

***Midwest Chapter
Newsletter for
November –
December 2018***

***FRIENDS
OF
MINERALOGY***

In this Issue:

- President's Message – 3**
Treasurer's Report – 4
Field Trip Reports – 6
Quarry Fossil Walk Report – 13
Membership Forms – 15

Newsletter published bi-monthly 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

On the Cover -

“ Marcasite ” , Melvyn
Williamsport quar

Paul Scholar

president@fommidwest.org

vpprograms@fommidwest.org

vpfieldtrips@fommidwest.org

secretary@fommidwest.org

treasurer@fommidwest.org

liaisonofficer@fommidwest.org

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 know mineralogical education; to protect and preserve mineral localities; to further cooperation between amateur and professional mineralogists for educational value; and to support publication kindred organizations.

Midwest Chapter President -

president@fommidwest.org

Succesful & a Great Detroit

Just returned from the Greater Detroit, Gem, Mineral & Fossil Show and fossil-related activities presented by the Michigan Mineralogical Society and sponsored by the Cranbrook Institute of Science. Sixty-three dealers offered a wide array of items in these categories for sale. Outstanding institutional exhibits from the A.E. Seamon Museum, Wayne State University and the Cranbrook Institute of Science contained world-class examples of minerals relevant to the show theme – Great Lakes was particularly impressed by the large transparent calcite crystals with bright native copper inclusions and the large well-crystallized native copper groups with natural patinas for which the UP of Michigan is famous. One private exhibit included one of the actual calcite crystals measured and described by Professor Charles Palache in his classic 1900 Report on the Crystalline Copper Mines. A few of the fossil exhibits included spectacular trilobites from the region, a complete Kosmoceras, a complete trilobite, and the open jaws (with teeth) of a Megalodon (giant shark). Visitors could actually stand inside. There were opportunities for kids to pan for gold or crack geodes. Friday morning, the Show hosts thousands of school kids and their teachers from around the Greater Detroit region. Their energy, curiosity, and eagerness to learn more about the natural history on display got the weekend off to a great start!

This year the Friends of Mineralogy Midwest chapter had an official presence at the greater Detroit Show. We are grateful to the members and officers of the Michigan Mineralogical Society and specifically their president Dave Lurie for providing us a table between Wayne State University and the institutional exhibit cases. We received a lot of foot traffic and inquiries from attendees. A few FM Midwest members dropped by and identified themselves. Approximately 150 people picked up a free 2-sided brochure with our chapter goals and contact information (our website and membership process). Friday and Sunday, Frank Konieczki joined me at the FM table to answer questions and identify specimens brought to us by kids and adults. I sensed great interest among MMS officers and members of other Michigan mineral and lapidary clubs in exploring more ways for cooperation between our organizations in the future.

Ken Bladh at the Mineralogy Midwest table at the 2018 Gem, Mineral & Fossil Show. Frank's Midwest specimens attract kids and adults who want to know more about the mineral organization.
Photo by Frank Konieczki

F M o n t h e g o

Field Trip Reports

Melvin Stone – Williamsport Plant Survey Report

By Johan Maertens

About the author

Johan Maertens is a new Friends of Mineralogy Mid- West member. He has collected and studied minerals, as a hobby, for 40 years. Crystal morphology carries his particular interest. Field collecting, photographing and purchasing complement building the collection.

[mr.calcite at verizon.net]

Crystal Morphology

With simple information technology, you too can become a Friend of Morphology (the other “FoM”). Crystallography and crystal morphology can assist with mineral identification. Once you know the mineral, along with fundamental crystal data, easily found in crystallographic databases, using the internet, you can use free or paid computer software to model the crystals you are holding. A goniometer is a good tool to measure angles and determine faces on the crystal. Since all my equipment is still in moving stage, I drew crystal models, without goniometer measurements, using common calcite crystal forms.

I am sure from now on, you will look at a mineral in a new and exciting way.

If you see me holding and rotating a specimen for what seems forever, it is not because my vision is impaired, yet I am trying to get a reflection of a crystal face to evaluate if I want to add that extra calcite to my collection.

My nickname is Mr Calcite, where the “Mr” stands for More ...

Field trip report

Date of Survey: August 25, 2018

Locality: Melvin Stone – Williamsport Plant, Pickaway Co., Ohio

Melvin Stone, a division of The Jurgensen Companies, operates the **Williamsport Plant**, an active quarry that regularly blasts and hauls crushed limestone and sand as part of its daily operation. The location is private property and MSHA training and prior approval are required for access.

The Mid-West Chapter of the Friends of Mineralogy surveyed the plant on August 25, 2018.

Figure 1 - Friends of Mineralogy meeting with safety briefing by Wayne Spriggs.

Geology

Based on literature about regional geology, the bedrock, at the Williamsport quarry location in Pickaway County, consists of Paleozoic age limestones of the middle Devonian system and shales from the upper Devonian system. The bedrock formations lie on the eastern flank of the Cincinnati Arch and have an approximate dip of 30 feet per mile to the east (Bain, 1979). The systems are outcrops, overlaying the upper Silurian system Salina Group dolomites and limestones.

During this survey, we had no access to blasted bedrock in the quarry. We collected samples on waste rock dumps. Based on literature and appearance of the rocks, I assume most limestone rocks we sampled, are from these formations:

The **Columbus Limestone** (Devonian), is a gray to bluish-gray, highly fossiliferous limestone, with chert beds and cherty nodules and with many thick beds of high calcium content relatively free from impurities.

Members including the upper portion of **Bellepoint** member (zone C?; a coral and stromatoporoid biostrome), a brown magnesian limestone, and the **Eversole** member (zone D?; chert zone) a middle portion containing few fossils, and **Delhi** member (zones E –H?) a top zone of abundant corals and stromatoporoids and a fine-grained (much of the rock is crystalline or subcrystalline in structure)-, thickly bedded, fossiliferous limestone. (Stauffer, 1957; Krissek, 1995). Rock cleavage with mud cracks and fossils demonstrate local marine and marginal-marine environments.

The **Ohio Shale** (Upper Devonian) is a brownish black to greenish gray shale, weathers brown; is carbonaceous to clayey, laminated to thin bedded, fissile parting; with a petroliferous odor (USGS).

Wisconsin age drift and till form the overburden at the Williamsport quarry.

Figure 2: Map after Slucher, 2006

Mineral Occurrences

In general, one expects to observe crystal specimens of carbonate, sulfate, and sulfide minerals in the regional Paleozoic carbonate rocks. Carlson lists the following mineral for the Williamsport quarry: barite, apatite, dolomite, calcite, marcasite, pyrite, quartz and sphalerite (Carlson, 2015).

During our survey, I observed marcasite and calcite along with quartz in chert nodules and marine fossils in rocks at the Williamsport quarry.

CHERT

Gray to white chert, sometimes banded, occurs as blobs and lenses in alternate layers in the limestone. Both chert and limestone are abundantly fossiliferous, with reportedly the specimens exceptionally well preserved in the chert.

MARCASITE

Marcasite is a common mineral at Williamsport Quarry in the overburden waste piles. I observed two variants: euhedral crystals and massive to reniform masses. The relation to host rock is difficult to establish, because the marcasite is found disturbed in waste piles. The marcasite is often embedded in a pale material that softens when submerged in water. The surface of reniform marcasite is discolored to a reddish brown due to oxidation and many globules are disintegrated, with an acid to rotten egg odor. Freshly exposed surfaces are greenish gray or a mixture of pale yellow and gray. Iridescent colors, dominantly blues and blue-greens, are characteristic of fractured marcasite.

The massive marcasite exhibits two habits: subhedral and reniform. Reniform habits are dominant in the thick massive marcasite occurrences at Williamsport Quarry. I found flat masses, in chunks, up to a foot across and 8 inches thick. The reniform habit is characterized by bands of marcasite composed of intergrown crystals radiating outward from a

common center, joining together to form cauliflower-like masses, similar to occurrences at Pugh quarry (Parr, 1977). The subhedral habit, generally in bands less than 5 mm thick, is made up of intergrown crystals of pyrite covered by tabular marcasite crystals (Figure. 3), found in petroliferous (by the smell) black shale seams (similar to specimens from Glen Echo Ravine, Columbus, Franklin Co., Ohio).

All marcasite crystals, collected on the waste rock dumps, show surfaces with varied degrees of alteration features. The dominant features are brown coatings and iridescent tarnish films. The brown coating is probably a ferrous oxide mineral.

Figure 3 Concretions of intergrown crystals of pyrite covered by tabular marcasite crystals in black shale seams. Concretions are 9mm thick.

I also collected euhedral marcasite crystals in loose small weathered aggregates – up to 30 mm in diameter - in the waste piles on the west side of the quarry. The euhedral marcasite is more colorful than reniform marcasite. The marcasite crystals are colored a pale yellow with bright metallic luster, to brown in daylight. An oxidation tarnish causes the colors on the crystal faces. Euhedral marcasite exhibits prismatic, pyramidal and tabular habits. Combined prismatic and pyramidal habit crystals are most common. The thin, flat, tabular crystals appear occasionally as "cockscombs."

Figure 4 Marcasite concretion from Ohio shale. Field of view is 70mm. Cockscomb growth lower left and center right.

CALCITE

Calcite is the most abundant mineral in the Devonian rocks at Williamsport Quarry. Since we could not sample rock in the main quarry pit, we collected calcites from rocks in waste dumps.

The calcite crystals show no evidence of replacement activity. The crystals are attached directly to the limestone. Occasionally, marcasite grows on calcite crystals.

Larger crystals are predominantly brown colored with variations in hue and intensity. The opacity ranges from opaque over translucent to transparent with selective etching of crystal faces. I performed no examination under ultraviolet light. Collectors found large calcite crystals up to 50 mm along the c-axis in elongated vugs in gray limestone. The large crystals consist almost entirely of scalenohedral forms with irregular surfaces, some modified by rhombohedron termination, often with parallel growth. Doubly terminated crystals are rare. I observed no twinning.

Small calcite crystals formed directly on the pale fossiliferous limestone host rock, in small vugs (Figure 5). The origin of the vugs is unclear. These small crystals range from colorless to brown, translucent to transparent. I did not examine the crystals under ultraviolet light. The most common crystal habit of the small calcite crystals is the hexagonal bipyramid {88.3}, a habit that is uncommon to very rare in other parts of the world. Pinacoid {00.1} terminations are common (Figures 6, 7a, 7b, 8a, 8b, 9a, 9b). Rhombohedron modifications do not affect the overall pyramidal habit.

We observed no small calcite crystals growing on the larger calcite crystals.

Figure 5 Calcite with fossil coral. Largest crystal is 6mm long. **Figure 6 Calcite: Double terminated, hexagonal bipyramid. Crystal is 16mm long.**

Figure 7a Calcite: Hexagonal bipyramid. Largest crystal is 8mm long.

Figure 7b Calcite crystal model

Figure 8a Calcite: Hexagonal bipyramid. Crystal is 7mm long.

Figure 8b Calcite crystal model

Figure 9b Calcite crystal model

Figure 9a Calcite: Calcite hexagonal bipyramid with pinacoid and rhombohedron terminations. Largest crystal is 6mm long.

Figure 10 Fossil single horn coral from the Columbus Limestone (Devonian), (Bellepoint member?). Coral is 90mm long.

QUARTZ

Some chert nodules have small vugs (10 mm) with druzy and micro quartz crystals, colorless, 1mm individual and smaller.

Summary

For most of the collectors, this was their first survey in the Williamsport Quarry. Collecting in weathered waste rock proved to be a different experience from fresh bedrock, yet most came away with a few nice specimens. This report helps with mineral identification and serves as a reference for listing and identification.

I list four out of eight minerals reported by Carlson for this quarry. I identified five out of six basic calcite forms; only prisms are missing. We have some challenges for the next survey.

While not part of this report, everyone found sizeable marine fossils, from invertebrates (simple horn-shaped corals of the family Zaphrentidae) to fish spines (Figure 10).

Acknowledgments

I thank Dr. Pete Richards for reviewing the report and providing recommendations to improve clarity.

I thank the staff of Melvin Stone, for hosting the Friends of Mineralogy and providing access to sample collecting sites. I look forward to the opportunity for the bedrock survey.

I thank Reggie Rose for coordinating the field trip.

All pictures and drawings are by Johan Maertens.

References

Bain, R.C., 1979. The Ground-Water Resources of Pickaway County, Ohio. Unpublished Master's thesis, The Ohio State University

Carlson E. H., 2015, Minerals of Ohio, 2nd edition, Ohio Department of Natural Resources Division of Geological Survey Bulletin 69, Columbus, OH

Geologic units in Pickaway county, Ohio. U.S. Geological Survey. URL <https://mrdata.usgs.gov/geology/state/fips-unit.php?code=f39129>, accessed 28 August 2018

Krissek L. A., Coats Kenneth P., 1995, geology field trip guide: an upper Devonian-lower Mississippian transgressive-regressive clastic sequence in central Ohio, with emphasis on the Bedford and Berea formations, 104th Annual Meeting. The Ohio Academy of Science. Hosted by Otterbein College and Ross Products Division of Abbott Laboratories, Columbus, Ohio

Parr, David F.; Chang, Luke L. Y., 1977, Descriptive Mineralogy of Pugh Quarry, Northwestern Ohio: Marcasite and Pyrite: The Ohio Journal of Science. v77, n5, 213-222

Rose R., 2015, Melvin Stone Quarry, August 15th – Williamsport, Ohio. Williamsport: An Unusual but Wonderful Place, The Friends of Mineralogy Midwest Chapter Newsletter, v29, n5, 7-8

Slucher, E.R., Swinford, E.M., Larsen, G.E., Schumacher, G.A., Shrake, D.L., Rice, C.L., Caudill, M.R., Rea, R.G., and Powers, D.M., 2006, Bedrock geologic map of Ohio. Ohio Division of Geological Survey. Digital Map Series BG-1.

Stauffer C. R., 1957, The Columbus Limestone: The Journal of Geology 65, no. 4: 376-383.

Stewart, G. A., 1955, Age Relations of the Middle Devonian Limestones in Ohio, Ohio Journal of Science:v55, n3, 147-181

Sugar, David J., 1990, Ground water pollution potential of Pickaway county, Ohio. Ground water pollution potential report no. 3. Ohio Department of natural resources division of water, ground water resources section.



Great Lakes Aggregates - Annual Quarry Challenge and Fossil Walk

Frank Konieczki

Most members of our chapter recognize the name Sylvania Minerals/Great Lakes Aggregates, located in South Rockwood, MI because it operates one of the quarries that host FoM Midwest mineral collecting trips annually, including this year's trip on July 7. Prior to this year's FoM collecting trip, Chris Kinney, President and CEO of Great Lakes Aggregates contacted FoM Midwest Vice President field trips Reggie Rose and asked him if our Chapter might be interested a unique opportunity for community outreach. Chris stated they were going to host the 2nd Annual Quarry Challenge, a competitive 5K run in the quarry on September 23, and the concurrent Fossil Walk that would take place on the surface level. He asked if FoM would be willing to set up and staff an educational table for the Fossil Walk. Reggie set to work and contacted FoM members and others to see if they were interested in the proposal.

FoM Midwest members and Michiganders Don Venier, Dieter Burrell and Frank Konieczki volunteered to help with the Fossil Walk, which was designed for children and their families to learn about fossils and minerals. The organizers asked them to develop a theme for the FoM table, and Midwest Michiganders. The display they designed included minerals obtained from sedimentary deposits throughout the Midwest and also from igneous and metamorphic deposits in Michigan's Upper Peninsula. The display also included examples of collecting equipment, safety equipment, and fluorescent minerals.

The concept of the Fossil Walk was unique. Before the event, the kids who participated in the walk received passports that they took to each table. They looked at the displays, dug in the sand piles, and had their passport stamped by volunteers after answering a couple of questions. They did the same at each successive station. The one mile course included five education stations, and FoM was designated to be at the first one. OSU's Orton Museum, the Michigan Mineral Society, the Oakland County Earth Science club, and Sylvania Minerals also organized displays. FoM also decided they would seed the sand pile by the table to augment the materials provided by the hosts, so Don, Dieter and Frank supplied and hid a variety of minerals, including calcite, hematite, selenite, pyrite, marcasite, epidote, sulfur, halite, and Kentucky and Indiana quartz geodes in the pile several times before and during the event.

The event was a great success, and the kids had a blast! There were ear to ear smiles, boundless energy, and a lot of excellent questions. Last year's number of total participants in the Quarry Challenge and Fossil Walk was about 70, but about a week before this year's event, there were about 400 registered participants. The event raised about \$30,000 for the Friends of the South Rockwood Library. The Monroe News covered the event, and their article is available online. It included specific recognition of FoM Midwest for its participation.

Thanks go to the organizers, Chris Kinney of Sylvania Minerals and also to Kerry Guiliano and Denise Camillo of the Friends of the South Rockwood Library, for their excellent communication, providing set up materials for the event, and for being wonderful hosts. They also provided all volunteers with breakfast, event T-shirts, and they donated the tablecloth they had made for our table to FoM Midwest. Also, thanks to former FoM Midwest member Bill Barr for providing several items for the display table and selenite for the sand pile, and to Roger and Ginger Newborn of Ypsilanti, MI for providing several boxes of minerals for the "dig pile".

4.0 In signing this Release, I acknowledge and reforegoing waiver of liability and hold harmless agree document as my own free act and deed; no oral repre written statement have been made. I understand that Activity, but I want to do so, despite the possible least eighteen (18) years of age, and fully competere adequate, and complete consideration fully intending related reasons or problems which preclude or restri insurance to provide and pay for any medical costs th

5.0 I further agree that this Release is in effec construed in accordance with the laws of the state in this Release shall be held illegal, unenforceable, o remaining portions shall not be affected thereby.

IN WITNESS WHEREOF, I have executed this Release

Participant Signature: _____

Address: _____,

Street

Phone with area code _____ email: _____

Emergency Contact: _____ with area code _____

Witness Signature (least 18 years old) _____

F R I E N D S O F M I N E R A L O G Y , I N C .
 M i d w e s t C h a p t e r
 A P P L I C A T I O N F O R M E M B E R S H I P
 M E M B E R D A T A S H E E T

Please fill in this application and mail it along with

Name _____
 Last First Middle Initial

Address _____
 Street City or Town

State Zip/Postal Code

Telephone Number _____ (Home) _____

E-mail address _____

Would you be willing to serve as an officer or committee member? _____

Would you be willing to serve in another volunteer capacity? _____

How did you find out about Friends of Mineralogy? _____

I affirm that I support the purposes* of Friends of Mineralogy, Inc. _____

Signature _____

Friends of Mineralogy, Inc. is composed of the members of the Midwest Chapter with a Prospective and renewing Midwest Chapter membership and \$20.00/year dues to the address below:

Our Chapter is funded by membership fees, fundraising and additional contribution to help support us in achieving our reporting purposes.

Additional donations:	Annual Symposium	\$ _____
	General Fund	\$ _____
	Total (including Dues)	\$ _____

- *
 1. To promote interest in and knowledge of mineralogy.
 2. To advance mineralogical education.
 3. To protect and preserve mineral specimens and promote conservation of mineral localities.
 4. To further cooperation between amateur and professional and encourage collection of minerals for educational value.
 5. To support publications about mineralogy and about the programs of kindred organizations.

Jeff Spencer, Treasurer
 Friends of Mineralogy, Midwest Chapter
 4948 Beechwood Rd., Cincinnati, Ohio