

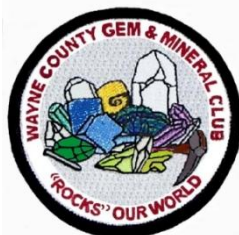
Wayne County Gem and Mineral Club News

August, 2020

Always Looking for Places to Dig!



Diamond Hill, SC (see pg. 4)



<http://www.wcgmc.org>

FACEBOOK link



Hamlin Beach sand (see pg. 5)

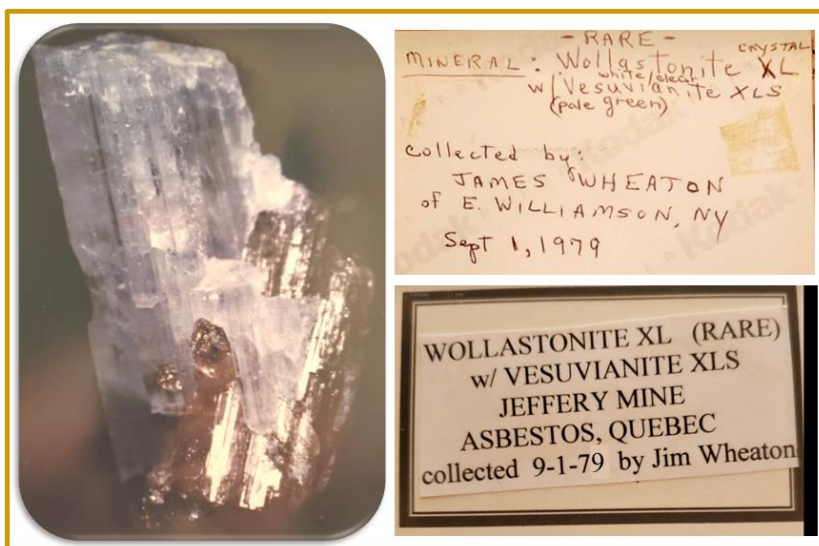
A Bit of WCGMC History by Fred Haynes

Some of you may know that our club was founded in 1974. You may also know that Jim and Marion Wheaton were the driving force behind its creation and its growth. Jim passed away in 2011, but his wife Marion continues to read our newsletter and follow the club's events and adventures. Their daughter, Diane, also shows Marion Facebook posts that our members post.

Well, Diane saw my Facebook post in mid-July when I sought input for this month's newsletter. Coincidentally, she was also organizing pictures that her 89 year old mother had accumulated. She picked out one of Jim Wheaton's mineral pictures and wondered if we might be interested in seeing a specimen Jim had collected on a WCGMC field trip over 40 years ago. What a wonderful thought and such a fine gesture.

Jim was a leader of many club trips in the first two decades of WCGMC's existence and apparently led a group to Quebec in the late summer of 1979. They visited the famous Jeffery Mine in Asbestos, Quebec where Jim collected this wonderful "world-class", gemmy miniature wollastonite crystal decorated by several smaller vesuvianite crystals at its base. Diane was nice enough to include a picture of Jim's original hand-written label and a typed label generated at a later date. Can you make out the Kodak watermark in the older label?

Some things change, but one thing remains constant:
WCGMC is Always Looking for Places to Dig!



from Marion Wheaton's photo collection, provided to WCGMC by Diane Wheaton. The specimen is now at the NY State Museum in Albany, which provided the mineral photo to the Wheatons.



President's Message

Linda Schmidtgaal

We lost our spring collecting season. We had to cancel GemFest and then our annual summer picnic. We are well into summer without being able to gather and collect. Now it seems fall is in jeopardy. 2020 will certainly be a year to forget.

I hope everyone is managing this mess, most importantly staying healthy, safe, and sane. I'm OK on the first two, but I could sure use a trip or two before the snow flies to maintain my sanity. I have managed five days of collecting so far: a fun, but not particularly successful day at Ilion Gorge, and four days at Ace of Diamonds. Thankfully, that location is just two hours away, and although its opening was delayed it is a site we can visit.

I actually attended both their Opening Days. At first, they only allowed those camping overnight to collect, so four of us did just that in late May. Then, when they opened for day collecting I made sure I attended that day also. I've been to their Opening Day every spring since I started collecting and I did not wish that streak to be broken. This marks my 11th consecutive Opening Day visit. My results have been mixed, but overall I did add a few diamonds to my collection.



My 2020 "diamonds" from four days of collecting. The top row, outside the box, represents my finds from Opening Day.

By far my best find of the year came at 4:45 PM (15 minute before closing time) on Opening Day in June. Most of the visitors for the day had left, but you know me. I can't quit until I have to. When we were given the 15 minute warning, I decided to dig one final hole into the muck pile. Five minutes later I was rewarded with a wonderful double crystal piece that weighs $\frac{3}{4}$ of a pound. I was elated. But it will have to cool off before I go look for more.



My best Herkimer of 2020, so far: Can you see I have found another use for those dreaded face masks?

Please consider sending Fred or me a report (or a picture) on your collecting adventures this summer. I believe Fred has heard from a couple of you, but we'd love to know what others are doing, and I'm sure the rest of your rockhound friends would also.

You probably noticed that this issue contains no scheduling announcements on either on page 1 or page 7 where they are normally posted. This is because we just don't know when we can next organize a club event. We do hope to meet in September at the church, but that will require permission to use the facility and a continued green light on holding meetings. I sure hope we can provide a more positive note on club activities in September.

Linda

FIREWORKS!

by Fred Haynes



On July 4th, we celebrated our nation's independence with fireworks. This year many public displays were cancelled, but if your neighborhood was like mine, there were still plenty of pyrotechnics decorating the evening sky. The wonderful colors are all part of simple elemental chemistry and most owe their origin to minerals and chemical compounds (metal salts) produced from those minerals.



There are exceptions, but most fireworks rely on specific elements to produce the colorful displays. Color variations can be created when the elemental compounds are combined.

- Red fireworks are produced from **strontium** carbonate
- Yellow fireworks generally require **sodium** nitrate
- Green colors result from fireworks containing **barium** chloride
- Blue fireworks are produced by **copper** chloride
- White or silver colors require **titanium** or **magnesium** salts
- Orange colors can be produced by **calcium** chloride (or by mixing **strontium** and **sodium** compounds)
- Purple fireworks combine **copper** with **strontium** compounds

All of these chemicals used in fireworks are compounds called "salts". A salt is any compound that contains both a metal and non-metal atom. When certain salts are burned they display intense color that is derived from the metal in the compound; these colors are defined as the flame color for the metal. Sulfur and

charcoal along with potassium nitrate are added as the "lift charge" and to help the fireworks burn. Nitrates, chlorates, and perchlorates are included in the mixture to provide oxygen for combustion. Dextrin is added to hold the mixture together. Fireworks are clearly a complicated mixture of chemicals, but it is the metal content of the salt that dictates the color.



strontianite from Mt. Pleasant Mills, PA

azurite from the WCGMC collection

barite from Kings Mtn. railroad cut, KY

titanite from Eganville, Ontario

We collect many of the minerals from which these metals are recovered. There is strontianite at Mt. Pleasant Mills in PA, and barium is often recovered from the sulfate mineral barite. Is it hard to imagine that brilliant blue comes from copper: just think of azurite, chrysocolla or even turquoise? Most titanium is recovered from rutile or ilmenite, but there is titanium in titanite also.

Most fireworks store all their chemicals in a pea-to peach-sized pellet. The lift charge is ignited to lift the firework into the air and a timed fuse is lit simultaneously. The final explosion of color occurs several seconds later when the burning fuse reaches and ignites the core mixture of compounds, hopefully when the charge is high above the ground, out of harm's way, and visible to all below.

References:

Conners, D, and Anderson, P.S., 2020, [How do Fireworks Get Their Color](#), Human World webpage

www.usgs.gov/minerals, 2020, [What minerals produce the colors in fireworks?](#)

Skeletal Quartz from Diamond Hill, SC



Editor's Note: Stephen and Tammy Mayer took a road trip to the Carolinas in June. They managed to work in a day of mineral collecting and still get back to New York before the mandatory quarantine was posted for folks visiting the southern states. They picked Diamond Hill for their collecting adventure.

By Stephen Mayer

Travelling along flat country roads in the western part of South Carolina one passes numerous farmlands rich with corn and a stockade with buffalo before reaching the town of Abbeville. A short distance away, down a dirt road, Diamond Hill Mine comes into view. Runnels traverse deep reddish-orange sandy clay before passing into a surrounding forest. Different rocks and minerals are exposed throughout the channels.



Diamond Hill Mine, Abbeville, SC.

Diamond Hill mine is known for quartz, notably milky, smoky and amethyst, the latter two being quite rare. However, what sets Diamond Hill apart from other quartz localities is that the quartz grew in stages punctuated by intervals of no growth. This resulted in crystals with numerous stepped faces referred to as "skeletal". In addition to this unusual pattern, iron and manganese oxides periodically coated the crystal faces, followed by still more quartz growth. This gives the terminations a range of colors from white to black with various tones of reddish-orange.

Collecting these crystals consists of digging, focusing on where the runnels expose a point protruding from the sands. Still other crystals can be found within deep pits



Color variations in skeletal quartz from iron and manganese oxides.



that seem to have been dug in random spots. The sandy clay sticks like glue to most of the crystals obscuring any details. Thus, once back from the mine, the crystals are scrubbed with water and a brush revealing the fanciful skeletal quartz. Some collectors further soak the crystals in Ironout to remove any residual staining left behind after washing with water. Still other collectors leave the staining as this is a natural coating. So if you happen to be in western South Carolina, you may just want to stop by and try your luck at the mine.

Check out the [Diamond Hill webpage](#).

The WCGMC Sand Page

Heavy Sand by Fred Haynes

Last, July I collected one of my first sand samples, locating garnet-magnetite sands in a small cove east of Hamlin State Beach on Lake Ontario. It turned out to be one of the more popular trade sands I have and although I still had some I decided to venture out again this year. I was curious whether the accumulation would still be there. Perhaps last winter's storms removed the heavy sands and I might have to search anew. But they were right where they had been a year ago and even more stratified.

It is hard to see in the field photo below, but the wave action had not only created a heavy sand layer in the small cove off Newco Road, but it had separated the heavier magnetite from the garnet. Distinct red and black sand layers were evident on the beach. And both were at least two inches deep.



The early morning shadows of several overlying trees do not permit the distinction between the red and black sands to be easily seen in this photo, but trust me, the two samples depicted on page 1 came from the locations labeled garnet and magnetite.

The red garnet and black magnetite have not been perfectly separated by the waves washing the sand grains onto the beach and then carrying the lighter quartz and shell grains back to the water's edge. In fact there is a significant component of magnetite remaining in the red sand region and certainly there is garnet where the sand is black. A magnified view of each sand sample shows the mixture of grains in each sample.



Heavy sands from the garnet-rich and magnetite-rich zones of Hamlin Beach: the magnetite grains in both sand samples are a bit smaller than the garnet grains indicating hydraulic equivalency.

Now I was curious. I wondered how much magnetite I could separate from the mixed garnet sand (the redder sand). I located my \$6 magnetite separator tool determined to find out. I learned that for this particular sand there was about 10ml of magnetite sand for every 25ml of non-magnetite (mostly red/pink garnet). The sorted piles are in the lower half of the photo, the unsorted sand, with the magnetite somewhat organized by the process, is resting under the tool handle in the top half of the tray.



Are you running out of ideas to do while social distancing? How about separating magnetic sand grains from garnet grains? Trust me, it can be fun.

ZURICH BOG A WAYNE COUNTY TREASURE

There are no rocks, no minerals, and unless there are buried mastodons, there are no fossils. But that does not mean that Zurich Bog is not an interesting place for Wayne County rockhounds to spend a few hours while remaining near home during this summer of social distancing. The small protected wetland preserve is just 8 miles north of Newark and 7 miles south of Sodus, almost smack in the middle of Wayne County.

Trapped between two north-south trending drumlins, the wetlands and central bog are generated where groundwater entering the valley upwells towards the surface from a deep-seated aquifer. However, there is insufficient water influx to form a standing lake or pond and the protected valley conditions combine with the groundwater to permit extensive covering vegetation (mostly Sphagnum moss) to develop and flourish.

Bedrock geology plays a role also. The bog and the glacial drumlins rest on Lockport Dolomite, the same formation we visit and pound on at Walworth Quarry just a few miles to the west. This limestone buffers the pH of the ground water preventing the development of truly acidic groundwater that is often associated with bogs. For this reason, the flora of the small preserve in central Wayne County is unique and for this reason Zurich Bog was established as a registered National Natural

Landmark in 1957. The land is owned and maintained by the [Bergen Swamp Preservation Society](#).

The sphagnum moss covered bog is at the north end of the preserve and a two-mile loop trail crosses multiple ecosystems including bog, fen, and wetlands. There is even a small central raised drumlin running across the center of the preserve and yes, there are a few rocks (glacial erratics) to be seen in the root balls of fallen trees.

But the site is best known for its flora. In mid-July, several species of rare orchids blossom and over 500 different species of fungi and mushrooms have been documented in the relatively small 650-acre preserve. The bog itself is also home to Pitcher plants, those carnivorous plants that trap unsuspecting insects who are then dissolved in the acidic fluids within the plant.

I've been there three times, all with local experts in the bog's flora. Orchid-viewing season has passed for 2020, but September is best for mushrooms and fungi. It is, however, a nature preserve. The Bergen Society asks visitors to contact them first for permission to enter the preserve. Their main message is for folks to stay on the trails, particularly in the regions with boardwalks, to stay off the central bog (first for your safety, second for the bog preservation), and to leave the flora and fauna as you found it.

by Fred Haynes



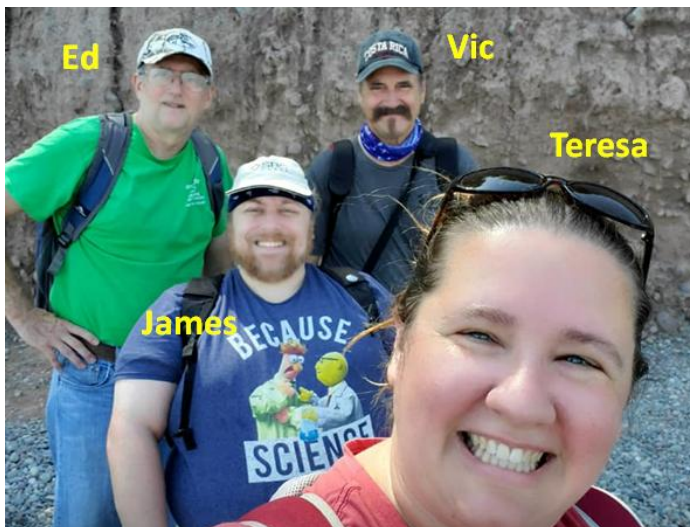
A few of my pictures from Zurich Bog: A) White-fringed Orchid, B) Orange Mycena, C) Oyster Mushroom, D) Citron Amanita, E) Pale Sulfur Shelf Mushroom, F) Grass-pink Orchid, G) Pitcher Plant

Lake Ontario is Always There

The pandemic can take away our meetings, it can curtail our joint field trips, and even cancel our great summer picnic. But it cannot, and never will, take away our Great Lake. Wayne County is known for its rural charm, its vast apple orchards, its majestic drumlins, and perhaps most of all for its 35 miles of glorious Lake Ontario shoreline, much of which is accessible to the public.

Judging by the communications on our [club Facebook page](#), it appears many of our members have been enjoying the rocky beaches, the coastal trails, and for some, the kayak opportunities in the open water.

Teresa Ferris, James Keeler, and Ed Smith ventured to the best known Wayne County Lake Ontario access point at Chimney Bluffs where they searched the shoreline for interesting rocks and investigated the erosion into the drumlins. Teresa sent a few pictures that tell the story of a fine summer day on Lake Ontario:



The fearsome foursome: or something like that.



Yes, there are rocks at Chimney Bluffs.



Now what is he about to do?

=====

We also have fielded numerous questions on Facebook from folks inquiring about their finds.



Laura Ellen asked if these were fossils. When told they were corals and crinoids set in limestone, she replied "it is very exciting and makes me want to look for more". Yes, this hobby is quite contagious.



Billy Hartman asked "Can someone tell me what this is please?" We sure can. That is a Devonian colonial coral called *Pleurodictyum americanum*, a very nice find.

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

