

# Wayne County Gem and Mineral Club News

October, 2019

Always Looking for Places to Dig!



Introducing the WCGMC Sand Page (p.3)



<http://www.wcgmc.org>  
**FACEBOOK link**



See page 4



Liters Quarry, Irvington, KY

*Rick is  
resting.*

*We thank the Catawba Valley Club of  
Hickory, NC for inviting us back for their  
Labor Day dig in Kentucky.*

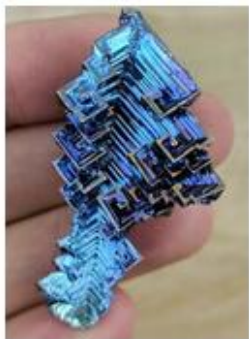
## WCGMC Upcoming Meeting

7:00 PM Park Presbyterian Church,  
Maple Court, Newark, NY

Friday October 11th

**Program:** **Show, brag, swap,  
share your 2019 finds**

**And .. Inga Wells**  
will demonstrate  
how bismuth can  
be grown. Come  
watch the crystals  
grow!



We have a full schedule of events for  
October (see *page 7 for details*)

- Oct, 2-9 - field trip to Ontario
- Oct. 11<sup>th</sup> – monthly meeting (see above)
- Oct. 12<sup>th</sup>-13<sup>th</sup> – Walworth Open House
- Oct. 19<sup>th</sup> – workshop is open
- Oct. 20<sup>th</sup> – annual inventory bulk rock sale
- Oct. 25-26 – Herkimer hunting at Ace of Diamonds
- Oct. 26-27 – Rochester Mineral Show

## Upcoming WCGMC Workshops

**October 19<sup>th</sup>, November 2<sup>nd</sup> and 23<sup>rd</sup>**

***Yup, that is correct. We will hold two  
workshops in November! Mark your calendar.***

When: 10:00 AM until mid-afternoon

Where: The Weiler's Barn /Club Workshop  
6676 E. Port Bay Rd, Wolcott, NY

Rules: Bring your own rocks.

Training on equipment is available.

Eye protection is required.

\$5/adult to offset maintenance costs.

Did we mention that if you need a rock to cut,  
carve or otherwise mutilate at the workshop you  
can always get one from the Weiler rock pile out  
back. Just 50 cents/pound and it will be yours.

## New Monthly contest starts in October

WCGMC is introducing a new game with prizes  
this month. Somewhere in this newsletter you  
will find a statement that reads **"The special  
mineral/fossil for October is xxxxx"**. Find  
that statement, remember the mineral or fossil  
listed, and come prepared to enter a raffle at the  
October 11<sup>th</sup> meeting to win a fine prize. I  
guess we will see how many folks read the  
newsletter! Don't share the code word or your  
chances to win will be reduced!



## President's Message

**Linda Schmidt Gall**

Oh the places I have been. Ten years ago, in October 2009, I read an advertisement in the local Pennysaver "Join the WCGMC and find rocks". I attended the October meeting and was hooked. I went to Walworth the following day. I had no idea what I was looking for and to make it worse, it was dark. Ken Rowe tried to point me in a general direction. I owe many members for their help in guiding me over the years.

Most of the meetings in my first few years were attended by 10 to 15 members. Since I was retired I attended almost every dig that was scheduled. Bill Chapman and I started filling in the calendar and taking as many as 30 digs in a summer. My collection started growing rapidly. I have collected in almost every state east of the Mississippi. I have been temporarily lost a few times, been rained on, poured on, and snowed on. I have fallen down, even accidentally pushed down, but I always jump back up. I have seen moose, bears, alligators and snakes. Oh, and a lot of bugs, big ones, small ones, round ones, colorful ones, and those insidious ones that dig under your skin and stay there.



So what the heck is this? I needed help identifying allanite at Benson Mines in Star Lake in September 2016.



Another bucket to lug. This time it is garnets from River Valley, Ontario in July 2017. Did you know garnets are dense?

Even though my husband, Les, has little interest in collecting minerals, he has understood my passion. Years ago I came home from a trip to Pennsylvania and I said "you will be proud of me, I only brought home one rock except it weighs about 400 lbs". It

was a carbonized tree trunk. Since there was no way we could ever budge it, Glenn Weiler had to bring over his skid steer and set it in my garden. It remains where he put it to this day.

Many times I have been in the middle of nowhere struggling to carry a bucket or backpack of stones and thought "what in the world am I doing". But I kept going. I have wondered how many miles I have traveled or how many tons of stone I have carried.

Five years ago the club was offered a huge inventory and I accepted the position to curate the collection. Over several years I have organized it in a section of our garage. That has been a lot of fun for me. It will be these rocks that will be on sale at our annual bulk sale on October 20<sup>th</sup>. You will not want to miss it. Besides I need some of that space for my rocks!

A check of the 2009 calendar indicates that October 9<sup>th</sup> is the official date of my 10-year anniversary with the club. As I reflect on the decade of personal fun and learning and the growth of the club over that period I must wonder which of our new members is being bitten by the rockhound bug as I was 10 years ago. Maybe it is you?

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We thank the Catawba Valley Gem and Mineral Club of Hickory, NC for inviting us to their Labor Day Weekend trip to Kentucky. They hosted a mineral sale/swap in the motel parking lot one evening.



WCGMC member Asher Whitney collected this colorful 10" piece with purple fluorite and white calcite at Limits Quarry in Irvington, Kentucky.



## The WCGMC Sand Page

### Introduction by Jim Rienhardt & Fred Haynes

As our club grows in number and diversity, we find ourselves expanding into new aspects of rockhounding and geology. Rocks, minerals, gems, and fossils all retain a place in our hearts and we plan collecting trips, workshop activities, and monthly meeting programs around each. However, recently, one of us (Jim) shared his interest in sand collecting and the other of us (Fred) started a collection as an extension of his interest in geology and a new way to satisfy his collecting gene. And one thing led to another.

WCGMC is now one of only a few Rock, Gem and Mineral Clubs with a sand collection group, or arenophiles as we are known. Over the coming months we will review books and websites related to the hobby and science of sand collecting. Occasionally we will share tidbits (or should it be grains?), as well as news and personal observations and experiences. For now, we will call this "The Sand Page". Please let us know if there is something you would be interested in on this topic. Jim email: [siderious@gmail.com](mailto:siderious@gmail.com), Fred email: [fredmhaynes55@gmail.com](mailto:fredmhaynes55@gmail.com)

We start this inaugural WCGMC Sand Page with a book review.

### A Book Review: The Secrets of Sand

By Jim Rienhardt



*The Secrets of Sand*, was written by Gary Greenberg, Carol Kiely, and Kate Cover. For starters, these authors brought a rather diverse mix of interests to their 2015 effort. Greenberg is a cellular biologist, inventor, photographer, and teacher; Kiely, a research scientist and journalist; and Cover is an explorer, traveler and writer with a background in geology. The subtitle of the book helps us understand the author's motives and objectives in writing the book. They simply call it; "A Journey into the Amazing Microscopic World of Sand"

The eclectic background of the authors is further evident early in the book. From Chapter One:

*"When we look at a beach, the sand usually appears beige in color. If we take a closer look, individual specs of color begin to emerge, but it isn't until we examine the grains with a microscope that we see there is an entire new world ready to be explored. Every little grain of sand has been sculpted into a tiny jewel, just waiting to be discovered."*

Flipping through the book one immediately notices the many large full color micrographs. These pictures were taken by Greenberg using a 3D microscope of his own invention. His microscope was intended to study biological micro-organisms, but he soon became fascinated with sand, which anyone does when it is seen under magnification.

The book begins with a discussion of the photography and microscopy. Subsequent chapters move on to the sand, first explaining the origins of sand then taking each sand location in turn, beaches, rivers and lakes, continental beaches, dunes and even on to lunar dust. Presently, you won't find that last location in any collection outside of NASA.

The chapters are relatively short, but there is enough detail to be informative without being overwhelming or technical. Each sand location is described along with the contents of the sand. The authors thoroughly discuss each sand without being overly wordy. One could, however, be easily satisfied just looking at the pictures and reading the captions.

What I did find missing from the sand locations are glacial deposits which we find a lot of in New York. Perhaps WCGMC arenophiles can tackle this omission with their own contributions? We certainly have a diversity of glacially derived sands to sample, photograph, and study right in our own backyards.

For anyone entering the hobby (or considering it) this is the book I recommend as a starter. The concise descriptions and great pictures are just what a beginning arenophile needs.

*The Secrets of Sand*, by Gary Greenberg<sup>1</sup>, Carol Kiely, and Kate Cover. Voyager Press, 2015, 128 pages, ISBN 9780760349441.

For more on this hardcover book, and to order a copy, visit <http://www.sandgrains.com/Books.html>



Our two week field trip to Michigan in August took us through Marquette, or more specifically the Marquette Iron District, where we spend three nights visiting and collecting. We attended two field trips planned by the Ishpeming Mineral Club, their club show, and also made several trips to Presque Isle Park and other Lake Superior shoreline locations. It was on the first of the club trips that we were introduced to the Iron District and to **taconite**. We visited the enormous dumps of the Republic Iron Mine, 20 miles west of Marquette.



**Republic Mine, Michigan (August 2<sup>nd</sup>):** Everyone is looking for banded iron formation suitable for lapidary work (or in my case as an ore specimen from a historic iron district). Can you spot and identify the collector with the WCGMC T-shirt? Can you find the WCGMC President? Can you see Waldo? Two out of three is pretty good.

**Taconite** is the term used for the low grade iron ore found in many Precambrian sedimentary sequences around the world. These unique rocks tell an interesting geologic story and aren't equally important economically. Geologists refer to the rocks miners call taconite as "banded iron formation" (or BIFs). They are composed of alternating bands of magnetite (or sometimes hematite), chert/jasper, and/iron silicates (cummingtonite/grunerite). The magnetite is black, the jasper various shades of red, sometimes the silicate layers are green. Together they can create colorful rocks which are prized for

landscape use, for lapidary work, and just simply for their unique beauty. These bands can be monotonously repeated or they can be highly variable in thickness and content. Often the bands have been intricately folded during tectonic activity and interesting metamorphic minerals can form. Note the folds in the "Banded Ironstone" pictured on the 1982 Zambia postage stamp to the left.

The term taconite was coined by Horace Winchell, State Geologist of Minnesota. He was mapping the Precambrian Iron Formations of northeastern Minnesota in the early 20<sup>th</sup> century and he noted that the rocks resembled the iron-bearing rocks from the Taconic Mountains of New York, his home state..



**Banded Iron Formation** - Magnetite (black) and jasper (red): brown in middle sample is possible siderite.

**The special mineral for October is jasper.**

Rock collectors may cherish the red/black banding of jasper and magnetite, however, the presence of all that jasper together with the iron oxide ore minerals posed a problem for early miners. Until the mid 1900's relatively pure iron ore (either red hematite or black magnetite) could be successfully mined that carried 50-60% iron content. The rocks in BIF typically contain 20-30% iron and it was (and still is) uneconomic to ship ore of that grade to steel mills (Mategko, 2011). But in the 1950's an engineering breakthrough allowed for the economic processing of these low grade ores. Taconite became the ore of choice for many steel mills.

The first part of the problem was not complex. The ores were ground to a powder and the magnetite separated from the siliceous material with magnets. But the powdery black product was not conducive to long distance transport. University of Minnesota professor and researcher E. W. Davis literally conducted two decades of experiments concocting an economic method to process and transport the enriched iron ore. The process involves mixing the magnetite with bentonite clay in large rotating cylinders causing the concentrate to form into balls



much like wet snow. These are passed through rollers spaced about a centimeter apart to insure a consistent size to the pellets. *Note the dime inside the c of taconite pellets in the title of this article.page.*

The taconite pellets output from this process are perfectly designed for what follows. First, they are easy to load on railroad cars and then large Great Lake barges using conveyor belts and rollers. But, perhaps more importantly, when they are “rolled” into the blast furnaces at the steel mill the increased surface area provided by the pellets optimizes the process of melting and recovery of iron (Breneman, 2018). In locations like Marquette where limestone is readily available, the optimal amount of limestone can be added during pellet formation and the steel mill need only load the taconite pellets and turn on the furnace. Limestone is used as a flux, acting to grab silica dioxide and other impurities in the melted iron ore. This waste material floats to the surface and is removed. We call this slag and it is commonly found around iron foundries of any age or style. The Marquette beaches are rich in this material where it is locally referred to as “Lake Superior beach slag”. And yes, we collected some of that, but that is another story!

In addition to collecting quartz and magnetite mineral specimens and banded taconite ores at the Republic Mine, we decided we could not come home without some bona fide taconite pellets. We found that to be very easy. The railroad line that runs from the active iron mines in Ishpeming and Negaunee to the port in Marquette is literally covered in the marble-like

magnetic pellets that had fallen off during transport. All we had to do was stop and pick them up. It is a sure bet you will see some soon in some WCGMC activity, perhaps we'll play marbles with them, or see how many can be moved from one pile to another with a small magnet in one minute. In fact, I bet Linda is working on ideas right now.



**Donna Smith on the railroad track in Ishpeming, Michigan getting her hands dirty with some taconite pellets.** I wonder how many it takes to fill a 4” by 8” by 2” cake pan? Should we count them or use math?

#### References:

- Breneman, J., 2018, [“How Innovation Saved the Iron Range”](#), Univ. Minn. Duluth Natural Resources Research Institute.
- Mategko, S., 2011, [Iron Range 101: What is taconite?](#), Twin Cities Daily Planet, 9/18/2011
- Mindat webpage, [“Definition of Taconite Pellets”](#)
- Wikipedia Entries for “Marquette Iron District” and “Taconite”



In late September, Fred Haynes helped ten Scouts earn their Geology Merit Badge at Montezuma Audubon Center in Savannah. And yes, they each received an egg crate collection of rocks and minerals.

#### Can you name this mineral ?

- I am a metamorphic mineral.
- I often grow in schist and gneiss alongside garnet and kyanite.
- I am hard, a bit harder than quartz.
- I form monoclinic crystals and I like to grow as twins.
- Some refer to me as a “Fairy Stone”
- I am reddish brown to blackish brown
- I am the official state mineral of Georgia.



See page 7 for answer





It was the final day of our 8 day trip to Kentucky and beyond. We had spent Labor Day weekend with the Catawba Valley Gem and Mineral Club in central Kentucky collecting calcite, dolomite and a bit of fluorite in two quarries and quartz geodes from a tributary of the Green River. We also had lots of Kentucky brachiopods, Tennessee crinoids and Virginia staurolite packed into just about every available spot in the car. But the trip home from Lexington, Virginia would only take 8 hours, plenty of time to make one quick stop.

Linda Schmidtgal and I decided our final stop would be just 5 miles east of Interstate 81 in Rockbridge County, Virginia. Beard (2017) stated that Little Marys Creek "is one of the best places in Virginia to collect unakite". We thought we should find out if he was correct.

WCGMC collectors know about unakite, having collected the metamorphosed granite at the Valentine Mine in Harrisville, NY. In fact, I have written about unakite and that Adirondack location in the [August, 2017 club newsletter](#). We thought it might be interesting to compare New York's unakite with the best Virginia has to offer.

The site was easy to find. Route 56 enters George Washington National Forest at a bridge over Little Marys Creek and parallels the creek for more than a mile. The land west of the bridge is private property, but one can walk the creek east into the National Forest. The creek is strewn with rocks of all sizes. Most are schist, gneiss or granite. Nice rocks, but not what we were seeking. At first it did not seem like we were going to be successful. But once the first piece of unakite was found and our eyes adjusted to the appearance of the altered epidote we were able to find several pieces.

The green epidote was altered brown on the surface and the best way to find unakite was to look for orange feldspar and carry a big hammer. When a unakite rock was broken the green epidote was immediately evident. It is very evident why unakite is a desired lapidary stone: orange and green minerals of equal hardness which take a nice polish.

We spent about an hour gathering up a few and headed back to the car. At this point, Linda spotted

a large black bear rambling across the road just behind our vehicle. He disappeared before I arrived with the largest unakite boulder and my Nikon. We will just have to take Linda's word that she saw a bear and not a woodchuck!



After confirming that the bear had moved on, we broke the largest piece (so we could share it!) and I captured this field shot.



**We sliced up some of the Virginia unakites at the September workshop.** The largest piece in this photo is from Linda's half of the piece in the field photo above. All those present got to take a piece home. If you missed out, we still have a large piece or two and there should be another opportunity. It is indeed a pretty rock.

The bluer piece in each picture is an intriguing rock. It sure looks like unakite where the altered plagioclase is now blue. Epidote can certainly be blue, but I am not familiar with that color when it occurs in unakite. Perhaps there is a reader out there who knows?

Reference:

Beard, R., 2017: Rockhounding Virginia, A Falcon Guide (see site #29 on p. 136-138.

## Wayne County Gem and Mineral Club 2019 Schedule *last update Sept. 29*

The collecting season may be coming to a close as we enter autumn, but WCGMC has a busy slate of activities planned for October. There is basically something going on every weekend. We hope to see folks in the field, at our meeting, at the workshop and at the Rochester Gem and Mineral Show.

**October 2 through October 9:** Ontario (trip includes Bancroft, Eganville, Valley River and Cobalt). There is still time to join part of all of it. (Trip leader – Fred Haynes)

**October 11<sup>th</sup>** monthly meeting (see page 1)

**October 12<sup>th</sup> and 13<sup>th</sup>** Walworth Quarry Open House Saturday 7 AM to 2 PM , Sunday 7:00 until noon. Please arrive early to sign-in and participate in the safety talk that will begin promptly at 7:00 AM. After the meeting, we will be led to the upper level of the quarry. This is a working quarry and safety equipment is required (hard hats or bicycle helmets for kids, safety glasses, long pants, and boots). Gloves are recommended. All children must be accompanied by an adult/guardian at all times. Walworth Quarry is at 1200 Atlantic Ave. in Walworth, NY.

**October 19<sup>th</sup>** – Saturday Workshop

**October 20<sup>th</sup>** – Sunday afternoon (1:00 – 4:00 PM) – Annual Club Inventory Sale at Linda Schmidtgal's. Address is 1267 Wiley Rd. in Savannah. This has been a popular event in past years.

**October 25<sup>th</sup> and 26<sup>th</sup>** (Friday and Saturday) – Ace of Diamonds for Herkimers, two days for our end of season visit this year! Make your own travel plans, the site opens at 9:00 AM

**October 26<sup>th</sup> and 27<sup>th</sup>** – [Rochester Lapidary Society Gem and Mineral Show](#), Rochester, NY (see below)

**November 2<sup>nd</sup>** – Workshop **November 8<sup>th</sup>** monthly meeting, **November 23<sup>rd</sup>** – Workshop

### Rochester Gem, Mineral, Jewelry and Fossil Show & Sale



<http://www.rochesterlapidary.org/show>

[facebook.com/ROCGemShow](https://www.facebook.com/ROCGemShow)

**Saturday October 26<sup>th</sup>**

**10:00 AM – 6:00 PM**

**Sunday October 27<sup>th</sup>**

**10:00 AM – 5:00 PM**

*Admission \$6.00*

Total Sports Experience  
438 West Commercial St.  
East Rochester



**I am Staurolite**



*answer from page 5*





## Wayne County Gem & Mineral Contacts

### ELECTED OFFICERS (NEWLY ELECTED)

President - Linda Schmidtgall  
[lees@tds.net](mailto:lees@tds.net) 315-365-2448  
 Vice-President - Fred Haynes  
[fredmhaynes55@gmail.com](mailto:fredmhaynes55@gmail.com) 585-203-1733  
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[debbiegb55@hotmail.com](mailto:debbiegb55@hotmail.com) 585-289-6989  
 Treasurer - Bill Lesniak  
[Dirtman300@aol.com](mailto:Dirtman300@aol.com) 315-483-8061

### Board of Directors

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 Bob Linderbery [bootmanblues@gmail.com](mailto:bootmanblues@gmail.com)  
 Heidi Morgenstern [morgensternheidi@rocketmail.com](mailto:morgensternheidi@rocketmail.com)  
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Past President - Glenn Weiler [gwexterior@gmail.com](mailto:gwexterior@gmail.com)

Visit us on Facebook:

<https://www.facebook.com/groups/1675855046010058/>

### APPOINTED POSITIONS

Bill Chapman – Field Trip Chair  
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 Fred Haynes – Newsletter Editor  
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 Bill Lesniak – Website Coordinator  
 Glenn Weiler – Workshop Coordinator  
[gwexterior@gmail.com](mailto:gwexterior@gmail.com) 315-594-8478  
 Linda Schmidtgall – Collection Curator  
 Eric Elias: GEMFEST Show Chair  
[thecrystalnetwork@hotmail.com](mailto:thecrystalnetwork@hotmail.com)  
 Fred Haynes – Facebook Administrator  
 Jim Rienhardt – Sand Chapter [siderious@gmail.com](mailto:siderious@gmail.com)

Club meets 2<sup>nd</sup> Friday of each month starting in Sept.  
 Social meeting at 6:30 PM Regular meeting at 7:00 PM  
 Park Presbyterian Church, Maple Court, Newark, NY

Website – <http://www.wcgmc.org/>

Dues are only \$15 individual or \$20 family for a full season of fun. Renewal is in October. Send to:

**WCGMC, P.O. Box 4, Newark, NY**

The Public is always welcomed  
 First Class, Dated, Meetings & Time Values



Wayne County Gem and Mineral Club  
 P.O. Box 4  
 Newark, New York 14513