



Voice of the Dinosaur

Newsletter of the Kawartha Rock and Fossil Club

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LAST MEETING JUNE 14, 2011

The meeting began with the regular business meeting and committee reports given as applicable.

1. Treasurer's Report - Reports were accepted as given. Brenda Beckett is retiring as our Treasurer in Jan. 2012 so other members are encouraged to volunteer for this important position.

The books were audited by Tom Jenkins and Fred Hall and all was found to be in good order. They congratulated Brenda on keeping a complete and easily understood record of Club finances

2. Field Trips - Planning is underway for both fossil and mineral trips.
3. Other Business - Thanks will be extended to the lady who donated the Arizona material.

Feature Presentation Our speaker for the evening was Bob Beckett whose topic was "Collecting Techniques/Tools & Specimen Care in the Field." With the assistance of a visual presentation, he covered different types of collecting, i.e. in quarries, trenches, road cuts, etc.; and also covered how to care for specimens on the trip home.

The meeting finished with a discussion about the Barite mineral and Bivalve fossil specimens our members brought in.

A silent auction was held during the coffee break with items of some of the Arizona material as shown at the last meeting.

Cut slabs

Cutting material.

Tumbling rock (agate).

Specimens with small crystals of quartz, calcite, etc (some are reverse-sceptre quartz).

Also items listed in the "For Sale" section in this Newsletter were available.

NEXT MEETING - Sept 13, 2011

Place - Orientation Centre, Peterborough Zoo

Time - 7:00 pm.

Agenda - Regular business meeting followed by the presentation.

The fossil of the evening will be coral and the mineral will be the mica group. Members are encouraged to bring some of their favourite and unusual mica samples and corals to show the group.

Feature Presentation - George Thompson will present his much anticipated program on "Cleaning Minerals."

Members are invited to bring in their own mineral cleaning challenges for George's expert advice.

A silent auction of fossils from Lakefield, Colborne, etc. will be held. Items are from Ken Meikle, Gabriel Kucik, Fred Hall and Tom Jenkins. Not all items are well identified.

THE FIELD TRIP CORNER

Fossil Collecting Trips – Part 1 By Kevin Kidd

May 28/2011 Lakefield, Ontario

The day started off foggy and overcast, but 11 members braved the elements to try their hands at fossil collecting. We met at the zoo and caravanned the few minutes north to Lakefield, specifically, to the new speed-skating oval. We were to meet our contact at the gate at 9:00 am. We arrived about 10 minutes early, and stood around gabbing. 9:00 am came and went with nobody meeting us, and about 10 after, Ulli Kullik's grandson, Eric Cunningham finally looked at the gate to find it unlocked. We hung our heads in shame for not looking at that sooner, but proceeded to drive in to the collecting site.



The Group

When I first heard that there was a skating oval under construction, I assumed it was an arena, and we'd be looking at rock dug up from the foundation. In fact, the oval is just that – an oval. It's an outdoor facility, and the rock we'd be searching was taken from one end of the oval and piled up at the other to make a level surface (Fig. 1 & 2).



Figure 1



Figure 2

With so many collectors in such a relatively small area, I figured we'd be done in no time, but Lakefield is a classic collecting locality that has been pretty much off limits for years. Any chance to go there should be taken. The area is Ordovician aged, Verulam formation approximately 450 million years old.

The collecting started off slowly, bits and pieces here and there, but nothing great. My first find was a graptolite. Not rare, but I've given up hope of finding one of any considerable size, so I'll take what I can get from now on. There was a lot of calcite, which kept the mineral people busy, but I wanted a trilobite. When Peter Lee announced he had found one, I asked "*Flexicalymene* or *Isotelus*?", by far the two most common species in the area. When he replied "Neither.", my blood started flowing. I went to where he was to find he had a prone example of *Calyptaulax callicephalus* (Fig 3). It isn't perfect, but complete specimens of that type are rare.



Figure 3
Calyptaulax callicephalus

I was re-energized and not long after that, I got lucky. I found a complete, enrolled *Flexicalymene* in matrix (Fig 4), which should prep out nicely. Not too far from there, I found a prone example of the same species (Fig 5), plus a nice bivalve to boot.



Figure 4
Enrolled *Flexicalymene*



Figure 5
Flexicalymene with bivalve

Eric, hunting in the same area, managed to find a partial cystoid, *Pleurocystites squamosus*, the only one found for the day. They aren't all that common, and I hadn't seen any evidence of them being there before he showed me his. Gabe Kucic had a partial *Isotelus* trilobite as well, but beyond that, I'm not sure what else was found. I did notice a large section of a cephalopod on a rock, which Peter thought about trying to remove until he remembered his wife's warning about bringing more rocks home. It's still there if anyone is interested (Fig 6).

By 12 o'clock, we were heading back to our cars when the skies opened up and anyone who hadn't already left, got drenched. Time to head home, dry off and get ready for tomorrow's hunt at Gamebridge.



Figure 6
Cephalopod

May 29/2011 Gamebridge, Ontario

The 8 collectors who were willing to make the trip to Gamebridge were met with similar weather to the previous day. We met at the prearranged spot (I love it when everyone is on time) and headed to the quarry as a group.



Quarry overview



Quarry levels



Quarry levels

The quarry is again Ordovician in age and mostly Verulam formation, with maybe a bit of Bobcaygeon formation near the bottom. The layers exposed at Lakefield are also here, near the top. Being an operating quarry, there was a lot more area to collect in and I explained that the very bottom pit was where the new blasts were going on. A few of us headed down there first, with the rest of the group following shortly after. There had been a recent blast, but for all the rain we had in May, it was still too dusty to see anything exposed. After seeing some saw-cut marks, I knew someone else had been here earlier. I know who it was, and he doesn't miss much, so I walked around the base of the wall intending to go back up to the main level. I passed Eric who was poking around and picking loose shale off some blocks. I was still close enough to him to hear him say "I found a trilobite". I'm not sure which species it was, although it wasn't common, and I left my camera in the truck due to weather, so no photo. I left the group picking away down there and headed one level up. Ulli was going to come with me until she realized that to get where I was going meant climbing down a gravel pile. Not unsafe by any means, but not like walking on solid ground either

I started looking and it wasn't too long until I found my first trilobite, *Thaleops laurentiana* (Fig 7). It needs to be glued and prepped, but should come out nice. As this species is not a common find, I was happy.

My next find, however made my day. It was, and still is, a stumper. I didn't even know what phylum it belonged to, let alone what species. It has the shape of a mollusk, but with plates like an echinoderm's. After consulting with friends specializing in echinoderms from this area, as well as the ROM, the best guess is that it's a paracrinoïd, related to *Amygdalocystites*, and likely an undescribed species. Is that cool or what! (Fig. 8-10)



Figure 7
Thaleops laurentiana



Figure 8
Paracrinoïd top view



Figure 9
Paracrinoïd side view



Figure 10
Paracrinoïd base view

As I was still in this spot, another collector yelled over to me that he had to leave. This was expected, as he had told me earlier. What I didn't expect was when he said everyone else had left as well. I hoped everything was alright, as it seemed like a long drive to collect for under three hours. Because of this early departure, I didn't know what anyone else found. I was still there, and not ready to leave, so on with the hunt.

The best place in the quarry to find trilobites is the old crush pile (Fig 11). People laugh when I say that, but it's true. Enrolled trilobites seem to survive the crusher and pop out of the pile every year. Conditions have to be just right to walk on the pile. If it's too dry, it's like walking on concrete. It's steep, and you'd have to be a fool to try if you can't get any traction. Too wet and you sink into it. Lots of traction, but a lot more effort to walk around. After all the rain we had in May, it was wet and mushy, but I still decided to give it a try. As I was climbing up the pile, the sun finally made an appearance. As nice as it was to finally see it, I wish it had waited a bit longer. Being already damp from a morning of drizzle, wearing dark jeans and the pile being full of water, once the sun started doing its thing, it quickly became a sauna up there. I did a few laps without much luck, and with my energy draining rapidly, I decided enough was enough. I would walk down the ramp at the end of the pile and call it a day. On the ramp, there were a few gullies and I decided to walk down one of these to see if anything had eroded out over the winter/spring. Bingo! In the side of one of these gullies, I saw the thorax of an enrolled trilobite. Wanting to get an "in situ" photo, I marked the spot and went to the truck for my camera. Making my way back to my find, I walked up the opposite side of the ramp. In a gully on that side I found not one but two more trilobites – one prone and one semi-enrolled. All three were *Flexicalymene senaria*. I retrieved the original one from the ramp, did a quick group shot (Fig. 12), packed up my gear and left.



Figure 11
Old crush pile



Figure 12
"Family reunion" of
Flexicalymene senaria

Two great days, half a dozen trilobites, and great memories.

Next month – hunting at Arkona

MEMBERS' CORNER

Keep an Eye on Your Tri...
Trilobite and other fossil collecting tips by Martin Legemaate)

I guess I can be considered a seasoned fossil collector now but I had much to learn earlier on. One time I was walking along the Georgian Bay shore near Thornbury because I had heard it was a great fossil trilobite location. I found many trilobite bits and pieces but with no success of finding a whole one. While walking I spotted a rock with a trilobite middle section (Thorax) in it along with the tail (Pygidium) but the head (Cephalon) was missing. I hesitantly picked it up and put it in my back pack. At home I was washing that sample when it popped out of the matrix on to the ground. I picked it up and flipped it around only to see two eyes staring back at me. It was a complete trilobite but it is what they call a rolled up or in this case a folded up trilobite because the head was folded over to the other side. Apparently trilobites rolled up when frightened just like their land cousins the pill bugs or roly pollies you see today. Now I am trying to think back, how many times I may have left a seemingly partial trilobite behind and it was actually rolled up!

Lessons learned:

- 1) When in doubt, bag your specimen and examine it later.
- 2) Collect unknown markings and fossils and study and search for them in books. The Royal Ontario Museum (ROM) is a great help too. The markings may turn out to be fabulous pseudo-fossils like

burrows or track marks. New fossil species are still being discovered in Ontario and who knows you could have it named after you!

3) Collecting in shallow creek beds near bedrock can be very rewarding. The eroding action on rock can reveal some amazing fossils where they normally would be obscured.

4) This one you already know otherwise you wouldn't be reading this. Get into a local rock club. You can learn a lot from other collectors about fossil and mineral locations and exchange information from others who have been in the field.

This folded trilobite (Fig. 1 and 2) actually gained some fame by being displayed at a local university¹ for a few years and it was even featured on a recent geology DVD².



Figure 1
Pseudogygites latimarginatus
Front (Cephalon)



Figure 2
Pseudogygites latimarginatus
Back (Thorax and Pygidium)

So remember, keep your eye on your tri... Your fossil may just become famous.

Also submitted to the NPGS newsletter. Thanks to David Rudkin at the R.O.M. for getting me started in fossil collecting.

Footnotes: 1. Redeemer University, Ancaster, ON 2. "Darwin on the Rocks"

THE FOSSIL CORNER

CORAL

Quick description by Bev Fox

Corals belong to the Phylum Cnidaria (Greek "cnidos" stinging nettle) which contains over 9,000 species of animals found exclusively in aquatic and mostly marine environments. These include box jellies, corals, hydrozoans, jellyfish, sea anemones and sea pens. Their common feature is *cnidocytes* or *neumatocysts*, specialized cells on the tip of tentacles that sting prey. There are two basic body forms: swimming medusae (resemble jellyfish) and sessile polyps, which include corals.

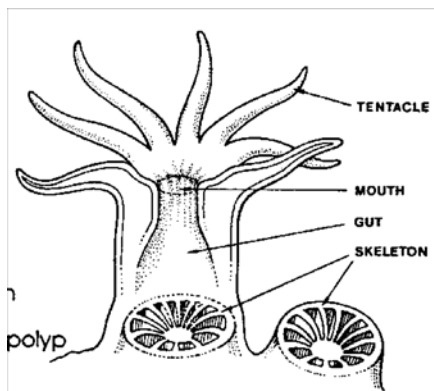


Figure 1
Anatomy of a coral polyp

The Phylum consists of four groups, the Anthozoa being the one containing corals. Looking at corals from a fossil perspective, molecular evidence suggests the Anthozoa are the earliest group to branch from the Phylum. However, fossil evidence for corals is sketchy until the Ordovician period, about 450 Ma (million years ago), when tabulate corals (so named for their horizontal internal partitions called *tabulae*) often formed branching masses consisting of many coral polyps beside rugose or horn corals (named for their resemblance to horns). Both types continued into the Silurian Period, but about the middle of the Silurian, (approximately 429 Ma) tabulate numbers began to decline and they became extinct at the end of the Permian Period, about 245 million years ago. The rugose corals became dominant by the middle of the Silurian period, but became extinct in the late Permian period.

Scleractinian (hard rayed) corals first appeared during the Middle Triassic (approximately 221 Ma) in small numbers and became common in the Jurassic with many species living today. Since their pattern of septa (see "skeleton" in Fig. 1) is six-rayed, they are not considered closely related to the tabulate and rugose corals. Septa are the vertical blades that sit inside the corallite cup or indentation which house the living polyp in corals. These blades can be very distinctive and have been used to differentiate between genera (Genus).

Figure 1 from <http://www.usm.edu/marineeducation/old/coralreef/03.pdf>

THE MINERAL CORNER

The Mica Group

Quick description by Ken Fox

The mica group or family is made up of four members:

Muscovite $(K,Na)Al_2(OH)_2(AlSi_3O_{10})$

Biotite $K(Mg,Fe)_3(OH)_2(AlSi_3O_{10})$

Phlogopite $KMg_3(OH)_2(AlSi_3O_{10})$

Lepidolite $KLi_2(OH,F)_2(AlSi_4O_{10})$

Note the term in brackets at the end, $(AlSi_3O_{10})$ or $(AlSi_4O_{10})$. This is a silicate group and in the molecule they are linked together to form a sheet which has very strong chemical bonds within the sheet but very weak bonds between sheets, thus giving the characteristic very easy basal cleavage for which mica is well known. The sodium, potassium, magnesium, iron and lithium atoms attached to the silicate groups give the various properties such as hardness, colour, density, melting point etc. which differentiate one mica from another.

Properties:

Muscovite

Transparent or translucent in thin sheets, easily cleaved, hardness $2\frac{1}{2}$, streak colourless, may be rich brown, pale yellowish, greenish, yellow-green, reddish-brown, infusible.

Biotite

Dark transparent in very thin sheets, easily cleaved, hardness $2\frac{1}{2}$, streak colourless, usually black, or very dark green, infusible.

Phlogopite

Similar to biotite except that the colour is brown, red-brown, yellow-brown with a pearly lustre, infusible

Lepidolite

Transparent or translucent in thin sheets, easily cleaved, hardness $2\frac{1}{2}$, streak colourless, usually lilac to rose coloured, pearly lustre, infusible. Usually occurs in scaly aggregates.

MARMORATON MINE TO CLOSE

The old Marmoraton mine is to be used as a pumped storage reservoir for power generation. The scheme is for the old iron mine pit to be filled with water which will then be pumped up at an estimated price of one or two cents/kilowatt hour, then released to run downhill and generate power to be sold at 10 or 15 cents/kilowatt hour. Northland Power, who is behind the scheme, has decided that since ON is bulking up its power grid with more sources of fluctuating wind and solar projects, the Marmora project could be turned up and down at will to compensate for natural variations in those sources of generation.

The old mine has been a favourite area for collecting for years and has yielded some excellent material. We can only hope the generation scheme works well enough that rockhounds will not begrudge the loss of an excellent collecting site.

FOR SALE

The Club still has the following items for sale:

1 used medium tumbler: Presto-Gem with about ½ lb. each 80/320/600 grit and ¾ lb. alumina polish, and manual. Runs great.
\$40.00

Sanding discs: qty 2 Covington 10" discs - fine and course and 1 extra paper disc.
Like new condition. \$25.00 for all.

1 Covington 10" Grinding Wheel in very good condition.
\$10.00

Contact Tom Jenkins if you are interested in any or all of these items. Phone: 705-745-1189 or
Email: tomjenkins@sympatico.ca

EMAIL ADDRESS CHANGE

Please note that there is a change to our President's email address; it is now:

mark.stanley@bellnet.ca

The change involved adding a period between "mark" and "stanley".

ADDITION TO THE LIBRARY

Morley Overholt has graciously donated his father's copy of *Manual of Mineralogy* by Edward S. Dana to the Club Library. This is the 15th Edition entirely revised and rewritten by Cornelius S. Hurlbut, Jr. We thank Morley for his gracious gift. This is a classic! Please add it to your Library List as No. 152.

THE EDITOR'S CORNER

Thanks to Kevin Kidd for the Field Trip Report on the fossil gathering trips to the Lakefield speed skating arena and to the Gamebridge Quarry near Brechin, ON. We look forward to his Report on the Arkona trip and have expectations of Field Reports from the mineral trips (Hint, hint).

Thanks also to Martin Legemaate for his article on collecting.

If we could compile a list of fossil and mineral finds in various areas, it would be interesting and helpful to those intending to search for fossils or minerals.

Articles related to mining, prospecting, collecting, cleaning, storage of fossils and minerals, etc. are always welcome, and the members enjoy reading about experiences of fellow members. If you have an article that might be of interest to fellow members, send it along to me, Bev Fox, and we'll see about getting it into print.

It won't be long until the next KRFC Rock and Fossil Show in 2012 and the competitions for the best mineral and fossil found in 2011. As well as the competitions, there will be an opportunity to have displays so look over your finds from this year's trips. You might have a winning fossil or mineral, or have material to make an interesting display.

COMING EVENTS

SEP. 17-18, 2011 Wonders of the Earth" - The 42nd Scarborough Gem & Mineral Club Show

Sat. 10-6, Sun. 11-5.

Don Montgomery Community Centre, 2467 Eglinton Avenue East, Scarborough

Admission: adults \$5, children \$1

Contact: Gem & Mineral Club of Scarborough scarbgemclub@lycos.com

Website: www.scarbgemclub.ca

SEP. 30 - OCT. 2, 2011 Ancaster Gem, Mineral, Bead & Jewellery Show

Friday: 9:30 a.m. to 6:00 p.m.

Saturday: 10:00 a.m. to 6:00 p.m.

Sunday: 10:00 a.m. to 5:00 p.m.

Try on the latest in fashionable jewellery. See crystals, fossils & magnificent rocks from all over the world! Shop at over 30 dealers.

Take a free seminar on rocks, fossils or crystals.