

Wayne County Gem and Mineral Club News

November, 2014

Always Looking for Places to Dig!



Pleurodictyum americanum from Kashong Formation, scale bar is in centimeters (see story on page 2)



Website

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

**ALWAYS LOOKING
FOR PLACES TO DIG**



Allanite from Benson Mines pegmatite, scale bar is in millimeters (see story , pg. 6)

Upcoming Events

Friday November 14th, - Club Meeting
7:00 PM, First Presbyterian Church,
Newark, NY

Program (review of recent trips)

Green's Landing fossils (Stephen)
Walworth Open House (all present)
NYSGA Field Trips (Fred)
Arkansas quartz collecting (Linda)

Christmas Party and Feast

Friday December 12th

6:00 PM, First Presbyterian Church,
Newark, NY

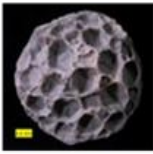
- Club will provide meat, drinks, and table settings
- Please bring a dish to pass
- GIFTS! Club will provide all who attend with a hobby related gift (more info to follow)

2015 GEMFEST HAS A NEW VENUE

The WCGMC Show Committee is pleased to announce that next spring's big show will be held June 8th-9th at the Greater Canandaigua Civic Center just north of Canandaigua city center off route 332. The facility features a hockey/skating rink in the winter, but the ice is taken up in April and the location is available for conventions and trade shows in the spring and summer. The setting will provide us with much more space, improved lighting, better parking, and full snack/food service. We are excited about the move and will have more details as the date approaches. Dealers interested in joining us can contact Pat Chapman (607-868-4649). Pick up your skates and head over some time this winter to check out the new venue.



The Greater Canandaigua Civic Center, 250 Boomfield Road in Canandaigua.



Fossil Fodder

by Fred Haynes



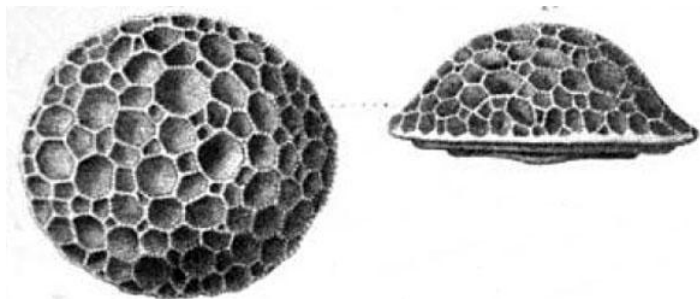
Palaeozygopleura hamiltoniae

Mineral Musings is taking a sabbatical this month in deference to the other collecting hobby many of us share. It will return in subsequent months.

Pleurodictyum americanum

I have had an active interest in mineral collecting for several decades (five years in Arizona can do that to anyone), but have developed a growing interest in fossils since moving to western New York two years ago. Having completed my first full season of mucking up creeks and stopping at roadcuts in the Silurian and Devonian strata of western New York I can announce that I now have a favorite fossil.

I realize many are, and for very good reason, enamored with trilobites. Be they *DiPleura*, *Greenops*, *Dalmanites*, or *Eldredgeops* (previously called *Phacops*, see note on next page), those are certainly great finds and I will be more than happy to pick one up when I come upon it. But I took a fancy to a simple tabulate coral species this summer: ***Pleurodictyum americanum***, a species first described by the German paleontologist Carl Ferdinand von Roemer in the late 19th century.



Original *Pleurodictyum americanum* drawings from Roemer (1876).

Perhaps it is the near perfect symmetry of the colonial coral that grabbed my eye. With a rounded top and a fairly flat bottom they certainly look grand once clay and shale is washed from the polygonal corallites covering the surface. Even better presentation results when multiple specimens of variable size are displayed together. My interest was also sparked because “pleuros”, as I have come to affectionately call them, are not as common as horn coral or many of the brachiopods species that are ubiquitous at

many sites in the Finger Lakes region, but they are also far from rare and when found they are typically complete and recoverable.

Given they are more resistant than the shale and siltstone within which they resided for the past 380MY, polished specimens of the Middle Devonian coral can be collected along the shorelines of many of the Finger Lakes. Their shape and surface features cause lake visitors to call them “turtle stones” when they encounter them along the lakes. However, my favorite way to find them is in place, with their tops exposed by erosion, and where they can be easily released from their hosts with a little care and some well placed chiseling.

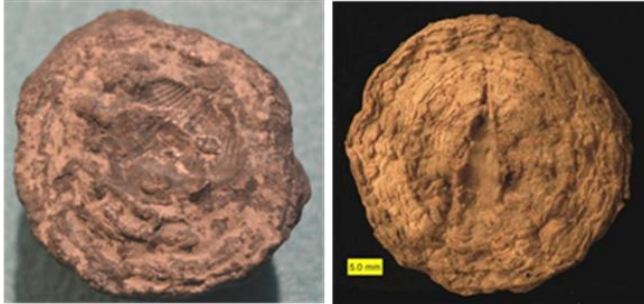


Pleurodictyum americanum collected from outcrop exposures of the Kashong member of the Moscow Formation in 2014. The upper row was collected by Stephen Mayer in Indian Creek in August. The lower two were collected in October along an unnamed creek north of Dresden, NY by Fred Haynes.

I have found them on the east side of Canandaigua Lake and on both sides of Seneca Lake this summer and can envision developing a location collection of 1-3” spherical “pleuro” coral in coming years. As a member of the coral family Favositidae, they are indeed one of the coral species commonly referred to as “honeycomb coral”.

A most interesting aspect of “pleuros” is their propensity to initiate growth on an existing fossil such

that the flat underside contains the mold of that fossil. What's more, Brett and Cottrell (1982) reported that the preferred fossil for such growth was the elongate spiral-shaped gastropod (snail) known as *Palaeozygopleura hamiltoniae*. They further concluded that the colonial coral encrusted the shells only after the snail itself was dead and gone. You may recall that we collected a squashed version of this snail genus in the Upper Wanakah section at Deep Run in July (see September WCGMC newsletter).



The flat bottom of two "pleuros" showing fossil molds. On the left is one of the Indian Creek specimens from the preceding photo and shows a brachiopod mold. The right photo is also from the Kashong shale of western NY. Here, the *Palaeozygopleura hamiltoniae* mold is readily apparent (from Wooster, 2011)

References:

Brett, C.E., and Cottrell, J.F., 1982, Substrate specificity in the Devonian tabulate coral *Pleurodictyum*, *Lethaia*, v. 15, p. 247-262.

Roemer, F. von., 1876, *Lethaea geognostica: handbuch der erdegeschichte mit Abbildungen der für die formationen bezeichnendsten Versteinerungen, I. theil, Lethaea paleozoica*, E. Schweizerbartsche Verlagshandlung (E. Koch), Stuttgart, Germany.

Wooster, 2011, Wooster's Fossil of the Week: A tabulate coral (Middle Devonian of New York), Wooster Geology Blog Site, Sept 4, 2011.

Eldredgeops versus Phacops

For over 150 years the common Devonian trilobite of New York and other North American locations had been referred to as *Phacops rana*, after the description and identification of *Phacops latifrons* in Europe. The literature, museums, and individual collections carry the name. As it turns out, this North American trilobite is not a *Phacops* genus, but rather an *Eldredgeops*. Although this has been known in the paleontology world for two decades, many specimens continue to be misnamed.

A most thorough and readable note on the distinction between the two genus can be found on the Fossil Forum website (www.fossilforum.com). The discussion, dated June 8, 2014, is called *Phacops Vs Eldredgeops* and is found in the General Discussion Forum of the website. The author is Gerry Kloc, a Rochester paleontologist who has studied trilobites extensively. Gerry has identified numerous subtle, but definitive, differences in the **cephalons** between the European *Phacops rana* and the so called North American variety. He concludes that the Middle Devonian New York species is actually an *Eldredgeops* and proposes it be given the full name *Eldredgeops rana*. If you have one, it is time to update your label.



Cephalon from a European *Phacops latifrons* and a New York *Eldredgeops rana* (from G. Kloc's 2014 Fossil Forum entry). The arrows in the *Phacops* photo highlight some of the differences Kloc noted between the trilobite genus.



The fall colors in St. Lawrence County were in full display for the NYSGA Field Trip Symposium Oct 10th-12th in Alexandria Bay. I attended a trip to visit three skarns (including the Valentine Mine in Harrisville) on Saturday and an ultramafic rock trip that included a stop at the Pyrites Mine on Sunday. More on this event in next month's newsletter.



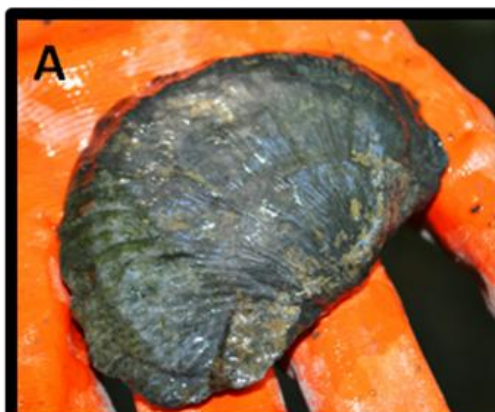



SITE OF THE MONTH

Green's Landing for Fossils

About three decades ago, WCGMC member Stephen Mayer did his M.S. at SUNY-Fredonia focusing on the stratigraphy and fossil assemblages of the Jaycox member of the Ludlowville Formation. A small creek on the east side of Canandaigua Lake provided wonderful exposure of the section and became the key exposure for his work. On Saturday September 27th Stephen returned to his old haunt, this time leading 17 members of our club on a fossil hunt at Green's Landing. Naturally we learned a little about the local stratigraphy from Stephen also as we hiked about 1200' up the creek, mostly through Wanakah member shales.

For example we learned that the Jaycox member is capped by the thin Tichenor limestone, itself a target for fossils. With its increased carbonate content, this Middle Devonian unit is a resistant marker in many of the creeks leading into the Finger Lakes forming waterfalls and promoting the exposure of the Jaycox unit immediately below. We also learned about the two fossil-rich beds in the Jaycox, the Cottage City Coral Bed and the aptly named Green's Landing Coral Bed. Large horn corals (*Heliophyllum halli*) can be found in each along with the colonial species *Eridiophyllum* and various *Favosites* species. The trilobite hunters were also not disappointed, a few complete *Eldredgeops rana* (see below) and fairly complete *Dipleura* were found by members of the "search team" and many partial pygidium molts were found scattered in the various units. Of course, many of the units are literally teeming with various small and mid-sized brachiopods. One of the better finds, a complete *Megastrophia conacava*, is pictured below. For more pictures, turn (or scroll) the page.

Green's Landing is on private land. The property is an active ranch complete with livestock and electric fences. Permission to collect is absolutely required to visit this location.

		<p>WCGMC Fossil finds, Jaycox member, Ludlowville Formation, Green's Landing, Canandaigua, NY</p> <p>A. Brachiopod (2.5") (<i>Megastrophia concava</i>), collected by Janis Becker</p> <p>B. Horn Coral Colony (<i>Eridiophyllum subcaespitosum</i>), note the parallel corallites collected by Glenn Weiler</p> <p>C. Trilobite (2") (<i>Eldredgeops rana</i>, formally <i>Phacops rana</i>), collected by Eva Jane Weiler</p> <p>D. Rugose Horn Coral (3") (<i>Heliophyllum halli</i>), collected by Ed Smith</p> <p><i>September 27, 2014</i></p>
		

More pictures from our September collecting trip to Green's Landing



There is the man with the kitty litter buckets again. This time he seems to have two buckets. Optimism is his middle name. Ask him if he filled them both next time you see him.



Everyone has a spot picked out along the Jaycox member exposure in Green's Creek. Lots of buckets to fill with fossils.



Cheyenne Riley exits from passing under an old wooden bridge along Green's creek. Youngsters from five families accompanied us. Fossil collecting is fun for all ages. Can you see our club president lurking under the bridge? Hint: He is wearing a blue shirt.



Our leader, Stephen Mayer is pointing out some disarticulated trilobites and a couple *Mucrospirifer* brachiopods to club members Janis Becker (seated), Ian Underwood and Tammi Murtha. The unit they are investigating is the Green's Landing Coral Bed of the Jaycox member.

**Happy
Halloween
from
your
editor**



Black biotite and orange calcite from Eganville, Ontario, another orange calcite from McDonald Mine in Bancroft, orange granite from the Adirondacks. Pumpkin and dahlia are homegrown!

A Fourth St. Lawrence County Trip

The leaves were changing (and even falling), but that did not deter a group of WCGMC folks from making a fourth trip to St. Lawrence County in late September. This time we were joined by 16 undergraduate geology majors from SUNY-Plattsburgh and their professor Dr. Mary Roden-Tice. It was truly wonderful to see so many young and eager folks enjoying geology and a day of collecting. The brilliant sun and the absence of mosquitoes did not hurt either.



Half of the SUNY-Plattsburg students have gathered near the top of the original Rose Road skarn site. Sky blue apatite has been spotted.

Our first stop was the famous, closed Benson Mines iron ore open pit and dumps outside Star Lake, NY (see February, 2014 WCGMC newsletter). We were greeted cheerfully by caretaker George Pearson, and started with a quick stop at the crushed rock piles for a sampling of the granulite facies metamorphic gneiss rocks. Although the mining of iron ore ceased in 1978, the owners do sell the dump rocks as crushed aggregate. After a quick review of the interesting history of the location we drove the length of the open pit (now a gorgeous deep blue lake) to the huge ore piles that remain at the north end. Did you know the iron ore was discovered in 1810 by engineers surveying for a railroad when their compasses were wandering (Crump and Beutner, 1970)?

Everyone got to use their magnets and test their skills at distinguishing magnetite from martite, the later being the term for a hematite **pseudomorph** after magnetite. Crystal faces from the two iron oxide minerals show a slight variation in luster to an

experienced eye, however we learned that the magnet is far more discriminating than our untrained eyes.

The sun was shining brightly as our caravan arrived at the north end of the pit and the large muscovite mica books in numerous pegmatite boulders were nearly blinding. In addition to the muscovite these pegmatites contain allanite, a rare-earth silicate mineral from the epidote group with the formula $(\text{Ce,Ca,Y})_2(\text{Al,Fe})_3(\text{SiO}_4)_3(\text{OH})$ (see photo, page 1). In addition to the allanite, small flakes of silvery molybdenite were speckled about in the quartz-rich pegmatite. We even found the foot long allanite crystal published in Lupulescu et. al.'s 2014 mineralogy article about Benson Mines (Figure 6). Don't worry, it is still there for others to find, and if you do, please take only a picture. It is a classic.

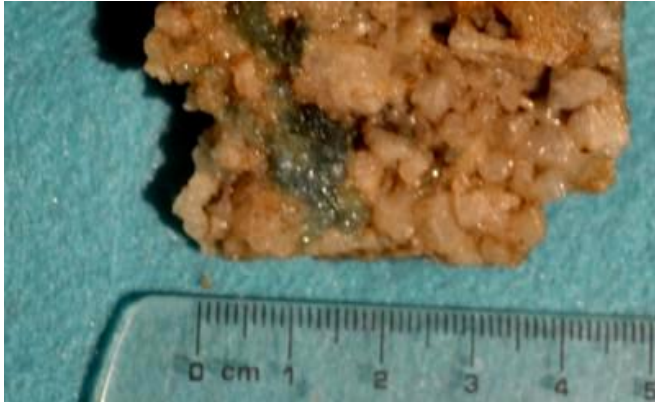
Less than 200m from the muscovite pegmatite occurrence was another large pegmatite boulder, but in this one the dominant aluminum-silicate mineral was sillimanite. Often the sillimanite at Benson Mines is altered to a yellow (sericite), green (chlorite) or stained red (hematite) (pers. comm. M. Lupulescu). But in this boulder the aluminum silicate mineral is deep green and almost gemmy (translation: very nice). With less quartz and more feldspar the assemblage there included two other neat silicate minerals, which were typically intergrown. Bright red almandine garnet ($\text{Fe}_3\text{Al}_2(\text{SiO}_4)_3$) was nicely set off by light green chrysoberyl (BeAl_2O_4). A few of these pieces even came with sillimanite.



Few crystal faces, but a pretty combination of green chrysoberyl and red almandine garnet from an aluminous pegmatite at Benson Mines.

The afternoon stop was about 20 miles east at the **skarn** bodies of Rose Road in Pitcairn. What a delightful place to take students interested in acquiring diverse minerals while learning

metamorphic geology. The original site there is literally covered with green diopside, chocolate brown titanite, and white albite. It is not all crystalline and some that is cannot be easily extracted from the hard calc-silicate rock, but no one who visits this site goes home empty handed. Although small the sky blue apatite set into the albite is pretty attractive as well. Even the wollastonite has a story to tell as it



Not a great picture or specimen, but this Rose Road blue apatite is surrounded by white albite crystals.

has been virtually completely replaced by fine yellow acicular diopside (Chamberlain and Robinson, 2013). Unlike the coarse green diopside, this replacement diopside is too fine to see even with a hand lens, but perhaps an industrious student will cut a thin section and test it out back in Plattsburgh. As with martite at Benson Mines, these specimen illustrate the concept of a pseudomorph as the triclinic crystal structure of wollastonite is preserved.



Bill Lesniak is either testing his Halloween costume and kitty litter candy bucket or he is mineral collecting at Rose Road. SUNY-Plattsburgh professor Dr. Mary Roden-Tice (in blue) assists a student with mineral identification behind Bill.

Less than 200m from the wollastonite-diopside ridge is a second occurrence of calc-silicate mineralogy with a very different mineral suite. Discovered only in 2011, the dominant skarn minerals at this second location are scapolite (variety meionite, S. Chamberlain, pers. comm.), a lavender diopside, fine gemmy phlogopite, titanite, apatite, and a coarse tan calcite. The scapolite fluoresces bright canary yellow and some excellent crystals up to 8 cm have been recovered from fracture surfaces. It would be indeed interesting to study how these two mineralized regions relate to each other. Unfortunately the region between is heavily forested and outcrop exposure is sparse.



Ken Rowe has found a comfortable spot and a diopside crystal. Now all he has to do is chisel it out!

When listed out in their entirety, the complete suite of minerals available from the two sites visited is rather impressive. We even made a quick stop at the satellite tower at the top of Rose Hill. The pad there is built with marble aggregate from the Balmat mine and it is laced with red—brown sphalerite and pyrite. Two more minerals for the student's growing collection and from yet another of upstate New York's world class ore deposits.

References:

Chamberlain, S.C., and Robinson, G.W., 2013, The Collector's Guide to the Minerals of New York State, Schiffer Publishing Ltd., pgs. 46-49.

Crum, M.R., and Beutner, E.I., 1970, The Benson Mines Ore Deposit, St. Lawrence Co., NY, in *Ore Deposits of the United States vol. 1*, pg. 49-71, ed., J. D. Ridge, American Institute of Mining, Metallurgical, and Petroleum Engineering, Inc.

Lupulescu, M. V., 2014, The Benson Mines, St. Lawrence County, NY, *Rocks & Minerals*, # 89, 118-131.

Wayne County Gem and Mineral Club 2014 Field Trip Schedule

last update (10/30)

Although we have not yet seen any white stuff in the air, or even had a frost in most of our region, it appears it is time to announce the closure of our field season and start thinking about next year. Our trips in 2014 are listed on the webpage, but for a quick summary, how about these numbers!

- We participated as a club in 21 field events between late March and mid-October.
- Eight trips were weekend or multi-day trips involving overnight stays (with two campouts).
- Although the majority was in search of minerals, we had 7 trips targeting fossils.
- We ventured to St. Lawrence County 5 times and to Ontario, Canada twice.

Several folks led individual trips this year, but our Field Trip Leader, Bill Chapman, planned and ran most of them. Many thanks to Bill for a wonderful field season.

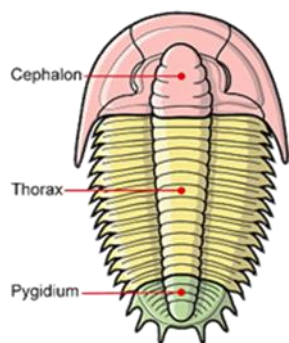
As for 2015, we have some ideas of new places to go and we will return to many of this year's sites, but we would love to hear from you where you would like to go. Anyone can lead a trip!

A reader has suggested that I include a section with definitions of geologic/technical terms used in the articles of each issue. Great idea. Words to be defined are printed in bold red print when first introduced in the body of the article.

A **cephalon** is the head portion of invertebrate animals from the Phylum Anthropoda. Anthropods include insects, arachnids, and crustaceans, but the use of the term cephalon is generally restricted to a number of extinct groups of Anthropods including Trilobites. The word comes from the Greek (cephale) meaning "head." Refer to left photo below

Skarns are calcium-bearing silicate rocks. They are most commonly formed at the contact zones between magmatic intrusions and carbonate sedimentary rocks (limestone and dolostone). Hot waters derived from the magma are rich in Si, Fe, Al, and often other trace elements. When these waters dissolve and alter carbonate rocks the metamorphic product is a skarn. Garnets, pyroxenes, and other exotic silicate minerals can be found in skarns making them an attractive target for mineral collectors. Refer to middle photo below

A **pseudomorph** is a mineral that has formed by replacement of another mineral while retaining the crystal form of its parent mineral. The name is literally translated as "false form", which exactly defines the circumstance. A commonly encountered pseudomorph is pictured below where iron oxide has replaced pyrite (FeS_2). The cubic form of pyrite is preserved, but the sulfur is gone, replaced by oxygen, or in the case of goethite, also by hydroxide (OH). Goethite is $\text{FeO}(\text{OH})$.



Trilobite



SKARN



Pseudomorph

Wayne County Gem & Mineral ContactsGlenn Weiler – President gwexterior@gmail.com

315-594-8478

Jerry Donahue – VP Chester145322@yahoo.com

585-548-3200

Eva Jane Weiler – Secretary gwexterior@gmail.com

315-594-8478

Bill Lesniak – Treasurer/Webmaster

Dirtman300@aol.com 315-483-8061**Board of Directors**Ken Rowe gotrox88@localnet.com 315-331-1438Susie Hoch smhrockfinder@rocketmail.com

585-794-7287

Linda Schmidt Gall lees@tds.net 315-365-2448Laurie Frey Lmcfaul328@aol.com 315-483-9894

Bill Chapman – Field Trip Chair

batnpill@empacc.net

607-868-4649

Fred Haynes – Newsletter Editor

fredmhaynes55@gmail.com

585-203-1733

Club meets 2nd Friday of each month starting in Sept.

Mini-miner 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

The Public is always welcomed
First Class: Dated, Meetings & Time Valued



Wayne County Gem and Mineral Club
P.O. Box 4
Newark, New York 14513