Wayne County Gem and Mineral Club News

June, 2016

Always Looking for Places to Dig!

Searching for fish and plant fossils in the Upper Devonian at Red Hill, North Bend, PA on April 30th. Fifteen club members on a 3-day trip to central Pennsylvania (see page 4)

http://www.wcgmc.org/

June birthstone

Pearl Alexandrite

Photo by Julie Daniels

Next Club Meeting: Friday June 10th

Presbyterian Church, Maple Court, Newark, NY

PROGRAM:

New Acquisitions and Creations

Bring items you acquired at GemFest. Bring newly collected material. Have you been working on things at the workshop? Bring them also.

MARK YOUR CALENDAR

Saturday, JULY 23rd (10:00 til 3:00 PM)
WCGMC Annual Picnic

Where: Weiler Home and WCGMC Workshop
6676 E. Port Bay Rd., Wolcott, NY

Club will provide meats and drinks.
Bring a dish to pass and a chair.
Come prepared to have a good time.
The club workshop will be open
There will be rocks to cut and geodes to saw.
Did I mention games to play?

Please note the date change from mid-August to JULY 23rd.

Wayne County Gem & Mineral Club

Gem Fest 2016

23rd annual

Sat. June 4 10-5
Sun. June 5 10-4

$3 Admission
Kids 12 & under FREE

LOCATION

Greater Canandaigua Civic Center
250 N. Bloomfield Rd, Canandaigua, NY

Soapstone Carving, Wire Wrapping, Sluice, Vendors, Exhibits, Free Prizes, and much more

UV Bob's Ultraviolet Show: 5 Showings

Gems, Minerals, Fossils, Beads & Jewelry

visit www.wcgmc.org for details

Club Members: Let your friends and neighbors know about the Big Show. Come help us in Canandaigua. See you there.

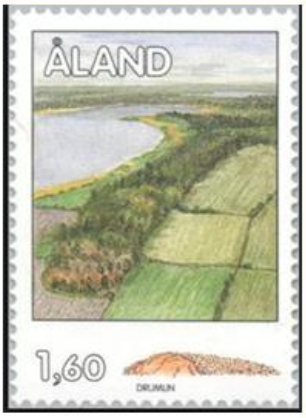
Mineral Musings

DRUMLINS by Fred Haynes

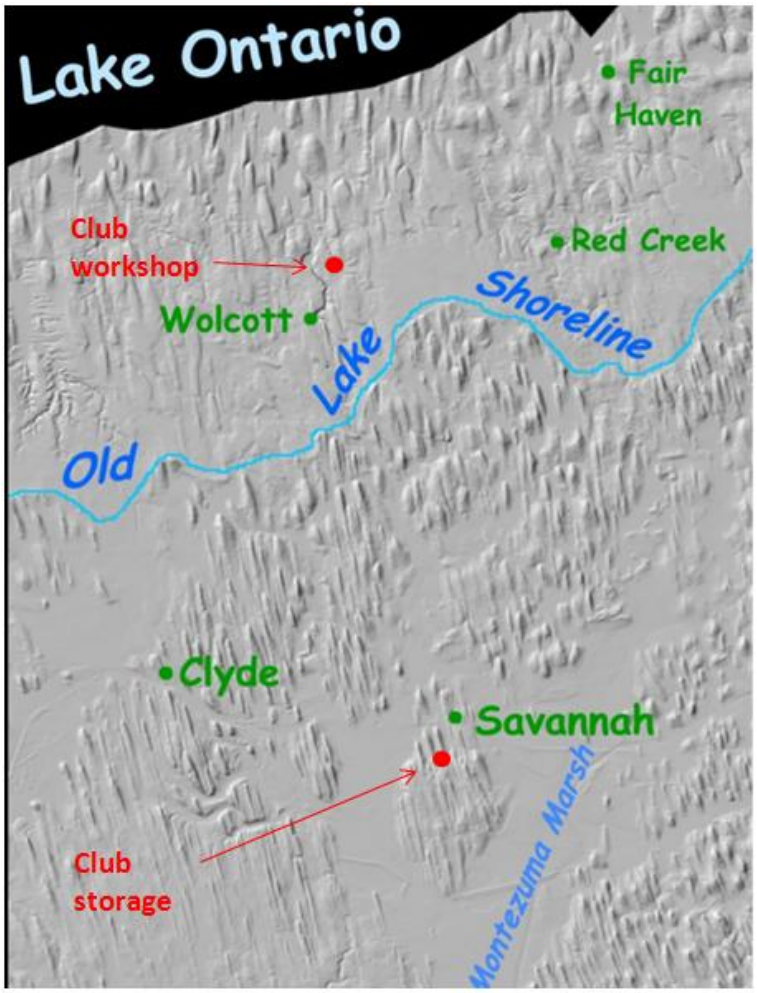
All of us who live or travel in Wayne County know it is easier to travel north-south than east-west. Most of us know that is due to the elongated hills called drumlins that cover much of the region. And we also know that those geomorphological features were formed by the continental glaciation that covered western New York with ice a mile thick until their final retreat 12,000 years ago.

BUT, did you know that until very recently, glacial geologists could not agree on exactly how these elongated parallel hills came into existence. It was known that the drumlin fields were aligned with the glacial flow and retreat, but it was unclear whether they represent debris built up progressively during glacial advance and retreat or whether they were sculpted out of older sediment from previous glacial deposits. The debate has raged for over 150 years.

In 1994, Åland, an autonomous island region of Finland, issued a stamp featuring a forested drumlin in the municipality of Finström. Other stamps in the geology set featured a diabase dike and a boulder field.



Well, a team of scientists from the University of Toronto Scarborough appears to have solved the dilemma (Eyles et. al., 2016). They deployed airborne high resolution ground-penetrating laser technology combined with advances in absolute GPS positioning to map depth to bedrock beneath soils, trees, and water. They found that drumlins are "islands" of sediment left behind as the intervening regions were washed out by rivers and streams coming off the retreating glaciers. The drumlins themselves are rooted in bedrock suggesting that not only was intervening glacial sediment removed, but ice streams with embedded rock and later rivers and streams also cut down into the Paleozoic bedrock. This enhanced the topographic extremes between the drumlin ridges and the valleys.



If you are bored, you can try to count the drumlins in this portion of Wayne County. Our area is so well known for its drumlin fields (often called swarms) that this shaded relief image map (sans the location of the WCGMC sites!) appears as the type example the Wikipedia drumlin entry. I wonder how many of our club members have their homes on this map?

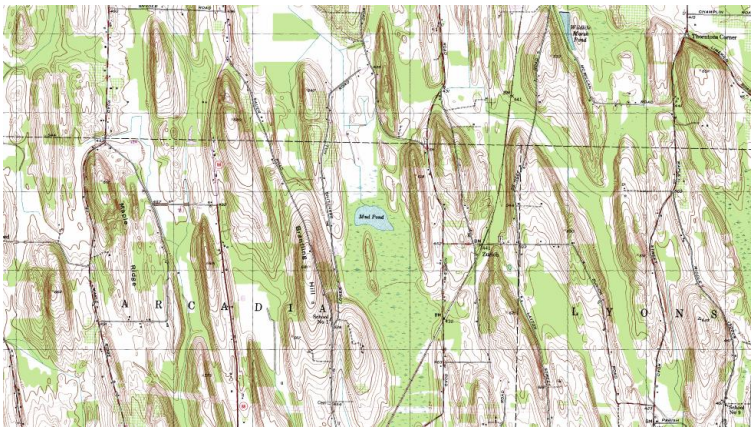
Our club collection curator, Linda Schmidtgall knows all about drumlins. She lives on one! You could even say she owns one! Her home is perched partway up the southern end of a mile long, 120' high drumlin within a swarm of several dozen between Savannah and Clyde. The drumlins just to the north of our club workshop at the Weiler home in Wolcott are a bit shorter and a bit wider that those farther south, but they are just as formidable for east-west travel. Most are forested and steep.

Did you ever wonder why East-West Route 104 is located where it is as it passes through the northern portion of Wayne County? Or why that route is so much easier to travel than any other east-west road? Well, route 104 more or less follows an old Lake Ontario shoreline where any drumlins that had existed would have been truncated and then eroded much as those at the current shoreline are today (witness - Chimney Bluffs State Park). It is also not a coincidence that the drumlins south of this old shoreline show a more pronounced and step morphology than those that were protected below water until more recently.

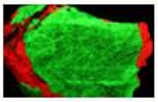
<u>References:</u>

Eyles, N., et. al., 2016, Erosional Origin of drumlins and megaridges, *Sedimentary Geology*, (in press)

Wikipedia: entry on drumlins



No, this is not the topography on the moon. Rather, this is a 6 mile wide section of Wayne County from the south end of the 7.5 minute USGS Sodus Quadrangle map. The town of Sodus is about 3 miles north of this region. The contour interval separating each of the brown elevation lines on the map is 10 feet . Most of these mile long drumlins are over 120' high, some are almost 200' in elevation.



TWO SPRING TRIPS

The end of April was an active and exciting period for WCGMC diggers with two trips, each of three days duration. While we wait for warmer weather to our north, the club ventured to the neighboring states to our south, New Jersey and Pennsylvania.

NEW JERSEY (April 22-24)

Impressed by the diverse mineralogy and spectacular fluorescence of the unique zinc ore, the Sterling Hills Super Dig is always a big draw for our club, but this year we out did ourselves. Eighteen members made the trek to north-central New Jersey. It is not clear whether we carried back a full ton of fluorescent zinc ore, but we surely tried. From sun-up to sun down and into the night by black light the mine area was scavenged for willemite, zincite, hydrozincite, wollastonite, and the ubiquitous red-fluorescing calcite. Jet black, octahedral franklinite is also dispersed through the rock.

Wollastonite (yellow in short-wave) has been found in a boulder near the top of the mine. Willemite (green), calcite (red) and some hydrozincite (blue) were virtually everywhere. Daylight collecting also yielded fine black franklinite often set off in fire engine red zincite. No one went home feeling mineralogically slighted.

Most folks also took advantage of one or more of the days underground or site tours which included a walk through the large overhead building that stands over the mine entrance. Underground visitors were treated to scenes of red, green and blue as the fluorescent minerals could be observed in place (see photo on page 1).

Rock pile just inside the Sterling Hills entrance is a literal treasure trove of goodies from the mine and elsewhere (all for $1.50/pound!).

But our trip to New Jersey was not just a one day affair. We took a side trip to the Carbondale and Archibald coal mining area north of Scranton on Friday en route to the Super Dig. The Carboniferous coal deposits throughout Pennsylvania are accompanied by significant plant material which has been preserved in the shales between the coal seams.

We were not allowed to collect inside one region east of Carbondale where a reclamation project is underway. Apparently an

underground coal fire has been burning there for decades and an effort is underway to dig 150' down to the fire and extinguish it before leveling the surface for possible development. Although unable to enter the large site, we did collect several interesting plant and fern fossils around the periphery as we awaited the mid-day blast.

And yes, we witnessed the daily blast, albiet it from afar.

Can you spot all the red rock amidst the otherwise black coal and shale in front of the blast area? We were told that is all burnt coal and shale that has been pulled from the pit as the crew works to relinquish the fire. We wondered how many interesting minerals might be found there with shale exposed to very high temperature/ low pressure conditions. Later, we did find a large site near Archibald where both ferns and lepidodendron tree branches and roots could be collected.

Carboniferous plants: The leaf clusters to the right are *Annularia* from the side branches of horsetail ferns called *Calamites*. The fossil plant on the left is a *Pecopteris,* a seed bearing Carboniferous fern: two nice finds.

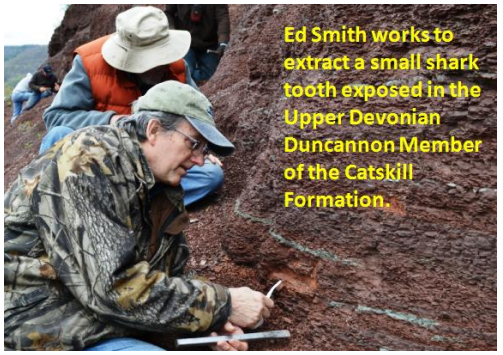
On the way home many of us stopped at site near Montague, NJ where amber-tipped quartz tips and clusters could be collected. *More on this site in a future issue.*

CENTRAL PENNSYLVANIA (April 29- May 1)

A trip to central PA and two National Limestone quarries in Synder County has become a regular WCGMC spring trip. This year we included a bonus location. After a day of collecting wavellite, calcite, travertine, and fluorite in the two limestone quarries, we met up with Doug Rowe and collected Upper Devonian fish fossil scales and plants at the famous Red Hill site near North Bend, PA.

We did not find any of the earliest tetrapod fossils that have made the site famous, well except for those on display at the small museum in North Bend, but we did see evidence of fish scales and spines in the outcrop. Doug showed us the most productive horizon in the long roadcut exposure and we went at it (see photo on page 1).

Glenn Weiler found the largest fish scale plate. This 3" section came out in 3 pieces, hopefully it made it home in just 3 pieces and Glenn can reconstruct a partial dorsal fin from a 265 Million Year old *Palaeoniscoid* fish. How neat is that!



The whole crew assembled at the North Bend Red Hill Museum. Doug Rowe, museum curator and our guide for the day, is seated in the back. We thank him for taking the time to share this fascinating site with all of us.

Red Hill was not the only new fossil site visited on this trip. In the late afternoon on Saturday we ventured to Danville, PA and site #50 in Robert Beard's 2013 Rockhounding Guide to PA and NJ. Here we were still hunting in the Upper Devonian, but this time in marine siltstones of the Trimmers Rock Formation where the assemblage is much more familiar to us.

The Danville site is a roadcut at a railway crossing: easy site to find, and easy to collect.

Brachiopods by the bucket full along with bivalves, and some crinoids and gastropods can be collected along the road and railroad track just outside town.

JUNE BIRTHSTONE

Pearl and Alexandrite

It is not quite fair to the rest of us, but folks with a birthday in June get a choice of two major birthstones. Pearl is the original modern gemstone for the month, officially named as such in 1912 by the National Association of Jewelers. However, alexandrite has been since added as a June gem.

Pearls are formed when sand grains get stuck inside an oyster. The oyster covers the irritant grain with a smooth substance called nacre which is very similar to the iridescent coating on the inside of the shell. Nacre is a combination or both organic biopolymers and inorganic aragonite (a form of calcium carbonate). After several layers have been deposited, a pearl is born. With their origin from a living creature, pearls are indeed a most unique gemstone.

The thickness of the aragonite layers determines the quality and richness of the iridescence. When the aragonite platelets are very close to the thickness of the wavelength of visible light the structure of the aragonite interferes with the passage of the differing wavelengths of light. At different viewing angles, different colors are constructed or destroyed by the thin aragonite platelets and iridescence is observed.

Pearls on the beach: The smaller pearls in this picture are less than one quarter inch in diameter and may have grown in less than one year, but the larger ones likely took 2-3 years to grow. Clean water and healthy oysters are required to grow perfectly symmetric large pearls.

Alexandrite was not discovered until 1831 in Russia, hence it is named after the ruling Czar Alexander II. Although rare, this unique gem variety of the mineral chrysoberyl (itself not that common) has become very popular. With a hardness exceeding 8, this beryllium aluminum silicate mineral ($BeAL_2O_4$) has perfect gem characteristics. Only corundum (ruby/sapphire) and diamond are harder amongst well known gems.

Much of the popularity of alexandrite is in its chameleon-like color. Typical chrysoberyl is yellow to yellow-green, but gem variety alexandrite is much more than that. The gemstone is a lovely green color in daylight, but turns to a purplish red when exposed to incandescent light from a common light bulb. Chromium is the impurity responsible for both colors in alexandrite. The element occupies a structural location in the lattice that makes it the perfect size to interfere differently depending on the nature of the light source upon which it is subjected.

Very fine alexandrite gemstone under different light conditions, on the left the stone is exposed to incandescent light, on the right the same stone is shown under daylight conditions.

Chrysoberyl is itself not a common mineral and the elemental association of Be and Al with chromium is even rarer. Since its discovery in Russia in the 19th century, alexandrite has been found in Sri Lanka, Zimbabwe, Madagascar, India, and Brazil. But it remains a rare and valuable gemstone.

WCGMC members who have collected at Benson Mines in Star Lake know that chyrsoberyl occurs there and can be collected in association with bright red almandine garnet. Unfortunately, neither the chrysoberyl nor the almandine is of gem quality. And by the way, the Eastern oysters found offshore Long Island do make pearls. However, they are not typically as brilliant as those produced by other oyster species.

To be complete, some consider moonstone as a third birthstone for the month of June. We will save that for a discussion of various feldspars.

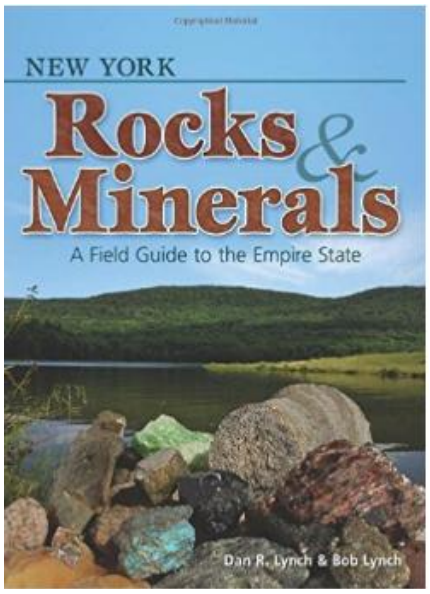
References:

American Gem Society website:
https://www.americangemsociety.org/birthstones

Various pearl, chyrsoberyl and alexandrite Wikipedia sites

Book Review

There is a new publication available entitled "New York Rocks and Minerals: A Guide to the Empire State". It is authored by Dan and Bob Lynch and published by Adventure Publications of Cambridge, MN. The 2016 book is available online for less than $20 on Amazon.



For each of 105 rocks, minerals, and fossils found in New York State this book provides a page of pictures designed to illustrate the specimen's most characteristic identifying traits and an opposing page providing information on environment, what to look for to identify it, size, color, occurrence, and a notes section with other pertinent information. The format and presentation is very easy to use. In addition, beginners should enjoy the several page overview of New York geology. The 14 page "Quick Identification Guide" based on color and then expanding into other properties may be just the ticket for some.

The book does not provide specific locations where each mineral, fossil or rock type can be found or collected. Rather it provides geographic or geological regional information in the form of a small inset map for each entry. If you are looking for a book full of locations for collecting you will be disappointed.

Several WCGMC members commented favorably about the photographs used in the book. Instead of providing pictures of museum quality specimens, the book depicts average specimens much like ones a hiker or collector might encounter. Another positive is the size of the book. Measuring just 4.25" across and 6" high, the book will fit into a car's glove compartment, the outside pocket of a backpack, or even in a modest sized vest or pants pocket. It not only is a field guide, but it can be used as one!

With only a little over 100 entries covering fossils, minerals and rocks, the book is not, nor was it intended to be, a comprehensive treatise of New York rocks and minerals. For example, in the fossil area, there are separate entries for eurypterid and for trilobite, however reef builders and colonial animals are merged into single entries and brachiopods and echinoderms are merged into a single entry entitled aquatic animals. The book seems more complete for minerals. Although some like tourmaline, plagioclase, and scapolite are covered as mineral groups, the book does include somewhat exotic minerals like chrysoberyl, warwickite, tennantite, and even löllingite.

In whole, it is a useful book for the beginner or intermediate New York collector to have at his/her disposal, and, of course, most advance collectors end up acquiring all that is written about their local region anyway. For less than $20 including shipping, most New York rockhounds will probably want one.

Collective Review by several members of the WCGMC

Raw banded travertine rock to polished cabochon.

Picture above and cabochon work by Ed Smith

Botryoidal travertine from my collection on an earlier visit in 2015.

Your editor has failed to unpack, much less clean, cut and polish his travertine from the May 17th club trip to Ilion Gorge. However, Ed Smith has bailed me out by providing pictures of one of his banded travertine pieces at various stages of cabochon creation.

WCGMC Member June Birthdays

Dan Breese
Sarah Elam
Steve Haynes
Tom Haynes
Paul Stalker

WCGMC 2016 Field Trip Schedule

last update 5/27/2016)

April and May were busy collecting months and we have sponsored 9 field trips already this young season. But we are not stopping here. GemFest takes precedent week 1 in June, but we are still busy planning our summer months. You should always contact the trip leader for details and possible changes. Or come to our monthly meeting and help plan. Additional dates will be added with each newsletter, and on the website.

Remember to attend a WCGMC field trip you must be a club member, or a member of an affiliated club if you do not live in our region.

June 16-19 (Thurs-Sun) New Hampshire (on Saturday we are invited to join the Burlington Gem and Mineral Club at the Palermo Mine, North Groton, NH – stops at Moat Mtn. and other pegmatites and sites are planned on other days *WCGMC Leader - Fred Haynes*

June 24-26 (Fri-Sun) NYPS trip to Ridgemont and James Dick Quarry in Canada This is a New York Paleontologic Society Trip. Trip is open to WCGMC members. *Contact Fred Haynes*

July 9 (Sat.) – Rickard Hill - Lower Devonian Fossil Dig – Schoharie, NY roadcut in Helderberg Group
Joint trip with the Rochester Academy of Science (they lead) (Details to follow)

August 7th Sunday - Green's Landing – Middle Devonian collecting East side of Canandaigua Lake
Joint trip with Rochester Academy of Science (we lead) (Leader – Stephen Mayer)

August 13-20 - Niagara Peninsular Geological Society trip to Thunder Bay Area. Several of us are planning to attend this week camping/collecting long trip to the northern shore of Lake Superior. Visit http://www.ccfms.ca/clubs/NPGS/trips.htm for some information or contact Fred Haynes

Much more will be planned, particularly into June and July– Watch this space
Fossil Trips proposed include Deep Run, Alden, Indian Creek, perhaps Second Creek in Sodus, and more. Mineral trips to Walworth (October), Benson Mines and Rose Road (September), and more

SHOWS and OTHER EVENTS TO KEEP ON YOUR RADAR in the next few months

June 4-5 -- THE BIG EVENT -- GEMFEST 2016 IN CANANDAIGUA

June 25-26 Gilsum Rock Show and Swap, Gilsum, NH http://www.gilsum.org/rockswap

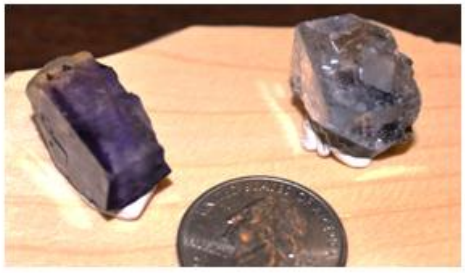
July 9-10 GemWorld 2016 in Syracuse (SRC Arena, 4585 W. Seneca Turnpike, Syracuse)
http://www.gmss.us/news/gemworld50-coupon/image/image_view_fullscreen for details & coupon

July 16-17 Herkimer Diamond Festival and Gem Show (Herkimer High School, 801 W. German St.)
http://www.herkimergemshow.com/

July 23 WCGMC annual picnic and workshop event ***(note the move from August to July)***

August 20-21 – St. Lawrence County Rock and Mineral Club Show --- NEW LOCATION in Canton, NY
visit http://www.stlawrencecountymineralclub.org/Library/2016_show.pdf for details

Gary Thomas was the lucky collector of May. At Ridgemont, Ontario on May 6 he scored a complete 4"Eurypterid flipper. A day later he was at the Penfield Quarry Open House and found two undamaged fluorite floaters.



Wayne County Gem & Mineral Contacts

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APPOINTED POSITIONS

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Fred Haynes – Newsletter Editor
fredmhaynes55@gmail.com 585-203-1733
Glenn Weiler – Workshop Coordinator
Linda Schmidtgall – Collection Curator

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. Send to:
WCGMC, P. O. Box 4, Newark, NY 14513