THE NORTHERN VIRGINIA MINERAL CLUB INC
Crystals are the flowers of the Mineral Kingdom

The Mineral Newsletter

Meeting: April 22 Time: 7:45–9:00 p.m.

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

Antarctic Search for Meteorites Expedition

April 22 Meeting

by Kathy Hrechka, Vice President

The program for the next meeting is the Smithsonian Institution's Antarctic Search for Meteorites Expedition. Our presenter will be Dr. Andrew Beck.

Dr. Beck conducts research on the National Meteorite Collection at the Smithsonian to test hypotheses about planetary formation and asteroid mineralogy. He also assists in data analysis from NASA's Dawn mission to asteroid 4Vesta, a protoplanetary asteroid in the main belt.

Dr. Beck was a participant on the Antarctic Search for Meteorites (ANSMET) team in 2012–13, a program which searches for and recovers meteorites in remote locations in Antarctica. He will be presenting a synopsis of this year's ANSMET expedition, where over 350 meteorites were recovered.

Volume 54, No. 4
April 2013
You can explore our club website:
http://www.novamineralclub.org/

Northern Virginia Mineral Club members,

Please join our April 22 speaker, Dr. Andrew Beck, for dinner at the Olive Garden at 6 p.m.

Olive Garden, Baileys Cross Roads (across from Skyline Towers), 3548 South Jefferson St. (intersecting Leesburg Pike), Falls Church, VA
Phone: (703) 671-7507

Reservations are under Kathy Hrechka, Vice President, NVMC. Please RSVP to my cell at (703) 407-5393 or ksrechka@msn.com.

The presentation will include pictures and movies of meteorite collection from the ice and some information about the local geology and mineralogy of the portion of Antarctica he visited.

Dr. Beck received his Ph.D. in Planetary Science at the University of Tennessee. His dissertation: Petrology and Geochemistry of Olivine-Bearing Diogenites and a Group of Paired Howardites.

Dr. Beck is a Postdoctoral Fellow at the Smithsonian Institutions Division of Meteorites.

President's Thoughts

by Rick Reiber

The club auction was a great success. We raised $148 for the Fred Schaefermeyer scholarship fund.

We also gained a first-time volunteer auctioneer, Talaya Ridgely, in addition to her award for her work at the club's mineral show last fall.

Be sure not to miss the April 22 meeting! Kathy Hrechka has arranged for Dr. Andrew Beck, a Postdoctoral Fellow at the Smithsonian Institution of Meteorites, to present at the meeting. We are truly fortunate to get such highly qualified speakers! In light of these great presenters, I will continue to try to keep the business meeting short.

I also want to note that a lot of work has been taking place behind the scenes this past month, resulting in the constitution and bylaws being updated by Sue Marcus and updates to the membership application. Jim Kostka has also tried to get in touch with members we haven't heard from in a while. Thanks for everyone's hard work!

Previous Meeting Minutes: March 25, 2013

by George Reimherr (filling in for Dave MacLean, Secretary)

President Rick Reiber called the meeting to order at 7:45 p.m. About 32 people were present. The minutes of the February 2013 meeting were approved as published in *The Mineral Newsletter* for March 2013.

The three past presidents who were present at the meeting were duly recognized. There was no old or new business, and there were no committee reports.

Award: Talaya Ridgely received an award for her service during the Children MiniMines event at the mineral show hosted by the Northern Virginia Mineral Club on November 17–18, 2012.

Announcements: The Gem, Lapidary, and Mineral Society of Washington, DC, invites us to their 2013 Spring Mineral Auction on Sunday, May 5, from 1 to 5 p.m. The auction will feature specimens from the Bruce and Cathy Gaber mineral collection.

Members who do not have name tags were urged to order the tags through the club. The cost to members is $5, with the club picking up the balance.

The business meeting ended at 7:56 p.m. Then the real fun began—the club's annual Spring Auction, with dozens of mineral specimens supplied by club members auctioned off.

Opportunities for Self-Collecting: Where Can You Go?

by Sue Marcus

Curiosity is what called many of us to the rock collecting hobby. We are curious about aspects of this hobby—minerals, fossils, gems, lapidary arts, etc. Our curiosity is often piqued by a specimen that we want to know more about and that leads to ... collecting!

Many people are interested in knowing where to go to collect minerals or fossils. Joining our club is a good start, because your membership brings with it your automatic inclusion in the Eastern Federation of Mineralogical Societies umbrella liability coverage, required to access many collecting sites.

Before I talk about collecting sites, a disclaimer: Although I started field collecting about 50 years ago and have done so in many places over the years, I'm not currently an authority. So I welcome a lively discussion by all who read this! My purpose here is to kick off a discussion.

Above all: Be safe!! Read and abide by the Rockhound's Code of Ethics (see the box on page 3). Wear safety equipment and use the proper tools.

Next—and more fun: Follow your curiosity! Stop at recent road cuts; contact clubs and collectors wherever you travel or vacation. Keep a rock hammer and collecting bag in the car, along with a roll of paper towels.

My dad was infamous for making any vacation by car (and they were mostly by car) much longer by wanting to stop at almost every road cut along the way.

We put 1,000 pounds on the car during one long trip! We brought home agate, petrified wood, fossils, and lots of stories.

Be careful to label your finds. Location information may help identify the unknowns later and adds value to your specimens. Wrap anything that's delicate (crystals or fossils). A treasure of unique gypsum crystals was found by club member Buck Keller at the Woodrow Wilson Bridge excavations—who knew!

Where can you go to collect in this area?

My first thought is the Vulcan Materials Quarry in Manassas. It requires access with a group, although most local clubs regularly go there; our club is often invited to join other clubs collecting there.

This is a wonderful beginner's experience. It is nearby, you can drive your own vehicle into the quarry, and there are lots of interesting minerals to find!

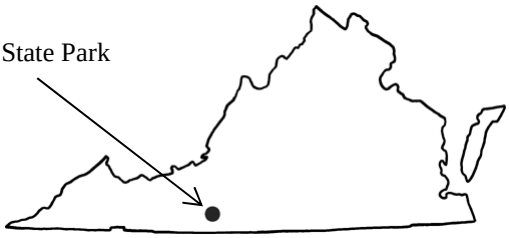
Many club members, including Jim Kostka, George Reimherr, and others, have collected there and shared their discoveries with those who weren't in on their finds or weren't able to go. The quarry is known for prehnite, apophyllite, stellerite, and other minerals. Be sure to dress properly, with the right safety equipment and tools.

My next thought is the Morefield Mine near Richmond. This locality is open to individual collectors for a fee; unfortunately, it is temporarily closed (through fall 2013).

But it is worth periodically checking the website (www.MorefieldGemMine.com), since the mine is relatively close and has lots of colorful minerals to be found. Most notable is amazonite, an aqua-colored form of microcline feldspar.

Fairy Stone State Park, about 6 hours from Washington, DC, is named for the twinned staurolite crystals found there. These dark, opaque crystals form various types of crosses. See http://www.dcr.virginia.gov/state_parks/fai.shtml.

Fairy Stone State Park



Rockhound's Code of Ethics

(last revised on October 17, 2011, by the American Federation of Mineralogical Societies)

- I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
- I will keep informed on all laws, regulations, or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material (matches, cigarettes, etc.).
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supplies.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, the Bureau of Land Management, or other authorities any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the Golden Rule, will use good outdoor manners, and will at all times conduct myself in a manner that will add to the stature and public image of rockhounds everywhere.


Fairy Stone State Park in southwestern Virginia allows surface collecting for staurolites, typically shaped like crosses.

You can also check out a number of ***individual websites*** describing collecting sites, including:

- http://www.dirtyrockhounds.com/VirginiaCollectingSites.html
- http://varockhound.com/rockhound-info/field-collecting/collecting-on-your-own-in-virginia/
- http://varockhound.com/rockhound-info/field-collecting/family-rockhounding-in-va/
- http://www.luckylakeva.com/

In this region, fossils are easier than minerals to collect on your own. There are several places along the Chesapeake Bay and the Potomac River where I've collected small sharks' teeth.

A relatively easy place to start is Purse State Park, on the east shore of the Potomac River, south of National Harbor and across the river from Aquia Harbor, VA. You park along Maryland Rt. 224, hike about three-quarters of a mile through the woods to the river, and wade in the water. It's best to go at low tide; don't get stranded!

It may take a few minutes to get your eyes adjusted so you can pick out the dark triangular sharks' teeth. You may also find stingray mouth plates.

You can find more information about the park at http://www.dnr.state.md.us/publiclands/southern/purse.asp

Along the Chesapeake Bay, you can collect at Matoaka Beach Cabins. It's a privately owned place that charges a small fee to collect along the shore. Again, wade in the water or sift the beach lag deposits for sharks' teeth, ray plates, and more. My last time there I found nothing, although that's pretty unusual and I was only there for an hour or so.

For more on this site, go to http://www.matoakabeachcabins.com/

Flag Ponds is a Calvert County park with a small fee for collecting, most noted for sharks' teeth. For more, see http://calvert-county.com/flagpond.htm

Brownie's Beach is another well-known site. I've never been there; elusive member Pat Flavin leads collecting trips to this and several other fossil collecting sites. For more information on this and other sites, see http://www.fossilguy.com/sites/calvert/

Individual websites on fossil collecting sites include:

- http://devonian.org/Digit.html
- http://www.fossillady.com/sites.html
- http://community.blackriverfossils.org/Forums/tabid/55/forumid/1/postid/2059/scope/posts/Default.aspx

Link to Mineral Clubs in the National Capital Area

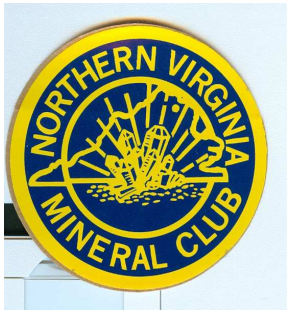
Thanks to Robert Clemenzi, who compiled the list, you can now access mineral clubs and associated activities in the area at one location. Just go to:

http://mc-computing.com/other/DCMineralClubs.html

Club Stickers and Patches Now Available!

Northern Virginia Mineral Club stickers and patches are available for sale at club meetings for $1 each (see below).

Members can also order name tags for $5. Wearing name tags to meetings helps us get to know each other and establish community.



The Lost World of James Smithson

by Kathy Hrechka, Vice-President

James Smithson (ca. 1765–1829), the founding donor of the Smithsonian Institution, was an English chemist and mineralogist.

James was the illegitimate son of Hugh Smithson, the first Duke of Northumberland, and Elizabeth Hungerford Keate Macie, a wealthy widow who was a cousin of the Duchess of Northumberland. His exact birth date remains unknown because he was born in secret in Paris, where his mother had gone to hide her pregnancy. In his youth, his name was James Lewis Macie, but in 1801, after his parents died, he took his father's last name of Smithson.

Smithson was interested in the chemistry of volcanoes and the fundamental nature of electricity. He published an analysis of the mineral calamine, critical in the manufacture of brass, which led to the mineral being named smithsonite in his honor.

Toward the end of his life, under a clause in his will, he left his fortune to the United States, a place he had never visited. He wanted to found "an establishment for the increase and diffusion of knowledge among men" in Washington, DC, under the name of the Smithsonian Institution.

Smithson died in Genoa, Italy, on June 27, 1829, and was interred nearby. In 1904, Smithsonian Regent Alexander Graham Bell brought Smithson's remains to the United States to rest at the institution created by his bequest.

Although Smithson's papers and his vast mineral collection were all destroyed by fire in 1865, the story of his life and work has been largely recovered in a recent biography by Heather Ewing, *The Lost World of James Smithson: Science, Revolution, and the Birth of the Smithsonian*.

Smithsonite (zinc carbonate, $ZnCO^3$), named for the James Smithson, who distinguished the mineral from calamine (hemimorphite). It usually occurs as earthy botryoidal masses. Grapelike clusters have pearly luster and are often slightly banded. Well-formed crystals are rare. Faceted smithsonite is featured below.

Shoebox Adventures: Pyrite Wires

by Mike Seeds

Editor's note: The article, lightly edited and slightly abridged, is taken from The Conglomerate: Newsletter of the Baltimore Mineral Society, *March 2013.*

Pyrite forms cubes—mostly. It also forms pyritohedrons and some other less common and more complex forms.

One form is wires, also known as pyrite whiskers or filiform pyrite. How strange! When a specimen of pyrite wire came out of my shoebox, I had to add it to the 17 already in the collection. Couldn't resist.

Where Found?

One source says that pyrite wires are known from over 35 different locations. But a road cut 5.5 miles south of Sugar Grove, WV, is one of the best collecting sites. The rock here is an amygdaloidal basalt intrusion about 45 million years old, making it the youngest volcanic rock east of the Rocky Mountains.

Some reports say that all the loose rock has been removed by the highway department, and you have to break your own. In any case, a lot of Sugar Grove material has been collected, so you might find some circulating among collectors. If so, break it down and look in the little vugs for nice stuff such as analcime, nontronite, chabazite, harmotome, natrolite, and other minerals. You will almost certainly find pyrite wires.

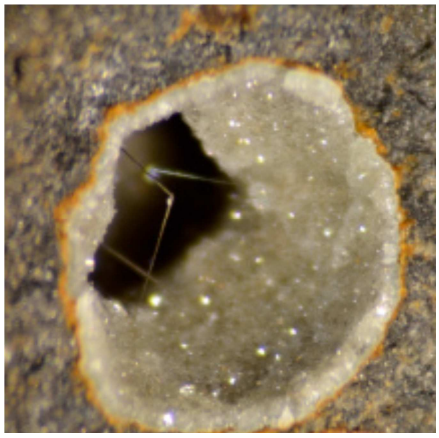
Another source is the Estacada pyrite near the Clackamas River in Oregon. The area has produced a lot of vesicular basalt containing filiform pyrite, but most has come from a single large boulder that has since been reduced to nothing. The site may be cleaned out, but a lot of material is in circulation among collectors.

Why Wires?

How could pyrite, the mineral of shiny cubes, form wires?

The wires have a square cross-section, so it might be wrong to call them wires. They have also been called rods. A machinist would call them bar stock—although they are a bit small for machining.

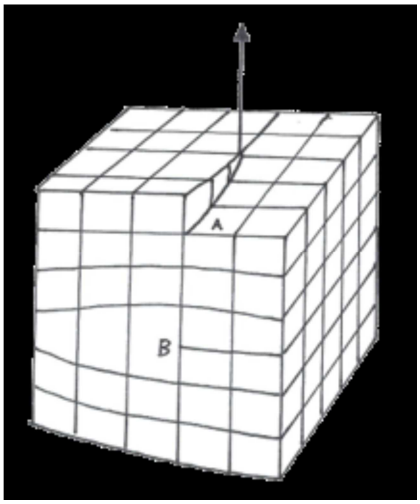
In fact, pyrite wires can be found as laths and blades, with a narrow rectangular cross-section, although such crystals are more often marcasite.



Pyrite wires, one bent at 90°. Sample from Clackamas County, OR; field of view 4 mm.

Some sources have blamed twinning for pyrite wires, but more recently the experts cite a screw dislocation. To see how this might happen, imagine that you are stacking cubical boxes to make a big, square stack. If you climbed on top of the stack and walked the perimeter all the way around, you should return to your starting point.

But look at the stack in the drawing below and imagine starting at point A to walk counterclockwise around the edge of the stack. When you got back to point A, you would be one box higher than where you started, typical of a screw dislocation. Obviously, there is an odd-size box somewhere down in the stack, in this case at B.



A screw dislocation results in continuous growth that wraps in a spiral around the axis of the discontinuity (arrow).

In a crystal, the odd box would be a site occupied by the wrong molecule or the right molecule incorrectly oriented. Another way a screw dislocation can get started is a mechanical shock to a growing crystal or an irregularity on the surface of the matrix where the crystal begins to develop.

Growth proceeds more rapidly at the irregularity—point A on the drawing of stacked boxes. A box approaching a plain side of the crystal is attracted by a single box, but a box approaching the discontinuity (A in the drawing) is attracted by two boxes. So the molecules attach to the discontinuity preferentially, and the crystal grows rapidly in a continuous spiral around the axis of the screw dislocation. This elongates the crystal, and it can grow to become a long pyrite wire.

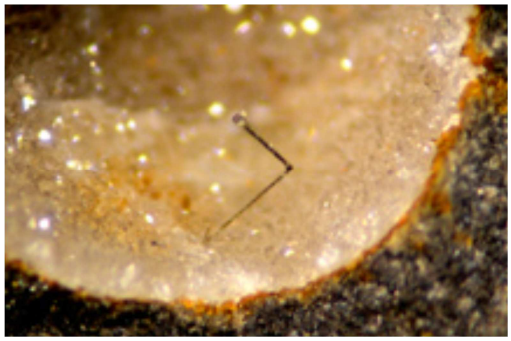
In some cases, the wires are thicker and more rodlike, and in some cases they are very fine, almost hairlike. In the case of pyrite, the individual boxes—the unit cells—are cubical, so the cross-section of the wire is square, no matter how thin it is.

Odd Shapes

Pyrite wires sometimes bend at right angles, but of course it isn't really a bend. Although unlikely, it is possible that the growing crystal can suddenly shift and begin growing to one side. Because the boxes are little cubes, the angle of the new growth is a right angle. Such right-angle growths are not rare at Sugar Grove or the Clackamas site, and you would probably only need to look in a few dozen vugs to turn one up.

The vugs at Sugar Grove are often lined with chabazite (or analcime) and are sometimes covered by nontronite. The pyrite wires seem to be especially

A ball of nontronite covering the tip of a pyrite wire. Sample from Sugar Grove, WV; field of view 3 mm.



Pyrite wire. Sample from Sugar Grove, WV; field of view 2 mm.

attractive to nontronite; it is not unusual to see a wire so completely covered by gray-green nontronite that it looks more like a pipe than a whisker. If the nontronite breaks away, you can often see the wire inside. Sometimes the nontronite forms a few distinct balls along a pyrite wire or a single ball at the end of a protruding wire—a poodle cut.

Another site where you can find pyrite wire is Halls Gap, a road cut south of Stanford, KY. Specimens from there are famous for long, curving hairs of millerite. Some millerite hairs have a twisted structure like a licorice whip, evidently caused by a sizable screw dislocation—that is, the discontinuity is much higher than one box. Pyrite cubes are often found with the millerite, and pyrite whiskers are not rare. If you have millerite from Halls Gap, look at it closely and see if you can find any pyrite wire.

Why pyrite forms wires at some sites is not clear. There must be certain conditions of pressure, temperature, and so on that are conducive to the formation of screw dislocations. SEM images of some conventional pyrite specimens have revealed forests of pyrite wires growing perpendicular to the crystal surface.

The cause of right angle bends is also unknown. Some have speculated about contamination with something that quenches tip growth and causes it to begin growing to the side. However, right-angle bends may have more to do with chance.

If you find specimens of vesicular basalt, especially if they come from Sugar Grove or Clackamas County, look carefully for pyrite wire. You may even find sharp bends in the wire—a visible consequence of the rules of atomic bonding.

American Federation of Mineralogical Societies

(AFMS)
www.amfed.org

AFMS/ Southeastern Federation Show
September 20–22, 2013
Jacksonville, FL

You are invited Thursday night to Hanna Park at the beach. Star gazing with Northeast Florida Astronomy Society members and telescopes (Saturn will be spectacular!). Cook out provided by Host society JGMS.

- SFMS Cracker Barrel Meeting: Friday 7 p.m.
- SFMS Annual Meeting: Saturday 9 a.m.
- ALAA Meeting: Saturday 2:30 p.m.
- Awards Banquet: Saturday 6 p.m.
- Editors and Webmasters Breakfast: Sunday 9 a.m.
- 40+ retail dealers, fantastic exhibits, and speakers from around the country. See the NASA Moon Rock; hear lectures on near-Earth bodies and meteorites; enjoy demonstrations and workshops. There are hourly door prizes, silent auctions, and more.

All AFMS and SFMS meetings will be hosted at the: Marriott, 4670 Salisbury Road Jacksonville, FL 32256, 904-296-2222 or 1-800-962-9786. Mention AFMS meeting for $82 room rate. Offer expires August 5, 2013. This rate is good from September 15 to September 25.

Enjoy the Annual Jacksonville Gem Show!!!

Eastern Federation of Mineralogical and Lapidary Societies

(EFMLS)
www.amfed.org/efmls

Communication and Involvement Are the Keys to Our Success!

EFMLS Annual Convention and Show
May 31–June 3, 2013
Long Island Sheraton, Haughpauge, NY

Theme: Long Island light houses and geology; hosted by the Island Rockhounds and Suffolk Gem and Mineral Club.

Geology Events

April:

26–28: Graves Mountain, GA. The SFMS has issued an open invitation for clubs to join them in a field trip to Graves Mountain. Contact Clarence Norman, Jr. (Junior), 706-359-3862 (business) or 706-401-3173 (cell).

27–28: Sterling Hill Mining Museum Super Dig and Mineral Sale. Saturday, 10 a.m.–11 p.m.; and Sunday, 10 a.m.–3 p.m. (sale only). The address is The Sterling Hill Mining Museum, 30 Plant Street, Ogdensburg, NJ 07439, 973-209-MINE (6463), info@sterlinghillminingmuseum.org; http://sterlinghillminingmuseum.org/gemmineral/index.php.

May 25: 24th Annual Gem and Mineral Show, Chesapeake Gem and Mineral Society. Saturday, May 25, 10 a.m.–4 p.m. Ruhl Armony, 1035 York Rd., Baltimore, MD. For more imformation, go to http://www.chesapeakegemandmineral.org/club-show.html.

EFMLS WORKSHOP AT WILDACRES

September 2–8: Speaker pending. Register early. Tuition is $380 per person. EFMLS website http://www.amfed.org/efmls. Just click on the Wildacres tab.

THE NORTHERN VIRGINIA MINERAL CLUB INC

Crystals are the flowers of the Mineral Kingdom

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PLEASE VISIT OUR WEBSITE AT:
http://www.novamineralclub

The Northern Virginia Mineral Club

You can send your newsletter articles to:

news.nvmc@gmail.com

Visitors are always welcome at our club meetings!

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:
Kenny Loveless, Treasurer, NVMC
PO Box 10085, Manassas, VA 20108

OR

Bring your dues to the next meeting.

Purpose: To promote and 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, 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.*