

MNCA Website dcmicrominerals.org
The Mineral Mite



Vol. 52 – No. 2

Washington D.C. – A Journal for Micromineralogists

February 2019

February 27 Time: 7:30 p.m. – 10 p.m.

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

**Program: Snow Crystal
Photomicrography 101**

Kathy Hrechka will share her joy of photographing snowflakes, including the unfortunate melt. While using her microscope along with two cameras, she has managed to capture each snowfall in Virginia for the past four years. Her findings defy scientific research, based on temperature. **Workshop:** club members are asked to bring micros for social sharing.



Photo of the Month



President's Message:

By: Dave MacLean

I am amazed at the extent of the efforts to collect micros from various places and circumstances. In a 1970 issue of *Rocks and Minerals*, I read about a person who collected copper oxychloride minerals from 19th century brass mill slags lying on the beach on Long Island Sound near New Haven CT. At past MNCA conferences we heard a program on lead, copper, and other minerals in vugs in slags at Laurium, Greece. These slags from extraction of silver from lead ore had lain in shallow ocean water for 200 years. Are these "artificial" minerals legitimate mineral or not? I have collected coal samples from narrow veins of coal near Greencastle, IN. In a damp basement the coal sprouted white fuzz (gypsum), and white Christmas trees (melanterite). Near Szentimragy, Hungary I visited a zinc mine dump consisting of limestone covered with iron rust and many small selenite crystals. continued page 2



Insect Entombed in Opal - Indonesian island of Java. Smithsonian Gemologist, Brian Berger purchased the Indonesian opal last year. The unusual specimen appears to contain an open-mouthed insect complete with 'fibrous structures' extending from the appendages. Volcanic fluid, rather than simply water, races over the Earth, and fills faults. As the fluid cools down, water contained within leaves behind silica deposits, launching the lengthy journey of opal formation.

<https://www.smithsonianmag.com/smart-news/gemologist-identifies-insect-entombed-opal-rather-amber-180971336>

Submitted by Robert Clemenzi

Micromineralogists of the National Capital Area, Inc.

Previous Meeting Minutes: 1/23/18

By Bob Cooke, Secretary

President David MacLean called the meeting to order at 7:45 PM January 23, 2019. Seven members were present (Dave MacLean, Dave Fryauff, Bob Cooke, Germaine Broussard, Erich Grundel, Dave Hennessey, Barry Remer).



Minutes of the November 14th meeting were approved as published in the Mineral Mite. The election of 2019 officers which had been deferred from the December meeting was conducted. All nominations were approved unanimously. Results were: President Dave MacLean; Vice President Dave Fryauff; Treasurer Michael Pabst; and Secretary Bob Cooke.

New business: Dave MacLean led a discussion of whether MNCA was willing to host a demonstration table on micromounting at the GLMS-MC mineral show on March 16 and 17. Members agreed to support a table and a sign-up roster was circulated. Dave MacLean announced he has the club's Yost rock trimmer at his house. He agreed to store it in the club's closet at Long Branch Nature Center so it would be more readily available to MNCA members.

Old business: No update was available on preparations for the Atlantic Micromounters Conference on April 5 & 6. Dave MacLean will contact Kathy Hrechka for information on payment and whether the guest speaker might have books for sale. Meeting adjourned at 8:20 PM.

Editor's note: Our Atlantic Micromounters' Conference registration is posted our club website www.dcmicrominerals.org; events. Members will receive a registration via US postal mailing soon.

Membership Dues are due for 2019

Single = \$15. Family = \$20.

Payable to MNCA - Michael Pabst, Treasurer
270 Rachel Drive Penn Laird, VA 22846



Previous Program Reviewed: 1/23/19

By Bob Cooke, Secretary

Program: Barwood Micros: David Fryauff narrated a presentation of micromineral photographs by the late Dr. Henry "Bumpy" Barwood. Dr. Barwood's favorite collecting places in Alabama and Arkansas were discussed.

Workshop: Members examined and purchased mineral specimens from the micromount collection of C. Carter Rich, donated by Erich Grundel. Members also viewed fossils and minerals donated by Georgia Olmstead.

President's Message Continued

Enough of the "wimp collecting" in 1980 and 1982 MNCA conferences a young man presented a talk about his collecting minerals from exit holes for hot gasses from a burning underground culm bank and coal mine. He related his experience collecting at an exit hole and looking up to see a river of burning sulfur running down toward him. He did not describe the possibility of the ground collapsing under him and dropping him into a burning hole or being killed by carbon monoxide. At one of our conferences, we heard a talk about a group of collectors who went into abandoned mines in UT to collect unusual minerals. I do not remember any word about head bashing rock falls or long falls brought about the collapse of rotten ladders. The ultimate effort I believe, was that the group collected micros from a rock ceiling above an open deep shaft of an old tin/tungsten mine. The collector was suspended over the open shaft to chisel vugs out of the ceiling. About half the specimens chiseled out fell down the shaft. In each of these ventures everybody came home unscathed.

So far, we have not heard from anyone surviving collecting micros from the back country in places such as Afghanistan or Pakistan, or off the surface of a glacier.

I appreciate all those who signed up to man our demonstration table at the GLMSMC show at the Montgomery County Fairgrounds on March 17-18, 2019.

See you on Wednesday, February 27 when we will see Kathy Hrechka's newest micros of snow crystals.

Pyrolusite and Manganite

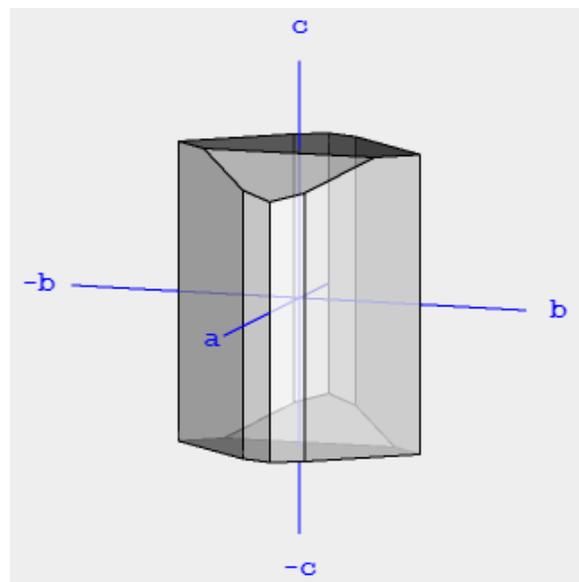
By Michael Pabst PhD, Treasurer

Last time we looked at the manganese oxide mineral Bixbyite, and at some of the minerals associated with Bixbyite in the Thomas Range of Utah. In this article, we will look at two manganese oxide minerals: Pyrolusite and Manganite. And in the next article, we will examine two more manganese oxides, Ramsdellite and Groutite. Here is a brief summary table of these five minerals plus Gaufreyite that we looked at earlier, and Chalcophanite and Hollandite that we will look at in future. These are all black manganese oxides:



Pyrolusite and Manganite are black with a black streak. Good crystals of both have a metallic luster. Good crystals of both have a hardness of around 6 on the Mohs scale. Bixbyite is relatively rare, but Pyrolusite and Manganite are abundant. It is sometimes hard to distinguish Pyrolusite from Manganite. Indeed, one of the specimens pictured below is labeled “Pyrolusite after Manganite”, indicating that alterations and mixtures are common. Note that Manganite, which is monoclinic, has a $\beta = 90^\circ$, meaning that it is pseudo-orthorhombic (all angles are 90°), making it harder to distinguish visually from tetragonal Pyrolusite where all angles are also 90° . The drawing of Manganite below shows a monoclinic crystal with all angles 90° . However, it has only one mirror plane (a c plane) and one two-fold axis of rotation around b, so it cannot be orthorhombic, because it lacks sufficient symmetry.

(A more recent report gives the $\beta = 114^\circ$, but I have not been able to get the paper to see how they explain the change. Probably it is only detectable by X-ray diffraction: Kohler T, Armbruster T, Libowitzky E (1997) Hydrogen bonding and Jahn-Teller distortion in groutite, α -MnOOH, and manganite, γ -MnOOH, and their relations to the manganese dioxides ramsdellite and pyrolusite, Journal of Solid-State Chemistry, 133, 486-500.)



Drawing of Manganite from Mineralein Atlas. Kristall Nr. M074ah by U. Baumgärtl. www.mineralatlas.eu/lexikon/index.php/MineralDat_a?mineral=Manganit. This web page has some nice pictures of Manganite.

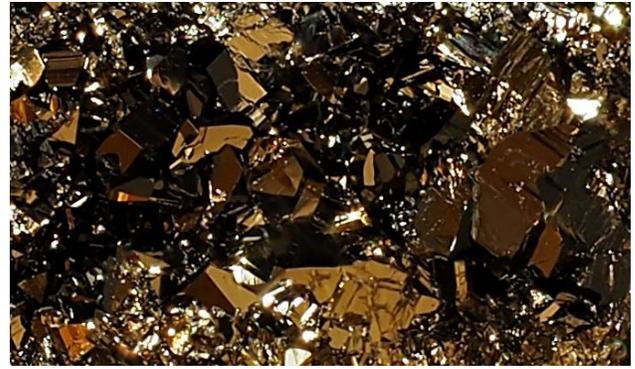
Here are photos of three of my samples of Manganite. The first photo shows Manganite with a mica-like yellow-orange mineral that looks like Desautelsite $\text{Mg}_6\text{Mn}^{3+}_2(\text{OH})_{16}(\text{CO}_3) \cdot 4\text{H}_2\text{O}$.

Bixbyite	$\text{Mn}^{3+}_2\text{O}_3$	Isometric	$m\bar{3}$ diploidal	6.75 Mohs
Pyrolusite	Mn^{4+}O_2	Tetragonal	$4/mmm$	6.5 Mohs
Manganite	$\text{Mn}^{3+}\text{O}(\text{OH})$	Monoclinic	$2/m \beta = 90^\circ?$	6 Mohs
Ramsdellite	Mn^{4+}O_2	Orthorhombic	mmm	3 Mohs
Groutite	$\text{Mn}^{3+}\text{O}(\text{OH})$	Orthorhombic	mmm	5.5 Mohs
Gaufreyite	$\text{Ca}_4\text{Mn}^{3+}(\text{BO}_3)_3(\text{CO}_3)(\text{O},\text{OH})_3$	Hexagonal	6	6.25 Mohs
Chalcophanite	$(\text{Zn},\text{Fe},\text{Mn})\text{Mn}^{4+}_3\text{O}_7 \cdot 3\text{H}_2\text{O}$	Trigonal	$3\bar{}$	2.5 Mohs
Hollandite	$\text{Ba}(\text{Mn}^{4+}_6\text{Mn}^{3+}_2)\text{O}_{16}$	Monoclinic	$2/m$	4-6 Mohs

Micromineralogists of the National Capital Area, Inc.

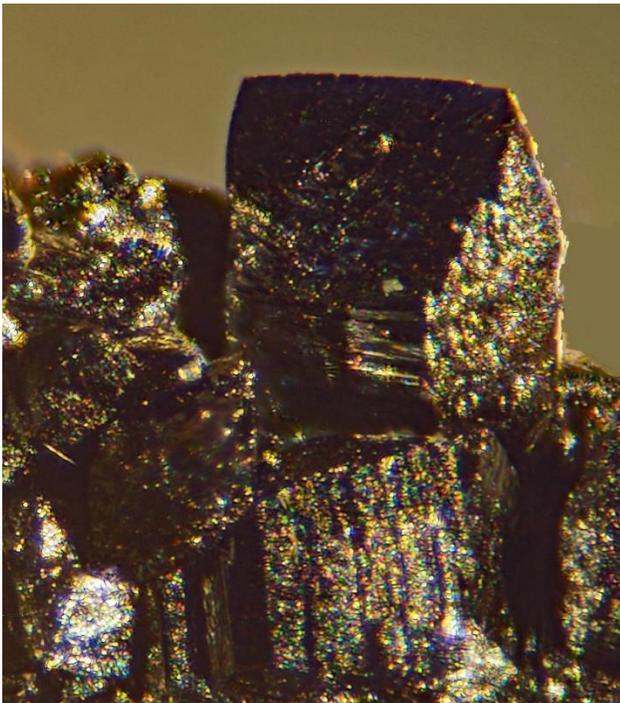


Manganite (and Desautelsite?), Montreal, Gogebic Range, Iron County, WI. FOV 2 mm. Photo by Michael Pabst. Stack of 7 photos taken with Olympus OM-D E-M5 Mark II camera on a Bausch and Lomb StereoZoom 7 stereomicroscope, processed with CombineZP.



Manganite (blocky), Robert Mine, Cuyuna Range, Crow Wing County, Minnesota, FOV 5 mm. Photo by Michael Pabst. Stack of 11 photos taken with 60 mm macro lens.

Beautiful photos of Manganite can be found on Mindat: www.mindat.org/photo-541595.html and www.mindat.org/photo-185813.html. I admit that, compared with these two beautiful specimens, my little micromounts cannot compete.

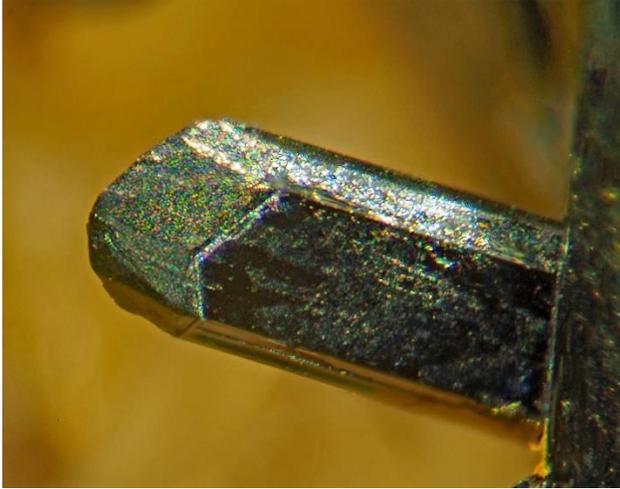


Manganite, Montreal, Gogebic Range, Iron County, WI. FOV 1 mm. Photo by Michael Pabst. Stack of 7 photos taken with stereomicroscope.

Moving on to Pyrolusite, here is a photo and a closeup of Pyrolusite from the Michigan copper country:



Pyrolusite, Keewanee, MI. FOV 10 mm. Photo by Michael Pabst. Stack of 12 photos taken with stereomicroscope.



Closeup of previous **Pyrolusite** photo. FOV 2 mm. Photo by Michael Pabst. Stack of 5 photos taken with stereomicroscope.

A good photo of a fan of Pyrolusite from Morocco is here: www.mindat.org/photo-87726.html.



Pyrolusite after Manganite, Malbon, Mt Isa area, Queensland, Australia. FOV 5 mm. Photo by Michael Pabst. Stack of 13 photos taken with stereomicroscope.

Here is a photo from Mindat of a Pyrolusite from Cloncurry, Queensland that resembles my specimen, and it is from a nearby locality: www.mindat.org/photo-186718.html.

We will look at Groutite and Ramsdellite in the next issue.



GeoWord of the Day and its definition:

All terms and definitions come from the [Glossary of Geology, 5th Edition Revised](#).

cryptotexture The textural characteristics of frozen, fine-grained organic and mineral earth materials cemented together with ice.

dissolved organic carbon Carbon present in seawater in the form of dissolved organic molecules, i.e., the elemental carbon in *dissolved organic matter*. Abbrev: DOC.

GeoWord of the Day is brought to you by: EnviroTech! envirotechonline.com

MNCA Volunteers Needed Mar 16-17 Micromount Demo Booth - GLMSMC

The Gem, Lapidary, and Mineral Society of Montgomery County MD., Inc. is holding its 55th Annual GLMSMC Gem, Mineral and Fossil Show at the Montgomery County Fairgrounds in Gaithersburg, Maryland on March 16 & 17, 2019.

Saturday 16th 10:00 A.M. to 6:00 P.M.
Sunday 17th 11:00 A.M. to 5:00 P.M

MNCA volunteers are free. Admission is \$6.00, ages 12 and older. Free for Children (11 and under), Free for Scouts in Uniform. Plenty of Free parking. More than 20 dealers will have gems, minerals, fossils, meteorites and crystals for sale. Enjoy demonstrations, over 40 exhibits, raffle, door prizes, free workshop, free specimens for kids, and/or get more information about specimens from your own collection. Those under 18 can dig for free specimens in the kid's mini-mines!

**Atlantic Micromounters' Conference
April 5-6, 2019**

Holiday Inn, Alexandria, Virginia
Speaker, Dr. Robert Lauf of Tennessee

Author, Robert Lauf holds a Ph.D. in Metallurgical Engineering from the University of Illinois. His scientific career included over twenty years at Oak Ridge National Laboratory, where he conducted research on topics ranging from nuclear fuel, coal by-products, materials synthesis, microwave processing, sensors, optical materials, and biomineralization. He has been granted fifty U.S. Patents for his inventions, many of which have become successful industrial products. He is now a Registered Patent Agent and technology consultant.



The Making of a Rockhound Bob Lauf

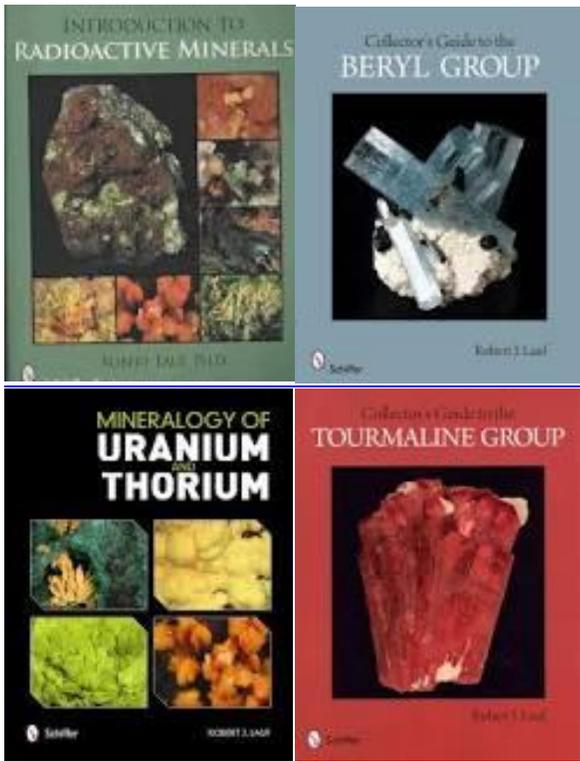
My story is, I think, typical of collectors of my generation. Growing up in Chicago, I visited all the museums regularly because my folks considered it a cheap way to entertain five kids and cultivate a love of knowledge. It worked on both scores!

On one visit to the Field Museum, I bought a bag of unidentified rocks for probably 25¢ and a copy of the Golden Guide to Rocks and Minerals. From then on, I became obsessed with not just buying specimens, but learning about them and cataloguing my ever-growing collection. Before the days of Interstate Highways, vacations consisted of driving around back roads and sightseeing. We stopped at every rock shop and the occasional roadcut, collected geodes in Keokuk, looked for fossils in Coal City, and bought agates at the Lake Superior Agate Museum.

In college, I bought microminerals by mail from Sharon Cisneros at Mineralogical Research Co. in San Jose, at prices starting at 50¢, and went up from there. Although I studied Engineering, I remained interested in minerals, and by luck I ended up with my own electron microscope when I was at ORNL. That led to occasional papers on mineralogy, so when I retired from materials science it was only natural to think about writing books. Sharon had gotten me interested in uranium minerals early on, so it was natural that this was the topic I started with. The elegance of silicate structures and how they are organized came to me through the extensive books by Deer, Howie, and Zussman, so that has become a major focus of my later work.

Conference topics include:

- *Electron Microscopy:
The Final Frontier of Magnification
- *Mineralogy of Uranium and Thorium
- *Orthosilicates



Conference registration may be found on our club website at www.dcmicrominerals.org.

Friday 6 – 9:30pm
Saturday 8:30am – 9pm
Fee \$30.

**The National Building Museum
Discover “E” Family Day
 (“E” for Engineering)
Geology Volunteer Needed**

By Mike Kaas, retired mining engineer

Date: February 16th from 10 AM to 4 PM.

It is that time again. The National Building Museum is holding its annual Discover “E” Family Day (“E” for Engineering) on February 16th from 10 AM to 4 PM. Metro stop: Judiciary Square. We hope that you can volunteer to help us at the AIME Minerals booth.

We will again be doing “Mining for Minerals” and other activities with the kids. Our booth will be the only participant featuring the Earth Sciences and careers in geology, mining engineering, and metallurgy.

In each of the past years we have had literally hundreds of kids and a comparable number of their parents visit the AIME booth. For many of these urbanites, it was probably their first exposure to earth science and engineering.

We will have 3 time slots on the schedule for volunteers: 10 AM to Noon, Noon to 2 PM, and 2 PM to 4 PM. Please let me know what you prefer. You can sign-up for one or two periods or all day. There will be free coffee and donuts for early-bird volunteers and pizza for lunch. In the interest of full disclosure, this is again Presidents’ Day weekend. That means we expect to have a larger crowd at the museum and a need for a few extra volunteers.

Thanks in advance for your help. Please let me know as soon as possible if you can participate. Give me a call if you have any questions. MIKE’S MINE
L. Michael "Mike" Kaas
4006 North 25th Street Arlington, VA 22207
call 703-525-3592 Email: minermike@att.net

Photos courtesy Mike Kaas from the 2018 event. As you can see, a good time was had by all, kids, parents, and volunteers!

**AIME Booth, 2018
National Building Museum, Family Day**



**AIME Booth, 2018
National Building Museum, Family Day**



MINING FOR MINERALS			
<p>MAGNETITE Iron Ore #1</p>	<p>SULFUR Sulfur</p>	<p>CORYMBOSELLA Corymbosella</p>	<p>COPPER PYRITE Copper Pyrite</p>
<p>GALENA Lead Ore #1</p>	<p>ZINC CARBONATE Zinc Carbonate</p>	<p>PYRITE "FOOL'S GOLD" Pyrite</p>	<p>SILVER Silver</p>
<p>BARITE Barite</p>	<p>SULFUR Sulfur</p>	<p>COAL Coal</p>	<p>ELECTRICITY Electricity</p>
<p>QUARTZ Quartz</p>	<p>STEEL Steel</p>	<p>GRANITE Granite</p>	<p>ALUMINUM Aluminum</p>

**Mineralogical Society of America
Centennial (1919-2019) Symposium**



**The Next 100 Years of Mineral Sciences
June 20-21, 2019**

MSA will hold a celebratory Centennial Symposium on June 20-21, 2019 at the [Carnegie Institution for Science Building](#), located at 1530 P St NW, Washington, DC 20005. Fourteen theme colloquia will offer a vision for exciting new directions in mineralogy, geochemistry, and petrology as MSA begins its second century. Each theme colloquium will include two 20-minute presentations by invited speakers followed by five minutes of moderated audience discussion.

Lunches will be included with your registration fee, and attendees are invited for a private evening reception in the Janet Annenberg Hooker Hall of Geology, Gems, and Minerals in the US National Museum of Natural History, Smithsonian Institution. We thank the Gemological Institute of America for sponsoring this evening reception. Please join us for this once-in-a-century event!

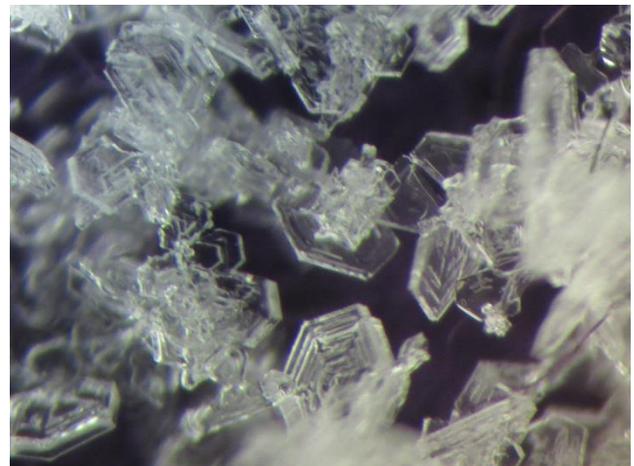
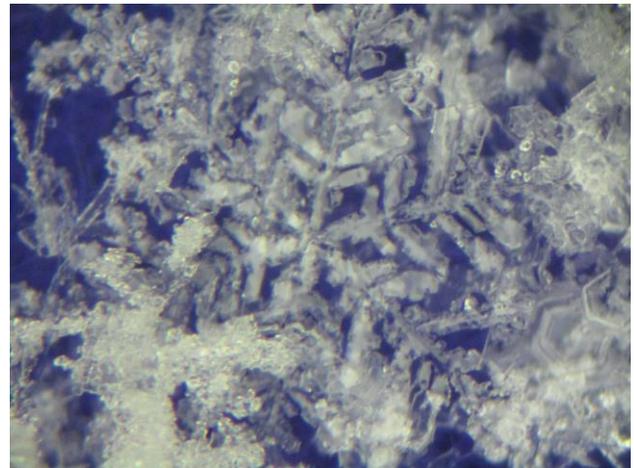
http://www.minsocam.org/MSA/Centennial/MSA_Centennial_index.html Submitted by Herwig Pelckmans



Snow Crystal Photomicrography 101

By Kathy Hrechka, Editor & Conference Chair

I have discovered a “winter wonderland” through my microscope each time it snows in Virginia. Here are just a few photos.



Micromineralogists of the National Capital Area, Inc.



**American Federation of
Mineralogical Societies**

(AFMS)
www.amfed.org

AFMS Purpose: 2018

Purpose of the AFMS: To promote popular interest and education in the various Earth Sciences, and in particular the subjects of Geology, Mineralogy, Paleontology, Lapidary and other related subjects, and to sponsor and provide means of coordinating the work and efforts of all persons and groups interested therein; to sponsor and encourage the formation and international development of Societies and Regional Federations and by and through such means to strive toward greater international good will and fellowship.

The A.F.M.S. Newsletter is published monthly except January, July and August by the American Federation of Mineralogical Societies. Address corrections and changes Subscription Information, Distribution Questions: Each Regional Federation Club is entitled to receive three (3) copies of the AFMS Newsletter. These are usually sent to the President, Editor and Federation Director or Secretary.

Subscriptions are \$4.50 per year Remit payment to the AFMS Central Office Checks should be made payable to "AFMS"

Address maintenance and mailing labeling are the responsibility of the AFMS Central Office. All Central Office Steve Weinberger PO Box 302 Glyndon, MD 21071-0302

<central_office@amfed.org> 410-833-7926
Content – Letters Editorial Comments – Submissions
Any communication concerning the content or format of the newsletter should be sent to the Editor: Carolyn Weinberger PO Box 302 Glyndon, MD 21071-0302
<editor@amfed.org> 410-833-7926

Deadline is the 1st of each month preceding publication (i.e. April 1 for the May issue)
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**Eastern Federation of
Mineralogical and
Lapidary Societies**

(EFMLS)
www.amfed.org/efmls

**Communication and Involvement
Are the Keys to Our Success!**

**Please read the EFMLS bulletin attached in
original monthly email to MNCA members.**

Geology Events:

February 2019

6: Mineralogical Society of DC – MSDC meeting
Smithsonian NMNH, Constitution Avenue lobby
7:30 pm to head up to the Cathy Kerby Room.
www.mineralogicalsocietyofdc.org

**11: The Gem, Lapidary and Mineral Society of
Montgomery County, Maryland - GLMS-MC**
7:30 pm - Rockville Senior Center, 1150 Carnation
Drive, Rockville, MD
www.glmsmc.com

**20: The Gem, Lapidary and Mineral Society of
Washington, DC - GLMS-DC meeting**
7:00-10pm - Chevy Chase Community Center,
5601 Connecticut Ave., NW, Chevy Chase, MD
www.glmsdc.org

25: Northern VA Mineral Club - NVMC meeting
7:30–10pm Long Branch Nature Center
625 South Carlin Springs Road in Arlington, VA
www.novamineralclub.org

**27: Micromineralogists of the National Capital
Area - MNCA meeting**
7:30–10pm Long Branch Nature Center
625 South Carlin Springs Road in Arlington, VA
www.dcmicrominerals.org

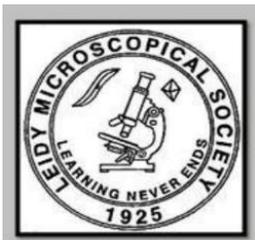
**Snow Policy: If Arlington County
schools are closed on the day of our
meeting, we are cancelled too.**

Micromineralogists of the National Capital Area, Inc.

43rd Leidy Microscopical Society MICROMOUNT SYMPOSIUM

By Don McAlarnen

****NEW LOCATION****
Advent Lutheran Church
45 Worthington Mill Rd
Richboro, PA 18954



Two Days
Friday March 8, 2019
noon to 6pm
&
Saturday March 9
9am to 6pm
(Lunch provided on
Saturday)

TABLE SPACE \$20.00
RAFFLE DOOR PRIZES

CLUB SALES TABLE - MINERALS - SUPPLIES



Reservations/ Admission: Send
Check for \$20.00 checks payable to;

Don McAlarnen,
916 Senator Rd, East Norriton, PA
19403
(610) 584-1364

Email: donmcarnen@outlook.com

*Hampton Inn, 1000 Stoney Hill Rd, Yardley, Pa.
19067 (215) 860-1700 (at I-295 & Rt. 332 exit approx.

8. Hotels:

5, miles from show)

* Brick Hotel, 1 Washington Av., Newtown, Pa. 18940
(267) 685-6443 (in Newtown, approx. 5.5 miles from
show)

*Temperance House, 5 S State St, Newtown, Pa. 18940
(215) 944-8050

*Motel 6, 265 E. Street Rd., Warminster, Pa 18974
(215) 674-2200

* Holiday Inn Express, 240 Veterans Way, Warminster,
Pa. 18974 (215) 443-4300

*Wyndham, 4700 E. Street Rd, Feasterville, Pa. 19053
(215) 364-2000

Micromineralogists of the National Capital Area

Meeting: The 4th Wed. of each month 7:30 -10 p.m.
Long Branch Nature Center (No meetings June & July)
625 S. Carlin Springs Road, Arlington VA 22204

MNCA Purpose: To promote, educate and
encourage interest in geology, mineralogy, and
related sciences.

Pres: Dave MacLean, dbmaclean@maclean-fogg.com
Vice Pres: David Fryauff, fryauffdj@gmail.com
Secretary: Bob Cooke, rdotcooke@gmail.com
Treasurer: Michael Pabst, Michaeljpabst@yahoo.com
Editor/Historian: Kathy Hrechka, kshrechka@msn.com
Website: Julia Hrechka, dcmicrominerals@gmail.com
Conference: Kathy Hrechka, kshrechka@msn.com

The society is a member of:

* Eastern Federation of Mineralogical and
Lapidary Societies

(EFMLS) www.amfed.org/efmls

*American Federation of Mineralogical Societies
(AFMS) www.amfed.org Affiliation

Dues: MNCA Membership Dues for 2019
\$15 (single) or \$20 (family)

Payable to MNCA - Michael Pabst, Treasurer
270 Rachel Drive
Penn Laird, VA 22846



Editor's Note:

By
Kathy Hrechka



Send your articles and photos to your editor.
Club Article Deadline is 1st of each month.

The Mineral Mite will be emailed on 5th.

No newsletter July/August

EFMLS Editor's Award

First Place 2016 - Small Bulletins

Inducted into Editor's Hall of Fame - 2018



Member inputs:

- * Dave MacLean
- * Michael Pabst
- * Kathy Hrechka
- * Don McAlarnen
- * Dr. Robert Lauf
- * Bob Cooke
- * Robert Clemenzi
- * Herwig Pelckmans

