

Midwest: Chopster Mewsletter for May - June 2018

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In this Issue:

President's Message – 3 Treasurer's Report – 5 S/10/18 Meeting Minutes – 6 eth Annual Symposium Report – 7 Quarry Travel / Event: Guide – 11

The next scheduled Friends of Mineralogy meeting with be held in conjunction with the CMS GeoFair at the Sharonville convention center. It will be on Saturday, May 5th 2018 at 3:00pm in room 101.

Volume 33 No.3

May – June 2018



Page 1

Newsletter published bimonthly in January, March, May, July, September and November. Please submit all information for publication in the newsletter by the 15th of the previous month.

Chapter Website:

www.fommidwest.org

National Website:

www.friendsofmineralogy.org

<u>On the Cover –</u>

"Walworth Fluorite/Dolomite" — New York

2012 – T. Bolka

2018 Officers

President - Ken Bladh, 132 East 2nd St. Springfield, Ohio 45504 (937)390-1742 presidente formulives of

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Fund Raising (Committee Chair) - Vacant

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.





Midwest Chapter President – Ken Bladh president@fommidwest.org

Please read this message from Reggie Rose - VP for Field Trips, for your information and in recognition of the reality of a shrinking list of quarries available for our collecting trips.

"The Saturday April 07, 2018 FM field trip to Marblehead was cancelled. The reason given was that the company has suffered 44 layoffs and would not have personnel on site to monitor our group. I hope this is a temporary situation, but who knows how long it will be before this site is operating anywhere near past maximums."

Officers are eager to hear suggestions from the membership on potential new or revisited collecting sites and the contact information of an individual with authority at that site if you know it. We will pursue all viable leads.

I want to remind members about the upcoming *GeoFair* in Cincinnati (May 5th & 6th) and the significant presence of Friends of Mineralogy Midwest Chapter behind the scenes and on display. Randy Marsh has organized a FoM donated-specimen table in the swap area and has several officers helping to staff the area on Saturday. He is also still accepting donations of specimens to be sold at *GeoFair*. These will benefit our chapter. Specimen donations can be brought to the swap area on Saturday. Jeff Spencer has a couple of displays in the exhibit area and will include the chapter logo in at least one of them. I am certain that other members will have displays of which I am not aware as I write this note. The Chapter is sponsoring an award for the best educational mineral exhibit judged by FoM officers in attendance. I will be judging for that award and for the CMS competitive mineral exhibits with Carl Francis. Carl is a retired curator of the Harvard University Mineral Museum and one of the program speakers for the show. All members and guests are invited to the FoM Midwest chapter business meeting Saturday afternoon. I look forward to greeting many of you and hearing your thoughts. The CMS show website has a downloadable coupon for \$2.00 off an admission. http://www.geofair.com/flyer2018pdf.htm

Please let one of the officers know if we should consider offering an award for best educational exhibit at another mineral show in our multi-state region. Contact information for the people organizing that show would be helpful with your suggestion for a specific show to be considered.

Thanks to all who helped organize this year's very successful Mineralogical symposium. Special thanks to Randy Marsh and John Rakovan for their efforts organizing the speakers' program. Our friends at the Cincinnati Mineral Society shared costs associated with the keynote speaker Dr. Peter Megaw. Terry Huizing helped judge the student papers with Randy and me to determine the award winners. I heard many positive comments about the quality of the keynote speaker and student presentations. Several of the students received a one year membership in our chapter sponsored by some of our current members. One of the highlights of the new facilities at the Karl E. Limper Geology Museum is the space for specimen exhibits by our members during the symposium. Along with some natural and fabricated silver

Volume 33 No.3

May – June 2018



Page 3

specimens that illustrated one of the student talks, John and Jay Medici set up an impressive display of minerals from the Findlay Arch mineral district in Ohio (photo below). Thank you both.



As always, if you have questions or suggestions, officers can be contacted through the links on the FoM Midwest website. Safe travels and successful collecting to us all.

Dear Friends of Mineralogy Midwest Chapter Member -

As part of our efforts to raise additional funds for Chapter activities, we are planning to have a swap table at GeoFair on Saturday, May 5th from 10:00 AM – 4:00 PM.

A flyer with details about GeoFair 2018 and a discount coupon is attached.

Many of you have graciously helped us out in previous years with donations for the swap table. This has included mineral specimens, books, lapidary items, jewelry settings and various pieces of equipment.

I am writing in the hope that many of you will consider making a donation this year as well.

The Chapter is willing to provide a letter for the total sale proceeds so that these can be deducted as a charitable item on income taxes. If you would like such a letter, I need to know at the time you provide the donated goods to me.

You can reach me by email (<u>marsh.rg@pg.com</u>) or cell phone (513-515-7890) – please leave a voicemail message.



Treasurer's Report

2017 Close-out and Audit

It's April 15th 2018 and all of our required State and Federal filings for 2017 have been submitted.

It is required in the Chapter By-laws that an audit be performed annually. Any Chapter member can perform this audit. I can provide all of the documents and a checklist to anyone who will volunteer to complete the audit. Contact me at treasurer@fommidwest.org and I can provide details.

2018

We started 2018 with \$6317.01 in the treasury. That included dues for 28-2018 registrations. Since then an additional 80 members have registered, including 18 new members. That brings our 2018 membership to 108.

Most of the Symposium expenses and our \$650 annual insurance premium have been paid. This leaves us with a current balance of \$6209.01. Randy Marsh has arranged for a swap table at the Cincinnati GeoFair Saturday May 5th. Please contact him if you can volunteer to help.

Remember, dues are still \$20.00 per person and are due by March 1st for renewing members. New members may sign up at any time. Use the form at the link below to submit your registration. Renewing members may register after March 1st. Please be aware that after March 1st, renewing members who have not yet registered when a field trip sign-up announcement is distributed will not be allowed to attend that trip, even if their registration is received prior to the trip! After April 30th, members who have not paid 2018 dues will be removed from the email list. Please contact me (treasurer@fommidwest.org) if you are unsure of your status or if you have other questions.

http://www.fommidwest.org/library/registration-forms/

http://www.fommidwest.org Treasurer@fommidwest.org

Jeff Spencer – Treasurer, Friends of Mineralogy Midwest Chapter, 513-476-2163



Friends of Mineralogy, Inc. Midwest Chapter

Meeting Minutes- March 10, 2018

Shideler Hall, Miami University, Oxford, Ohio

<u>Called to order</u> by President Kenneth Bladh at 9:14 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 6th Annual Mineralogical Symposium. Twelve or more members and 5-10 guests were present for the meeting; there were approximately 20 additional non-members present at various times who attended the symposium.

President Bladh welcomed all attendees to the symposium, including guest speakers Mark Jacobson, who is the President of Friends of Mineralogy, National Chapter and Dr. Peter Megaw.

The following agenda was discussed:

Approval of Previous Meeting Minutes:

President Bladh asked if any corrections to the November 18, 2017 meeting minutes were needed. No changes were proposed or adopted. A motion was requested and made to accept the minutes as published, to unanimous consent (THuizing/JSpencer/P).

Officer Reports:

<u>Treasurer's Report:</u> Treasurer Jeff Spencer presented the unaudited final 2017 financial report at the meeting, which included \$2,120.00 dues received during the year ending December 31, 2017. Additional income included proceeds from the sales table at the Cincinnati Geofair and there was also \$220 of earmarked donations for the 2017 symposium. The total income in 2017 was \$3,235.00, and the expenditures totaled 2,445.88. This resulted in a surplus of \$789.12. The ending balance was \$6,317.01. The current 2018 membership total is 77, with 28 members paying dues in 2017 and 49 paying to date in 2018. There has been \$255 in donations toward this year's symposium. Jeff noted that the number of members has remained relatively stable for years. He indicated that we lose an average of 10-15 members per year, but the losses are offset by new members.

Vice President of Programs Randy Marsh made several announcements. First, he noted that a training information sheet for 2018 was available in the hallway outside the auditorium. Second, there are several upcoming events, namely the Bluegrass show on March 24, the Columbus show on April 7-8, the Rochester Mineral Symposium from April 19 through April 22, and the Cincinnati GeoFair, where FoM Midwest will have a sales table, is on May 5. There are still opportunities to donate materials for the table. Randy also thanked those who assisted him with arrangements for this year's symposium, namely Dr. John Rakovan, FoM Midwest President Ken Bladh, and Heather Marsh, Randy's wife.

Vice President of Field Trips Reggie Rose indicated that the focus for this year's collecting trips is arranging a minimum of six trips, excluding two open house events. He provided the following tentative dates and several general probabilities for field trips; Marblehead, OH on 4/7/18 (90%); Auglaize (Junction, OH) on 5/12/18 (90%); South Rockwood, MI in July (60%); Williamsport, OH (60%, no tentative date); Clay Center, OH, which is operating 70 hours per week (10%, no date); and Genoa, OH (50%, no tentative date). Liaison Officer Clyde Spencer stated Sylvania Quarry is open to college classes for collecting, and he suggested contacting them regarding the possibility of a collecting opportunity. President Bladh suggested that serving as a local school liaison for quarries might be a means to enhance collecting possibilities.



Liaison Officer Clyde Spencer reminded those present that mineral identification is available to club members and the public. Club members will assist in identification, and there is funding available for professional analysis of some specimens on a case by case basis.

Old Business; None

New Business: None

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

Meeting adjourned: 9:38 AM.

<u>Program</u>: Friends of Mineralogy Midwest Chapter 6th Annual Mineralogical Symposium. There were eight presentations- three in the morning, and then five in the afternoon. (See separate program notes).

Respectfully submitted by Frank Konieczki, Secretary



The Friends of Mineralogy Midwest Chapter held its annual symposium in Shideler Hall from 9:45 AM to 4:30 PM. John Rakovan was once again the host for the symposium. He noted that this year's event marked a departure from previous years, when there was a specific theme. For example, last year's symposium focused on sphalerite and wurtzite, the ZnS polymorphs. The new format is varied presentations by guest speakers in the morning, with the afternoon devoted to presentations by students that detail their current research projects. This year's attendance was substantial, with approximately 30 FoM Midwest Chapter members and guests present during the event. We extend our thanks to Miami University and John for graciously making the facility available, and especially to John for donating his time and effort to be both host and co-organizer, as this will be his last year in the latter role.

About a dozen specimens of the featured minerals were on display, including some fine and interesting examples of both native and synthetic wire silver.

John Rakovan welcomed the attendees, introduced the speakers, and announced a couple of changes in the sequence of the presentations, owing to the unavailability of one scheduled speaker.

The first speaker was Dr. Peter Megaw, an award winning economic geologist who has successfully located blind ore deposits. His first of two presentations was titled *Carbonate Replacement Deposits- Reactivity is Everything.* He began by speaking about the genesis of carbonate placement deposits (CRDs), indicating that they are carbonate hosted, high temperature (>250°C), sulfide rich, polymetallic deposits associated with intrusions. The CRD family includes CRD, MVT, Irish Type, and epithermal veins deposits. He then described the replacement process of carbonate rock (limestone and dolostone) by acidic, saline solutions containing metals. The processes tend to be multi-stage, repeated episodes. The

Volume 33 No.3

May – June 2018



Page 7

deposits develop porosity and cavities later become ore centers. Skarn sulfide replacements typically exhibit about a 20% reduction in volume that allows occupancy by sulfides, silicates, and gangue minerals. Minerals that are often found in the deposits are: large amounts of calcite in a myriad of forms, quartz, some dolomite, garnets, pyroxenes, pyrite, and chalcopyrite, to name a few. Retrograde carbonate solubility creates OS fluids for further deposition, and subsequent oxidation creates secondary minerals that reflect the primary chemistry. For example, cerussite and anglesite are common in Pb rich ore bodies. Russian, Bulgarian and Mexican deposits are all CRDs. Dr. Megaw described the successive levels of the deposits, moving upward from the intrusion to the surface, and then descending through secondary oxidation deposits. He then described some of the significant minerals found at several Mexican sites, including Ojuela, an oxide mine in Mapimi that yields silver on its upper level, with the lower level being dominated by zinc. Fine specimens of hemimorphite, adamite, paradamite, legrandite, malachite, and azurite are among those that are typical of the site. Santa Eulalia is notable for many fabulous finds, such as smithsonite pseudomorphs after calcite, smithsonite on arsenopyrite, adamite on adamite, and hematite in calcite. Interestingly, Mexican deposits involve water tables that are typically 350-400 meters deep, and recent droughts have further lowered the water tables, which have allowed access to deposits for the first time since the 1970s.

Next, Mark Jacobson, Friends of Mineralogy President and Associate Editor of Rocks and Minerals provided his presentation, The Hiddenite and Emerald Mineral Localities, Alexander Co., North Carolina. Mark began by providing a brief geologic overview of the area, which is located near Statesville in western North Carolina. It is best described as Devonian and Silurian age metamorphic rocks with granitic plutons. The deposits are Alpine high to low temperature hydrothermal veins, not pegmatites. Rather, the hydrothermal veins crosscut the pegmatites and derive hydrothermal solutions from them. Minerals that are found include quartz, calcite, muscovite, beryl, dolomite, rutile, spodumene (including the variety Hiddenite), and siderite. The locality was first discovered in 1875, and in 1879 William Hidden arrived, looking for platinum, and in 1880, he began the first dig at the Adams Farm site. A major discovery was made in 1881, when a 1,270 carat, 8.5" x 1" emerald was mined. Sadly, it was stolen in 1950 from a museum and it has never been recovered. In 1885 the Hiddenite and Emerald Mining Company began operations. In 1886, two major pockets, "King of Emeralds" and "King of Hiddenites" were discovered. This mining endeavor ended in 1912. Another venture was the Ellis Mine, which opened in 1907. The Colburn Brothers reopened the Hiddenite Mine on Adam's Farm in 1926-1927. Mining was later abandoned for decades, but in 1952, the Ellis Mine re-opened, and the Adams farm reopened for collectors in 1956. There were some major finds, such as a 1,400 carat emerald (1971) and a 940 carat specimen (1997). The Rist Mine, later named the North American Emerald Mine, opened at the former Adams Farm property in 1969 and gem-quality emeralds were found as early as 1970. An 1,861 carat emerald was discovered at NAEM (2003), and the Carolina Emperor was later extracted. Other area mines that were most recently opened include the Emerald Hollow Mine (1986) and the Wooten-Rutledge Mine (1994-1997). In addition to the photographs of many fine emeralds, Dr. Megaw also presented images of other fine mineral specimens from the sites, including spodumene var: Hiddenite, quartz var: amethyst, calcite, siderite, dravite and muscovite. Today, the Hills Mine is not operating. The Emerald Hollow Mine is still open, with plans to continue operations, and it is likely that other localities will open in the future.

The final morning presentation was *Mineralogy of Mexico; Hopelessly Oversimplified and Illustrated with Some "Recent" Finds,* the second provided by Dr. Peter Megaw, who first provided a general overview of the general geology of the region, and stated he would then address high temperature deposits, move to the surface, and then return to the lower levels. The major deposits are polymetallic, and they include the following: Cu and Mo; Ag and Au; Ag, Pb and Sn replacement deposits; and Ag, Pb and Zn vein deposits. They follow a SE to NW trend between a volcano belt to the west and limestone deposits to the east. There is substantial subduction related volcanism. He noted that there have been 77 types species discovered in Mexico since 1832, and also that pegmatites are uncommon in Mexico, save the Baja Peninsula. Oxidation zones in Mexico are particularly rich because they are old enough to have been exposed, but also recent enough to not have been completely eroded. Copper/molybdenum deposits in NW Mexico are a



continuation of the Arizona deposits, and because of their oxidation, they have yielded great mineral examples. Dr. Megaw stated the Mexican CRD deposits occur along the country's midline, with the larger ones occurring to the west and smaller ones to the east. He also noted that the adjacent skarns also yield some fine specimens. He showed many fine images, including pyrite, pyrrhotite, garnet, fluorite (Naica fluorite fluoresces bright red), quartz, calcite (including manganoan calcite), rhodochrosite, danburite, datolite (Charcas), anhydrite (Naica), selenite, and guartz on guartz. Low sulfidation veins are seen closer to the surface and are associated with silver. In fact, more than 10% of the silver mined in history has been taken from Frensnillo. Examples shown from these deposits included acanthite pseudomorphs after argentite, prousite, polybasite, pearcite, aguilarite (type species), silver crystals, quartz var: amethyst, aragonite, fluorite, and creedite. Near surface occurrences are related to eruption and cooling, and typical minerals include fluorapatite, calcite, topaz (from rhyolite flow domes), and many quartz agates- Crazy Lace Agate is an example of quartz replacing aragonite. Geodes occur in many locations. There are low temperature basin brine deposits that are similar to MVTs, these yield fluorite and celestine. There are SEDEX deposits that occur when hydrothermal fluids precipitate in sea water basins, and interesting minerals are formed during subsequent oxidation. Mexico also has one of the world's largest evaporate deposits, which produces gypsum, halite and borates. Moving downward from the surface, oxidation zones produce a wide array of minerals, including boleite, phosgenite, cerussite, wulfenite, mimetite, aurichalcite, willemite (Santa Eulalia), hemimorphite, smithsonite, adamite, austenite, legrandite, calcite, malachite, and azurite. Notably, oxidation of the copper molybdenum deposits, such as in Milpillas, produce splendid azurites, malachite pseudomorphs after azurite, brochantite, and cuprite.

The afternoon session was devoted to presentations by university students who are engaged in research. The topics presented were as follows:

1. CRYSTALLINITY AND TEXTURE OF NATURAL AND SYNTHETIC WIRE SILVER.

C. J. Anderson*, J. Rakovan, T. Böellinghaus, and V. Lüders Dept. of Geology and Environmental Earth Science, 250 S. Pa tterson Ave., Miami University, Oxford, OH, 45056,

Bundesanstalt für Materialforschung und prüfung (BAM) Unter den Eichen 87 D-12205 Berlin, Germany, and Helmholtz Zentrum Potsdam, Deutsches GeoForschungsZentrum, Section 3.2 Telegrafenberg, 14473 Potsdam, Germany

2. TRACE AND RARE EARTH ELEMENT CHEMISTRY OF FLUORITE FROM THE ILLINOIS KENTUCKY FLUORSPAR DISTRICT AND ITS IMPLICATIONS FOR THE ORIGINS OF MINERALIZING FLUIDS.

J. Bergbower*, C. Dietsch, J. Rakovan, and J. Singer, University of Cincinnati, Cincinnati, OH, Miami University, Oxford, OH, and Rensselaer Polytechnic Institute, Troy, NY

3. GEOCHEMISTRY OF FLUORAPATITE FROM THE ROSE ROAD WOLLASTONITE DEPOSIT, PITCAIRN, NEW YORK.

C. Emproto*, P. Tomascak, and A. Andersen, Department of Geological and Environmental Earth Science, Miami University, Oxford, OH, 45056, Department of Atmospheric and Geological Sciences, State University of New York at Oswego, Oswego, NY, 13126

4. THORIUM RICH FLUORAPATITE FROM THE POUDRETTE PEGMATITE, MONT SAINT-HILAIRE **C. Chappell*** and J. Rakovan, Miami University, Oxford, OH

5. RESULTS OF GEOCHEMICAL AND GEOCHRONOLOGICAL CHARACTERIZATION OF LLALLAGUA ALTERED PORPHYRY AND HYDROTHERMAL VEIN ASSEMBLAGE IN CONTEXT OF PRE-EXISTING AGE DISCREPANCY.



W. B. Betkowski* and J. Rakovan, Department of Geological and Environmental Earth Science, Miami University, Oxford, OH, 45056

*Denotes speaker



The symposium speakers group photo - From the left to right - Caleb Chappell, Chris Emproto, Wladyslaw Betkowski, Josh Bergbower, Calvin Anderson, Dr. Peter Megaw, Mark Jacobson

The symposium concluded with another opportunity to view the museum gallery and the minerals on display for the event. Awards were then handed out to three students for their presentations, as judged by a three person panel of FoM Officers and members. The first and fifth speakers, C.J. Anderson and W.B. Betkowski, tied for the first place, and each received \$150. Third place was awarded to J. Bergbower, who received \$50.



MARBLEHEAD JUST A MEMORY - I HOPE NOT

As you know, the Marblehead quarry is a special place. This year, the April 7th trip had to be cancelled. The day of the trip, the temperature did not reach 40 degrees. The Saturday before the temperature was 57, and I attended an evening meeting in February in shorts. Go figure. Our April 7th trip was not cancelled by the weather but was weather related. One of our FM members reported that a recent storm destroyed the Lafarge Marblehead dock. Marblehead mines rock for rip rap along Lake Erie in northeast Ohio and ships some of its product to Ontario. With no means of transporting product, no sales could be completed, so no blast rock was needed. With no demand for blast rock, 44 employees had to be laid off. In his email to me, the quarry superintendent said that staff morale at his plant was at an all-time low. More glumly for us, he did not know if they would host field trips in the future.

Of course, without blast rock, we're out of business at many given sites, because blast rock is the life blood of the mineral collector. As mineral collectors, we are disappointed that we have missed a field trip. However, that disappointment pales to what an unemployed person is feeling. Mineral collecting is a delightful endeavor. Our efforts fill museums and auction tables to raise monies for worthwhile causes. Yet, if we think of a laid off employee that ran a front-end loader and is now stocking canned goods at a box store at one-fourth of his former wages, then our demands as mineral collectors seem trivial. Mineral collecting is not life. We should keep that in perspective.

Quarry Travel / Event Guide

MAY 05, 2018: PENFIELD QUARRY – PENFIELD, NEW YORK

Field Trip Locality: Dolomite Products Inc. Address: 746 Whalen Road, Penfield, NY 14526 County: Monroe Date of Trip: Saturday May 05, 2018 Time of Field Trip: 6:45 am - 12:00 pm Travel Distance: (from Grove City, OH; exit 100 on I 71): From Grove City, OH: via toll roads: 419 miles; without toll roads 459 miles Travel Time: From Grove City, OH; exit 100/I 71: via toll roads: 6:09; without toll roads: 6:55 County: Monroe Age of Rock: Lower Devonian- the rock here is 410 million years old (Devonian 415-355 mya) Rock Units Exposed: Lockport Dolomite Training Required: On-site Specimens Present: calcite, dolomite, fluorite, selenite, sphalerite **Special Considerations:** FM will be one of several clubs at this open house; be there early to get checked in since the group there will be large; any power equipment, including saws, is allowed (just no explosives; there is no defined limit on how many collectors we can take, but nonetheless, sign up of interested. Quarry Location: Pick up the following log where it is convenient from your home location:



From Grove City, OH		
Leg of Route:	distance (miles):	time:
From exit 100, I 71 Ohio:		
I 71 N from exit 100 to exit 220 (enter I 271N)	120.0 mi.	1:42
I 271 N @ exit 220 of I71 N TO I 90 E	46.3 mi.	0:44
I 271 N ends; begin I 90 E @ mile 190		
I 90 E OH to I 90 E PA	53.0 mi.	0:50
I 90 E PA Line to I 90 E NY Line	46.9 mi.	0:43
I 90 E NY Line to I 390 (Rochester exit 46)	129.6 mi.	2:12
I 390 N (Rochester) to I 590 N (Rochester)	9.0 mi.	0:10
I 590 to exit 07 (286 E/Browncroft Road)	5.7 mi.	0:07
From 286 E turn right/south onto Whalen Road (CR 13) 7.4 mi.		0:11
Proceed S on Whalen Road to quarry entrance on the left 0.9 mi.		0:03
GPS Estimates: 419 mi; 6:11	418.5 mi.	6:41

MAY 12, 2018: AUGLAIZE QUARRY - JUNCTION (OAKWOOD) OHIO

I imagine you are itching to get out of the house after such a wonderful opening third of spring. I looked out the kitchen window one day this week and a robin was huddled under the base of my shed noticeably shivering. However by the time we go mineral hunting on what proves to be our first trip of 2018, the birds will be singing and the air will be fresh with spring fragrances. If you go on this trip the address is in Junction, Ohio but the computer lady in your GPS will tell you that the quarry is in Oakwood.

Field Trip Locality: Stoneco - Auglaize - Junction, OH Address: 13762 Road 179, Oakwood (Junction), OH 45873 Date of Trip: Saturday May 12, 2018 Time of Field Trip: 7:00 am – 11:15 am Travel Time from Designated Point: 2:30 from central Ohio Age of Rock: Middle Devonian Rock Units: The Detroit River Group Specimens Present: Auglaize Quarry is best known for its crystals of iridescent brown fluorite, along with sphalerite, calcite, pyrite, quartz, and hydrocarbons. The minerals are found in pockets and fractures of quarry dolostones. Training Required: MSHA Quarry Location: The Shelly – Stoneco Auglaize Quarry is in Paulding County, Ohio. Take route 111 SW from Defiance for about 8 miles to Ohio State Route 637 just east of Junction. Go east a short distance across the Auglaize River, and turn south on Paulding County Road 179 to the Quarry office on the east (left) side of the road.

From the south, take I-75 North to exit 130 (Bluelick Road). Take Bluelick Road 3.5 miles west to State route 65. Take route 65 North/R for 1.6 miles where you will bear left onto route 115 North. Take this route 7 miles into Kalida and continue in 115 North for 19.5 miles until its junction with state route 15. Proceed west/L on route 15 for 0.5 miles to state route 613. Go west/L on Route 613 for 9 miles passing through Continental, Hartsburg & Oakwood. At the Junction of route 613 and route 66 west of Oakwood, take route 66 North/R. Five miles later, take state route 166 west/L 2.6 miles. Turn right (North) onto County Rd 179. Take 179 North for 1.3 miles to the quarry entrance on your right.



Cincinnati GeoFair 2018

53rd Annual Gem, Mineral, Fossil & Jewelry Show of Greater Cincinnati www.geofair.com

> May 5 Saturday 10 am to 6 pm



May 6 Sunday 11 am to 5 pm

Featuring: Calcite Crystals & Fossil Echinoderms

Illustrated Earth Science Programs Saturday, May 5 Calcite: Beautiful, Intriguing & Important Earth Extinction Events Sunday, May 6 Calcite: Habits and Varieties The Mississippian Age of Crinoids

> Sharonville Convention Center 11355 Chester Road Sharonville, Ohio 45246 www.geofair.com for directions

FREE PARKING

Cincinnati GeoFair 2018

Adults.......\$9 Two-day pass.......\$12 Children....\$3 Uniformed Scouts free Scout leaders pay adult rates Teachers free with ID and paid adult companion

\$2 OFF ONE ADULT ADMISSION GeoFair 2018 May 5 & May 6 Sharonville Convention Center 11355 Chester Road Sharonville, Ohio 45246 FREE PARKING 2018.3

Gem, Mineral, Fossil & Jewelry Dealers 50+ Retail • 4 Wholesale • 3 Publications www.geofair.com for list

Educational Earth Science Programs Dr. Carl Francis • Mr. John Moffitt Mr. Jeff Scovil • Dr. David Meyer

Gem, Mineral, Fossil & Jewelry Displays 70 museum, university, and private collections

Family Activities •Education Center • Games Geode cracking • Demonstrations • Swap area Free mineral, meteorite, fossil & gem identification • Scout merit badge assistance Free mineral or fossil collection - kids under 12

GeoFair 2018 is produced by the nonprofit Dry Dredgers – an organization of amateur paleontologists & fossil collectors. www.drydredgers.org, and the Cincinnati Mineral Society – an organization of amateur mineralogists & mineral collectors. www.mineralsociety.org

