



# Voice of the Dinosaur

Newsletter of the  
Kawartha Rock and Fossil Club

June 2013 ~ Volume 25 ~ Issue 6

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Member of the CCFMS

**LAST REGULAR MEETING**

May 14, 2013

The meeting was called to order by the President, Robert Montgomery. Minutes were approved as given. Committee reports were read and approved.

The program for the evening was presented by Bob Betcher who introduced us to the science of hydro-geology which deals with water below the surface of the ground. He illustrated his talk with interesting stories and visuals, mostly from his time in Manitoba.

The meeting was followed by one of Tom's silent auctions featuring various items from his own collection.

**NEXT MEETING**

Date - June 11, 2013

Place - Orientation Centre, Peterborough Zoo

Time - 7:00 pm

Agenda - Regular business meeting

Program - A presentation will be given by David Webster, P. Geo., Senior Conservation Geologist for the Ministry of Natural Resources.

Bring any fossils you might have from the Arkona area and any other fossils or minerals you might like identified or might be of interest to the members.

Kevin Kidd hopes to attend the meeting and has offered to identify fossils and to give estimates for fossil cleaning.

**Please note:** The next regular meeting after June's will be September 10. Visit the Club's Website regularly for news to members and field trip notices.

This will be the last Newsletter until September.

Have a good summer!

**THE FOSSIL CORNER**  
**2013 Fossil Collecting - Trip 2**  
By Kevin Kidd

Sunday, April 7

The time had come where I wanted to get back exploring the younger fossils of the province, so I headed to Arkona/Hungry Hollow with a couple of friends to look for 385 million year old Devonian fossils. In case you're wondering, the local Ordovician rock is about 65-75 million years older. To put that into perspective, the time difference between the local fossils and the fossils in SW Ontario is about the same as the difference between the last of the dinosaurs and now. I figured most of the snow had likely melted and the weeds weren't up yet, so this really is the best time to go. Another big plus about going this early in the year –NO BUGS (at least not the modern, living variety). One of the friends I drove down with is a paleontologist, and we met a friend of his at the site, also a paleontologist. How often does one get the chance to hunt with a pair of people who have both done extensive collecting (for the ROM) at the Burgess Shale site in B.C.?

We parked at the north pit and while the others immediately went off to look for *Greenops* trilobites, I was happy checking the Arkona and Hungry Hollow formations for small specimens. I also checked an area I'd never even noticed before –a creek about half way up Fossil Rd. and running into the Ausable River. I didn't find anything here except for some large trilo-bits in limestone, but there is quite a bit of Arkona formation exposed and it might be worth another look. Returning to the exposure by the gate, I met another collector whom I had been expecting. Lise lives locally and is just beginning to collect, so she welcomed any info I offered and was quite excited by the pieces I was finding and passing on to her. From this area, one piece I just had to keep for myself was a *Heteroschisma* blastoid. If you've been following my articles, you know this is the "ice-cream cone" blastoid that had eluded me for so long. Finally able to cross this one off my "must find" list, I walked around to the high banks to see how the others were faring. Unfortunately, there was a threat of rain, so my camera stayed in the car.

Before reaching the others, I had to pass the tallest exposure at the site where one can collect from the Arkona, Hungry Hollow and Widder formations with ease, as long as you don't mind climbing. While searching thru this material, I found my second blastoid, a very nice, fully inflated *Nucleocrinus* (Figure 1). After collecting a few more pieces – mostly less common brachiopods to upgrade pieces in my collection (Figure 2, Page 3), I joined the others who were busy splitting chunks of fallen Widder formation in their search for *Greenops*'. They were having some luck too, as a few complete ones were found (Figures 3 and 4, Page 3), along with vast amounts of pieces. I stayed with them for awhile, but had no luck, so I went over to the south pit (Figure 5, Page 3) with Lise.



Figure 1.  
The first blastoids of the season.  
*Heteroschisma canadensis* on the left  
and *Nucleocrinus elegans* on the right.



Figure 2.

A pair of *Eumetabolotoechia multicosstum* (top), *Pholidostrophia nacrea* with both valves intact (right), *Parazyga hirsuta* (bottom) and *Cryptonella attenuata* (left). The *Eumetabolotoechias* are most often found flattened in matrix. There is a layer of them in fragile shale at the contact between the Arkona and Hungry Hollow formations (right under the bottom limestone ledge).



Figure 3.



Figure 4.

Figures 3 and 4 are two of (I believe) five trilobite plates found.



Figure 5.  
South pit.

Since last fall, someone had put a load of dirt over the slope you walk down to get into the pit, thereby eliminating that area from collecting, but the rest seemed unchanged. I pointed out to Lise the best spot to find enrolled trilobites and while she didn't find one this day, she has since found her first one. What she did want to find was an ammonite (technically a goniatite ammonoid) but she wasn't sure what to look for. I found one right away and without touching it, called her over to "find" it for herself. She did, and was thrilled. Hers was the largest one found, but I found several tiny examples for myself (Figure 6, page 4) before I climbed up to once again search the Hungry Hollow formation. I didn't find much, but I was able to add two new species of brachiopods to my collection (Figure 7, page 4).





Figure 6.

Mostly juvenile *Tornoceras arkonense* goniatites, all pyritized, with a few *Sinuitina* as well. The *Sinuitina*s are small gastropods (snails) coiled in one plane rather than spiraled. Not uncommon, but this is average size, so not often collected.



Figure 7.

*Strophodonta plicata* (large) and *Charionella rostrata*.

The others eventually joined us in the pit, but soon wandered over to the banks on this side of the river for more trilobites. While not as plentiful over here, they still found a couple, as well as a rare pyllocarid. This is an animal looking similar to a shrimp with a D-shaped carapace and a segmented thorax and tegmen (tail). The example found has the tail, quite uncommon here, and the carapace which is very plain and likely wouldn't be recognized as anything unless you knew what to look for (Figure 8). (Editor's note: the *telson* is on the end of the tail.) This find was kind of ironic as another reason I wanted to get down to Arkona was that a collector in nearby London was selling a Silurian phyllocarid from the Eramosa formation in Wiarton, and I was planning to buy it. This one is quite well preserved and included both positive and negative halves. Since the site it was found at no longer allows collecting – how many times have we heard that – I am happy to have this piece in my collection (Figures 9 and 10, page 5).

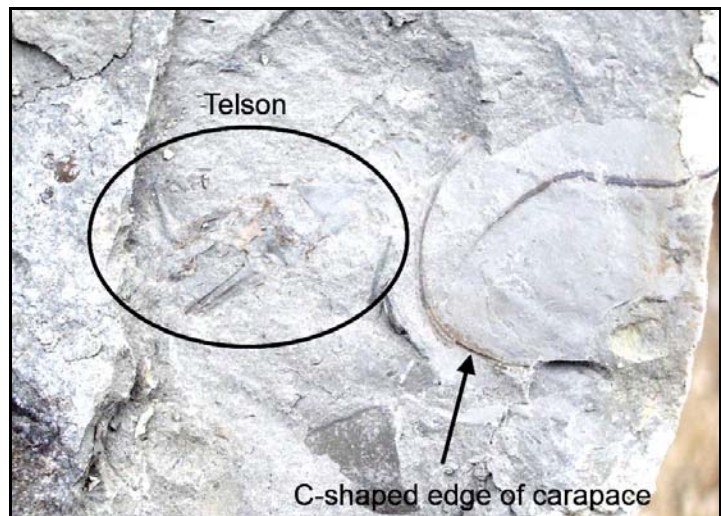


Figure 8.

Not my best pic ever, but I hope you can see it. The mating plate was also kept and will likely be glued back in position. Preparation will then remove all covering matrix leaving an intact (hopefully) fossil.



Figure 9.  
*Ceratiocaris papilio*, positive half. 96mm long.



Figure 10.  
Negative half of *Ceratiocaris papilio*.

### Saturday, April 13

I had afternoon plans, but Beth Kummling was leading a trip to my regular quarry with members from several clubs, so I made an appearance. There were people from as far away as Ottawa and Niagara and they were all eager to learn as most had never been here before. In my brief time there, I found an enrolled *Flexicalymene* trilobite in virtually perfect condition as well as a very large *Bumastoides* trilobite (Figure 11). Its pygidium (tail) has some damage, but this bug is a beast. Both were found in an area I'd never collected before – believe it or not – and this was the spot that was still snow covered on my last trip. I know of one other nice prone Flexi that was found on the



Figure 11.  
Enrolled *Flexicalymene* trilobite (left) and a *Bumastoides* trilobite (right).



Figure 12.  
Prone *Flexicalymene senaria*.  
Collected and photographed by Lothar Dahlke.

crush pile (Figure 12), but since I had to leave at noon, I don't know what other goodies found new homes.

Until next month – Happy Hunting!

PS: Shameless plug time. I'm going to try to be at the June meeting, so if anyone has any fossils they'd like to have prepped over the summer, please bring them and I'd be happy to have a look and give you an estimate. Even if you'd just like an ID, bring your piece(s) along.

Figures 1-11-- Photos by Kevin Kidd.  
Figure 12 --Photo by Lothar Dahlke.



# THE MINERAL CORNER

## Pyrite

Compiled by Sue Kehoe

### Nomenclature:

Pyrite is from the Greek phrase “pyrites lithos” which translates as “stone which strikes fire”, referring to the fact that a spark is produced when pyrite strikes iron. It is also known as fool’s gold due to its similarity to gold in colour. Alchemists in the Middle Ages believed that it had the ability to be turned into gold.



Figure 1.  
Pyrite in cubic form.

### Chemical Composition

Pyrite is  $\text{FeS}_2$  or  $\text{Fe}^{2+}\text{S}_2^{2-}$ . It is commonly referred to as iron disulphide but if you look at the diagram below of the atomic structure you will notice that the two sulphur atoms at the centre of the unit are bonded together (S-S) with the iron atoms more or less arranged around the perimeter, therefore the correct term for pyrite should be iron persulphide.

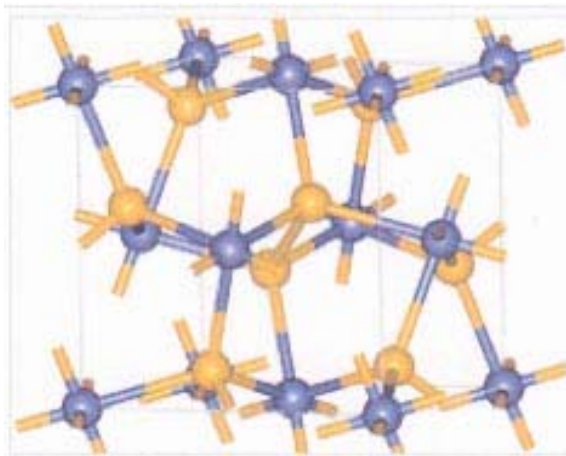


Figure 4.  
Crystal (atomic) structure of pyrite. In the center of the cell a  $\text{S}_2^{2-}$  pair is seen in yellow.

Pyrite can contain up to 17% Nickel in nickelian pyrite and 14% cobalt in cobaltian pyrite. Pyrite oxidizes into sulfates or limonite in ore veins.

The pyrite group consists of a number of similar minerals. The members vary depending upon various groupings in the literature but overall are:

Aurostibite	$\text{AuSb}_2$
Cattierite	$\text{CoS}_2$
Dzharkenite	$\text{FeSe}_2$
Erlichmanite	$\text{OsS}_2$
Fukuchilite	$\text{Cu}_3\text{FeS}_8$
Gaotaiite	$\text{Ir}_3\text{Te}_8$

Also included are Marcasite, Pyrrhotite, Greigite, Macinawite, Smythite, Ahavalite and Vaesite. Bravoite is a nickel-cobalt variety of pyrite with a 50% or greater substitution of  $\text{Ni}^{2+}$  for  $\text{Fe}^{2+}$  within pyrite. This is not yet a formally recognized mineral.

### Crystal Structure

Pyrite is basically cubic (isometric) in form. It also occurs in pyritohedrons which are pentagonal dodecahedrons with 12 faces, each one having five sides. It also occurs in octahedrons and can occur as single crystals, clusters of crystals or in massive form with a variety of shapes such as fibrous, radiate, mamillary, stalactitic and spherical (or botryoidal). Many specimens commonly demonstrate the feature of striations.

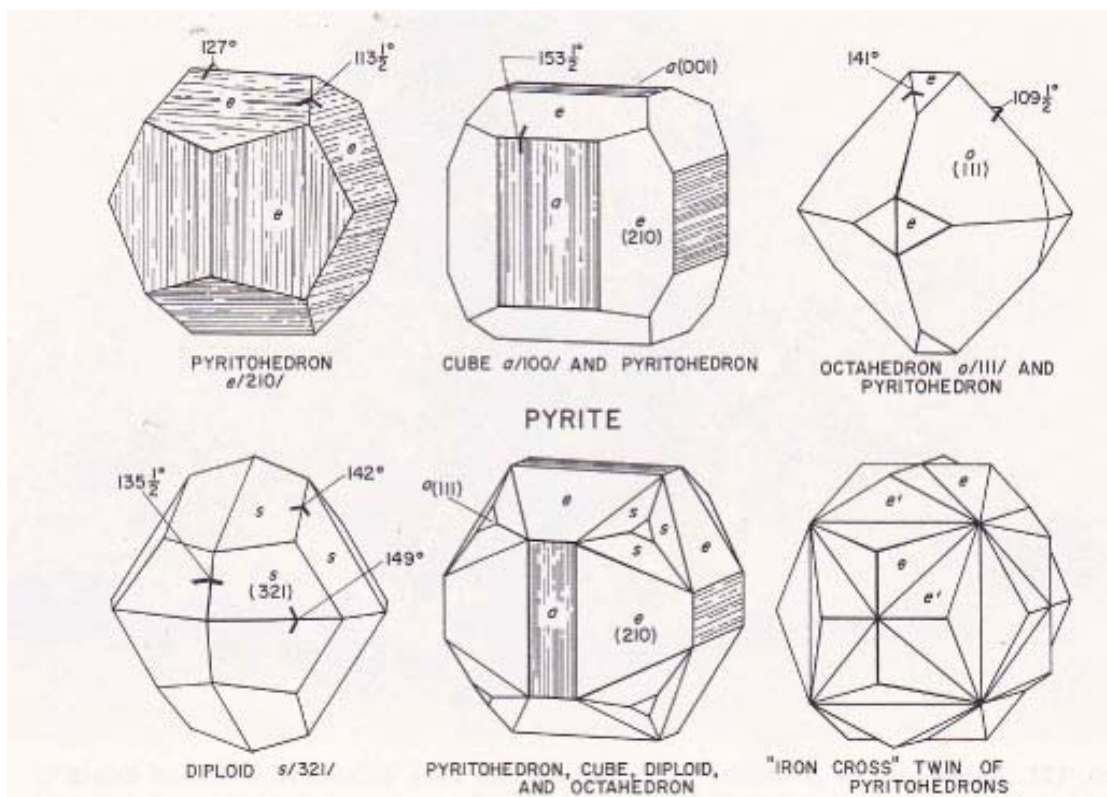


Figure 3.  
Crystal forms.

Twinning can occur with interpenetrating twins known as “iron cross” twins.

### Physical Characteristics

Tenacity:	Brittle
Fracture:	Conchoidal to uneven
Cleavage:	None or indistinct
Hardness:	6.0-6.5
Specific Gravity:	4.9-5.2
Transparency:	Opaque
Refractive Index:	None
Pleochroism:	None
Fluorescence:	None
Streak:	Greenish to brownish black
Lustre:	Metallic
Colour:	Pale brassy yellow
Other:	Non-radioactive, fuses at 2.5-3; magnetic after heating; insoluble in hydrochloric acid; decomposes into FeS (iron II sulphide) and sulphur at 550 degrees C.

### Occurrence

Pyrite is found in many geological environments including hydrothermal veins, contact metasomatic deposits (rocks chemically altered by hydrothermal fluids) and as an accessory mineral in many rock types including sedimentary rocks (particularly those that have formed in fine-grained mud deposits of stagnant water and low oxygen conditions). Sulfur-reducing bacteria promoted the development of pyrite crystals in the mud that were preserved when the mud changed to rock. As the mudrock eventually changed into slate over the millennia, pyrite could grow into larger crystals and sometimes is found in fossils where it has replaced shells and bones. Pyrite is also found in massive sulfur deposits and in both bituminous and lignite coal beds. Quite often pyrites in the coal are flattened with pressure into pyrite "suns".

Pyrite is associated with gold, lead, zinc and copper. It can be distinguished from chalcopyrite and gold by its hardness (6 versus 3.5-4) and by its crystal form. Pyrite also associates with arsenic and may form arsenopyrite which is a silver white colour. Most pyrite contains a small amount of arsenic.

Pyrite is unstable in its natural setting, either being in a state of formation or decomposition into an iron oxide and sulfate. This decomposition can be enhanced in the presence of *Acidithiobacillus* bacteria and occurs more rapidly if pyrite occurs in small particles such as fine crystals or dust. Care needs to be taken in handling it in this state as sulfate +water = sulfuric acid so it is advised to wear gloves and wash hands after handling.

Pyrite dust and decomposition in a mine setting can be dangerous as the decomposition process is exothermic (produces heat) and has been responsible for causing spontaneous combustion in mine shafts. Sometimes shafts have to be sealed off to eliminate oxygen or the walls have to be sprayed with limestone dust. This process must be repeated as the pyrite continues to degrade. Building stone containing pyrite tends to deteriorate over time as the pyrite oxidizes and can affect the quality of dry wall and aggregates.



## Uses:

Historically pyrite has been used as a source of both iron and sulfur but is presently less frequently used due to the problems with the decomposition products and contaminants. Early black powder pistols were designed with a small iron wheel rotated against a piece of pyrite to create a spark and ignite the black powder and initiate the firing of a metal ball.

Pyrite has also been used to manufacture “copperas” (iron II sulfate). Iron pyrite was allowed to weather in heaps, then the acid runoff was boiled with iron to create iron sulfate. Sulfuric acid has been produced by this method since the 1500's. (Bet the environmentalists wouldn't like that!!) Commercially pyrite is used in the production of sulfur dioxide for use in the paper industry and the manufacture of sulfuric acid. It is also used as cathode material in non-rechargeable lithium batteries. In the 1900's it was used as a mineral detector in radio receivers. Presently, pyrite is being trialled experimentally for use in photovoltaic solar panels in combination with copper sulfide. It has been used to make jewellery, marked as “Marcasite” which of course is incorrect. However while it is quite attractive, it is not hard wearing due to its very brittle nature.

In terms of healing uses, pyrite was considered a magical stone in the middle ages, due to its ability to produce fire, and for its colour. It is reputed to be effective in dealing with lung infections and decreasing anxiety, strengthening for the liver, gallbladder and bowels, decreasing gastric secretions and relieving menstrual pain.

## References

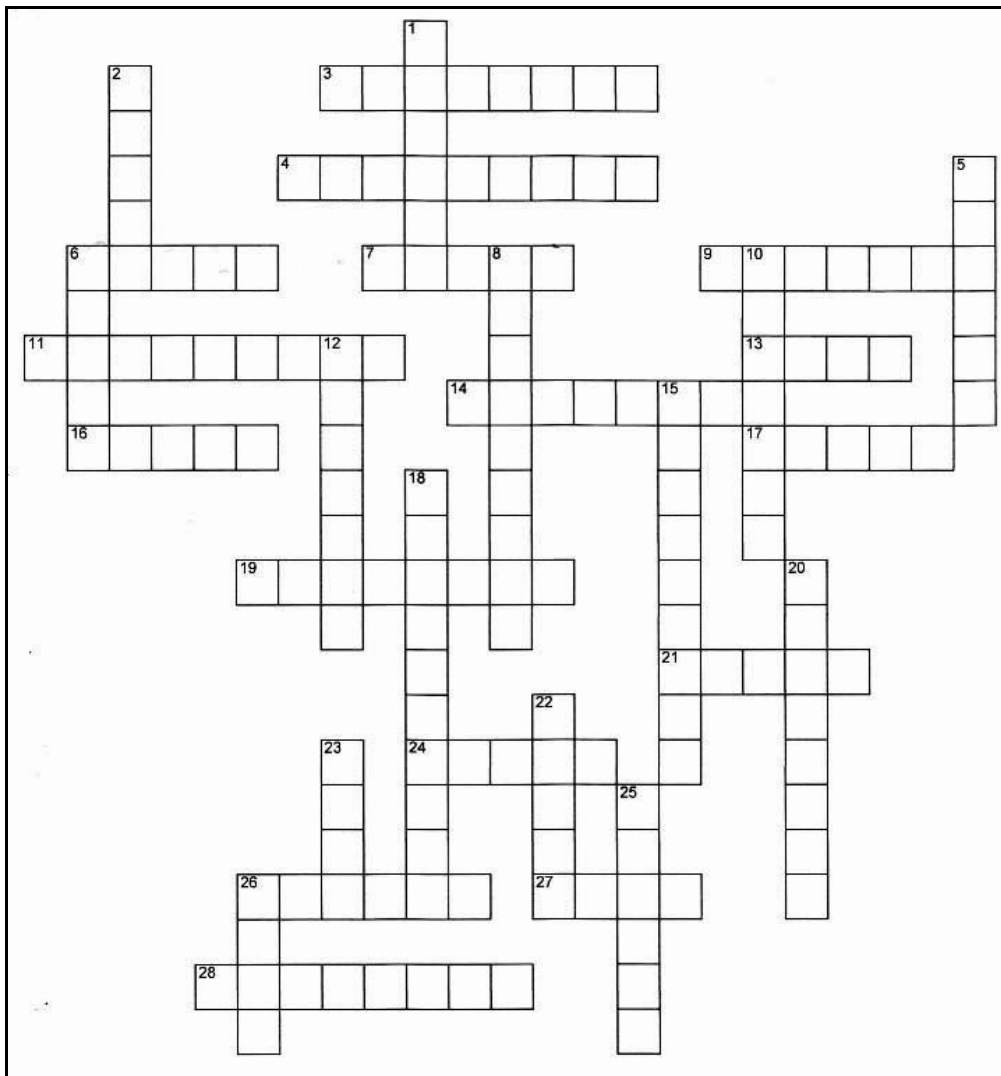
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*Gemstones of the World*, p.162; Walter Schumann, Stirling Publishing Co, New York.  
*Healing Crystals and Gemstones from Amethyst to Zircon*, pp.230-231; Dr. Flora Peschek Bohmer and Gisela Schreiber; Konecky and Konecky, Old Saybrook, CT, 2002.  
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[www.webmineral.com/data/Pyrite](http://www.webmineral.com/data/Pyrite)  
[www.mindat.org/Pyrite](http://www.mindat.org/Pyrite)  
[www.geology.com/minerals/pyrite](http://www.geology.com/minerals/pyrite)  
Figure 1 - photo, own collection.  
Figure 2 - atomic structure, Wikipedia as above.  
Figure 3 - crystal forms, Sinkankas as above.



## THE PUZZLE CORNER

Sue Kehoe suggested that it would be good to involve the members more. To this end she has submitted a crossword puzzle. It is from the Website called “Puzzlefast” ([www.puzzlefast.com](http://www.puzzlefast.com)) and is designed for teachers to develop puzzles for their students. Just supply the words and clues and the program puts it into crossword format. If you like the idea, let me know and we'll make crosswords a regular feature of the Newsletters.

Print this page.



**Across**

- 3. Found in lava flows
- 4. Lake deposits
- 6. Weight of a crystal
- 7. Crystal clear
- 9. Arsenic sulphide
- 11. Tree-like
- 13. Barely existed
- 14. Microcline is one
- 16. Like Geminis
- 17. Liquid time
- 19. Local gem
- 21. Bar
- 24. Multicoloured gem
- 26. Think of the Lone Ranger
- 27. Mine opening
- 28. Mountain building

**Down**

- 1. Metallic cube
- 2. Desert basin
- 5. Hard tetragonal crystal
- 6. Suitable for arrows
- 8. Out of this world
- 10. Colourful gem
- 12. From lava
- 15. Igneous mass
- 18. Magnesium silicate
- 20. A pyroxine
- 22. Molten rock
- 23. Think Australia
- 25. A mineral group
- 26. Agate

## FIELD TRIP CORNER

Info from Field Trip Co-Ordinator Ulrike Kullik

June 15-16 Arkona

So far there are 13 members signed up for the trip to Arkona.

### Directions

From Townsend Line turn north on Sylvan Road. From Sylvan Road left on to Hungry Hollow Road at the second intersection. (Hungry Hollow Road is a loop road with two intersections with Sylvan Road, turn to the left on the second (north) intersection of Sylvan and Hungry Hollow Roads).

Please park very close to the fence, do not block the road.

Because it is a long drive and people are coming from all directions there will be no meeting time beside Saturday later in the morning.

If I have a better time frame I will let you know.

Be aware you are not covered under the CCFMS policy before you sign the waiver.

Most useful tool is a flat screw driver for lifting flat plates, but bring any other tools you believe might be useful.

This is a Kids' friendly site and does not require regular gear (hard hats, fluorescent vests, etc.). However, safety glasses and gloves are recommended.

Any questions, please contact me:

705-778-3787

[ulrike.kullik@gmail.com](mailto:ulrike.kullik@gmail.com)

Since this is the last Newsletter until September, stay in touch with me and watch the Website for further field trips this summer.





## THE LIBRARY CORNER

Bev Fox

Over the past several months, we have been most fortunate in receiving several donations of books. Our thanks to the following members:

From Bob Smith (these are from a friend who took a course in geology):

- #IGC 001     24<sup>th</sup> I. G. Congress  
Precambrian Volcanism of the Noranda - Kirkland Lake - Timmins,  
Michipicoten, and Mamainse Point Areas, Quebec and Ontario
- #154        Ages of Rocks, Planets, and Stars by Henry Faul  
Covers the dating of rocks.
- #155        Geologic Time by Don L. Eicher  
The focus is on “not precisely what we know about geologic history, but  
*how we know it...*”.
- #156        The Surface of the Earth by Arthur L. Bloom  
Focus on how the surface of the Earth has achieved its present form.
- #157        Earth Resources by Brian J. Skinner  
Focus on “Study of the abundance and distribution of the Earth’s  
resources...”.
- #158        Physical Geology Laboratory Manual by W. K. Hamblin and J. D. Howard  
This would be good reading for someone new to geology.

From Phil Jones:

- #159        The Physiography of Southern Ontario, 2<sup>nd</sup> Ed. By L. J. Chapman and D. F.  
Putman. Hard cover. 1966  
This is something of a classic.

From Fred Johnson:

- #160        A Guide to the Mineral Deposits of Southeastern Ontario and  
Southwestern Quebec by John E. Udd
- #161        Petrology: The Study of Igneous, Sedimentary, Metamorphic Rocks by  
Loren A. Raymond
- #162        Principles of Geochemistry 2<sup>nd</sup> Ed. by Brian Mason. 1960
- #163        The Complete Illustrated Guide to Rocks of the World by John Farndon.  
2012  
Simplified geology with photos of sample rocks.
- #164        Invertebrate Palaeontology and Evolution 3<sup>rd</sup> Ed. by E. N. K. Clarkson

If you would like to borrow any of the above books or any others in the library, please contact me at: [kfox71@cogeco.ca](mailto:kfox71@cogeco.ca), or 705-742-6440.

I will soon be sending out the complete list of library holdings.

## THE EDITOR'S CORNER

Bev Fox

This is the last issue of the Newsletter until September. My thanks to Sue Kehoe for her articles on minerals over the last few months and for the crossword puzzle in this issue; and to Kevin Kidd for his, always, interesting and informative articles on fossils. The Newsletters would be dull without the input of these two members. My thanks, also, to my husband Ken, who patiently proofreads every issue and catches my mistakes.

As always, I am looking for more members to participate in the Newsletters. If you are interested in some aspect of geology, rockhounding, lapidary arts, etc. and would like to submit an article, or read such an article in the Newsletters, let me know.

Until September, have a good summer and collect lots of samples so you can take part in the Best Collected Fossil/Mineral for 2013 Competitions at the 2014 Show. Or you might consider having a display at the Show of some fossils or minerals that you have collected.

While we are on the topic of the 2014 Show, Tom Jenkins is once again collecting clean, clear milk bags for use in the Kids' auctions. He thanks all for your great response to his request for bags for the last Show and knows you will be just as helpful for the 2014 Show.

### COMING EVENTS - 2013

- Jun 8            Geo Venture - NPGS 47<sup>th</sup> Annual Gem, Mineral & Fossil Show and Sale  
10:00 am-5:00 pm  
Mountainview United Church, 150 Glendale Ave., St. Catharines, ON  
Fabulous vendors, member displays, flint knapping and jewellery demonstrations, gems, minerals, jewellery.  
[npgsshow@bell.net](mailto:npgsshow@bell.net), [www.ccfms.ca/clubs/npgs](http://www.ccfms.ca/clubs/npgs), or 905-687-6503
- Thanks to the CCFMS Website for the following info:
- Jun 15-16        Gneiss Guy Minerals and Fossils Warehouse Sale  
Sat 10:00-5:00; Sun 10:00-5:00. Open to the Public.  
Come check out our many specials on opening day.  
BBQ each day from 12:00 noon – 1:30 pm.  
820 Gartshore St. Unit 19, Fergus, On N1M 2W8 (located only 1 hour from Toronto).  
Contact: Ken Dardano at 519-831-3093 or [gneissguy@bell.net](mailto:gneissguy@bell.net)
- June 19           Mineral Identification Night at the ROM  
4:00 pm to 5:30 pm.  
Use President's Choice Entrance on Queen's Park, doors nearest Museum subway stop.  
Visit their website at:  
<http://www.rom.on.ca/en/activities-programs/events-calendar/rock-gem-mineral-fossil-and-meteorite-identification-clinic>  
or contact at 416-586-5816; [naturalhistory@rom.on.ca](mailto:naturalhistory@rom.on.ca)
- July 13-21       Field Trip (Walker Mineralogical Club) – New York State.  
We have a full slate of localities and will have local guides to help us find the best specimens. Detailed itinerary will be available shortly.  
Admission is \$5 per person per day. You must be a CCFMS club member to participate and have proof.  
To register contact Bruce Fulcher at; [bruce@novitherm.com](mailto:bruce@novitherm.com)
- July 14           Prince Edward County Rock, Gem & Mineral Show  
Rekindle the rockhound in you and discover nature's treasures at our second annual event.  
Showcasing gem and mineral, lapidary and jewellery exhibitors in the historic Crystal Palace - 375 Main Street, Picton, ON.  
PEC Fairgrounds - Crystal Palace, 375 Main Street, Picton, ON  
10:00 am to 5:00 pm  
Admission: \$3.00, 12 and under free.  
Contact: 613-476-5510 or email John Zandarin at: [howhardcanitbe@sympatico.ca](mailto:howhardcanitbe@sympatico.ca)
- July 19-21       31th Annual Sudbury Gem and Mineral Show  
"Northern Ontario's Largest Gem, Mineral, Fossil, Bead and Rock Craft Show and Sale"  
Fri. 5:00 pm-9:00 pm, Sat. 10:00 am-6:00pm, Sun. 10:00 am-5:00 pm.  
Location :Carmichael Arena, 1298 Bancroft Drive across from Minnow

Lake; 1 km. south of the Kingsway (Hwy. 17 East).  
Admission: Adults \$5.00, Seniors (60+) \$3.00, Kids 6-12 \$1.00, Kids under 5 years free with adult.

Free parking.

Features: Dealers; displays; demonstrations; door prizes (including amethyst geode grand door prize); silent auctions; kid's activities; mineral identification; prospectors' and metal detecting displays; video theatre; BBQ; free handouts and literature.

Outside dealers/swap area Sat. 11:00 am-4:00 pm.

Field trip Sun. at noon.

Contact: Ed Debicki (705) 522-5140, E-mail: [ed.debicki@sympatico.ca](mailto:ed.debicki@sympatico.ca)

Website: <http://www.ccfms.ca/clubs/Sudbury/show.htm>

July 28

Bancroft Gem & Mineral Club 17th Annual Gem & Mineral Show

Sunday 10:00 am-4:00 pm.

Bancroft Legion Hall, Station St., Bancroft, ON

Features: 25 dealers plus silent and live auctions.

Admission: \$2.00/adult, children & students (18 yrs & under) free.

Contact: Frank Melanson at 613-332-1032

Aug 1-4

50th Annual Rockhound Gemboree

"Canada's largest gem & mineral show"

North Hastings Community Centre, 103 Newkirk Blvd, Bancroft, ON and the Bancroft Curling Club at 63 Newkirk Blvd.

For more information, contact the Bancroft & District Chamber of Commerce, Tourism & Informaton Centre in Bancroft. 1-888-443-9999

Our website is [www.bancroftdistrict.com](http://www.bancroftdistrict.com)

Aug 17

Rockhound Family Day at Robert Hall Originals. A fun family event!

10:00 am-4:00 pm

138 Sugar Maple Road, St. George, ON

Admission: Free

Kids Fossil Dig. Rock Buddy Craft For kids – Free

Mineral Identification. Bring A Specimen! Explore Outdoor Rock Piles!

Giant Silent Auction - Bring your items to include in the auction!

Bidding begins at 11:00 am & 1:00 pm (\*10%commission).

Free Rock Swap – Bring a table and set up you treasures. Contact us to reserve your free rock swap space.

Contact: [inquiry@roberthalloriginals.com](mailto:inquiry@roberthalloriginals.com), (519) 448-1236 or 1-800-360-2813

Website: <http://www.roberthalloriginals.com>

Aug 21

Mineral Identification Night at the ROM

4:00 pm to 5:30 pm.

Use President's Choice Entrance on Queen's Park, doors nearest Museum subway stop.

Visit their website at:

<http://www.rom.on.ca/en/activities-programs/events-calendar/rock-gem-mineral-fossil-and-meteorite-identification-clinic>, or contact at:

416-586-5816; [naturalhistory@rom.on.ca](mailto:naturalhistory@rom.on.ca)

??-??

Field Trip (Walker Mineralogical Club) – Location and exact date to be determined.

Admission is \$5.00 per person per day. You must be a CCFMS club member to participate and have proof.

For details and to register, contact Bruce Fulcher at: [bruce@novitherm.com](mailto:bruce@novitherm.com)

Sep 7-9

Field Trip (Walker Mineralogical Club) – Cobalt area, Ontario.

We will be looking for Silver, Cobaltite, Skutterudite, Nickeline, and many others.

Admission is \$5.00 per person per day. You must be a CCFMS club member to participate and have proof.

To register, contact Bruce Fulcher at: [bruce@novitherm.com](mailto:bruce@novitherm.com)

For any who might be headed to Nova Scotia this summer:

Aug 16-18

Nova Scotia Gem and Mineral Show

Lion's Arena, 2163 Western Ave., Parrsboro, N. S.

Jewellery, gems, minerals, foreign fossils, beads & supplies, geological walks, talks, demonstrations, workshops.

More info: The Fundy Geological Museum, 1-866-856-3466

Website: <http://museum.gov.ns.ca/fgm>