for a discussion of this), but its band gap is so large that light in the visible range is not energetic enough to promote electrons from the valence band to the conduction band. If no visible light can be absorbed, the result is a colorless material. However, impurities and defects in the lattice can result in a reduction of the band-gap energy, allowing some colors of visible light to be absorbed, thus producing the complementary color. This is the cause of the so-called "fancy" colors which add to the interest (and the price!) of this gemstone. Any color dark enough to put a diamond in the "fancy" category is a rarity—it has been estimated that only one out of every ten thousand gem-quality diamonds is sufficiently colored to get this designation.

Diamonds are classified into types based on their impurity level—specifically, the number of nitrogen atoms present. About 98% of natural diamonds are classified as Type I, which contain a relatively large number of nitrogen atoms substituting for carbon atoms in the structure (up to three nitrogen atoms for every thousand carbon atoms). Since nitrogen atoms have one more electron than do carbon atoms, and nitrogen atoms typically form three chemical bonds instead of the four needed to "correctly" occupy the position of a carbon atom in the diamond lattice, this changes the electronic structure (making the band gap smaller), and may also introduce defects into the lattice. This type is further subdivided into Type Ia (the vast majority of Type I diamonds), in which the nitrogen atoms are found in small aggregates (pairs in Type IaA and

quartets in Type IaB; these do not produce any observable color), and Type Ib, which is much rarer (only about 0.1% of all natural diamonds), in which there are relatively few nitrogen atoms (about 25-50 per million carbon atoms), and which has the nitrogen atoms scattered individually throughout the lattice. The other 2% of natural diamonds are Type II, which have a smaller number of nitrogen atoms in the structure (fewer than 10 nitrogens per million carbons). Almost all Type II diamonds are Type IIa, which have some nitrogen atom content, but a tiny fraction of them are Type IIb, which have essentially none (less than one nitrogen per ten million carbons). However, Type IIb diamonds typically contain a small fraction of boron atoms, which gives Type IIb diamonds some special properties as discussed below. It is also possible for a single diamond to show growth zones of different types (analogous to "phantom" crystals), which is a record of changes in the conditions (pressure and temperature) under which the diamond formed deep in the earth. An article by Breeding and Shigley in the Summer, 2009 issue of *Gems and Gemology* magazine explains diamond types in more detail, including how the types are experimentally distinguished.

By far, the majority of diamond colors are the result of atomic impurities (nitrogen, boron, and/or hydrogen), lattice defects, or some combination of these. While these causes have similarities to some of the causes of color in other minerals, their details are specific to diamonds. In many cases, multiple causes are operating, making their explanation difficult. Many of the specific causes have been determined, but some remain unknown in spite of much scientific work. (The owners of high-value fancy-color diamonds generally don't want to donate them to a museum or laboratory for testing to find out what they had.) However, a few diamond colors result from causes other than atomic impurities or lattice defects. Black diamonds usually owe their color to inclusions of graphite (indeed, graphite is one of the most common types of inclusion in diamonds used in jewelry), but inclusions of metallic sulfides, magnetite, hematite, or native iron can also be the cause. A rare type of black diamond owes its color to the presence of "hydrogen clouds" in the lattice. Most "black" diamonds are not truly black, but rather very intensely colored (brown, red, or green). Inclusions of many other minerals (such as sapphire, garnet, hematite, diopside, olivine, and others) are known in diamonds and

continued on page 5

Color in Minerals: Diamonds

continued from page 4

can lend some color to the stone, but stones with these inclusions are typically kept as study specimens and only very rarely used for jewelry. Some pale green diamonds owe their color to defects related to the presence of nickel atoms in the structure. (Yes, nickel ions commonly cause a green color due to *d-d* electronic transitions, but that's a totally different color-producing mechanism.) In addition, the color of some diamonds can be affected by fluorescence.

The most common color for diamonds is brown. For many years, diamonds of this color were unpopular for jewelry purposes and were relegated to industrial uses. However, when much of the output of the Argyle Mine in Australia had this color, they began a clever marketing campaign by creatively re-naming them as "champagne," "cognac," and "chocolate" or "coffee" diamonds (from lightest to darkest) and sales took off. The origin of this color is not fully understood, but it is currently believed to be the result of a plastic deformation of the diamonds after their formation, but while still far below the surface of the earth. Often, the brown color is concentrated in very closely-spaced parallel layers (referred to as "grain-ing"). These are actually defects of about 60 "missing" carbon atoms. The strain associated with these defects can be observed using crossed polarizers. The color can be lightened or changed to yellow by high temperature, high pressure (HPHT) treatment (more on that below). Yellow, orange, and pink diamonds often have a brownish component to their color.

The second most-common color for diamonds is yellow. (Calling them "canary" diamonds seems to make them more marketable.) The GIA's D-Z color grading scheme was specifically designed to deal with diamonds of this color. In general, diamonds grading with letters toward the end of the alphabet are considered less desirable than lighter-colored ones, but ones with a more intense yellow color (i.e., those which would be graded beyond Z if there were more letters in the alphabet) are more desirable. (I guess that pale yellow stones have "too little of a bad thing.") Most yellow diamonds are Type Ia, whose color is a result of what are called N₃ centers, which is when a carbon atom vacancy is surrounded by three nitrogen atoms. (No, "N" doesn't refer to nitrogen in this case—it means it is a "natural" color center.) Most of the diamonds graded "intense" or "vivid" yellow are Type Ib diamonds where the color is due to an isolated nitrogen atom in the lattice. The largest polished diamond of any color is the 545.67-ct "Golden Jubilee" diamond.

One of the most famous (notorious?) diamond colors is blue. In most cases, blue diamonds are also electrically conducting. Both the color and the electrical conductivity are due to the presence of boron atoms, typically about one per million carbon atoms. The presence of nitrogen atoms negates the effect of boron atoms, so almost all blue diamonds are Type IIb. Boron atoms have one fewer electron than do carbon atoms. This difference changes the electronic structure and makes the band gap smaller, causing energy in the red-to-yellow region of the visible spectrum to be absorbed and allowing light from the blue-to-violet end of the spectrum to pass through. The electrical conductivity is also due to this change in electronic structure. A type of diamond found at the Argyle mine in Australia is known by the acronym "HGBV" (meaning "hydrogen-rich gray-to-blue-to-violet"). Their color is due to some sort of defect (whose exact structure is unknown) related to the presence of an unusually high number of hydrogen atoms in the lattice. HGBV diamonds are Type Ia and are electrically nonconducting, contrasting with the more typical blue diamonds (Type IIb and conducting).

Green diamonds are not that rare as rough stones, but are not often found as faceted stones. The color is due to a defect (a missing carbon atom, called a GR₁ ("GR" = "general radiation")) which is caused by exposure to radiation (natural or artificial). By itself, this defect causes a blue color, but produces green when found in combination with the yellow caused by an N₃ center. Often, the exposure was only strong enough (by relatively low-energy alpha or beta radiation) to cause defects in the very outermost part of the diamond crystal, meaning that the green color is only "skin deep." Sometimes, the green color is concentrated in spots on the surface. Such color-zoned rough does not make for good-looking faceted stones. Exposure to higher-energy neutrons or gamma rays which can penetrate more deeply into the stone produces a more homogeneous green color. Most diamond colors are believed to have formed while the diamond was still deep in the earth, but green is believed to form from exposure to radiation after the diamond has been pushed to near the surface. So-called "charreuse" diamonds have a yellow body color but show a strong green fluorescence.

Rarer than any of the above is red or pink (with red just

continued on page 6

Color in Minerals: Diamonds

continued from page 5

being an especially intense pink). These colors are due to deformation of the lattice creating so-called "glide planes" (somewhat similar to the cause of brown). As with brown diamonds, the color is found in thin bands along the deformation planes. Most other diamond colors have been produced artificially (see below), but the specific center causing pink has not yet been successfully produced in a laboratory. The color of violet diamonds can be due to hydrogen-related defects, but is usually a combination of pink/red with a transmission of blue light due to the absence of N₃ centers. The color of violet diamonds from Siberia is due to a plastic deformation of the lattice, and the color is concentrated in very thin layers (much like the brown and pink colors). Perhaps the rarest color of all is a pure orange (with no brown component). This color results from a broad absorption of light in the blue-violet end of the spectrum. The underlying cause hasn't been fully explained, but it may be due to a defect similar to the N₃ center.

Many diamonds have a gray color (sometimes called "silver" to make it sound more appealing), and this color is often found as a modifier of another color ("gray-blue," etc.) The cause of this color isn't fully understood, but may be due to hydrogen-related defects (as in the HGBV diamonds mentioned above) or to a plastic deformation. The gray color can usually be lessened by HPHT treatment. And, lastly, white diamonds have also been found. No, I don't mean "colorless" (which is what most people mean when they (incorrectly) describe a diamond as "white"), but an actual white color. This is caused by a huge number of microscopic inclusions which scatter light and give the stone an opalescent appearance. (This is similar to the cause of the white color of "milky" quartz.) White diamonds are not popular for jewelry, but are mostly seen as collector stones.

Because of the importance of diamond in industry (for cutting/grinding/abrading, as a heat sink for electronics, and as an optical window for lasers) and as a gemstone (as well as for pure scientific, "I wonder if/how I can do this?" reasons), many attempts were made throughout history to synthesize diamonds. The first successful synthesis was achieved by a Swedish team in 1953, but this was not reported until the 1980's. The first commercially successful synthesis was reported by General Electric in 1955. This involved subjecting graphite to high pressure (over 100,000 times normal atmospheric pressure) and high temperature (above 1500°C) and using a metal solvent/

catalyst such as iron, nickel, or cobalt. These first synthetic "HPHT" diamonds were only suited for industrial use, but later modifications of the procedure (first done at General Electric, but also in the former Soviet Union, China, and elsewhere) yielded crystals large and transparent enough for gem use. However, these stones typically contain small inclusions of the metal catalyst used in their synthesis, so they are fairly easy to recognize. More recently, another method called chemical vapor deposition (CVD) has been developed, in which diamond can be deposited from a mixture of methane and hydrogen at a pressure below one atmosphere and a temperature of about 800°C. Originally, this method was used to create thin diamond films, but it is now possible to grow diamond crystals large enough for creating faceted stones using this technique. Currently, over 95% of the diamonds used for industrial purposes are lab-created. Some lab-created diamonds are actually harder than any known natural stones.

Until recently, all lab-grown diamonds were colored, mostly due to the causes discussed above for natural diamonds. Since nitrogen molecules are so abundant in the atmosphere, most synthetically-produced diamonds have at least some yellowish tinge due to the presence of this element. Brown, blue, green, and orange stones have also been synthesized. Recently, however, very pale colored synthetic diamonds have become available. Methods have been developed to distinguish natural from lab-created stones, but these require fairly sophisticated instruments. (Some diamond-manufacturing firms laser-engrave the girdle of finished stones to let you know their source.) Eaton-Mangana and Shigley presented a review of the laboratory tests done to date on CVD-grown diamonds in the Fall, 2016 issue of Gems and Gemology magazine. It will be interesting to see how the world gem-diamond market responds to this new source of gemstones. Lab-created diamonds are less expensive than natural ones (particularly the "fancy" colored ones), and are free from any taint of "conflict" nature (i.e., they aren't "blood diamonds"), but still have some stigma due to the fact that they aren't created by nature. Currently, synthetic diamonds represent about 2% of the gem-quality diamond market, but that share is almost sure to increase in the future.

continued on page 7

Color in Minerals: Diamonds

continued from page 6

In addition to diamond synthesis, a huge number of studies have been made investigating various methods of treating diamonds to “improve” their color and/or transparency. (As always, if there’s money to be made by cheating or tricking someone, there will be somebody ready to do so.) Some methods are as simple as backing the stone in its setting with colored metal foil, or even painting the stone with transparent nail polish(!), but most treatments are more elaborate and more difficult to detect.. Gamma irradiation of colorless diamonds can produce GR1 centers, making them turn green; this has been known since about 1900. (The majority of polished green diamonds on the market have been artificially irradiated to produce or at least intensify their color.) Heating these irradiated stones can make them turn yellow or brown (and occasionally pink or orange) due to the migration of nitrogen atoms to the vacancies, producing N3 centers as in natural diamonds, or producing H3 and H4 centers. (“H” = produced by heat treatment; an H3 center is two nitrogen atoms trapped at a carbon atom vacancy, and an H4 center is four nitrogen atoms trapped near two carbon vacancies.) Electron bombardment of colorless diamonds can yield a blue color. As with natural diamonds, incorporation of boron into a lab-grown diamond produces a blue color, and it is also possible to implant a diamond (either or natural or synthetic) with boron, which gives it boron-rich blue outer “skin.” Submitting diamonds to HPHT treatment allows the atoms to rearrange in the lattice, “healing” defects due to plastic deformations or strains. This can lessen brown or gray colors caused by these defects. Irradiation of Type Ib diamonds, followed by heating, produces a pink color, but this is due to a so-called “N-V” center (a nitrogen atom trapped at a carbon vacancy). New treatments are being devised seemingly almost daily; as soon as any book or article is published describing diamond treat-

ments (such as the article by Overton and Shigley in the Spring, 2008 issue of Gems and Gemology magazine), it is probably already out of date. The best way to keep up with the latest developments is to look at Gems and Gemology (or comparable publications from other countries); almost every issue of that magazine contains an article or two on diamond synthesis and/or treatment.

If you want to delve more deeply into the history and lore of diamonds, diamond mining, and their use as precious stones, there are dozens of books (if not more) which have been written on the subject. Two of my favorite books on diamond are The Nature of Diamonds, edited by George Harlow, and Lithographie’s Diamond—The Ultimate Gemstone. In addition to a discussion of the history, lore, sources, and uses of diamond, both of these books include a section on the “scientific” aspects of this mineral, including the causes of its various colors (although Harlow’s book is getting a bit outdated on diamond color and synthesis). If you can read German, Diamant (extraLapis No. 18) contains a wealth of all sorts of information. Wikipedia has good articles on brown diamonds, diamond synthesis, and color centers in diamond. The diamond pages on the Mindat and gemdat websites are also good sources of information on this material, including many references which can be consulted for further information, as well as hundreds of photos of diamonds of various colors.

In the final two installments in this series, I’ll list a few more cases of mineral colors which haven’t been discussed in previous articles, mention a few more where I haven’t yet been able to find out the cause of the color, and give more references for further reading.

Scrambles:

Unscramble the following to find the names of common minerals

Rice tin
Rice coot
Skate soil

Fuel riot
Edited nothing

Then rearrange the last letters of the five words to spell the sound made by fingernails on a blackboard.

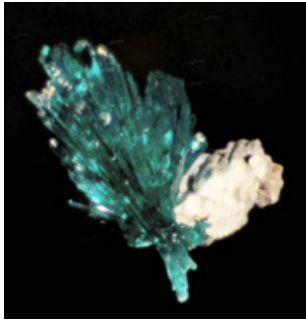
Answers on page 10.

Shoobox Adventures 72: Collecting People

photos and text by Mike Seeds

Stamp collecting and mineral collecting are rich hobbies because there are so many ways to collect. You could build a stamp collection of French tax stamps or a mineral collection of radioactive minerals. Sometimes it's fun to have your own specialty inside the larger hobby. For example, you could collect people.

Ed Quick (1924-2002) was a member of the Baltimore Mineral Society for many years. He collected everything



Diopside, Christmas Mine, Gila County, AZ. An Ed Quick mount. Specimen is 3 mm

from big cabinet specimens to the smallest micromounts with a special affection for calcites. He was not a technical collector looking for specks of rare minerals. Rather, he loved beautiful specimens, and his micromounts are works of art.

Ed was a perfectionist cleaning, trimming, and mounting his specimens for maximum effect. As you might expect, he kept detailed records on note cards for each of his specimens. It is a great pleasure to have some of his mounts in a sub-collection including the matching note cards. The quick mounts shown here are small, only a few millimeters, and carefully mounted on sharpened toothpicks painted black. His care in preparing his micromounts pays off for any subsequent collector who begins to collect Ed Quick mounts.

You could specialize in micromounts by any number of collectors. Randy Rothschild is a member of the Micromounters Hall of Fame, and his best mounts went to the Smithsonian on his death. They are not on exhibit; they are safely stored in the "Blue Room" behind the scenes. You could request special permission to see the collection, but you can't just knock on the door and walk in. So, you can't collect those Rothschild mounts, but many of Randy's mounts are in circulation. He traded his mounts and donated many of them to BMS sales and auctions. It isn't unusual to find more than one in the silent auction at the BMS Desautels Symposium each October. He was a skillful and careful mounter who made lovely micromounts. If you see any of his mounts, you should not pass them up.

Leonard Morgan was a charming man who loved minerals and micromounting. He was a fixture at the Desautels Micromount Symposium for many years. He loved

to trade, so some of his mounts are in circulation, and you might find some in auctions and trade boxes. Len is gone now, but you can still touch a bit of micromounting history by collecting Len Morgan mounts.



Crocoite, Adelaide Mine, Dundas, Tasmania, Australia. An Ed Quick mount. Specimen is 3.5 mm.

Not all collectable micromounters have passed away. Bob Rothenberg loves to trade and sell mounts. He collects all kinds of minerals from common minerals to rare crystals from distant mines. And he is an active digger himself exploring and developing new sites. If you have a chance to collect some Rothenberg mounts, be sure to add them to your people collection.

If you travel to distant mineral shows, you will find other micromounters you can collect. Keep an eye out for interesting mounts and find out who made them.

If you begin collecting a certain mounter, you don't have to keep those mounts separate in a dedicated cabinet. Mix them in with your own mounts, but, of course, don't remount them. They are collectable because they were mounted by that certain person. If one is damaged, you would want to repair it, but you want to keep the original box and label so you can admire the work of the mount's creator. If you catalog your collection in a data base or in a spread sheet, it is easy to sort out the mounts by the subject of your special sub-collection.



Edingtonite, Ice River, near Golden, B. C., Canada. An Ed Quick mount. Longest crystal is 3.8 mm long.

One of the reasons micromounting is so much fun is because of the people. At micromount symposia you get a chance to talk with collectors and hear about their collecting adventures. You can ask about the mystery mineral that is too beautiful to throw away, or the quarry you've never heard of. You can trade minerals with others and hear their stories. Collecting mounts from certain people is just another way of enjoying the community of micromounters.



Most likely everyone knows about a field trip, mine master, dig leader. But, what about a field trip follower? You know -follower, the last one in line, the person who helps the stragglers and others not so quick to get to the mine.

The story: Some few folks know I am a hiker and a person who can run up a mountain and take narey a deep breath. A group was going up a local mountain and, probably because of my hiking background, invited me along. This was a mixed group of various ages and abilities, with few having hiking experience. As I'd been up the mountain many a time, I was sort of the guide/leader of the excursion.

While still in the parking lot at the base of several of the young bucks and bucketts decided to go on up ahead. I had no difficulty or concerns about that because the trail was very well marked, and next to impossible to go astray. This was a church group mind you.

So, I appointed myself the field trip follower. Much of the group had gone on ahead and I sort of stayed with the last fellow in line. I did not let on that I was going slow simply to match his pace. He looked enthused about the hike but I had some reservations about his abilities.

The climb was modestly steep along several stretches of the trail. Perhaps 1/2 way up, with the others well ahead of us, the fellow again stopped to rest. He casually mentioned that he had forgotten to bring his heart meds. That was the first moment in the hike when I thought I was going to be the one to need heart meds for myself. Instead of slapping my forehead and enquiring of the fellow, "What were you thinking?" I kept my poker face, kept calm, and tried to maintain my composure. I assured him that I too liked frequent rest stops. I posed the question of turning back and his com-

ment was as expected, he was going on, no matter what. Hmmmm, well, that was the second time I thought I might need heart meds. Okay, all right, we pressed on. We 'aided' one another with frequent stops for rest and conversation. I found many reasons to stop, talk and admire the beauty of the trail and undergrowth. Perhaps 3/4 of the way up of the young bucks and bucketts passed us as they headed down. The fellow and I did make it to the top, enjoyed the view, and soon headed back down - all the while taking almost as many rest breaks as we did on the way up.

Returning to the parking lot to join the picnic, things appeared to return to normal...ish. I'm not sure my heart had relaxed yet

That trip occurred years ago, in the pre-cellphone era. From that day onward I often became the self-appointed follower. A self-appointed follower when hiking, field tripping, jogging, ice climbing, biking, kayaking, cross-country skiing--whatever.

Does your club's field trip, mine master, dig leader also have a follower? Might be something to consider. Sometimes at the top of a mountain or mine folks are so busy they may not take note that a person did not show up. Even in this day and age, in the wild and woolies of the mountains, cellphones can be problematic. Be - sides, someone might be hurt enough so as to be unable to use one to call for help.

There are a great many ways of keeping members safe, please consider taking advantage of all of them. Even being a follower is good. Your safety matters.

Winter Weather Policy

If Baltimore County schools cancel their evening activities our meeting will be cancelled. You can obtain this information by tuning to WBAL radio (1090 AM) or most TV stations. You usually can also find it on the web at <wbaltv.com>. We'll also try to put out a notice via e-mail.

In addition, if the parking lot at NHSM isn't cleared of ice or snow, and is unusable, we'll send out an alert to members via e-mail as early as possible.



Rockhound Soapbox

by John Martin, AFMS Conservation & Legislation Chair from AFMS Newsletter, November 2017

For the last ten months there have been a lot of discussions on the future of our National Monuments. There has been a lot of miss-information presented by many political and environmental groups mainly to justify their agendas and positions. The Proclamation signed by the President only asks that a Review of the National Monuments, which was created by Presidential Action, be reviewed for compliance with the Antiquities Act of 1906. There was nothing in the Proclamation that authorized any change, reduction or elimination of any standing National Monuments under review. The review has been completed and the report has been released by the Department of the Interior (DOI). The preliminary DOI report has been sent to the President for consideration on the 29 National Monuments under review. The report is yet to be released to the public; however there has been a copy of the report leaked from the DOI.

The leaked DOI Final Report recommends some changes to 10 of the 29 National Monuments. These monuments are: Bears Ears National Monument, Utah; Cascade-Siskiyou National Monument, Oregon; Gold Butte National Monument, Nevada; Grand Staircase-Escalade, Utah; Katahdin Nation Monument, Maine; Northeast Canyons and Seamounts Marine National Monuments, Massachusetts; Organ Mountains-Desert Peaks National Monument, New Mexico; Pacific Remote Islands Marine National Monument; Rio Grande Del Norte National Monument, New Mexico; Rose Atoll Marine National Monument, American Samoa.

The leaked DOI Final Report recommended changes be made to these National Monuments, but did not provide or define the changes. It did recommend that the changes be made in accordance with established laws and regulations and should include public input. Will the President accept the recommendations in the leaked DOI Final Report? It remains to be seen.

Will this review have an effect on Recreational Rockhounding? If there are changes made to the National Monuments it will be up to concerned Rockhounds to make sure that the voice of the Rockhounds is heard and Recreational Collecting is included in the changes to the affected National Monuments where applicable.

A few words on the American Antiquities Act of 1906 as amended and its usage to create National Monuments

without the consent of Congress or input from the Public.

The act stipulates that "The President may, in the President's discretion, declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated on land owned or controlled by the Federal Government to be national monuments" and "The President may reserve parcels of land as a part of the national monuments. The limits the parcels shall be confined to the smallest area compatible with the proper care and management of the objects to be protected". (<https://www.gpo.gov/fdsys/pkg/USCODE-2015-title54/html/USCODE-2015-title54-subtitleIII-divsnC-chap3203-sec320301.htm>) On these statements most Americans can agree and in most cases when used with common sense and best management practices are acceptable for preserving and protecting the as stated, historic and prehistoric structures, and other objects of historic or scientific interest on public lands. However, when the laws are manipulated for political purposes or for special interest groups, the people, Congress and the President have the right to question these actions, which is the case with the current National Monument Review. Were these 29 National Monuments under review, created adhering to the actual requirements of the American Antiquities Act of 1906 as amended or for political purposes? Only time will tell.

Scrambles: Solution

Rice Tin	Citrine
Fuel riot	Fluorite
Rice coot	Crocoite
Edited nothing	Eddingtonite
Skate soil	Kassolite

The sound made by fingernails on a blackboard is "eEEEE".

Baltimore Mineral Society Membership Renewal

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

E-mail: _____

Names of family members included in membership:

Annual dues for individual memberships are \$10.00

Annual dues for family memberships shall be \$15.00 for husband and wife and all children residing in the home under the age of 18.

Renewal deadline is the March meeting.

Mail or give to: Carolyn Weinberger
PO Box 302
Glyndon, MD 21071-0302

Checks should be made payable to "Baltimore Mineral Society".

The Conglomerate

Mike Seeds, Editor
2412 Lime Spring Way
Lancaster, PA 17603



Upcoming Events

December:

5: Gem Cutters Guild lapidary auction. Meadow Mill at Woodberry - 7:30 pm

8: Chesapeake Gem & Mineral Society Holiday Party. Westchester Community Center - 6:30 pm

9: BMS Holiday party at Chris Altizers - 4 pm. Info and directions on "Members Only" page of website.

12: 1st night of Hanukah

25: Merry Christmas

January:

1. Happy 2018

12: Chesapeake Gem & Mineral Society meeting at Westchester. Info at <chesapeakegemandmineral.org>.

24: BMS meeting at NHSM- Program to be announced.

From our home to yours

Happy Hanukah

Merry Christmas

Happy Kwanza

and a happy and healthy 2018

*Steve,
Carolyn
and Mocha*

