



# *Tulip City Gem & Mineral Club* **CONGLOMERATE**

Monthly Newsletter of the TCG&MC  
PO Box 2082, Holland, Michigan 49422

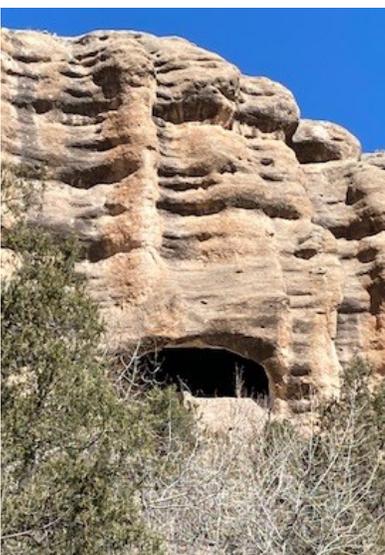
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May 2022

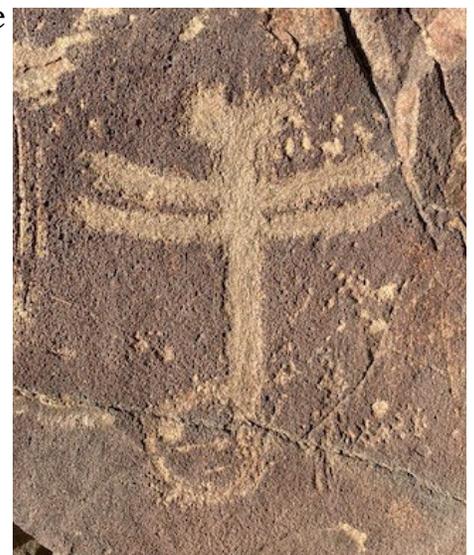
Volume 55, Edition 5

## **PSILOMELANE, MANGANESE, AND RICK AND DEB'S BIG, FAT NEW MEXICO ADVENTURE**

Deb and Rick Smith recently returned from a trip to New Mexico and came back with some rockhounding stories, some vacation anecdotes, some stuff on minerology, on metallurgy, on mining history, military history, onomastics (look it up), social history, the mineral psilomelane (pronounced SIH-LAH-MEH-LĀN), and the metal manganese... Hey, a little something for everyone, right? Now maybe you're thinking, "Psilomelane? Manganese? Those seem a little exotic to me, those don't sound like 'something for everyone'." But as exotic as the word may look, psilomelane is actually a Michigan mineral, so you have a closer connection to it than you may have thought. And maybe manganese isn't as familiar a metal as, say, iron or copper, but it's a metal that might also be closer by than you think. You may have some manganese in your rock collection right now without even realizing it... and maybe even in your refrigerator too. Come to our Tulip City club meeting in May, learn more about psilomelane and manganese, and hear about some of the interesting places where psilomelane can be collected in New Mexico. Places with names like Starvation Draw and Massacre Peak! Hope to see you



Wednesday, May 25 at 7:00 at the  
Howard Miller Community Center  
in Zeeland.





# Events



## FOR OUR CLUB AND BEYOND!

- 2022 TCG&M Board**  
President - Michael B. Larson  
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- Secretary - Teresa DeMol  
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- Treasurer - Kurt Brinks  
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- Field Trips - Peter Riemersma  
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- Historian - Betty Hoekstra  
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- Dir. at Large - Tom DeMol  
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- Dir. at Large - Greta Fochtman  
gretestuff@yahoo.com
- Past President - C.H. Falstad  
cfalstad@ameritech.net

- 5/21 **Cincinnati MS Annual Show** - Sharonville Convention Ctr  
11355 Chester Rd, Sharonville, OH, Sat 10-6, Sun 11-5
- 5/25 **Tulip City General Meeting - Wed, 7pm**  
Howard Miller Library, Zeeland
- 5/27 **Tulip City Memorial Day Weekend Kentucky Field Trip**  
Travel on Friday 5/27, Collect on Saturday & Sunday, Return Monday  
Geodes and fossils mostly in Kentucky.
- 5/28 **Antrim County Petoskey Stone Festival** - Barnes County Park  
4871 US-31, Kewadin, MI Sat 10-4
- 6/3 **State Line GMS Annual Show** - Fulton Cty Fairgrounds  
8514 Ohio 10, Wausoon, OH, Fri 12-6,
- 6/11 **Indian Mounds RMC Rock Swap** - Woodland Drive-In Church  
2600 Breton Rd SE, Grand Rapids, MI, Sat 9-12
- 6/11 **Mid-Ohio MFC Annual Show** - Richland Cty Fairgrounds  
Fairhaven Hall, 750 N Home, Mansfield, OH, Sat 10-6, Sun 11-5
- 6/15 **Tulip City Board Meeting - Wed, 7pm**  
Howard Miller Library, Zeeland
- 6/22 **Tulip City Show Committee Meeting - Wed, 7pm**  
Howard Miller Library, Zeeland
- 6/24 **Lawrence County RC Annual Show** - Lawrence Cty Fairgrounds  
US-50, Loogootee, IN, Fri 10-6:30, Sat 9-6:30, Sun 11-5
- 6/29 **Tulip City General Meeting - Wed, 7pm**  
Howard Miller Library, Zeeland
- 7/23 **Tulip City Summer Picnic** - Westside County Park  
Details to follow

~ It's getting CLOSER ~

9/16 - 9/18 - TCGM SHOW



Quartz cluster - Mt. Ida, AR  
Came out of the pocket as shown

~ This months "Mascot" ~  
The masthead image is a specimen of Rhodochrosite from Argentina. This strikingly pink mineral is part of the carbonate family and also happens to contain Manganese. This specimen exhibits a stalactitic growth pattern seen in the small "eyes" of the polished surface. 1.5" wide x 2" tall.  
- Jon Mull

**No minutes were submitted for the board or general meetings in April.**

**~ Workshop Report ~**

**Several Basic Wire Wrapping** Workshops were held April 23 and 24 at Ken and Betty Hoekstra's house with Sue Goedert leading the classes. Sue was very impressed with the accomplishments of the beginners. You can see photos of some of the folks and their finished pieces. There is also a photo of some finished pieces from the advanced wire wrapping workshop back in March!



## Acid Cleaning Workshop Report

Submitted by Mary Johnson

While it seemed like most of those in West Michigan were either in downtown Holland for the first day of Tulip Time 2022 or on Ottawa Beach Road trying to get to the Craft Fair and Quilt Show at Beechwood Church, some intrepid rock enthusiasts were on Jon Mull's driveway, learning from the geode guru how to best clean and dissolve unwanted material from geodes and other collected material! Featured on the day were many of the Missouri druzey agates collected on April's Spring Break trip south. Those who attended learned a lot. Thanks, Jon!!



*I should add a couple of tips here, since I have even recently learned a few more things about this process. I had been noticing how slow the process was with Oxalic acid and happened to comment on it to Kevin Ponzio who said I should try Iron Out. I have used it in the past but did not realize how much better it can be than Oxalic. It works faster, is less toxic, and is safer to clean up once it has been "used up." Kevin also suggested adding vinegar to the Iron Out solution to help keep the removed iron "in solution" rather than re-adhering to the pieces you are trying to clean. It is supposed to help keep that yellow color from coming back. He also said that an Iron Out solution can benefit from being heated, for example in an old crockpot, much like Oxalic acid. So my steps are still 1. power wash 2. dry and repeat washing until as much dirt is removed as possible 3. Soak in Iron Out solution mixed with vinegar 4. Rinse in a bucket of water and baking soda 5. Rinse and repeat 4 and 5 as needed. I hope to have the large rock pictured above fully cleaned for the May meeting using this process.*

~ **GPS Gem LAST month** ~

Satellite mode is a must

[19.390119, -155.104394](#)

This GPS pin takes you to Puu Oo crater on Hawaii. In the satellite image at the time of writing this you can see glowing orange on a lava flow and fumes trailing from the site. Also to the east of the plume is what appears to be a helicopter.

~ **GPS Gem THIS month** ~

Street view is a must !

[36.870352, -85.128808](#)

Take a look at the north side of Hwy 127. This is Lake Cumberland, KY. If you go to street view and explore the images you can see geodes bristling out of the roadcut. Some of them are obviously hollow. I think we'll check it out Memorial Day weekend.



**Field Trips**



**5/27 - 5/30 - Memorial Day Weekend - Kentucky w/ Jon Mull**

The location is set, we will travel to Kentucky for geodes and fossils!

We will leave early on Friday to push straight for the northern shore of Lake Cumberland, KY for geodes and then stay in Danville. Saturday will be spent collecting geodes in and around the Green River and then moving on to Maysville, KY. Sunday morning we will collect near Flemingsburg, Maysville, and either Georgetown, OH, or along Hwy 9 on our way to Wilder, KY for the night. Heading home on Monday. There are several people signed up for this trip but certainly room for more. Please contact Jon Mull via email [solace247@yahoo.com](mailto:solace247@yahoo.com) if you are interested.

**June or July trip TBD - w/ Peter Riemersma**

*Peter is leaning towards a trip to New York focusing on Herkimer quartz.*

Other items might include *trilobites, Gore Mt. garnets, blue calcite, etc.*

The dates of this trip are still being decided but if you have comments or questions, please reach out to Peter via email. [riemersp@gvsu.edu](mailto:riemersp@gvsu.edu)

Geodized Brachiopod - Georgetown, OH  
(photo from Mindat.com)



Millerite Geode - Halls Gap, KY  
(photo from goldenhourminerals.com)



## **News from the West Michigan MWF Mineral Study Group Hosted by Kreigh Tomaszewski from the Indian Mounds club**

### **Mineral Identification**

Our current study structure is to look at minerals by elemental composition, working our way thru the periodic table. This month we took a break from looking at minerals, and we looked at the ways that mineral identification can be done.

Just about anything about a mineral can be identified later except the location it came from (and with very advanced methods this is often possible too). Your first identification of a specimen should always be the location where it was collected. Knowing the locality lets you short-circuit the one of these things is not like the others process of going from 5,794 accepted minerals to one by looking up the locality and looking at the short list of known minerals from that location. The locality is the most important item of information about a specimen.

The German mineralogist Fredrich Mohs came up with a standard hardness scale that has been in use since he proposed it in 1822. It is based on the idea that any mineral can scratch any other mineral that is softer or of the same hardness. We practiced doing hardness tests using both mineral test kits and hardness points. We talked about the related property of tenacity -- how tough the mineral is in defending itself against breaking and physical deformation.

The French Priest (and mineralogist) Rene-Just Hauly accidently dropped a calcite specimen in 1781 and had an inspiration from the evenly split fragments. He is credited with founding the study of crystallography. We reviewed the six major crystal systems; isometric (cubic), tetragonal, hexagonal, orthorhombic, monoclinic, and triclinic. We touched on the 32 crystal classes. Closely related to crystal form, habit refers to the preferred crystal growth, which may be very different than the perfect crystal form. This is the form the mineral is usually found in, and may be quite characteristic.

Minerals tend to break in smooth flat planes related to the internal crystal structure of the atoms that make it up. Breaking an unknown specimen can reveal a lot about it and is very useful in identification if cleavage planes can be identified. Note that cleavage planes are related to the crystal structure, but often connect various axis endpoints instead of following the axis themselves. Some minerals, such as quartz, do not have cleavage and instead show fracture, which can also be useful in identification.

When a mineral is powdered and placed on a white surface its color is often (very) different from the massive form. A piece of unglazed tile is normally used as a streak plate by rubbing the unknown across its surface. With a hardness of 7 the streak plate powders the mineral and gives the white surface for comparison. This also works for minerals harder than Mohs 7, but they must be powdered by other means. It is most useful in dark colored minerals. We practiced taking streaks. You might be surprised at how often specular hematite gives the blackish streak of magnetite instead of the expected reddish streak.

Luster is how the mineral surface appears. Metallic and non-metallic are the main distinctions. Vitreous means it looks like glass on the surface. Adamantine (like diamond), greasy, resinous, silky, and pearly are other common descriptive terms used for the non-metallic lusters.

Some minerals, like Lodestone, are naturally magnetic. Others can be attracted by a magnet. Some minerals become magnetic after heating or fusing with a blowpipe. This can help identify the mineral. Crushing the mineral to powder and analyzing it in a flame, with the help of a blowpipe, is a classic way to identify minerals. Observing the colors of flames in oxidizing and reducing conditions, and the colors of beads formed by fusing the unknown with various chemicals. The common example is spilling a little liquid while cooking and having the salt in the water turn the flame yellow. Blowpipe analysis is particularly effective in identifying the elements that compose your unknown mineral. A related process in the fusibility of the mineral; knowing its melting temperature is another key to identification.

*... mineral study continued ...*

When excited by ultraviolet light, also known as black light, some minerals will glow with different and characteristic colors. A related effect is phosphorescence, where a mineral will glow after stimulating (black) light is removed. A few minerals, such as tremolite and quartz, will exhibit triboluminescence and glow when struck. Some minerals, like quartz, will also generate electricity when stressed. This is piezoelectricity. Thermoluminescence is the ability of a mineral to emit a small amount of light upon being heated.

Comparing the weight of a (pure) specimen to the weight of the amount of water it displaces lets you calculate the density or specific gravity of the unknown, and can often be used alone as an identification. Density is how many times heavier the specimen is than an equivalent sized quantity of water. Weigh the specimen in air. Weigh the specimen suspended in water. The difference is the weight of the water displaced; divide this difference into the weight in air to get the specific gravity. Each mineral has a unique specific gravity range. We performed this test, and the alternate 'tare' method from John Betts ([http://www.johnbetts-fineminerals.com/jhbnyc/articles/specific\\_gravity.htm](http://www.johnbetts-fineminerals.com/jhbnyc/articles/specific_gravity.htm)).

We talked about identification by geology and association with other minerals. If you can identify one mineral in a specimen, association may limit the number of choices for the other mineral.

We talked about mineral chemistry, both for identification, and for safely storing specimens (like with like, to avoid chemical interactions). There are about a dozen main groupings of minerals based on their chemistry; native elements, sulfides and sulfosalts, oxides and hydroxides, halides, carbonates, nitrates and borates, sulfates, phosphates (vanadates and arsenates), tungstates (molybdates and uranates), and the silicates (with several subdivisions). Each group tends to share some common attributes.

We talked about mineral identification by physics. X-rays, electron microscopes, and Raman spectroscopy are high tech options. But polarized light and thin sections work too. Electrical conductivity can be a clue as many minerals are semiconductors. Use your geiger counter (you should know if your specimen is 'hot'). Mass spectrometry, isotopic analysis, and a particle accelerator may be needed to prove the chemistry and physical crystal structure of a new mineral. If the specimen is transparent you can do identification by measuring refraction.

We talked about color. Color can be useful in mineral identification, but it can be unreliable due to trace impurities. And we finished talking about identification by example. Experience is a wonderful teacher. Being able to say 'that looks just like a specimen of x that I saw at y' can tell you exactly what tests are needed to confirm an identification. It is one of the reasons why our mineral study group exists.

And if you can't match your unknown against any known mineral, you might have a candidate for a new mineral and the chance to name it.

We often have some time to look at some unknown you might need help on (no promises of a positive ID, but we are slowly improving at identification). This month was not an exception, and we identified several specimens people had brought in

Our group does not meet during the summer. The next monthly meeting of the West Michigan MWF Mineral Study Group will be held on Tuesday, September 13, 2022, from 7 pm to 8:30 pm, at the home of Kreigh Tomaszewski, 653 Burton St. S.E., Grand Rapids, MI 49507. Face masks will be required (unless everyone attending has been fully vaccinated against covid)

We try to limit our study range so we only have about 26 specimens to fit them into our time frame. We will be studying minerals that contain Cadmium, Indium, Tin, or Antimony (but only if they start with the letters A thru M for the Sb minerals).

We try to start (and end) on time; please do not arrive more than 20 minutes early (and everyone gets thrown out by 9). All West Michigan rockhounds are invited to attend. Please join us and let part of your collection get to meet some other rockhounds and be appreciated, but you are always welcome to learn even if you can't bring any specimens.

# One (or a few) more things...

## A Brief Banquet Recap

The Spring Banquet was a good day for Tulip City as we gave a total of \$4,240 in scholarships!!! We gave \$3,660 in scholarship awards to GVSU and Hope students. Also through our banquet raffle we raised \$580 for the GVSU-Gibson Summer Research Scholarship.



A great gathering of guests



Hope College Recipients



The effervescent, Ken & Betty Hoekstra



Peter Riemersma & GVSU Recipients

Most of our fundraising is done through our September show. We hope you'll volunteer your time and talents this fall.



First time to this show, saw Kevin Ponzio, and Alex, from our show

**- Junior Page -**

A-rag'-on-ite (funny name) is a Calcium Carbonate ( $\text{CaCO}_3$ ) just like the more common Calcite. Kids will learn why this class of mineral develops differently-shaped crystals. Both are “polymorphs” of the other. – Actually, I’ll explain a bit now: Aragonite is rarer because it forms by evaporation of warm water in hot springs and in caves. Calcite forms from cooler solutions (water plus calcium plus carbonates, etc).

Kids will SEE large crystals to illustrate the shape differences. We’ll also discuss several varieties of Aragonite formations.

We’ll also use the hydrochloric acid (HCl) test – a droplet on the specimen causes carbonates to bubble and fizz!

Uses of  $\text{CaCO}_3$  are many: as an antacid like Tums or Roloids, agricultural lime, walls of public buildings, part of making steel, paper, plastics, road cement, and in water purification processes.

ARAGONITE in Star Crystal Cluster formation...

The Aragonite Star Cluster has radiating crystals, sort of ball-shaped. Often a white crystal, this one is tinted reddish-brown by some iron during growth, so beautiful! It’s likely from Morocco or Spain (based on mindat.org photos).

We hope all of the Juniors out there can join us this month!



Aragonite “star”

Aragonite Helectite  
from Ochtina Cave - Slovakia



*Juniors will be able to take home an Aragonite “star” cluster. Special thanks to Ken & Betty Hoekstra for providing the specimens!*



Meetings are held monthly on the last Wednesday of the month at the Howard Miller Community Center 14 S. Church Street, Zeeland, MI at 7pm, unless otherwise noted in the **TULIP CITY CONGLOMERATE**.

Our Junior Club welcomes and encourages young rockhounds and meets separately during the meeting. To become a member, complete the form at [www.tulipcity.org](http://www.tulipcity.org)

Advertising rates for club members are: \$5 for business card size, \$10 for 1/4 page, \$15 for 1/2 page, \$30 for full page. non-member rates are double. Make check payable To: TCG&M with ad copy to Editor.

Our club is a non-profit organization sponsored by the Holland Recreation Department. it is a member of the Midwest Federation and the American Federation of Mineralogical Societies. The general purpose of this club is to develop interest in and increase knowledge of minerals, rocks, gems, fossils, and the lapidary arts. The objectives of this club shall be promoted whenever possible, through family participation.

### Tulip City Conglomerate

Jon Mull, Editor  
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Did you remember to color the volcano from last months newsletter? You could be missing out on a great piece of druzy from Missouri. Bring your picture to the May meeting. The picture with the most votes gets first pick!

Background photo is the road cut at Lake Cumberland, KY