

Michuest Chapter Newsletter for May – June 2019



*In this Issue:* President's Message – 2 Treasurer's Report – 4 Chapter Meeting Minutes – 5 7<sup>th</sup> Annual Symposium Minutes – 7 **Event Calendar – 14** 

Volume 34 No.3

May – June 2019



Page 1

# Midwest Chapter President – Ken Bladh

#### Repeated from the December 2018 Newsletter

"In 2019 we expect to continue a broad distribution of regional business meetings and official chapter presence (information table) at mineral events in Michigan, Ohio and Indiana. **Please send me contact information for clubs in our region that would like an FM Midwest presence at their shows**." FYI, Frank Konieczki and I will be on the floor at the Detroit Show and we have a business meeting on Saturday at 4:30 at the Cincinnati **GeoFair.** I have not received any requests. However, it is not too late. <u>kbladh@wittenberg.edu</u>

#### Final Request for Loaned Specimens for the FoM Midwest Display at the Cincinnati GeoFair

Members can display one or a few of their choice specimens in a FM Club case at the Geofair the first weekend in May. The Show theme is "colorful minerals". Contact me, Randy or Jeff and let one of us know the approximate size of the space to the case your specimen(s) will require. One of us will be available Friday evening during set-up and again Saturday morning before the show opens at 10am to help assemble the Club display. Specimens can be picked-up Sunday after the show closes or some other time by prior arrangement.

#### Update - An Unusual Specimen from Ohio

This unusual celestite specimen was collected with my students in 1983 at Woodville Lime & Chemical quarry. Two of our experienced field collectors shared the same conclusion about these tubes during an open discussion at the recent *FM Midwest Symposium* at Miami University. They believe them to be casts around former anhydrite crystals. I have added a closeup of one of these tubes (2 mm I.D.) as a first test of this possibility. The tubes have a square to rectangular cross section which is compatible with a missing bladed orthogonal crystal. However, the tube walls are composed of euhedral, pyramidal crystals (still unidentified) that distort any original surface features of the tube interior surfaces that might have held clues. I will continue to study this "old friend" and display it in the FM case at the Cincinnati *GeoFair*.



Page 2

Volume 34 No.3

## A Rare Mineral from Woodville Lime & Chemical quarry

This mineral, listed in the 2<sup>nd</sup> edition of Mineralogy of Ohio from this locality, forms a skeletal, gray crystal group associated with calcite and pyrite, and is slightly oxidized. The crystal group is 3 mm across. Examine your specimens from this locality with a 10x magnifier. You may have a rare find. The identity of this common mineral (uncommon in Ohio) will be shared in my next news note.



# Our Field collecting season has begun

Please support the trip leader by arriving at the quarry a little early, by being attentive to onsite training (rules) of the host quarry, by collecting as explained in our MSHA collecting safety training and being ready to depart the quarry at the time set by our host. Good luck.

## Symposium on Specimen Mineralogy

Thanks to Randy Marsh for organizing another outstanding FM Midwest Symposium. Clyde Spenser suggested Dr. Steve Chamberlin as the keynote speaker. Steve gave a great presentation on a classic mineral district, Balmat, NY. Three FM Midwest members contributed talks aimed at beginning to advanced collectors (Dr. John Medici: *Some Auglaize Quarry Mineral Collecting, 1968 to Date,* Johan Maertens: *The Mineral Ice: Collecting Frost Crystals,* and Dr. Ken Bladh: *Arizona Wulfenite*). Two Miami University Professors (Dr. John Rakovan: *Forensic Mineralogy: Examples in Silver and Gold* and Dr. Claire McLeod: *General Mineralogy of the Moon*) shared fascinating summaries of their current research. Frank's excellent summary of the Symposium, elsewhere in this Newsletter, is worth reading even if you were present. I can hardly wait for next year! Let an officer know if you have suggestions for speakers or ways to improve the Symposium. Unfortunately, we can't control the weather. My thanks to all who attended and contributed to the success of the Symposium.





#### April 15, 2019

We began 2019 with \$7,431.72 in the treasury. This included thirty - seven 2019 registrations paid in 2018. Since that time, we have had 57 additional registrations for a total of 94. This added \$1140 to the treasury. An additional \$285 in donations were received. Our expenses for the symposium have all been paid, as well as our liability insurance premium of \$650.00. This puts our current balance at \$7225.50.

Remember, you can always access the registration for at the following link: <a href="http://www.fommidwest.org/registration-forms/">http://www.fommidwest.org/registration-forms/</a>

#### 2018 Audit Requirement

The required IRS 990-N filing for 2018 has been completed. I need a member who is willing to complete the audit of the 2018 records to volunteer. Please contact me at <u>treasurer@fommidwest.org</u> or call 513-476-2163.

#### Jeff Spencer – Treasurer Friends of Mineralogy Midwest Chapter



FoM members eagerly awaiting the start of our recent Marblehead field trip



#### Friends of Mineralogy, Inc. Midwest Chapter Meeting Minutes- March 9, 2019 Shideler Hall, Miami University, Oxford, Ohio

<u>Called to order</u> by President Kenneth Bladh at 9:12 AM, after declaring a quorum. The following officers were present: Kenneth Bladh, President; Randy Marsh, Vice President Programs; Reggie Rose, Vice President Field Trips; Jeff Spencer, Treasurer; Clyde Spencer, Liaison; Frank Konieczki, Secretary. The meeting was held in conjunction with the Friends of Mineralogy Midwest Chapter 7th Annual Mineralogical Symposium. Sixteen members and eight guests were present for the meeting; there were approximately 20 non-members present at various times who attended the symposium.

President Bladh welcomed all attendees to the symposium, and he also introduced this year's FoM Midwest officers to the attendees. The following agenda was discussed:

#### **Approval of Previous Meeting Minutes**

President Bladh asked if any corrections to the November 3, 2019 meeting minutes, as published in the January-February, 2019 newsletter, were needed. No changes were proposed or adopted. A motion was requested and made to accept the minutes as published, to unanimous consent (THuizing/JMaertens/P).

#### **Officer Reports**

<u>President's Report</u>: President Bladh provided a brief recap of the FoM National Board meeting conducted at the Tucson show, including a new process for distributing the quarterly FoM newsletter. FoM National's new president is Bill Besse.

**Treasurer's Report:** Treasurer Jeff Spencer noted the ending balance for calendar year 2018 was \$7,431, including \$740 of income from 2019 dues paid by 37 members in 2018. National dues have been paid, the current balance is 8,244.00. Forty - three more members have paid dues since January, so the current number of members is 80, including six new members. Last year's membership total was 114. We typically lose about 20 members per year, but in most years, the losses are offset by new members. The cutoff for 2019 dues was March 1<sup>st</sup>, so anyone who missed the deadline and renews their 2019 membership will miss an opportunity to attend the first field trip of the year. If you know any members who have not yet sent in their dues, please remind them. Treasurer Spencer indicated he also will send an e-mail reminder. He observed that attendance was low at the FoM member reception at the Tucson show. Five of seven chapters were represented, including FoM Midwest. Our chapter provided updates.

<u>Vice President Programs Report</u>: Vice President Randy Marsh indicated that FoM Midwest will have a sales table at the Cincinnati GeoFair that will take place on May 4-5, 2019. Members may donate materials for the table, and anyone who wishes to make such donations or who would like to assist with sales can contact Randy. FoM also has reserved a display case at the GeoFair, and if members wish to display a piece or two, please contact President Bladh, Vice President Programs Marsh, or Treasurer Spencer. President Bladh

Volume 34 No.3

May – June 2019



Page 5

announced FoM will judge the educational displays at the show again this year and present an award for the best one. Judging will take place in the early afternoon on Saturday. Also, member John Medici indicated that another important local event is the Columbus show in April. This year's theme will be fossils.

<u>Vice President Field Trips Report</u>: Vice President Reggie Rose indicated that there will be several MSHA training sessions this spring. They are as follows:

3/23/19 Wittenburg University, Springfield, OH (contact Randy Marsh- please note that attendance is limited to 50, and 43 already have reservations)

4/13/19 Lexington, KY (contact Ed Odell- there is a \$30 fee to attend this training)

4/19/19 Mansfield, OH

4/27/19 Columbus (contact Reggie Rose)

Liaison Officer Clyde Spencer: Liaison Clyde Spencer stated he did not have a formal report, but he inquired if there was a backup copy of the Chapter's website information. Treasurer Jeff Spencer, who also manages the FoM Midwest website, replied that there was not a copy, so Clyde suggested it would be a good idea to produce a copy and provide it to President Bladh. This would allow required restoration or updates to the website in case of unforeseen circumstances, and also if Jeff Spencer was unavailable.

Old Business: No items were presented for consideration.

<u>New Business</u>: President Bladh indicated that FoM Midwest will have a presence at the Greater Detroit Gem, Mineral and Fossil Show again this year. The event is scheduled for October 11-13, 2019. Many questions were fielded at last year's FoM information table. The table included a display of Midwest minerals that drew interest, especially from younger attendees.

For the Good of the Order: No comments were received.

There were some brief comments submitted after the formal agenda was concluded. John Medici stated that Reggie Rose's importance to the club is critical, and field trip augmentation may increase the number of members. Also, he posed a question about a specimen collected in 1993 at Woodville Lime and Chemical-what are the hollow tubes? Suggestions included anhydrite and fossils.

Meeting adjourned: 9:40 AM, upon a motion to adjourn (THuizing/RMarsh/P).

**<u>Program</u>**: Friends of Mineralogy Midwest Chapter 7th Annual Mineralogical Symposium. There were nine presentations- three in the morning, and then six in the afternoon, including three presentations by university students. (See separate program notes).

Respectfully submitted by Frank Konieczki, Secretary

Volume 34 No.3

May – June 2019



# 7<sup>th</sup> Annual Friends of Mineralogy Midwest Chapter Mineralogical Symposium at Miami University March 9, 2019

Friends of Mineralogy Midwest Chapter held its annual symposium in Shideler Hall from 9:45 AM to 4:30 PM. Dr. John Rakovan was again the host for the symposium. The morning and early afternoon sessions were devoted to presentations, and the latter portion of the afternoon was reserved for presentations by students who outlined their current research projects. This year's attendance was good, with approximately 30 FoM Midwest Chapter members and guests present at the symposium. We extend our thanks to Miami University and Dr. Rakovan for graciously making the facility available, and especially to John for his continued role as host.

John Rakovan welcomed all who attended and introduced the day's speakers. He indicated this is the 100<sup>th</sup> anniversary of the founding of the Mineralogical Society of America (MSA), and there will be a banquet at the Smithsonian this year to celebrate the milestone. There will also be presentations in conjunction with the banquet, and Dr. Rakovan noted that there was a MSA display case in the Karl A. Limper Museum at the symposium today. He also mentioned temporary displays in the Karl A. Limper Museum related to today's symposium topics, namely minerals from Auglaize Quarry in Junction, OH, and also Arizona wulfenite specimens.

This year's keynote speaker was Dr. Steve Chamberlin, whose presentation was titled Balmat, NY- An Underappreciated Classic Locality. Dr. Chamberlin is a native of Pennsylvania who attained a doctoral degree at Syracuse University, and who was the host of the Rochester Mineral Symposium from 1986-2016. He has written over 100 published articles, and his personal collection exceeds 35,000 specimens. Dr. Chamberlin authored Collector's Guide to the Balmat Mining District. He noted that not much has been published about northern New York mine sites, in spite of them being well-known. The area contains talc mines and zinc mines. The talc mines are located above the zinc containing orebodies. The formation of the deposits included three distinct polymetallic episodes and two metamorphic events. The Balmat Mining district was the nation's largest zinc producer for over 80 years. Dr. Chamberlin first discussed talc mines that operated from 1867-2008. They mined white talc to be used as paper filler, but zinc laden talc was discarded because its color was unsuitable as filler. The last talc mine to operate was the Governor Talc #1 Mine. All of the specimens that came from the Balmat and Talcville talc mines were taken from the Talcville #2 ½, Talcville #3, and the nearby open pit mine. Many images of specimens from the talc deposits were shown, including chromium dravite (American Mine), cummingtonite (Talcville #2 ½), violan diopside and tremolite (Wight Mine), fluorapatite (Talcville Open Pit), manganocummingtonite (Talcville #3), phlogopite (American or 2 ½ Mine), and tremolite—variety hexagonite (Arnold Open Pit). Next, the zinc mines were discussed. Zinc-bearing deposits were known as early as 1838, but the area was mined for gold until the Edwards Orebody was discovered in 1901. There were a couple of notable facts presented about specific mines. First, the Balmat #2 Mine contained stopes that were almost 200' high, and in 1924, the Edwards Mine workers accidentally blasted into an 80' deep mud pit, which caused sediment to seep into the mine. A host of photographs of fine mineral specimens were shown. An impressive example of sphalerite and a wonderful calcite specimen from Balmat #2 were shown. Specimens from Balmat #3 included barite, boulangerite, twinned calcite, celestine, halite, silver, spinel, tennantite, and several combination specimens, such as calcite, goethite and hematite, as well as



calcite, hematite and chalcopyrite. Balmat #4 specimens shown were lazurite, magnetite, yellow sphalerite, and orpiment with realgar. Edwards Mine pyrite, gypsum, and lazurite were shown, as was an ilvaite specimen from the #2 Open Pit. The origin of the manganese and chromium deposits was briefly discussed. Schists that contain the former may have arisen from slow deposition of material containing marine manganese-rich nodules, which allowed the formation of braunite, friedelite, groutile, donpeacorite (Balmat #4 is the type locality), spessartine, and other minerals. The sources of chromium found in chromium dravite and chromium tremolite include bolides, sulfide sedex deposits\*, and upwelling fluids from underlying ultramafics. Cubic magnetite from Balmat is among the finest in the world, and the crystals are formed in halite. Significant amounts of zinc are found in the cubic crystals, but not in octahedral and dodecahedral ones, so this seems to be important in their formation. There was a new discovery in December, 2018 at the 3,800' level of the Empire State Mine (formerly Balmat #4). Calcite crystals were found inside sphalerite, and specimens of halite, quartz, pyrrhotite, and sphalerite have also been recovered.

# \*See https://en.wikipedia.org/wiki/Sedimentary exhalative deposits) for further information.

Next, Dr. Ken Bladh, Emeritus Professor of Geology at Wittenberg University and current President of Friends of Mineralogy Midwest Chapter, presented Arizona Wulfenite. Wulfenite was the featured mineral at this year's Tucson show. The type locality is Bleiberg, Austria. Wulfenite, PbMoO<sub>4</sub>, includes one uncommon element, specifically molybdenum. Wulfenite from the Red Cloud Mine, AZ also contains traces amounts of another relatively rare element, chromium, which produces the rich red color that is characteristic of Red Cloud specimens. The geology of Arizona is comprised of three provinces. From north to south, they are the Colorado Plateau, the Transition Zone, and the Basin & Range. Wulfenite locations occur in the Basin & Range structural setting. The four most common habits of wulfenite are the following: equant, thin tabular, thick tabular; and bipyramidal. In most locations, one habit is dominant, with some exceptions. For instance, the Glove Mine has produced both tabular and bipryamidal crystals. A very impressive 42 cm specimen (#11716) from the Glove Mine is on display at the University of Arizona. An exceptional, localized occurrence was found in the Empire Mine, where a 2.5 meter high wall was completely covered with 1 cm crystals. Dr. Bladh discussed what he considers the 12 premier locations for quality wulfenite specimens (the sites were listed in alphabetical order). They are: 1) Defiance Mine, Turquoise District, Cochise Co. – butterscotch colored, thin tabular crystals, but also smaller dipyramidal ones 2) Finch Mine, Banner District, Gila Co. well known for quartz covered, yellow tabular crystals 3) Glove Mine, Tyndall District, Santa Cruz Co.- thick tabular, butterscotch crystals, along with thin yellow. A 4) Hilltop Mine, California District, Cochise Co.- butter-yellow wulfenite on white calcite crystals 5) Mammoth-St. Anthony Mine (Tiger Mine), Mammoth District, Pinal Co.thick orange and yellow crystals- also known for unusual associations (dioptase, sauconite, and cerrusite, for example 6) Old Yuma Mine, Amole District, Pima Co- the site is now part of a national monument 7) North Geronimo Mine, La Paz Co.- orange-red, thick tabular 8) Red Cloud Mine, Silver District, La Paz Co.- bright red crystals, owing to trace amount of chromium as a chromophore 9) Rowley Mine, Painted Rock District, Maricopa Co.- transparent, orange, thin tabular crystals associated with prismatic orange mimetite on barite. Also associated with bright orange and red globular mimetite 10) Silver Bell-Mystery Mine, Turquoise District, Cochise Co.- yellow, thin tabular crystals (11) Toughnut Mine, Tombstone District, Cochise Co.- transparent, yellow, thin tabular crystals 12) 79 Mine, banner District, Gila Co.- thick tabular crystals with large, pyramidal faces. The Smithsonian's mineral displays include 31 wulfenite specimens, and 30% are from Arizona.



The morning session's final speaker was widely respected, veteran mineral collector John Medici, who presented Some Auglaize Quarry Mineral Collecting-1968 to Date. John and his family lived in New Jersey, Vermont and Maryland before moving to Ohio in the 1960s. Their first collecting experience at the Stoneco, Inc. Auglaize Quarry in Junction, OH was in 1968, and John and his family have continued to collect there for 50 years. He noted that the most sought after mineral at Auglaize is undoubtedly fluorite, which most commonly occurs in a relatively thin breccia zone. The amount of breccia varies considerably in different parts of the quarry. Some of the fluorite at Auglaize is very iridescent, and sometimes these specimens have purple fluorite overgrowths. Phantom fluorite crystals are found, with most being transparent, colorless over purple, but reverse phantoms are sometimes found, and very rarely clear over brown phantoms have been collected. The fluorite from Auglaize is almost always cubic, but occasionally the crystal aggregates appear botryoidal. Cubic fluorite crystals at the quarry often have corner modifications, including hexoctahedral and tetrahexahedral shapes. Calcite crystals are also found, with some being longer than 15 cm. The calcite crystals are bipyramidal, but large rhombohedral faces make the bipyramidal habit less evident. The largest of these crystals were found above the most mineralized area in the guarry, and one of the images shown during the program was a 16.5 cm, yellow orange, doubly terminated calcite crystal. Quartz is also found, most often as crystal casts. Pyrite and marcasite are also present, and the former is sometimes associated with calcite and fluorite crystals. The latter typically presents as crusts on calcite or inclusions in calcite. Sphalerite is present as crystals to 4 cm. Fossils include ammonites, Devonian Era fish, and also stromatoporoids. Photographs of a large number of high quality specimens were shown, including the various fluorite specimen types. Some of the fluorite specimens exhibit marked fluorescence under LW UV light. The largest of the fluorite aggregates shown was iridescent deep blue and dark green fluorite that completely lined a 53 cm long vug. Examples of each of the other aforementioned minerals were shown, including several combination specimens.

The first afternoon speaker was Dr. Claire McLeod, whose presentation was titled General Mineralogy of the *Moon.* Dr. McLeod began by noting that 2019 marks the 50<sup>th</sup> anniversary of the Apollo 11 mission, whose crew brought back the first lunar samples. Apollo 11 traveled for three days, landed at 20:17 UTC on July, 20, 1969, and astronauts Armstrong and Aldrin spent 22 hours on the surface. The crew returned to Earth and splashdown occurred about 500 miles southwest of Hawaii on July 24, 1969 at 12:50 PM, EDT. She indicated one might ask "Why study the moon?" There are several important reasons. First, it is our nearest neighbor. Second, it can provide a window into early solar system evolution, especially since its surface has not been reworked by plate tectonics. Third, it is the best characteristic planetary object, save Earth, and last, it may be a source of future resources, such as iron, aluminum and magnesium. The moon today consists of its crust, divided into terrae and maria, the mantle, consisting of an upper mantle and a lower mantle, and a 350 km liquid outer core that surrounds a 160 km diameter solid core. The lower mantle contains a partial melt zone. The surface of the moon is very heterogeneous. Maria are primarily basalt and appear dark. The light patches are of feldspathic lithology (over 95%), and craters are impact and excavation events. Chang'e 4 landed on the far side of the moon on January 3, 2019 at Von Karman crater, and the expedition included a lander and a rover. Two previous lunar expeditions included Clementine (1994) and Lunar Prospector (1998). The far side of the moon is more iron deficient, with near side iron being most prevalent in the basalt. There are four broad categories of rocks present—highlands (plagioclase feldspar), mare basalts, breccias (from impacts), and lunar regolith (an assortment of other rocks- it is "lunar soil"). The time model for lunar formation begins with the formation of the solar system. Gas and dust coalesced into planetary embryos, and 70-110 million tears after formation, an event known as the Giant Impact occurred between proto-Earth and a Mars-sized



body (Theia), resulting the formation of Earth and the Moon. Lunar samples suggest a lunar magma ocean (LMO) subsequently cooled over a 250-300 million year period to form the anorthite crust over olivine and pyroxene sinks. Current topics of lunar research include timescales of LMO crystallization, the timing of the Giant Impact, the composition of the Impactor, and post-LMO evolution, which is the focus of Dr. McLeod's work. The latter includes basaltic magmatism, magma dynamics, crust forming processes, and evolution through impact. Future lunar missions may focus on the potential for drawing resources from other bodies. Dr. McLeod allowed the attendees a rare opportunity to view thin sections of ALHA 81005, the first lunar meteorite identified, in the museum after the presentation. Its composition includes taenite and troilite.

The next presentation was Johan Martaens' The Mineral Ice: Collecting Frost Crystals. The focus of his talk was observations of frost crystals made over a one year period (2011) at his New Jersey home. He noted ice is classified as a mineral, as long as it is naturally occurring. It has a specific gravity of .9167, has a vitreous luster, a hardness of 1.5, and its crystal class is hexagonal. Frost, a variety of ice, is formed when water vapor in the air transitions to a solid, ice, without becoming liquid water. Ice has a lower saturation vapor pressure than water droplets. Many of the frost crystals he captured as photographic images were 'collected' from north windows of his house. The most common type of frost is irregular; however, window frost often forms hexagonal plates and columns. The crystals are three dimensional and sometimes are seen as elaborate patterns. Overall aggregate growth depends on the growth of each face, based on temperature, supersaturation levels, and one should also consider the type of surface (to which it is affixed). Changes of habit occur at -4° C, -10° C, and -22° C. Mr. Maertens showed a wide array of detailed images, some in color, and other in black and white, which revealed the intricate patterns of frost crystals and polycrystalline aggregates. He observed that slight changes in the orientation of the camera and light conditions changed the colors recorded in the photographs, and that sunrise was the best time to take photos. The images included stellar or broad branched plates, perfectly hexagonal sectored plates with distinct ridges, and polycrystalline stellar dendrites. Fernlike stellar dendrites occur when many side branches are formed. The branching that occurs is a function of instability- the longer water vapor has to travel, the more growth slows- bumps form, then branches form on the bumps, bumps form on the new branches, and the cycle continues. Other images included slender, columnar needles and sheaths, and hollow prisms in which the secondary prism face is the most stable. The latter form develops from  $0^{\circ}$  C to- $10^{\circ}$  C, and also less than - $25^{\circ}$  C.

Next, Dr. John Rakovan of the Miami University's Department of Geology and Earth Science presented *Forensic Mineralogy-Examples in AG and AU*. He began by thanking nine people From Miami University, Harvard University, and Los Alamos National Laboratory who collaborated with him to study and assess authenticity of several gold and silver specimens. Forensic mineralogy/gemology investigation is the application of science to civil and criminal laws, and it is used in authenticity and provenance. An example is the application of science to test the hypothesis that the Hope Diamond was cut from the French Blue, which disappeared during the French Revolution. The basic science used in these studies has other applications. The first forensic analysis Dr. Rakovan and others conducted was requested by Stack's Auction House to determine if gold crystals from Venezuela were natural or manmade. The crystals that were studied were found in the alluvial and eluvial deposits of the Guiana Shield in Bolivar, Venezuela. Specifically, the world's largest crystal (217.78 carats), the world's largest trapezohedral crystal (73.2 carats), and an 89.9 carat hoppered crystal were subjected to analysis. X-ray diffraction is often the tool of choice for similar material, but typical samples are about 10 microns long, so a broad beam method was used instead. Using x-ray diffraction, one would expect to see a diffraction peak corresponding to the 311 lattice plane if the specimen was a single crystal.



The largest crystal showed peaks at 111, 200, 222 and 311, which suggests the specimen is polycrystalline, likely a cast. The same method was applied to the other hoppered crystal, but one face only showed peaks at 111 and 222. How could this be explained? One hypothesis was a small amount of mechanical stress can cause similar "powder pattern" results, and when other samples were tumbled and the subjected to x-ray diffraction analysis, they produced patterns similar to those found in the aforementioned specimens. Neutron bombardment was chosen as further analytical tool because the neutrons penetrate more deeply than x-rays. Thus, the interiors of the specimens could be studied. Single crystal diffraction (SCD) and high-pressurepreferred orientation (HIPPO) beamlines were used at Los Alamos National Laboratory to determine if the samples exhibited single spots, indicating the sample is a single crystal, or if they showed streaks, indicating that the material was polycrystalline. The results indicated that the hoppered Venezuelan specimens were single crystals, whereas the "golf ball" was polycrystalline. The latter is likely a man-made cast, since there is no known natural process that would account for the specimen's formation. A second study involved analysis of wire silver, upon request by Collector's Edge. It has been known for centuries that wire silver can be formed by subjecting acanthite to heat. Natural wire silver exhibits striations, but high magnification observations reveal the wire are composed of thousands of individual crystals. Interestingly, the speaker and Calvin Anderson discovered formation of wire silver leads to isotope enrichment. The first part of the study by Rakovan and Anderson was published in Rocks and Minerals (2017). The most recent of the three forensic analyses was done to determine the structure of the world's finest wire gold specimen, the 11 cm Ram's Horn that was found in 1887 at the Groundhog Mine in Red Cliff, Colorado, as well as a 3cm Columbian wire gold whose authenticity has been called into question, and also similarly sized wire silver from China. Energy dispersive SEM analysis was done, and the data revealed Groundhog specimen is about 30% silver, but the surface of the Columbian gold was almost pure (later work would reveal the interior of the Columbian gold contained about 25% silver). Using neutron bombardment of the entire specimens would be the preferred method for further analysis, but irradiation of the Ram's Horn was problematic because of its significant silver content, coupled with the fact that one isotope of silver (Ag<sup>108</sup>) has a 418 year half-life. The researchers decided to irradiate thin slices, not the whole items, and the results revealed the gold wire specimens were either single, or at most, a few crystals, which is quite different than the composition of wire silver.

Friends of Mineralogy Midwest Chapter President Kenneth Bladh thanked Miami University staff and the Cincinnati Mineral Society for making the event possible. Clyde Spencer was thanked for inviting Dr. Chamberlin to be the keynote speaker. Randy and Heather Marsh were thanked for providing the donuts.

The latter portion of the afternoon schedule was devoted to student talks. The presenters were as follows:

An "Ordinary Mineral" from an Extraordinary Locality: Fluorapatite from Mont Saint-Hilaire J. Caleb Chappell, J.F. Rakovan, A. Sommer, B. Phillips, I. Horvath, and E. Horvath Department of Geology and Earth Science, Miami University, Oxford, Ohio

Interesting Inclusions in Green Muscovite from the Merelani Hills, Tanzania

<u>John Fink</u><sup>1</sup>, Chris Emproto<sup>1</sup>, John A. Jaszczak<sup>2</sup>, and J.F. Rakovan<sup>1</sup> <sup>1</sup>Department of Geology and Earth Science, Miami University, Oxford, Ohio <sup>2</sup>Department of Chemistry and the A. E. Seaman Mineral Museum, Michigan tech University, Houghton, Michigan



### Carbonate-Hosted Apatite from the Grenville Province

<u>Chris Emproto</u>, John Fink, and J.F. Rakovan Department of Geology and Earth Science, Miami University, Oxford, OH.

Attendees were afforded another opportunity to view the museum and special exhibits while the student talks were evaluated. The awards were presented in the following order:

3<sup>rd</sup> Place- Caleb Chappell

2<sup>nd</sup> Place- John Fink

1<sup>st</sup> Place- Chris Emproto



From left to right – Caleb Chappell, John Fink, Chris Emproto







Marblehead Fluorite / Calcite specimen collected 4.13.19 – Randy Marsh



Typical material for our inspection, from our recent Marblehead field trip

Volume 34 No.3

May – June 2019



# Event calendar

April	TITLE: Collector-Specific Annual Safety Refresher Training DATE/TIME: Saturday, Apr 27, 2019 10:00 AM – 2:00 PM LOCATION: ODNR, Building E1, 2045 Morse Road, Columbus, OH COORDINATOR: Reggie Rose (captaino@core.com)
	TITLE: Spring Gemboree 2019 SPONSORED BY: The Akron Mineral Society and The Summit Lapidary Club DATE/TIME: Saturday, Apr 27, 2019 and Sunday, Apr 28, 2019 LOCATION: Emidio and Sons Expo Center, 48 East Bath Road, Cuyahoga Falls, Ohio
MAY	TITLE: Kalamazoo Geological and Mineral Society Show DATE/TIME: Fri, May 3, 2019 to Sun, May 5, 2019 LOCATION: Kalamazoo County Expo Center, 2900 Lake St, Kalamazoo, MI
	TITLE: GeoFair 2019 – Colorful Crystals and Fascinating Fossils DATE/TIME: Sat, May 4, 2019 10:00 AM – 6:00 PM and Sun, May 5, 2019 11:00 AM – 5:00 PM LOCATION: Sharonville Convention Center, 11355 Chester Road, Cincinnati, OH HOST/COORDINATOR: Terry Huizing (tehuizing@fuse.net) ACTIVITY: Chapter meeting scheduled for 4:30 PM on Saturday May 4
	TITLE: Penfield Quarry Field Trip DATE/TIME: Saturday, May 4, 2019 TENTATIVE LOCATION: 746 Whalen Road, Penfield, NY
	TITLE: New England Mineral Conference DATE/TIME: Fri, May 10, 2018 to Sun, May 12, 2019 LOCATION: Grand Summit Resort Hotel and Conference Center, Sunday River, Newry, ME
	TITLE: Auglaize Quarry Field Trip DATE/TIME: Sat, May 11, 2019 – TENTATIVE LOCATION: 13762 Road 179, Oakwood (Junction), OH
	TITLE: Cleveland Area Gem and Mineral Show ROCKaRAMA DATE/TIME: Sat, May 18, 2019 and Sun, May 19, 2019 LOCATION: Soccer Sportsplex, 31515 Lorain Road, North Olmstead, OH SPONSORED BY: Parma Lapidary Club
	TITLE: Maine Pegmatite Workshop DATE/TIME: Postponed until 2020 LOCATION: Poland Mining Camps, Poland, Maine HOST: Ray Sprague <rasprague@mac.com></rasprague@mac.com>
JUNE	TITLE: Richland Lithic & Lapidary Society Show – Fabulous Fluorites DATE/TIME: Sat, June 8, 2019 and Sun, June 9, 2019 LOCATION: Richland Co. Fairgrounds, 750 N. Home Road, Mansfield, OH SPONSORED BY: Richland Lithic & Lapidary Society HOST: Tom Kottyan, 419-562-1152
	TITLE: 54 <sup>th</sup> Annual Gem, Mineral, Fossil Show and Swap DATE/TIME: Fri, June 21, 2019 to Sun, June 23, 2019 LOCATION: Lawrence County Fairgrounds, 11265 W US 50, Bedford, IN HOST/COORDINATOR: Dave Treffinger (djt5766jkft@msn.com) SPONSORED BY: Lawrence Country Rock Club



## 2019 Officers

President - Ken Bladh, 132 East 2<sup>nd</sup> St. Springfield, Ohio 45504 (937)390-1742 president@fommidwest.org

Vice President Programs –Randy Marsh, 6152 Old Stone Ct. Hamilton, Ohio 45011 (513)515-7890 <u>vpprograms@fommidwest.org</u>

Vice President Field Trips - Reggie Rose, 4287 Parkmead Dr. Grove City, Ohio 43123 (614)875-2675 vpfieldtrips@fommidwest.org

- Secretary Frank Konieczki, 50355 W. Huron River Dr. Belleville, Michigan 48111 (734)-699-3321 <u>secretary@fommidwest.org</u>
- Treasurer Jeff Spencer, 4948 Beechwood Road Cincinnati, Ohio 45244 (513)248-0533 <u>treasurer@fommidwest.org</u>
- Liaison Officer Clyde Spencer, 1858 Robin Hood Dr. Fairborn, Ohio 45324 (937) 878-9988 <u>liaisonofficer@fommidwest.org</u>

#### Fund Raising (Committee Chair) - Vacant

Newsletter (Committee Chair) Tom Bolka, 2275 Capestrano Dr. Xenia, Ohio 45385 (937)760-6864 <u>newsletter@fommidwest.org</u> Newsletter published bimonthly in January, March, May, July, September and November. Please submit all information for publication in the newsletter by the 15<sup>th</sup> of the previous month.

#### **Chapter Website:**

www.fommidwest.org

National Website:

www.friendsofmineralogy.org

On the Cover –

Marblehead Quarry - iridescent calcite - Clyde Spencer

#### Affiliations:

THE MINERALOGICAL RECORD THE MINERALOGICAL SOCIETY OF AMERICA AMERICAN GEOSCIENCES INSTITUTE MINERALOGICAL ASSOCIATION OF CANADA ROCKS & MINERALS MAGAZINE MINERAL NEWS MINDAT

Our purpose is to organize and promote interest in and knowledge of mineralogy; to advance mineralogical education; to protect and preserve mineral specimens and promote conservation of mineral localities; to further cooperation between amateur and professional and encourage collection of minerals for educational value; and to support publications about mineralogy and about the programs of kindred organizations.

