FRIENDS OF MINERALOGY

Midwest Chapter Newsletter for September – October 2019

In this Issue:

Midwest Chapter President – Ken Bladh

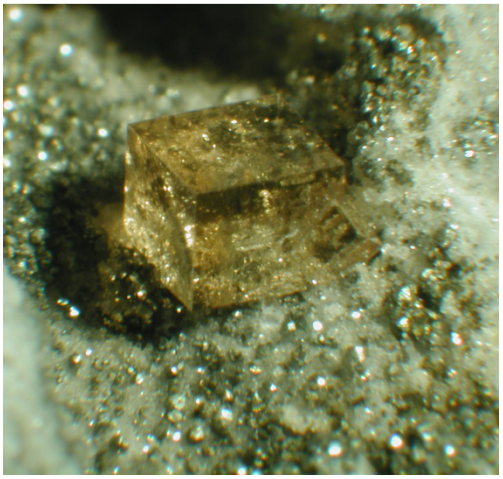
President's Report

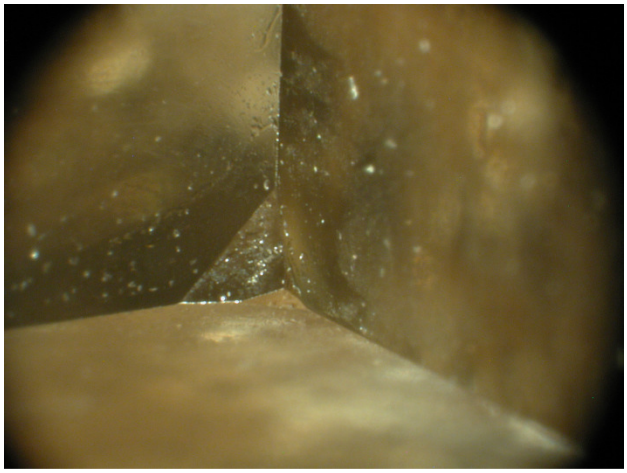
Hope that your summer plans are going smoothly and safely. Even though we are in prime field collecting season, chapter members have other sponsored activities to consider for their end-of-year calendars. FM Midwest will have a table on the main floor of the Detroit Show (October 11-13) to greet members and publicize our organization. Frank and I look forward to greeting chapter members (we will have FM Midwest decals for members), interacting with the general public who stop by our table of mineral samples to handle (lots of kids can't resist the opportunity) and sharing collecting stories. In November (Saturday the 2nd), FM Midwest will have our annual business meeting at the site of the Cleveland Micromineral Symposium (Natural History Museum). We elect officers and set dues for 2020 at this meeting. Members also welcome to hear the speakers in the symposium earlier that day. Officers also are trying to organize a social activity that same day for FM members near Cleveland. More details about the business meeting and social activity will be sent by email closer to the date.

I find myself this summer occupied with examination of my inventory of specimen material collected over the past 40 years and stored for future study. That "future" seems to be here finally. Retirement and restricted physical activity associated with the rehabilitation of my ankles this summer have provided that opportunity. My first project has been the examination of a huge quantity of rough material donated to Wittenberg University in 1979 by Joe Kielbaso (whom many of you will remember as an active Midwest field collector). The two groups of specimens that have attracted most of my attention are from the famous Pugh quarry in Ohio and the Meshberger Stone quarry in Indiana.

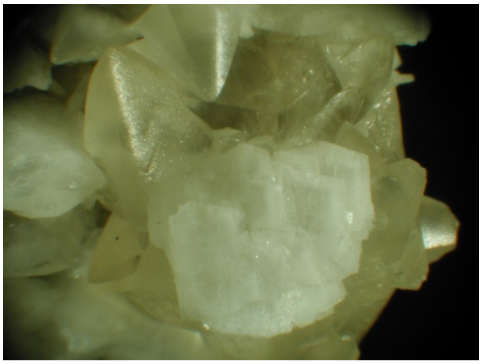
Most of us know Pugh quarry for the large golden calcite crystals, sometimes with encrusting white to bluish barite. Large crystals of celestite of white to bluish color from Pugh quarry also grace many regional collections. As I examined the matrix and associated minerals on the more famous Pugh minerals, I found wonderful micro crystals of sphalerite, marcasite and pyrite. These are crystals that require 10x to 15x magnification (hand lens or binocular stereomicroscope) for full appreciation.

Fluorite, a mineral I did not associate with Pugh quarry, occurs as pale brown crystals with colorless phantoms at their cores and some display the three-paired corner modifications of the cube typical of the trapezohedron (Parr and Chang 1979, Ohio J. Sci., 79, 24-31).





Colorless calcite scalenohedra with clusters of tabular white barite crystals perched on them make very attractive micromineral specimens. The golden calcite clusters in parallel orientation for which the quarry is famous don't occur as micro specimens in the material that I have examined so far. Do any of you have golden micro calcite from Pugh?



Four papers by Parr and Chang in the Ohio Journal of Science (1978-1980) contain good descriptions with black and white photographs of the minerals of Pugh quarry and should be the starting place for anyone examining their Pugh specimens for associated mineral species. All four papers are available as free pdf files online through OSU
(barite and celestite https://kb.osu.edu/handle/1811/22668;
calcite, dolomite, fluorite https://kb.osu.edu/handle/1811/22590;
marcasite and pyrite https://kb.osu.edu/handle/1811/22476 ;
and sphalerite https://kb.osu.edu/handle/1811/22563).

I am only now getting around to examining the calcites from Meshberger quarry, Indiana, that Joe donated to Wittenberg. I am particularly interested in the colorless "pyramidal" crystals terminated by rhombohedra that are in turn over grown by a younger generation of skeletal calcite. The next photo shows one of these calcite crystals with an internal phantom coated by marcasite crystals. The overgrowth partially covers the tip of the crystal and is slightly golden in the photograph. Am in the process of measuring interfacial angles to determine which crystal forms are present.

One or both of these quarries will be discussed with improved photos and analysis as part of my talk Saturday morning at the Cleveland Micromineral Symposium.

The purpose of these anecdotes about my summer are to encourage you to look at your specimens for their associated minerals (often perfect micro crystals), examine "scraps" or break down larger pieces of rough material for hidden pockets. At regional mineral shows and swap meets look for old material – acquired years ago and perhaps forgotten. And don't forget the older literature, like Parr and Chang, on which books like Carlson's tour-de-force on Ohio Mineralogy are based. These publications help to calibrate our eyes to what is possible on our specimens.

Please contact an officer (links are on the FM Midwest webpage and at the end of this newsletter) if you have suggestions for social activities or future group trips.

Treasurer's Report

Treasurer@fommidwest.org

There have been no changes since the last report.

Jeff Spencer – Treasurer
Friends of Mineralogy Midwest Chapter

Desert Stormtroopers at Mountain Pass

Clyde Spencer

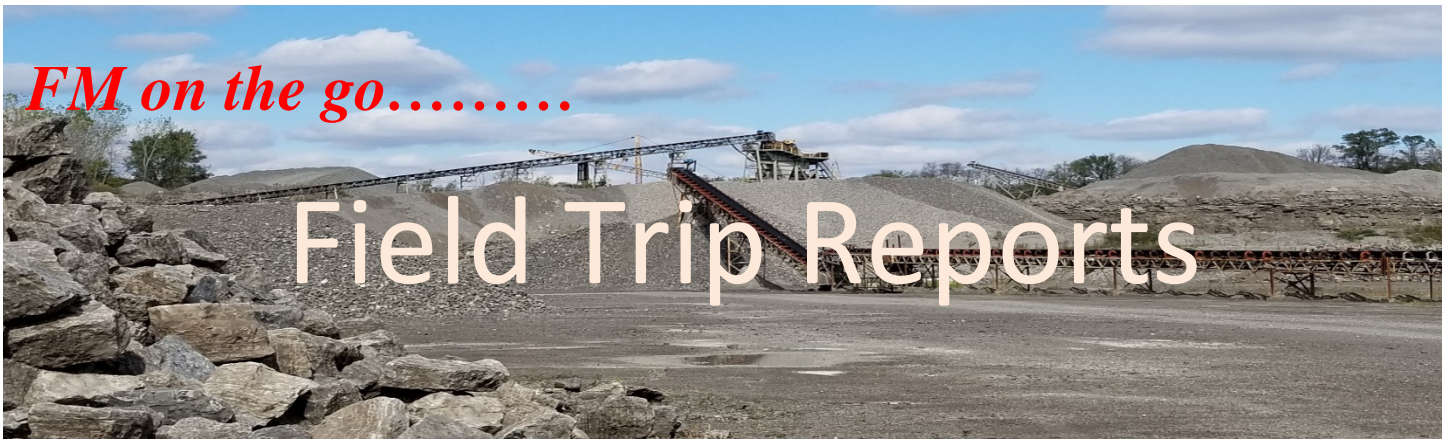
I have previously written several articles in Friends of Mineralogy newsletters about the problems encountered by mineral collectors on public lands. I recently became aware of a similar problem experienced by Moly Corp, previously the only producer of Rare Earths in the United States. China is now the major producer of Rare Earths, and is a minority investor in the company that has recently purchased the Mountain Pass mine. Click on the embedded link below for a 35-minute *American Investigator* video that summarizes a magazine expose', *Desert Stormtroopers*, written by Marc Morano.

Some of you may be familiar with the name Mountain Pass. For those who have not previously heard of it, I suggest that you read the material at the following Wikipedia link:
https://en.wikipedia.org/wiki/Mountain_Pass_rare_earth_mine

Unless you have been living under a rock, you are probably aware that Rare Earth Elements have been in the news a lot because they are essential for such things as powerful magnets used in wind turbines. Currently, the world is almost entirely dependent on China for commercial supplies. The mineral of economic interest at Mountain Pass (CA) is bastnäsite. For more information, please see this link: https://www.mindat.org/min-563.html . Not content with controlling the sources of rare earths, China has also been obtaining patents for the mining and processing of rare earths.

I appreciate and support the necessity for protection of endangered species. However, it seems to me that the government overreacted. They seem not to have heard of the admonition "Moderation in all things."

For additional background on the difficulties the US mining industry is laboring under, I suggest also reading the opinion piece at this URL:
https://wattsupwiththat.com/2019/07/16/modern-societies-require-minerals-and-mining/



It's Not Too Hot in South Rockwood – Reggie Rose

On July 13th an even two dozen FMers journeyed to South Rockwood, Michigan to visit our friends at Great Lakes Aggregates, just off the Lake Erie shore.

From an FM perspective the GLA quarry at South Rockwood gives us two famous memories - the first of those famous memories is burned into our minds and is one we do not covet; kiln-like temperatures like we experienced in 2016. The second famous memory, its deep blue watery celestine seen on the middle bench circa 2015, we do covet. Fortunately, then unfortunately, during this year's 2019 field trip we found neither memory.

Fortunately, the temperature was not too hot during our stay, but neither was the collecting. To say that the collecting was not too hot probably is not the proper way of expressing that it was just a quiet day at South Rockwood. Because the quarry was busy, we were relegated to the lower bench during our stay.

Ordinarily, when we move around and I have a chance to encounter a variety of collectors and their finds. On this trip, I spent most of our time in one area practicing extraction methods and watching our newsletter editor Tom Bolka and two nearby drill aficionados, past president Clyde Spencer and central Ohioan Jeff Schaumberg display their skills. There was not a variety of opportunities to move around and collect in different areas, because the first (and last) area of the day presented a good enough challenge. Celestine was present in copious amounts in thick "veins". But unfortunately, those copious amounts were positioned in the middle of huge boulders. Because of how the celestine was positioned in boulders, which neither saw nor drill could remove, nice display pieces in-matrix were hard to come by. Instead, the celestine veins came out of matrix in hand specimen sized chunks. One characteristic of this celestine was interesting, some of it had a gray cast to it. Very much unlike the clear to white and blue specimens we are accustomed to seeing.

Newsletter editor Tom Bolka saved the day from being mired as a monomineralic experience when he found and extracted pieces where celestine had some nice little honey-colored calcite point friends.

If this report is in error, and you had a banner day, please let the field trip chair know, because not only will photos of your finds make for a more interesting report, but you will also find fame and fortune.

Auglaize, Junction, Paulding Co. Plant Survey Report

By Johan Maertens

mr.calcite at live.com

Field trip report

Date of Survey: June 15, 2019

Locality: Auglaize, Junction, Paulding Co., Ohio

Dr. John Medici presented “Some Auglaize Quarry Mineral Collecting, 1968 to Date” during the 7th Annual Friends of Mineralogy Midwest Mineralogical Symposium. That exited me and while much collecting happened during the easier access years (and stronger muscles and stable footing John?), one never knows and has to experience the site in person.

It happens. While I was researching and writing this contribution and wanted to make it a Mercedes class article by “digging a little deeper” (Mercedes stars are common in crystals), I was overtaken by the Rolls Royce class article by FoM-MW members Ken Bladh and John Medici (Medici, Auglaize). They did a great job in documenting collecting experiences and minerals gathered at the Auglaize locality. Their detailed and well document article got me in the Rolls-Royce Spirit of Ecstasy.

Prior to the trip, I found several purchased Auglaize specimens, in my calcite collection. I had never visited the Auglaize locality before and was not aware of its (local) fame. It was one of those would-like-to but hard-to-walk-in places. Fortunately, I moved to Ohio and joined the local Friends of Mineralogy chapter. My calcite samples provided me with a flavor and reference of what could be found. Research on the internet added more opportunities.

I packed several regional calcites in a flat and Randy Marsh was so kind to identify some calcites from Ohio and Indiana. Some unknowns remain. Joe Vasichko, where are you? You remain elusive.

The attendees gathered in the garage/workshop for sign up and safety briefing. The location was fitting, as the morning had substantial chance for rain, and we got intermittent drizzle to rain. Well, the weather did not bother me too much while in the quarry, but the drive home to Cincinnati was at times white knuckle, with heavy downpours and poor visibility starting when we signed out from the quarry.

I started on a bad note, when my car refused to start in the quarry parking lot. Like the whole battery was dead. We received the foreman’s cell phone number for emergencies and I texted him my situation. After he guided the collectors in the quarry, he returned and jump started the car and I joined the group, who was well spread out by then. Still puzzling, as I got no cell phone reception in the pit.

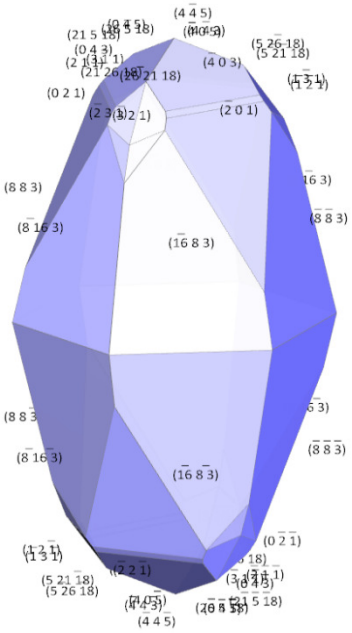
Collectors could roam most of the single level pit and search in rock piles, the muck pile and rows of broken rocks.

I drove up to the rows of hydraulic hammered broken boulders. Usually these are quite fresh with opportunities to find interesting specimens. Because of the rain, I left most gear in the car and walked light.

There were many rocks with stylolite exposures and others with fossils (bulbous hemispherical stromatoporoids (mainly of laminated and tabular forms, up to 2 feet tall), cemented agglomerates coral and shell fragments). The rows were reasonable but not overly productive, yet provided a nice sample of many types of rocks of the facies exposed in the quarry.

With a large group present, it is impossible to visit everyone to see what they collected and I share my experience.

One 2-foot diameter boulder of light brown limestone did not scare me and opaque white calcite filled fissures dotted with sphalerite hinted at the promise of open spaces. This boulder survived blasting, moving, tumbling, hydraulic hammering and now the pounding of my sledge. What are the chances of finding specimens intact? Some luck was with me (I favor my skill) and the boulder split in several pieces along the calcite filled fissures, exposing more sphalerite crystals and vugs with colorless transparent calcite crystals up to 32mm tall. They are different from the usual honey colored crystals growing in vuggy limestone. These calcites are dominant bipyramidal with double rhombohedron terminations and extra steeper rhombohedron and scalenohedral modifications. Modelling the crystals is a work in progress; current status exhibited here.



The sphalerite is brown with a reddish hue with some crystals approaching a golden brown, and translucent to opaque. The subhedral to anhedral clusters of sphalerite crystals are always attached to the brown host rock and are up to 70 mm long. All of them are fractured, and acid etching of the host calcite results in sphalerite pieces and fractured crystals. In other rocks, sphalerite was found on chert surrounded by massive calcite. Special was a banded chert crust enclosing calcite and sphalerite.

Another large boulder exposed a 20cm wide vein with white opaque massive calcite and yellow translucent to Iceland spar clear transparent massive calcite cores. This calcite luminesces and phosphoresces weak white under short wave ultraviolet exposure.

Chert nodules in limestone, have voids containing colorless transparent drusy and micro quartz crystals, 1 to 2 mm individual and smaller. Some boulders contained chunks of pale to white fragmented fossilized coralline debris conglomerates (wackestone?) (up to one foot) with chert crusts and dissolution vugs after corals, replace by a druse crystallized quartz core or lining. In the same rows of broken boulders, I collected several specimens with a green earthy material in limestone vugs, especially in a hard, light-grey limestone that is similar in appearance to unglazed porcelain (porcellanite?). The green material also appeared, in a nice color contrast, on colorless calcite. This is probably glauconite. Carlson (Carlson, Ohio Minerals) lists glauconite from western Ohio and the shallow marine origin of the rock adds to the probability for this visual identification.

During a dry spell (literally and figurative) I moved to the muck pile. There I found small calcite crystal clusters, colorless transparent with a typical Auglaize shape. Few of the prized zoned fluorite (colorless cubes around a purple cubic core) were found. Some collectors, including Jay Medici located boulders with vugs containing brown and small iridescent purple fluorite crystals. One has a good day at Auglaize if one finds the ever-elusive iridescent fluorite. Prize-holding boulders were concentrated in the blast pile.

Randy Marsh showed a calcite crystals cluster (30 mm) in the Auglaize morphology tradition, translucent with a honey hue.

For a first-time visit, I found specimens of most reported minerals (except marcasite and dolomite). I am grateful for access to this locality and the help from collectors in providing identification. The Auglaize Quarry is reluctant to give up her specimens, and John and Ken's Auglaize quarry article spanned decades and many trips. Driving away half soaked from sweat or drizzle with some nice calcites makes my month!

Acknowledgments

Thank you, Reggie Rose and Jeff Spencer for coordinating the field trip.

Thank all participants for excellent safety and collecting behavior.

Thank you, Shelly Company for facilitating access for the survey.

References

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

Medici J., Bladh K., The Auglaize Quarry. The Mineralogical Record Vol 50(4), pp. 399-427 , 2019

Figures - All specimens, pictures by and copyright to Johan Maertens, except where noted

Figure 1 - Auglaize Quarry, muck pile collecting

Figure 2 - Calcite crystal, 32 mm

Figure 3 - Fluorite (picture/collection Bob Dewitt)

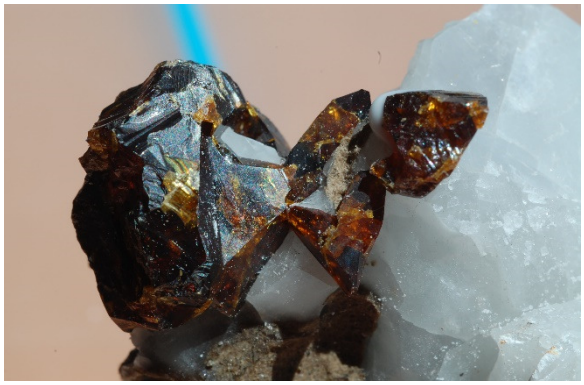


Figure 4 - Sphalerite (35 mm view)

Figure 5 Quartz (25 mm view)

Figure 6 Stylolite (100 mm view)

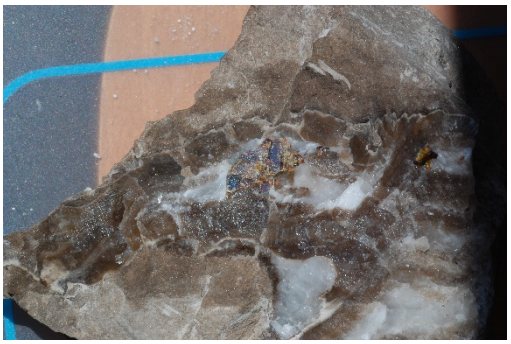


Figure 7 Chert, sphalerite, calcite (135mm view)

Fluorescence Exhibited by Certain Herkimer Diamond Specimens

By Calvin Harris (June 2019)

Introduction

Quartz generally does not exhibit fluorescence, so it is intriguing and worth investigating luminescence displayed by certain Herkimer diamonds when exposed to ultraviolet light. This paper will describe the effects that four different wavelengths of ultraviolet radiation have on specimen ch2012028fl from Herkimer Diamond mine located in the state of New York and specimen ch2013028fl from St. Johnsville, New York. These specimens are part of my personal collection and were acquired for their educational value. The testing procedures regarding this study are basic and easily reproducible. A description of these test methods and their outcomes will be provided. Additionally, an account of possible causes of the luminescent responses will be discussed.

Geologic Setting

Current theory explains that Herkimer diamonds from Herkimer County form by slow crystallization in vugs within dolostone. This process occurs when silica is suspended in solution by certain organic acids that form when bacteria decomposes organic matter. These acids are lost through thermal splitting when temperatures become elevated from sediment burial, which allows formation of the Herkimer diamonds.

During formation, a fluorescence generating activator may become incorporated within the crystallizing mineral. Under favorable conditions, a sufficient amount of the activator can accrue while the solidification process continues until completed. The publication, *Fluorescence: Gems and Minerals Under Ultraviolet Light* by Manuel Robbins, indicates that the presence of organic matter as inclusions is attributed to the blue-white fluorescence produced by exposure to shortwave ultraviolet radiation.

Specimen Acquisition

In 2012, while purchasing fluorescent minerals from a well acquainted dealer, I noticed a Herkimer diamond attractively perched within a pocket of medium gray, fine grained dolostone. This specimen was collected from Herkimer Diamond mine, Herkimer County near Middleville, New York. I seriously considered buying this specimen because of its aesthetic quality under daylight conditions. Before the purchase, I wanted to determine any fluorescent response to ultraviolet light. When permitted by a seller, this is my normal routine before buying any specimen at mineral shows or rock shops. Fortunately, the dealer was generous enough to allow handling of the sample for testing and even offered a cardboard box to provide some shade from ambient light. In practice, I use a RAYTECTOR 5 ultraviolet lamp for testing, even when the results are doubtful. This unit provides shortwave and longwave radiation independently or in unison. Upon exposure to shortwave ultraviolet radiation, I was pleasantly surprised to see a bluish-white fluorescent zone located in its center. At this point, there was no question about buying the item and the deal was made. This sample was cataloged ch2012028fl.

The experience in 2012 proved valuable the following year when the same dealer offered a greater selection of Herkimer diamonds for sale. As a result, selecting another fluorescent specimen was straightforward and highly anticipated. Consequently, a sample from St. Johnsville, New York was purchased and assigned the identification code, ch2013028fl.

Specimen Description

The Herkimer Diamond mine specimen has been cataloged ch2012028fl. This alpha-numeric code identifies the year of actuation and the sequence of fluorescent mineral added during that year. The "diamond" is slightly less than an inch in length, with a fractured center and relatively clear terminations. This center occupies a considerable area of the specimen and is quite distinct from the clearer parts of the sample. The crystal's position in the matrix allows viewing from almost any direction. It was collected from Herkimer Diamond mine, which is located in Herkimer County near Middleville, New York.

Specimen ch2013028fl collected from St. Johnsville, New York consists of several crystals situated in an open pocket within dolostone. The largest crystal is about 1.75 inches long and the smallest crystal is a little more than 0.5 inches in length. All of the crystals formed with fractured centers and moderately clear terminations, although the extent of the fractured areas vary. The St. Johnsville, New York locality shares the same geological profile as the Herkimer Diamond mine.

Test Procedures and Results

Three SuperBright II lamps were used for this study and are manufactured by UV SYSTEMS, INC. These sources emit the following wavelengths: 254nm (shortwave), 312nm (mid-wave), 351nm (longwave); a SuperBright III that emits the wavelength 370nm (longwave) was also employed. Each ultraviolet source was positioned approximately 1-2 inches from the test subject to provide enough exposure for careful observation.

The notations, ~ (approximate), - (less), - - (significantly less) are used to describe the relative brightness of the chromatic responses in a readily comprehensible manner. The results of short-wave exposure were used as a standard of comparison because it provided the most prominent response.

Specimen number	**Shortwave (SW) 254nm**	**Mid-wave (MW) 312nm**	**Longwave (LW) 351nm**	**Longwave (LW) 370nm**
ch2012028fl	Bluish white	Bluish white -	Gray - -	Gray - -
ch2013028fl	Light blue	~ Same as SW	Bluish gray - -	Bluish gray - -

The outcome of shortwave and mid-wave wavelengths were closely related while a significant difference was noted with longer wavelengths. Test results show that specimen ch2012028fl exhibited a descending luminescent effect toward longer wavelengths. The progression exhibited by specimen ch2013028fl was more gradual, but otherwise similar to specimen ch2012028fl. It is interesting to note that the matrix for both specimens exhibited a moderate fluorescent and phosphorescent response to the various wavelengths, although this response was most pronounced with shortwave and mid-wave emissions.

Discussion

The fluorescent responses are restricted to the fractured zones of the crystals. The zoning is not homogeneous and the areas of dense fragmentation are distinct. These areas appear white due to the concentration of fractured crystalline mass. One of the references used for this study indicates that the presence of organic matter as inclusions is attributed to the blue-white fluorescence when exposed to shortwave ultraviolet light. Bituminous matter is the most common type of inclusion in Herkimer diamonds, although carbon dioxide, salt water, liquid clear petroleum and minerals such as pyrite and calcite have been noted.

The luminescent responses of the samples tested draw a concern regarding the type of activator that effected the fluorescence. While organic material has been ascribed the cause of fluorescence, the role of organic activators is not well understood. For example, the luminosity of organic minerals such as idrialite are similar to effects caused by organic activators such as fulvic acid humic acid, although the origins of these different species are vastly different. As a whole, these compounds exhibit a pastel fluorescent and phosphorescent effect in response to multiple types of ultraviolet wavelengths. However, additional work is needed to determine if liquid clear petroleum is a factor. The luminescence displayed by the Herkimer diamonds was limited to fluorescence. In addition, the chromatic feature was saturated which is indicative of inorganic activators.

Observations and Comments: It was noted while testing both samples that the dolostone matrix responded in a manner consistent with the presence of organic activators and the responses to shortwave and mid-wave radiation were especially conspicuous when compared to the longwave radiation. The dolostone associated with the Herkimer diamond locations described in this paper forms under low-temperature conditions and the primary constituents, dolomite and calcite are a carbonate minerals well known for their luminescent attributes. The presence of an organic activator may be attributed to post-depositional migration of the activator that integrated this rock type. A careful study of the cause and effects regarding the fluorescent and phosphorescent aspects of dolostone is needed to gain clarification.

Field collectors occasionally find Herkimer diamonds accompanied by the carbonaceous substance, anthraxolite. At times, some of Herkimer diamond specimens from New York State have a pronounced tar-like odor. Interestingly, one particular specimen of mine from St. Johnsville, New York has no obvious staining, but the odor is evidence that volatile aromatic compound(s) are present. It seems likely that the dolomite matrix was permeated with an asphaltic compound or similar agent. This specimen cataloged as ch2013026fl is so malodourous that it has to be encapsulated in air-tight containment and stored in isolation.

Conclusion

There are several areas of interest spawned by this study. These include an investigation toward identifying the type of activator and why fluorescence is restricted to the fractured zone of certain Herkimer diamonds. In addition, understanding the nature regarding the interaction between ultraviolet light and the dolostone matrix. Moreover, additional research should be afforded to better comprehend the role anthraxolite plays in the formation of Herkimer

diamonds. The publication, "*The Collector's Guide to Herkimer Diamonds*" by Steven Chamberlin and George W. Robinson has noted this is a possibility, especially since anthraxolite can form before, during and after crystal formation.

Selected Bibliography

Chamberlain, Steven C., and George W. Robinson. (2003). "The Collector's Guide to Minerals of New York State". Schiffer Publishing, Ltd., Atglen, PA.

Robbins, Manuel. (1994). "Fluorescence: Gems and Minerals Under Ultraviolet Light". Geoscience Press, Inc., Phoenix, AZ.

Walter, Michael R. "The Collector's Guide to Herkimer Diamonds". (2014). Schiffer Publishing, Ltd., Atglen, PA.

Harris, Calvin. "Comments Regarding Organic Activators in Fluorescent Minerals". (2015). UV Waves, Newsletter of the Fluorescent Mineral Society, Inc. Volume 45, Numbers 2-3, March-June 2015.

Event Calendar

SEPTEMBER	**TITLE:** 43rd Annual Greater Indianapolis Gem, Mineral and Fossil Show **DATE/TIME**: Sep 6, 2019 to Sep 8, 2019 **LOCATION**: Hancock County 4-H Fairgrounds, Greenfield, IN **HOST/COORDINATOR**: Cheryl Hamilton (clhamilton1951@gmail.com)
	TITLE: Colorado Mineral and Fossil Show (Fall) **DATE/TIME**: September 6, 2019 to September 14, 2019 **LOCATION:** Crowne Plaza Denver Airport Convention Center, 15500 E 40th Ave, Denver, CO **ACTIVITY**: FM National General Membership Meeting may be held during show
	TITLE: 21st Annual Fall Indianapolis Bead, Gem, Mineral and Jewelry Show **DATE/TIME**: Sep 27, 2019 to Sep 29, 2019 **LOCATION**: Indiana State Fairgrounds, Agriculture/Horticulture Building, Indianapolis, IN **HOST/COORDINATOR**: Van Wimmer (van@toteshows.com)

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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 –

Auglaize Quarry - iridescent Fluorite pocket, 1.5" – John Medici

Affiliations:

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THE MINERALOGICAL SOCIETY OF AMERICA
AMERICAN GEOSCIENCES INSTITUTE
MINERALOGICAL ASSOCIATION OF CANADA
ROCKS & MINERALS MAGAZINE
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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.