

MNCA Website www.dcmicrominerals.org

The Mineral Mite



Vol. 53 – No. 1

Washington D.C. – A Journal for Micromineralogists

January 2020

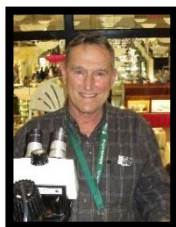
January 22 Time: 7:30 p.m. – 10 p.m.

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

Program: Gem-forming Pegmatites

by David Fryauff, Vice president

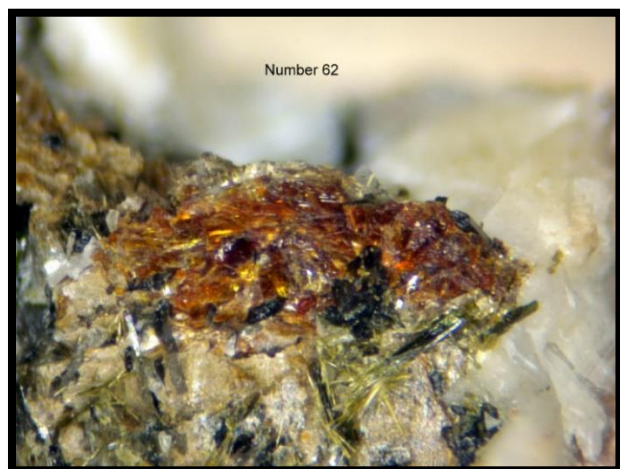
Dallas Symposium Dvd of Dr. David London, University of Oklahoma presentation entitled "Gem-forming pegmatites: How nature makes big, clear crystals." Dr. London's research pertains to the chemical evolution of felsic magmas.



Workshop: Club members bring micros to share.

George Reimherr's micros: Michael Pabst will update us on his and Tom Tucker's progress with an email announcement prior to our January 22 meeting.

Photo of the Month



Barwoodite 3M Quarry, Little Rock, Pulaski County, Arkansas: photomicrography by Steve Stuart
Steve will be one of the featured speakers at our AMC on April 4. Article page 6-8

President's Message:

by Dave MacLean

I wish all of us a happy, healthy, and fully prosperous new year. Let us all look forward to our Atlantic Micromounters' Conference on April 4-6, 2020 in Alexandria. We will need mounted and unmounted specimens for the silent, voice auction, and for the freebie table.



Again, we can demonstrate micro minerals at the Gem, Lapidary, and Mineral Society Show of Montgomery County GLMSMC to be held on March 14-15, 2020 in Rockville, MD. I look forward to our new year.

Mark your calendars:

**Atlantic Micromounters' Conference
April 3-5, 2020 (weekend before Easter)
Holiday Inn, Alexandria, VA
Tour Victor Yount's mineral collection
on Sunday April 5 - Time TBD**

James Madison University Mineral Museum Note
by Dr. Lance E Kearns

JMU Mineral Museum is coming along well. Cindy and I have 90% of the cases done (18 cases done, 2 more to go). Grand opening will be Friday, April 17th in the afternoon. Your clubs will be receiving invitations soon.

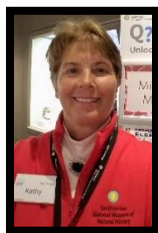
**MNCA club member dues are due:
\$15 individual \$20 Family - Details p 10**

Micromineralogists of the National Capital Area, Inc.

Previous Meeting Minutes: 12/16/19

by Kathy Hrechka, Temp Secretary

Vice President David Fryauff called a brief meeting to elect our slate of officers for 2020. Dave Fryauff, Jeff Guerber, Dave Hennessey, Kathy Hrechka, and Barry Remer voted unanimously to reinstate all officers.



President: Dave MacLean
Vice Pres: David Fryauff
Secretary: Bob Cooke
Treasurer: Michael Pabst

**Photo to right:
Crystallography Tree
constructed early years
of MNCA - 1970's**

Kathy Hrechka was asked to speak about our Atlantic Micromounters Conference to be held on April 3-5, 2020. Four presentations are scheduled. On Sunday, April 5, Victor Yount has invited AMC participants to view his mineral collection. The AMC registration and details are posted on the MNCA website.



Previous Program Reviewed 12/16/19

By Kathy Hrechka

We celebrated the holidays by joining our Northern Virginia Mineral Club friends. Dave Hennessey won a door prize for being the longest standing member since the 1960s. The festivities included great food, door prizes, gift exchanges, and simply geo friendship. David Fryauff and Dave Hennessey donated beverages on behalf of the MNCA.



Sugilite

by Michael Pabst PhD, Treasurer
Editor's Note: Michael Pabst from Penn Laird, VA will be one of the featured speakers at our Atlantic Micromounters' Conference on April 3, 2020



Our next manganese mineral, Sugilite, is really an iron mineral, strictly speaking. The original formula for Sugilite from the type locality was $\text{Na}_2\text{KFe}^{3+}_2\text{Li}_2\text{Si}_{12}\text{O}_{30}$. The type locality for Sugilite is in Japan, where Sugilite is rare, poorly crystallized, and tan in color: www.mindat.org/photo-807553.html. But later, Sugilite was found in the Kalahari manganese fields in South Africa in fibrous veins in the manganese ore: www.mindat.org/photo-76750.html.

Sugilite was found in the Wessels Mine and the N'Chwaning Mines (1). (Prosper Williams of Toronto introduced this material to the scientific community. He was a great dealer who introduced to me many beautiful specimens from Tsumeb.)

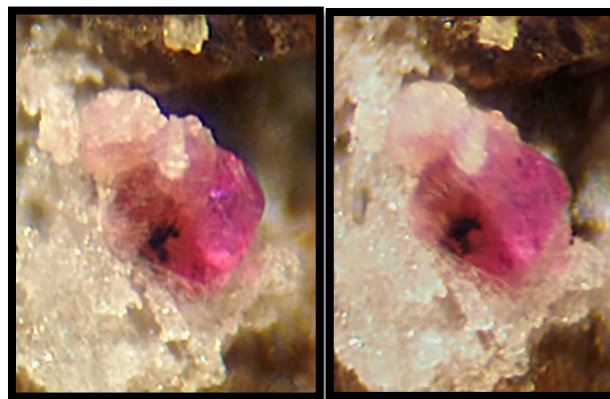
This Kalahari Sugilite has some of the iron replaced by manganese, leading to a striking purple color. In two analyzed samples, manganese replaced 14% and 21% of the iron (2). This Kalahari Sugilite is abundant, and it is much used in lapidary art. Some specimens of Sugilite from Kalahari have Ruizite in association: www.mindat.org/photo-388511.html. Even later, in 1990, some good crystals of Sugilite were found in Liguria, Italy (3,4). When additional specimens of Sugilite were found in Australia in 1994, it became clear that Sugilite can have a wide substitution of manganese and aluminum for iron (5).

My first Sugilite specimen is from the N'Chwaning Mines. It features tiny pink granular crystals of Sugilite in a background of white or tan Pectolite $\text{NaCa}_2\text{Si}_3\text{O}_8(\text{OH})$. I cannot discern the shape of the individual crystals of Sugilite in this specimen, even with high magnification.



Sugilite on Pectolite from N'Chwaning Mines, Kuruman, South Africa. FOV 18 mm. Photo taken with macro lens, stacking 23 images. Photo by Michael Pabst.

My second Sugilite specimen is from Italy. I may have paid 60 euros for it, because good crystals of Sugilite are rare. Here is a stereo photo of my specimen:

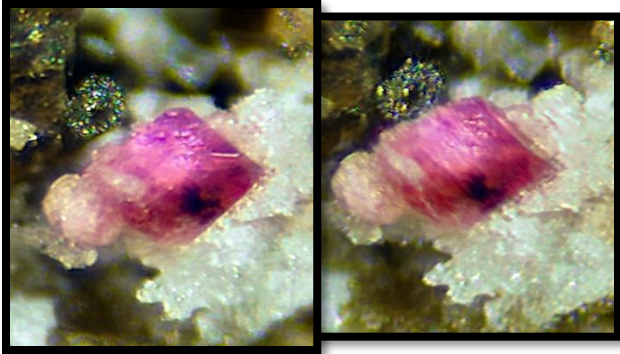


Stereo Pair photos (parallel) of Sugilite from the Cerchiaro Mine, Pignone, Borghetto di Vara, La Spezia Province, Liguria, Italy. Violet crystal is 0.2 mm wide. Photos taken through both eyepieces of a stereomicroscope. Photos by Michael Pabst. (If you have difficulty seeing the stereo effect, just look at the left photo. But it is worth staring at the stereo images for a while, because what looks like fuzziness, especially in the right photo, magically resolves into a clear image in 3D.)

Continued next page

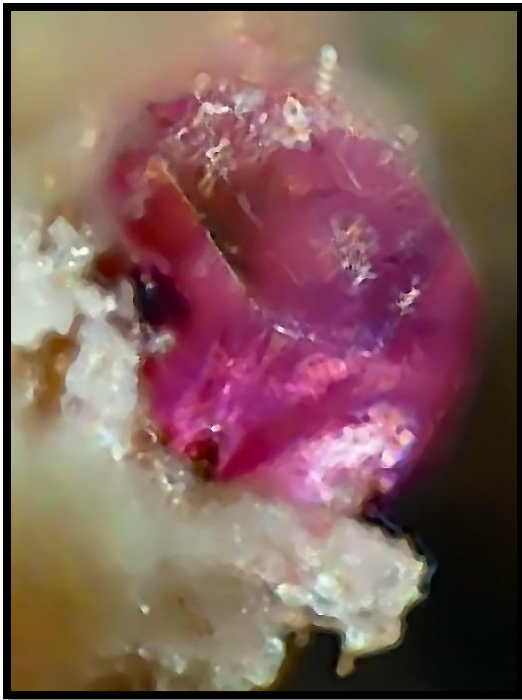
Sugilite continued

Here is the same crystal from another angle:

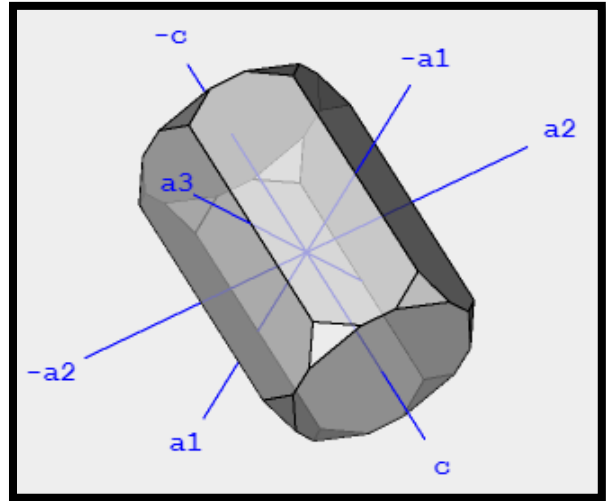


Stereo Pair photos (parallel) of Sugilite

Because this Sugilite crystal is so small, I brought out my big Mitutoyo lens to try to get a good photograph. I took a stack of 9 images, using a micrometer stage to advance the crystal towards the lens. Then I cropped the stacked image to about 10% of its original size, so that the tiny crystal filled the photo. This is really pushing my limits for small crystals, but I think the result is still interesting.



Sugilite photo taken with Mitutoyo lens and bellows. Stack of nine images. FOV 0.3 mm. Photo by Michael Pabst.



The diagram comes from Mineral Atlas: www.mineralatlas.eu/lexikon/index.php/MineralData?mineral=Sugilit. It is Kristall Nr. S330ad by Ulrich Baumgärtl, which I rotated to show my estimate of the crystal's orientation.

The best photo of Sugilite on Mindat is: www.mindat.org/photo-288959.html. This specimen shows a beautiful crystal from Liguria, Italy (minID 6QU-EEX), which is also the source of my tiny specimen. The specimens from Liguria are said to be "iron-poor aluminum-rich manganese sugilite" (4).

A current formula for Sugilite is $K,Na_2Li_3(Fe^{3+},Mn^{3+},Al)_2Li_3[Si_{12}O_{30}]$ (6). Mindat gives the formula: $K(Na,\square)_2Li_3(Fe,Mn,Al,Zr)_2[Si_{12}O_{30}]$, but I don't know where that formula with Zr and \square comes from. Sugilite is hexagonal $6/mmm$. Sugilite is a member of the Osumilite Group, aka the Milarite Group. Sugilite has a hardness of 6-6½.

Because there is an unexplained comment in Mindat doubting the validity of Sugilite from Liguria, which would presumably apply to my specimen (my catalog number #1158), I have provided the references I used here below, including a fairly recent study (6). If anyone has more up-to-date references, I would like to know. Continued next page

Sugilite continued

References:

1. Dunn, PJ, Brummer JJ, Belsky H. (1980). Sugilite, a second occurrence: Wessels Mine, Kalahari Manganese Field, Republic of South Africa. *Canadian Mineralogist* 18: 37-39.
2. Armbruster T, Oberhänsli R. (1988). Crystal chemistry of double-ring silicates: Structure of sugilite and brannockite. *American Mineralogist* 73: 595-600.
3. Palenzona A. (1990) - La Sugilite di Cerchiaro (SP) - *Rivista Mineralogica Italiana*, fasc. 3, pp. 153-154.
4. Cabella R., Lucchetti G., Palenzona A. 1990. Al-rich, Fe-poor manganian sugilite in a pectolite-bearing assemblage from Cerchiaro Mine (Northern Apennines, Italy). *N. Jb. Miner. Mh.*, 10: 443-448.
5. Kawachi Y, Ashley PM, Vince D, Goodwin M. (1994) Sugilite in manganese silicate rocks from the Hoskins mine and Woods mine, New South Wales, Australia. *Mineralogical Magazine*, 58: 671-677.
6. Geiger CA. (2009) A ^{57}Fe Mössbauer spectroscopic study of sugilite, $\text{KNa}_2(\text{Fe}^{3+}, \text{Mn}^{3+}, \text{Al})_2\text{Li}_3\text{Si}_{12}\text{O}_{30}$. *Canadian Mineralogist* 47: 927-931.



GeoWord of the Day and its definition:

iridium (i-rid'-i-um) (a) An element of the *platinum* group, symbol Ir. (b) A metallic white cubic mineral consisting of more than 80 percent Ir, the remainder being osmium, palladium, or related elements.

paleointensity the intensity of the ancient Earth's magnetic field, as determined by experiments on geologic materials that attempt to duplicate the magnetization acquisition process, using the correct ancient field intensity. Paleointensity values may be expressed as "virtual" dipole moments for the Earth.

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

GeoWord of the Day is brought to you by:

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The American Geosciences Institute is a nonprofit federation of about 50 geoscientific and professional organizations that represents geologists, geophysicists, and other earth scientists. The organization was founded in 1948. Headquarters is located on Duke Street in Alexandria, Virginia.

Time Change at Stonehenge

Below: submitted by retired George Loud

Hate this time of year.

Busy night at Stonehenge as all the workers move the stones backward one hour...



In Search of Barwoodite

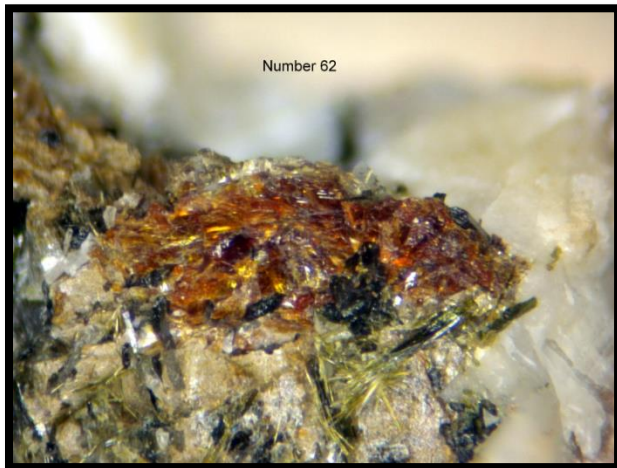
By Steve Stuart, Editor CMMA

In early 2016, Dr. Henry “Bumpi” Barwood notified his e-mail distribution list several times about a potential new mineral he was finding in material from the 3M Quarry, Little Rock, Pulaski County, Arkansas. Preliminary analyses led him to call it a manganese niobium silicate. He distributed images, some of which were published in the CMMA MicroNews.



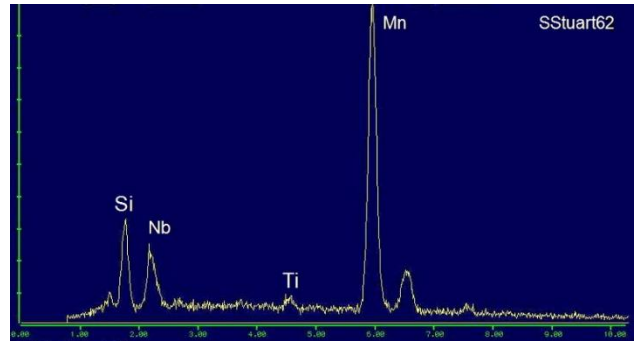
At the SE Micromineralogists Symposium that Dr. Barwood organized at Troy University in Alabama in July 2016, much material was distributed to participants. The author brought several pieces back, rich in the “new mineral”. Dr. Barwood also gave a presentation regarding ongoing research to characterize the potential new mineral. Excitement about his discovery was tempered by word of Dr. Barwood’s passing in the fall of 2016. It was not until the fall of 2017 that his discovery was officially recognized and named barwoodite in his memory and honor.

The author snipped off a small piece of the “new mineral” and sent it to Kerry Day for rudimentary EDS analysis. Here is a photo of the piece, sent to him in September 2016.

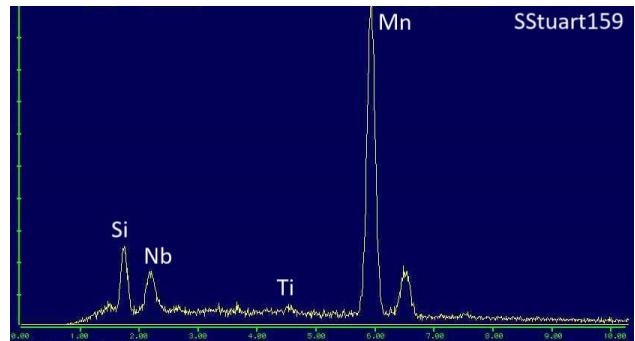


Barwoodite 3M Quarry, Little Rock, Pulaski County, Arkansas: photomicrography by Steve Stuart

Kerry returned the following spectrum.



Note the major components of manganese, niobium and silicon, with a slight leavening of titanium. This sample was sent to Kerry Day in September 2016 before barwoodite was officially named, so his response was, “No idea!” Now, we can say that this spectrum is representative of the new mineral barwoodite from the 3M Quarry. To be sure, a second sample from 3M Quarry was sent to Kerry in early 2018 with the following spectrum returned.



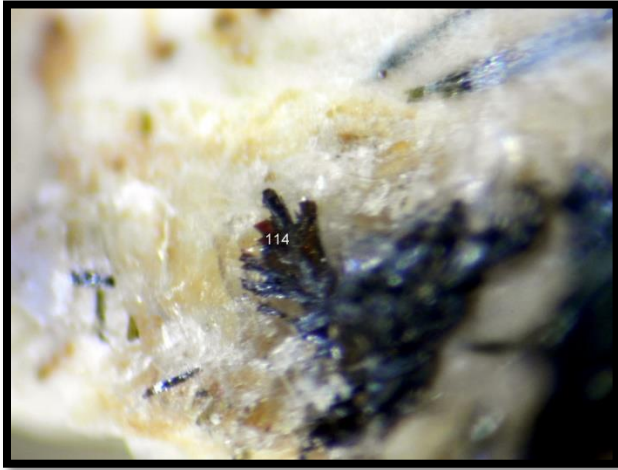
Exact match!

Even in 2016, members of the SE Micromineralogists group were speculating that barwoodite might be found at the other syenite quarries near the 3M Quarry, most likely at the Granite Mountain Quarry No.1 (GMQ1). The 2017 SE Micromineralogists Symposium, the first after Dr. Barwood’s passing, was held in Little Rock Arkansas in late July 2017. It included field trips to 3MQ and GMQ1. The author only brought back a bucket from each quarry, not being an experienced field collector. Breaking down and searching through the GMQ1 material resulted in a few samples of what might be the elusive barwoodite from GMQ1. Here are some results.

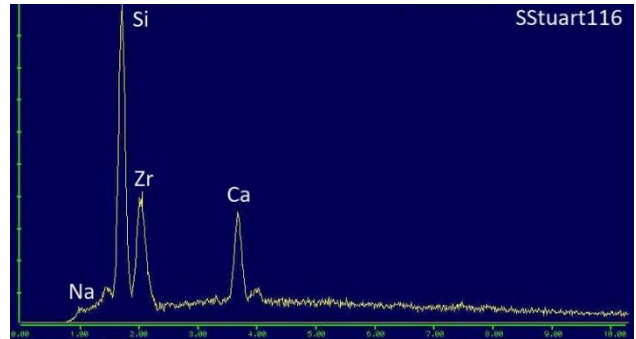
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Barwoodite continued

Sample #114-



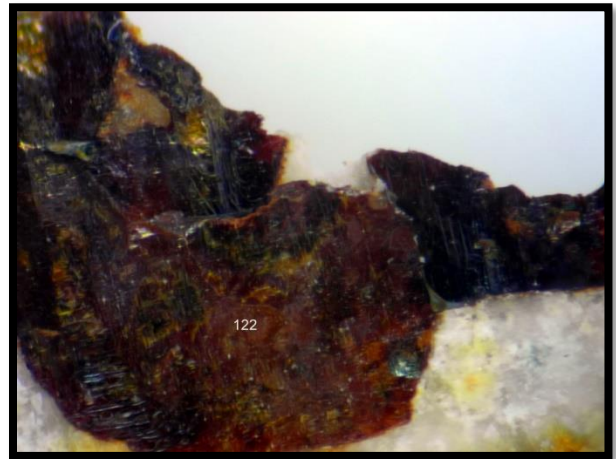
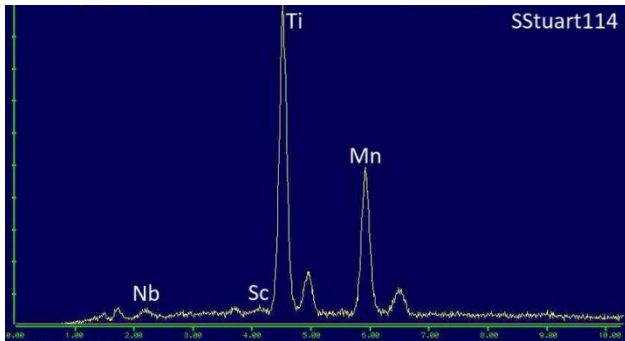
Spectrum of Sample #115- POSSIBLY HILAIRITE or CALCIOHILAIRITE!!



This result does not make sense.

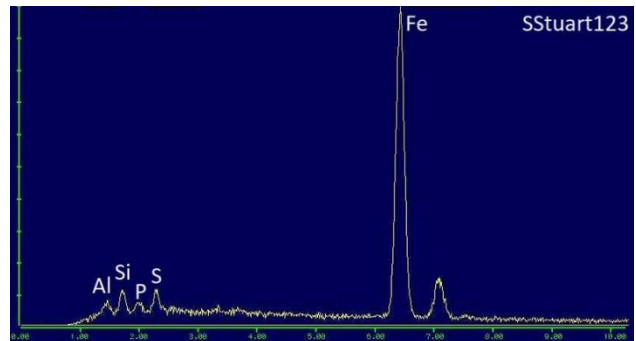
Sample #122-

Spectrum of Sample #114- PYROPHANITE



Spectrum of Sample #122- IRON SCUM!!

Sample #115-



Again, this does not make sense. Barwoodite from GMQ1 remained elusive!

Continued next page

Barwoodite continued

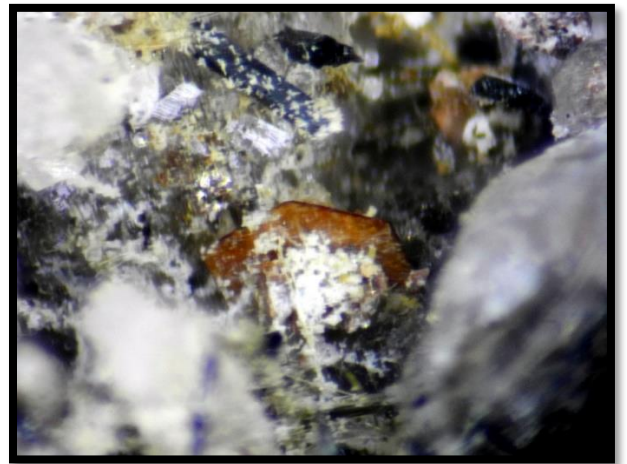
Another more experienced collector, Jim Stoops, brought out copious amounts of material from the July 2017 visit to GMQ1. He was very generous in sharing a lot of it with other micromineral enthusiasts at the SE Micromineralogists Winter Gathering in February 2018. From the latter event, the author brought home a fair amount for exploration. One of the samples is shown below.



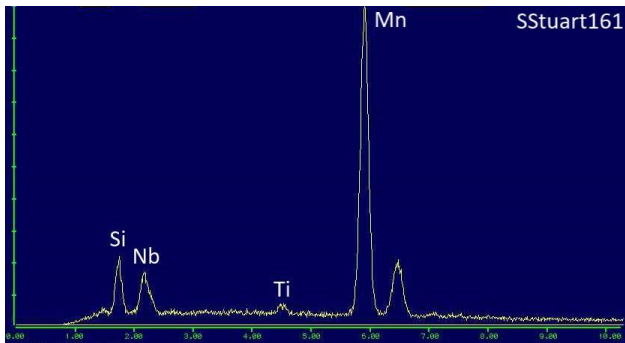
The image below shows what remains of the specimen after extracting a piece for analysis. The author has labeled and catalogued it in his collection.



Photo below: Here is another orange plate of possible barwoodite from GMQ1.



This looked extremely promising, so a small piece was extracted, recovered and sent to Kerry Day for analysis. He returned the following spectrum.



This matches almost exactly the two confirmed barwoodite spectra from the 3M Quarry.

The author feels confident that barwoodite is indeed found at a second locality, the Granite Mountain Quarry No. 1, Little Rock, Pulaski County, Arkansas.

Editor's Note: Steve Stuart from Bethlehem, Pennsylvania will be one of the featured speakers at our Atlantic Micromounters' Conference on April 4, 2020 at the Holiday Inn in Alexandria, Virginia

Micromineralogists of the National Capital Area, Inc.



**American Federation of
Mineralogical Societies**

(AFMS)
www.amfed.org

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

AFMS Purpose: 2020

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"

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Content – Letters Editorial Comments – Submissions
Any communication concerning the content or format of the newsletter should be sent to the Editor
<editor@amfed.org>

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.**

Local Geology Club Meetings:

January 2020

8: 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

**13: 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

**17: 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

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

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

**March 13-14: Leidy Microscopical Society
44th Annual Micromount Symposium**
45 Worthington Mill Road Richboro, Pennsylvania
Information: <donmcalarnen@outlook.com>

**Atlantic Micromounters' Conference
April 3-5, 2020 - Holiday Inn, Alexandria, VA
Tour Victor Yount's mineral collection Sun 5**

Micromineralogists of the National Capital Area, Inc.

Atlantic Micromounters' Conference April 3-5, 2020

Holiday Inn, 6055 Richmond Hwy Alexandria, VA
Tour Victor Yount's mineral collection Sunday 5

Fri Apr 3 - 7pm Michael Pabst "Exotic Lands, Exotic Foods, Exotic Minerals"

Sat Apr 4 - 10am Scott Duresky "Conclusions from the Research of the Historic Rutherford Mine Pegmatite #2, Amelia Courthouse, Virginia"

Sat Apr 4 - 4pm Steve Stuart "Findings from the Winston Collection"

Sat Apr 4 - 7pm Michael Seeds "Collecting Radioactive Minerals."

Sun Apr 5 - Time TBD Victor Yount has invited our group to view his mineral collection on Sunday in Marshall, VA which is 50 miles west of Holiday Inn.

Brief speaker biographies:

Michael Pabst, Penn Laird, VA Michael Pabst is a retired professor of biochemistry who has collected minerals all his life. He and his wife, Karen, like to travel and check out mineral museums in distant lands.

Scott Duresky, Charlottesville, VA Scott is a self-taught mineralogist who first started collecting on the dumps of the Rutherford Mine pegmatite in the late 1960's. Early on, he received extensive lessons in the field from the late Frank Crayton, a research chemist with Philip Morris in Richmond.

Steve Stuart Bethlehem, PA His childhood interest in chemistry, nature and minerals was rekindled in 1995 when he started to collect fluorescent mineral. In the late 1990s, he bought a stereo microscope, which opened a whole new world for him. Steve posted his first photo to Mindat in 2004, and now has over 2,500 images on Mindat.

Mike Seeds, Lancaster, PA He was a Physics major at the University of Illinois and MS and PhD in Astronomy from Indiana University (1970). Mike has published eight different books for teachers using different approaches to introductory astronomy.

Victor Yount's mineral collection tour on Sunday

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
Phone (703) 228-6535

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

President: Dave MacLean

Vice President: David Fryauff

Secretary: Bob Cooke

Treasurer: Michael Pabst

Editor/Historian: Kathy Hrechka

Website: Julia Hrechka

AMC Conference: Kathy Hrechka

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 2020

\$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
AFMS Trophy 2019**



Member inputs:

- * Dave MacLean
- * Michael Pabst
- * Kathy Hrechka
- * David Fryauff
- * Steve Stuart
- * George Loud

