

Wayne County Gem and Mineral Club News

June, 2021

Always Looking for Places to Dig!



There is always something to see at the club workshop.



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



The things you might see while collecting sand on Fortescue Beach in New Jersey in May.

Finally, A WCGMC Meeting

June 5th, 11:00 AM

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

It is time, no it is past time, that we meet again. And this Saturday, June 5th we will do just that on the lawn outside the club workshop.

You will want to consider bringing:

- a lawn chair
- your lunch or a snack and a drink
- entries for the best of 2020/2021 (see →)
- a sun umbrella (I am being optimistic)
- a few spare coins, maybe even some bills
- a mask for inside the workshop only

See Linda's Presidential Message on Page 2 for additional detail

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We are planning for an August 28th picnic at the workshop in Wolcott.

See page 7 for information on two upcoming summer field trips.

Best of 2020-2021 Competition to be held at June 5th meeting

Be recognized and win prizes for the best minerals, rocks, and fossils collected by WCGMC members

General rules

- a) Must be self collected, except #7
- b) Label piece, provide identity and location BUT NOT YOUR NAME
- c) Limit one entry per person per category, but you may enter all categories
- d) All present will be judges

Categories

- 1) Best mineral/rock collected in New York
- 2) Best mineral/rock collected outside NY
- 3) Best fossil collected
- 4) Most interesting sand collected
- 5) Best lapidary creation of your own
- 6) UGLIEST rock/fossil of the year
- 7) Favorite show purchase since Jan. 2020.



President's Message

Linda Schmidt Gall

I am looking forward to our two big June events. Our first club meeting in over a year will be an outdoor event at the Weiler farm in Wolcott (the site of our workshop) at 11:00 AM on June 5th. You will want to bring a chair, perhaps your lunch, and a sun umbrella should we be blessed with a fine summer day. Bring a mask if you want to go into the workshop. We won't require them outside.

In addition, be sure to bring any rocks, fossils, lapidary creations, etc. that you have found, made or acquired in the last two years and enter them into our various **"Best of 2020/2021"** competitions. See details on categories to be judged elsewhere in this newsletter. To add to the fun, everyone present will have a chance to be a judge. This event has been popular in the past, but works best when everyone enters into the competition. Look over your recent acquisitions and bring a few to show off.

Another activity I have planned for June 5th is to bring a wide assortment of the smaller polished cabochons that the club owns. Anyone who is interested can purchase a small locket (\$3) and then pick the stones they want to place into the locket for a few more quarters. You can put together a pretty nifty gift this way and have fun doing it.



A few examples of the stones in the club selection and a finished locket on the right. Come next Saturday and make your own!

Remember those Christmas e-mails you sent me to earn a club gift? Well, I remembered and I will have your prizes with me. We'll hold a raffle among those who earned eligibility by contacting me. Everyone who did not participate will be very jealous!"



This is what will go home with those who sent me a note at the holidays.

There will be some other club specimens for sale and I'm sure there will be plenty of giveaways also. And if you have not been to the workshop in a while there is a lot of different stuff on the rock pile out back. For just 50 cents/pound you can stock up.



The Weiler rock pile. See anything you might want?

Later in the month, we have a multi-day field trip planned for the final weekend in June. We'll be in the Adirondacks, hopefully after the black flies have given up for the year. There are new sites for us and a couple oldies, but goodies as well. I can provide the logistics to anyone who sends me a message. We are approaching 30 interested rockhounds already so it should be a fun weekend in the Adirondack lowlands.

It is also time to start thinking about coming back together in the church in Newark. We expect to be meeting there again starting in September. And one of our first orders of business will be the selection/election of a new slate of officers. We will need new folks to step into a number of positions starting with mine! So start thinking if perhaps this is the time for you to become an officer. Ask me about it Saturday or give me a call anytime.

Linda

The Mystery Spheres in "Urban Sand" by Kathleen Cappon



In [the July 2020 issue](#) of our newsletter, Fred Haynes wrote an article called "Urban Sand". He described discovering tiny whitish disks in sand samples collected from a tributary of Allen's Creek near Pittsford. These could only be spotted after magnification of the sand sample.

After posting the pictures, Fred was contacted by Leo Kinney, a sand collector from Massachusetts. He shared that they were reflective glass beads used in the painting of the highway lines. These grains can more likely be found in sand accumulations of creeks and rivers near marked highways.

I decided to add to Fred's interesting article by seeking the source of the reflective beads and road paint. All of us at some time have followed or driven past a paint marking truck. Through experience, one learns not to drive across the fresh paint or to just avoid the truck altogether! Trying to remove the dried paint from your mud flaps or rocker panels is next to impossible.

This past October I decided to visit the Wayne County Department of Public Works to find out more about the beads. The large highway facility is located near the Blue Cut Nature Center between Newark and Lyons. The paint trucks are housed at this location and are used for marking all roads in the surrounding counties.

I called the secretary, Kim Carr to arrange an appointment with Superintendent, Kevin Rooney explaining that I was a WCGMC Sand Section member and wanted to ask about the beads found in sand samples. When we met, he found Fred's article most interesting. He allowed me to obtain a sample of the glass beads to share with the club. The highway departments in New York order these beads in 50 lb bags from a company in Malvern P.A. P.Q. Corporation. or Potters Glass Bead Manufacturing Company.

Mike Crandall, one of the paint truck drivers, gave me a tour of the maintenance garage along with the skills required in marking the roads. Four of the huge paint trucks were parked in the yard Mike talked about the 5lb ratio of disks to each gallon of paint and the art of creating the perfect road paint..



I prepared small (20ml) bags and vials of the beads for other members and Fred then took their picture under magnification. The beads range from about 0.5 to 0.8mm in diameter.

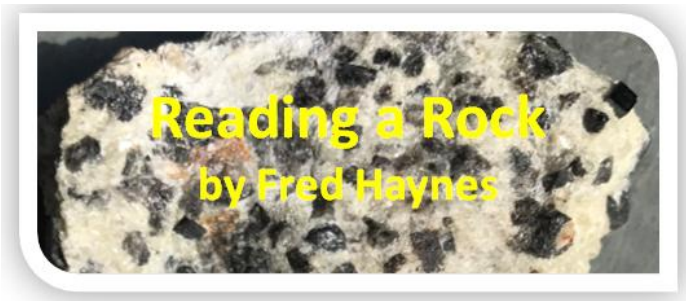


One of the four of the huge paint trucks were parked in the yard



The trucks were impressive up close with their multiple mixing tanks, endless pipes and lots of precision technology.

This visit provided me an in-depth knowledge of the art of road painting and gave more background to the "Mystery Beads" But, wouldn't it be better if this turned into a Sci-Fi story instead and Fred had discovered the shards of miniature flying saucers? Set your microscope to a closer setting. Maybe there are letters or glyphs that have a faint spelling of: WCGMC.



[Last month](#) we “read” about a mafic (Fe-Mg rich), low silica volcanic rock called basanite with olivine-bearing mantle xenoliths. This month we remain focused on igneous rocks that are too low in silica to contain quartz. This month’s igneous rock is an intrusive variety and is actually ultramafic with even higher iron and magnesium content. It is also found closer to home (Quebec) and contains some very uncommon minerals. The rock itself is so rare that it is named for the location where it is found.

Chapter 3: Okaite from the Oka Carbonatite, Oka Quebec, CANADA

The Oka Carbonatite Complex is located about 20 miles west of Montreal along the Ottawa River. The complex is about 5 miles long and 2 miles wide and consists of some very unusual igneous rocks. In the past these rocks have been prospected and mined for rare earth elements like niobium. The Complex is Early Cretaceous in age (dated at 124-125 million years) and intrudes Precambrian metamorphic rocks.

The core of the complex is a carbonatite, an igneous rock consisting of more than 50% calcite that is often hard to distinguish from marble. That in itself is interesting, but it is the myriad of dikes that surround and extend from the central core that attract mineral enthusiasts (and rock lovers like me).

One of these rocks is called okaite, named after the town and geologic complex where it is found. The white matrix material is a mixture of calcite, nepheline, melilite and other feldspathoid minerals, not the typical quartz and feldspar most continental granitic rocks would contain. This is because the source magma was derived from partial melting of the upper mantle with very little assimilation of the Precambrian crustal material that it intruded. The upper mantle is enriched in iron and magnesium at the expense of silica.

One clearly identifiable mineral of interest in these rocks is perovskite. Perovskite (CaTiO_3) is a very simple cubic mineral. The small 1-2mm size black

cubes sprinkled throughout these rocks is perovskite. The mineral is rare in nature because it is not stable in the presence of either quartz or feldspar. Too much silica will lead to the formation of titanite (CaTiSiO_5), a mineral WCGMC



2mm crystal of perovskite

members have collected at Rose Road in the Adirondacks and at numerous sites in Ontario. In addition to the perovskite other dark minerals include magnetite, ilmenite, and augite (pyroxene).



A few years ago I obtained these two small, but interesting specimens of okaite from WCGMC member Don Lapham. Don had collected them on a field trip with the Walker Club (Toronto) in 2007. The yellow arrows point to perfect black cubes of perovskite. The far left crystal is enlarged in the preceding image.

In planning this note I sought additional input about the site and his finds from Don. He responded with the following:

The dig in Oka was one of many stops on a weeklong trip in the region around Montreal with the Walker Club. The gate at the site was locked when we arrived and our key person was late, so I remember waiting for a while and someone making phone calls. The fields we drove past were planted with tomatoes. It was an uphill drive and eventually we turned right at the top of one of the tomato fields and parked where the field ended into woods. I do remember my Dad driving his Chevy Suburban into the woods road at the end to pick up my Mom who was too overheated to walk back.

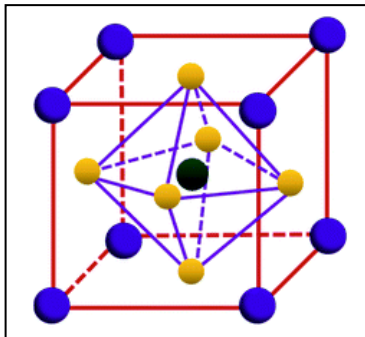
We thought we were in the famous "Bond Zone" where the little cubic minerals could be latrappite $(Ca,Na)(Nb,Ti,Fe)O_3$. But I later learned that we had missed the Bond Zone by one hillside, so all the rocks we were collecting probably didn't have enough niobium to qualify as latrappite. I remember tossing away a specimen that didn't have any cubes, but did have a poor little apatite looking crystal. I now realize(it may have been niocalite $Ca_7Nb(Si_2O_7)_2O_3F$ and I kick myself everytime I recall the mistake. Oka is the type locality for both latrappite and niocalite.

We were collecting out in an open area, probably scarred by prospecting trenching and there was a small cut into the hillside and lots of boulders scattered around. The okaite and perovskite were everywhere and easy to find.

I always assumed the groundmass was granular calcite. The non-crystalline black specks are probably magnetite, ilmenite or pyrrhotite. I don't recall checking any specimens for radioactivity. The brown areas could just be rust from the oxidation of pyrrhotite. All of my specimens look like the ones you have; the ones I kept just have slightly larger cubes.

A Bit More About the Perovskite Structure

The perovskite mineral structure (ABX_3) has a central titanium cation (black-B) surrounded by six octahedral oxygen (yellow-X) that are each shared between two lattices. The eight corners (blue-A) are occupied by calcium and each is shared by eight cells. All of which leads to the generalized mineral formula $CaTiO_3$ or the generalized formula ABX_3 .



Interestingly, the perovskite mineral structure has the potential to revolutionize the solar cell industry by its ability to convert UV and visible light into electricity both effectively and efficiently, a property first recognized in 2009. Since that time, literally hundreds of man-made compounds with that structure have been tested. The race to develop the most efficient and also environmentally friendly compound utilizing the perovskite structure in solar

cells is intense. Some of the key research is being done just a few miles down the road at Cornell University (James, 2020).

References:

Davidson, A., 1959, A study of okaite and associated rocks near Oka, Quebec, M.S. Unive. Of British Columbia, abstract

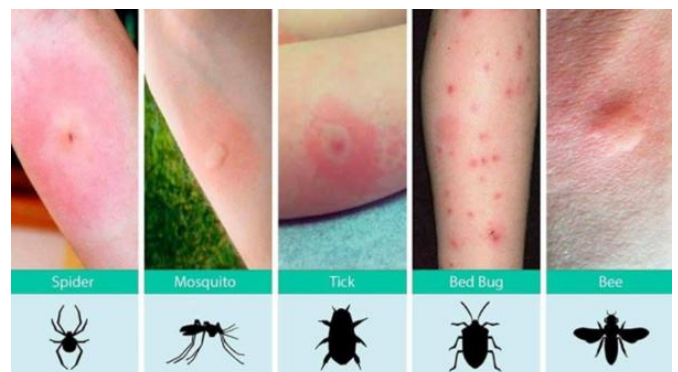
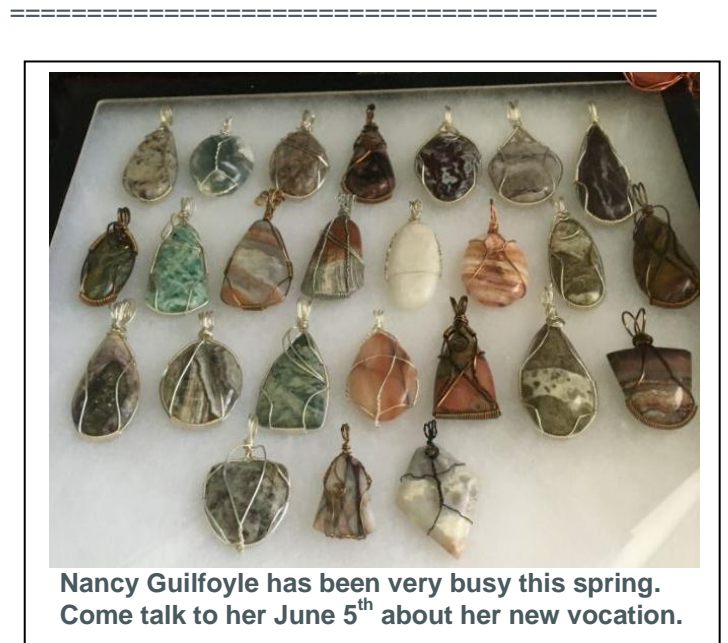
James, L., 2020, [To Reach a Solar Boom, We Must Say Goodbye to Silicon, Claim Cornell Engineers](#), All About Circuits,

Mindat, [Oka complex, Oka, Deux-Montagnes RCM, Laurentides, Quebec, CANADA](#)

Ossila, 2018, [Perovskites and Perovskite Solar Cells: An Introduction](#), webpage

St. John, J., 2014, [Okaite, Oka Niobium Mine, Quebec](#)

Wikipedia – [Perovskite](#) and [Perovskite Solar Cell](#) entries



Be careful out there. The critters can be nasty.

Splendid Sands Calendar

June 2021

Kanyakumari Beach, Tamil Nadu, INDIA



Photo by Leo Kenney

by Leo Kenney, Kate Clover & Carol Hopper Brill

At the extreme southern tip of the Indian peninsula, Kanyakumari lies at the confluence of the Arabia Sea, the Bay of Bengal, and the Indian Ocean. Coastal beaches along this southern point are enriched with heavy minerals with densities much greater than quartz. These grains include garnet, ilmenite, rutile, and zircon.



On the beach these minerals sort and concentrate as breaking waves take the foreshore minerals to the beach and the backwash carries the lighter minerals back to the sea. The to-and-fro action leaves wavy, heavy-mineral patterns on the beach.

These minerals weathered out of gneiss and granite rocks in the Ghats Mountain Range. Rivers transported the grains into the Bay of Bengal and they now accumulate in dunes extending 75 kilometers along India's southwest coast. Discovered in 1909, the dune deposit is dredged to recover ilmenite and rutile, titanium-bearing minerals. The pink-red grains are garnet and the black are ilmenite. The clear and rounded grains are quartz.

Editor's Note: Wow, now this is a sand I would like to have for my collection.

Cape May "Diamonds"

by Fred Haynes

One stop Linda Schmidtgal and I made on our May mid-Atlantic beach tour seeking sand and fossils was the extreme southern tip of New Jersey. Sunset Beach and Higbee Beach along the Delaware Bay side of Cape May are known for the extraordinary accumulations of highly rounded quartz sand, gravel and pebbles. You may have heard of Cape May "diamonds".



How about several miles of beach that look like this? Linda is almost lost on the horizon of semi-polished stones.

The quartz was sourced from thick quartz veins hundreds of miles upstream in the Delaware Water Gap. The quartz was rounded and deposited during glacial periods as Pleistocene gravel. These gravel deposits are now being eroded along the New Jersey shoreline of the Delaware Bay. The gravel and cobbles are blocked from entering the ocean coastline by the tides and ocean currents and are pushed ashore near Cape May during periods of high water.



Some of mine picked out on Sunset Beach. The 15mm piece marked by the yellow arrow may be my best once polished. It is likely large enough for faceting.

Wayne County Gem and Mineral Club 2021 Schedule *last update May 30*

It is time to hold a meeting and we hope you all can make it to Wolcott this Saturday. One agenda item is to discuss what else folks might like to do this summer. Our list right now is short, but it need not stay that way.

June 5th: A club meeting is planned in Wolcott for 11:00 AM. The workshop will also be open that day. As noted on page 1 and page 2, we have a full slate of activities planned, but the really good thing is just that we can meet again!

June 26th and June 27th – No change from last month on this announcement. Two packed days of field trip visits in the Adirondacks. Both days will start at 9:00 AM and both will include at least two stops. Right now it appears that two of the sites will be new to the club, and one other will be Benson Mines, a favorite location we did not get to in 2020. We are asking that all who have potential interest in this trip contact **Linda Schmidt** to sign-up and get on a distribution list with particulars, details of which are still being worked.

Mid-July: James Keeler will be leading a trip to Maine to hunt through pegmatites for tourmaline, garnets, apatite, quartz, and other treasures. The trip will be centered around the weekend of July 18th (probable digs on 15, 16, 17, and 18th TBD). Please send an email to jamesrocks@jkeeler.com if you'd like to put yourself on the "I'm interested and considering going" list to receive further details.

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.

WAYNE COUNTY GEM AND MINERAL CLUB SATURDAY WORKSHOP *May 22, 2021*



Glenn



Linda



Kathleen



Heidi



Nancy



Bob



Karen

Wayne County Gem & Mineral Contacts

ELECTED OFFICERS

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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](mailto:fredmhaynes55(at)gmail.com)

Bill Lesniak – Website Coordinator
Glenn Weiler – Workshop Coordinator

Linda Schmidtgal – 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

