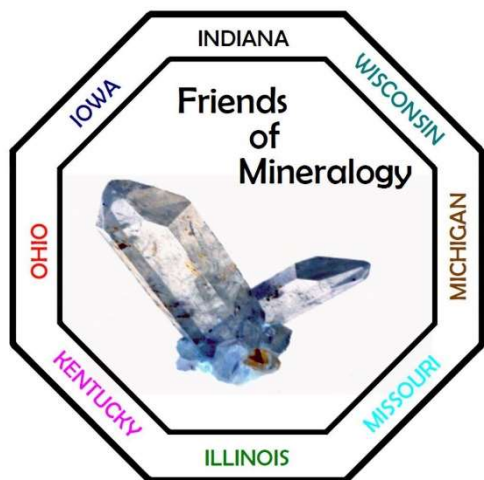


FRIENDS OF MINERALOGY

MIDWEST



Midwest Chapter Newsletter for March – April 2020



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Friends of Mineralogy Midwest Chapter
8th Annual Mineralogical Symposium
 Hosted by the Miami University Karl E. Limper Geology Museum

DATE: Saturday March 14, 2020

TIME: 9:00 AM – 5:00 PM

LOCATION: 152 Shideler Hall (Spring Street & Patterson Ave), Miami University, Oxford, OH

CONTACTS: Randy Marsh (vpprograms@fommidwest.org or 513-515-7890)

Ken Bladh (president@fommidwest.org or 937-390-1742)

STATEMENT OF PURPOSE: FM's objective is to promote, support, protect, and expand the collecting of mineral specimens, while furthering the recognition of the scientific, economic, and aesthetic value of minerals and mineral collecting. The purpose of the symposium is to bring together professional and amateur mineral enthusiasts to share information of common interest, to build a local mineralogical community and to provide students with an opportunity to share their work and receive public recognition for it.

DETAILED AGENDA:

- 9:00-9:30 FM Midwest Chapter Meeting (open to all)
- 9:30-10:30 *Dr. John Jaszczak*¹: **Criminal Minerals**
- 10:30-11:00 *Dr. Travis Olds*²: **Adventures for new minerals from Utah, Colorado, & the Czech Republic**
- 11:00-11:30 *Dr. Claire McLeod*³: **Extraterrestrial Mineralogy: Insights from 5 new Lunar Meteorites**
- 11:30-1:00 Lunch Break Armstrong Student Center and Museum Viewing
- 1:00-1:30 *Dr. John Rakovan*⁴: **Split Minerals**
- 1:30-2:15 *Dr. John Medici*⁵: **Unusual Mineral Findings at Delphos, Van Wert Country, Ohio**
- 2:15-2:30 Break
- 2:30-4:30 Student Talks (20 min each)
- 4:45-5:00 Awards for Student Talks

¹ *Dr. John Jaszczak is Professor and Interim Chair, Department of Chemistry, Michigan Technical University.*

² *Dr. Travis Olds is the new curator of the mineral collection at the Carnegie Museum of Natural History.*

³ *Dr. Claire McLeod is an Assistant Professor of Petrology and Geochemistry at Miami University. Her research involves looking at the mineralogical make up of returned Apollo samples and lunar meteorites in order to evaluate the geological history of the Moon.*

⁴ *Dr. John Rakovan is a Professor of Mineralogy at Miami University and an executive editor of Rocks & Minerals.*

⁵ *Dr. John Medici is an American Chemical Society emeritus Chemical Abstracts retiree (Biochemistry/Food/Nutrition editor-translator) with extensive field collecting travels in over half of the 50 US states and several provinces in Canada.*

STUDENT TALKS:

1. NEW INSIGHTS INTO GROWTH OF WIRE GOLD

C. J. Anderson and J. Rakovan

Department of Geology and Environmental Earth Science, Miami University, Oxford, OH, 45056

2. CHEMISTRY OF APATITE FROM VEIN DIKE DEPOSITS IN THE GRENVILLE PROVINCE

C. Emproto, J. Fink, S. Mounce, and J. Rakovan

Department of Geology and Environmental Earth Science, Miami University, Oxford, Ohio, 45056

3. AN UNUSUAL OCCURRENCE OF ZINC SULFIDE FROM THE FRANCON QUARRY, MONTREAL, CANADA

J. Fink¹, C. Emproto¹, and J. Chappell²

¹Department of Geology and Environmental Earth Science, Miami University, Oxford, Ohio, 45056

²Department of Geology and Geological Engineering, Colorado School of Mines, Golden, Colorado, 80401

4. MELT AND MICROMINERAL INCLUSIONS IN APATITE, CALCITE, FLUORITE, ALBITE, AND AUGITE FROM THE WILBERFORCE AREA, ON, CANADA

S. Mounce, C. Emproto, M. Murchland, M. Rutherford, and J. Rakovan

Department of Geology and Environmental Earth Science, Miami University, Oxford, OH, 45056

5. OPTICALLY ANOMOUS FLATTENED CRYSTALS FROM MUSCOVITE

M. Murchland, M. Rutherford, J. Fink, and J. Rakovan

Department of Geology and Environmental Earth Science, Miami University, Oxford, Ohio, 45056

6. MINERALOGICAL CHARACTERISTICS OF OPTICAL ANOMALIES

M. Rutherford, M. Murchland, J. Fink, and J. Rakovan

Department of Geology and Environmental Earth Science, Miami University, Oxford, Ohio, 45056

ADDITIONAL PRESENTATIONS by KEYNOTE SPEAKER: Dr. John Jaszczak will be giving an additional talk entitled *Magnificent Merelani Microminerals* at the Cincinnati Mineral Society meeting at 8 PM Friday, March 13, 2020. Contact Terry Huizing at tehuizing@fuse.net for further details or visit the CMS website (mineralsociety.org).

DIRECTIONS and PARKING: The Limper Geology Museum is located on the Miami University campus just inside the East and West entrances to Shideler Hall on the first floor. Shideler Hall is located west of the intersection of US Highway 27 and State Route 73. See map on following page.

Recommended parking is in Cook Field lot near the bell tower across the road from Shideler Hall. Parking requires the purchase of a permit. Please visit <http://www.miamioh.edu/parking/permits/index.html>, select Visitors, and then click Purchase Visitor Permit. You will need to display this permit on your dashboard the day of the event. Cost is \$3.

You may also obtain permits from John Rakovan inside the auditorium on the day of the symposium. You will need cash. You will have to walk back to your vehicle to display the permit.

+ Current Students, Faculty, and Staff

+ Departments and Offices

+ Contractors and Vendors

Visitors

Parking for visitors may or may not require a permit. See the information below for parking restrictions.

Permit Required

- At all times for University surface lots (except for Special Events, see below)
- From 7 a.m. to 6 p.m., Monday through Friday, on Spring, Oak and Maple Streets

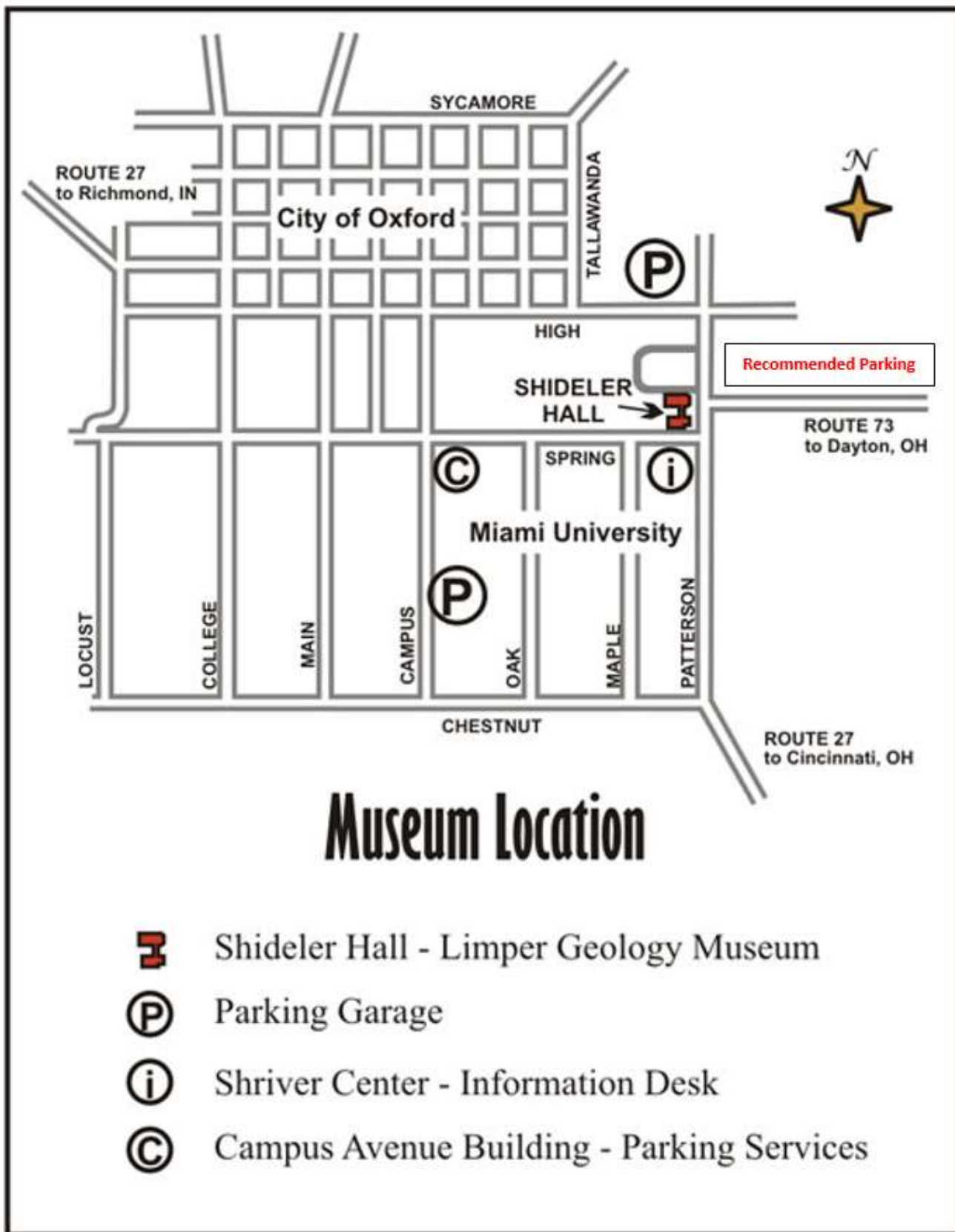
Permit Not Required

- Any parking meter
- Campus Avenue Garage (hourly rates and event parking rates apply)
- North Campus Garage (hourly rates and event parking rates apply)
- Every day from 6 p.m. and 7 a.m. on Spring, Oak, and Maple Streets
- Between noon Friday and 10 p.m. Sunday on weekends of home football games

Purchase a Permit

Visitors may purchase a permit at the HOME Office during business hours or online for \$3 per day. Registration requires the license plate number, make, model, and color of the vehicle to be registered. Students and contractors are NOT permitted to purchase visitor permits.

[Purchase Visitor Permit »](#)



Treasurer's Report

Treasurer@fommidwest.org

As of 2/27/2020, seventy members have registered for this year. This includes 6 new members. Several members included additional donations with their memberships. 2020 dues are delinquent as of 3/1/2020 so please use the form available on the website and mail in your registrations. **Do not wait for the symposium or MSHA training events to submit your dues!**

In conjunction with the new field trip guidelines, the board agreed to purchase of a pair of walkie-talkie units for **\$114.21** to be used by field trip leaders. This purchase was completed in 2019.

Our current balance is \$9177.29.

Jeff Spencer – Treasurer
Friends of Mineralogy Midwest Chapter

Don't forget!

- If you have not already done so, get your dues paid.
- Scott Kell will once again be giving his collector-specific training on Saturday, March 21, from 9:00 AM -2:00 PM in the Barbara Deer Kuss Science Center at Wittenberg University, Springfield, Ohio. If you are using your GPS, the street address is 315 Bill Edwards Drive, Springfield, OH. Parking is available directly across the street from the Science Center. Signs will be posted on the doors of the Science Center to guide you regardless of what door you come in.

A Study Comparing the Luminescent Properties of Barite Concretions from Warden Point, England and Elk Creek, USA, by Calvin Harris

Introduction

The Warden Point and Elk Creek specimens featured in this article consist of barite crystals that formed within concretions. These crystals have dissimilar forms, sizes and colors. Although different from each other, they are typical of the specimens found in their respected localities. This paper describes the fluorescence and phosphorescence of these barite crystals when exposed to four different ultraviolet wavelengths.

Geological Settings

The host rock at Warden Point consists of Eocene clay that formed near the coast of Isle of Sheepey, within the London Basin. Barite crystals are often found combined with sand grains to form what is colloquially known as barite roses. They also form as crystalline sprays in concretions. These concretions are found embedded in Eocene clay and are accessible when sufficient erosion takes place.

The Elk Creek locality consists of limestone formations along the Elk Creek tributary. Barite crystals can form in elongated prisms that are often yellow, amber and honey colored, and also colorless. They are found in septarium and fossil bearing concretions that form in the Pierre Shale formation of the Late Cretaceous period. The concretions can be collected as the host rock is removed through weathering.

Specimen Description

The specimen from Warden Point consists mainly of two crystalline barite sprays situated on top of a calcite matrix. They have a light tan color appearance. The larger of the two sprays is bow-tie shaped and is no larger than 1.75"x 1". The smaller spray is roughly rectangular and measures 1.75"x 0.5". The height of these sprays was too shallow to measure. Overall, this specimen has a square configuration with a concave base; its dimensions are 4"x 3.75"x 2.5".



Warden Point Specimen – daylight photo

The Elk Creek sample is a concretion fragment consisting of clear, honey-colored, columnar barite crystals and amber-colored, dog-tooth calcite crystals situated on a limestone matrix. Overall, the specimen is 6.4"x 4.75"x 3.75". The barite crystals are elongated; the largest measures 2.0"x 0.5"x 0.5". The calcite crystals measure 0.25" and are clustered on various areas of the specimen.



Elk Creek Specimen – daylight photo

Testing Procedure

Three SuperBright II units and one SuperBright III unit were used for this study. The SuperBright II units emit the following wavelengths: 254nm (shortwave), 312nm (mid-wave), 351nm (longwave) while the SuperBright III unit emits a wavelength of 370nm (longwave). A lead-acid battery supplied the electricity for the lamps. Each ultraviolet lamp was held about 3-4 inches to assess fluorescence and 1-2 to determine phosphorescence. An exposure time of 5 seconds was used to determine phosphorescence because it proved sufficient during my previous studies.

Fluorescent and Phosphorescent Test Results

The abbreviations, **fl** and **phos** are used to indicate fluorescence and phosphorescence.

Specimen identification	Shortwave 254nm response	Mid-wave 312nm response	Longwave 351nm response	Longwave 370nm response
Warden Point	fl: bluish-white w/ tan hue; strong intensity. phos: powder-blue, moderate intensity; 15 sec. duration w/5 sec. exposure.	fl: bluish-white w/ tan hue; strong intensity. phos: greenish-blue, moderate intensity; 10 sec. duration w/5 sec. exposure.	fl: bluish-white w/ tan hue; strong intensity. phos: greenish-blue, moderate/bright intensity; 8 sec. duration w/5 sec. exposure.	fl: bluish-white w/ tan hue; strong intensity. phos: greenish-blue, low intensity; 8 sec. duration w/5 sec. exposure.
Elk Creek	fl: bright greenish-white + tan patch areas. phos: bright lime-green 9 sec. duration w/5 sec. exposure.	fl: approximately same as SW except larger tan patches. phos: similar to SW.	fl: tan, moderate brightness; phos: tan, but dimmer than fl. 7 sec. duration w/5 sec. exposure.	fl: tan, moderate brightness. phos: tan, but less intense than fl. 4 sec, duration w/5 sec. exposure.

Findings

Regarding fluorescence, the Warden Point specimen reacted similarly to shortwave and mid-wave wavelengths. However, fluorescence and phosphorescence yielded a chromatic shift toward longer wavelengths and the duration of phosphorescence decreased when longwave radiation was applied. Interestingly, the 351nm wavelength provided a brighter phosphorescent response relative to the other wavelengths while 370nm provided a relatively low response.

The Elk Creek specimen exhibited similar fluorescent responses to shortwave and mid-wave radiation, except that the areas showing a tan color response were larger with mid-wave exposure. There was a chromatic shift toward the red end of the visible spectrum for fluorescence and phosphorescence when longwave wavelengths were used. Moreover, progressively longer wavelengths led to reduced phosphorescent duration.

The different responses between these barite samples are noteworthy and demonstrate a possible impact from mineralogical variances. The results are based on a very limited number of samples, but there is agreement with the findings of this study and the information found in the selected references. The data from these references are based on ultraviolet equipment that were available at the time of their publication, and this study adds to this knowledge with the use of mid-wave, as well as, an additional longwave wavelength.

Selected References

Robbins, Manuel. The Collector's Book of Fluorescent Minerals. 1983. Van Nostrand Reinhold Company, Inc., pp. 80-81.

Robbins, Manuel. Fluorescence, Gems and Minerals Under ultraviolet Light. 1994. Geoscience Press, Inc., Phoenix, Arizona, pp. 55-61.

Campbell, Thomas J, Donald R. Campbell and Willard L. Roberts. "Famous Mineral Localities: Elk Creek, South Dakota. The Mineralogical Record, Vol. 18, No.2 Mar/Apr 1987. p. 125

Kemp, S. J. and D. Wagner. The Mineralogy, Geochemistry and surface Area of Mudrocks from the London Clay Formation of Southern England. Keyworth, Nottingham British Geological Survey 2006. pp 1,5.

Mindat, (2020) reference search: Warden Point, Isle of Sheppey, Swale, Kent, England, UK
www.mindat.org/loc-1583.html

2020 Officers

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Vice President Programs – Vacant

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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 –

***Calcified Shell – Tom Bolka –
Ruck's Pit, Florida***

Affiliations:

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