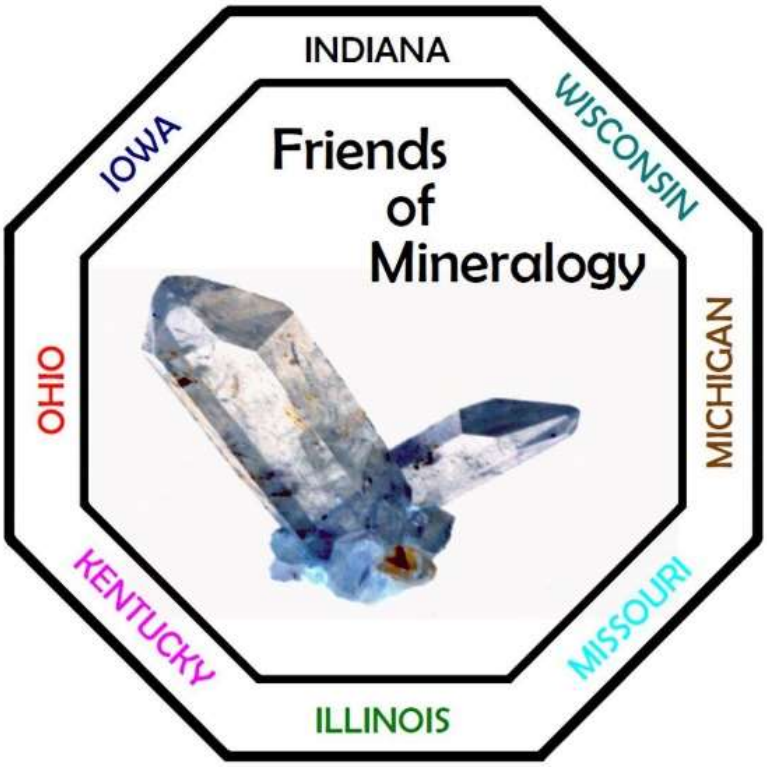
FRIENDS of MINERALOGY

Midwest



Chapter Newsletter for
July – August 2021

Treasurer's Report

Treasurer@fommidwest.org

Treasurer's Report – 6/15/2021

Membership registrations are $20.00 and 2021 memberships are past due! Again, if you paid for 2020 you are good through 2021. If you have any questions at all about your status, please contact me at jspencer@jsite.com.

At last report, we had $8,089.89. in our account. Since the last report we have received $20.00 in dues and $50.00 in donations. This brings our balance to $8,159.89. We have 89 registered members.

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

Request for older editions of the FM Newsletter.

Particularly editions from before 2010 would be appreciated. We are trying to get them archived and available on our website. Please scan and send them to tbolka@att.net and I will pass them along.

Luminosity of Barite from Linwood Mine, Iowa
by, Calvin Harris

Introduction

The purpose of this paper is to describe in detail observations regarding the effect of ultraviolet radiation has on certain barite specimens from Linwood mine in Iowa. A better understanding of barite from this location is gained by identifying and comparing certain luminescent nuances provided by these samples. Additionally, observing these differences is an enriching and worthwhile pursuit for mineral collectors.

Site Description

The Linwood mine is located along the Mississippi River in Scott County near Buffalo, Iowa. The mine is situated in carbonate rock units of the Wapsipinion Group and is about 59 miles south of the Upper Mississippi Valley Mineral District. The Otis Formation is one of several geological units and is noted for its barite deposits. This formation is a karst setting characterized by brecciated, medium grained limestone with evidence of some fossilization; dolomitic horizons are also present.

Description of Specimens

Specimen A consists of opaque, creamy-white, plumose-like tabular crystals situated on a gray, craggy dolostone matrix. The crystals measure approximately 0.5 cm on edge and the specimen measures 10cm x 7cm x 6.5cm.

Specimen A

Specimen B

Specimen B consists of clustered, well-developed prismatic crystals measuring 0.5cm to 2.3cm on edge. These crystals are translucent, grayish-tan and situated on a light brown, fine-grained dolostone matrix. The specimen measures 8.0cm x 7cm x 5.5 cm.

Specimen C (not photographed) consists of a large, partially developed prismatic crystal and smaller well-developed prismatic crystals that are clustered on a craggy, gray, dolostone matrix. The largest crystal measures 11 cm on edge with grayish-tan coloration and areas that are translucent and opaque. The smaller crystals measure 0.7cm on edge with grayish-tan coloration and are translucent. Overall, this specimen measures 11cm x 6.5cm x 6cm. Note: Only the large crystal was evaluated for luminosity to ensure accurate results.

Test Procedures and Results

The methods used for testing provide satisfactory results and can be applied in the field or under controlled conditions. Ultraviolet lamps that emit shortwave (254nm), mid-wave (312nm) longwave (351nm) and longwave (370nm) radiation were used to produce luminosity. Each lamp was place 3-4 inches from the specimen for evaluating fluorescence and 1-2 inches for phosphorescence. Depending on each specimen, the time needed for sufficient viewing of phosphorescence was 10 seconds or 25 seconds.

Table 1. Specimen A

Wavelength	**Shortwave (254nm)**	**Mid-wave (312nm)**	**Longwave (351nm)**	**Longwave (370nm)**
Fluorescence	Bright intensity, bluish-white coloration.	Bright intensity, white coloration w/slight green tint.	Moderate-bright intensity. Cream-white coloration, bluish-white at terminations.	Intensity, color similar to longwave 350nm.
Phosphorescence	Bright intensity, lime-green coloration; 11 second duration with 10 second exposure.	Similar to SW, except slightly brighter; 13 second duration with 10 second exposure.	Intensity, approx., 50% of SW, similar color; 8 second duration w/ 10 second exposure.	Low intensity, light-gray coloration; 6 second duration with 10 second exposure.

LW 350nm

LW 350nm2

Table 2. Specimen B

Wavelength	Shortwave (254nm)	Mid-wave (312nm)	Longwave (351nm)	Longwave (370nm)
Fluorescence	Bright intensity, bluish-white coloration in terminations and some planes. Moderate-bright intensity, bluish-gray coloration in remaining areas.	Similar to shortwave except more blue-gray response compared to blue-white response.	Moderate intensity; white and gray chromatic response. Coloration pattern similar to shortwave.	Similar to longwave 350nm, except slightly brighter.
Phosphorescence	Moderate-bright intensity, lime-green color; 8 second duration with 25 second exposure.	Similar to shortwave except slightly brighter; 11 second duration with 25 second exposure.	Low intensity response. Scattered, lime-green coloration; 5 second duration with 25 second exposure.	Similar to longwave 350nm, except brighter.

Table 3. Specimen C

Wavelength	Shortwave (254nm)	Mid-wave (312nm)	Longwave (351nm)	Longwave (370nm)
Fluorescence	Very low intensity, greenish-gray coloration. Restricted to one area.	Intensity slightly brighter than shortwave. Lime-green coloration.	Intensity and color similar to shortwave.	Results similar to longwave 350nm.
Phosphorescence	Low intensity, greenish-gray color. Slightly brighter than fluorescence w/o zoning; 4 second duration with 25 second exposure.	Low intensity, blue-gray coloration; 4 second duration with 25 second exposure.	Very dim intensity, gray coloration; 2 second duration with 25 second exposure.	Results indiscernible.

Summary of the Observed Nuances

- Generally, the shortwave and longwave results were consistent with findings in accepted reference books, but there were several noted differences based on recently developed 312nm and 370nm wavelength sources. Also, with few exceptions the intensity of fluorescence and phosphorescence diminished with longer wavelengths.
- Overall, the plumose-like tabular crystal habit produced brighter fluorescent and phosphorescent intensity than the prism forms. The fluorescence shifted from a cool to warm chromatic characteristic. Exposure time needed to produce phosphorescence and the time of duration were similar. The lime-green color in response to 254nm, 312nm and 351nm wavelengths was fairly consistent, but there was a shift toward gray coloration in response to wavelength 370nm.
- The luminescent responses exhibited by the prism forms were interesting. Fluorescent zoning was displayed at some terminals and certain planes when one specimen was exposed to the four wavelengths. The fluorescent intensity was bright coupled with bluish-white coloration. The remaining specimen exhibited a bluish-gray coloration. These features diminished noticeably reduced upon exposure to longwave radiation. However, no apparent zoning was observed during phosphorescence. Conversely, another sample with the same crystal habit displayed almost negligible luminescent responses to the wavelengths employed.

Selected References

Freiburg, Jared T., Julio A. N. T. Soares, Pingfan Hu. "Barite from the Linwood Mine, Scott County, Iowa." 1992. *The Mineralogical Record* 23, no. 1 (May/Jun): 231-238.

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Henkel, Gerhard. "The Henkel Glossary of Fluorescent Minerals." 1989. *Journal of the Fluorescent Mineral Society*, 15, (1988-1989): 25.

Robbins, Manuel. *The Collector's Book of Fluorescent Minerals.* 1983. Van Nonstrand Reinhold Company, Inc., pp. 260, 267, 268.

Field Trip Report "Valles Mines"

(Randy Marsh) ***Reprint from July – August 2014***

Field Trip with the Mississippi Valley Chapter

On Saturday May 17, Clyde Spencer and Randy Marsh met with the Friends of Mineralogy Mississippi Valley Chapter to participate in the Valles Mines trip they had set up. The day started with an orientation at the Valles Mines Offices/Museum where Steve Frazier talked about the history of mining there and Art Hebrank spoke about the geology/mineralogy of the area. The group then proceeded to explore some old hand diggings close to the museum in the hopes of finding some galena. As the area was quite overgrown, it made digging challenging, but a few small specimens were found. After enjoying a picnic lunch, we drove to the Guaratee Mine dump where we searched for boxwork/drybone hemimorphite. Our final stop of the day was at a dam constructed of barite pit residuum. Here, we were able to find some excellent specimens of drusy quartz/Missouri lace agate with barite. Overall, a very good day of collecting!

500 pound galena cube!

On Sunday May 18, the group enjoyed an outstanding tour of the Missouri Mines State Historic Site and the processing plant of the former St. Joe Lead Company. We viewed the excellent mineral collection in the museum and watched a video from the 1950's that showed the actual mine in operation.

After that, Clyde and Randy joined a smaller group for a trip to the Silver Mine recreation area before taking on the 8 hour trip back home.

This was a great opportunity to learn about mining in Missouri, to explore a variety of different collecting sites, and to make new friends with our partner Chapter.

Drusy Quartz and Baryte Specimen

Field Trip Report "Auglaize Quarry"

(Reggie Rose) -*Reprint from July – August 2014*

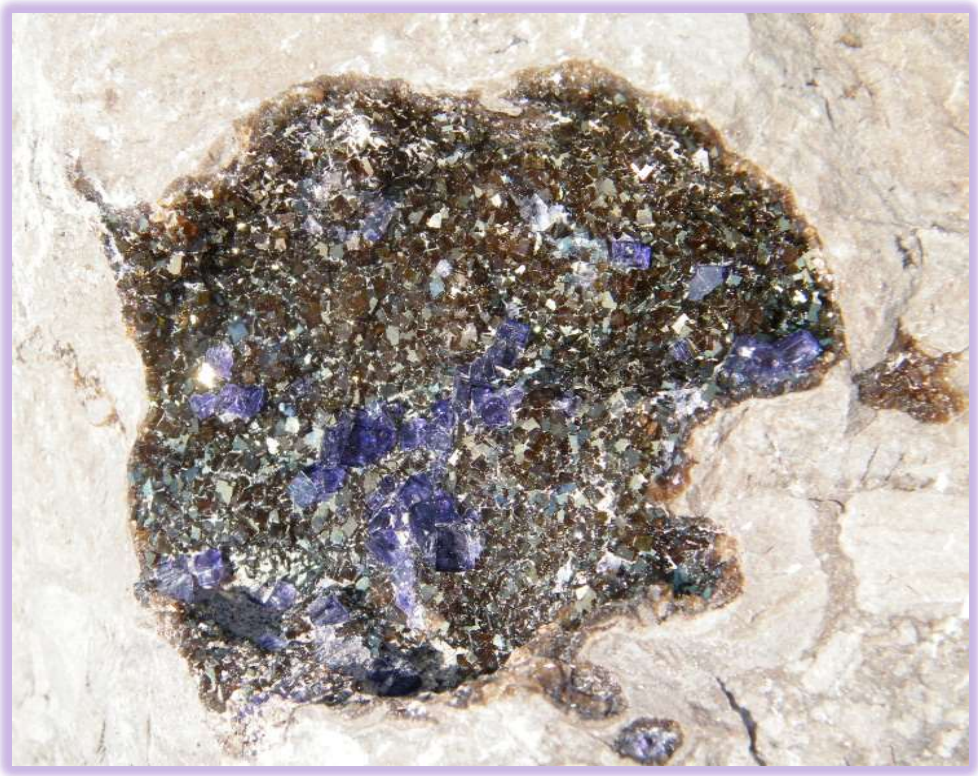
Auglaize Plays Hard to Get but Bears a King

Do you remember ever having a crush on someone in junior high school? Maybe you asked her to the school dance, or if it was a Sadie Hawkins affair, you asked him to the dance. Then, do you remember not going to the dance because she/he artfully declined your invitation? That is Auglaize. Auglaize can be as elusive in yielding its specimens as that dance partner you never had. If twenty people go to Auglaize (we had 19), 2 or 3 will have a slow day, and 2 or 3 people will have a great day. The others will be somewhere in between.

I can only report on specimens that I see on the trip and on the collectors that collected them. Therefore, the report below reflects what I saw on the trip. With regards to specimens, I saw calcite (white rhombohedral and clear scalenohedral) and iridescent, glassy fluorite (both purple and amber-brown). Though sphalerite is found in this quarry, I saw none this year.

Remember what I just said about 2 or 3 people out of 20 having a good day? One has a good day at Auglaize if one finds the ever-elusive iridescent fluorite. Prize-holding boulders were concentrated in a ten meter line along the edge of the blast pile. There were in fact three who found fluorite in numbers or in a high-quality specimen. Our president, Clyde Spencer, found a boulder about the size of a small watermelon with a hint of a pocket in it. Splitting the boulder revealed multiple purple and amber-brown fluorite pockets - nicely done. Also finding fluorite was Michigan's John Lindsay. He found multiple hand sized specimens and a couple of larger boulders with fluorite including a real beauty with both purple and amber-brown. However, the fluorite pocket of the day was found by Indiana's Alan Dewitt. Last year Alan and Amy Bach discovered a multiple specimen fluorite pocket. This year he outdid last year's find discovering a boulder with a museum quality two-color fluorite pocket in it. One glassy purple cube approached the 3/16" mark. Alan says that he had been to Auglaize approximately nine times before 2013 and had only discovered fluorite the last two years. Since Alan has struck it big the last two years at Auglaize, he holds the title of "King of Auglaize" until he is deposed.

To reflect on the above report, you should not be tepid when considering your attendance on a future trip. If you choose not to attend, you will miss out on one of the truly beautiful specimens we collect in our region, the ever-elusive iridescent fluorite.



"The ever –elusive iridescent fluorite"

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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.