

# Wayne County Gem and Mineral Club News

December, 2015

Always Looking for Places to Dig!



*Yellow Mineral Night for WCGMC (see pg. 2)*



Website

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



*It is Party Time!*



*Two pleurodictyum coral and a brachiopod from Indian Creek (see page 6)*

## WCGMC Christmas Party is HERE 6:00 PM, December 11th

Presbyterian Church, Maple Court, Newark, NY

**If you did not sign up while at the November meeting, please let us know. A call or note to either Eva Jane Weiler, Linda Schmidt Gall, or Fred Haynes will do the trick. We need to have a head count to insure we have enough meat, potatoes, and gifts!**

After signing up, it is very simple:

- Note the earlier start time of 6:00 PM
- Club will provide meat, potatoes, drinks
- Bring a dish to pass (dessert or entrée)
- Club will have a mineral gift for all and Linda is busy concocting a fun and new way for you to "earn" it.

## Club Workshop, Saturday, Dec. 12th

Bring your rocks to saw and polish. The workshop is open to all paid club members; we do ask for \$5/visit from each adult to help maintain equipment. We plan to hold similar workshops once a month through the winter months.

When: 10:00 AM til mid afternoon, Sat. Dec 12th

Where: The Weiler's Barn and Workshop  
6676 E. Port Bay Rd, Wolcott, NY

Rules: BYOR (Bring your own rocks) to saw, grind, polish or even facet. Training on equipment is available. Eye protection is recommended.



**Christmas 2014**







## Mineral Musings by Fred Haynes



### Yellow Mineral Sunshine

Yellow is the color of sunshine, of brilliant warm summer days. It is the color of bananas, lemon meringue pie and butter pecan ice cream. There are beautiful yellow breasted birds and wondrous yellow flowers. Some cultures view yellow as the color of happiness, amusement, and even optimism.

All that is well and good, but yellow is also the color of wulfenite, sulfur, heliodor and a number of other wondrous minerals and gems. And, of course, it is the color of gold. It was with this appreciation of the color yellow that WCGMC convened in November for a celebration of "Yellow Minerals".

The quintessential yellow mineral is undoubtedly native sulfur. The simple native element mineral is the definition of yellow, no color modifier is needed.



Linda Schmidtgal's sulfur was the largest and brightest of several that were brought to the event.

Sulfur is a common element in the earth's crust, but it is usually combined with oxygen in minerals like gypsum or with metal elements in minerals like pyrite. Sulfur is a common element in

volcanic gases and native sulfur can form in vugs and along fractures in volcanic rocks, but the best sulfur crystals form when sedimentary gypsum deposits are reduced (oxygen stripped for sulfate).



Linda had more than sulfur to display. Travertine from Ilion may not be classic yellow, but it counts, and it is pretty..

In Arizona,  $\text{PbMoO}_4$  is love! And sometimes this love is yellow. The square thin transparent crystals are also quite fragile. This secondary mineral in lead-rich ore deposits requires an arid environment to form and be preserved. Morocco and Mexico are other locations where colorful wulfenite can be found, but the mineral was discovered, and named, after a location in Slovenia in eastern Europe.



Four of the five wulfenite specimens I brought to "the show" were self collected in Arizona.



You can spot the sulfur in the upper left and probably the honey colored dogtooth calcite in the middle of Stephen Meyer's display, but can you see the gold? Here let me help you out!



Of course, there were other yellow metallic minerals on display. Chalcopyrite and pyrite are often referred to as fool's gold, but they remain collector favorites. Pyrite is cubic and chalcopyrite is tetragonal and both show off these forms superbly.



Two inch chalcopyrite specimen from China.





Ed Smith had a nice pyrite specimen, but he also brought a number of faceted citrine crystals.

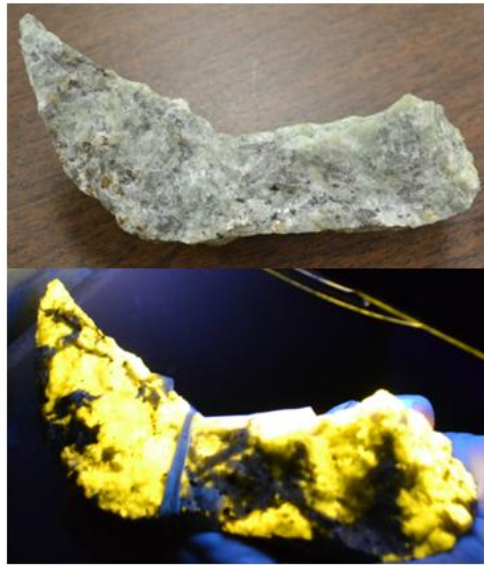
In addition to gemstones like citrine and heliodor, there is a lot of lapidary material that comes in shades of yellow and orange. The club has a bit of Carnelian agate which tends to best display its brilliance once cut.



Carnelian agates.

Some minerals don't show off their spectacular yellow colors without a little help. Scapolite comes to mind. Typically a drab grey, bluish grey to beige mineral when found in the metamorphic rocks of the Adirondacks, most scapolite lights up canary yellow

when exposed to long wave ultraviolet light.



Bill Chapman brought this drab massive block of scapolite (Var. wernerite) to the event. You had to go into the back room with his black light to see its special color.



Of course yellow minerals can be collected on little pieces of paper also. Many of the countries of the world have featured sulfur, pyrite, citrine, heliodor, chalcopryite and more on their postage stamps. The Chinese citrine here is natural, but is has been cut and polished.



Gary Thomas collects fossils and he was not going to be left out. I think this specimen has been doctored a bit though.

Generally we do not think of fossils when we think of the color yellow. There are, however, yellow pyritized fossils. We collect them at Alden every year, and several were on display from Club members.



But, this excellent pyritized ammonite is not from Alden and it is not Devonian. It is not even from North America. Stephen Mayer displayed this *Pleuroceras* sp, which is from the Early Jurassic of Germany.

### Some yellow minerals that did not appear in Newark



Smithsonite from Italy



Fluorite from Spain



Fluorite from England



Apatite from Mexico



Legrandite from Mexico



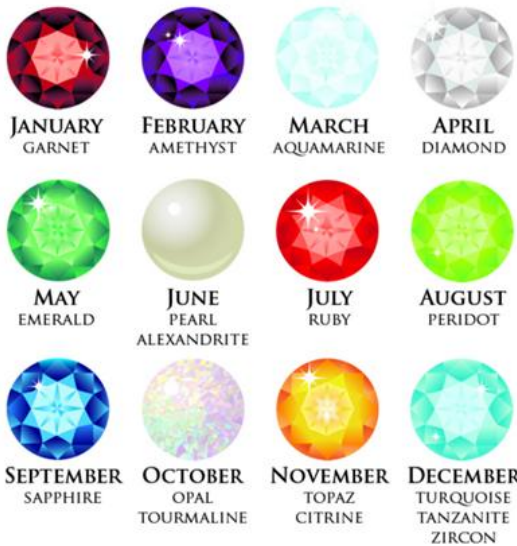
Orpiment from Nevada

Arsenic minerals are often yellow.

Minerals like smithsonite and fluorite will appear in a mineral display of just about any color.



## 2016: The Year of the Birthstone



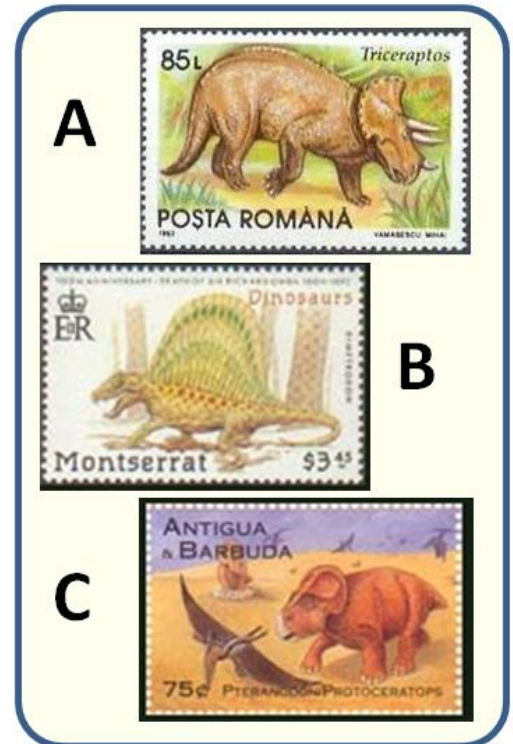
Let's learn more about all the birthstones in 2016. Not just the gems, but also the minerals behind the gems. Peridot and ruby and others are not mineral names. Who knows what mineral alexandrite is and where it can be collected in New York? Each month we'll highlight the birthstone of the month in the WCGMC News. Garnet is a great mineral to start with in January. Who has garnet as a birthstone?

## November Workshop News – Another Sphere Machine



**A.** Our president has built yet another sphere machine. This one is for really large orbs. **B.** The Ilion travertine continues to yield some stunning polished slabs. This one is 3" across. **C.** The "old" sphere machine was in action with a piece of rose quartz. **D.** Glenn explains to Bill how his new machine works. He is demonstrating how large a sphere he can make with his hands. We are all waiting to see the first Jupiter sphere.

## A Test of your Dinosaur Knowledge



Here are postage stamps issued by Romania, Montserrat, and Antigua & Barbuda. They are part of sets of dinosaur stamps issued by the respective countries. Each contains an egregious paleontology error. Can you find the mistake in each stamp? Turn to page 7 for the answers.

## A week in the Carolina Mts.

Have you ever considered attending the Eastern Federation of Mineralogy and Lapidary Society (EFMLS) Wildacres workshop in North Carolina? Now is the time to think about the pair of week long 2016 opportunities (May 9-15 and September 5-11) for learning and camaraderie with others who share our passion for the hobby.

Take classes, listen to expert speakers, join a field trip, and otherwise enjoy a peaceful week of lapidary fun at a fantastic retreat just off the Blue Ridge Parkway. Partially funded, the event will only cost you \$400/person for full room and board.

For details visit the [EFMLS Wildacres website](http://www.efmls.org/wildacres).



## World's Largest Diamond

It happened last month in Botswana, a land locked country in southern Africa. While processing kimberlite rock for diamonds, the Lucara Diamond Corp. struck gold, well not literally. What they unearthed was the largest gem quality diamond found in more than 100 years anywhere in the world.



**Is it real?** This may look like a misformed garden variety ice cube or maybe a piece of quartz from a pegmatite, but it is not. It is a 1,111 carat diamond discovered on November 16<sup>th</sup>, 2015 at the Karowe Mine in central Botswana. Measuring 65mm x 56mm x 40mm, the cabinet size mineral specimen is purported to be the second largest gem diamond ever recovered.

It was actually fortuitous that this diamond was recovered whole. Kimberlite rock below the upper 10m of weathered surface is hard and it is routinely crushed to permit recovery of diamonds via density separation and hand screening. Had this diamond undergone such treatment a whole lot of smaller diamonds would have been recovered instead of this behemoth.

However, the rock containing this diamond was subjected to screening by a new type of X-ray technology called XRT sorting, which can measure the atomic density regardless of surface interference. Translation: the dense carbon mineral could be detected inside the rock and saved from the crusher.



The Karowe kimberlite pipe was discovered in 1969, but was not further pursued until 2000 when drilling indicated the volcanic pipe of diamond-bearing kimberlite was comprised of three lobes and was considerably larger than previously estimated.

Finally, in 2008 Botswana issued a development license to Lucara Diamond Corp., a Canadian company headquartered in Vancouver. The first diamond was extracted in 2011 and mining has proceeded at a rapid pace since. Lucara reports a production rate of about 400,000 carats/year. At that rate this single diamond represents about one day's worth of production.

Lucara has not yet decided when or how to sell the stone, and it is not clear whether it is of more value uncut or fully faceted. Interestingly, the stone is too large for Lucara's onsite scanner so it will very likely need to go to Antwerp, Belgium to be properly accessed for cutting to maximize value from the stone.



Despite this uncertainty stock in the small Canadian mining company jumped 32% when the find was first announced on Nov. 19<sup>th</sup>.

*WCGMC is investigating the feasibility of purchasing this stone. If we are successful we will display the uncut gem next June at GEMFEST in Canandaigua. Subsequent to that it would be our plan to facet the stone in our club workshop. If our*

*acquisition efforts fail we can display these stamps instead.*

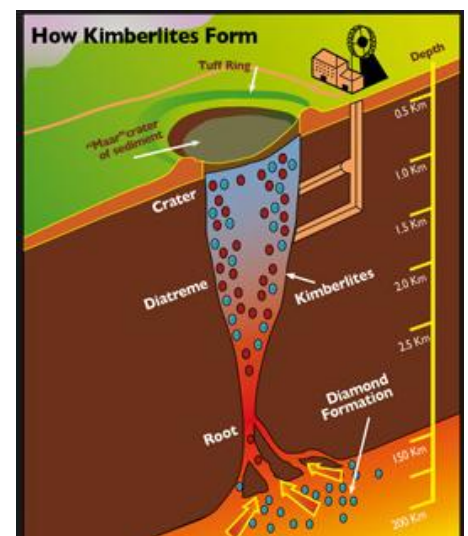


Botswana has issued a number of stamps commemorating its diamond industry. Included is a set in 2001 where the stamp itself is shaped as a cut stone.

## How do Diamonds Form?

Diamonds require extremely high temperature and pressure, and significant time to form. For this reason most of the earth's diamonds grow 140-170 kilometers (over 90 miles) beneath stable continental regions. Temperatures of greater than 2000°F are also required.

But formation is not enough for us to enjoy their brilliance as no one has figured out a way to access the rock at those depths. Magmatic processes capable of carrying fragments of the mantle rock from those depths to the surface are also required. Such volcanic events (called kimberlite eruptions) are rare even in geologic time and none have occurred since man has been around to observe geologic processes.



Kimberlites carry diamonds from their source at 140-170 kilometers.



# SITE OF THE MONTH

## Indian Creek

by Fred Haynes



There are many well known fossil collecting sites in the creeks and gullies draining into the Finger Lakes (places like Kashong Gully, Deep Run, and Portland Point to name a few). But for every well documented site there are a dozen lesser known locales where drainages into the Finger Lakes expose the fossil rich strata of the 385 million year old Middle Devonian Hamilton Group. Indian Creek, near Willard on the eastern side of Seneca Lake, is one such location.

Upon entering Indian creek off of East Lake Road just north of the hamlet of Willard, one immediately encounters a unit with large irregular concretions exposed in the bedrock. To an untrained eye some might even be confused with dinosaur bones. One land owner that Stephen Mayer and I visited during an October excursion was absolutely convinced of this and had even built a nice wooden stand to hold his prize "bone".

Given that the Menteth limestone is exposed at the lakefront in this region, one would suspect that these concretions and the entire stratigraphic section in Indian Creek would expose the overlying Kashong and Windom Shale members of the Moscow Formation. However, it is not that simple. There is apparently some faulting in the area which may lead to repeat section in the creek bed. Jacobi (2002) mapped major cross-faults in the creek and Luther's 1907 Seneca Lake bedrock geology map shows older rock than Menteth extending up Indian Creek.

Furthermore Gordon Baird (pers. comm.) recalled a repeated Menteth unit somewhere up Indian Creek.



Indian Creek in the fall: Can you spot Stephen Mayer in perfect paleontology posture?

Even armed with all this wonderful input, Stephen and I could not convince ourselves that we were not in a straight forward Kashong shale section as we waded upstream. Perhaps it was all the fallen leaves that covered the pertinent geology, but more than likely our failure was that we had our eyes glued to the shales looking for fossils. While we did not get leave with a comfortable understanding of the stratigraphy we did leave with some fossils.



Traversing the Kashong shale, we found a few trilobite pieces, here a pygidium, and lots of *Tropidoleptus* brachiopods like the one hiding behind George Washington's head.

About 1500' from Lake Road and at a major fork in the creek we encountered our first bona fide

fossil bed. Multiple species of brachiopods including *Spinocyrtia granulosa*, *Mucrospirifer mucronatus*, *Rhipidomella* sp., and the ubiquitous *Tropidoleptus carinatus* were waiting to be collected, but my day was made finding three perfectly symmetric and complete *Pleurodictyum americanum*. You may recall from an [earlier newsletter](#) that "pleuros" are my favorite fossil and this was a new locality for me to boot.



A *Pleurodictyum americanum* as encountered in the creek bed. Note the *Tropidoleptus* in the lower middle. They were truly everywhere.



*Pleurodictyum americanum* are tabulate corals noted for their polygonal corallites. The three I found in the Kashong shale of Indian Creek are also symmetric in overall shape.

Another interesting aspect of *Pleurodictyum* coral is that they appear to require a hard substrate on which to grow. Some grow on rocks, others on carbonate hardgrounds, but the



most common substrate seems to be another fossil (Brett and Cottrell, 1982).



I guess with all the *Tropidoleptus* brachiopods around, it should not be surprising to see one of the *Pleurodictyum* I found growing on the common brachiopod of the time. Can you see it on the base of the coral? Meanwhile the *Tropidoleptus* are literally a time a dozen.

Indian Creek splits into two major creeks about 1500' from the lake. We walked each fork a short distance, but had spent our energy for the day collecting fossils near the confluence. We will need to return next year and

walk up each to find ourselves stratigraphically. Perhaps we can find the phosphatic pebble bed at the top of the Kashong member near the base of the Windom. Moreover, maybe we will traverse the entire Windom and find the Tully limestone that caps the Moscow Formation. This could establish where we were collecting. Until then, knowing that we were in the Kashong shale member will have to suffice.



And last but certainly not least, I believe this brachiopod is an *Orthospirifer marcyi*. Regardless of genus, it is a fine pedicle valve specimen from a new locality.

#### References:

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

Haynes, F. M., 2014, [Pleurodictyum americanum](#), WCGMC News, Nov. 2014, p 2-3.

Jacobi, R.D., 2002, Basement Faults and seismicity in the Appalachian Basin of New York State, *Tectonophysics*, V. 53, p. 75-113.

Luther, D.D., 1907, Geology of the Geneva-Ovid Quadrangles, NYSM Bulletin 128.

*Indian Creek does not appear to be posted, but as with all creeks and off road regions along the Finger Lakes permission to enter should be sought before entering.*

### Answers to Dinosaur Stamp Quiz on Page 4

- Triceratops*, a Cretaceous age herbivore dinosaur, is misspelled on this 1993 Romanian stamp.
- This Monsterrat stamp was one of a four stamp set issued in 1988 to honor the 150<sup>th</sup> anniversary of the word dinosaur. However, the *dimetrodon* featured on one of the stamps was not a dinosaur. In fact, this mammal-like reptile lived in the Early Permian Period 40 million years before the first dinosaurs appeared in the Triassic Period.
- Although both of these pre-historic creatures featured on this 1995 stamp from Antigua & Barbuda lived in the Late Cretaceous Period they never shared the same desert. *Pteranodon* lived in North America from 85-80 million years ago while *Protoceratops* is a central Asian species that lived from 75-70 million years ago.



Warren was an avid mineral collector so it was not surprising that he was out collecting on the first day after the snow had melted in the Adirondacks. It was also not surprising that Warren was soon leaning out over a steep embankment reaching for a loose rock which appeared to have large scapolite crystals. Unfortunately he fell awkwardly and broke both legs.

Warren was beside himself with despair when he awoke from having his legs reset and cast. With tears on his face he cried to the doctor who had set both legs, "Why couldn't this wait and happen on my last day of collecting for the year". The compassionate doctor replied quietly, "It did."

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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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