Micromineralogists of the National Capital Area, Inc.

MNCA Website www.dcmicrominerals.org

The Mineral Mite

Vol. 54 – No. 6 Washington D.C. – A Journal for Micromineralogists June 2021

Zoom Meeting June 23 Time: 7:30 p.m.

Program: Geologic Origin of Serpentinites and the Unique Minerals Associated with Ultramafic Rocks

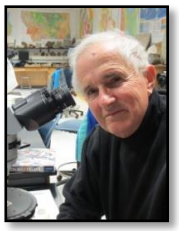
Dr. C. Leigh Broadhurst, Ph.D. Research Physical Scientist at the US Department of Agriculture Research Service will present her research via Zoom. She is a local club member of the Gem Lapidary Mineral Society of Montgomery County.

Mystery Photos of the Month:

Presented by Dave Fryauff. Can you guess their identities? Hints: Both specimens are from Tsumeb. Both specimens are what they look like -- No tricks or exotics.

Mineral #1 from Tsumeb, Namibia. FOV 5 mm. Photo by Michael Pabst, taken with stereomicroscope, stacking 23 images.

President's Message:



by Dave MacLean

It is rockhound time with better weather, warmer temperatures, traveling to exotic places to collect, and stories about spectacular world class specimens that "got away" not found, or not collected. Let's look forward to September when we can gather in person to look at our summer's minerals, be there for a program, and tell stories. To some degree I will miss Zoom with its slide shows from everywhere and audiences from almost everywhere. Let's consider how we can combine our in persons meetings with Zoom for programs.

Mineral #2 from Tsumeb, Namibia. FOV 7 mm. Photo by Michael Pabst, taken with stereomicroscope, stacking 24 images.

Previous Meeting Minutes: 5/26/21

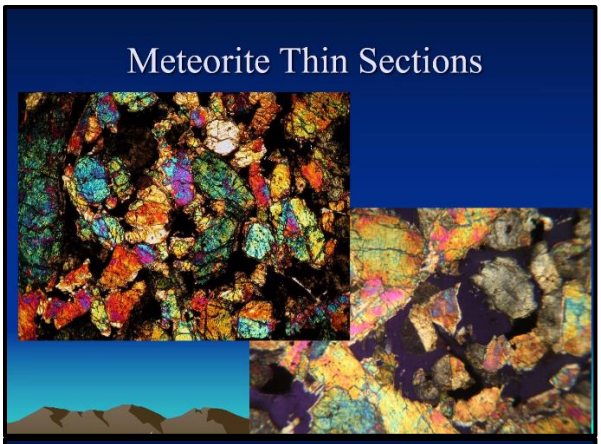
by Bob Cooke, Secretary

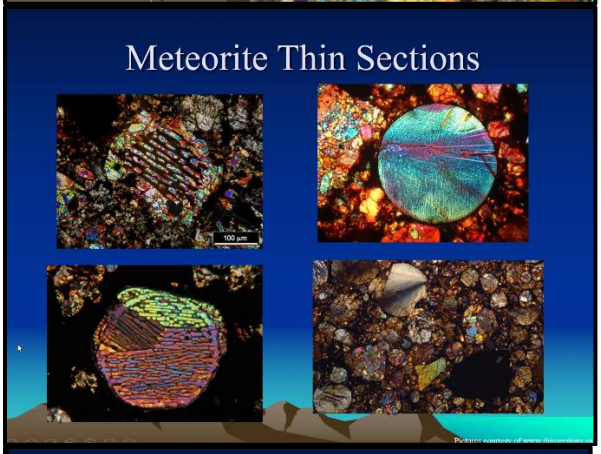
Since no business meeting was held, there are no minutes to report.
Editor's note: Remember, there are no meetings for July and August, therefore no newsletter.

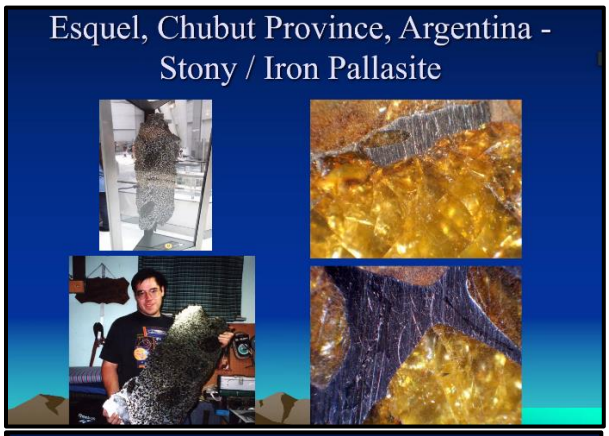
Previous Program Review: 5/26/21

by Kathy Hrechka, Editor

Derek Yoost, from New Jersey presented "Microstructures in Meteorites and their Relation to the Formation of the Solar System". Derek demonstrated some of the meteorites that showed interesting structures, including chondrules under magnification, as well as polarized light. Meteorites are about 4.5 billion years old and come from the very earliest stages of our solar system formation. Derek's meteorite collection contains over 350 different falls and finds. Meteorites represent the only samples that we have preserved for study from that long ago time scale. Derek had the chance to meet Meteorite Men, two guys featured on the Science channel.







In Loving Memory of Robert D. Rothenberg, our dear mineral friend

by Dave MacLean, President MNCA

On behalf of the Micromineralogists of the National Capitol Area, I offer my condolences to the family and friends of Robert Rothenberg. We were blessed with his presentations at the 2015 annual Atlantic Micromounters' Conference.

Atlantic Micromounters' Conference
2015 Speaker - Robert Rothenberg

Robert was an Accounting and Law professor at the State University of NY, college at Oneonta for 31 years. Prior to that he spent several years working was an accountant with an accounting firm. He has been collecting micros since about 1964 and has been photographing minerals for about ten years. Robert has done some field collecting, mostly during the 1990's with continued success today. Some of his favorite collecting sites are MSH and Varennes, Arkansas, and most recently Virginia. Robert's conference topics included "New Zealand Mineral Collecting, White Island Volcano" and "Micro Photo Editing – Stacking (partly interactive) with comments on photo management".

Below: Mindat.org

RIP - Bob Rothenberg General

Tony Nikischer 4th Jun 2021 20:36 UT

I just learned that my friend and astute attorney Bob Rothenberg has passed away. He amassed a huge collection of micromounts over many years, specializing in Mont Saint-Hilaire. He was elected to the Micromounters Hall of Fame in 2016 and was the attorney who helped establish the Hudson Institute of Mineralogy (owners of Mindat.org) as a not-for-profit organization in 2003. Bob was one of our original board members, and I offer sincerest condolences to his wife, Monet, and his many friends in the collecting community.

Robert Rothenberg Mar 22, 1943 – May 28, 2021
Robert D. Rothenberg was born on March 22,1943 and passed away on May 28, 2021, and is under the care of **Lester R. Grummons Funeral Home**
14 Grand Street Oneonta, NY 13820 607-432-6821

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Desautels Micromount Symposium Hall of Fame Awarded to Robert Rothenberg in 2016
on behalf of the Baltimore Mineral Society, MD
submitted by Quintin Wight, Ottawa, Canada

Robert's plaque read, "Robert (Bob) Rothenberg has been attracted to minerals since childhood and saw the advantages of micromounting early on. Since that time, he has been active both as a collector, and in helping others to understand and appreciate the discipline.

He has now amassed a large collection of international specimens that he uses both physically and as photographic models to explain and illustrate his talks. Many of those specimens were obtained through trading around the world, giving him both a wide acquaintance with other micromounters and an encyclopedic knowledge of minerals. In terms of service to the micromounting community, he has attended all the micromount symposia on the eastern seaboard of the Continent from Florida to Canada, offering lectures and specimens, particularly from his favorite sites, Mont Saint-Hilaire, and Varennes in Québec, the Aris Phonolite in Namibia, and the Stoutameyer Branch in Virginia. He is currently assisting in a survey of the Stoutameyer Branch syenites. In recent years, he has expanded his interests to include photography, and has acted as moderator at conferences discussing the latest techniques and improvements in photomicrography.

Bob has lectured to groups in the USA, New Zealand, and Canada, and published articles on micromounting and related subjects for many years. Those subjects have been as varied as his interests, and cover everything from micromounting to techniques for delivering presentations. He is ready to aid others with his skills wherever possible and has proven himself worthy of membership in the Micromounters' Hall of Fame." Enjoy some of his micromineral photos on the next page.

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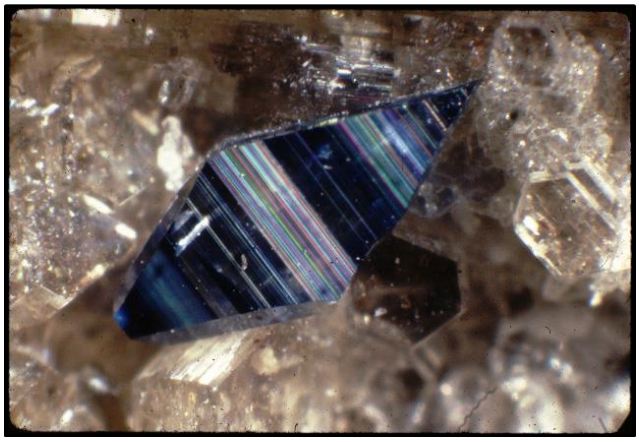
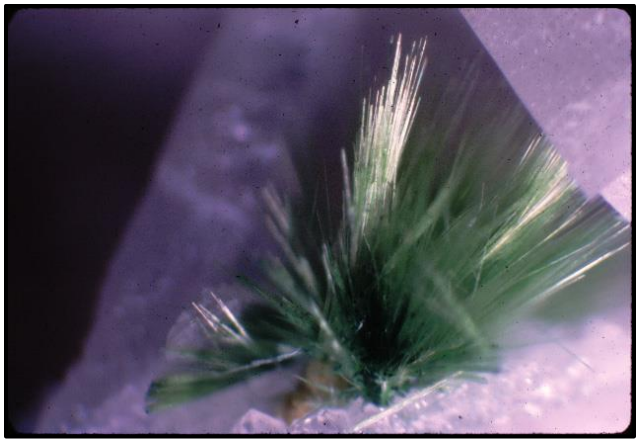
We remember Robert as one of the finest photographers of microminerals of our times.

Robert was also known for his extensive anatase collection.



Anatase

Allactite



Agardite

Ancylite

Ajoite

Annabergite

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Remembering Robert Rothenberg
by David Fryauff Vice President

I first met Bob down at Tom Tucker's home in Mt. Sydney, VA. Bob, Tom, Robbin Tibbets, and Don Smoley had been collecting micromineral specimens from the hard nepheline syenite boulders from the streambed and eroded banks of Stoutameyer Creek, a location in Augusta Co., VA that Erich Grundel and Lance Kearns discovered years ago. Tom Tucker took a wonderful photo of Bob, hunkered down in the snow and hammering on a frozen black boulder in Stoutameyer Creek. Bob told me of having found a huge boulder in the streambed that spring which they somehow reduced completely to a pile of black shards. I went with those guys, and Mercy--Tom's dog, in October 2014, I recall, when the weather was warm, and the forest was glorious. We all took off in different directions, but you could hear the ring of steel hitting against that very dense nepheline syenite, a type of rock that is very stubborn and reluctant to yield its micromineral secrets.

We spent the rest of that weekend breaking rock and looking into small vugs and vesicles. After lunch we all headed upstream seeking that point at which the syenite disappeared and near which the dike or sill or batholith or pluton of all that syenite must lie. We went far up the Stoudameyer creek bed but did not see an end of the syenite. That should be an easy task for Tom & his dog, Mercy, since it was almost in his backyard. But as far as I know, the source has not been found. That was my first visit down to Tom's house and my first meeting with Bob. I recall how the four of us would pack into Tom's "office" with our microscopes, lamps, and buckets filled with shards of the dark Stoudameyer syenite. Under Bob's practiced eye, and his nice Meiji microscope, I/we saw tiny wonders: divergent sprays of clear natrolite, perfect crystals of harmotome, arfvedsonite, aegerine, fluorite, synchsite, even steacyite. And many more. The contents of those tiny, difficult vugs became a passion of Bob's while he produced a wonderful series of photos of the microminerals hidden in this rock.

Bob was truly kind to give me an early copy of the paper that he, as lead author of the Stoutameyer Creek group, was preparing for publication. It will be a fitting tribute to Bob when that work is published and made available to our greater community. I was lucky to become associated with this group of accomplished, and dedicated micromineral collectors at a time when I was just getting started. Thanks to Bob I developed an early, doomed, fascination with the microminerals of Mont Saint-Hilaire, Quebec. Bob had been (for years) a serious collector and photographer of the amazing number of mineral species from that location. Over the years I managed to find some nice micros from Franklin and Sterling Hill and was happy that I could give some of these to Bob in exchange for rare and unique micros from Mont Saint-Hilaire. Bob also introduced me to the beautiful minerals of the Big Rock Quarry of Little Rock Arkansas where my father had once worked, during his start in the industrial mineral's division of 3M company.

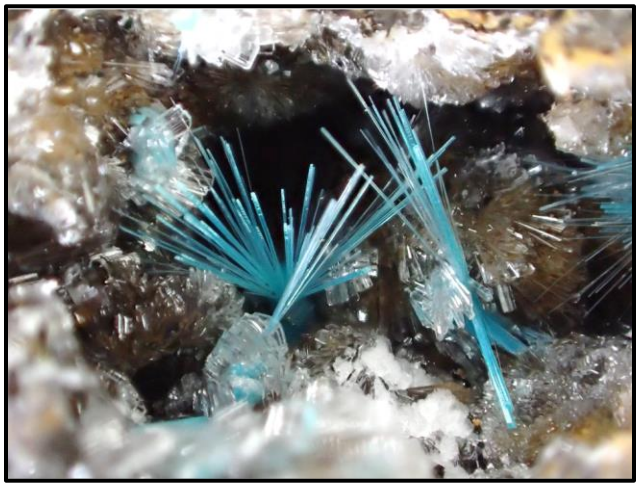
Bob told me that he began collecting minerals when he was a kid and that his collection by now probably numbered at more than 40,000 specimens. He collected at locations all over the US and Canada, including places like Mullica Creek in NJ and the Bishop Mine in VA. The stories he told of those places were so fascinating. Bob had so much information in his head and such interesting stories. He always seemed kind and patient. But I saw that time was beginning to take its toll on him when we met at the Leidy Microscopical Society Conference in March 2019. I knew Bob was in a bad way from emails we exchanged during 2020. It was painful to hear him tell of the loss of his sight and motor control, as he was one of the great micromineralogists of "my" brief time and it was an honor and privilege to have known him. Thank you, Bob, for your great friendship, knowledge, and talents. Until we meet again…

Photo of Robert by Tom Tucker Feb 2012

Quetzalcoatlite and Eurekadumpite

by Michael Pabst PhD, Treasurer

Quetzalcoatlite. This article will start with a stunning photo of Quetzalcoatlite from the Blue Bell Mine in California. This specimen was collected and photographed by Daniel J. Evanich, who has kindly allowed me to reproduce the photo here. Looking at this photo, you can see what prompts my enthusiasm for Quetzalcoatlite. Some of the blue crystals are 3 mm in length, associated with contrasting clear Hemimorphite.



Quetzalcoatlite and Hemimorphite. Blue Bell Mine, Zzyzx, Soda Mountains, Silver Lake Mining District, San Bernardino Co., California, USA. FOV 6 mm. Collected and photographed by Daniel J. Evanich. Used with permission. This was Mindat Photo-of-the-Day for 16 April 2021. minID: E9E-Y2X.www.mindat.org/photo-1119408.html. Hemimorphite is $Zn_4Si_2O_7(OH)_2 \cdot H_2O$.

Quetzalcoatlite was first reported by Sidney A. Williams in 1973 from Moctezuma, Sonora, Mexico. He reported a formula of $Cu_4Zn_8(TeO_3)_3(OH)_{18}$, making Quetzalcoatlite a copper zinc tellurate. However, the crystals were exceedingly small, and the supply was limited.

Reference: Williams SA (1974) Quetzalcoatlite, $Cu_4Zn_8(TeO_3)_3(OH)_{18}$,new mineral from Moctezuma, Sonora. Mineralogical Magazine: 39: 261-263. rruff.info/doclib/MinMag/Volume_39/39-303-261.pdf)

Later, in the year 2000, Peter C. Burns and colleagues studied the crystal structure more closely, using better crystals and using synchrotron radiation, which is the equivalent of a more powerful X-ray. The synchrotron radiation gave better results with the tiny crystals. Quetzalcoatlite was one of the first minerals identified using high-energy photons from a synchrotron to study crystal structure. They discovered that silver is an integral part of the structure of Quetzalcoatlite. Their formula is $Zn_6Cu_3(TeO_6)_2(OH)_6 \cdot Ag_xPb_yCl_{x+2y}$. This formula indicates that both silver Ag^{1+} and lead Pb^{2+} are part of the structure, and their positive charges are balanced with a corresponding amount of chloride. The silver, lead, and chloride form a sort of cage around the copper, zinc, and tellurium.

Reference: Burns PC, Pluth JJ, Smith JV, Eng P, Steele I, Houseley RM (2000) Quetzalcoatlite: a new octahedral-tetrahedral structure from a 2 x 2 x 40 μm^3 crystal at the Advanced Photon Source-GSE-CARS facility. American Mineralogist 85: 604-607. (Available at rruff.info/doclib/am/vol85/AM85_604.pdf)

Figure 1 in the reference above shows a nice electron micrograph of Quetzalcoatlite, showing long crystals with hexagonal cross-section. The crystals shown are about 2 µm across. The Quetzalcoatlite crystals shown in the first photo of this article are clearly much larger than the tiny crystals in my specimen, and they are much larger than the crystals used to describe the mineral. The crystal used for the synchrotron diffraction analysis of crystal structure was 2 x 2 x 40 µm.

Crystal System: Trigonal (The "octahedral-tetrahedral structure" mention in the article title refers to the arrangement of the silver and lead ions, not to the overall structure, which is a tad confusing.)
Class (H-M): 3*m* (3 2/*m*) - Hexagonal Scalenohedral.
Space Group: $P\bar{3}1m$.

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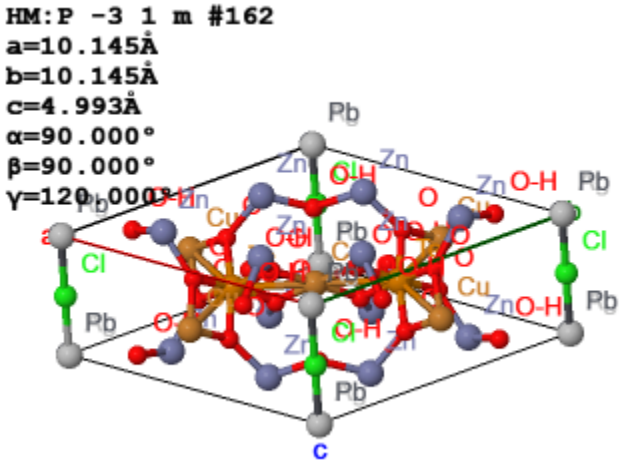
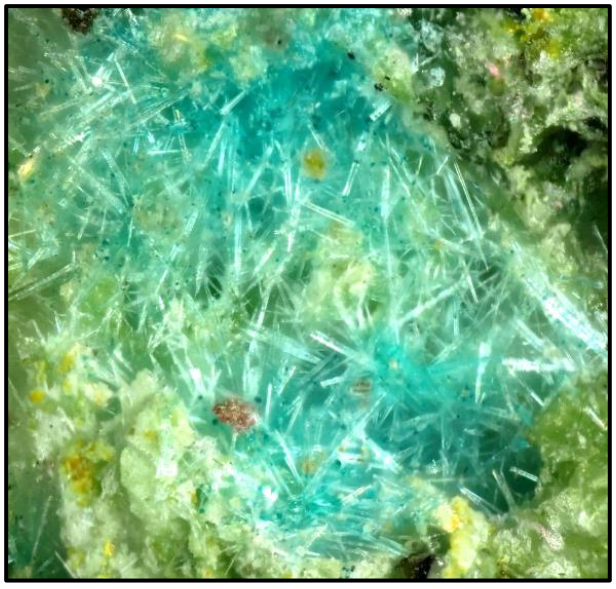
Quetzalcoatlite continued

Here is a diagram from Mindat www.mindat.org/min-3343.html showing the arrangement of atoms in the unit cell for Quetzalcoatlite:



Unit cell for Quetzalcoatlite, showing Pb at the corners of a "tetragonal box" enclosing the atoms previously thought to constitute the mineral. The corner atoms are shown as Pb in the diagram, but in most of the analyses provided in the paper, silver Ag is more abundant than lead Pb at these positions.

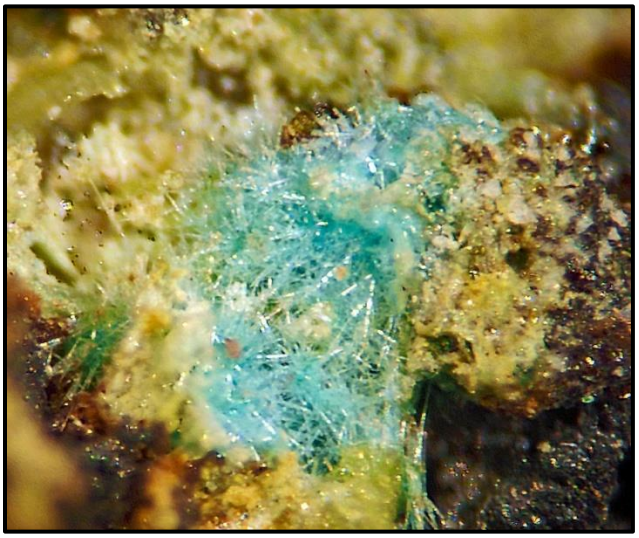
My specimen of Quetzalcoatlite is from Utah. This photo was made by Nothern Minerals, from whom I purchased the specimen. (Nothern Minerals can be found on the e-Rocks website on some days. Nothern is not spelled like the direction North.) The label states "EDS-Raman Conf." which I interpret to mean that this sample, or a sample like it, was subjected to Electron Microscopy and Energy Dispersive X-ray Spectrometry and to Raman infrared analysis.



Quetzalcoatlite, North Star Mine, Mammoth, Tintic District, Juab County, Utah. "FOV 1.2 mm" (I would say 0.8 mm). Photo by Nothern Minerals.
To give you a better idea of scale, here is a photo of the overall specimen that I made with my macro lens + Raynox lens. The little blue patch in the upper left is the Quetzalcoatlite.

Quetzalcoatlite from North Star Mine, Mammoth, Tintic District, Juab County, Utah. Overview photo taken with Macro lens + Raynox lens, stacking 10 images. FOV 11 mm.

Here below is my closeup picture taken through the stereomicroscope (I prefer my photo over the dealer's):



Quetzalcoatlite, North Star Mine. Photo taken with stereomicroscope, stacking 15 images. FOV 1 mm. Photo by Michael Pabst. continued next page

The name Quetzalcoatl means plumed (feathered) serpent. Quetzalcoatl was an Aztec god, who was pictured as part bird (quetzal) and part snake (coatl). Here is an Aztec stone carving representing Quetzalcoatl.

Quetzalcoatl, the Plumed Serpent. Photo copyright Audrey and George Delange on Wikipedia: en.wikipedia.org/wiki/Quetzalcoatl#/media/File:La_Venta_Stele_19_(Delange).jpg

The quetzal is no ordinary-looking bird. Here is a photo of the Resplendent Quetzal in flight. In his paper cited above, Mr. Williams said that he named the new blue copper zinc tellurate Quetzalcoatlite, because Quetzalcoatl was god of the sea, alluding to Capri blue color. I wonder if the blue plumage of the quetzal had subliminally affected his decision.

Resplendent Quetzal. They inhabit cloud forests in Central America. The iridescent blue-green feathers allow them to hide among the wet leaves of the rain forest canopy. Photo from Google: www.beyondtheordinary.co.uk/features/quetzal-guatemala/

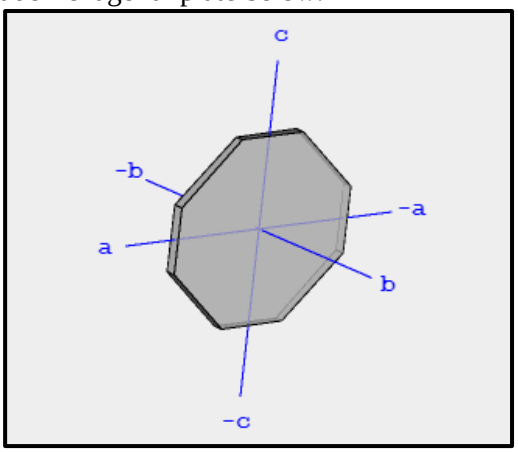
I hope you enjoyed this colorful and unusual silver mineral, which makes a nice variation from the red and black crystals found in my recent articles about silver minerals.

Eurekadumpite. While we are looking at unusual copper tellurate minerals with interesting stories, I would like to mention Eurekadumpite, $(Cu,Zn)_{16}(TeO_3)_2(AsO_4)_3Cl(OH)_{18}\cdot 7H_2O$. My specimen comes for a locality only about 1.5 miles from the locality for my Quetzalcoatlite. Indeed, Quetzalcoatlite and Eurekadumpite have been found together on specimens, for example: www.mindat.org/photo-910978.html. As far as I know, Eurekadumpite does not contain silver. One of the authors who described Eurekadumpite is our friend Tony Nikischer from Excalibur Minerals in Charlottesville. Here is the reference:

Reference: Pekov IV, Chukanov NV, Zadov AE, Roberts AC, Jensen MC, Zubkova NV, Nikischer AJ. (2010) Eurekadumpite $(Cu,Zn)_{16}(TeO_3)_2(AsO_4)_3Cl(OH)_{18}\cdot 7H_2O$ − a New Hypergene Mineral, Zapiski Rossiiskogo Mineralogicheskogo Obshchetstva 139(4): 26-35. (Available at rruff.info/uploads/ZRMO139_26.pdf).

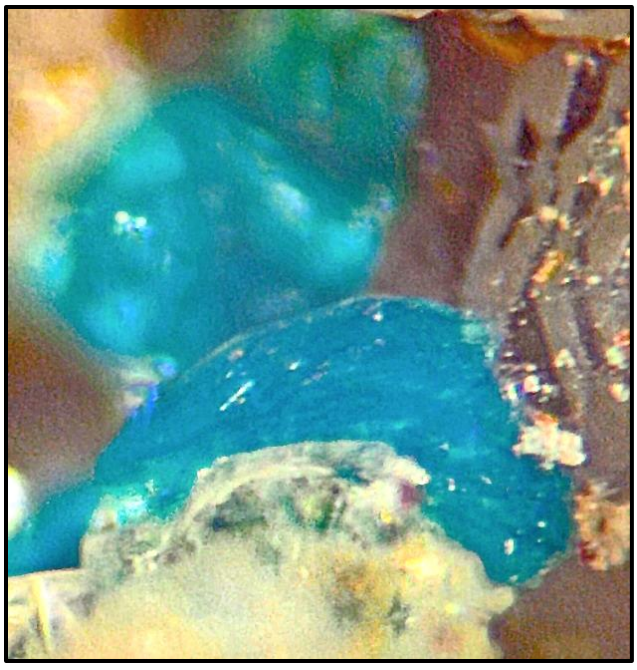
Eurekadumpite is monoclinic 2/*m* prismatic, β = 121.3°, space group *P*2/*m*. But it forms as stacks of pseudo-hexagonal plates. Like Quetzalcoatlite, Eurekadumpite has a beautiful teal (blue green) color.

The paper cited above uses the term “hypergene”, which I believe is a Russian variant of “supergene”, which means a mineral formed by ground water and oxidation near the surface. Both Eurekadumpite and Quetzalcoatlite are late-forming minerals produced by surface waters and oxidation. Eurekadumpite as pseudo-hexagonal plate below.



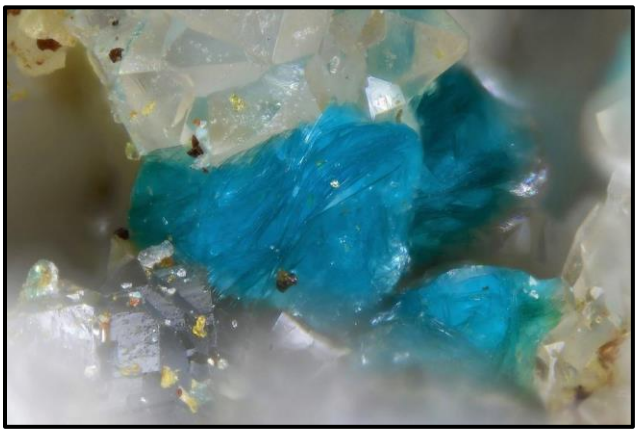
Above is a photo of the entire specimen of Eurekadumpite from Centennial Eureka Mine, Tintic, Juab County, Utah. FOV 16 mm. Photo taken with macro lens + Raynox lens, stacking 20 images. Photo by Michael Pabst.

Here is a closeup image of some of the crystals in the small cavity on the right side of the photo above.



Eurekadumpite, Centennial Eureka Mine, Eureka, Tintic District, Juab County, Utah. FOV 0.5 mm. Photo taken through stereomicroscope, stacking 6 images. Photo by Michael Pabst.

Below is a better photo taken by the dealer who provided the specimen. If you look closely, you can see the lamellar structure of the stacked crystals:



Eurekadumpite, Centennial Eureka Mine, Tintic District, Juab County, Utah. Photo by Mintreasure. My estimate of FOV = 0.7 mm.

Eurekadumpite is named for its type locality, the dump of the Centennial Eureka Mine. Eureka means "I have found it" in Greek.

Both my Quetzalcoatlite and Eurekadumpite specimens feature tiny crystals that made photography difficult. I would say they are a bit beyond my equipment and ability. For this reason, I added photos provided by the dealers, who may have used a $20,000 Zeiss microscope. For some reason, the *Mineral Mite* appears unwilling to upgrade my equipment to this standard. Thanks for reading, and I hope to see you again in September.

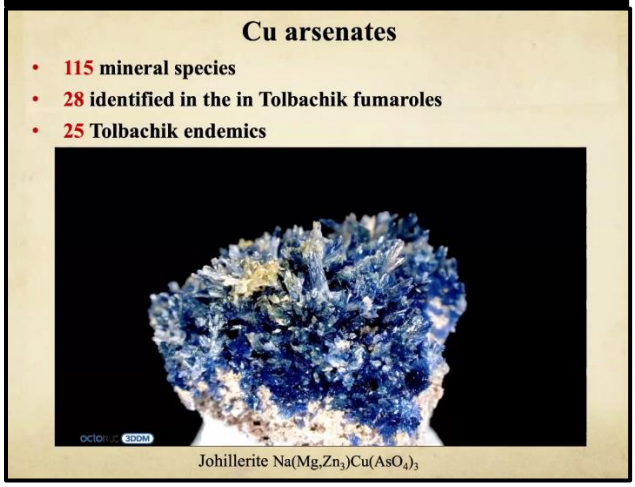
Canadian Micro Mineral Association Virtual Symposium May 1, 2021 recap

by Kathy Hrechka, Editor

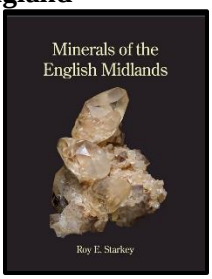
Frank Ruehlicke, President of CMMA brought together three great speakers who presented their research for this virtual symposium.

Tolbachik, Kamchatka: Micromounters Paradise
Dr. Inna Lykova, Ottawa, Canada

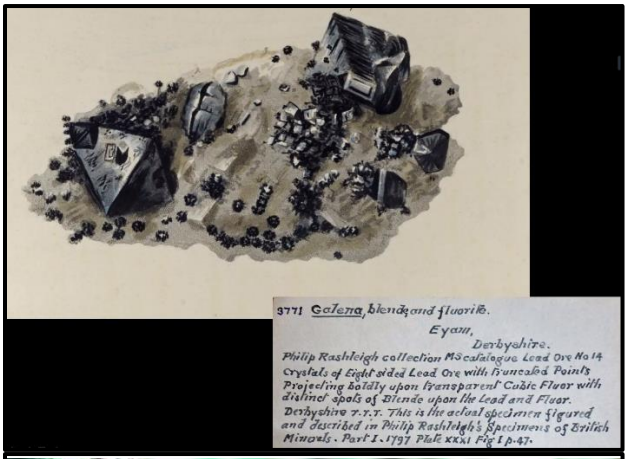
Dr. Lykova presented her research on microminerals from the Tolbachik volcano in Russia. Dr. Lykova is a research scientist and acting curator with the Canadian Museum of Nature since 2019. Prior to that, she was a Senior Research Fellow at the Fersman Mineralogical Museum in Moscow for over six years. Tolbachik is a volcanic complex in Russia's eastern Kamchatka Peninsula, creating over 280 different mineral species and 130 type locality specimens. We enjoyed seeing some of these new microminerals.



Minerals of the English Midlands
Roy E. Starkey, Birmingham, England



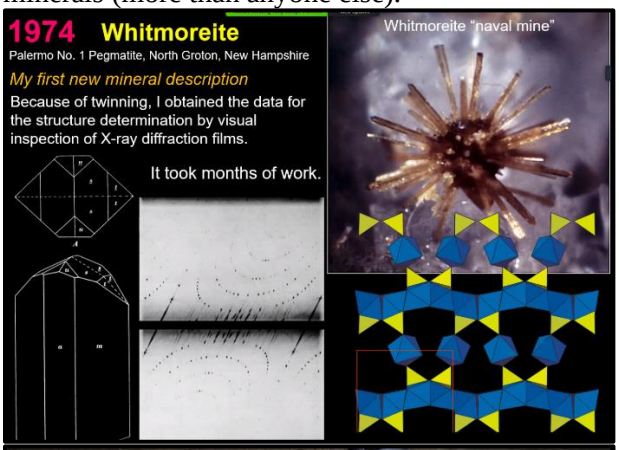
Roy E. Starkey, founder of the British Micromount Society is author of The Minerals of the English Midlands. He gave an overview of England's mining minerals. His program focused on research of the people, places, and stories within his new book.

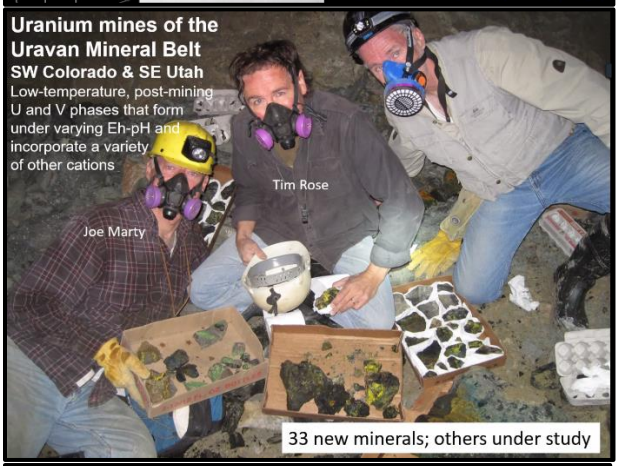


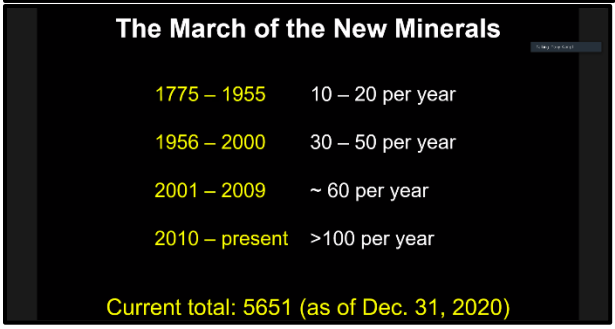
Canadian Micro Symposium continued

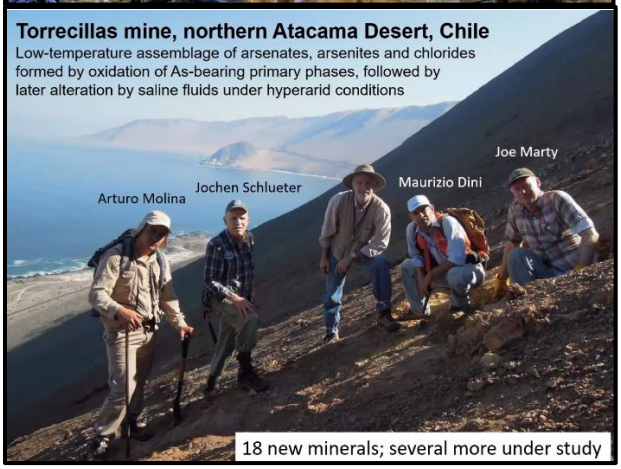
The Journey from an Unknown to a New Mineral
Dr. Tony Kampf, Los Angeles, California

Dr. Kampf received his PhD in mineralogy and crystallography in 1976, which led him to a forty-four career at Natural History Museum of Los Angeles County, California. Since 2008 he has served as the US delegate to the International Mineralogical Association's Commission on New Minerals, Nomenclature, and Classifications. His presentation featured his work, concerning 5,700 known minerals. Dr. Kampf has 450 publications and has authored 290 minerals (more than anyone else).









Editor's Note: Dr. Kampf, Curator Emeritus at the Natural History Museum of Los Angeles County will be inducted into the "Paul Desautels Micromounters Hall of Fame" this fall, hosted by the Baltimore Mineral Society of Maryland. Mike Seeds, symposium chairman will update us on the exact date. Check club website.

www.baltimoremineralsociety.org

The Micromounters of New England

are inviting us to their Virtual Symposium **June 19th 10am– 1pm**.

Featured speakers include:
Col. Quintin Wight
"Microminerals of Mont. St. Hilaire"
Tom Mortimer & Peter Cristofono
"The Geology and Mineralogy of the Aggregated Industries Quarry – Raymond, New Hampshire"

There is no charge for the symposium, but pre-registration is required, states Neil Cavanagh Secretary, MMNE.

www.MicromountersofNewEngland.org

Paul Desautels Micromounters Symposium hosted by the Baltimore Mineral Society, MD October 2021

by Quintin Wight, Ottawa, Canada

Somehow and somewhere, in October of 2021, **Dr. Anthony (Tony) Kampf** of the Natural History Museum of Los Angeles County, and **Jean-Luc Designolle** of Tignieu-Jameyzieu, France, will be inducted to the Micromounters' Hall of Fame.

We say "somehow and somewhere" because the current pandemic has thrown a monkey-wrench into everyone's plans, and we are not yet certain of what will be available and when. Come what may, however, the induction ceremony will take place either physically or virtually under the aegis of the Baltimore Mineral Society.

Tony Kampf, as many of our readers will know, is an indefatigable researcher who has described at least 290 new mineral species and has named many of them after the micromounters who brought them to him. He has also been a friend to micromount groups and has made presentations at our symposia in both the USA and Canada. As a professional, he has been a strong voice in international mineral circles.

Jean-Luc Designolle, on the other hand, is a strong voice in micromount circles in Europe. In particular, he has given a new impetus to the development of the public micromount collection of French localities built by the *Association Française de Microminéralogie* (AFM) and hosted by the *École des Mines* (School of Mines) museum in Paris. He is also assiduous in promoting micromounting at major events such as the huge annual mineral show at Sainte-Marie-aux-Mines in France.

Both gentlemen have earned their places in the ranks of the Micromounters' Hall of Fame and will be welcomed in October.

Mineral Talks Live: 1pm Wednesdays

by Kathy Hrechka, Editor

Each Wednesday at 1pm EDT Bryan Swoboda, Blue Cap Productions in Honolulu, Hawaii has been moderating various mineral persons of interest on Zoom.

May 19: Rui Galopim de Carvalho, gem education consultant from Lisbon, Portugal was featured. Rui values gem-set artefacts of historical heritage in National Museums and the church. He is an author and international lecturer on gemology of gems in Portuguese jewelry. Recently, he has been involved in the study of the gemstones at the Museu Nacional de Arte Antiga and has been appointed as one of the curators of the forthcoming Museu do Tesouro Real, where the crown jewels and other royal treasures of Portugal will be on display. Rui's programs are available on social media. Topics include Emeralds, Colored Diamonds, Ruby, Sapphires, History of Gemstones, Sri Lanka Sapphire Island, Brazilian Diamonds, Corals, etc.

Rui was proud to have met Dr. Jeff Post

The Museu Nacional de Arte Antigua in Lisbon, Portugal received the famous monstrance "Lechuga" from Columbia complete with Columbian emeralds on loan in 2017. Rui's Facebook post 11.19.20

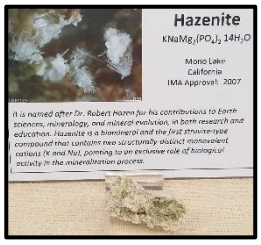
All Mineral Talks Live lectures are complementary to our geology community through the following individuals: Bryon Swoboda BCP, Dr. Rachel Alanzo Perez from the Mineralogical & Geological Museum at Harvard University, and Dr. Eloise-Gaillou, curator of the Mineralogy Museum Paris School of Mines in France representing the Society of Mineral Museum Professionals SMMP. Each of his programs are recorded, so you can view archived speaker topics.

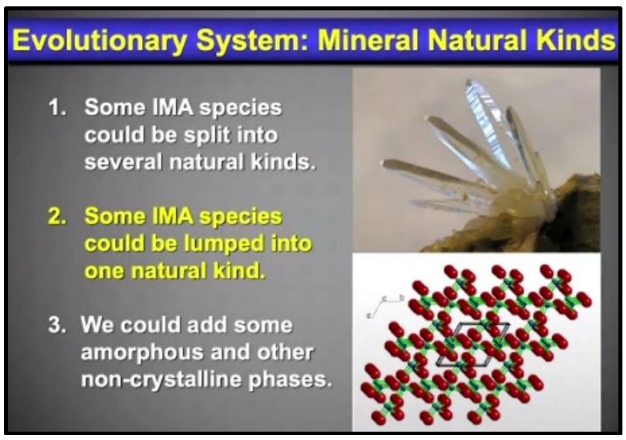
http://go.mineraltalkslive.com

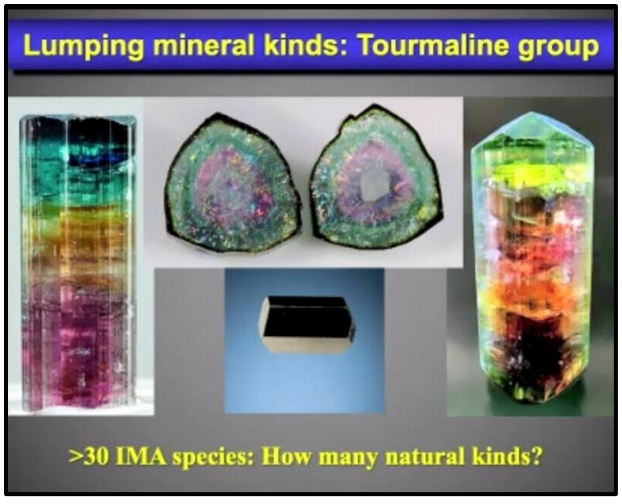
continued next page

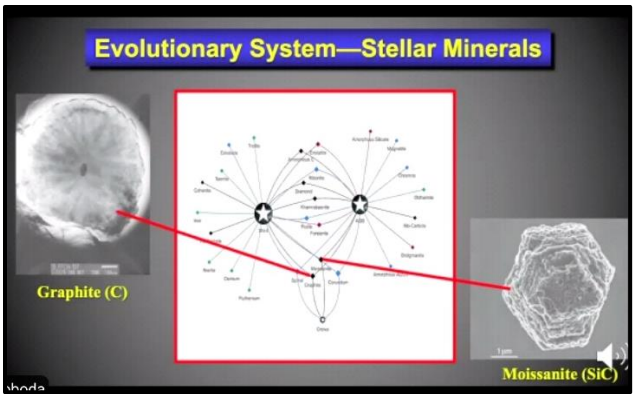
Mineral Talks Live continued

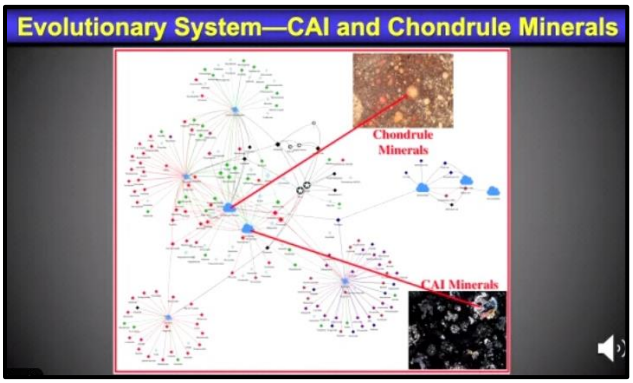
May 26: Dr. Robert M. Hazen Senior Scientist at the Carnegie Institution for Science and former Robinson Professor of Earth Science at George Mason University, received degrees in geology from MIT and Harvard. Author of more than 450 articles and 25 books on science, history, and music, his recent book is The Story of Earth (Viking-Penguin) was finalist in the Royal Society and Phi Beta Kappa science book competitions. Since 2008, Hazen and his colleagues have explored "mineral evolution" and "mineral ecology"—new approaches that exploit large and growing mineral data resources to understand the co-evolution of the geosphere and biosphere. The biomineral "hazenite" was named in his honor. *Hazenite photo by K. Hrechka Arizona State University, Tucson, AZ 2018.* @https://hazen.carnegiescience.edu/











Friends of Mineralogy Virginia FMVA

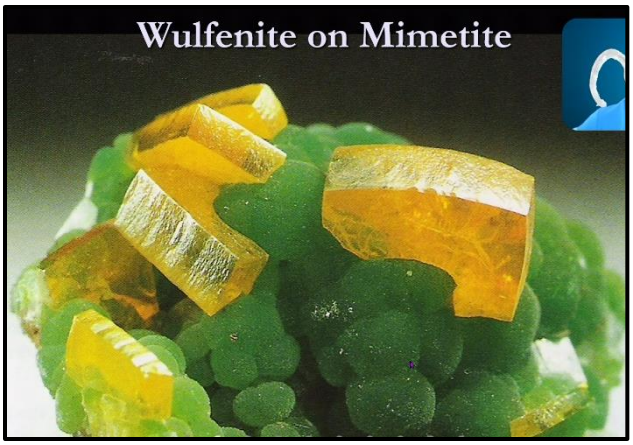
by Kathy Hrechka, Editor

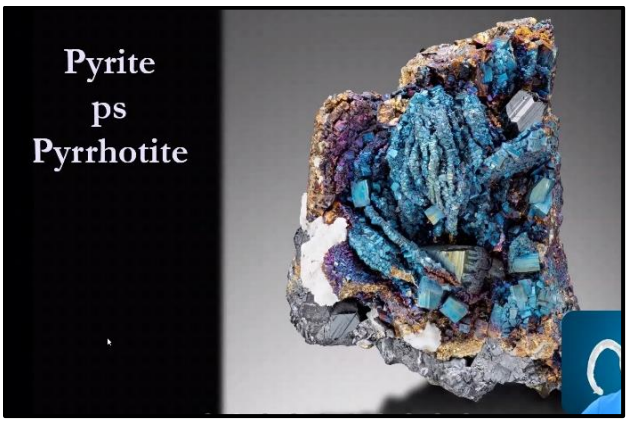
May 28: Dr. Peter K.M. Megaw "Mineralogy of Mexican Carbonate Replacement Deposits (CRD) Dr. Megaw is a Consulting Geologist (PhD UofA) President of IMDEX/Cascabel and co-founder of MAG Silver and Minaurum Gold. He moved to Tucson in 1979 and joined the Tucson Gem and Mineral Society, taking on the job of Exhibits Chair for the Tucson Show in 1984. His mineral collecting focuses almost exclusively on minerals of Mexico and has spoken and written extensively on specimen localities there. Peter has recently written an in-depth article for Mineralogical Record on the Santa Eulalia Mining District in Chihuahua, Mexico.

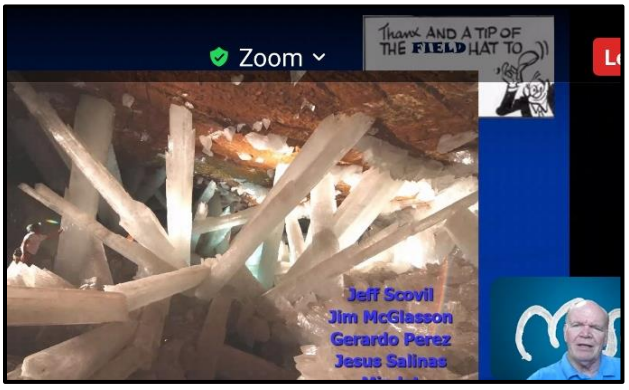
Dr. Magaw is also a contributing editor for Rocks and Minerals and occasionally writes for Mineralogical Monographs. In his spare time, he collaborates on studies of silver isotopes in silver minerals, is Mindat's moderator for submissions on Mexico and co-moderator of the FMF Mineral Forum. A combination of the above led him to be awarded the Carnegie Mineralogical Award for 2009.

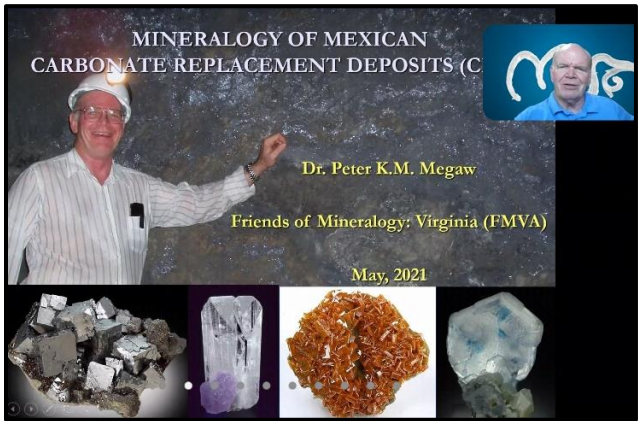
Friends of Mineralogy Virginia FMVA is a non-profit organization dedicated to promoting and expanding the study of mineralogy and the hobby of mineral collecting. Learn more about FMVA and follow us on Social Media: Facebook Instagram

https://www.friendsofmineralogyvirginia.org/
Email: friendsofmineralogy.virginia@gmail.com
Thomas Hale is the founder and President of FMVA.









Micromineral News from Australia

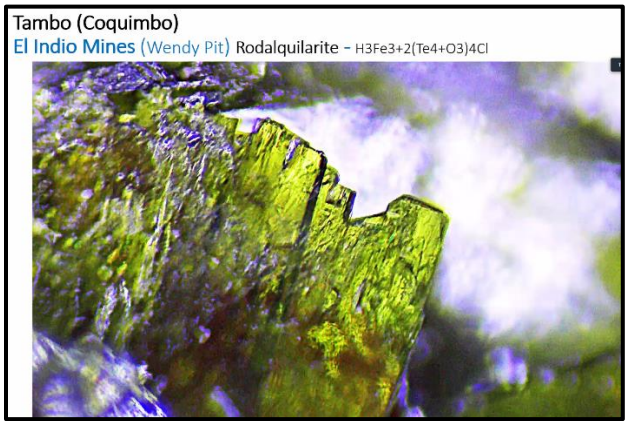
by Kathy Hrechka, Editor

Steve Sorrell from Melbourne, Australia hosts a program every other Tuesday at 4pm (EDT) with various geology persons of interest.

You can sign up for Steve's programs, and meet new presenters, while enjoying friendly faces within our geology community around the globe.

steve@sorrellpublications.com

June 1: Jane Currie, United Kingdom "Northern Chile the Atacama Desert, A Tour of its Minerals & Localities" part 2



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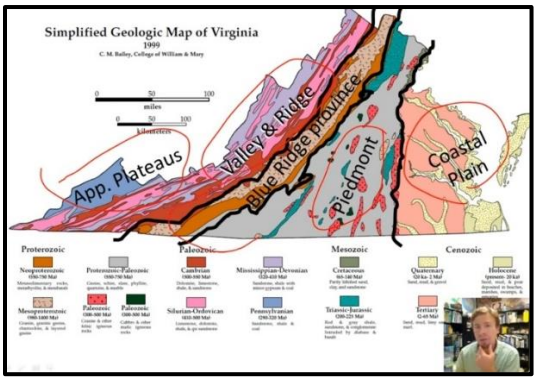
June 15: Herwig Pelckmans from Belgium is scheduled to speak. Simply contact Steve for the Zoom invite to attend.

Callan Bentley Lectures on YouTube

by Kathy Hrechka, Editor

Callan Bentley is an assistant professor of geology at Northern Virginia Community College's Annandale Campus. He works mainly in outreach and educational materials development. He has provided 221 short lectures on the world wide web.

Videos of Callan Bentley YouTube Bing.com/videos

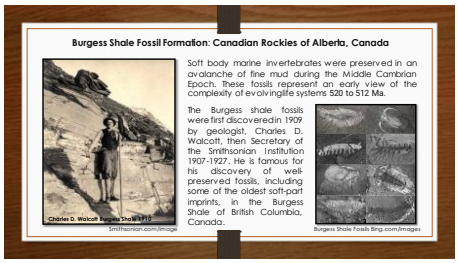


"The Grenville Orogeny and rifting of Rodinia, Virginia" by Callan Bentley NVCC

Historical Geology 106 term projects Northern VA Community College

by Kathy Hrechka, student NVCC spring 2021

I had the opportunity to audit Historical Geology online with Dr. William Straight, Professor Loudon Co. campus. T. rex reveals my personal adventures.



Burgess Shale Biota

Tyrannosaurus Rex

American Federation of Mineralogical Societies

(AFMS)
www.amfed.org

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

American Federation Note:
Editor MNCA, I am pleased to inform you that one or more of your entries into the 2021 AFMS Bulletin Editors Contest will be recognized as one of the top 10 in North America in its category.

If you will be at the 2021 AFMS Editors Breakfast in Big Piney, Wyoming, this month you will be able to receive it in person. If not, I will make arrangements with your federation BEAC to receive it, or you may contact me to have it sent to you directly. Thank you for entering this contest and I hope to see your entry next year!

Mark Nelson, American Federation of Mineralogical Societies for Bulletin Editor Advisory Committee

2021 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.

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.

Local Geology Club Meetings: Zoom

June 2021
2: Mineralogical Society of the District of Columbia - MSDC 7:30 Zoom
www.mineralogicalsocietyofdc.org

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

16: The Baltimore Mineral Society BMS
7pm Zoom www.baltimoremineralsociety.org

19: The Micromounters of New England - Gene Bearss Virtual Symposium 10am– 1pm. Zoom
www.MicromountersofNewEngland.org

?: The Gem, Lapidary and Mineral Society of Washington, DC - GLMS-DC meeting
www.glmsdc.org

23: Micromineralogists of the National Capital Area, Inc. - MNCA 7:30pm Zoom
Dr. C. Leigh Broadhurst, Ph.D. Research Physical Scientist at the US Department of Agriculture Research Service presents "Geologic Origin of Serpentinites and the Unique Minerals Associated with Ultramafic Rocks"
www.dcmicrominerals.org

28: Northern VA Mineral Club – NVMC meeting 7:30 Zoom www.novamineralclub.org

GeoWord of the Day and its definition:

alaite (al'-a-ite) A dubious mineral: $V_2O_5 \cdot H_2O$.

cluster particles Extremely friable and porous micrometeorites composed of an aggregate of small mafic silicates, phyllosilicates, carbonaceous material, metal, and sulfide particles. See also: *interplanetary dust.*

inherited argon Argon-40 that is produced within mineral grains by the decay of potassium-40 before the event being dated. It may have been generated during the premetamorphic history of a rock, which has survived a metamorphic event, or it resulted from the incorporation of older contaminating mineral grains in a dated sample. Cf: *excess argon; extraneous argon; radiogenic argon.*

spatial dendrite (spa'-tial) A type of snow crystal somewhat like a *stellar crystal* except that branched arms form an irregular three-dimensional structure instead of building a pattern of hexagonal symmetry in a single plane.

All terms and definitions come from the Glossary of Geology, 5th Edition Revised.
GeoWord of the Day is brought to you by:
EnviroTech!
envirotechonline.comwordoftheday@agiweb.org

AGI was founded in 1948, under a directive of the National Academy of Sciences It is a not-for-profit 501(c)(3) organization dedicated to serving the geoscience community and addressing the needs of society. AGI headquarters are in Alexandria, Virginia.

Micromineralogists of the National Capital Area
Meeting: The 4th Wed. of each month 7:30 -10 p.m.
Long Branch Nature Center (No meetings July & Aug)
625 S. Carlin Springs Road, Arlington VA 22204
Phone (703) 228-6535 (Long Branch is still closed)

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: Kathy Hrechka
AMC Conference: Kathy Hrechka

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 **No Dues 2021**
$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 1st of each month.
***The Mineral Mite* will be emailed on 5th.**
No newsletter July/August

Inducted into Editor's Hall of Fame – 2018
AFMS Trophy 2019 Small bulletins

Newsletter inputs:
*Dave MacLean
*David Fryauff
*Bob Cooke
*Michael Pabst
*Kathy Hrechka
*Quintin Wight
*Neil Cavanagh