

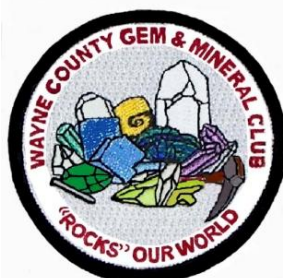
# Wayne County Gem and Mineral Club News

June, 2015

Always Looking for Places to Dig!



Linda Schmidt Gall and Glenn Weiler with Glenn's "newest generation" sphere machine outside the workshop on May 23rd. See results on page 6



Website

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

**Gem Fest  
2015**



Wulfenite from the Total Wreck Mine in Arizona (see page 2) F. Haynes collection

**It is show time !**

Wayne County Gem & Mineral Club

**Gem Fest  
2015**

Sat. June 6 10-5  
Sun. June 7 10-4



**NEW LOCATION**

Greater Canandaigua Civic Center  
250 N. Bloomfield Rd, Canandaigua

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

[UV Bob's Ultraviolet Show](#)

**Gems, Minerals, Fossils, Beads & Jewelry**

visit <http://www.wcgmc.org/> for details

**Next Club Meeting,  
Friday June 12th, 7 PM**

Presbyterian Church, Maple Court, Newark, NY

Summer Planning and Show Review

*Remember to bring your new possessions*

## Upcoming WCGMC Field Trips

**Saturday May 30, Ilion, NY** - For travertine, likely a fossil stop or two south of Syracuse on the return. Meet at McGee's Country Diner just off Thruway Exit 41 (Rte. 414), breakfast at 7 AM, departure for Ilion at 8 AM

**Friday-Saturday June 19-20** – Bill Chapman's "Yard" rock sale. You just cannot find the variety offered here at any one dig. Bring a bucket and go home with rocks from all over North America! One stop shopping at 11421 Co. Rd. 78 in Pulteney. *Call Bill for directions*

**Saturday June 27 – Alden, NY** for pyritized fossils in the Ledyard shale. See June-July 2014 WCGMC News for site details. Meet at Dollar General Store on Rte. 20 in Alden at 10 AM.

**For more info and details on trips/events, see page 7**

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If you have a few hours on Friday June 5<sup>th</sup> to help with set-up for GemFest, please consider stopping by the Greater Canandaigua Civic Center anytime after 9 AM to lend a hand. We have tables to move, club activities and exhibit cases to set up, electrical lines to run, etc. We will also need help Saturday and Sunday manning entry and club tables and club craft booths. And, of course, it all must be taken down on Sunday afternoon. Contact any of the club officers on the back page to see how you can help, or just show up and offer.



## Mineral Musings by Fred Haynes



### $\text{PbMoO}_4$ is Love

Mineral collecting can be both stimulating and reflective. Does your mineral collection bring back fond memories of trips and times past? Does it re-invigorate you each time you re-organize, recatalog or otherwise peruse your collection? I am often brought back to earlier periods and places in my life just by the simple act of focusing on a self-collected piece in my collection or by seeing a mineral specimen I had not viewed in a long time. Last month I opened a box of Arizona wulfenite in the garage that had been securely wrapped in 30 year old tissue and newspaper and it was *deja vu* all over again. It was like I was in the Total Wreck Mine in the Empire Mountains of Arizona all over again.



**Total Wreck, Arizona in 1885** – Now a ghost town at the end of a virtually impassable 4-wheel drive trail, Total Wreck once was the home of five saloons, three stores and over 200 miners and prospectors. The prize was silver and over half a million dollars of the metal were extracted in about two decades. Today (see below from 2011) all that remains are some mine dumps, some open adits and shafts, and a few overgrown dirt trails.

Both photos from Rose, 2012



Have you heard the expression  *$\text{PbMoO}_4$  is Love*? Well, that was the expression in Arizona in the 1980's when my graduate student colleagues and I would tramp about the state looking for that elusive wulfenite specimen at some 30 odd locations known to offer the brilliantly colored spectacular mineral. Heck my 1970-something Ford Falcon collecting wagon even hosted a bright blue bumper sticker that simply read " $\text{PbMoO}_4$  is Love ". That car saw them all. There were, of course, the famous locations: the Red Cloud Mine in Yuma, the Silver Bill Mine in Gleeson, the Rawley Mine in Theba, the Glove Mine in the Patagonia Mountains. But there were also the not so famous mines where fragile panes of wulfenite could be coaxed from adit walls or carefully chiseled from dump material. My favorites were the Total Wreck Mine in the Empire Mountains, the Finch Mine in Gila County, and the Dogwater Mine in Aravaipa but that list too is long.



Bright orange panes of wulfenite with sharp corners from the Rawley Mine are associated with small red spherical blebs of mimetite. Often both sit aesthetically on bright white massive barite.



Finch Mine (also known as Barking Spider Mine) wulfenite is unique in that it is coated by fine drusy bluish, but transparent quartz.

The styrofoam square in the lower two photos is a 1" square



Dogwater Mine wulfenite is yellow with generally thicker and more stable panes than many others. The crystals display very distinctive beveled edges and rounded corners.

*Specimens collected by  
F. Haynes in the 1980's*

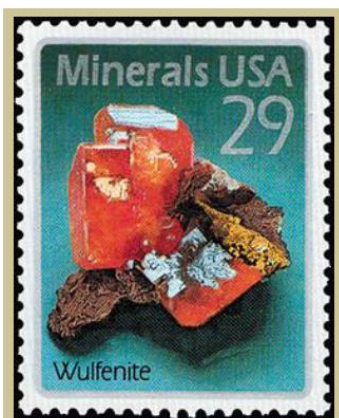
Wulfenite is a relatively simple mineral within the scheelite group of minerals. The colorful tetragonal mineral is characterized by three perpendicular axes, two of which are of equal length. The core of the mineral is the molybdate radical  $(\text{MoO}_4)^{2-}$ , with 4 oxygen atoms surrounding the central molybdenum



atom in a tetrahedral structure. With a double negative charge this radical is receptive to capturing a single  $\text{Pb}^{2+}$  cation to form wulfenite. Because of the relative sizes of the Mo and O atoms in the core tetrahedral, the lattice is distorted resulting in an extremely short third axis. For this reason, wulfenite crystals are thin and tabular and often resemble small transparent panes of colored glass.

The color of wulfenite has nothing to do with its primary elemental composition. In fact, pure  $\text{PbMoO}_4$  is essentially colorless or white. However, lead is not the only divalent (2) transition metal ion available to combine with  $\text{MoO}_4$  ions. It is trace amounts of vanadium, manganese, chromium, and titanium that depart the wonderful yellow, orange, and red colors. These elements do this by absorbing the violet, blue and green visible spectra. The variation in color, together with a variety of modifications in crystal structure including beveled edges, and bipyramidal or dipyramidal terminations add to the attractiveness of wulfenite.

Perhaps the most famous wulfenite locality of all is the Red Cloud Mine just north of Yuma, Arizona. Silver was mined there sporadically from 1860 to 1941, but it is the bright red, large reflective crystals set onto a black volcanic matrix that set the site apart. They are sought by collectors worldwide for their color, their luster and the size and perfection of the beveled crystals. My visit there was not particularly productive. In fact, from a wulfenite point of view, it could actually be called a bust. But not everyone can say that they have collected underground at the Red Cloud Mine, and I have since acquired multiple copies of the stamp!



Red Cloud wulfenite



**Wulfenite on a US stamp:** In 1992, the USPS issued a set of four 29 cent stamps with mineral specimen from the Smithsonian Museum in Washington D.C. The museum specimen from the Red Cloud Mine on the right was one of the featured minerals.

With a density of 6.5-7.0 (quartz is 2.65, calcite is 2.71), wulfenite is among the densest of all transparent minerals. However, because most of the elemental bonding in wulfenite is due to weak ionic bonds, wulfenite is soft, registering just 2.5-3.0 on the Mohs scale, or slightly softer than calcite.

Wulfenite forms as a secondary mineral in the oxidation zones of lead-rich ore deposits. Most often it is found in arid regions where low water tables allow the oxidation zone to extend deeply below the surface. The arid and very metalliferous regions of the American southwest and in parts of central and southern Africa are perfect places for wulfenite to form and be preserved.

As an oxidation zone mineral, wulfenite is often associated with other metals and their oxidation products. Cerussite ( $\text{PbCO}_3$ ), vanadinite ( $\text{Pb}_5(\text{VO}_4)_3\text{Cl}$ ), and mimetite ( $\text{Pb}_5(\text{AsO}_4)_3\text{Cl}$ ) are natural associations given the presence of lead in the mineral formula. But in many of the mineralized regions across Arizona copper is a common metal and it is not uncommon to find copper carbonate minerals in association with wulfenite. One of my favorite haunts where both wulfenite and copper minerals could be found was the Silver Bill in Gleeson, Arizona (just a mere 15 miles west of Tombstone if you are a crow).



**Minerals from Silver Bill Mine, Gleeson, AZ:** Wulfenite on the right, rosasite on the left. Rosasite is a copper zinc carbonate  $(\text{Cu,Zn})_2(\text{CO}_3)(\text{OH})_2$  which forms velvety connected balls.

#### References:

Mindat website, several different mine location sites

Rose, J.D., 2012 Total Wreck Mine – Total Wreck Ghost Town (<http://www.wyattearpeexplorers.com/total-wreck.html>)



# SITE OF THE MONTH

## Sheds Fossil Site



### A Central NY Fossil Location

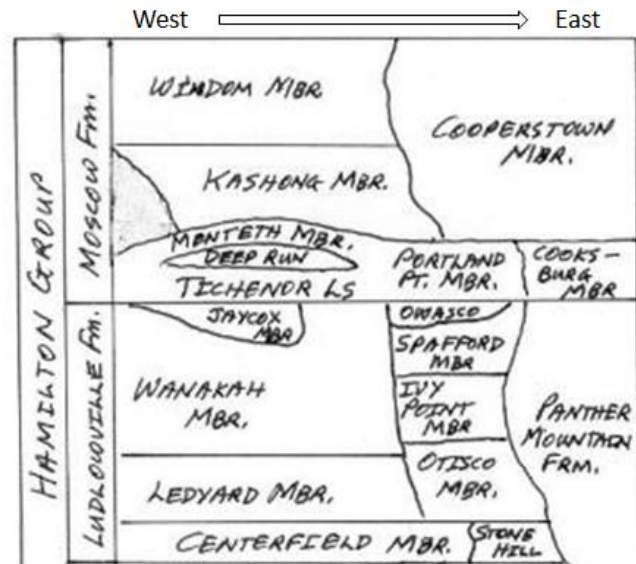
Many of us have become familiar with exposures of fossil-bearing Middle Devonian Hamilton Group in the creeks and gulches draining into the Finger Lakes. And we may have ventured west to Penn-Dixie or other Buffalo region sites. But there are also numerous sites within these same geologic units in central New York. One small site is a simple roadside exposure on Dugway Road, just 2.4 miles northeast of Sheds, Madison County, NY (GPS N 42° 49.94', W 75° 47.72').



**Sheds, NY:** Gary Thomas and I stopped off at the Sheds site en route to Ken St. John's mineral sale in April. Here, Gary points out the expansive roadside cut behind my field vehicle. We found small to medium sized brachiopods, gastropods, and some bivalves in both of the exposed levels.

The exposed shales at the Sheds site are from the Windom shale of the Moscow Formation, the youngest unit of the Middle Devonian Hamilton Group in west and central New York. The schematic stratigraphic column to the upper right is full of unit names within which we have collected in the past year. (the Ledyard and Centerfield members in Bethany and Avon in April, the Wanakah and Jaycox from Green's Landing last September, the Deep Run and Kashong from Deep Run last July).

The sea floor at the Sheds site in central NY was muddy with significant sediment input from the mountains to the east. As a result of the turbidity of the water, sensitive filter feeders like corals and some brachiopods were not able to survive, while gastropods and bivalves found the environment more to their likely.



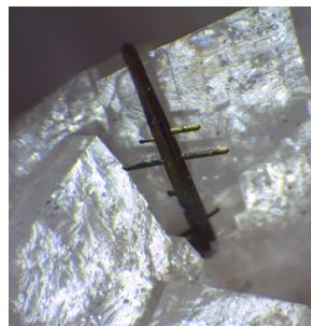
Stratigraphic column of the Ludlowville and Moscow Formations of the Hamilton Group (modified from "bingweb.binghamton.edu/~kwilson/home.htm")

Although we did find numerous small broken portions of trilobites, Gary and I did not find anything like this *Eldredgeopora* that has been reported from the Sheds site. Photo is from:



<http://bingweb.binghamton.edu/~kwilson/Devonian/DevSites/Sheds/Sheds.htm>

Two dolomite associations members collected at Penfield on May 2nd



Andrew Zioto found this interesting 6mm long marcasite needle nestled among dolomite rhombs. He has posted it to mindat: <http://www.mindat.org/photo-684117.html>

Photo by Paul Dudley



Christine Van Neel recovered this neat selenite with dolomite piece. Selenite is the transparent and colorless crystalline form of gypsum.

Photo by Christine Van Neel



A Fossil Quiz for all the budding paleontologists in the club.



1. Can you name the phylum of all these fossils/shells?
  2. How about the Class for each?
  3. Now, how about the Genus and species for each?
  4. A-C are all related, but there are two species. Can you tell which one is different? Hint: It is not based on color.
- Turn (or scroll) to page 6 for the answers.

## A Trip to Pennsylvania

Pennsylvania and the Limestone Products Quarries in Mt. Pleasant Mills and Middlebury beckoned a number of us south for May Day. We were not exceptionally lucky atop the ridge collecting wavellite, lots of color but not many full balls and none of the deep green the Buffalo Club had on display at its show in March. We probably did not dig deeply enough to deserve quality pieces.



### Digging for wavellite atop the ridge above Mt.

**Pleasant Mills Quarry:** Looking high, low, and in between did not work out well this time. Yes, that is Jerry Donahue with his sampling tool in the middle of the photo. It was good to see him back with us in the field.

Pickings were better in both quarries. There was an adequate amount of doubly terminated clear  $\frac{1}{2}$ "-1" calcite crystals atop drusy calcite at Mt. Pleasant Mills for all to sample and then a bit of purple fluorite and lots of travertine to pick from late in the afternoon in the Middlebury Quarry.



**Middlebury Quarry:** No quarry wall is safe from Bill Chapman. Here he has located a large travertine boulder halfway up the talus slope. Linda is preparing to catch it when he rolls it down as I document the event. Just kidding! Linda is really there in case she has to catch Bill.

On Friday, we scampered over to Scranton and the coal dumps in both Jermyrn and Carbondale. There were lots of lycopod trees and other Lepidodendron genus Carboniferous plant fossils exposed in both the coal dumps in Jermyrn and the roadside remediated areas east of Carbondale. I think we all left with enough material to start our own little Carboniferous rock pile in our gardens. Roots, stems, fronds, branches and even a few good sized stumps were uncovered in a few hours. Once again we know we had to look up to see Bill most of the time.



**Jermyrn, PA:** That yellow hat and purple St. Lawrence County Club shirt belongs to Billy "Goat" Chapman as he scrounges the Jermyrn dump for oversized lycopod tree stumps.





Some more tree parts from Jermyn. Rootlets at the top, bark in the largest piece and a small stump or branch in the upper left, all now part of my Carboniferous forest in Rochester.

Four friends went out into the Grenville hinterlands searching for minerals. They paired off in twos and went out in different directions. That night, one of them returned alone, staggering under two loaded buckets of rare tourmaline crystals on matrix.

"Where's Jimmy?" asked one of the partners from the other group.

"Jimmy had some sort of a stroke. He's about a mile back on the trail."

"You left Jimmy laying out there and carried these buckets back?"

"A tough call," nodded the friend while lifting up one of his buckets, "but look at these beauties. I figured no one in their right mind is going to steal Jimmy."



There was something interesting being sawed in the big saw at the April workshop. Was it that large banded agate piece? You will have to come to our workshops to find out.

The May club workshop saw a test of Glenn's second generation sphere machine (see photo on page 1). We must have a contest to give the thing an appropriate name. It is far more deserving than to just be called "Glenn's sphere machine". Anyway, below are two products that were created during the 3-4 hour long workshop. Half of the source boulder beside the unpolished but fully ground spheres. The quartz vein through metamorphic rock on the left should take a nice polish. The layered sandstone may have to retain an unfinished surface, much like most of our solar system's planets. If you have a rock that deserved to be "sphered" (is that a word?) then you are going to have to schedule a trip to the club shop.



In mid-May, the WCGMC workshop was converted to a classroom. Both Glenn (middle picture demonstrating one of his sphere machines) and Eva Jane Weiler (far right) were busy instructing youngsters in the use and utility of minerals in our modern world. Some of Glenn's labeled displays with minerals and their use can be seen on both the table on the left and on the longer table to the right.

Photos by Matt Weiler

## WCGMC 2015 Field Trip Schedule

last update (5/23/2015)

We are now entering the prime collecting season and we've planned a busy June. Hope you can find an event and a timing that works for you. We sure hope to see all of you in Canandaigua for GemFest. As for our field trips, you should always contact the trip leader for details and possible changes. Or come to our monthly meeting and help plan. This list is forever in flux and additional dates will be added with each newsletter, and are also posted on the website. You can always contact the listed trip leader, or Bill Chapman, if you are uncertain whether you have the latest information. This coming month's club activities are in red.

**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.**

**Saturday May 30, Ilion, NY** - For travertine, and likely a fossil stop or two south of Syracuse on the return. Meet at McGee's Country Diner just off Thruway Exit 41 (Rte. 414), breakfast at 7 AM, departure for Ilion at 8 AM. *Leader – Bill Chapman*

**June 12-14 (Friday-Sunday)**- A few club members may accompany Dry Dredgers Club of Cincinnati to Ridgemount Quarry in Ontario on a Eurypterid hunt (10 miles from Buffalo) and then to Penn-Dixie or other Buffalo area sites. *(Contact Stephen Mayer for details, 585-943-5058)*

**Friday-Saturday June 19-20** – Bill Chapman's "Yard" rock sale. You just cannot find the variety offered here at any one dig. Bring a bucket and go home with rocks from all over North America! One stop shopping at 11421 Co. Rd. 78 in Pulteney. *Call Bill for directions*

**Saturday June 27 – Alden, NY** for pyritized fossils in the Ledyard shale. See June-July 2014 WCGMC News for site details. Meet at Dollar General Store on Rte. 20 in Alden at 10 AM.

**July 19-26** – Six days in Ontario – Presently there are 9 of us slated to spend 3 days in Cobalt, Ontario and then 3 days in Eganville, Ontario. The Cobalt and Gowganda silver/cobalt/nickel districts will be visited out of a lakefront motel on the first three days and we plan to visit sites east of Bancroft (Miller property, Beryl Pit, and more) on the later 3 days. *Leader – Fred Haynes*

**Sunday August 9** – A fossil trip, probably to Green's Landing, perhaps together with Rochester Academy of Science Fossil Section. *Leader – Stephen Mayer*

### **Later in the Summer – Watch this space**

Fossil Trips proposed include Deep Run, Green's Landing, Indian Creek, Syracuse area, Second Creek in Sodus, and more. Mineral trips to Walworth, West Pierrepont+Powers, Rose Road, and more

## **SHOWS and OTHER EVENTS TO KEEP ON YOUR RADAR in the next 2-3 months**

**June 6-7 -- THE BIG EVENT -- GEMFEST 2015 IN CANANDAIGUA** [www.wcgmc.org](http://www.wcgmc.org) for details

**June 12<sup>th</sup>** – Friday 7 PM, club meeting in Newark

**July 11-12** - GemWorld 2015 in Syracuse visit <http://www.gmss.us/annual-show/2015-annual-show> for details

August 1-2 – Paleontological Research Institute 10<sup>th</sup> Annual Summer Symposium (more details next month)

August 15 - Mark your calendar for the WCGMC Picnic in Wolcott at the Weiler's. The workshop will be open.

August 21-23 – The St. Lawrence Gem and Mineral Club show in Madrid, NY. With field trips planned to Powers Farm on Saturday and Bush Farm on Sunday.

## Wayne County Gem & Mineral Contacts

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Bill Lesniak – Treasurer/Webmaster

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585-203-1733

Club meets 2<sup>nd</sup> 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



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