



The purpose of the Gem, Lapidary, and Mineral Society of Montgomery County MD, Inc. is “to increase knowledge and popular interest in earth sciences, geology, mineralogy, paleontology, lapidary arts, and related subjects.”

### **Regular Meetings**

The general meeting will be held on Monday, September 14 at 7:30 PM.

**Speaker:** Bob Cooke

**Title of Talk:** Perspectives on Micro Mineralogy

Bob Cooke’s academic background is in Chemical Engineering and Physics, but he acknowledges that 20 years in the Army has allowed him to “flush” the greater part of that knowledge. While in the Army as a Chemical Corps officer, he specialized in nuclear weapons design, maintenance, and policy. Upon retirement from the Army he spent another 20 years in support of nuclear programs at the US Department of Energy in Germantown, Maryland, both as a contractor and a Federal employee.

More importantly, while stationed in Germany in 1975, Bob was introduced to thumbnail minerals by a fellow Army officer who had a geology background. A few years later, Bob and his wife Carolyn attended a mineral show in California, got hooked, and decided to start collecting thumbnails themselves.

In 2012 Bob retired from DOE. To support his interest in mineral crystals and geology, he took advantage of Virginia’s senior citizen program to audit several Geology classes at the Northern Virginia Community College. He has been volunteering in the NOVA Geology Department ever since. Retirement has also allowed him the time to participate in several mineral clubs: the Northern Virginia Mineral Club, the Mineral Society of the District of Columbia, and the Micro-mineralogists of the National Capital Area.

Bob will be speaking to us on his recently acquired perspectives on micro mineralogy.

Dave Tiktinsky,  
Vice President

### **BOARD OF DIRECTORS MEETING**

The Board of Directors will meet 7:30 PM on **Monday, September 21<sup>st</sup>, 2015** at the home of Holly Heighes. Board members are expected to be there. Any member is welcome to attend, but please let Holly know if you plan to attend.

### **PRESIDENT’S MESSAGE**

Chris Luzier

As you all know, we lost one of our greats in the mineral community with the passing of Andy Muir in August. Andy was a truly wonderful person and it was a pleasure and a privilege to be

his friend as many of you know. What has always made the GLMSMC such a great group is not the rocks and minerals, the fieldtrips, or our annual show. It has always distilled down to something simpler, something more basic.

It will always be the people who make up the Society, everything else just follows along. The people in our Society are the reason I drive an hour to come to the meetings and enjoy all of your company. It's not the mineral specimens, lapidary pieces or excellent speakers at the meeting. It is always because of you the members and at times like these, it really makes you appreciate all the people around you. Andy always enjoyed the camaraderie at the meetings, fieldtrips and digging at the wonderland of Franklin and Sterling Hill. In that vein, let us all continue that bond of enjoying each other's company and sharing our mutual love of such a wonderful hobby. I look very forward to seeing you all at the September meeting.

Peace to you—Chris Luzier

## **IN REMEMBRANCE OF ANDY MUIR** **February 8, 1965 - August 9, 2015**

Jeff Cessna, Holly McNeil, Chris Luzier, Mark Dahlman, and Wendell Mohr  
Photos Supplied by Wendell Mohr



Many of us knew Andy as a collector of fluorescent minerals, having joined our Society during a resurgence of interest in fluorescence. Andy was a seriously committed, fluorescent enthusiast (whose license plate said GLOROX). Andy of course enjoyed attending the Franklin, NJ shows, the digs at Sterling Hill, and the yearly fluorescent only show, Ultraviolation. He didn't confine his interest to NJ specimens though, developing a wide knowledge of minerals from around the world and was on an ongoing quest for perfect "sphere" material. Much like the resurgence in fluorescents, Andy's enthusiasm for spheres sparked an interest in many other members. Spheres now make as regular an appearance as fluorescents on the meeting show tables. Having a supportive family, Andy's more decorative acquisitions were on display throughout their home, including a very attractive black light display of minerals in the living room.



Andy was an avid softball player for many years and he also enjoyed gardening. His yard was filled with a nice mixture of plants and rocks to give year-round interest, and he could often be observed waving his arms in the air and yelling to chase the deer away from his plants. Andy loved the holidays and especially Christmas. Perhaps some of you noticed a green and red haze in the night sky over the Germantown area during the month of December? You might be surprised to learn that it was the glow from Andy's extensive outdoor decorations that he painstakingly put out with great joy every year. Andy's life was further enriched this last year by the addition of two feline companions (Hermione and Luna) to the Muir household and Andy personally made cat trees and scratching



posts for them.

He married Denise on July 8, 1989, and was the father of Savannah and Gabrielle (Gabi) Muir, all of whom are Society members. Andy and Denise were always very active in their daughters' activities, providing a strong sense of family. His father, John Muir and mother, Nancy Muir, of Auburn, Maine were also members of our Society from 2007–2010. He also had a brother, Mike Muir, of Waterville, Maine and other relatives. Savannah is a junior in college and Gabi is entering college this fall.

He and his immediate family joined the Society October 9th, 2006. In the short years since then, he distinguished himself by taking leadership roles in the Society. He served as Treasurer from 2009 to 2013 and "Upstairs" Show Chairman since May 2013. He willingly became Secretary Pro-Tem at Board meetings held at his home, when the Secretary was unable to attend. Andy graciously helped with many of the auctions held by the Society. He also was taken by spheres and



arranged to have material he collected or purchased fashioned into spheres. You might say others came under his sphere of influence and followed suit. He regularly participated in showing his finds at the Show Table at monthly meetings and shared his knowledge about fluorescents with the Future Rockhounds of America group at one of their meetings. The Board of Directors was treated to monthly hospitality at the Muir residence when Andy graciously assumed these duties from the Ballards. This home also occasionally hosted the traveling meeting of DC area New Jersey mineral enthusiasts, the Frankliners. Andy was an active member of the Mineralogical Society of DC club too, regularly seen at the dinner prior to their meetings expanding his sphere of friends.

Andy was a Dartmouth College Chemistry graduate. He spent his career working on aircraft safety for the Federal Aviation Administration. He spent his free time surrounded by his family, those fortunate enough to call him their friend, and of course, his rocks.

Andy was smart, gregarious and had a sharp sense of humor and a big laugh. He good-naturedly tolerated much teasing by his many friends and gave it back in his turn.

He will be greatly missed and we were all lucky to know him.

### **A Note from Your President**

For the upcoming autumn season, we as a group will have many upcoming positions that will need to be selected for by December. The most urgent are the Upstairs Showchair position that Andy Muir so competently filled, and also the Downstairs Showchair as well. As you know, this position was held by Pat Repik-Byrne for many years and was managed beautifully as well. There are many folks that are willing to step in and help with the two Chair positions, but we need folks to spearhead the positions. The outpouring of help has been certainly cheering after Andy's passing. Thank you and we just can't do it without you!

The Board of Directors slate will need to be determined by late fall and this is the next stage of where we need help. Finally, we would like to start the Mini-Miners program again, but need a leader for this as well. If you are a parent with young children who are interested in a beginning program to instill a love of Earth Science at a young age, we encourage you to ask us about the program and the support we can provide to help with its instruction.

Whatever your strengths and weaknesses are, we can find a niche for you on the Board or in other roles as well. It has truly been my pleasure to be your President for the past two years, and VP before that. Please just ask any of us, what you can do and where we need people the most. Our Society is as strong as our members make it, let's make it even stronger for the next year.

Thank you again as always-- Chris

### **MESSAGE FROM OUR MEMBERSHIP CHAIR: SEPTEMBER IS A GREAT TIME TO PAY DUES**

Doug Baum

2014-2015 GLMSMC memberships expired on August 31, 2015 and new annual dues were due on September 1, 2015. Single membership is still \$15 per year. Family membership (defined as up to 2 adults and children under 18 years of age) is \$20 per year.

We pay dues for **EFMLS/AFMS** affiliations and over \$3 for insurance for each member over 10 years of age so it's very important when renewing to **LIST ONLY THOSE** who will be actively taking part in Society activities.

Please send dues (cash or checks made out to GLMSMC) to:  
Membership Chairman Doug Baum  
11205 Golden Meadow Court  
Germantown MD 20876-1740  
[240-888-7485](tel:240-888-7485) or email [dbaum18@aol.com](mailto:dbaum18@aol.com) for questions

If you send me a self-addressed, stamped envelope, I will mail your membership card(s) back to you; otherwise you can pick them up at the September meeting.

**VERY IMPORTANT!** If your phone number, address, email, or other vital information has changed, please let me know. **HELP by paying your dues on time this year. DO IT NOW while you are thinking about it.**

### **GLMSMC Regular Meeting Minutes**

There has been no meeting since the prior Rockhounder.

### **GLMSMC BOARD MEETING MINUTES**

There have been no board meetings since the prior edition of the Rockhounder.

### **FUTURE ROCKHOUNDERS OF AMERICA (THE MOCKS, AGES 10-15)**

Mark Dahlman

**Next Meeting Date:** September 14, 2015

**Meeting Time:** 7:45-9:00PM

**Meeting Location:** Sunroom Cafeteria at the Rockville Senior Center

### **June 8th Meeting:**

At our June meeting we discussed some properties of minerals that can be used to identify those minerals with a microscope. We also took home an extra helping of specimens to tide us over until September.

### **September 14<sup>th</sup> Meeting:**

At our September meeting we will be deciding on the FRA badges for the fall. Come and help us decide what's next. FRA members, if you have 10 labeled micromounts (requiring magnification to appreciate them), 10 labeled thumbnails (typically in 1" boxes), and/or 10 labeled miniature specimens (in 2" boxes), please bring them to our meeting so you can receive credit toward the World in Miniature badge. See you at our meeting!

For more information on the Future Rockhounds of America program, please contact Mark Dahlman at <[fra\\_advisor@glmsmc.com](mailto:fra_advisor@glmsmc.com)> or 301-428-0455.

### **FIELD TRIP NEWS**

Jonathan Harris

- ***Fairfield Quarry: Saturday, October 24, 2015 from 9AM-1PM***

Please reply to me no later than Thursday, October 16 by 5PM if you would like to go on this trip. Earlier responses would be much appreciated. As you can see this is a joint trip run by another club. Valley Quarries has let in minors with a parent present. Our standard trip rules and waiver (read below), in addition to any DMS specific rules, apply.

**Delaware Mineralogical Society  
Field Collecting Trip  
Fairfield Quarry  
Saturday, Oct 24, 2015  
(9:00AM-1:00PM)**

Fairfield Quarry is one of several Valley Quarries sites in the Gettysburg, PA area, and is located along Rte 116 near the small village of Fairfield and just north of the Mason-Dixon Line. Geologically, it's part of the larger Gettysburg Formation and is predominantly limestone. However the limestone here is somewhat unique. The underlying limestone was formed during the Cambrian-Ordovician Eras which was exposed by erosion by the beginning of the Mesozoic Period. Early in the Mesozoic, erosion from nearby highlands brought successive layers of clastics and fine sediments to this area, producing successive layers of fine layered limestone, shales and conglomerates. Tectonic activity during the Jurassic produced diabase layers which caused contact metamorphism, producing marble and some chert.

Limestone, marble and calcite are the predominant minerals. Other minerals found here include grossular garnet, diopside and vesuvianite. The one specimen I have from this quarry is a 6", light blonde calcite plate where the crystals appear to be more cubic than rhombohedral (looks more like fluorite than calcite).

Unique to this site, and most interesting, is that mid-Triassic dinosaur tracks are found in some of the shale layers. One site, about 15' square, is exposed and available to visitors (though no collecting is allowed here). However, the shale layer dips into the active quarry (easy to follow by eye) and dinosaur prints have been collected there. Two of the dinosaur names are 'grallator' and 'brachychirotherium'.

I will bring pictures/articles of the quarry and footprints to the Sept. and Oct. DMS club meetings.

As always, this Field Trip is open to members of the Delaware Mineralogical Society and members of invited clubs only.

- **Cornwall Mine Dump (Cornwall, PA): Sunday, November 8, 2015 from 10AM-3PM**

Please reply by email to [jgharris7@gmail.com](mailto:jgharris7@gmail.com) if you are attending. Please let me know 10 days prior to the trip so I can get Tom a correct headcount.

**Field Trip  
Cornwall Tailings  
Cornwall, Pa  
Sunday, Nov 8, 2015  
(10:00 – 3:00)  
Delaware Mineralogical Society**

### Site Geology

The minerals at Cornwall are associated with two major rock types: diabase and limestone. The Triassic diabase is an igneous rock of dark green to black color containing feldspars and pyroxenes, with minor amounts of biotite, ilmenite and hornblende. The diabase formed by crystallization of these minerals from a molten rock that cut upward through surrounding Cambrian and Ordovician limestone. This diabase, as it cooled and solidified, recrystallized some of the limestone into marble. Several minerals, such as diopside, actinolite, epidote, and garnet, also formed in the limestone partly as a result of the heat from the diabase and partly as a result of the addition of some chemical elements from the final crystallization of the diabase. Later, additional solutions spread outward along the top of the diabase into the limestone. The magnetite, hematite, pyrite, chalcopyrite, actinolite and chlorite formed at this stage. Sometimes they replaced the limestone, and sometimes they replaced the previously formed diopside and actinolite. The zeolites, sulfated, hydroxides, and copper carbonates crystallized last, filling open fractures and cavities. The consequence of this series of geologic events has resulted in certain minerals occurring together. Three such examples are the associations 1) magnetite-chalcopyrite-actionlite, 2) zeolites-chlorite-magnetite, and 3) garnet-tremolite-calcite-serpentine. The age of the ore deposit is approximately 190 mya, which is within the Triassic period.

Mindat list 75 minerals that have been found at this site.

### Collecting

The mines at Cornwall have been closed for some time, and are now imploded and/or flooded. However extensive tailing piles remain and we have been granted permission to collect at one. It is quite large being perhaps 100 X 300 yds roughly a triangular shaped slope. The rocks

appear to be mostly diabase; little limestone was evident but I did find some. Virtually all of the rocks are dinner plate sized and smaller.

**NOTE:** It is about a ¼ mile walk from a parking area to the tailings piles. For the most part it's a very easy walk. This is not necessarily a strenuous collecting trip, depending on how much you collect. The tailings slope is immediately adjacent to a golf course; don't bother the golfers, stay down the slope out of sight. And there are lots of round, dimpled, white 'rocks' scattered throughout the slope...collect them for your favorite golfer.

## **Equipment**

You will need to bring leather boots (I don't think you need steel-toed), gloves and goggles (hard hat optional). Bring rock hammers, chisels and small sledges (2-5 lb range), wrapping material and flats (I don't think a big sledge is necessary). Also bring lunch, snacks and drinks; there are no food sources nearby (unless the Golf Club restaurant happens to be open)

Bring a compass; watch it go crazy! If you somehow get lost, do not rely on your compass.

**This Field Collecting Trip is for Delaware Mineralogical Society members and members of invited clubs only.**

**Editor's Note:** This is a reprint of Sam Linton's article from the summer issue of The Rockhounder due to the fact that the pictures did not carry over with the article. Enjoy!

## **Flintstone, MD, and Medford**

Sam Linton

Our Veteran's Day 2014 hounding trip of the year for me was to Bedrock Quarry in Flintstone, MD. As with virtually all quarries in Maryland, it was a tough hound. We were dealing with the Tonoloway Formation, which stretches from West Virginia to Pennsylvania. It is made up of dark gray slate with veins of calcite that is intermixed with dolomite, fluorite, and quartz. At some quarries along the formation, you can find strontianite and celestite... this quarry was said to have native sulfur, though that was an "early days" find.

It was easy to hound in because it resembles Mount Pleasant Mills Quarry in Pennsylvania, which I have hounded many times. However, I only walked away with a 1' cubed rock that I trimmed down to two pieces... see pics! No kidding, this is a really good fluorite for Maryland... for this formation, usually fluorite is massive or in cubes imbedded in calcite, which crumbles apart when trying to extract. "Herkimers" are not common for Maryland or this formation. I didn't notice it on the rock until I started trimming.

My second hounding trip was to Medford Quarry in Westminster, MD. This is a famous Maryland quarry, because it had some really good specimens "back in the day"... people claim they stepped on a specimen with every step they took... a highly exaggerated statement for sure. Luckily, we did not hound in Pit 1... rarely produces crystal specimens, so you are likely to get skunked unless you collect fluorescent minerals. Instead, we were taken to the virtually inactive Pit 2. Blasting rarely occurs in this pit, as it has recently become the dumping area for the quarry's junk rock. This is unfortunate, because this pit is where the good stuff is. Please see my pics for the specimens that I found! The pyrrhotite and malachite ones came out of the same small pocket (on a 2.5' cubed boulder)... (a total of six small cabinets were had after trimming)... they are of a quality that would be considered rare for Maryland... great "modern" finds to say the least. BTW, I cut my

thumb on a table saw a week prior, so I had to extract these with one-handed swings of my 20lb sledge... this is why I lift weights. The calcite one was buried amongst boulders in the berm... mostly damage free. Though I didn't walk on specimens with every step, Medford did not disappoint.







## WEBSITES OF INTEREST

Wendel Mohr

**The Pegmatite Interest Group (PIG)** is a product of the Mineralogical Society of America dedicated to those most interesting earth formations, Pegmatites. Hosted by Dr. David London, University of Oklahoma, School Geology & Geophysics, you will find here News, Links, Events, and, to me, the most interesting: Comments and Questions and Short Articles. Some articles are somewhat technical.

<http://www.minsocam.org/msa/special/Pig/>



Photo Credit Roger Weller  
Cochise College

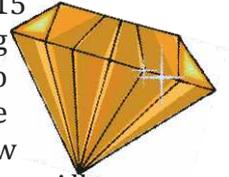


**Mega-disasters: Earthquakes in the Heartland.** The fault near New Madrid, Missouri, could reactivate at any time. The 149 mile long Reelfoot fault has been shown to have slipped in 2350 BC and 300, 900, 1450 AD. The 1811-12 quakes were felt in Montreal, Boston, and Charleston. The Mississippi River flowed backwards! Sand blows resulted in geysers belching sand to 100 feet high. No seismographic records existed at the time but quake destruction appears to have been at an 8.0 level. A 45" History Channel video covers effects in eight states centered around Southeastern Missouri. Today, massive destruction would result in populous nearby cities, such as St. Louis and Memphis. Motions could last for up to a month and firestorms could blanket a million square miles. What if????

P.S. full screen is not very high definition.

<https://www.youtube.com/watch?v=7kc7pJ8f1aY>

**This is How Diamonds Are Made** is a youtube video, 49 minutes in length, which details the making of synthetic diamonds. It is a Horizon Program of the British Broadcasting Corporation. Dr. Boris Feiglson of Russia pioneered the production of colored synthetics over 15 years ago. The story continues with the Gemesis Corporation in Florida, making fancy yellows selling for about 1/4 of the cost of natural stones, and Apollo Diamond, near Boston. Apollo Diamond is able to grow clear synthetics more brilliant than natural diamond gems using chemical vapor deposition at low pressure to add to seed diamonds using Hydrogen, H<sub>2</sub>, and Methane, CH<sub>4</sub>, gas. All represent a threat to DeBeers. GIA has been able to detect the synthetics by sophisticated tests they have developed. However, the buying public will determine the commercial success or failure of these ventures. Would you prefer a cheap synthetic or a very expensive natural stone?



[https://www.youtube.com/watch?v=z4wCkzfH\\_8E](https://www.youtube.com/watch?v=z4wCkzfH_8E)

## **2014 UNITED STATES MINT “AMERICA THE BEAUTIFUL®” QUARTER- SERIES OF GEOLOGIC INTEREST**

Wendell Mohr

### **The Great Smoky Mountains National Park Quarter - Tennessee**

This is the first of 2014 and the 21<sup>st</sup> overall in the America the Beautiful Quarters® Program. This national park features wondrous biodiversity, with ridge upon ridge of forest straddling the border between TN and NC. Great Smoky Mountains National Park is world renowned for its diverse plant and animal life, the beauty of its ancient mountains, and the quality of its remnants of southern Appalachian mountain culture. It is America's most-visited national park. It was first established as a national site on May 22, 1926.



The reverse (tails side) designed by Chris Costello and sculpted by Renata Gordon depicts a historic log cabin found within Great Smoky Mountains National Park. It features a segment of the lush green forest and a hawk circling above.

The park is dominated by plant-covered, gently contoured mountains that formed perhaps 200-300 million years ago. In fact, the Smokies are among the oldest mountain ranges in the world! Elevations in the park range from approximately 850 to 6,643 feet. This range, in altitude, mimics the latitudinal changes you would experience driving north or south across the eastern United States, say from Georgia to Maine.

### **Shenandoah National Park Quarter - Virginia**

The second United States Mint quarter for 2014 is the Shenandoah National Park Quarter. This strike honors the national park in Virginia and is the 22nd coin of the Program. The reverse (tails side) is a design depicting a day hiker taking in the view from Little Stony Man summit. Phebe Hemphill designed and sculpted the image.



[Shenandoah National Park](#) was established in 1935. It was not easy to establish this national park as several homes and communities had to be relocated or removed entirely. The oldest rocks in the Blue Ridge Mountains were created over a billion years ago as magma deep within the earth's crust moved upward. Over eons it cooled, fractured, and was joined by younger metamorphic rocks formed from sedimentary deposits. All were altered and eroded to shape today's granite peaks and sylvan hollows.

Skyline Drive, hiking, and other sightseeing activities help Shenandoah National Park thrive. Visitors can drive at a cozy speed of 35 mph along Skyline Drive and stop at several points to sightsee. There are over 500 miles of hike-able trails, and several waterfalls for visitors to see. Most visitors to the Park arrive in the fall to see the changing of the leaves in the forest. Others come during all times of the year to stay at several of the lodges and cabins within the park.

### **Arches National Park Quarter - Utah**

The third 2014 coin from the series by the mint is the 23rd out of a total of 56 quarters scheduled. The reverse design for the Arches National Park Quarter was designed by Donna Weaver and sculpted by Charles L. Vickers, and depicts Delicate Arch, a 65-foot freestanding natural arch. The La Sal Mountains are also visible in the background.

[Arches National Park](#) of Utah was founded originally as a national monument in 1929. After several changes, and with additional land acquired, it was finally declared a national park in 1971.

There are over 2,000 sandstone arches in Arches National Park, including the most famous Delicate Arch that is featured in this issue. Tourists can hike to see many of these arches, but must be prepared for extremes in weather. During the summer, temperatures can reach over 100 degrees, while in the winter temperatures can drop to below zero. The arches were developed by thousands of years of erosion, which still occurs today. Over 40 arches have collapse since 1970. Tourists can hike many of the trails in the 119 square miles of the park, ranging in elevations of just over 4,000 feet to over 5,500 feet.



### **Great Sand Dunes National Park Quarter - Colorado**

The fourth series release in 2014 is the Great Sand Dunes National Park Quarter. It honors the park in Colorado and marks the 24th in the series.



The reverse (tails side) sports an image emblematic of the national park. This design, created and sculpted by Don Everhart, features a father and son playing in the sand next to a creek bed. The distinctive mountains and sand dunes appear in

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*The Rockhounder*

the background. The [Great Sand Dunes National Park](#) of Colorado was founded as a national monument originally in 1932 and was a fraction of the size it is today. In 2000, another large portion of land was purchased to increase the size of the monument. Finally, in 2004, Great Sand Dunes was designated a national park.

The Great Sand Dunes National Park is not a dry area. In fact, the dunes maintain a certain amount of stability due to moist sand underneath a dry top layer. There are rivers that flow around the dunes that also erode away at the sand. However, when the rivers dry up, the wind blows that sand back up into the dunes, replenishing them.

There is more to this national park than just sand dunes. There are several alpine lakes, forests, and wetlands. This diverse array of landscapes means that tourists should prepare for multiple climates. Those who do visit will find that hiking within the park can be a very rewarding experience.

### **Everglades National Park Quarter - Florida**

The final 2014 release, the 5th of 56 in the Program, honors the national park in Florida. The landscapes today in Everglades National Park, and in all of southern Florida, are the direct result of geologic events of the past and ongoing environmental processes. It is impossible to consider the geology of the Everglades without also considering the hydrology. Primarily consisting of limestone, the bedrock geology of Everglades National Park has responded over time to the ongoing processes of weathering, erosion, compaction of organic sediments, unique hydrologic conditions, and episodes of sea-level rise and fall to produce the landscapes we see today.



The Everglades is a vast, nearly flat seabed that was submerged at the end of the last Ice Age. Its limestone substrate is one of the most active areas of modern carbonate sedimentation. UNESCO recognized that the subtropical wetlands, coastal and marine ecosystems, and complex biological processes that make the Everglades a sanctuary for its legendary wildlife would not exist were it not for the underlying geology, which predefines existing Everglades landscapes and ecosystems. See <http://www.nps.gov/ever/learn/nature/evergeology.htm> for more detailed geology information.

**The obverse** (heads side) of all National Park Quarters is identical for all of the America the Beautiful coins. They bear a portrait of George Washington, the first President of the United States as designed by John Flanagan.



Sources: United States Mint and National Park Service

## TO THE WAY BACK MACHINE -- MINERAL COLLECTING: 17<sup>TH</sup> & 18<sup>TH</sup> CENTURY

Andy B. Celmer, EFMLS Historian

Hiya Friends,

Those of you who can still remember last month's story will know that systematic mineral collecting begins in Ernest, (Germany?) in the 16<sup>th</sup> century. Minerals are classified by physical properties such as density, color, luster, transparency, taste, odor and shape. This is a good start, but far from our eventual classification system based on chemistry. Chemistry is not yet sufficiently developed at this time and is not an appropriate topic for a rock newsletter anyway. Major collections come into existence that specialize in minerals.

Right on schedule, the 17<sup>th</sup> century is out and about with its own idea of a proper collection. A proper collection includes plants, animals, minerals, art and instruments. Plant, animal and mineral specimens from all over the world are readily available. This contributes to an increase in the number of collections, but also to a lack of systematic classification and critical examination. "But wait Andy B," you say, "What about Pliny the Elder?" I dealt with that last month, pay attention!

The 17<sup>th</sup> century says, "Where does the time go?" as the 18<sup>th</sup> century walks in the room. Two important works on collecting and a review of existing collections are published for the layman, generating additional interest. Rules are published for museum visitors to heighten their intellectual enjoyment of a collection. General collections are sorted into categories as specialized mineral collections based in beauty and science, emerge once again. Sources of minerals expand further and the size of collections increase to new highs.

John Stuart (1713-1792), the Earl of Bute, is reported to have a collection of 100,000 specimens. He should not be confused with the 'Duke of Earl', aka Gene Chandler and his 1962 No. 1 hit of the same name. The Duke of Earl does not appear to have a mineral collection. Did I digress?

Collections of 10,000 to 20,000 specimens are known to exist and a few in the 30,000 to 40,000 range. Keep this little bit of information near at hand the next time friends and family, try to have you committed due to your relatively modest collection. However, a large collection does not mean a high quality collection. A good example would be my sand collection containing millions of specimens.

Jean Rome de l'Isle (1736-1790) is one of the founders of modern mathematical crystallography. He publishes his first technical work on crystallography in 1772, wherein he describes 110 crystal forms. This is a significant increase of the 40 crystal forms described by Linnaeus. Jean Rome de l'Isle publishes a 4 volume work on crystallography in 1783 describing the consistency of interfacial angles discovered by his assistant, Arnould Carangeot. Carangeot goes on to invent the contact goniometer, a device that makes precise measurements of crystal angles. This information and data give the 1783 work a solid mathematical footing, however Jean Rome de l'Isle has only a vague understanding of symmetry, not recognizing that the cube and the octahedron share the same internal symmetry. He believes, as do others, that external crystal form should be the basis of a mineral classification system, unfortunately many minerals have several external crystal forms. But worry not dear reader, as Yoda said to Obi Wan in 'Star Wars,' "There is Another!" Jean Rome de l'Isle's collection resides in the Natural History Museum in Paris.

Rene Just Haüy (1743-1822) is considered the other founder of mathematical crystallography. He discovers his talent for natural science through botany. Attending a lecture on mineralogy by Louis Daubenton, Haüy awakens a physics based interest in minerals and crystals. He finds Jean Rome de l'Isle's 1772 work on crystallography wanting and Haüy wonders what laws define the crystal shape of minerals. He acquires a mineral collection and visits the collections of Paris.

At the collection of Jacques DeFrance in 1779, he accidentally drops some prismatic calcite crystals. We all know what happens next! The calcite crystals shatter into rhombohedral cleavage pieces. Could the cleavage rhombs reflect the internal structure of calcite regardless of the external crystal shape? As the Firesign Theatre says, "Could this be the solution to our problem, both personal and scientific?"

Hauy went home and started breaking his calcite crystals of scalenohedrons, rhombs, bipyramids, plates and prisms. Don't try this at home, kids! Your friends and family will have the proof they need to commit you! But I digress! The calcite crystals all broke into cleavage rhombs!

Soon Hauy determines that stacking cubes and rhombs as well as other basic units, produces many external crystal forms! Further work in geometry shows his theory is mathematically precise and consistent. No one has seen his work, at this point. When his fellow scholars see his work, they convince him to present it to the Academy of Science in Paris. He is elected to the Academy of Science in 1783 and publishes his work in 1784.

Remember Jean Rome de l'Isle? His work is published in 1783 and within a year it is made obsolete by Hauy. Jean Rome de l'Isle is not a happy camper and he reacts rather badly. Hauy's work on crystallography is still one of the great accomplishments in the history of science.

Rene Just Hauy's collection resides in the Natural History Museum in Paris. More than 6,000 of his specimens still have their original labels in Hauy's handwriting.

Well, that's enough for now. Some may wonder why the collections of the 17<sup>th</sup> century are so meager. I would refer you to the documentary, 'Rollerball' (1975), wherein the computer with bubble drive storage capability, deletes the events of the 17<sup>th</sup> century. The bubble drive is the precursor of the cloud storage system. What is the moral of this storage? Don't trust the cloud!

## EVENTS OF INTEREST

- ***Fossil Field Experience: Sept. 19, Oct. 24***

The program begins at the Cove Point Lighthouse at 9:00am with a trained guide. Participants learn how to find and identify fossils. Solomons, MD. [410-326-2042, ext. 41](tel:410-326-2042), [calvertmarinemuseum.com/215/fossil-field-experience](http://calvertmarinemuseum.com/215/fossil-field-experience)

- **Sat-Sun Sept 26-27, 2015**

Sat 10am-6pm, Sun 10am-5pm. Atlantic Coast Gem, Mineral, and Jewelry Show. Howard County Fairgrounds. [www.gemcuttersguild.com](http://www.gemcuttersguild.com)

- ***Annual "ULTRAVIOLATION" Show: Sat Oct 24, 2015***

A Fluorescent Minerals only show. Location: First United Methodist Church, 840 Trenton Road, Fairless Hills, PA., 9AM – 5 PM.

Cost \$2.00 Donation, Children 12 years old and younger FREE.

Door Prizes, vendors, food, lots of fun!

Info - Chuck O'Loughlin 856-663-1383 or [ultraviolation@yahoo.com](mailto:ultraviolation@yahoo.com)

- ***South Penn Rock Swap: Sat Oct 31, 2015. 8am-3 pm***

615 Narrows Road, Biglerville, PA 17307. See below or contact [tsmith1012@comcast.net](mailto:tsmith1012@comcast.net).

- **Audubon Naturalist Society:** New online registration for all programs below. Visit [www.ANShome.org/adultnatureprograms](http://www.ANShome.org/adultnatureprograms) and click on "Register Online". Questions? Call Pam at [301 652 9188 extension 16](tel:3016529188) or e-mail [pamoves@anshome.org](mailto:pamoves@anshome.org)
- **Fall Montgomery County Recreation and Parks Programs:**

### **Gemology I Introductory**

Ages 18 & Up. Want to know those gems you are wearing on your rings, necklaces, bracelets, brooches? Curious about how gemstones came to be? Beginning Gemology, organized around Mohs scale of hardness, is an introduction to gemstone study. Hands-on specimens and examples to examine during each class.

11 Sessions, \$100. Instructor: Our Member, Tim Morgan. At Potomac Community Center, 11315 Falls Road, Potomac MD 20854 Class Number 5820. Starts October 1 Thursdays 10:00 am – 11:15 am.

### **Gemology II Advanced**

Ages 18 & Up. Prerequisite – Beginner or Introductory class. Interested in Gemstones, but already know a little something about them? Want to learn more? This class examines gemstone groups with examples and hands-on specimens. Guest speaker and field trip possible.

11 Sessions, \$100. Instructor: Our Member, Tim Morgan. At Potomac Community Center, 11315 Falls Road, Potomac MD 20854 Class Number 5858. Starts September 30 Wednesdays 10:00 am – 12:15 am.

Register online at [www.ActiveMONTGOMERY.org](http://www.ActiveMONTGOMERY.org) or obtain a copy of the Montgomery County GUIDE - Fall Recreation and Parks Programs booklet at a public library, use the registration form on the inside back cover, and mail in as directed.

## SHOW ANNOUNCEMENTS

### South Penn Rock Swap

--FALL SWAP--

Saturday, October 31, 2015

8 a.m. to 3 p.m.

#### South Mountain Fairgrounds

West of Arendtsville, PA on Route 234

For GPS, use address:

615 Narrows Road, Biglerville, PA 17307

General admissions: \$1.00/person

Table for Swappers: \$5.00/table

Sponsored by the Central Pennsylvania and

Franklin County Rock & Mineral Clubs

Contact: [tsmith1012@comcast.net](mailto:tsmith1012@comcast.net)

## Atlantic Coast Gem, Mineral & Jewelry Show

@ Howard County Fairgrounds

September 26-27, 2015

Saturday 10 AM-6 PM ■ Sunday 10 AM-5 PM

[www.gemcuttersguild.com](http://www.gemcuttersguild.com)



If you are planning a trip and want to know what clubs you might be able to visit, it would be worthwhile to visit the American Federation of Mineralogical Societies website. Check out their newsletter archives at <http://www.amfed.org/news/default.htm>.



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**Society Address:** Gem, Lapidary, and Mineral Society of Montgomery County MD., Inc.

P. O. Box 444, Gaithersburg MD 20884-0444; Web Site: <http://www.glmsmc.com/>

All Society correspondence is to be sent to this address except that which is intended for *The Rockhounder* and its editor. Such items are to be sent to the editor's email address –

[BulletinEditor@glmsmc.com](mailto:BulletinEditor@glmsmc.com)

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Award Winning Bulletin  
EFMLS, AFMS



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*THE ROCKHOUNDER*  
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