

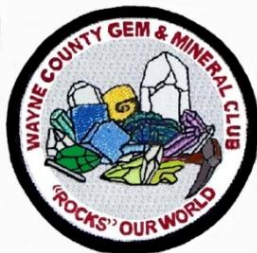
Wayne County Gem and Mineral Club News

March, 2023

Always Looking for Places to Dig!



Lake Ontario sands (see page 3)



<http://www.wcgmc.org>

FACEBOOK link



February fun at the WCGMC Workshop

March Meeting

Friday, **March 10th**, 7:00 PM.
Park Presbyterian Church,
Maple Court, Newark, NY

Program: Best of 2021-2022

Bring your best for any or all of the seven (7) categories listed in the box to the right. They are all winners and the night will be more fun if there is a lot to see.

PLUS: We will discuss the upcoming field trip season. You can help our Field Trip Coordinator (Teresa Ferris) work towards a fun-filled field season by answering the questionnaire that has been sent separately with this newsletter. Send responses directly to Teresa at:

rockhoundingft@gmail.com

With your responses Teresa will lead a discussion at the meeting. More about the WCGMC Field Trip Season on page 2.

FIRST FIELD TRIP OF THE SEASON

The first field trip is already in the works. Yup, **we will travel to Ace of Diamonds on April 1st**. It is Opening Day as Herkimer Hunting Season officially opens. **Questions?** Bring them to the meeting or ask Teresa at the e-mail address in red just above.

Saturday Workshop: March 11th
(10:00 AM until mid-afternoon)

Where: 6676 E. Port Bay Rd, Wolcott, NY

Eye protection is required.

Training on equipment is available.

\$5/adult to offset maintenance costs

Future workshops are April 15th & May 13th.

BEST of 2021-2022

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

General rules

- must be self collected recently except for #7
- label piece, provide its identity and location
BUT NOT YOUR NAME AS COLLECTOR
- limit one entry per person per category but you may enter all categories
- all present that evening will be judges

CATEGORIES

- Best mineral/rock collected in New York
- Best fossil collected in New York
- Best mineral/rock collected outside NY
- Best fossil collected outside New York
- Best lapidary creation of your own
- UGLIEST rock of the year
- Favorite show purchase in past few years

Field Trips Yay!

by Teresa Ferris



Hi Everyone,

I am so excited for a new season of rockhounding. We have a lot of new members since our last real rockhounding season prior to COVID. I hope you fill out the questionnaire and come to the March meeting to talk about field trips. I am so excited to hear what you have to say and to help people learn more about rockhounding. I want to talk about the nervousness about being a Trip Leader. I am here to help and it was brought up to me about having people pair up to lead trips.

We plan to start our season off the way this club had for many years in the past before the pandemic, by going to Ace of Diamonds on Opening Day. April 1st is a Saturday this year, which means a lot of members should be able to make the trip east. We can talk about this first trip at the March meeting and any other spring trips folks might want to take.

If you have a chance, you can help me out by filling out the field trip questionnaire that was e-mailed with the newsletter. If you can send me your thoughts in an e-mail before the March meeting, it will help me understand how many members hope to go on trips and what your interests are. Thank you.

We are tentatively scheduled for a trip to central PA May 19th-20th. Perhaps we can align on a time when folks want to go to Sterling Hill or Franklin, NJ. And that is just for starters.

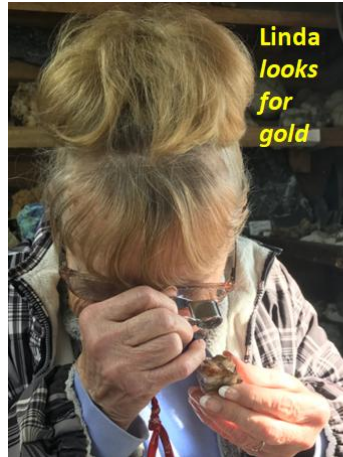
But for right now, I cannot wait to see all the "competition" pieces at the meeting. I hope to see you all on March 10th

Teresa Ferris
WCGMC Field Trip Coordinator



April 1, 2023: Ace of Diamonds Field Trip

WCGMC February Workshop Activity



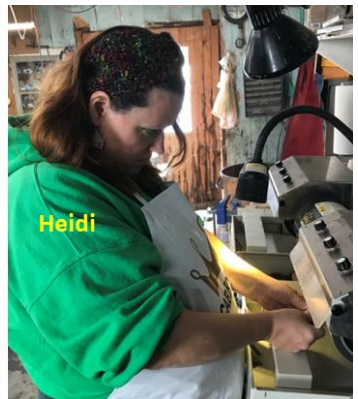
Linda looks for gold



Glenn



George



Heidi



Karen



Bob



Orbicular rhyolite

Microminerals in sand from Lake Ontario beaches by Fred Haynes

We all love to visit the rock-covered Lake Ontario beaches once the ice has retreated and the lake has calmed a bit. Whether in Wayne County or sites both east and west, one can find colorful red and gray sandstone and crinoid/cephalopod-rich limestone cobbles from the local rock formations. There is also a multitude of guest metamorphic rocks with garnet and epidote that were carried to our backyard by the glaciers that once covered Wayne County. But just as there is variety in the rocks, there is also great diversity in the sands that can be seen or collected. One just has to set one's eyes to a different scale.

Yes, for starters there are certainly typical quartz-rich sand beaches to sink your bare feet into. But look carefully. Often at the high water mark from the last storm or wind event, the sand may be covered by a thin veneer of heavy mineral sand. Generally, this is magnetite. Next time you visit Lake Ontario carry a magnet and see for yourself. Magnetite is dense and the grains pushed high onto the beach by strong wave action are too heavy to be carried back down by the gentler retreating water. They are left stranded where kids (or certain adults) can accumulate them with a magnet.



Streaks of fine, black magnetite grains have been left stranded above the water line on a warm July day at Durand Beach in Rochester.

Magnetite is the most common heavy mineral that can be found in the sands along Lake Ontario, but it

is not the only one. Spectacular accumulations of red sand can be found in spots along Hamlin State Beach. These sands are dominated by garnet, mostly almandine in composition, and are also products of glacial transport and subsequent density segregation along the lake margin. I've written about these in previous newsletters ([Aug2019](#) and [Aug2020](#)), but it is also interesting to note that these garnet sands have been the target of sand collectors for at least 70 years. In 1954, Rocks and Minerals magazine, in a regular column penned by Peter Zodac simply called The Sand Collector, we find the following:

Garnet sand from Hamlin Beach S. P., N. Y.

In the extreme N. W. corner of Monroe County, N. Y., is Hamlin Beach State Park on Lake Ontario. From the beach we have a sand sample that was sent in by Erik Hans Krause, 5 Castle Park, Rochester 20, N. Y.

This is a dark red medium grained sand. It consists chiefly of garnet (pink to red, gemmy; also opaque dark red that is almost black) and quartz (colorless, some brown). Another mineral that is common is black lustrous magnetite. A few grains of green epidote also present.

Zodac, P., 1954, The Sand Collector, Rocks and Minerals, v. 29, no. 7-8, p.56

Of course words only can tell part of the story. Here is what that sand looks like up close and personal.



Garnet-rich sand from Hamlin State Beach in Monroe County. FOV is about 5mm Photo by Leo Kenney

Just as the heavy components can be concentrated by the wave and wind action along Lake Ontario, lighter fractions of the coastal sand can also accumulate. Berms or ridges of broken shells often develop along sections of beach that are protected from heavy wave action by piers or rock walls. The diversity of lake shells may not be what is seen on ocean beaches, but zebra mussel shells with occasional bits of both lake and land gastropods can still make for a formidable pile and an interesting beach sand sample.

Another Lake Ontario setting we all like to visit is the erosional cliff faces presented by the drumlins in Wayne County. Whether at Chimney Bluffs, Whistlewood Park, or Scotts Bluff in Wayne County or at Sterling Nature Center in Cayuga County, the shoreline beneath the large eroding drumlins has something to please all rockhounds.



Whistlewood Park, Wolcott, Wayne County, NY

This line of larger rocks shields the landward side a bit allowing for the development of very coarse sand directly behind the rock wall (left below). Closer to the drumlin exposure the light tan sand is actually a silt comprised of glacial rock flour (right below) that has eroded from the drumlin.

In other beach locations the shells are mixed in with rock fragments and quartz sand grains yielding a somewhat more conventional mixed biogenic sand.



Two sands from Whistlewood Park, Wolcott, NY

Next time you visit a Lake Ontario beach, bring a magnet, a hand lens, and your observational skills and set your sights on the little things in front of you. You might be surprised with what you see.



Lake Ontario sand from Sea Breeze Beach in Monroe County contains a wild assortment of rock fragments, a bit of quartz, and a sprinkling of broken shells. FOV is ~8mm. Photo by Leo Kenney

Acknowledgement: I thank Massachusetts sand collector and photographer Leo Kenney for photographing two of the sands in this story. Leo uses a Canon 90D camera, a 65mm macro lens, and Helicon photo stacking software

Magnetite and Thomas Edison by Howard Heitner



The early iron industry in the United States was based primarily on processing ores containing the mineral magnetite. Pure magnetite is 72.4 % iron. In colonial times the center of magnetite mining was in the Hudson Highlands, an area extending from the border of New York and New Jersey across the Hudson to Putnam County.

The magnetite was found in thick veins and pods. Pieces were mixed with charcoal and heated in a furnace called a bloomer producing cast iron. At this time, steel was made by adding carbon to the pig iron. Small amounts of steel were produced from magnetite by blacksmiths using forges. England was the major iron producer at that time and for a while iron production was not allowed in the colonies.

The Revolutionary war had a major effect on the iron industry. Not only was iron needed for weapons, but a major defensive project was put into place. It was decided to place an iron chain across the Hudson to prevent British ships from coming up the river. George Washington specifically requested that "Sterling Forest" iron be used. Sterling Forest was an area located in Orange County that was known for its high quality ore. The chain was really the first industrial scale project in the United States and the raw material was magnetite. The furnaces and forges were fueled by charcoal, meaning many acres of trees along the Hudson had to be cut down.



A remaining section of the Hudson chain at West Point, where the chain was placed across the river.

In the 19th century, the blast furnaces came to the United States and steel production increased. Steam railroads required increasing amounts of steel for engines and rails. During the Civil War the demand for iron for weapons increased yet again. The main

ore was still Hudson Highland magnetite. Cannons were produced at the foundry at Cold Spring and the steel for the Monitor was forged at Troy and other places along the Hudson.

The naval battles of that war showed that the days of "wooden ships and iron men" were over. After the war, the construction of a new steel navy and merchant fleet started. Other uses followed in America and elsewhere. In Paris, a demonstration project called the Eiffel Tower gave an excellent view. In New York harbor, a new copper clad statue with a steel frame greeted visitors.

The steel industry was changing with increased production. High grade magnetite in the United States was running out, as was the supply of charcoal. The steel industry shifted west. Coke made from bituminous coal was almost pure carbon and fueled the new blast furnaces of Pennsylvania.

By the beginning of the 19th century both electricity and magnetism were known (static electricity, batteries, lodestone, and lightning). At first they were simply curiosities of nature, with no practical use. The relationship between the two was realized by Michael Faraday who discovered that a current going through a wire created a magnetic field. Wrapping the wire around an iron core produced a strong magnet. This invention led to the subsequent invention of the telegraph by Morse in 1832. An electromagnet made the dots and dashes. The telegraph was really the first practical use of electricity and magnetism.

Thomas Edison encountered this new technology in his early job as a telegraph operator. Edison thought of all sorts of ways to make the telegraph better. All his early inventions were related to the telegraph. Over his early years many profitable inventions come out of his lab. Contrary to popular belief, Edison did not invent the incandescent light bulb, but in 1879 he did invent the first one that lasted long enough to be useful and therefore economic. More inventions followed and he became part owner of a company called General Electric. Eventually he sold his shares and had money for new projects.

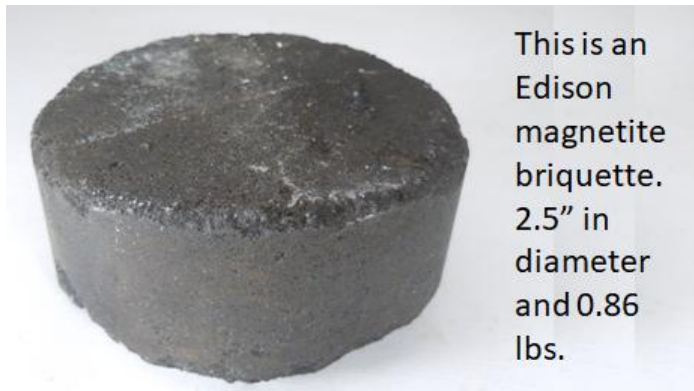


In 1829, the United States commemorated the 50-year anniversary of Edison's light bulb with a 2 cent postage stamp.

Ever an opportunist Edison put his knowledge of magnetism to work. America needed iron ore! The high grade magnetite in the East was almost gone. There was a lot of low grade ore consisting of magnetite grains dispersed in rock and Edison purchased a property in Sussex County, New Jersey with low grade magnetite ore. It was relatively close to the Pennsylvania steel mills. The magnetite however had to be "liberated" by crushing the ore. Edison devised powerful crushing machines to break the rock into coarse sand-sized grains. Then, based on his experience with telegraphs, he devised powerful electromagnets to extract just the coarse sand-sized magnetite.

A blast furnace is charged with iron ore, coke and limestone. Once the process is started a strong stream of air goes in the bottom into a bed of burning coke. This generates heat and a large amount of carbon dioxide and carbon monoxide. The carbon monoxide reacts with iron oxides in the ore (hematite or magnetite) to form iron. The limestone (CaCO₃) becomes lime (CaO), which in turn reacts with silicates in the ore to form a glassy slag.

But one problem still remained. A blast furnace could not accept sand. Edison came to the rescue once again. He developed a method of agglomerating the magnetite grains into cylindrical briquettes and built a separate plant just to do this.



Although this was a brilliant solution, it was an expensive process to produce iron. Mining and metal production is entirely controlled by costs. At the same time that the Edison mine and plant were started up, enormous beds of hematite were starting to be mined in Minnesota as well as beds of hematite and magnetite in northern Michigan. The iron content of these ores was high enough so they could be used in a blast furnace without any beneficiation.

The official designation was "direct shipping ore". Edison's briquettes could not compete economically and his mine and plant were shut down. Pointing at the mine Edison was reported to have said "I dropped a million dollars into that hole" All was not lost however. The giant ore crushers could be used to produce excellent quality Portland cement and some of his investment was recovered.

What can be concluded from this story? First, that a great inventor is not always right. Edison succeeded often, but failed several times also. There is another good example, which is often cited. The light bulb made a lot of money for Edison, but the decision to wire New York City with direct current to sell electricity to light his bulbs, was not a good idea. Two men named Tesla and Westinghouse saw that AC was a much better way and that is why the grid is AC. In another sense however Edison was just too far ahead in his thinking. Most direct shipping ore in the United States is now gone and iron ore is being beneficiated (taconite) more than a hundred years after his unsuccessful "experiment".

The Buffalo Geological Society, Inc.
 53rd ANNUAL
 Gem Mineral Fossil Show
 DINOSAURS are coming!

Sat. March 18, 2023 9 am to 7 pm
 Sun. March 19, 2023 9 am to 6 pm
 In the Market, Grange, and
 NYS Police Buildings located on
 the Fairgrounds in Hamburg, NY

1 DAY ADMISSION \$7 PER PERSON
 2 DAY ADMISSION \$10 PER PERSON



See: <https://bgsny.org/annual-show>

Splendid Sands Calendar

March, 2023
 Hotel Kamili Beach
 Kalutara, Sri Lanka



Photo by Leo Kenney

by Leo Kenney, Kate Clover & Carol Hopper Brill

For centuries, the tropical island of Ceylon, now known as Sri Lanka, has been famous for its quality spices: cinnamon, clove, black pepper, nutmeg, mace, and cardamom. European maritime nations, the Dutch, Portuguese, and British vied over the lucrative spice trade from the mid-1200s onward. Located at the southwestern tip of the Indian sub-continent, Sri Lanka still produces some of the world's best spices.

The Kalutara District on the island's southwest coast is known for spices and also heavy-mineral sand deposits. These are rich in ilmenite and rutile, sources of titanium used to manufacture surgical tools, mobile phones, goalie masks, bicycle frames, and a host of other high-tech products.

This sand contains minerals with densities greater than quartz (2.65 g/cm³): pink garnets, ruby red rutile and spinel, opaque black ilmenite, yellow/brown monazite, and tiny clear zircons along with clear quartz. All were derived from the island's Precambrian metamorphic rocks, transported to the coast through Sri Lanka's river systems, and then deposited on the beach by currents.

**53rd ANNUAL
 GEM & MINERAL SHOW 2023**

PRESENTED BY
Che-Hanna Rock & Mineral club, Inc.
A (501c3) not-for-profit organization

March 25, 2023 9 a.m. - 5 p.m.
 March 26, 2023 10 a.m. - 4 p.m.

WYSOX VOL. FIRE CO. SOCIAL HALL
 111 LAKE ROAD, WYSOX, PA

OUTSTANDING GEOLOGICAL EXHIBITS PRESENTED BY

Susquehanna River Archaeological Center
Artifacts and information about SRAC research near Tioga Point

FLUORESENT MINERAL PROGRAMS BY UV-BOB
 Saturday -- 11am-1pm-3pm Sunday -- 12 noon -- 2pm

**NY
ROCKS!**
Ancient Life of the Empire State
museumoftheearth.org

NY Rocks! Ancient Life of the Empire State is scheduled to open March 13, 2023 and be on display for the rest of the year at the **Museum of the Earth in Ithaca.**

The exhibit will offer an opportunity to learn about New York's rich fossil record in the Devonian Period. Visitors can explore why rocks are different across our state and how geologists can learn about ancient environments from the fossils we all like to collect.

The exhibits will tell stories about geology and fossils through a combination of specimens, dioramas, videos and hands-on interactives. It is designed to be informative and educational for folks of all ages.

Sir: it is really quite simple, either you take down the baffle preventing us from getting into the bird feeder or we are going to chew through the power line and take down your internet.

Wayne County Gem & Mineral Contacts

ELECTED OFFICERS

President – James Keeler
[jamesrocks\(at\)keeler.com](mailto:jamesrocks(at)keeler.com)
 Vice-President – Holly Woodworth
[autum14513\(at\)yahoo.com](mailto:autum14513(at)yahoo.com)
 Secretary – Beth Webster
 Treasurer - Bill Lesniak

Board of Directors

Bob Linderbery
 Heidi Morgenstern
 Karen Wilkins
[Open position](#)

Past President – Linda Schmidtgal

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

APPOINTED POSITIONS

Field Trip Coordinator – Teresa Ferris, *help wanted*
[rockhoundingft\(at\)gmail.com](mailto:rockhoundingft(at)gmail.com)
 Fossil Field Trip Leader - Stephen Mayer

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

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.wcgmcc.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

