

Wayne County Gem and Mineral Club News

July, 2016

Always Looking for Places to Dig!



GEMFEST 2016

**GEMFEST 2016 is another WCGMC success
(more on page 2)**



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

July Birthstone



Rubies are red ..



**Just a little Ilion travertine
from Linda's GemFest
display. The piece in the
back is 12" tall!**

WCGMC PICNIC Saturday July 23rd

(10:00 AM til 3:00 PM)

**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, geodes to saw,
and a faceting demo (see page 8)**

Did I mention games to play?

Lucky folks may even get a barrel ride!

NEXT FIELD TRIP – Sat. July 9th Rickard Hill roadcut, Schoharie, NY

This is a joint trip with Rochester Academy of Science Fossil Section. We will collect fossils in the Lower Devonian Helderberg Group. Brachiopods, corals, gastropods, sponges, and trilobites can all be found. Contact Fred Haynes (585-203-1733 or fredmhaynes55@gmail.com) if you plan to attend for further logistics. Carpooling is possible. Depending on who responds we can meet at a freeway exit and share the 2.5 hour trip east.



WCGMC Fossils at GemFest: Sue Hoch managed the club's fossil table, explaining the Middle Devonian treasures and the local sites where they can be found. But that was not enough! In the exhibit section, Sue displayed all aspects of her crinoid collection, from holdfast to repaired stems to calyx. The exhibit even included the tools of the trade, from dental pick to micrometer.





FROM THE PRESIDENT'S DESK

Well, we did it again and we did it bigger and better than ever before. GemFest 2016 was a great success. I would like to take a moment to thank all the club members who volunteered their time and skills to help pull it off. It was a team effort for sure. Thanks to all the dealers for working with us as we grow our annual event. Without you, we could not succeed. A special thanks to our friends at the GCCC (Craig, Dave, D.J., and Zach) who sure made the civic center feel like home for the weekend. And wasn't the music provided by Kathleen and her crew a welcome addition. Three weeks have passed, only 49 weeks until GemFest 2017!

Now we can turn our attention to the club picnic in July. I sure hope you can all make it. We'll have the workshop open and I am sure the same volunteers who helped at the show will plan something special for that event also. Good food and great friendship are a given for all who attend.

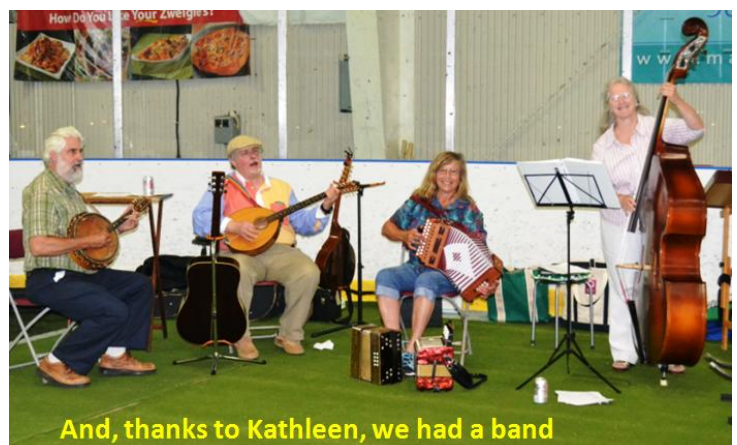
As I write this in mid-June I am a bachelor in Wolcott. EvaJane is in Guatemala helping to paint orphanages and playing with the children. I told her to bring home a beautiful rock for me.

Blessings to all, *Glenn Weiler.*

GemFest 2016 in Pictures



GEMFEST 2016





Mineral Musings

Collecting Minerals on Mercury

by Fred Haynes



Admittedly, some of WCGMC's collecting trips are out of this world. However, that's figurative speech as we have not yet actually figured out how to visit any true planetary bodies. No, Cobalt, Ontario does not count, not even Sudbury. But suppose we could travel to another planet to collect. What might we find? Let's consider Mercury for starters.

We all know Mercury is the closest of the 8 planets to the sun, orbiting the sun in just 88 days. Sunny side temperatures can exceed 800°C while the mercury (pardon the pun) can drop to -250°C on the dark side. This is exacerbated by the fact that Mercury rotates very slowly on its own axis such that a Mercurial day is more than 58 times longer than one on earth. We will clearly need to plan our visit to arrive and leave at dusk or dawn. But, I digress.



One of 8 stamps issued commemorating the planets on May 31st of this year.

To the human eye, Mercury is a drab gray color (read the article to learn why!). To visually enhance variations in the surface geology/composition, "false-color" images are created with unusual wavelengths. This 2015 rendition from the Messenger mission highlights the chemical, mineralogical and physical differences between the rocks that make up the surface. Think of it as viewing the planet with a highly sophisticated black light!

The surface of Mercury is heavily cratered much like our moon. Although Mercury does have a molten iron core like earth, its surface more resembles the moon as it lacks recent surface magmatic activity or any type of tectonic movement and has virtually no atmosphere or surface water. Given those factors, impact events from longer than two billion years remain undisturbed and erosion is practically non-existent. But that is apparently where the similarity between Mercury and the moon ends. Besides, this article is supposed to be about mineral collecting on Mercury.

The composition of the surface rocks on Mercury have long puzzled astronomers and geologists. First off, the surface of Mercury reflects much less sunlight than the moon. This was thought to reflect the presence of iron or

titanium-rich rocks, but early data from the Messenger probe did not find either in appreciable amounts despite orbiting the planet and collecting data from 2011-2015. However, last year a breakthrough in analysis of the infrared spectra data from the Messenger data combined with neutron sparks released by cosmic rays striking the planet's surface allowed the question to be answered. Much of the surface of Mercury is covered by carbon, actually by the mineral **graphite**!

The mineral is believed to have been generated by magmatic igneous processes long ago, like billions of years ago when the planet was volcanically active. With seas of magma rising and pooling on the surface of Mercury, elemental carbon would float to the surface, differentiated by density from silicates, alkali elements, and obviously metals. Lacking oxygen to form carbonate minerals, the carbon remained in native form. The result was a vast amount of the mineral **graphite**.

In fact, it is believed that a few billion years ago large portions of Mercury may have been covered by a shell of graphite as much as a kilometer thick (Sokol, 2016). Lava flows may have locally buried the layer, but impact events over the ages would gouge down to the graphite, exposing the layer in the deeper craters and spreading it across the planet as ejecta which rained down all around the impact crater.

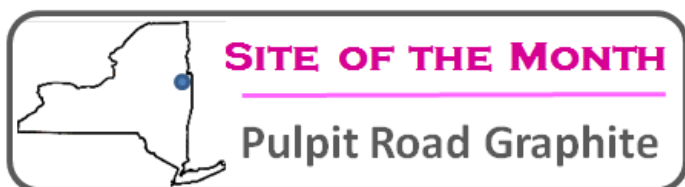
If correct, one of the primary minerals to collect on Mercury would be graphite, perhaps in very large chunks. Perhaps even in megacrystals the size of school buses. Well, one can dream.

References:

Sokol, J., 2016, Mercury once had a graphite crust floating on a sea of magma, online New Scientist, March 7.

Space.com, 2011, [NASA's Messenger Mission to Mercury website](#)

Wikipedia entries on Mercury and Messenger probe



SITE OF THE MONTH

Pulpit Road Graphite

When Fred, Linda, Bob, and Ed ventured to New Hampshire and Maine in search of aquamarine, topaz, smoky quartz, and other pegmatite riches (*more on this trip next month*) they did not pass by the planet Mercury (see page 3). However, they did find an interesting spot to collect a little graphite. The site is in extreme eastern New York between the northern end of Lake George and the southern end of Lake Champlain. Along Pulpit Road, one half mile east of Route 22 in Putnam, NY, a large pile of boulders lay just 50 feet off the roadside.



The Pulpit Road graphite-bearing boulder field. Bob, Linda, and Ed for scale. (June 16, 2016).

Coarse grained granitic rocks and a very siliceous schist/gneiss contain centimeter-sized brilliantly grey and reflective graphite crystals. They seem best collected by simply breaking the large boulders to



Graphite flakes approaching and exceeding a centimeter were common in the quartz-rich matrix.

expose the graphite which is brilliantly offset by the bright white quartz matrix. Millimeter sized red apatites were also present in the matrix. We did not observe the rose quartz that Beard (2014) had noted.

Beard (2014) reports that the weathered lichen-coated boulders likely came from a nearby graphite prospect. There are many prospects and even late 19th century-early 20th century mines to the north near Ticonderoga and to the south near Whitehall (Alling, 1917), but none in the Putnam, NY region of Pulpit Road. New York was actually the world's largest supplier of graphite during the first two decades of the 20th century.

References:

Alling, H.L., 1917, The Adirondack Graphite Deposits, NYSM Bulletin #199, 162 p.

Beard, R, 2014, Rockhounding New York, A Falcon Guide, site #18, p. 67-68.

Spring Creek in Alden

WCGMC has been informed by a new property owner in the Spring Creek area off Route 20 in Alden that the spot where we have enjoyed collecting pyritized fossils for a long time is now off limits to collecting. The owner has informed us that in the future he will treat "fossil collectors as trespassers". There is some confusion over the extent of the new owner's land, but until WCGMC learns more, we are not planning any trips to the area.

This is an excellent reminder to us all that many of the sites we visit are often public land with collecting regulations or private land where permission must be obtained to collect. And that the conditions for both can change. It is our responsibility to know and honor the wishes of the land owners at all times.

Geology Word Scramble

Tammy & Stephen Mayer

Rearrange the letters to form words used in geology.

AZUQTR	_____	LTCA	_____
FSRUUL	_____	SFHI	_____
HCDNODRAEODE	_____		
VONNDIEA	_____		
CRULTNOSEE	_____		
CRHDTORIOSEO	_____		
ANWGND AO	_____		
DIROICN	_____		
TMTYEHAS	_____		

Bring your answers to the picnic !



JULY BIRTHSTONE

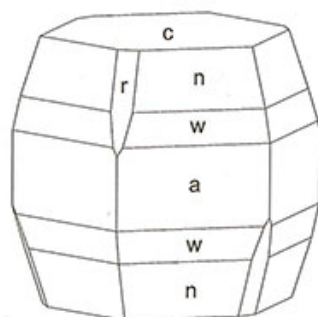
Ruby



Rubies are red, very red. Rubies are hard, very hard. In fact with a hardness of 9 on the Moh's scale, they fall just below diamonds as the hardest natural mineral on earth. Ruby is also the birthstone for July, the seventh month in the Gregorian calendar.

Ruby is the gem name associated with the red variety of the mineral corundum (blue corundum is sapphire and is reserved for the September birthstone). Corundum is a very simple mineral, both structurally and chemically. The corundum lattice consists of hexagonally close packed oxygen atoms with two thirds of the gaps between the octahedrally aligned oxygens occupied by aluminum. This results in the simple formula, Al_2O_3 . And when a very small amount of chromium replaces some aluminum the crystal turns ruby red. If there are no other impurities of note, a gem is born.

Structurally, corundum is a hexagonal mineral that crystallizes in the trigonal system (i.e. with 3-fold symmetry). Barrel shaped crystals predominate, with very flat pinacoidal tops. Numerous modifications are possible both horizontally and vertically to the basic hexagonal or trigonal faces. Crystals can be short and stubby or tall and tabular with bipyramidal faces that cut deeply into the basal pinacoidal face. Crystals are often striated and etched. They do not exhibit cleavage, but can fluoresce orange, yellow or red in shortwave ultraviolet light.



Typical corundum crystal form

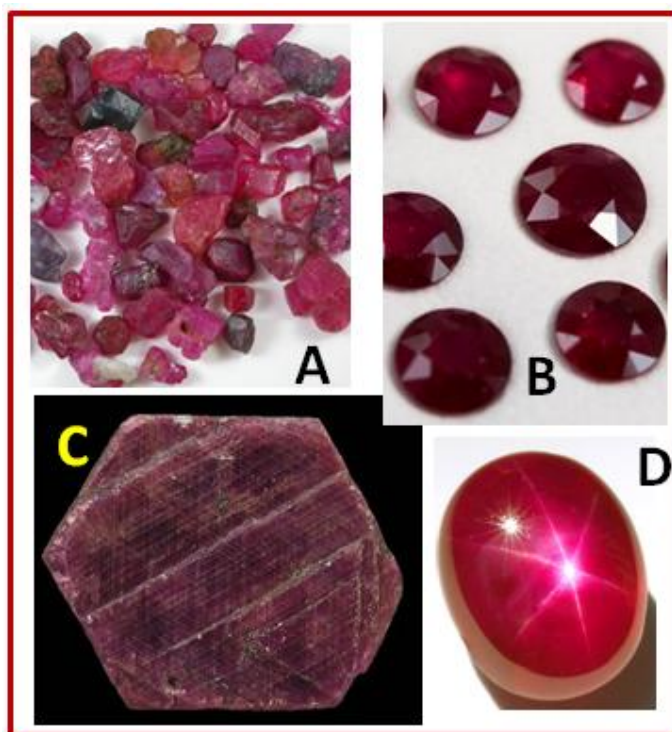
a – hexagonal prism
c – basal pinacoid
r – rhombohedral modification
n, w – hexagonal bipyramids

from Jeršek and Mirtič (1999)

Corundum is a high temperature mineral that crystallizes from magma or is formed during high grade metamorphism of sedimentary rock that is generally low in silica such that the available aluminum is not all consumed in feldspar. This

includes several types of low silica igneous rocks like syenite, and metamorphic rocks like mica schist, gneiss and some marbles.

The best (purest and reddest) rubies arguably are those from Myanmar (Burma), although folks in Sri Lanka (Ceylon) and perhaps Pakistan might disagree. Recently, Madagascar and Tanzania in southern Africa have produced quality gem rubies. Lower quality rubies and lots of corundum have been recovered from several sites in North Carolina. Because of its density (corundum is 50% denser than quartz) and its hardness, many of the active mining locations for rubies are alluvial deposits where the gems have been concentrated in sediments left by streams in a similar fashion as placer gold.



Corundum and Ruby: A and B – raw and cut rubies from Myanmar, C) looking down on the striated pinacoidal face of a corundum crystal, D) a star ruby where needle-like rutile inclusions cause a six-sided star to shimmer over the stone.

Wayne County trips to the Adirondacks and to the Bancroft area in Ontario have yielded corundum with red color, although no gem rubies. Small red corundum can be found sprinkled in the calcite-

diopside-scapolite matrix of the Purple Diopside Mound at Rose Road, Pitcairn, NY. The Burgess Mine in Hastings Co., Ontario was mined for corundum from 1902-1917. Now, silvery terminated corundum crystals with a reddish tint can be collected on the dumps. They are embedded in a syenite gneiss, but often display their hexagonal and pinacoidal faces.



It is not a ruby, but this 20mm twinned corundum from the Burgess Mine in Canada does reflect a reddish tint. This piece and many others were collected on WCGMC trip in September, 2014.

References:

American Gem Society website:

<https://www.amerangemsociety.org/birthstones>

Baeuer, M., 1968, Precious Stones (Volume 2), Dover Publications, 627 p.

Jeršek, M, and Mirtič, B, 1999, Corundum from Philep Dolomitic Marble in Macedonia, Jour. of the Slovenian Museum of Natural History, No. 41, p 1-22.

Wikipedia and Mindat (various webpages)

WCGMC Member July Birthdays

Don Craig

John Diaz

Will Haynes

Scott Jones

Mike Watkins

Sandy Wirth



The Two Sides of Charlie the Eurypterid



WCGMC had visited Ridgemount Quarry in Fort Erie, Ontario in early May, but pickings had been scarce. In late May, Stephen Mayer returned for a second attempt at finding a prize eurypterid. He was rewarded with this fine 4" fella. The telson (tail) is missing and one flapper is truncated, but both sides of this 420 million year old sea scorpion display well. I am sure we will see this very nice specimen soon at a club meeting.

Photo and specimen from Stephen Mayer

Penn-Dixie Dig with Experts from Above



Any guesses? How about 120-odd, or is it 120 odd, fossil collectors all seeking a complete *Eldredgeops rana* trilobite on May 21st at the Dig with the Experts Event at Penn-Dixie Fossil Site in Hamburg, NY. Not sure if any WCGMC members were there that day, but this photo taken from a drone captured the event. I can't see any trilobites in the picture. Can you? The aerial camera may not have proven to have been a very good exploration tool.

Photo from Paleo Joe's Facebook page

WCGMC 2016 Field Trip Schedule

last update (6/25/2016)

Summer and fall planning: You should 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.

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) Contact Fred Haynes to be included in the planning for this trip. We can pick a place a thruway exit location to meet for possible car pooling depending on who is planning to go.

July 23 (Saturday) - CLUB PICNIC – We cannot mention this in enough places! Be there!

August 7 (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.

Sept 16-18 (long weekend) – Star Lake for Benson Mines, Rose Road, Powers, Selleck Road and more.
Please let Fred Haynes know if you plan to attend. If enough seek overnight accommodation we can try to book a house in Star Lake.

Sept 22-25 (Buffalo Geol. Society) – To attend you must join BGS - 4 day trip to Cincinnati and 3 World Class fossil Locations (Napoleon and St. Paul Quarries in Indiana, Mt. Orab site for Isotelus, etc.) and maybe more

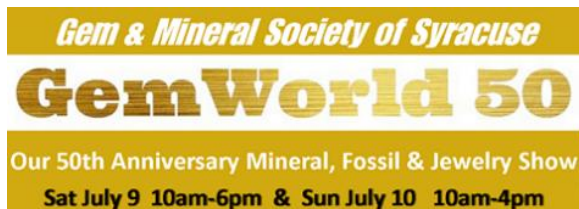
Oct 8-9: Walworth – Sat. 7-2, Sun. 7-noon – *(Details to follow)*

More will be planned in the fall

Trips proposed include Deep Run, Indian Creek, perhaps Second Creek in Sodus. But don't be shy. Let us know where you want to go.

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

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)*

July 29-31 Paleontological Research Institute (PRI) Summer Symposium (seminar and field trips)
 Visit the seminar website for details: <https://www.priweb.org/events.php?page=summersymp>

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

October 22-23 – Rochester Gem, Mineral, Jewelry and Fossil Show and Sale, sponsored by Rochester Lapidary Society, <http://www.rochesterlapidary.org/show/index.htm>

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