

MWF News

Midwest Federation
of Mineralogical and Geological Societies

March 2020 - Issue No. 590

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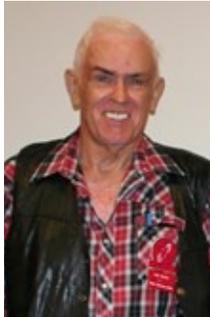


PRESIDENT'S MESSAGE

John Donker, MWF President

As the winter weather gets nearer to spring, the snowbirds are coming back to the cold weather of the 20s and 30s. What a change from the 70s of Arizona!

There was snow from New Mexico to Michigan on my recent trip, and then a change from the ice to the heat. Quartzsite and Tucson were places of many rockhounds, and a lot of deals to be had.



Many clubs are working on their spring and summer shows and sales. As the weather warms up, plan to visit the shows in your area. Many clubs have summer field trips, as well.

Hope everyone had a good winter. Remember the MWF Executive Committee meeting in Wyoming, Michigan (near Grand Rapids) coming up! The annual MWF Convention will also be held in our great state in September, in the city of Howell. We hope to see a lot of rockhounds in Michigan this year.

BUY ROCKS AND MINERALS IN BEER CITY!

Kreigh Tomaszewski, President
Indian Mounds Rock and Mineral Club (Michigan)

The Indian Mounds Rock and Mineral Club will present its 45th annual show Thursday through Saturday April 9, 10, and 11, 2020. The show is being held in conjunction with the Midwest Federation's Executive Committee meeting. The show will be held at Rogers Plaza Town Center, 972 28th Street, in Wyoming, Michigan. Hours on Thursday and Friday will be 9:30 a.m. to 9 p.m.; Saturday hours will be 9:30 a.m. to 7 p.m. Parking and admission are free.

We will have more than a dozen professional dealers, artisan displays and demonstrations, egg carton collections for children of all ages, grab bags, member and club sales, museum-quality exhibits, and rock and mineral identification.

Grand Rapids is known as Beer City because of the concentration of micro-breweries around the city serving a great variety of food. Other places to consider while visiting include the world famous Frederik Meijer Gardens & Sculpture Park,

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ROCKS AND MINERALS IN BEER CITY, CONT.

(Continued from page 1)

Frank Lloyd Wright's Meyer May House, and the John Ball Zoo.



Waterfall in the Sculpture Park of Frederik Meijer Gardens. Photo by Michael Barera, via Wikimedia Commons.

Grand Rapids has several museums focusing on different topics, too. You can visit the Gerald R. Ford Presidential Museum, the Grand Rapids Public Museum, the Grand Rapids Children's Museum, and the Grand Rapids Art Museum.

For more information about the Executive Committee meeting, contact Donna Moore, mwfsecretary@gmail.com. For more information about the show, go to www.indianmoundsrockclub.com.

MEET A CHAIR: ENVIRONMENT & LEGISLATION

Susan Stanforth, MWF 1st Vice President

This month I interviewed Catherine Clevenz, chair of the MWF Environment and Legislation Committee.

1. When did you first get the rockhounding bug?

I really started to get interested in rocks as a child, while being on vacation with my family at White Birch Lodge close to Traverse City, Michigan. They taught me how to find Petoskey stones and I thought it was cool to see the difference when they got wet. I still have a couple of those treasures from that time. Then I had children who liked to pick up rocks from our vacations.

I still didn't have any idea that rock clubs existed. As I got older, I found myself learning about different rocks, especially semi-precious and precious stones. Not long after, I started to go to the yearly Gem and Mineral Show at the Stranahan in Toledo. I finally joined the Toledo Gem & Rockhound Club, after going to a few meetings and learning about places to go and rockhound.

2. Which clubs have you joined? How long have you belonged to them?

I am still an active member in the Toledo Gem & Rockhound Club, and have been for about five years. I have also recently joined Stateline Gem and

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ALAA SEEKS MIDWESTERN HELP

Shirley Leeson, President
American Lands Access Association

I am searching for ALAA state representatives who can keep an eye on what is going on in their state, be it on federal lands, private quarries, etc.

I'm also looking for someone interested enough to be an ALAA director. We haven't had anyone from the Midwest since Tom Noe. He was great, and got information out to the clubs on what was going on.

If you're interested, please contact me at shirleyleeson@gmail.com.

MINERALS WITH CALCIUM STUDIED

Kreigh Tomaszewski
West Michigan MWF Mineral Study Group

Our mineral study group's latest featured element is calcium, and at a recent meeting we studied minerals with calcium that start with the letters G or H.

Each month the members of the mineral study group go through their collections to find representative specimens to share with the group. We also do some homework to learn a bit about the subject group of minerals so we have something to share, even if we don't have specimens that month. We started this month with the borate carbonate Gaudefroyite.

This was quickly followed by the carbonate Gaylussite, the halide Gearsutite, and the sulfate Glauberite, which was named in allusion to its content of the compound sodium sulfate, formerly called "Glauber's Salt," after the German alchemist Johann Rudolf Glauber (1604-1668).

We then looked at Goosecreekite, the nesosilicate Grossular, and the sulfate Gypsum. The end of the Gs and the mention of gypsum took us off track to a discussion of the history of gypsum mining in Grand Rapids, and our fond memories of collecting in the Alabastine Mine before it was closed to collecting due to safety issues.

We got back on track with the tectosilicates Harmotome and Hauyne (which was named after the "Father of Crystallography," Abbé Rene Just Haüy), the inosilicate Hexagonite, the oxide Hibonite, the inosilicate Howlite, the tectosilicate Hsianghaulite and the inosilicate Hubeite.

We sometimes look at an unknown that someone needs help with identifying. This month we identified an after-garnet pseudomorph from the Upper Peninsula as probably being Aphrosiderite.

Everyone who came to this meeting got a micromount specimen of Hodgkinsonite collected at the type locality (Sussex County, New Jersey) as an early Christmas present.

Meetings of the West Michigan MWF Mineral Study Group are held in Grand Rapids, Michigan. Write to Kreigh Tomaszewski, Kreigh@gmail.com, for more details.

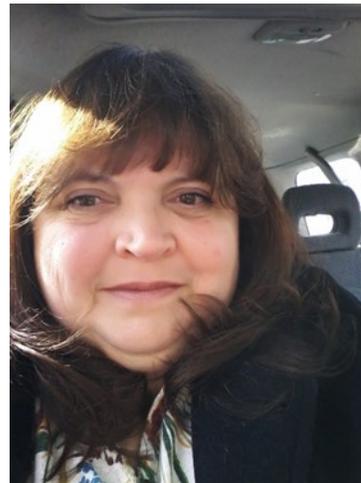
MEET A CHAIR, CONTINUED

(Continued from page 2)

Mineral Society, because they are more active in their community in their outreach about rocks.

3. Why did you want to be an officer for the Midwest Federation?

I was approached by phone and asked if I wanted to run for office. Apparently, A couple of folks enjoyed my enthusiasm for the MWF and thought I might like to run. I truly enjoyed meeting different folks within the federation, and also thought I could help make a difference. So I said yes!



*Photo courtesy of
Cathy Clevenz.*

4. What is your dream collecting trip or site?

My dream trip would be to go collecting gems in the Carolinas and finding large, quality specimens of amethyst, emerald and garnets.

5. What are your favorite minerals/fossils to collect?

My favorite rocks to find are opals and thunder eggs. When digging for opals, finding those beautiful flashes of color always makes me smile. In collecting thunder eggs, I find I enjoy digging in the dirt and rock to find them. I especially enjoy cutting them open and seeing what's inside.

6. How can we improve this organization?

We need to encourage and develop communications between the MWF and each club.

PEBBLE PUPS HONORED BY CLUB AND COUNTY

Julia Allande, Pebble Pups Chair,
Tulsa Rock and Mineral Society
From the February 2020 T-Town Rockhound

Two of our Pebble Pups have distinguished themselves recently, one with an award from our club, and one with an award from a county fair.

What do an eighth-grade student, a member of Boy Scouts of America for seven years, an active Pebble Pup of Tulsa Rock and Mineral Society for the last two years, an active field tripper, a Future Rockhound of America member with more than eight badges already to his name, a repeat display entrant in the Tulsa Rock and Mineral Show and a competitive entrant with a trophy in the same show, and a willing volunteer and helper for the Tulsa Rock and Mineral show ALL have in common?



Photo courtesy of Julia Allande.

They are ALL 13-year old Adam, who has been named our **TRMS Junior Rockhound of the Year** for 2019. Adam is a quiet but productive young man who has participated in field trips both near and far, from Paris, Texas to Peru, Kansas, and from Ada, Oklahoma to Hot Springs, Arkansas, including some trips for the purpose of scouting a good rock-hunt site.

Besides entering a competitive display in the TRMS show, Adam was instrumental in set-up and tear-down operations, as well as giving his time and lending assistance to various exhibits and activities of the show. Adam was particularly drawn to fossils, but

then he discovered crystals, gems, and geodes! He prepared an impressive trophy-winning educational case for display and competition highlighting his finds from a club field trip.



Photo courtesy of Julia Allande.

Evelynn had two exhibits in our case at a recent meeting. We were delighted to see her **first-place winning entry from the Tulsa County Fair** (on the case's top shelf in the photo).

She also presented a display of fluorescent rocks (on the case's lower shelf). This was a first for us, as no one has ever attempted to display black-lighted rocks in the case before now. She has also put together an excellent rock cycle chart!

DEADLINE CALENDAR

MWF Website Contest: Entries are due on **March 15th**; the winning two entries will be submitted to the AMFS Website Contest. For information, contact Dave Fanger, rockfanger@gmail.com.

Rockhound of the Year Awards may be submitted at any time for certificates and a mention in the MWF News. Contact Steve Shimatzki, sjs132@gmail.com.

MWF Executive Committee Meeting, sponsored by Indian Mounds Gem & Mineral Club in conjunction with the club's annual show, will be **April 11th** in Wyoming, Michigan.

UPCOMING EVENTS

Date and Time	Organization	Place	Contact
Feb. 29-March 1 Sat 9:30-5, Sun 10-4	Des Plaines Valley Geological Society	Park District Administrative Center, 2222 Birch Street, Des Plaines, IL	Mike Hanley, Geodeguy@att.net
Feb. 29-March 1 Sat 11-6, Sun 10-6	The Roamin Club	Schoolcraft Community College, 18600 Haggerty Road, Livonia, MI	Todd Gall, Roaminrockhound@gmail.com
March 6-8 Fri & Sat 10-6, Sun 11-4	Eastern Indiana Gem & Geological Society	County Fairgrounds, 861 N. Salisbury, Richmond, IN	Judy Burton, JLEEBurton@woh.RR.com
March 7-8 Sat 10-6, Sun 10-5	Geodeland Earth Science Clubs	Student Union Ballroom, Western Illinois University, Murray Street, Macomb, IL	Deb Coursey, courseyfarms@gmail.com
March 13-15 Fri 10-8, Sat 10-7, Sun 10-5	Association of Earth Science Clubs of Greater Kansas City	KCI Expo Center, 11730 NW Ambassador, Kansas City, MO	Bruce Stinemetz, brucestinemetz@att.net
March 14 Sat 6-9	Silent auction of the Chicago Rocks & Minerals Society	Gymnasium, St. Peter's United Church of Christ, 8013 Laramie, Skokie, IL	Jeanine N. Mielecki, jaynine9@aol.com
March 14-15 Sat 10-5, Sun 10-4	Rock swap of the Kettle Moraine Geological Society	County Fair Park, 3000 Highway PV, West Bend, WI	John Rettler, johnrettler@gmail.com
March 21-22 Sat 10-5, Sun 10-4	Earth Science Club of Northern Illinois	County Fairgrounds, 2015 Manchester, Wheaton, IL	Dave Carlson, fossil54@att.net
March 27-29 Fri 4-8, Sat 10-7, Sun 10-5	Rock Hobby Club	Machinist Auditorium, 12365 St. Charles Rock Road, Bridgeton, MO	Roy Hurlburt, hurlburt@juno.com
March 28 Sat 10-5	Rock swap of the Midwest Mineral & Lapidary Society	St. John's Lutheran Church, 13115 Telegraph Road, Taylor, MI	Lou Talley, ltalley1970@gmail.com
March 28-29 Sat 9-5, Sun 9-4	50 th annual show of Badger Lapidary & Geological Society	Craig Center, County Fairgrounds, 1301 Craig Avenue, Janesville, WI	Laurie Trocke, glowyrocks@gmail.com
March 28-29 Sat 8:30-6, Sun 9:30-5	Cedar Valley Rocks & Minerals Society	Hawkeye Downs, 4400 6 th Street SW, Cedar Rapids, IA	Marv Houg, m-houg@yahoo.com
March 28-29 Sat 9-5, Sun 10-5	Stark County Gem and Mineral Club	County Fairgrounds, 305 Wertz Avenue, Canton, OH	Scott Walton, 1timothy412@att.net
April 4 Sat, 10-3	Rock River Valley Gem and Mineral Society open house	North Suburban Library, 6340 N. 2 nd St., Loves Park, IL	Duane Cushing, tcde78@comcast.net

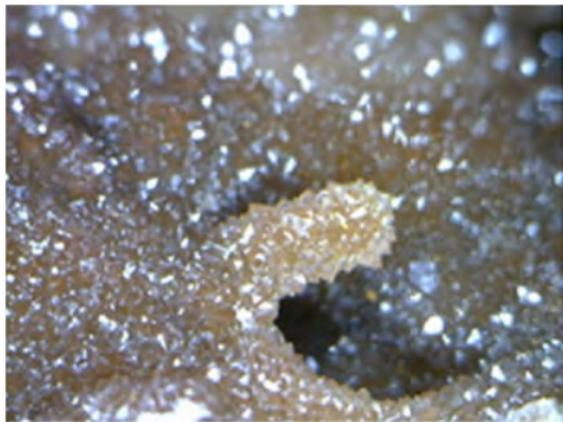
*April Issue Submission Deadline
Is March 4th!*

WHAT ARE COLD WATER AGATES, AND HOW DO THEY FORM?

Dr. Bill Cordua, Geology Committee Chair
From the January, 2020 Rock Rustler's News
of the Minnesota Mineral Club

We have two different types of agate in our area: the Lake Superior agate and the “cold water” agate. “Lakers” are from filled gas cavities in volcanic rocks (amygdules). They formed from fluids with temperatures of perhaps 200 to 300 degrees C.

The cold water agates formed at about room temperature. They occur in the Ordovician dolostones forming the prominent bluffs along much of the Mississippi Valley and its tributaries. Cold water agates are often associated with crusts of tiny sparkly quartz crystals, called drusy quartz. These silicified rocks form masses and intricate networks within the dolostone. The drusy quartz crusts are especially attractive when magnified.



Close-up, about 5 mm across, of drusy quartz in cavity in dolostone. From a quarry near Stockholm, WI. Photo by Dr. Bill Cordua.

How do these silica deposits form from such relatively cool water?

An important clue is the distribution of these silica materials within the dolostones which make up the Prairie du Chien Group. This group is divided into two formations: the slightly older Oneota Formation and the overlying Shakopee Formation. Both were deposited in a warm shallow sea, so shallow that sediments were often exposed to air as the tide went out. The formations are rich in evidence of this – ripple marks and cross-beds that show current flow,

stromatolites that grow in shallow water, mud cracks and salt crystal casts that formed at low stands of the tides.



Light colored dolostone veined with darker cold water agate with vugs of drusy quartz. From a quarry near Winona, MN. Photo by Dr. Bill Cordua.

The two formations are separated by an unconformity – an erosion surface – formed when the Oneota Formation was exposed to air for many years before the Shakopee Formation was deposited. Much of the silicification occurs in the Oneota below this boundary. Another zone of silicification occurs near the top of the Shakopee, below another unconformity covered by the St. Peter Sandstone.

It is clear that these unconformities are related to the silica deposition. Many workers believe these rocks are silcretes. Silcretes are a variety of what geologists call “duricrusts,” which are sediments cemented by minerals precipitated during weathering. These form most often in arid or semi-arid climates.

Many who collect rocks out west are familiar with “caliche” – a white, limey duricrust formed on weathered rocks. Silcretes are similar, but involve cementation by silica.

To see how this might happen, we need to go back in time about 480 million years and look at the landscape when the unconformity between the Shakopee and Oneota Formations was forming. We'd see a bare low-lying plain of limey muds exposed to

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WHAT ARE COLD WATER AGATES, AND HOW DO THEY FORM?, CONTINUED

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air and rain in a warm climate. Our region was close to the equator then. Only lichen and microbial life existed on the land.

Rain water would dissolve lime, silica and other salts, making a corrosive, probably alkaline, brine. The silica could come from the siliceous remains of organisms such as sponges, or was perhaps released from weathered rocks. As this water percolated down cracks, it leached more chemicals from the surrounding rocks, picking up organic material and salts from minerals such as halite or anhydrite. The dissolution formed hollows and, in places, extensive cave systems. The fluids would precipitate minerals at or the below the water table, filling the openings, and replacing the host rock.

The products were cold water agates (originally likely a form of opal) and drusy quartz, as well as some pyrite, marcasite, calcite and hematite. The chemical environment around stromatolites was apparently a prime location for mineralization. Zones of replaced digitate (finger-like) stromatolites are particularly distinctive.



Digitate stromatolites replaced by cold water agate and drusy quartz. El Paso, Wisconsin. Photo by Dr. Bill Cordua.

We can see this process happening more recently in Australia and Africa. In places the silcrete is so abundant that they were used by ancient peoples to make tools. How lucky we are to be able to find these older silcrettes literally in our back yards!

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VERY COMMON PHENOMENA PRODUCE STONES OF UNCOMMON BEAUTY

Brandon Poy

From the January, 2020 Pick and Dop Stick,
Chicago Rocks & Minerals Society

One mineral that is well known for its unique display of colors is the precious variety of opal. Unlike other gemstones, precious opal shines with the colors of the rainbow. Its reputation for being a beautiful iridescent gemstone has made it known throughout the world even by people who do not know anything about geology.

There are two types of opal: precious and common. Precious opals display vibrant colors and are known for their “play of color” from different angles. Precious fire opals have similar properties to precious opals, but their underlying color is different. They are known for having vivid orange or red background colors that add to the iridescent and opalescent colors. Not all fire opals have play of color. Finally, common

opals lack the iridescent colors or play of color and show only opalescence. They appear like a solid color with a glossy surface or they can be clear, as in jelly opal, and are many times found included with other minerals.

Opal is a hydrated form of silicon dioxide, meaning it contains water in the gem. It is also amorphous, meaning that it has no distinct form. Technically, opal is considered a mineraloid, which is almost exactly like a mineral, but has no crystals. It is believed to be formed when silica-rich water seeps into cracks and cavities in the host rock and that water evaporates, leaving behind a layer of silica.

The unique colors that precious opal displays are a result of two effects: iridescence and opalescence. Iridescence is the effect that makes the stone appear to change colors when viewed from different angles.

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VERY COMMON PHENOMENA PRODUCE STONES OF UNCOMMON BEAUTY, CONTINUED

(Continued from page 7)

Because opal is amorphous, its surface is made up of lumps of silica. These lumps act like prisms and split white light into various colors. Depending on how uniform these lumps are, the lights can be more or less intense. The size of the silica lumps also affects the dominant color displayed. Small lumps tend to show more blues, while larger ones show more reds.

Opalescence is different than iridescence because unlike iridescence, which involves diffraction of light, opalescence is caused by the reflection of light at different wavelengths. There is a thin film in the substance that splits light due to varying densities. Rather than showing various rainbow colors, it creates a milky blue sheen over the whole gem.

Clearly, there is a lot to know about opals, from their different varieties to their play of color. Many people know opal as the gemstone with the indescribable rainbow colors, but the science behind it is not very complicated. Diffraction and reflection are both very common phenomena in the world.

Following is some suggested reading:

Opal | Causes of Color, Web Exhibits,
www.webexhibits.org/causesofcolor/15F.html.
Accessed December 22, 2019.

10 Awesome Facts About Opals, Opal Auctions,
www.opalauctions.com/learn/did-you-know/10-awesome-facts-about-opals. Accessed December 22, 2019.

Opal Gemstones, Gem Select,
www.gemselect.com/gem-info/opal/opal-info.php.
Accessed December 22, 2019.



Fire opal from Chihuahua, Mexico. Photo by Didier Descouens, via Wikimedia Commons.