Wayne County Gem and Mineral Club News

May, 2021

Always Looking for Places to Dig!

Scouting out a new site (see page 2)

http://www.wcgmc.org

FACEBOOK link

A Saturday Workshop in April

WCGMC Workshops

May 1st and May 22nd

We continue to hold Saturday workshops with limited attendance to allow for social distancing. Our April 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 our May workshops.

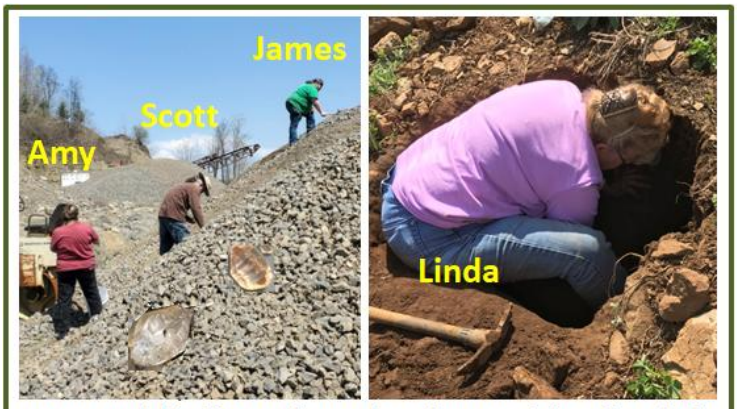
When: 10:00 AM until mid-afternoon
Where: The Weiler's Barn /Club Workshop
6676 E. Port Bay Rd, Wolcott, NY
Rules: Bring your own rocks.
A mask must be worn when inside the shop. Eye protection is required.
Training on equipment is available.
$5/adult to offset maintenance costs.

==========

Keep **June 5th** open on your calendar !!
We are planning an outdoor meeting.

We are planning for an August 28th picnic at the workshop in Wolcott. See page 7 for more on field trips, the picnic, and other tentative summer events.

Finally, a field trip and warm weather
Ace of Diamonds, April 24, 2021



James took his diamond search to the top of the pile. Linda dug a hole like only Linda can. I hope the collectors on the pile of crushed stone found those two big ones!

President's Message

Linda Schmidtgall

It was great to see several of you at Ace of Diamonds on April 24th. The diamond digging was only so-so, but it was a beautiful day to get down and dirty and to renew friendships. I came home with a few new additions to my collection and I hope others who made the trip did also.

The previous Saturday a number of us ventured north to scout out a site we might visit again on our Adirondack trip in June (see page 7). Ken St. John had obtained permission from the owner to visit the McLear pegmatite, (also known as Green Hill) in DeKalb. It was once a feldspar mine and there was plenty of white feldspar and quartz around in addition to some tremolite and other goodies.

Rob Bancroft found an interesting small (about 3mm tall) black crystal set in sugary white quartz. In the field we had no idea what it might be, but it kicked his geiger counter once he got it home. Given its crystal form we think it might be thorite.

Please keep Saturday June 5th open on your calendars. We have had to cancel GemFest that weekend, but that does not mean we can't do something with rocks that weekend. We are hoping to plan an outdoor club meeting. Not sure what the program will be yet, but we'll likely have something planned before the June newsletter. Perhaps a bring your own chair and picnic lunch for a midday meeting outside the workshop? One thing is for sure. Whatever we do will involve rocks.

I spotted this white deer just outside Weedsport on my way to Ace of Diamonds. He may think he was hiking behind the spring buds, but he is way too white for that.

Linda

==========

April 10th was a busy day inside and outside the club workshop

North Country Rock Hound

by Kathleen Cappon

It will be a treat, finally, to be able to visit my brother Dan and his family later this spring. He lives on a large tract of land near the Tug Hill area in upstate New York. Visiting him for me always includes several collecting stops along the way on routes 3, 11, and 81. The limestone exposures on these routes yield a lot of brachiopods, trilobites, crinoid stems, and corals. Kings Quarry and the general area has fossil layers. All sorts of fine fossils (and not so fine ones too) can be found in the tributaries of South Sandy Creek and along the roads east of the quarry.

My brother's property also has some beautiful polished glacial hedgerow stones of much harder compositions than the ones near me in Walworth. One large banded schist boulder graces one of his wife Liz's numerous garden beds. It is as nice as the one in front of Glenn Weiler's lapidary shop!

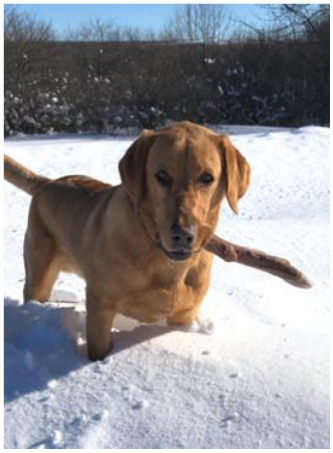
On occasion I will "ID" a stone when I visit or Dan will send me a picture and ask. The latest "mystery" stone that he sent to me in April has quite a story behind it (picture to the right). It was small (about one and half inches in diameter) and pretty ordinary at first glance. I said "I'm not sure, some kind of metamorphic rock, maybe granite gneiss? But, why do you ask?"

Well, here is the rest of the story: In the fall, Dan and Liz got a new Labrador puppy. Over the years they always have had hunting or retrieving dogs. This one was unique in that it was a Fox Red Lab. Rusty started out as more of a golden color then changed over to a reddish coat. He also is a great retriever of things.

Not only did the picture of the stone have new meaning, it also had to have a name. Rusty swallowed this stone and threw it up!! I said "Oh my brother, you have yourself a Stone Hound". Both of us had a laugh when I told him about gastroliths and coprolites.

I have known only three people in my life that had Labradors that would do things with stones. One would retrieve a stone you would throw into the lake, (not far out), and he would bring that same stone back to you each time! Others would just carry a stone around in their mouths and deposit them in piles in the yard or near the house. Over time their teeth would wear down or sometimes crack. God forbid the occasional swallowed one.

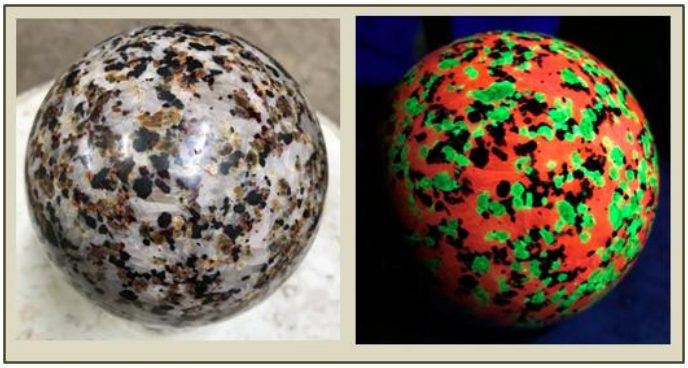
Rusty was lucky and will have to be watched a little more closely. Dan said, "I will name this rock for you this time". The Mystery Rock for this month's newsletter is a North Country Red Fox Labrador Puke Stone, or a NCRFLPS for short. Everyone should have one in their rock collection.



A couple pictures of Rusty, a dog of all seasons and a retriever of anything that is not tied down.

==========

I think WCGMC has a "spherist" in the group.

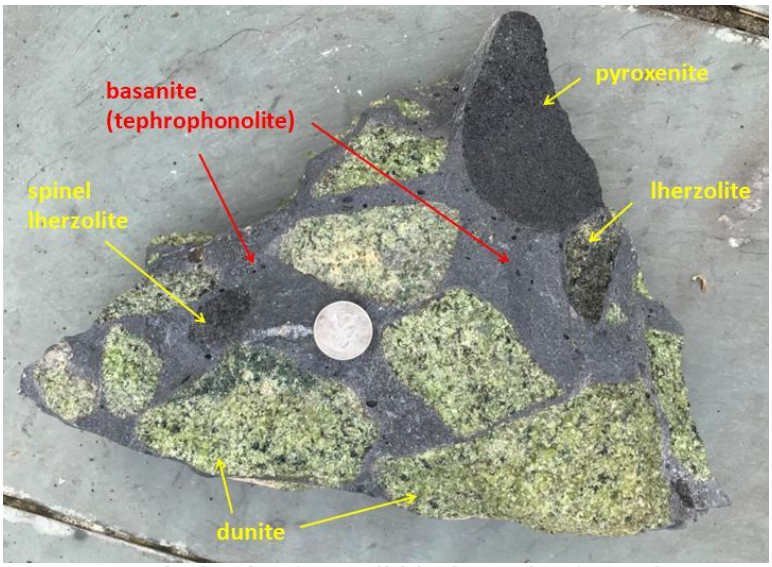


Just look at what Bob Linderbery was finishing up at the April workshop! This 4" diameter sphere is from Franklin, NJ. Daylight photo on the left, short wave UV light on the right. In the right photo the black is franklinite ($ZnFe^{3+}{}_2O_4$), the green is willemite (Zn_2SiO_4) and the red is calcite ($CaCO_3$).

In 2015, WCGMC received a wonderful donation of minerals, rocks, and lapidary equipment from Elizabeth and Brian Cowger, who were leaving the region for Florida. A number of club members spent most of a day moving the donated material from two storage units in Auburn to multiple club locations. A bit later we returned to sort and organize over 500 boxes and buckets, filled with rocks of all flavors. Club members have benefitted from the collection since, but at that second meeting we agreed that each helper could take something of modest value that they had seen during the day of work.

Wouldn't you know it with all those stones and rocks to choose from Ed Smith and I had our eye on the same rock, but for very different reasons. I wanted the rock for its geologic uniqueness while Ed had his eye on some facetable gems exposed in two or three spots on the rock. So, Ed took the piece first and chipped off a number of uncut stones. He returned the rest to me and it has resided on my mantle for several years. Now, it is time to read my rock and acknowledge Ed's lapidary skill.

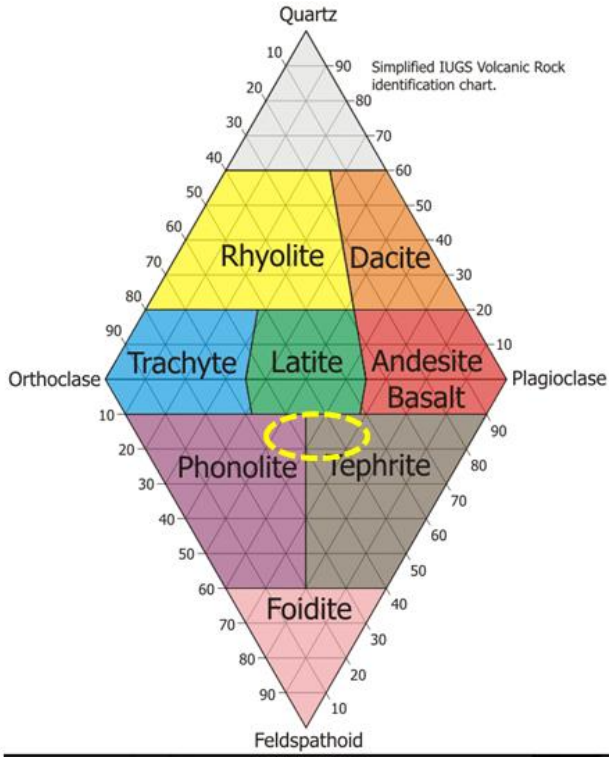
Chapter 2: Xenolithic basanite(?) from Peridot Mesa, Arizona



An 18 pound chuck of xenolithic basanite from the San Carlos Volcanic Field in Arizona

Many call this rock basalt. I thought that correct also until I started to read the rock. After all, basalt is by far the most common volcanic rock on our planet. But basalt has higher silica content than this rock and thus contains quartz and feldspar. This rock contains no quartz and is too low in silica for feldspars to form. Much of the available silica was consumed forming pyroxene, olivine and other mafic (iron and magnesium) silicates at higher temperatures for feldspars and quartz to form as the lava further cooled and turned to rock.

Instead this rock is a basanite, a fine-grained volcanic rock low in silica and high in alkali metals (notably Na and K). Mineralogically, it is composed of pyroxene, olivine, plagioclase, and feldspathoid minerals like leucite and nepheline. But basanite is a general term. Based on the composition of this rock's matrix (yellow dashed oval area in plot), this volcanic rock is best called a phonotephrite or a tephritic phonolite (James, 2018). Now, that is a mouthful. No wonder they are often referred to as basalt!



QAPF diagram for classifying volcanic rocks. (modified from GeologyIn.com, 2015)

You will notice that most of the volcanic rock names we all know (rhyolite, andesite, basalt, etc.) do contain quartz and fall in the top triangle of this diagram. Silica-deficient rocks like the San Carlos volcanics are less common.

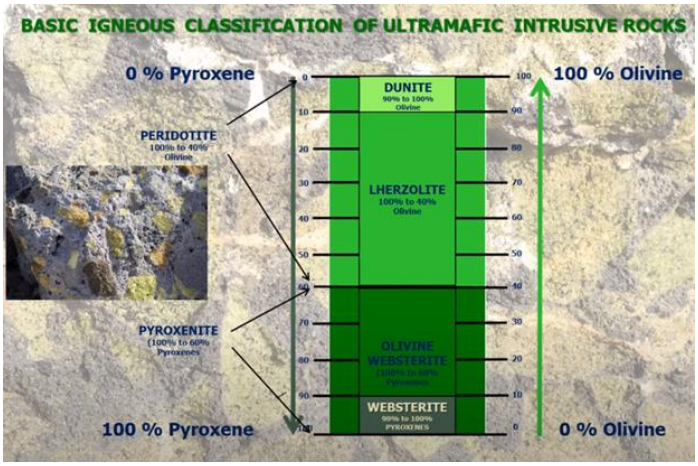
But the real story of this rock is the large and colorful xenoliths it contains. A xenolith is a rock

continued on next page

fragment that became enveloped (or captured) in another rock during that rock's formation. Xeno means foreign and lith means rock, a xenolith is quite literally, a foreign rock.

The large green xenoliths that dominate this rock are nearly 100% olivine and they come from the earth's mantle. As the basalt magma was beginning its journey from the mantle, it tore off bits and pieces of the local mantle rock and carried it to the surface. A rock made up of mostly olivine like this is called a dunite. There are several large dunite xenoliths in this 18 pound piece of Arizona.

But that is not all. There are other xenoliths that are equally interesting. There are darker xenoliths composed of primarily pyroxene and rationally called pyroxenites. Rocks with olivine and pyroxene are called lherzolites or websterites depending on the relative amounts of the dominant minerals.

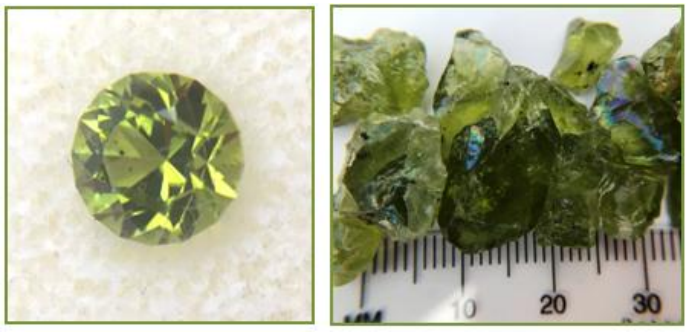


Igneous classification for the ultramafic xenoliths: from Celestian, 2016

The xenoliths are all coarse grained intrusive igneous rocks called ultramafics (very high Mg-Fe content) and they come from the earth's upper mantle. Their occurrence and preservation in this unique basanite flow in Arizona is believed to result from two aspects of the volcanic event. First and foremost, the lava rose rapidly from its mantle source preventing the xenoliths from being altered or even assimilated on their ascent. And second, the crust is a bit thin in that region of North America so it did not have to travel as far as in other locations.

Interestingly, there seems to be disagreement about the actual geologic timing of the Peridot Mesa eruptions that brought these interesting mantle rocks to the surface. Celestian (2016) indicates an age of 5.0 to 2.5 million years ago during a 15-minute youtube video that is well worth viewing, but Gullickson, et. al., 2010 note a younger age of less than one million years, and St. John (2018) notes an even younger age of 580,000 years.

As Ed Smith had recognized, the olivine in the dunite xenoliths can be of gem quality; gem quality olivine is called peridot, one of the August birthstones. Ed was successful in faceting several gems from the small pieces he removed and he was nice enough to give me one. Apparently he was unaware that my wife has two ears.



Ed's creation on the left is a standard round cut and is 1.07 carats. The raw pieces of rough removed from the xenoliths may also have facet potential.

Ed missed this gemmy olivine. Crystal is about 4mm across. Photo taken with zOrb digital microscope

References:

Celestian, S., 2016: The Geology of Peridot Mesa, ***a 15 minute youtube video worth watching***

GeologyIn.com, 2015, How to Use QAPF Diagram to Classify Igneous Rocks?, webpage

Gullickson, A.I., et. al., 2010, A neglected magma: constraining the volatile content and pre-eruptive conditions of hhe Peridot Mesa basanite, AGU Fall mtg.

St. John, J., 2018, Peridotite mantle xenoliths in phonotephrite (Peridot Mesa), San Carlos Volcanic Field, AZ

Wohletz, K. H., 1978, The eruptive mechanism of the Peridot Mesa vent, San Carlos, Arizona, in Burt, D.M., and Pewe, T.L., eds., Guidebook to the geology of central Arizona, 74th Cordilleran Section Meeting, GSA

Splendid Sands Calendar

May 2021
Benaulim Beach, Benaulim, Goa, INDIA

Photo by Leo Kenney

by Leo Kenney, Kate Clover & Carol Hopper Brill

Nearly dead center on India's western coast, the Province of Goa has a long history of human activity, including 450 years of administration by Portugal. Goa's shoreline has been extensively used for agriculture, shell fishing, traditional fishing, and recreation.

Benaulim Beach runs N-S for close to 20 miles along the coast of South Goa, bounded by rocky headlands. Offshore the sandy seafloor slopes gently for nearly a mile into the Arabian Sea. Now popular with Indian and international tourists, there are concerns about over-development and its impacts on the rich biodiversity of the coastline.

This finely polished biogenic sand contains shells and shell fragments of many mollusc species. Surveys report up to 50 gastropod and 43 bivalve species. The transparent tubes near center are tooth shells (Scaphopods, a sand-dwelling class of mollusc). Other diversity includes many small spiral forms and also a brown sea urchin spine at lower left.

Editor's Note: North American's prefer to spell mollusk with a k, but mollusc is the preferred spelling in the rest of the English speaking world. Because this sand and its bivalves are from India, the authors of the international sand calendar chose to use the preferred spelling of that region.

The WCGMC Sand Page

Hamlin State Park Beach

By Fred Haynes

It was ostensibly a trip to view early spring wildflowers, of which there were many, but Hamlin State Park Beach on Lake Ontario hosts some fine garnet and magnetite sand horizons which change dramatically with every year. I decided April 19th was as good a day as any to check out this year's exposures. And I was not disappointed.

In between the rounded Grimsby sandstone cobbles, the sand is brilliant red, colored by concentrations of sand-sized garnet grains left in the swash zone by high waters.

On the same beach, and not more than 100' away, the lake had left a sand shelf displaying alternating bands of magnetite sand and quartz sand.

Wayne County Gem and Mineral Club 2021 Schedule *last update April 28*

Without monthly meetings in the church and without GemFest in June, it seems we may have lost some momentum as 2021 moves into spring and then summer. But we did visit Ace of Diamonds twice in April and held a Saturday workshop. We have plans for two more workshops in May and are putting together plans for at least two longer field trips this summer

May 1st & May 22nd Workshop Days, but with limited attendance. Call Linda Schmidtgall to reserve a spot.

June 5th: Reserve this date. We are working on planning an outdoor club meeting that day, perhaps a club o meeting outside the workshop? Details should be available shortly.

June 26th and June 27th – 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 Schmidtgall** to sign-up and get on a distribution list with particulars, some of which are still being worked.

July: We hope to spend 5-7 days in Maine or other locations in northern New England. Timing and details are not yet known. **James Keeler** is working to identify the dates and locations we can visit.

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.

==========

Wire wrapping seems to be contagious in the club this spring. On the left, Heidi Morgenstern's second creation, chain coral (Halysites) from Walworth Quarry wrapped in silver. Nancy Guilfoyle's teardrop cabochon is wrapped in copper. Nancy has a few more ready to be wrapped (far right). She says it was hard to get started, but maybe she will be like a train: once rolling, hard to stop. I wonder who will catch this malady next?

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