



The Mineral Newsletter

Meeting: December 19 Time: 6:30 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd., Arlington, VA 22204



Tennantite

Tsumeb Mine, Otjikoto Region, Namibia

[Wikipedia](#). Photo: Didier Descouens.

Volume 57, No. 10

December 2016

Explore our [Website](#)!

December Program:

Holiday Party!



In this issue ...

Mineral of the month: Tennantite	p. 2
Club officer election coming up	p. 2
Holiday party details—food needed!!	p. 3
The Prez Sez	p. 3
November meeting minutes	p. 4
November program review: M.A.G.I.C.	p. 5
Field trip opportunities	p. 6
2016 club show reports.....	p. 6
Book review: The River and the Rocks.....	p. 11
Fluororichterite?	p. 11
U. Delaware Mineralogical Museum.....	p. 12
AFMS/EFMLS: 2016 newsletter contest.....	p. 13
Bench tip: Drilling small items.....	p. 14
Humor	p. 14
Micromineral fun	p. 15
Mineral crystals in sands.....	p. 16
AFMS: Safety 101	p. 17
EFMLS: Wildacres report.....	p. 18
Upcoming events	p. 19

Deadline for Submissions

January 1

Please make your submission by the 1st of the month! Submissions received later might go into a later newsletter.



Mineral of the Month Tennantite

by Sue Marcus

Researching tennantite taught me about the English Smithsons. Of course there was James, who endowed the eponymous Smithsonian Institution. Tennantite was named in 1819 by William Phillips for another Englishman, Smithson Tennant. This chap was a chemist who discovered two new elements, osmium and indium, in platinum ores. He also identified both diamond and coal as forms of carbon. The unfortunate man was killed when a bridge over which he was riding collapsed!

Just as life isn't simple, tennantite isn't, either. It forms a "solid solution series" with tetrahedrite. That means that each of these minerals is on one end of a spectrum, with mixtures in between. In tetrahedrite, antimony (Sb) substitutes for arsenic (As) in the chemical formula. Iron, zinc, and silver may also occur in varying amounts, substituting for copper.

It is difficult to impossible to tell tennantite from tetrahedrite in hand samples, so using known, verified location information can be helpful. Tricky minerals, they may occur together or as a mixture.

Tennantite was originally found in Cornwall, England. It occurs in hydrothermal veins and contact metamorphic deposits. Hydrothermal veins form when hot fluids pulse through the surrounding older rock. Metamorphic deposits occur when hot fluids or igneous rock *contacts* the older surrounding rock and interacts with it chemically.

You may have deduced that tennantite is an ore mineral that is mined for copper. The silver, if found in the ore, may be the primary product or byproduct of the mining.

In the United States, tennantite is well known from the mines of Butte, MT, along with its analog, tetrahedrite. Nice crystals also come from the Julcani and Quiruvilca mines in Peru and from the Cobre Mine in Zacatecas, Mexico.

Tennantite also occurs in many other copper deposits around the world. Some of these, like Tsumeb, Namibia, though mined for copper, are also noted for minerals. The Swiss use the name "binnite" for tetrahedrite from the Lengenbach dolomite quarry in the



Merry Christmas!

Happy Hanukkah!



Club Elections Committee Report

The NVMC will elect club officers for 2017 at the December meeting before the holiday party. Nominated are:

President..... Bob Cooke
Vice-President..... Ti Meredith
Secretary..... David MacLean
Treasurer..... **Open—volunteers needed!***

* Rick Reiber has been NVMC Treasurer for over 10 years and is due for a break. If you don't want to serve full time as Treasurer, please consider becoming co-Treasurer. Rick will help you learn the ropes.

Binn Valley near Wallis, Switzerland. This quarry has many unusual sulfosalts. More commonly, tennantite is found with pyrite, arsenopyrite, chalcopyrite, sphalerite, siderite, barite, quartz, calcite, and dolomite.

As a copper ore, the arsenic in tennantite makes the resulting metal alloy harder. Early civilizations may have exploited this property in creating bronze.

Technical details:

Chemical formula..... $\text{Cu}_6[\text{Cu}_4(\text{Fe}, \text{Zn})_2]\text{As}_4\text{S}_{13}$
Crystal form Isometric (cubic)
Hardness..... 3.5–4
Density 4.6–4.7 g/cm³ (measured)
Color..... Dark gray to black, usually opaque, though can be deep red in strong light
Streak..... Reddish gray
Cleavage..... None
Fracture Subconchoidal to uneven
Luster..... Metallic, though often oxidized coating ➤

Sources

Mindat. 2016. [Tennantite](#).

Webmineral. N.d. [Tennantite mineral data](#).

Wikipedia. 2016. [Tennantite](#).



Holiday Party

December 19, 6:30–9:30 p.m.

The NVMC and the Micromineralogists of the National Capital Area are jointly hosting this year's holiday party at the Long Branch Nature Center (our usual club meeting place).

The clubs will pay for barbeque, baked beans, and cole slaw, but we need members to fill out the menu with their own contributions. So this is critical—

Please tell Sue Marcus at

akumaldreams@gmail.com how many guests you will bring!

And please tell Sue what you will bring from the suggested list below!!!

- | | |
|---|--------------------------|
| 1 green salad | 1 cake |
| 1 veggie plate | 2 pies |
| 1 frito salad | 3 plates of cookies |
| 1 pasta salad | 2 plates of brownies |
| 3 platters of shrimp | 1 plate of fudge/candy |
| 1 platter of cheese | 1 jar pickles or similar |
| 2 boxes of crackers or loaves of bread | |
| 2 plates of deviled eggs (24 halves each) | |

If you'd like to participate in the gift exchange, please bring a hobby-related gift. The gift you bring should have a value of no more than \$20 and no less than \$5.

Thank you for helping to make our holiday party fun! Please come and enjoy! ♪

The Prez Sez

by Bob Cooke

The Prez says THANK YOU! The club's 25th Annual Gem, Mineral, and Fossil Show is now part of history. I had my doubts, but you did it! And although the



The club mineral show in November had multiple rooms and vendors, with visitors of all ages. Reports on the show begin on page 6. Photos: Sheryl Sims.



numbers are still tentative, it looks like the show was a big success.

Tom Taaffe performed his usual wizardry in lining up some great vendors and coordinating contractual details. Julia Nord did mortal combat with the bureaucracy at George Mason University in arranging for The Hub facilities and the shuttles.

Ti Meredith earned the title of Mini-Mines Queen for organizing the kids' room. No one had any doubts who was in charge of the Silent Auction when Rob Robinson yelled, "Pencils down!" And Roger Haskins put Charles Atlas to shame as he did the clean-and-jerk on boxes of rocks in the storage room.

I'm tempted to refer to the cast of thousands who worked through all the details, but we actually had only about fifty doing all that work. Everyone just showed up, pitched in, and worked hard. My thanks to each and every one of you!

I hope you also had a chance to enjoy the show. Perhaps you found a few items for Santa to put under the tree for you. Reports on the show begin on page 6.

I will not be attending the holiday party, because crowds and noisy environments just don't agree with



me. However, I wish you all the best for the New Year and look forward to more mineral activities with you in 2017! ↗.

Bob



Meeting Minutes November 14, 2016

by David MacLean, Secretary



President Bob Cooke called the meeting to order at 7:45 p.m. at the Long Branch Nature Center in Arlington, VA.

The minutes of the October 2016 meeting were approved as published in *The Mineral Newsletter*.

The president recognized past presidents in attendance, Rick Reiber and Barry Remer. The president also recognized guests Marissa Dudek and Robin Rohrbach from NOVA.

Officer and Committee Reports

Bob Cooke, reporting on behalf of the Nominating Committee, announced that Vice-President Ti Meredith is nominated for vice-president in 2017 and that Secretary David MacLean is nominated for secretary. No nominees had been found for president and treasurer. However, Bob Cooke subsequently agreed to be nominated for president again next year.

Treasurer Rick Reiber announced that he will gladly help a volunteer nominee for treasurer learn how to use the system for tracking NVMC income and expenses.

There was no treasurer's report.

Old Business

Show Chair Tom Taaffe announced that more help was needed for the NVMC show on November 19–20 at the George Mason University student union (The Hub). Help was needed for setup on Friday evening, to run the show on Saturday and Sunday, and to take it down on Sunday evening. Specifically, help was needed for the admissions desk, the Kids Mini-Mines, and other activities; 40 Scouts were scheduled to come at 10 a.m. on Sunday. Tom asked people not busy performing particular tasks to be floaters, filling in wherever needed and monitoring crowds near vendors' tables to help maintain security. Tom also asked

**Scenes from the
November club
meeting ... thanks to
Sheryl Sims for the
great photos!**



Marissa Dudek, a geology student at NOVA, delivered the program for the meeting. Here she is displaying a three-dimensional printout model of a fossil for classroom purposes.

club members to hand out show admission discount cards, which were distributed at the meeting.

Announcements

The NVMC will join the Micromineralogists of the National Capital Area in hosting a holiday party for club members and guests on Monday, December 19. The clubs will provide the main course, but donations of side dishes and desserts will be needed. Contact Sue Marcus to volunteer (see the list of needed items on page 3).

Wildacres will be held on May 22–29, 2017, at the usual facility near Marion, NC. Bob Jones will be the resident speaker.

Professor Lance Kearns has invited the NVMC and MNCA to visit the mineral museum at James Madison University from 9 a.m. to 4 p.m. on Saturday, January 28, 2017.

Craig Moore, who went on the field trip to a quarry containing wavellite in Mt. Pleasant Mills, PA, reported that the waste rock piles with wavellite were covered with 4 feet of other kinds of rock, requiring hours of digging to obtain the wavellite.

Door Prize Winners

Door prize winners included Marissa Dudek, Jeff Guerber, Mike Kaas, Craig Moore, Barry Remer, Robin Rohrbach, and Tom Taaffe.

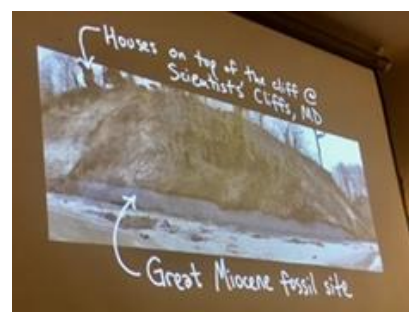
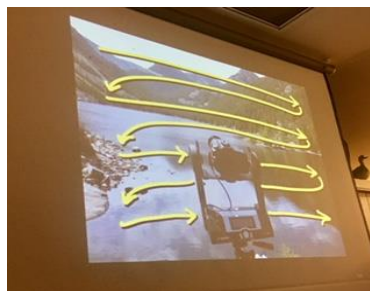
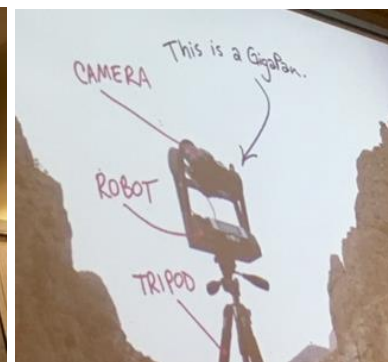
Adjournment

By motion duly made and seconded, the members adjourned the meeting. ➤



November Program **M.A.G.I.C.: The Midatlantic** **Geo-Image Collection—** **Building an Online Repository of Geologic Imagery** **Marissa Dudek**

Marissa Dudek gave a presentation on M.A.G.I.C., part of her program in geology at Northern Virginia Community College's Annandale Campus. After being introduced by her friend and colleague Robin Rohrbach, Marissa de-



scribed the use of Gigapan and other photographic techniques.

Gigapan uses supporting software such as stitching multiple images together, stacking to get all parts of a small object in focus, and photostacking to provide longer distance and very close-up photos without blurring the images. Marissa showed panorama photos of sedimentary formations along Corridor H, from the Shenandoah Valley of Virginia to eastern West Virginia. She also showed photos of stacked macros of grains in thin sections of rocks.



The photo techniques were applied to mineral specimens and fossils of various sizes, down to foraminifera at 4900x on an SEM. Online, a person can view three-dimensional images, turn them, zoom in on them, and copy them for personal use.

On the M.A.G.I.C. Website, there are more than 1,500 panoramas and 92 photos of Corridor H and Tonoloway formations. The Website is open to the public to view for free. If you go to the [Website](#), you can take a “virtual field trip” to places such as Giant’s Causeway in Northern Ireland or Corridor H in Virginia. ➤

Save the Dates! **Field Trip Opportunities**

James Madison University

January 28, 2017

Professor Lance Kearns has invited club members to visit the mineral museum at James Madison University from 9 a.m. to 4 p.m. on Saturday, January 28.

George Mason University

February 18, 2017

In appreciation for the success of our recent mineral show, Professor Julia Nord of George Mason University's Department of Atmospheric, Oceanic, and Earth Sciences has invited NVMC members to visit GMU's geology facilities on Saturday, February 18.

We will meet on campus at Exploratory Hall at 10 a.m. for a demonstration of mineralogical laboratory equipment and a tour of the mineral museum. An optional lunch will follow. Details will appear in future newsletters. ↗

Northern Virginia Community College **Geology Field Trips**



In spring 2017, NOVA's Annandale campus is offering 1-day weekend courses—essentially, field trips—related to our hobby. You can get more information at the [Field Studies in Geology—GOL 135 Website](#).

Cretaceous Geology of Maryland and Fossil Hunt.

One-day field trip starting at 10 a.m. on Sunday, April 23, 2017. Well-known dinosaur expert and paleontologist Dr. Peter M. Kranz will lead this fun outdoor expedition to nearby fossil sites, where you can discover many exciting fossils to take home.

Paleozoic Geology of Virginia and West Virginia.

One-day field trip via college van on Saturday, April 1, 2017, 7 a.m. to 9 p.m. This field trip will let you explore the late Silurian and Devonian geology of western Virginia and West Virginia, considering ancient depositional settings (tropical marine reefs, lagoons, shelves, deep basins, and terrestrial flood plains) and fossils, as well as later deformation (fault-

ing and folding) associated with the Valley and Ridge Province. ↗

Annual Club Show

By Tom Taaffe, Show Chair

The Northern Virginia Mineral Club held its 25th Annual Gem, Mineral, and Fossil show at George Mason University on November 19–20, 2016. For the 18th straight year, our event was cosponsored by Dr. Julia Nord and George Mason University's Department of Atmospheric, Oceanic, and Earth Sciences.

Once again, the event was a huge success, with mineral and fossil enthusiasts of all ages finding their way to The Hub (the student union) at GMU to see all the marvelous specimens on display and to participate in learning activities.

Our Kids' Activity Room was separate from the ballroom where the vendors had their displays, and it saw a lot of action from Scouts and troop leaders, along with kids of all ages and their parents. By completing a wide assortment of mineral and fossil challenges, the kids were able to earn free picks from our well-stocked Kids Mini-Mines and Fossil Dig.





Many thanks to our hard-working team in the kids' area! Volunteers included Tom Benedict, Elizabeth Crews, Basma Elfahssi, Roger Haskins, Lewis Holt, Jonathan Huynh, Patricie Julien, Dave MacLean, Ti Meredith, Lauryn Nemeth, Susan Russell-Robinson, and Brian Whiteley.

Our club's annual show typically spotlights 23 dealers spread out over 73 tables. This year again, The Hub ballroom buzzed with activity. Our longtime dealers have learned to bring their choicest array of specimens for our attendees to alternately marvel at and be tempted by.

There is always something for everyone at our show, be it a rare calcite for a particularly discriminating collector or an affordable amethyst cluster to help start a beginner's collection.

Below and right are pictures showing some of the offerings and vendors in The Hub ballroom. Enjoy! 🏹

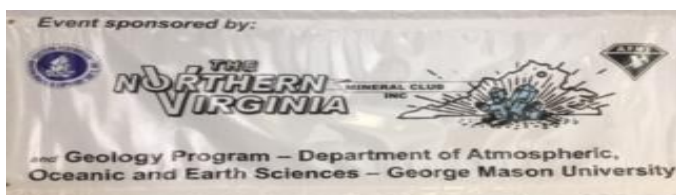


Left: Tom Kottyan (Bucyrus, OH), with George Loud and Keith William (Rio, WV). Tom and Keith traveled farthest for our show. I'm pretty sure that George Loud was our first show chair 24 years ago.

Above, top (left to right): Mike Shoemaker, Carlin Green, and Mubarek Allumani. Mike promoted our show on the Internet. Carlin represented Victor Yount, GMU, and himself. Mubarek sold Ethiopian opals at GMU's table.

Above, middle: The Prospector Shop (represented by Marianne Cannon, not shown) featured an elaborate booth display.

Above, bottom: Jehan Sher (Jan Minerals) and Wayne Sukow.



Our Mineral Show Through My Eyes

by Sheryl E. Sims

This year's mineral show, in my eyes, was a success. Setup took place late Friday, November 18. The show was open on Saturday, 10 a.m. to 6 p.m., and on Sunday, 10 a.m. to 4 p.m., with takedown late Sunday afternoon. Despite a couple of cold and blustery days, large crowds of anxious mineral seekers showed up. After months of hard work, everything fell into place, and there were lots of smiles all around.

Feeling fortunate to work at the admissions table, I had great fun greeting the attendees. It's nice to talk to them a little before they enter the mineral show. It's pure joy to see the expressions of excitement on so many children's faces, especially the younger ones. There is nothing like their wide-eyed enthusiasm when they get their own mineral.

My heart melted when some of the children returned to the front desk to show me the minerals they "earned" by completing quizzes or to show me a door prize that they had just won. They were so proud of themselves! Even their parents were thrilled to see them so happy! More than a few thanked me profusely for talking to their child and for the experiences that their children had at our show. I hope that other club members experienced this as well. The kids' mineral room was a huge success!

Getting teenagers and some of the young adults excited can be challenging. However, even though a few entered with that look on their faces that told me that their parents were "making" them come, they certainly had different expressions on their faces as they roamed the showroom and left with bags of mineral goodies. I think a few had to admit that they had a good time and that minerals were actually "cool" after all. In fact, I was pleased to see people signing up to join our club! That's awesome!

It felt good to help people sign up for door prizes and to people-watch after the mad dash of setting up. Some people were surprised to find that I remem-



Sheryl Sims (left) with show attendees.

All photos: Sheryl E. Sims.

bered them from previous shows. Others were excited to have lucked upon discovering that there was a mineral show going on!

One person sought information about our show the night before via a Facebook inquiry. "JP," a GMU student, asked about the show on our Facebook page. I responded and was able to say hello to him when he arrived.

I saw our members wearing many hats and patiently responding to lots of questions. Members were filling in where needed and helping both vendors and visitors. Along with working at the admissions table, it's always a treat to visit the vendors' tables. So many minerals! So little time!

Our shows give us a chance to see how many of our fellow club members are also dealers. It's interesting to see what they've collected and to hear the stories about how they came across certain minerals. It's great learning about the sources of those minerals. Some mines and quarries have closed, making certain specimens more collectible. Some minerals came from private collections, and others were just happy purchases! I always learn something when talking to our veteran collectors.

Members are very generous in sharing information. It was explained to me not only what a certain mineral was but also where it came from and why it would be a good purchase.

A specimen that I had just purchased came from George Loud's collection, which makes it a keeper

for me! I was told that it originally came from Patterson, NJ. Jon Ertman later shared with me that I could look forward to the value of my specimen increasing over time and that I could also find “apophyllite” in Centerville and Chantilly, VA. Rob Roberson and Barry Remer explained why another specimen I purchased was so easily identifiable by appearance and location.

I spotted our usual wonderful experts in the field of geology, such as Dr. Julia Nord; Dr. Shelley Jaye; Dr. Lance Kearns and his wife, Cindy; as well as many mineral club friends from other local clubs. Our show looked and felt like a mineral reunion! Some of us only see each other at each other’s mineral shows!

See for yourselves! Here’s a glimpse of what I saw! Something for everyone! 📷



Smithsonian Fossil Hall Event

Thanks to Sheryl Sims for the reference!

Join Kirk Johnson, paleontologist and director of the Smithsonian National Museum of Natural History, for a special event on December 6 from 6:30 to 8:10 p.m. Kirk will take you behind the scenes to explore the massive undertaking of redoing the National Fossil Hall. For more information, click [here](#).

GeoWord of the Day

(from the American Geoscience Institute)

senility

The stage of the hypothetical cycle of erosion in which erosion has reached a minimum and base level has been approached. See *peneplain*.

(from the [Glossary of Geology, 5th edition, revised](#))

Another Perspective The 2016 NVMC Mineral Show

by Dave Lines

Editor's note: The author is a member of the Southern Maryland Rock and Mineral Club. The piece is adapted from an article prepared for that club's newsletter, Rock Talk. Thanks to Sheryl Sims for the reference!

After an extra-early start on Saturday, November 19, my son Jeff and I arrived at the 25th Annual Gem, Mineral, and Fossil Show cosponsored by the Northern Virginia Mineral Club and George Mason University's Department of Atmospheric, Oceanic, and Earth Sciences. The show is held every year at George Mason University in Fairfax, VA, typically at The Hub (the student union).

We arrived just as they were opening at about 10 a.m. We were pleased to get first opportunity to shop at the many vendor tables and see the best specimens. Within an hour, the place was packed with customers—young and old alike—and it remained very busy until we left that afternoon at about 2 p.m.

It is always neat to visit with old friends, both vendors and customers like us. The show tables were all loaded with great specimens and well lit. I was very pleased with the quality of the show and found many interesting specimens. My son Jeff far outspent me and brought back some great items.

I ventured into two rooms adjacent to the show—one just for kids, a huge effort with lots of friendly volunteers helping kids “win” free rocks. Judging from the many kids participating in the packed room, I would say it was a super success.

The other room contained display cabinets featuring different themes, including a particularly interesting one about meteorites from around the world. There was also a large round table covered with different rocks and minerals, all labeled, and signage that encouraged onlookers to “touch” and handle the different specimens. A great idea and well executed!

Another table had hands-on science experiments reminiscent of “Mr. Wizard.” Especially captivating was one with two bottles of water screwed together at the open ends. The visitor held them vertically and turned them over so that the water drained from one bottle into the other, like turning an hour glass. The visitor was supposed to slightly swirl the bottles in order to



Photos: Sheryl Sims.



start the air bubbles into a whirlpool vortex. Very ingenious!

Overall, it was a great show, very well organized, interesting for all ages (with a special emphasis on kids), and quite worthwhile to attend.

Well done, NVMC! ↗



Twin door prize winners at the NVMC mineral show.
Photo: Ti Meredith.

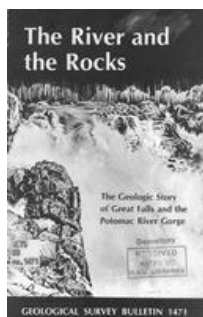
Fossilized Eggs Found in China

Thanks to Sheryl Sims for the reference!



Forty-three fossilized dinosaur eggs were found in southern China while a road was being upgraded. The fossils were discovered in Heyuan, Guangdong Province. The fossilized eggs were large, with one 5 inches in diameter. Nineteen were completely intact. ...

[Read more.](#) ↗



Book Review

The River and the Rocks

by Hutch Brown, Editor

If you can find this gem, buy it!

Published by the U.S. Geological Survey in 1980, it was written by John C. Reed, Jr., Robert S. Sigafoos, and George W. Fisher.

The full title is *The River and the Rocks: The Geologic Story of Great Falls and the Potomac Mather Gorge* (Geological Survey Bulletin 1471).

I bought my copy in the mid-1990s at Great Falls National Park, and you can probably still find it online. I had started working for the U.S. Forest Service, and I figured that my background in German literature didn't quite cut it. So I was taking courses in natural history at the Audubon Naturalist Society's Woodend Center in Maryland.

I took a wonderful course in geology, and the instructor mentioned the book. That course, together with my son's interest in minerals, eventually led me to join our club.

In the interim, I used the book—a field guide to the geology you can see on both sides of the Potomac at Great Falls. Self-guided field trips start at the falls in both Virginia and Maryland, then take you downstream along Mather Gorge.

The guide leads you down the well-worn trails from stop to stop, giving mileage estimates between stops. One drawback is that the trails have changed in places and some landmarks (such as big old trees) are gone. But you can still find your way.

At each stop, you get a detailed description of what you can see, from metagraywacke at Great Falls, to lamprophyre dikes in Mather Gorge, to mica schist at Difficult Run (on the Virginia side). Overall, the book gives you a good introduction to the rocks of Great Falls and Mather Gorge and the geological processes that shaped them.

Of course, it helps to have a geologist's eye, which I don't. Amphibolite, for example—I never did find any. I'm sure I saw it but failed to recognize it. And I never found any granite intrusions, either.

But the book still does a great job of describing the geology of Great Falls and Mather Gorge, even to a neophyte like me. ↗

Fluororichterite?

Hutch Brown, Editor

I inherited a small mineral collection from my parents without knowing what most of the minerals were. I have occasionally asked club members to help me identify them.

The mineral shown below has dark needlelike crystals on a white crystalline matrix. I have slips of paper from my parents with names of minerals on them but with no way of telling which slip goes with which mineral.

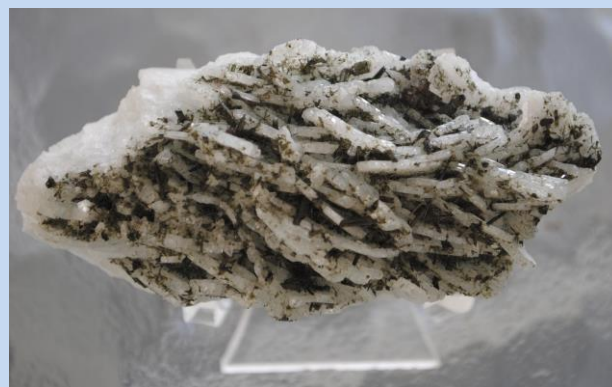
I didn't know the name on one slip, so I looked the mineral up online, and lo and behold—it looked a lot like the specimen shown below! It even had the same locality noted on the slip of paper!

The tiny dark crystals appear to be fluororichterite from Wilberforce, Ontario, Canada. Samples from that locality suggest that the white matrix is calcite.

The chemical formula of fluororichterite is $(\text{Na})(\text{CaNa})(\text{Mg}_5)(\text{Si}_8\text{O}_{22})(\text{F},\text{OH})_2$. The system is monoclinic, the luster vitreous, the hardness 5–6. The color ranges from black, to reddish brown, to dark green.

Richterite is a group of sodium–calcium amphibole minerals of limestone metamorphosed due to contact with hot fluids or igneous rock. “Fluoro” indicates a variant of richterite with fluorine (F) in it.

But if you think the photo below shows something different, please let me know!



University of Delaware Mineralogical Museum

Thanks to Craig Moore for the reference!

One of the best mineral museums in the country is an easy day trip away for our club members.

The University of Delaware Museum of Mineralogy is rated 17 on a [list](#) of the top 30 university museums of natural history in the country; it is the top mineralogical museum on the list. The core of the museum's holdings is a fantastic collection from the early 20th century by industrialist and mineral collector Irénée du Pont (1876–1963).

Du Pont began collecting minerals as a child. But his first major purchase came as a wealthy industrialist, when he saw a rounded, stream-rolled topaz crystal weighing more than 19 pounds for sale in New York. To obtain the topaz, he had to purchase an entire collection that included emeralds, bicolor tourmalines, a diamond in a matrix, and much more.

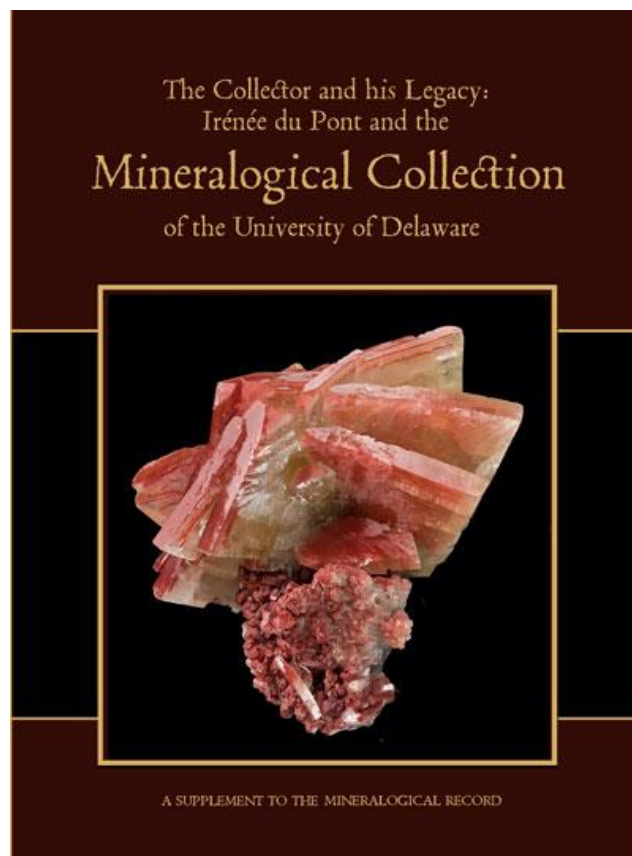
He couldn't resist, and the stunning collection was his. When the University of Delaware acquired the collection in 1964, it became the centerpiece for the university's Mineralogical Museum.

The museum's collection has grown to include specimens gifted or made possible by many generous donors. About 350 specimens are on view from a total collection of more than 2,500; frequent changes let visitors see new specimens, beautifully displayed in cabinets with fiber-optic lighting.



The museum is located at 255 Academy Street in Newark, DE (about a 2-hour drive from our area). Normal hours are Wednesday, 12–8 p.m.; and Thursday–Sunday, 12–5 p.m. For more information on hours and location, click [here](#).

Spodumene, from the collection of the University of Delaware Mineral Museum.



Huge Oil and Gas Find in Texas

Thanks to Sue Marcus for the reference!



In its largest assessment of continuous oil ever found in the United States, the U.S. Geological Survey estimated that the Wolfcamp Shale in Texas contains an estimated mean of 20 billion barrels of oil, 16 trillion cubic feet of associated natural gas, and 1.6 billion barrels of natural gas liquids. Special technical drilling and recovery methods, such as hydraulic fracturing, have made the resources technically recoverable. Whether or not removal is profitable has not been evaluated. ... [Read more](#). ↗



2016 BEAC Contest Results

by Hutch Brown, Editor

Each year, the Eastern Federation of Mineralogical and Lapidary Societies' Bulletin Editors Advisory Committee (BEAC) holds a contest for club newsletters. Our club submits articles and sample issues of our newsletter for the competition.

Results are typically announced each spring. The first-, second-, and third-place winners in each category are then judged in a followup contest by the American Federation of Mineralogical Societies, with the results announced in the fall.

How Are Newsletters Judged?

Newsletter editors volunteer to judge the competing newsletters. They evaluate the newsletters in four categories: mini (5 pages or less); small (6 to 11 pages); large (12 pages or more); and "new editor."

In each category, the judges use a standard list of 29 [evaluation criteria](#), such as "news of members" and "Eastern Federation news." For each criterion, the judges give points; for "spelling and grammar acceptable," for example, they give up to 5 points. They can give up to a total of 100 points overall, and the newsletter with the highest number of points wins.

Maybe you've wondered what winning newsletters look like compared to our own. For the 2016 BEAC competition, the first-place winners are listed below. For those that are posted online (not all are), you can click on each one to go to the newsletter Website.

EFMLS Trophies

- **Mini newsletters:** *The Pegmatite* (Nashoba Valley Mineralogical Society, Littleton, MA)
- **Small newsletters:** [The Mineral Mite](#) (Micro-mineralogists of the National Capital Area)—CONGRATS, Editor Kathy Hrechka!!!
- **Large newsletters:** [Chippers Chatter](#) (Chesapeake Gem and Mineral Society, Baltimore, MD)
- **New editors:** [Crack 'n Cab](#) (Gem and Mineral Society of Syracuse, NY)

AFMS Trophies

- **Mini newsletters:** [Snoopy Gems](#) (Mississippi Gulf Coast Gem and Mineral Society, Ocean Spring, MS)



Mary Bateman (standing), BEAC chair, at the EFMLS convention in October 2016, where results of the newsletter contest were announced. Photo: Sheryl Sims.

- **Small newsletters:** [West Seattle Petroglyphs](#) (West Seattle Rock Club, Seattle, WA)
- **Large newsletters:** *Rock Buster News* (Central Pennsylvania Rock and Mineral Club, Harrisburg, PA)
- **New editors:** *The Slate* (Lake County Rockhounds, Clear Lake Oaks, CA)

How Did Our Club Do?

Our club's entry, *The Mineral Newsletter*, took third place for large newsletters in both the EFMLS and the AFMS competitions. (EFMLS newsletters generally did well in the AFMS contest.) That is the best our club has done in the 4 years that I have been editor (2013–2016). The third-place awards came for the [April](#) and [June](#) 2015 issues, thanks to our club members, who contributed generously. We got points we usually don't get for evaluation criteria such as "field trips," "committee reports," and "program reviewed."

In addition to evaluating club newsletters, the EFMLS BEAC judged individual articles in multiple categories. As editor, I submitted nine articles for our club (three per category, the maximum allowed). Results were as follows:

Educational/Technical Articles—

Sue Marcus, "Mineral of the Month: Zircon"—3rd Place

Alec Brenner, "Lab Notes: Mineral Identification (the Cool Way)"—8th Place

Sheryl Sims, "Tribune Tower: A Tower That Rocks"—9th Place

Nontechnical Articles—

Sue Marcus, "What's a Hole in the Ground?"—5th Place

Hutch Brown, “James Hutton: Father of Geology”—Honorable Mention

Kathy Hrechka, “Natural History Museum in London: In Search of Smithsonite”—Honorable Mention

Written Features—

Sheryl Sims, “Mineralogy Is a Stitch!”—Honorable Mention

Sheryl Sims, “Cold Weather Fun”—Honorable Mention

Wayne Sukow, “The Prez Sez” (for April)—Honorable Mention

Due to its third-place showing in the EFMLS contest for Educational/Technical Articles, Sue Marcus’s article “Mineral of the Month: Zircon” (in the [March 2015 issue](#)) was judged in the followup AFMS contest, where it took second place.

Third place regionally and second place nationally? Go figure!

Anyway, congratulations, Sue! Congratulations to all our authors, and special thanks to everyone who contributed to our newsletter! Keep those contributions coming! ♪

Bench Tips: Drilling Small Items

Brad Smith

Small pieces need to be held securely while drilling to prevent them from spinning if the drill catches. Having sliced my fingers occasionally in my younger days, I avoid band-aids now by using flat-jaw pliers or a ring clamp.

Pliers also save you if the piece gets hot. Put a little tape over the jaws of the pliers if needed to avoid scratches.



Editor’s Corner Newsletter Contest

by Hutch Brown



As editor of the club newsletter, I have now experienced 3 years of annual newsletter contests (2013–2015). I also saw the 2012 contest results, but I was a new member then and had no real idea what the contest was about.

The contest is designed to help editors improve their newsletters by adding elements they might not have considered. And it does help. Based on the latest results, for example, I have added a return address to the back cover, and I have also decided to add Brad Smith’s Bench Tips (some folks might use them).

But the judging is typically uneven and subjective. We lost points, for example, for “variety of material fulfills needs of club” (how would the judge know?); for images too close to page edges (really?); and for not having “continued on page X” (not needed—our articles continue on the next page). As usual, “news of members” was deemed deficient; and we got only 1 point in 6 for “hints & tips, safety info, book reviews, humor, etc. (variety as meets club needs),” even though our newsletter has lots of material in short formats, including “safety info” and “humor.” (My query to the federation on this matter last year left me puzzled, so I have tried again.)

This year’s contest cost the club \$133.82 for mailing color copies in triplicate for judging. Over half of the expense was for the newsletter alone (the individual articles submitted accounted for the rest). Does the club want to consider saving costs on a newsletter contest we can probably never win? ♪

***Humor* What I Owe My Mother**

Editor’s note: The piece is abridged and adapted from Livermore Lithogram (newsletter of the Livermore Valley Lithophiles, Livermore, CA), October 2011, p. 7.

1. My mother taught me to APPRECIATE A JOB WELL DONE.

“If you’re going to kill each other, do it outside! I just finished cleaning!”

2. My mother taught me about RELIGION.
“You both better *pray* that this will come out of that carpet!”
3. My mother taught me LOGIC.
“Because I *said* so, that’s why!”
4. My mother taught me about HYPOCRISY.
“If I told you once, I’ve told you a million times. Don’t exaggerate!”
5. My mother taught me about my ROOTS.
“Shut that door behind you! Do you think you were born in a tent?”
6. My mother taught me about SOCIOLOGY.
“Get your elbow off the table! Do you want to grow up to be a truck driver?”
7. My mother taught me about OSMOSIS.
“Shut your mouth and eat your supper!”
8. My mother taught me about STAMINA.
“You’ll sit there until that spinach is gone!”
9. My mother taught me about WEATHER.
“This room of yours looks as if a tornado went through it!”
10. My mother taught me HOW TO BECOME AN ADULT.
“If you don’t eat your vegetables, you’ll never grow up!”

And my favorite:

11. My mother taught me about JUSTICE.
“One day you’ll have kids, and I hope they turn out just like *you*!” ♫

I Spy—With My Tiny Little Eye ... Microminerals!

by Sheryl E. Sims

Although I’m not a member of my local micromineral club, the Micromineralogists of the National Capitol Area, I consider myself a “friend of the club.” When my schedule permits and I see a program of interest, I am always welcome to attend their meetings. I’ve enjoyed attending the micromounters confer-

ences that the club puts on each year as well, and I expect to attend the 2017 conference.

Microminerals! I like the idea! Unfortunately, I discovered the world of microminerals a bit late. Over the past 8 years, after I first joined a mineral club, I enthusiastically collected every rock and mineral that I could put my hands on. I didn’t know what I was doing. In fact, I had to “slow my roll,” because my daughter, Amber, remarked that we were living in a “quarry.”

Living in an apartment makes collecting, keeping, and storing minerals tricky. After stubbing my toe on a not-so-well-placed rock and overloading every available surface in my apartment with a mineral that I “just had to have,” I was told by several of my micromounter friends that collecting micros would take up far less space. In fact, I could conceivably fit my entire collection in one drawer! Wow!

Here’s what I like about micros. You can look at them with your naked eye and see an okay-looking mineral—that is, if they’re not too small. However, when you look at the same mineral under a microscope or with your loupe, a whole new beautiful world of minerals opens up for you!

Speaking of beautiful microminerals ... while surfing the Web one day, I came across the Website for the American Museum of Natural History, located in New York. The museum is at Central Park West at 79th Street; the phone number is 212-769-5100; it is open daily from 10 a.m. to 5:45 p.m., except on Thanksgiving and Christmas.

Housed in the museum is the Harry Frank Guggenheim Hall of Minerals. How I’d like to visit!

For now, I must satisfy myself with visiting their Website. The museum has exhibits depicting chemical, physical, optical, and many other properties of minerals.

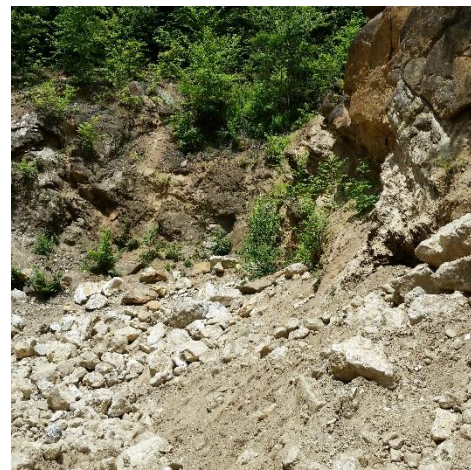


You’ll be happy to know that the museum also houses the Howard Lee Belsky Memorial Exhibit of Microminerals. You can find the Website by clicking [here](#). Whether online or in person, these microminerals are worth seeing! ♫

Sheryl Sims. Photo: Anne Barber.

Field Trip Aquamarines From Gem Mountain

In June, NVMC member Pat Flavin sent these photos from her trip to Spruce Pine, NC. Enjoy! ↗



Mineral Crystals in Sands

by William Beiriger

Editor's note: The piece is adapted from Livermore Lithogram (newsletter of the Livermore Valley Lithophiles, Livermore, CA), December 2009, p. 4.

Minerals come in all shapes and sizes. Most people have seen large, showy crystals of pyrite, quartz, calcite, and tourmaline.

But my specialty in minerals has been micromount mineral crystals that require using a stereomicroscope to see. The microcrystals look the same and sometimes even better than their larger counterparts because they have not had a chance to bump against each other and grow together like the larger ones have.

But I had no idea that there were well-formed crystals even in sand until I started taking a close look at the sands I had in my collection. Most crystals in sands are damaged as they bounce against each other and lose their crystal faces. But the nice crystals shown on the right are from some of my sand collections from around the world.

The quartz crystal formed in gypsum. Gypsum is very soft and readily dissolves in water, releasing the quartz crystals.

The garnets from New Zealand probably weathered out of a rock similar to the Franciscan formation along the California coast.

I also have sands with pyrite crystals. Although different, they are from the same beach in Cyprus. One end of the beach has golden crystals, while the other end contains crystals coated in limonite.

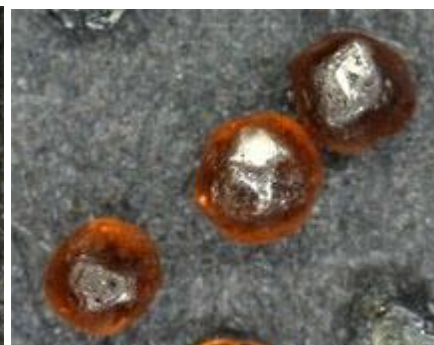
At White Sands National Monument in New Mexico you can find rhombohedron crystals of gypsum, although most have been weathered.

Other minerals found in sands include zircon, sapphire, ruby, spinel, ilmenite, magnetite, rutile, and more. A major mineral found in beach sands along the African coast is diamond, although in most cases the diamonds you find are miniscule.

Next time you go rock and mineral collecting, take a good look at the sand in the rivers where you collect. You just might find crystals! ↗



Quartz from New Mexico; 2.8 mm.



Garnets from New Zealand; 0.5 mm.



Safety Matters Safety 101

by Ellery Borow, AFMS Safety Chair

Editor's note: The article is adapted from A.F.M.S. Newsletter (June 2016), p. 8.



To my knowledge, no Safety 101 class is offered anywhere for rockhounds, fossilhounds, and the like. In my years and years of safety research, I've sort of made up an informal list of what might be offered if there were such a course.

Now, I'm sure you all, as good rockhounds and so forth, are aware of, in one form or another, and follow a self-made list of similar guidelines, one specifically tailored to your particular activities. So the following list may be more of a reminder for veteran collectors and a good reference list for newcomers to our great hobbies.

1. Prepare yourself both mentally and physically for the task at hand.
2. Wear and utilize any and all protective gear suitable for the task.
3. Stay hydrated and consider bringing additional water for others.
4. Keep with you or know the whereabouts of a first-aid kit. Learn how to use its contents.
5. Let folks know where and when you will be, both on the road and at your destination. (Cell phone batteries are notorious for quitting at the most inopportune times.)
6. Keep your personal meds with you.
7. Know the guidelines and safety rules of the mine, quarry, or building you are in.
8. Keep the "Golden Rule" in mind—and, no, I'm not talking about the rule, "He who has the gold makes the rules."
9. Mind the needs of the critters you bring with you and the critters you meet along the way.
10. Set a good example in all you do.
11. Take advantage of those golden opportunities to learn something, teach something, or both.

12. Take more rest breaks than you might think you need—your body will thank you.
13. Mind the conditions around you, whether it is too hot, too cold, too wet, too humid, too deep, too close to an edge or slope, too slippery, too hazardous, too ... anything.
14. Remember that your actions reflect on your club.
15. Note that your attitude makes a huge difference in what you do and how safe you are.
16. Keep your wits about you at all times. You will need them—if not now, then later. Personally, I have used up so many wits that I am down to half of one, but that's a story for another time.
17. Have maps handy. (GPS batteries also have a nasty habit of failing when most needed.)
18. Take enough time to be safe. Our hobby is not a race.
19. Keep a personal protective kit with you in case you get lost and need to spend more time than planned out in the wild.
20. Keep in mind the [AFMS Code of Ethics](#); it is as much a safety as an ethics guide.
21. Learn to fly the plane if the pilot is incapacitated—that's a metaphor for all experiences in life.
22. Clean up after yourself.

As you might imagine, this list is in no particular order, and every situation has its own specific requirements. I'm sure another thousand guidelines or so could be added without too much thought. This list is just a good starting point.

Be safe, think safety, because your safety matters! ↗





2016 EFMLS Workshops at Wildacres—A Huge Success!

by Steve Weinberger

Editor's note: The article is adapted from EFMLS News (October 2016), p. 5. (Photos are from Wildacres.)

Our two 2016 EFMLS workshops at Wildacres have now been enshrined in the history books. Both were a huge success.

Spring Session

In the spring, Speaker-in-Residence Helen Serras-Herman and her husband, Andy, joined us from their home in Arizona. Helen not only presented six outstanding talks but also gave a “sharing program” on our Activity Day. Her talks were well received, and she was peppered with questions.

Students who were enrolled in classes produced an amazing variety of projects—soapstone carvings; Kumihimo and Russian spiral pattern beaded necklaces, bracelets, and earrings; standard and free-form cabochons; faceted gemstones; pewter objects; and scrimshaw items, both in black and white and in color. In addition, some of the participants learned about the geology of the Little Switzerland area through in-class talks and field trips.

Fall Session

The fall session saw a change in plans, because our announced speaker-in-residence, Alfredo Petrov, had to cancel due to a family emergency. Jumping into the void was the fabulous Dr. Steve Chamberlain, Chairman of the Rochester Mineralogical Symposium. Steve gave six wonderful talks, exhibiting his



humor, knowledge, and photographic skills. Like Helen, he was peppered with questions after each talk.

Students produced numerous outstanding projects during their classes: faceted gemstones; opal cabochons; wire-wrapped bracelets and pendants; terrific silver rings, pins, and pendants; fused-glass pendants and objects; and polymer clay objects.

Fun Events

As usual, each session included a tailgate event where participants could sell and/or swap items they had made or collected. This is always a fun occasion that gives everyone a chance to talk, swap stories, and procure new items for their own collections.

On the final evening, after all the classrooms have been cleaned and tools put away, participants join in a good old-fashioned “Show & Tell.” Someone from each class tells what they learned during the week, and everyone gets to display their projects for all to see. It is a fun night, replete with songs, skits, stories, and awful corny jokes. Some of the stories told about the instructors and the classes during Show & Tell always prove to be amusing and definitely educational!

See what you missed by not being there this year?

Planning for 2017

Now's the time to start considering a trip to one (or both) of the EFMLS workshops at Wildacres in 2017. We don't yet have the dates, the session costs, or the classes we'll be offering, but we should have them in time for the January [EFMLS News](#).

So watch that space! ↗



December 2016—Upcoming Events in Our Area/Region (see details below)

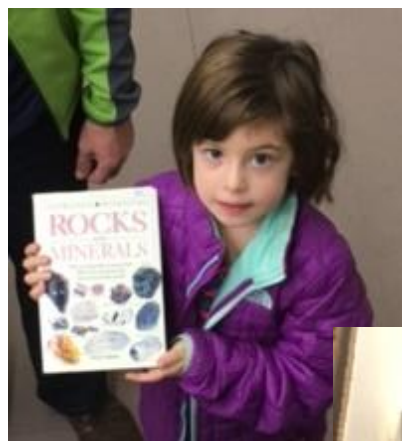
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9 Show, Laurence- ville, GA	10 Shows, Laurence- ville, GA; Franklin, TN
11 Shows, Laurence- ville, GA; Franklin, TN	12	13	14	15	16	17
18	19 NVMC/ MNCA Holiday Party	20	21	22	23	24 Christmas Eve
25 Christmas/ Hanukkah	26	27	28	29	30	31 New Year's Eve

Event Details

9–11: Lawrenceville, GA—23rd North Atlanta Gem, Mineral, Fossil, & Jewelry Show; Mammoth Rock Shows LLC; Gwinnett County Fairgrounds, 2405 Sugarloaf Parkway; Fri/Sat 10–6, Sun 10–5; adults \$5, children 16 and under free; info: Richard Hightower, 800-720-9624, staff@mammothrock.com.

10–11: Franklin, TN—Annual show; Mid-Tennessee Gem & Mineral Society; Williamson County AgExpoPark, 4215 Long Lane; Sat 9–6, Sun 10–5; adults \$4, students \$1, children free; info: Mardy Smith, 615-417-1416, show@mtgms.org.

19: Arlington, VA—Holiday party; Northern Virginia Mineral Club/Micromineralogists of the National Capital Area; 6:30–9:30 p.m.; Long Branch Nature Center, 625 S Carlin Springs Rd.



Scenes from this year's mineral show. Photos: Sheryl Sims.





**THE
NORTHERN
VIRGINIA**

**MINERAL CLUB
INC**

Crystals are the flowers of the Mineral Kingdom



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**Mineral of
the Month:
Tennantite**

PLEASE VISIT OUR WEBSITE AT:

<http://www.novamineralclub>

The Northern Virginia Mineral Club

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You can send your newsletter articles to:

hutchbrown41@gmail.com

**Visitors are always welcome at our club
meetings!**

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:

Rick Reiber, Treasurer, NVMC
PO Box 9851, Alexandria, VA 22304

OR

Bring your dues to the next meeting.

Purpose: To encourage interest in and learning about geology, mineralogy, lapidary arts, and related sciences. The club is a member of the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS—at <http://www.amfed.org/efmls>) and the American Federation of Mineralogical Societies (AFMS—at <http://www.amfed.org>).

Dues: Due by January 1 of each year; \$15 individual, \$20 family, \$6 junior (under 16, sponsored by an adult member).

Meetings: At 7:45 p.m. on the fourth Monday of each month (except May and December)* at **Long Branch Nature Center**, 625 Carlin Springs Road, Arlington, VA 22204. (No meeting in July or August.)

**Changes are announced in the newsletter; we follow the snow schedule of Arlington County schools.*