Wayne County Gem and Mineral Club News

April, 2021 **Always Looking for Places to Dig!**

Reading a Rock (see page 3)

http://www.wcgmc.org

FACEBOOK link

A Workshop Raffle

Upcoming WCGMC Workshops

April 10th and May 1st

We continue to hold Saturday workshops with limited attendance to allow for social distancing. Our two March workshops filled, but without leaving anyone without at least one spot. Contact Linda Schmidtgall to reserve a spot (e-mail and phone number on page 8) in one of our next workshops.

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.
A mask must be worn when inside the shop. Eye protection is required.
Training on equipment is available.
$5/adult to offset maintenance costs.

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Ace of Diamonds Mine – *Take 2*

April 1st was a bit of a bust (see page 2), but **we will return on Saturday April 24th.** It is time to get busy!

We are planning for an August picnic at the workshop. See page 7 for more on field trips, the picnic, and other tentative summer events.

Gem Fest

2021 is canceled

WCGMC held an officers' meeting Saturday March 27th outside the club workshop. Regrettably, we reached a unanimous decision (all 9 officers) to cancel GemFest 2021 which was scheduled for June 5-6 in Canandaigua.

We had all hoped that March would show a smooth decrease in Covid cases in the area as vaccinations proceed, but alas, that has not been the case. In fact, this past week has seen an uptick in both cases and hospitalization in our area and many predict an even greater increase in April that could be with us until summer. Given that backdrop, we decided it was not prudent to continue planning an event that might jeopardize our volunteer club members, our vendors, or the show's patrons. We plan to be back in June 2022.

March 27th WCGMC Board meeting. Photo by E. Weiler

President's Message

Linda Schmidtgall

We call our Opening Day field trip to Ace of Diamonds the April Fool's Field Trip and this year that name was very appropriate. It snowed a bit, the wind blew, and the temperature hovered in the low 30s. As a result, the saner members who planned to hunt for diamonds decided to stay home. But, five of us survived the rite of passage into the field collecting season and we have some diamonds to prove it (see mine to the right). I thank James Keeler for the photos at the bottom of the page.

This past winter I have done some more organizing. First I wondered how I would assemble my sand collection. Just what I need is another collection. Love it. I only collect at places I have been and as I am usually with Fred Haynes, he volunteered to collect enough and give me a little labeled baggie. The little baggies fit nicely in a baseball card display sheet (upper right photo). I secure them in the sheet with a scrap booking sticky tab. It works quite nicely.

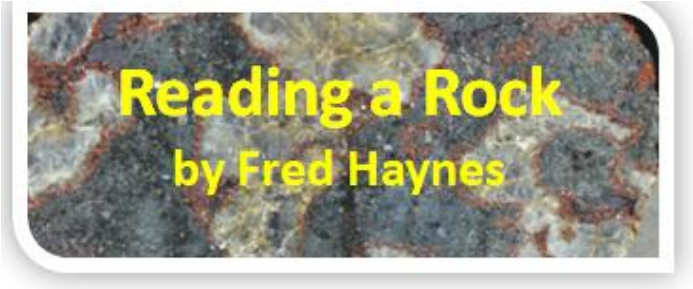
So I decided to continue with the baseball card sleeves and put small slabs of stones. As shown to the right each has a label for the stone and a Velcro circle to hold them in place so they don't slide out when a page is turned. Again works quite well with 9 to a page and 8 – 10 pages per notebook.

Though minerals dominate my collections, I also try to find old marbles, vintage buttons, old beaded purses, grandma's rhinestone brooches, and foreign coins, just to name a few. I admit I am an organized hoarder. I love to find different little things. Got something? I love to look. For buttons and foreign coins, I have a lot to trade.

My sand collection, neatly stored in a notebook.

What works for sands, also works for slabs.

For my larger slabs, I use a wire CD holder. This also works great.



By now, you must all know that I like rocks. Rocks tell stories. Sometimes the story is short and simple. Other times it is long (like billions of years) and complex. But the story is almost always interesting. So yes, I like to read rocks. With that thought what better article series to start than one on reading rocks. Each rock story can be a chapter. And I think I have a really exciting one for starters.

Chapter 1: Gabbroic Meta-anorthosite or Coronitic Metagabbro

I found the rock pictured on page 1 (unsliced!) in a stream bed in the Adirondacks several years ago. I don't even remember which stream. It languished in my garage for two years and then I moved it to one of my rock gardens. I rediscovered it this past month when I was reviewing the clean-up job my gardens would need this spring. Right then I realized it was time to do what I had intended when I first picked it up. So, I took it to the club workshop, sliced it in two directions, polished up one surface (sort of), and brought it home to study.

I am calling it a gabbroic meta-anorthosite. OK, so what in the heck does that mean. The core of the Adirondacks, the high peaks region, consists of anorthosite, a deep-seated coarse-grained igneous rock consisting almost exclusively of calcium-rich plagioclase, either end-member anorthite, or labradorite. Of course, it is labradorite that can produce the wonderful iridescence known as labradorescence on fresh surfaces. Unfortunately, the plagioclase in my rock does not display this colorful sheen. Plagioclase is less dense than other mineral phases that were forming within the deep-seated magma and it is thought it may have separated from other portions of the magma and floated to the top of the magma chamber.

Surrounding the central core of anorthosite in the Adirondacks are darker intrusive rocks containing iron and magnesium mineral phases, notably pyroxene and sometimes olivine and amphibole in addition to plagioclase. These coarse grained igneous rocks are called gabbros. Sometimes one can find the gabbros cutting the anorthosite as dikes (Hollacher, 2014). Naturally there were also zones where the two magmas mixed and froze together. Bingo, you have a gabbroic anorthosite, or some might call it a coronitic metagabbro, claiming that there are way too many mafic (Fe, Mg) minerals to call it anorthosite. Semantics, I would say.

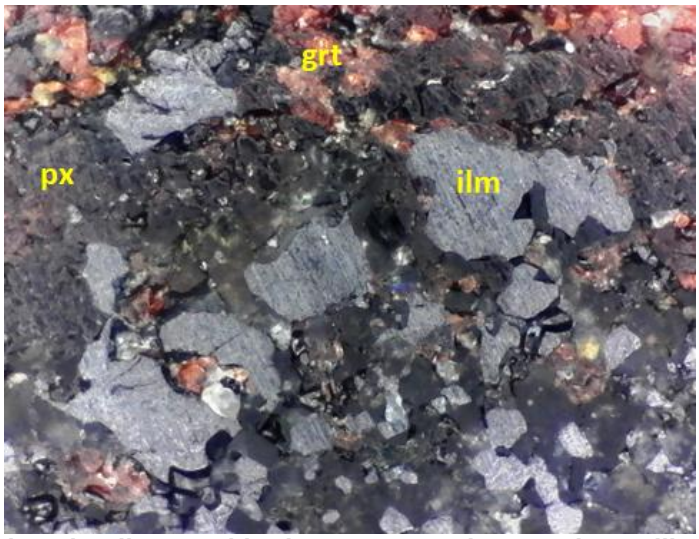
But then it gets really interesting. Whichever name you prefer, the meta part of the name implies that this is a metamorphic rock: in this case, a metamorphosed igneous rock. The Adirondacks are the exposed roots of a once very high mountain range. Erosion of as much as 30-40 kilometrers of overlying rock has exposed rocks that were once deeply buried and at very high temperature and pressure. Temperatures exceeding 800ºC and pressures exceeding 10-12 kbars are sufficient to melt many rocks back into magma, but for others these conditions lead to what is called granulite-grade metamorphism.

Calcium-rich plagioclase and pyroxene (augite or perhaps hyperstene) have particularly high melting temperatures and survived the elevated temperature without melting. But, they did undergo granulite facies metamorphic reactions. In particular, a reaction rim (or corona) of red garnet grew at the interface between the pyroxene and the plagioclase. The pyroxene supplied Fe, Mg, and maybe a bit of Ca, while the plagioclase supplied Al, and most of the Si required to grow an almandine-pyrope garnet. In doing so the composition of the remaining pyroxene and plagioclase changed and both minerals probably display compositional zoning in my sample.

Photo of partially polished slab: (px – pyroxene, plag – plagioclase, grt – garnet, likely almandine). Photo was taken with iPhone7 equipped with Clarius 15x Macro lens. Field of View is 40mm (4 cm) across.

But wait, there is more. The polished surface of the pyroxene reveals blebs and streaks of a metallic gray lustrous mineral that was very distinct from the

duller blacker pyroxene. I first thought it might be magnetite, but it was not observably magnetic. Some of the Adirondack gabbros are enriched in the element titanium. Concentrations in some locations were sufficient for them to be mined. Tahawus on the south side of the high peaks region is one such location. I believe the gray mineral in my rock is ilmenite (an Fe-Ti-oxide). I was pleasantly surprised to see this phase in small amounts in several of the larger accumulations of pyroxene. I was even able to photograph the pyroxene-encased ilmenite.



Ilmenite dispersed in the pyroxene shows submetallic luster and surrounded by garnet in this partially polished slab. This photo was taken with a zOrb digital microscope. Field of view is ~4mm across.

The ilmenite may be a product of the granulite-grade metamorphism this rock experienced. Or perhaps it separated from the pyroxene by exsolution during the original igneous crystallization process. Perhaps someone reading this will know the answer and can inform me. Regardless, it seems that at some point in this rock's history there was too much titanium to be incorporated into the pyroxene lattice and the ilmenite grew as blebs and blobs within the pyroxene.

And if you are still reading this chapter, here is another idea to ponder. Perhaps the pyroxene was generated during metamorphism and the original rock might have been a troctolite. A troctolite is an intrusive igneous rock composed of plagioclase and olivine. They are not common, but they have been implicated in the Adirondacks (Regan, et. al., 2011) and in other anorthosite terrains. In this scenario, the olivine would have been replaced by pyroxene, likely hyperstene, during metamorphism. For me, this makes the origin of the ilmenite even more interesting. Maybe someone knows this answer also?

It would be nice to analyze the actual elemental compositions of some of these minerals and perhaps say more about the history of this 1.1 billion year old piece of New York State, but for now I am satisfied with what I learned by "reading this one rock". I wonder what rock will appear in Chapter 2? Perhaps you have a rock you would like to learn more about? Simple or complex, they all have stories to tell.

References:

Hollocher, K., 2014, A Pictorial Guide to Metamorphic Rocks in the Field, Figure 25.12, p. 268.

Regan, S. P., et. al., 2011, Evidence for an enriched asthenospheric source for coronitic metagabbros in the Adirondack Highlands, Geosphere, v. 7., p 694-709.

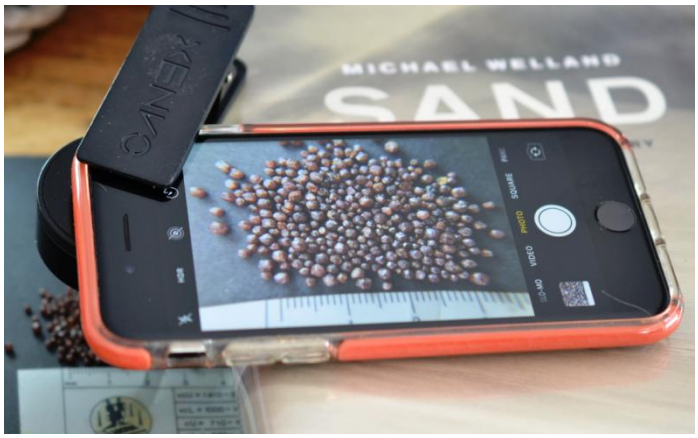
Strekeisen, A., 2006-2020, Granulite (felsic), webpage

Two Inexpensive Macro Photo Methods

by Fred Haynes

I do not profess to be much of a mineral or rock photographer. However, I did use both my inexpensive (<$50 each) close-up devices in the preceding article with some success so I thought I would spend a few words noting what can be done with very little talent and minimal finances.

First, the figure on the preceding page was taken with a small $45 lens attached to my iPhone7, specifically a Clarus 15x Macro lens which clips over the iPhone's lens at the corner. Laying the iPhone on a flat surface to stabilize it (I used a book here), a tripod seems unnecessary. Depth of field is naturally limited, but for slabs or sand samples adequate photos can certainly be acquired.



iPhone7 with Clarus 15x Macro Lens and several hundred garnets from Tolland, CT. The small markings at the base of the iPhone image are mm.

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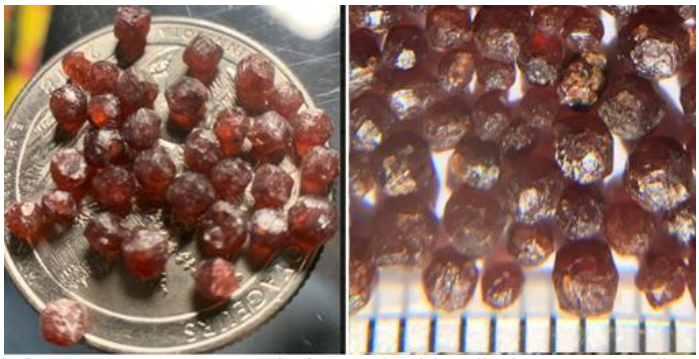
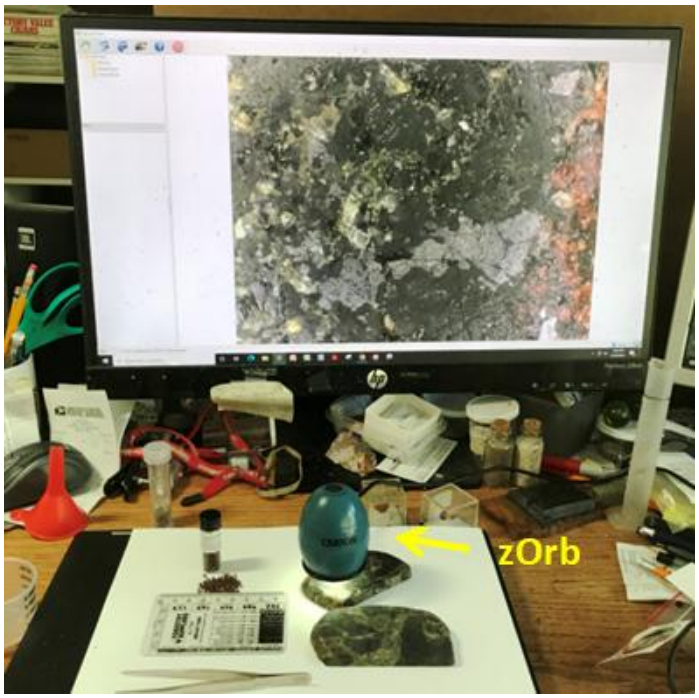


iPhone garnets: Linda Schmidtgall has a similar attachment lens for her iPhone10R and she also has sand-sized garnets collected from the weathered schist outcrop in Tolland, CT. She photographed some of hers atop a quarter (left) while I chose to use a mm scale from a grain size card for scale with my iPhone7 and close-up lens (right).

The photo of the ilmenite blebs inside pyroxene on the previous page was taken with a digital microscope that I have used before for all sorts of close-up documentation. I first wrote about the zOrb65x in the WCGMC April 2018 newsletter. At that time I was pleased with the ease of its use and satisfied with the modest quality it could produce. I've taken hundreds of pictures with it since, particularly of sand samples and polished slabs and with those medium it is extremely useful as a documentation tool.



The zOrb65x digital microscope atop a polished slab of gabbroic meta-anorthosite with the image projected to a computer screen. True width of the image that is projected is 6.5mm. The grain size card below the tiny garnets is 3.5" by 2.5".

Neither tool will win me any photographic awards, but both are easy to use and worthy of my investment.

====== Photo Contributions from WCGMC Members ======

Ed Smith had this blue garnet at the first March workshop. OK, it is not a blue garnet. It is sodalite from the Princess Mine in Bancroft, Ontario and Ed had trimmed it into a dodecahedron as the first step towards making a blue sphere.

Bob Lindenberry spotted this fella outside his home in Elmira.

Glenn Weiler entertained and educated two groups of Wayne County students with his display of economic minerals. You can be assured each student went home with rocks too!

Heidi Morgenstern has completed her first wire wrap. That's a petrified polished dinosaur bone wrapped in copper. Pretty nice, eh?

Mystery Rock
by Kathleen Cappon

Remember the "mystery object" in the issues of Yankee Magazine? Sometimes it was a picture of an old tool or kitchen gizmo from long ago. The readers would send in their guesses in the next issue then the "mystery" was revealed! A rock that I was recently introduced to revived that memory and kindled an idea for the WCGMC. Newsletter.

Now and then club rockhounds could send in a picture and description of a rock that they have difficulty identifying. Members then could send in responses or contact the person who has the "mystery rock" Here, I offer an example using an unusual rock I encountered in late fall.

It was October, and I went to the Wayne County Department of Public Works to meet with the supervisor. I had made an appointment to speak with him about the glass spheres added to highway paint. My plans were to follow up on Fred Haynes' Urban Sand article in the July 2020 issue of our newsletter. Those plans remain in place.

Anyway, when the staff at the county highway facility learned that a "rock hound" was coming one of the workers brought a large rock in his truck for me to identify. The gentleman said that it was plowed up in a field near Port Gibson. He mentioned that it was found near a creek.

This large elongated rock was twisted and appeared water washed, but it was not smooth. Perhaps is quartz-rich schist, but I could not tell for sure. It weighed at least 40 pounds! Well there are your clues. The man who brought it would really like to find out what it is. Study the picture in the newsletter, send your guesses to Fred OR.....Feel free to contact Kim Carr at the Highway Department to ask the owner of the rock to see it first hand. The department's info is: Phone: 315-946-5600 or krooney(at)co.wayne.us

Splendid Sands Calendar
April 2021
Yuzhny Island, Matochkin Strait, Novaya Zemlya, Arkhangelsk Oblast, Russia

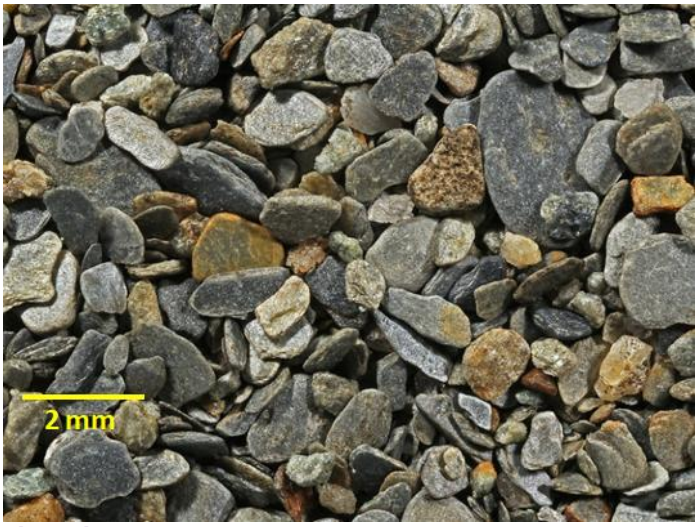


Photo by Leo Kenney

by Leo Kenney, Kate Clover & Carol Hopper Brill

The Arctic archipelago of Novaya Zemlya is a land of extremes. Rigors at this northern latitude include extreme cold, wind, rain, and fog. For three summer months, the sun never sets, and for three winter months it never rises. The archipelago includes two large islands separated by the Matochkin Shar Strait. The northern island is ice covered; the southern island has tundra landscape.

The indigenous Nenets once fished and hunted polar bears, seals, and reindeer but they were resettled to the mainland in the 1950's to make room for a nuclear testing site. Over its history, over 200 underwater and underground tests took place on the islands, including the 1961 Tsar Bomba, the most powerful nuclear weapon ever detonated. Testing stopped in 1990.

Geologically, Novaya Zemlya is an extension of the Ural Mountains. This coarse sand, collected along the western end .of the Matochkin Strait on the southern island of Yuzhny, is composed of schist, metamorphosed shale and siltstone.

Wayne County Gem and Mineral Club 2021 Schedule *last update April 2*

Finally, we have some scheduling information to report, albeit it sketchy and tentative. Except for five hearty souls, weather pretty much obliterated opening day at Ace of Diamonds, but we are planning for bigger and better things later in April. The club is also working on events for May, June, July, and August. We sure hope it can be a better summer than last year.

April 10th and May 1st: Workshop Saturdays, but with limited attendance. Call Linda Schmidtgall to reserve a spot.

April 24th: Let's see how many WCGMC rockhounds we can get at Ace of Diamonds! They open at 9 AM.

A Saturday day trip or perhaps two in May: dates and locations tentative.

Last weekend in June: a 2-3 day field trip, potentially Adirondack bound. We should know exactly where by the May newsletter.

July: We hope to spend a week in Maine or other locations in northern New England. Again, timing and details are not yet known, but are being worked.

August 28th: Picnic time in Wolcott. Mark this date on your calendar. You will not want to miss it. We plan multiple events including an auction and, of course, rock give-aways as always.

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Wayne County Gem & Mineral Contacts

ELECTED OFFICERS

President - Linda Schmidtgall
lees(at)tds.net 315-365-2448
Vice-President - Fred Haynes
fredmhaynes55(at)gmail.com 585-203-1733
Secretary - Debbie Breeze
Treasurer - Bill Lesniak

Board of Directors
Gary Thomas
Bob Linderbery
Heidi Morgenstern
James Keeler

Past President - Glenn Weiler

Visit us on Facebook:
https://www.facebook.com/groups/1675855046010058/

APPOINTED POSITIONS

Bill Chapman – Field Trip Chair

Fred Haynes – Newsletter Editor
fredmhaynes55(at)gmail.com

Bill Lesniak – Website Coordinator
Glenn Weiler – Workshop Coordinator

Linda Schmidtgall – Collection Curator
Eric Elias: GEMFEST Show Chair

Fred Haynes – Facebook Administrator
Jim Rienhardt – Sand Chapter

Club meets 2nd 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 14513

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

Always Looking for Places to Dig
First Class:
Dated, Meetings and Time Valued