Micromineralogists of the National Capital Area, Inc.

MNCA Website www.dcmicrominerals.org

The Mineral Mite

Vol. 57 – No. 1 Washington D.C. – A Journal for Micromineralogists Jan 2024

January 29 3-5:30pm Kings Park Library, Burke

Program: Micro Study

by Jeff Guerber, Vice President

Our January meeting will be on Monday Jan. 29, 3:00-5:30pm in the Kings Park Library Meeting Room (the large room). Did you do any collecting over the holidays? Visit any mineral collections? Acquire interesting new specimens? Have a geo-adventure? Tell us about it! Also, we'll discuss plans for the 2024 Atlantic Micromount Conference. For February, I've scheduled our meeting for Wed. Feb. 28, 3:00-5:30 in the KPL Conference Room (the small one).

Mystery Micro Mineral of the Month

Clue: Elias Mine, Jáchymov, Czech Republic. FOV=1.1mm. Aloha Peter Chin, Honolulu, Hawaii

President's Message:

by David Fryauff

Glad tidings for the new year of 2024. Thank God for every star in the universe and for every living thing that has ever lived and that will strive to live. Be kind, thoughtful, and generous with your talents and resources. Read, keep active, and walk often, Take notice of the simple things around you. Remember that life, the plants, birds, fish, mollusks, and insects all around us are a fragile wonder and complement our minerals in reflecting all the living colors of this world we share. Below is my latest micromineral.

Mystery Micro Mineral of the Month

by Aloha Peter Chin, Honolulu, Hawaii

Answer: Rauchite, Elias Mine, Jáchymov, Czech Republic. FOV=1.1mm.

Previous Meeting Minutes 12.04.2023

No meeting was conducted.

Previous Program Reviewed 12.04.2023

HOLIDAY PARTY! On December 4, we joined our friends from the NVMC for a festive Holiday Party at the Dunn Loring VFD, 2148 Gallows Road, Dunn Loring, VA. This was in lieu of our regular meeting. Dave Fryauff, David McLean, and Jeff Guerber were in attendance representing MNCA.

Atlantic Micromounters' Conference '24

Remember to bring your ideas and input to our next meeting on January 29.

MNCA/NVMC Holiday Party Photo

Micromineralogists of the National Capital Area members: Dave Fryauff, David McLean, and Jeff Guerber in attendance.

2024 Membership Dues are Due

by Michael Pabst, Treasurer

Dues for MNCA for 2024 are being gratefully accepted by the Treasurer, either in person or by mail. (By mail, send a check made out to MNCA, and mail it to Michael Pabst, 270 Rachel Dr., Penn Laird, VA 22846.) We have received $125 in dues for 2024 so far. There are a few more faithful members who will undoubtedly respond soon. Dues are $15 for an individual and $20 for a family. These dues should cover MNCA's dues and insurance with the Eastern Federation for 2024.

MNCA February meeting choices: For the February meeting, neither room was available for Monday 26th (and the library's closed Feb. 19). The big room was not available on the 28th but the small one was, so I booked it. The big room is still available on Wed. Feb. 21 though, if people like that date. Jeff Guerber, Vice President

Northern Virginia Mineral Club members: all others.

Deluxe Iron Phosphates: Triphylite, Leucophosphite, Kidwellite, Dufrénite, Natrodufrénite, Anapaite

by Michael Pabst PhD, Treasurer

Having consumed an excess of "deluxe" Christmas edibles, the word "deluxe" seemed appropriate to me as a description of these colorful and unusual iron phosphates. In 2015, my colleague, Dean Hofstetter, explored an outcrop near the Dixie Mine, near Vesuvius in Rockbridge County, Virginia. He recovered tiny but remarkable samples of iron phosphates. At that time, I presented a slide show to MNCA about these minerals, but only one photo appeared in the *Mineral Mite*. Our current examination of iron phosphates provides an opportunity to look at more photos of these iron phosphates, particularly iron phosphates that contain Li^{1+}, Na^{1+}, K^{1+} or Ca^{2+} in addition to iron. Here is the species list for this article, which includes both Dixie Mine specimens and some related minerals:

Triphylite	$LiFe^{2+}(PO_4)$
Leucophosphite	$KFe^{3+}{}_2(PO_4)_2(OH)\cdot 2H_2O$
Kidwellite	$NaFe^{3+}{}_9(PO_4)_6(OH)_{11}\cdot 3H_2O$
Natrodufrénite	$NaFe^{2+}Fe^{3+}{}_5(PO_4)_4(OH)_6\cdot 2H_2O$
Cyrilovite	$NaFe^{3+}{}_3(PO_4)_2(OH)_4\cdot 2H_2O$
Dufrénite	$Ca_{0.5}Fe^{2+}Fe^{3+}{}_5(PO_4)_4(OH)_6\cdot 2H_2O$
Anapaite	$Ca_2Fe^{2+}(PO_4)_2\cdot 4H_2O$

Triphylite. Triphylite is gray-green and orthorhombic *mmm* – dipyramidal. Triphylite $LiFe^{2+}(PO_4)$ forms a series with Lithiophilite, its manganese analog $LiMn^{2+}(PO_4)$. Triphylite contains the ingredients of the lithium iron phosphate batteries used in some Tesla cars. I have never come across an attractive micromount specimen of Triphylite, and I don't see any good photomicrographs among the 122 photos on Mindat. (There are good micros of Lithiophilite.) However, this photo by Rob Lavinsky of Triphylite from a New Hampshire pegmatite shows a good specimen: https://www.mindat.org/photo-169882.html.

Leucophosphite.
Leucophosphite $KFe^{3+}{}_2(PO_4)_2(OH)\cdot 2H_2O$ is mono-clinic 2/*m* – prismatic. There are attractive purple crystals found at the Tip Top Mine in South Dakota, as shown in this photo by Gianfranco Ciccolini: https://www.mindat.org/photo-685502.html. Below is my photo, first used to show Rockbridgeite, but now illustrating Leucophosphite.

*Black Rockbridgeite with pink **Leucophosphite** $KFe^{3+}{}_2(PO_4)_2(OH)\cdot 2H_2O$ from Tip Top Mine, Custer County, South Dakota. FOV 5 mm. Photo by Michael Pabst using stereo microscope, stacking 27 images. Specimen from the MNCA/Betsy Martin collection.*

Kidwellite. Kidwellite $NaFe^{3+}{}_9(PO_4)_6(OH)_{11}\cdot 3H_2O$ is greenish, monoclinic 2/*m* – prismatic. (Unlike Mindat, I have chosen to use a simplified chemical formula, without any "x", because really all chemical formulas are idealized.) Kidwellite may grow in epitaxy with Dufrénite or Natrodufrénite, making them hard to distinguish. Kidwellite was named for an American mineral collector and geologist Albert Kidwell (1919-2008). Dave Fryhauff has uploaded a nice photo from the Dixie Mine on Mindat:
https://www.mindat.org/photo-1218436.html.
The specimen was collected by Tom Tucker and photographed by Rob Rothenberg.

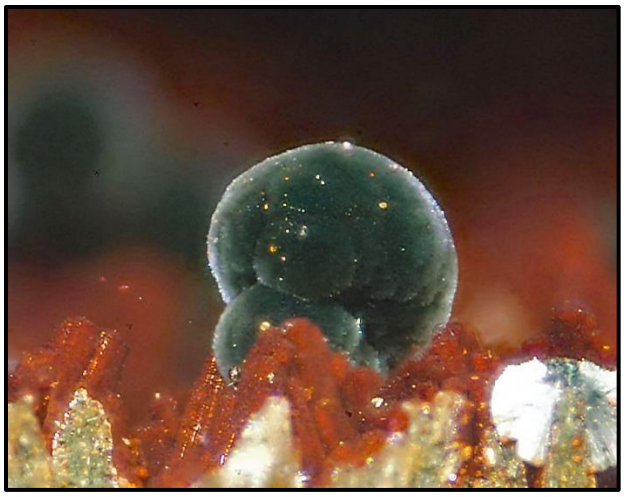
Here is my photo of Kidwellite from Vesuvius.

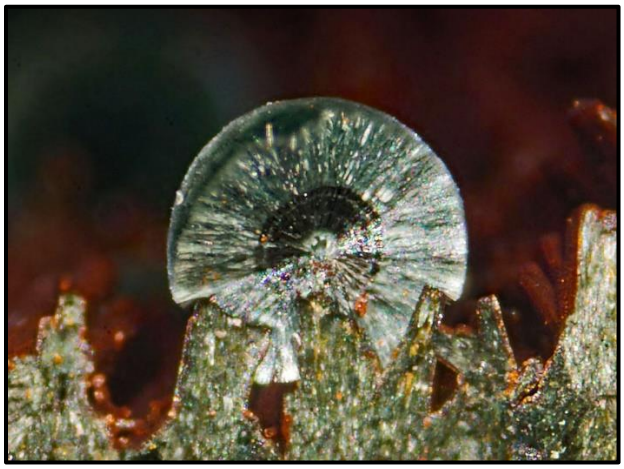
Continue to next page.

Kidwellite *from near the Dixie Mine at Vesuvius, VA. FOV ~5 mm. Photo by Michael Pabst.*

Dufrénite.Dufrénite $Ca_{0.5}Fe^{2+}Fe^{3+}{}_5(PO_4)_4(OH)_6{\cdot}2H_2O$ is monoclinic 2/*m* – prismatic, β = 111.20°. Distinct crystals are rare, usually Dufrénite forms balls of minute fibers. Dufrénite was named after a professor of mineralogy at the *É*cole des Mines in Paris with a charmingly long name: Ours Pierre Armand Petit Dufrénoy (1792-1857).

Here are my photos of Dean Hofstetter's Vesuvius specimen, showing Dufrénite at increasing magnifications:





Dufrénite *from near the Dixie Mine in Vesuvius, VA. FOV ~1 mm for last photo. Photos by Michael Pabst*

I admire a similar Dufrénite specimen from France, photographed by Jean-Marc Johannet, shown below.

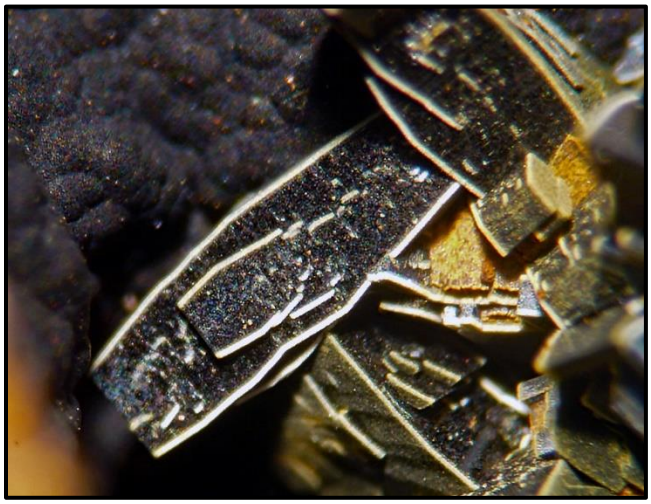
Dufrénite, *Bel Air Mine, France. FOV 3 mm. Photo by Jean-Marc Johannet in Mineralienatlas.de.*

Cyrilovite. Cyrilovite $NaFe^{3+}_3(PO_4)_2(OH)_4 \cdot 2H_2O$ is tetragonal 422 – trapezohedral. Named for its type locality in Czech Republic. Cyrilovite can form nice yellow crystals. This photo by Christian Rewitzer nicely shows the crystal form: https://www.mindat.org/photo-141091.html.

My Cyrilovite specimen comes from Cornwall and contains Cyrilovite as yellow balls of crystals associated with nearly black Dufrénite $Ca_{0.5}Fe^{2+}Fe^{3+}_5(PO_4)_4(OH)_6 \cdot 2H_2O$ and green Torbernite $Cu(UO_2)_2(PO_4)_2 \cdot 12H_2O$ (or Chalcosiderite $CuFe^{3+}_6(PO_4)_4(OH)_8 \cdot 4H_2O$). Here are two photos from the specimen.

Dufrénite, Cyrilovite, Torbernite *(or Chalcosiderite) from Gunheath China Clay Pit, Stenalees, Treverbyn, St. Austell, Cornwall, England. FOV 10 mm. Photos by Michael Pabst using stereo microscope, stacking 18 images (Cyrilovite) or 8 images (Torbernite). The tiny red crystal might be Cassiterite.*

Natrodufrénite. Natrodufrénite $NaFe^{2+}Fe^{3+}_5(PO_4)_4(OH)_6 \cdot 2H_2O$ is also monoclinic 2/*m* – prismatic, $\beta = 111.53°$, and it is isostructural with Dufrénite. Natrodufrénite can form good crystals, including remarkable coffin-shaped crystals. This specimen from near Vesuvius was analyzed by Dr. Lance Kearns at James Madison University to confirm its identification as Natrodufrénite.



Natrodufrénite *from near the Dixie Mine, Vesuvius, VA. FOV ~1 mm. Photo by Michael Pabst.*

Coffin-shaped crystals of Natrodufrénite have also been found at the Bel Air Mine in France:

Dufrénite *(or Natrodufrénite), Bel Air Mine, France. FOV 3 mm. Photo by Jean-Marc Johannet in Mineralienatlas.de.*

Continued next page.

Anapaite. Anapaite is triclinic $\bar{1}$ – pinacoidal. Its crystals resemble Turquoise $CuAl_6(PO_4)_4(OH)_8 \cdot 4H_2O$ which is also triclinic $\bar{1}$ – pinacoidal. The light green color of Anapaite is due to Fe^{2+}, whereas the stronger blue of Turquoise is due to Cu^{2+}. Anapaite was named after its type locality in Russia near the Kerch Bridge with Crimea.

Anapaite, *San Giovanni, Val d'Arno, Tuscany, Italy. FOV 14 mm. Photo by Michael Pabst, using macro lens, stacking 100 images.*

Anapaite, *Ketch, Crimea, Ukraine. FOV 12 mm. Photo by Michael Pabst, using macro lens, stacking 100 images. Specimen from the MNCA/Betsy Martin collection.*

I anticipate one more article about iron phosphate minerals, focusing on those containing manganese, like Laueite, Stewartite, Schoonerite, and Strunzite.

Micro Club Zoom Session - Australia

December 19 Program: Microminerals of Mont Saint Hilaire, presented by Quintin Wight.

"Quintin knows the famous Mont Saint Hilaire mineral locality really really well. He even has a mineral found there named after him (quintinite). His presentation includes a bit of history, a bit of geology, and a look at many of the minerals found there. Quintin clearly outlines the challenges of visually identifying some of the minerals that occur that have not been analyzed. Many minerals occur in different forms, either at the locality, or compared to other localities. Even some of the more common minerals can dupe you! Mindat currently lists 439 valid mineral species, including 73 Type Locality minerals, quintinite being just one of those". Steve Sorrell

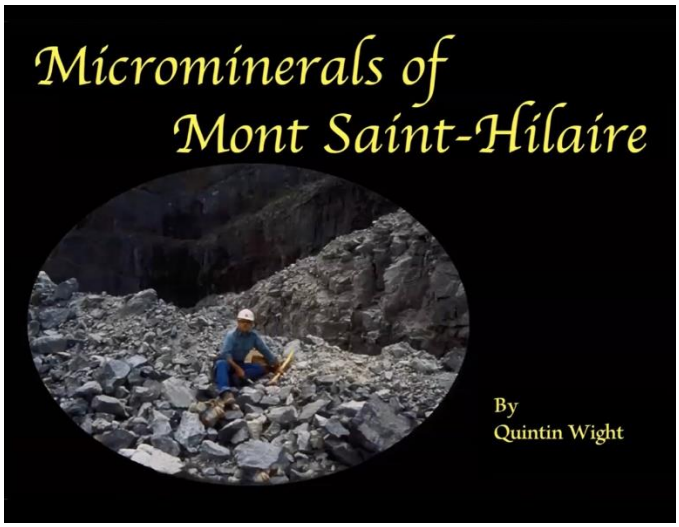
Micro Club Zoom Host: Steve Sorrell resides in Melbourne, Australia and hosts various geology persons of interest at his micromount meeting each month on Zoom. You can sign up for Steve's programs, while enjoying friendly faces within our geology community around the globe.

"The vast majority of presentations, apart from the first few sessions, have been recorded and are available on my YouTube Channel. You can now register for upcoming sessions. Once registered, you will receive an email and the opportunity to save the Zoom session in your (Google, Yahoo, or Outlook) calendar, and this will be in your local time zone." Steve's website

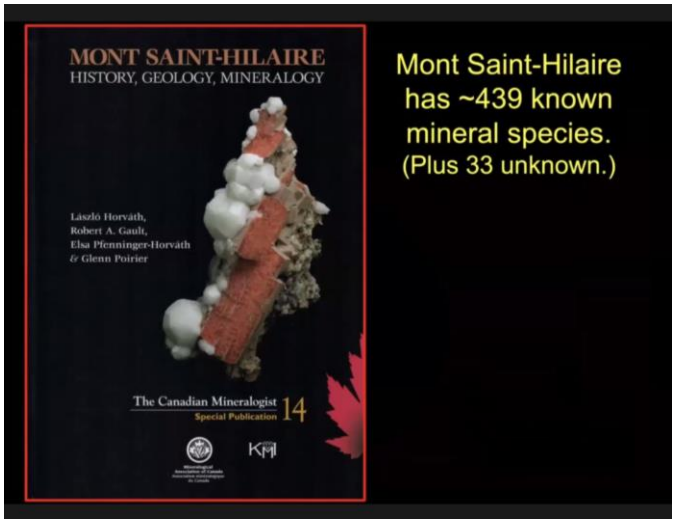
Register for this and other future Zoom sessions here:
Micromount Club Zoom Sessions - Crocoite.com
steve@sorrellpublications.com

MNCA Editor's note: thanks to Steve Sorrell from Melbourne, Australia, we have been connecting with new mineral friends around the world for the past three years. I have learned that he is a master photomicrographer, as well as an author of mineral books and a talented artist.

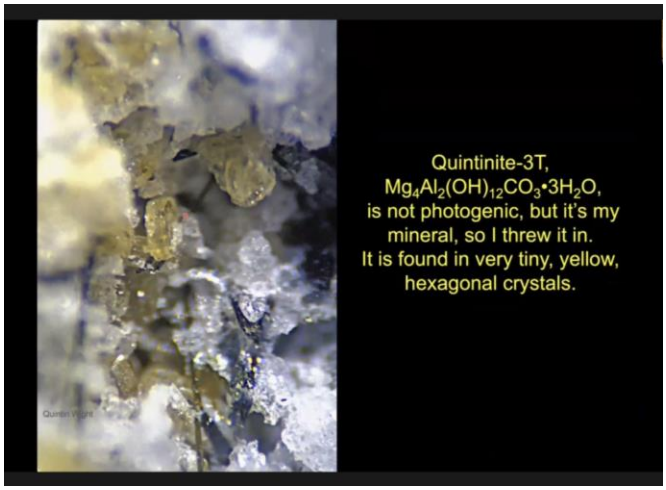
Quintin's program note by Kathy Hrechka: Please enjoy my random selection of screen shots from Quintin's program on pages 7-9. Quintinite, named for Quintin Wight is located on page 7.


Microminerals of
Mont Saint-Hilaire
By
Quintin Wight

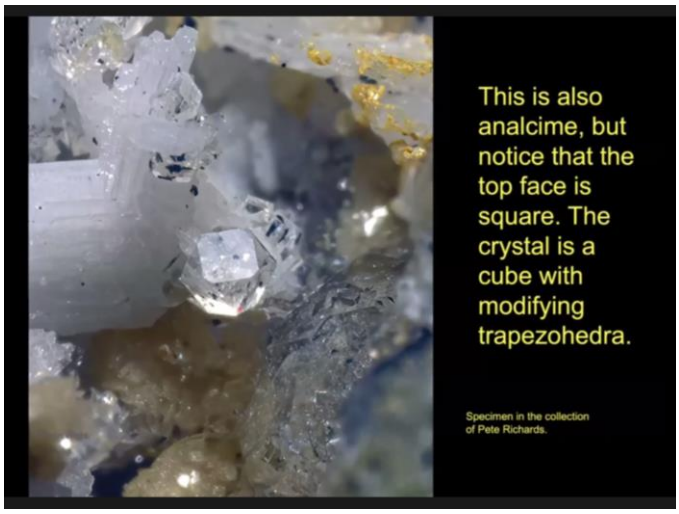

Many species occur in pegmatites, but others may be in miarolitic cavities in nepheline syenite.


MONT SAINT-HILAIRE
HISTORY, GEOLOGY, MINERALOGY
László Horváth,
Robert A. Gault,
Elsa Pfenninger-Horváth
& Glenn Poirier
The Canadian Mineralogist
Special Publication 14
Mont Saint-Hilaire has ~439 known mineral species. (Plus 33 unknown.)


Allanite-(Ce)
{CaCe}{Al2Fe2+}(Si2O7)(SiO4)O(OH)
on chlorite and quartz. Acid etched from calcite cover.
Identification made by x-ray in 1985. Reconfirmed, also by x-ray, in 1991. May have other REE as well.


Quintinite-3T,
Mg4Al2(OH)12CO3•3H2O,
is not photogenic, but it's my mineral, so I threw it in.
It is found in very tiny, yellow, hexagonal crystals.

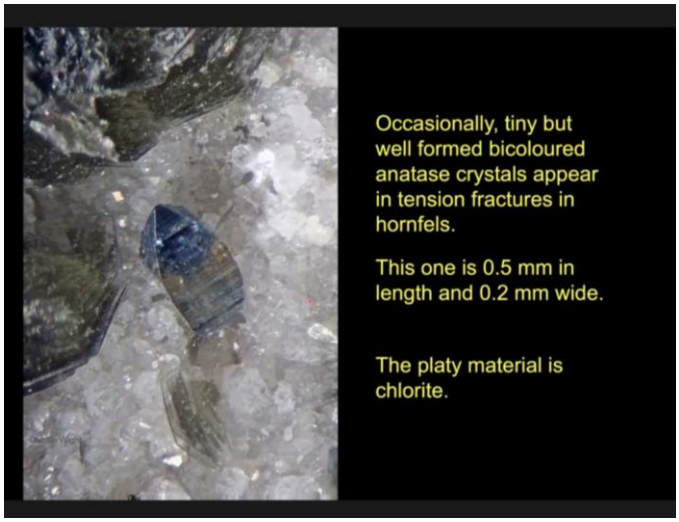

Analcime, NaAlSi2O6•H2O.

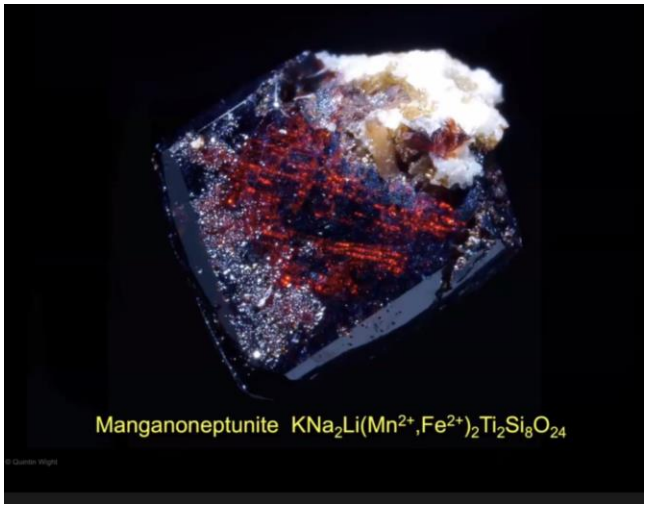

This is also analcime, but notice that the top face is square. The crystal is a cube with modifying trapezohedra.
Specimen in the collection of Pete Richards.

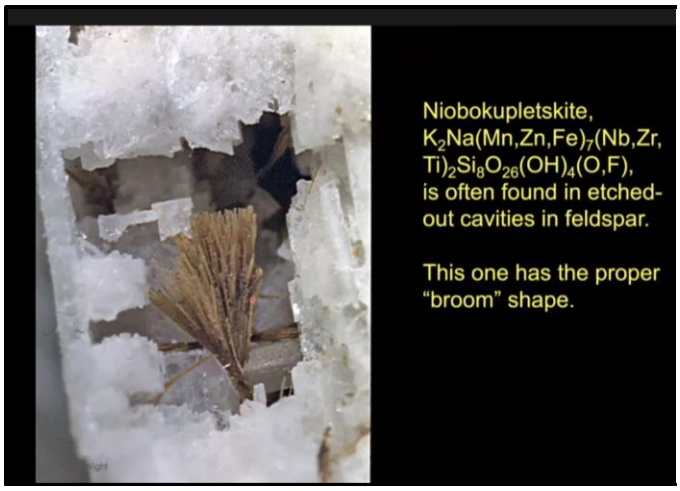

Gmelinite-Na.
$Na_{7.5}(Al_{7.5}Si_{16.5}O_{48})•21.5H_2O$,
is usually colourless at Mont Saint-Hilaire, but often includes dark metallic sulphides. Its most common habit is in hexagonal, tabular plates.

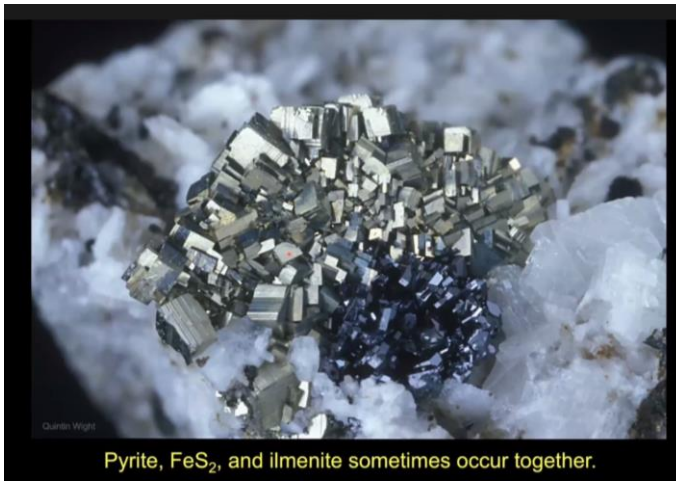

This dolomite “octahedron” isn’t quite perfect, but it’s close. The green colour is masked by a brown organic coating.


The Labuntsovite Group has three members:
Labuntsovite-Fe
Labuntsovite-Mg
Labuntsovite-Mn.
These are probably the manganese members.


Occasionally, tiny but well formed bicoloured anatase crystals appear in tension fractures in hornfels.
This one is 0.5 mm in length and 0.2 mm wide.
The platy material is chlorite.


Manganoneptunite $KNa_2Li(Mn^{2+},Fe^{2+})_2Ti_2Si_8O_{24}$





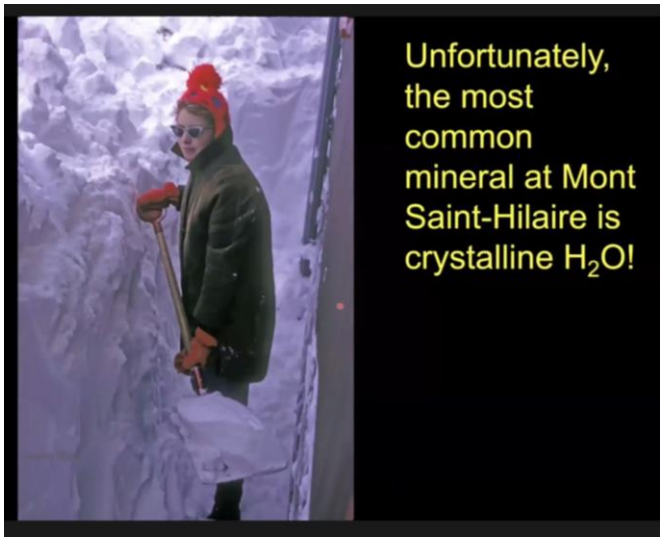


Photo lower right: Quintin's wife, Willow braves the crystalline snowfall in Canada!

EFMLS Wildacres Geology Retreat Little Switzerland, NC May 13–19, 2024

by Mary Bateman, committee member

A very Happy and Healthy 2024. Have you put Wildacres on your new year's resolutions' list? If not, now is the time to do so.

The EFMLS Wildacres Committee is happy to announce that registration for the May13-19, 2024, session begins on Monday, January 1, 2024. With a great lineup of classes and instructors and a well-accomplished Speaker-in-Residence, classes are sure to fill up. You may want to get your registration early. Getting your registration early gives you a better chance to get your first choice of the class(es) you want.

Speaker in Residence: Michael J. Colella

"We are very fortunate to have a fabulous new Speaker-in-Residence for the Spring 2024 session of the EFMLS Wildacres Workshop, Michael. J. Colella, a multi-faceted artist, who will share his passion for photography, rocks and minerals, world sands, suiseki stones, and wood-turning art.

Michael J. Colella is a native Washingtonian who grew up in Silver Spring, Maryland. As a child, Mike used to go hunting with his dad and scour the ground for rocks and possible fossils. In 5th grade, his dad made a wooden display case for his collection to enter in the school science fair, and his first connection to the earth was formed.

Today Mike still enjoys photography, collecting rocks and minerals and viewing stones. He also has a quite extensive sand collection, which he has photographed.

Michael will give six presentations at Wildacres on all these art forms and travels. I've known Mike for over 35 years. He photographed much of my work. Get ready to see and hear how all these experiences became one man's connection to the Earth. I am sure you will enjoy his stunning photography and stories of his life passions. Mike will be accompanied by his wife Sue".

Helen Serras-Herman, Speaker-in-Residence Coordinator, Wildacres Committee

Classes this session are.

Class	Instructor
Beading	Cheryl Brown
Chainmaille	Marilou Hillenbrand
Geology	Rob Robinson
Intarsia	Chuck Bruce
Silversmithing	Richard Meszler
Soapstone Carving	Ken Valko
Viking Knit	Danny Griffin
Wire Wrapping	Jacolyn Campbell

If you have any questions about classes or the facilities, contact: Mark Kucera (mark_j_kucera@yahoo.com)

Questions regarding registering and accommodations, contact: John Milligan (jmilligan@stny.rr.com).

For more details about the history or what Wildacres is, go to https://efmls.org or contact Mary Bateman at mbateman1@verizon.net.

We look forward to seeing you at the Wildacres session, on top of the mountain, May 13-19.

Steve Weinberger, Chairman, Wildacres Committee

Wildcare's lodge, Little Switzerland, North Carolina wildacres.org

American Federation of Mineralogical Societies

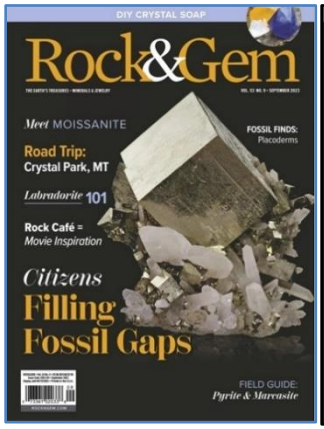
(AFMS)
www.amfed.org

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

2024 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 related subjects, and to sponsor and provide ways to coordinate the work and efforts of all interested persons and groups; to sponsor and encourage the formation and international development of Societies and Regional Federations and thereby to strive toward greater international good will and fellowship.

Celebrating 50 years!
The Rock & Gem magazine is recognized as the official magazine of the AFMS.
Free archived downloads

Rock & Gem Magazine Archive : Free Download, Borrow, and Streaming : Internet Archive



Eastern Federation of Mineralogical and Lapidary Societies

(EFMLS)
https://efmls.org

Communication and Involvement Are the Keys to Our Success!

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

January 2024 Local Geology Club Meetings

2: Northern Virginia Mineral Club NVMC Meeting 7:30pm on Zoom
www.novamineralclub.org

3: Mineralogical Society of the District of Columbia MSDC Meeting 7:30pm on Zoom
www.mineralogicalsocietyofdc.org

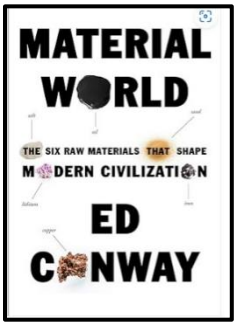
8: The Gem, Lapidary and Mineral Society of Montgomery County, Maryland - GLMSMC Meeting 7:30 pm www.glmsmc.com

?: The Gem, Lapidary and Mineral Society of Washington, DC - GLMS-DC meeting 7 p.m. Chevy Chase Community Center, 5601 Connecticut Ave; Washington, DC. www.glmsdc.org

17: Baltimore Mineral Society BMS meeting
www.baltimoremineralsociety.org

29: Micromineralogists of the NCA, Inc.
Meeting 3 – 5:30pm Kings Park Library, Burke, VA
www.dcmicrominerals.org

"Miner" Mike Kaas Recommends Book



Material World: The Six Raw Materials That Shape Modern Civilization - Sand, salt, iron, copper, oil, and lithium. Deckle Edge, Nov 7, 2023 by Ed Conway

GeoWord of the Day and its definition

ferrarisite (fer-rar'-i-site) A colorless triclinic mineral: $Ca_5(AsO_4)_2(AsO_3OH)_2 \bullet 9H_2O$. It is a dimorph of guérinite.

radiogenic strontium (a) Strontium-87 formed from decay of rubidium-87. (b) Strontium-87 occurring in rocks and minerals that is the direct result of decay of rubidium-87 in situ since the rock or mineral formed. Cf: *common strontium.*

ruthenium (ru-the'-ni-um) A rare metallic white hexagonal mineral: Ru . It is a metallic element of the *platinum* group.

wurtzite (wurtz'-ite) A reddish-brown to dark brown hexagonal mineral: (Zn,Fe)S . It is dimorphous with sphalerite. Wurtzite occurs in hemimorphic pyramidal crystals, or in radiating needles and bundles within lamellar sphalerite. Many hexagonal and rhombohedral polymorphs with slight variants on the wurtzite structure are known, and separate names proposed for some of these are "superfluous and not generally accepted" (Hey, 1962, 3.4.3).

***Note by Kathy Hrechka**: One of our MNCA founding members from 1967 was named Ruth Cole Wurtz. While researching wurtzite, unfortunately I learned it was not named after Ruth. (and neither was ruthenium)*
All terms and definitions come from the Glossary of Geology, 5th Edition Revised.

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

Micromineralogists of the National Capital Area
www.dcmicrominerals.org

We are temporarily meeting at Kings Park Library in Burke, 3-5:30pm (forth Monday or Wednsday) until we locate a permanent meeting place.

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

President: David Fryauff
Vice President: Jeff Guerber
Secretary: Bob Cooke
Treasurer: Michael Pabst
Editor/Historian: Kathy Hrechka
Website: Kathy Hrechka
AMC Conference: open

The society is a member of:
* Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) www.efmls.org
*American Federation of Mineralogical Societies (AFMS) www.amfed.org affiliation

Dues: MNCA Membership **Dues 2024**
$15 (single) or $20 (family) donations
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 the 1st of each month.
***The Mineral Mite* will be emailed by the 5th.**
No newsletter July/August

Inducted into Editor's Hall of Fame – 2018
EFMLS Trophy 2021 Small bulletins

Barry Remer update.
Please visit him/send card.
Barry Remer
Potomac Place
3236 Locker Street
Falls Church, VA 22042
Potomac Place phone **571-378-0295**

Newsletter inputs:
* David Fryauff
* Jeff Guerber
* Michael Pabst
* Pete Chin
* Mary Bateman
* Mike Kaas