



Voice of the Dinosaur

Newsletter of the Kawartha Rock and Fossil Club

Feb. 2012 ~ Volume 24 ~ Issue 2

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ANNUAL GENERAL MEETING

The meeting was opened by the President, Mark Stanley. The minutes of the January 2010 AGM minutes were read by the Recording Secretary, Ken Fox. The minutes were accepted as read. The President turned the meeting over to the Elections Returning Officer, Tom Jenkins, who conducted the elections.

Minutes of this meeting will be distributed to members.

LAST MEETING

Jan. 10, 2012

The meeting was chaired by the President, Mark Stanley and began with the regular business meeting and committee reports given as applicable. Minutes of the Dec. 2011 minutes had been distributed to members earlier so were accepted without being read at the meeting.

1. Treasurer's Report - Report accepted as given.
2. Field Trips' Report - The new Field Trip Co-Ordinator, Bill Rawson, wants to make field trips frequent and fun this season. See his "blurb" later in this Newsletter.
3. Show Committee Report - Bob Beckett, the Chairperson, now has an "apprentice", Don Doell Jr., who will assist with the 2012 Show and take over the Show Chair in 2013.

Feature Presentation - Tom Jenkins, using maps, visuals and mineral samples gave an interesting presentation on his experience working at Faraday Mine in the mid 50's.

A silent auction was held.

From the President, Mark Stanley:

NEXT MEETING - Feb. 14, 2012

Place - Orientation Centre, Peterborough Zoo

Time - 7:00 pm.

Agenda - Regular February Meeting

Feature Presentation: Pete Midgley will explain and demonstrate how to wire wrap gemstones.

We will, also, have another fun rock quiz and Tom's silent auction.

Fossil of the evening - brachiopods

Mineral of the evening - pyrites, bring in those samples.

Both of these are very common so members should have many samples.

THE SHOW

Club Table at our March Show

We will again have a Club table at the show, March 3 and 4, 2012. We need everyone to sign up to man this table for at least 2 hours during the Show. It is a fun way to meet the public and tell them about our Club and what we do.

I will have a sign up sheet at the February meeting and it usually fills up quickly, so feel free to contact me before the meeting to reserve your preferred times.

Mark Stanley

Phone: 705-639-2406

Email: fulgurite@bellnet.ca

And More on the Show

Well folks it's getting to be that time of year again when we start to recruit members to help out at the annual Club show being held this year on March 3rd & 4th. Please take a look at the following list and sign up for as much time as you can spare, every hour helps out tremendously. Please contact Bob Beckett by phone 705-748-0178, or Email rbeckett@cogeco.ca if you're able to sign up for any of these time slots.

Club Table

Saturday, March 3	Sunday, March 4
10:00 am to 11:00 am	10:00 am to 11:00 am
11:00 am to 12:00 pm	11:00 am to 12:00 pm
12:00 pm to 1:00 pm	12:00 pm to 1:00 pm
1:00 pm to 2:00 pm	1:00 pm to 2:00 pm
2:00 pm to 3:00 pm	2:00 pm to 3:00 pm
3:00 pm to 4:00 pm	3:00 pm to 4:00 pm
4:00 pm to 5:00 pm	4:00 pm to 5:00 pm

Displays

If you want to put in a display this year, and I encourage you to do so, we have a number of show cases available for your use. Contact Bob Beckett to reserve a show case. (See contact info above.)

As many of you know one main focus of the display area this year will be a two case display of meteorites and meteorwroings so if you have items to display that would compliment this display, that would be wonderful. Contact Bob Beckett.

Sand Box

Fred Hall will be looking after the Sand Box area for the kids again this year. If you have time available and would like to help out in this area, please contact Fred to see what you can do to help out. We are always in need of specimens to add to the Sand Box so dig around in your extra material, contact Fred and donate some pieces to the Sand Box.

Fred Hall: Phone: 705-742-6108

Email: fred.hall001@sympatico.ca

Auctions

We will again this year have our Silent and Live Auctions. If you have material to donate to the Silent Auctions please contact Tom Jenkins or bring it to the February meeting. If you have material to go into the Live Auction bring it to the show hall preferably on Friday March 2nd between 4pm and 7 pm or on Saturday March 3rd between 8am & 9:30am. Items arriving late may not be in the Live Auction. Proceeds from the Live Auction are split between the Club and the owner. The Club retains a small commission for selling your items.

Tom Jenkins: Phone: 705-745-1189

Email: tomjenkins@sympatico.ca

Best Collected Mineral & Fossil

Club members are encouraged to enter their best collected mineral or fossil from the 2011 collecting season in Club competition. One award is made in each category as chosen by voting Club members. So, wrap up your best finds and bring them to the show!

Bob Beckett- Show Co-Ordinator

FIELD TRIPS

A Message from Our New Field Trip Co-Ordinator

To all club members. I'm the new trip coordinator. I'm looking for your input to the trips this year. If you have any places that you would like to go to collect this year, tell me by email. If you have information as to the name, the location, if you know it, and, if possible, who owns the property, or a contact so I can ask for permission to visit a site for collecting purposes, so much the better. I will be sending out a list of the trips in the near future to all members.

Thank You.

Bill Rawson

Email: wrawson62@live.com

ROM ID CLINICS

Bring Your Treasures to Us

Rock, Fossil, Gem, Mineral & Meteorite Identification Clinic

Visitors with rocks, minerals, gems, fossils, or suspected meteorites can have them identified at the special ID clinics by ROM experts held 6 times a year.

Now in its 15th year, these clinics are free to the public but patrons wishing to visit the rest of the museum will be charged admission. See our new lower admission prices at www.rom.on.ca

Sorry we can't ID stone artifacts and NO appraisals will be done.

New Location & Extended Hours!

Wednesdays, 4:00 pm to 5:30 pm

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

March 21, 2012

May 16, 2012

July 18, 2012

September 19, 2012

November 21, 2012

Call (416) 586-5549 for more information or our website

http://www.rom.on.ca/programs/id_clinics.php

Updates on ID Clinics and all things at the ROM:

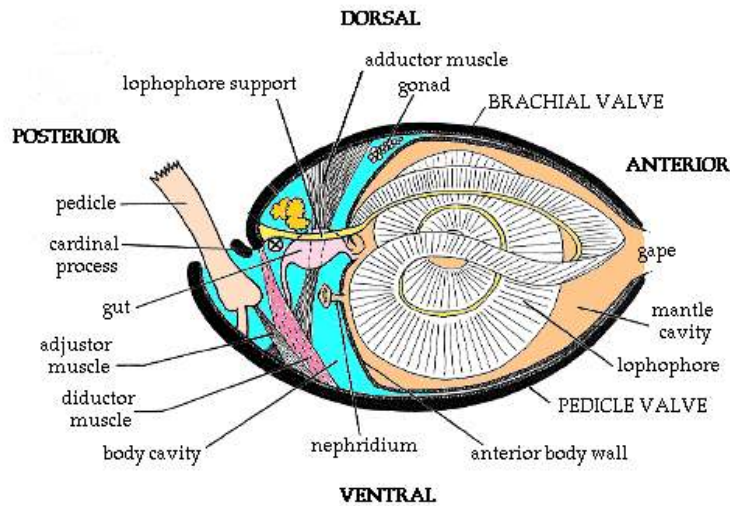
Twitter: @ROMtoronto

Facebook: <http://www.facebook.com/royalontariomuseum>

THE FOSSIL CORNER

Brachiopods

By Kevin Kidd



General Anatomy of a Brachiopod

Brachiopods are without a doubt the most plentiful intact fossils to be found at most of the Paleozoic fossiliferous outcrops in Ontario (sorry crinoid stems, but you aren't complete animals). Most people when asked would refer to them as clams, although the two are quite different. Clams are bivalves, which have two asymmetrically rounded shells, a left and a right, which are mirror images of each other through the hinge line. Brachiopods also have two shells, a top and a bottom (pedicle and brachial), and each shell is symmetrical through an imaginary line drawn parallel to the length through the center of both valves (fig.1).

Internally, the two are also very different, although with fossil specimens, this isn't always the easiest to see.

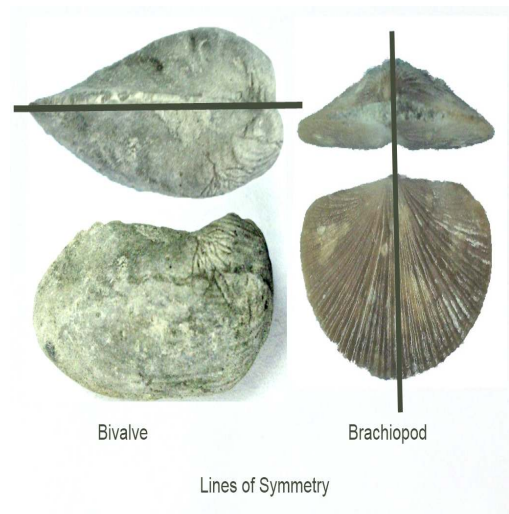


Figure 1

Brachiopods are one of three groups of animals, along with bryozoans and phoronida (horseshoe worms) that possess a *lophophore*. The lophophore is a filter feeding organ that is basically a ring of hollow tentacles, often horseshoe shaped or coiled, that are covered in fine hairs called *cilia* that direct food to the brachiopod's mouth. Most brachiopods also have a *pedicle*. This is a stalk-like anchor or foot used to attach the brachiopod to the seabed. It extends outside of the shell through an opening in the pedicle valve called a *foramen*. Since the pedicle is soft tissue, it is rarely preserved as a fossil, although in the Cambrian Chengjiang biota in China, it is not uncommon (fig.2). These deposits are about 10 million years older than Canada's famous Burgess Shale.

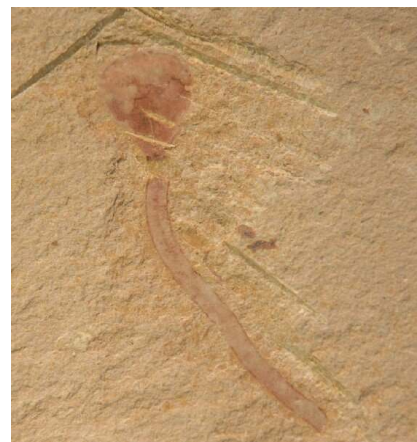
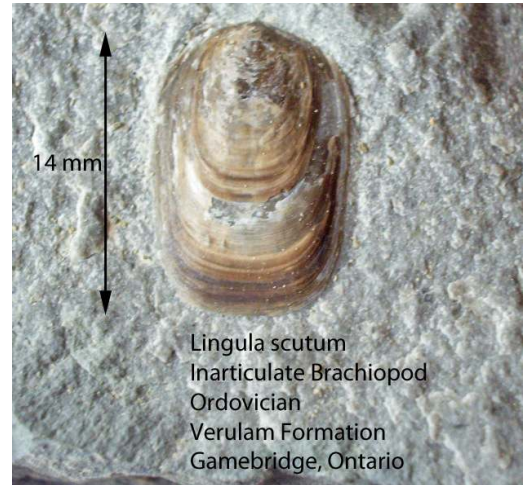


Figure 2

There are only about 300 living species of brachiopod, compared with over 12,000 fossil species. Most of the living species are found in very cold water, either in polar regions or at great depth. Fossil brachiopods, especially from the Paleozoic, were common in all marine environments. They originated in the Cambrian and were very plentiful in the Ordovician. They experienced a bit of a decline through the Silurian, but bounced back to have their greatest diversity during the Devonian with over 200 genera. They continued strong until the end of the Permian, about 245 million years ago, when the greatest extinction event in history occurred. About 2/3 of all brachiopod species were wiped out, along with about 90% of all animals, and they have never regained the dominance they once had.

Historically, brachiopods have been divided into 2 orders: the *inarticulata* and the *articulata*. The inarticulata have 2 shells, but no articulating hinge. They are held together with muscles only. Articulata have a hinge. A few of the more common orders within the classes are:

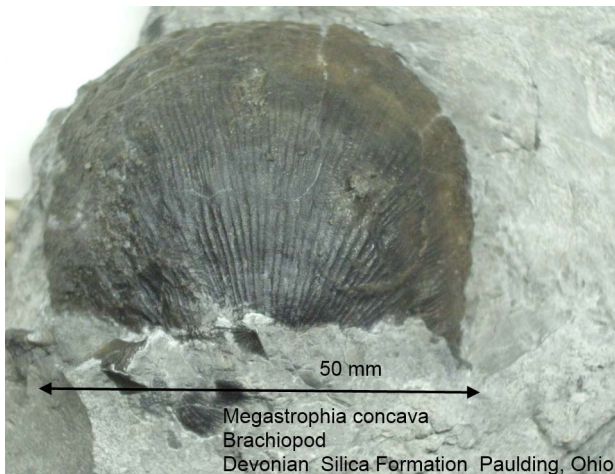
Lingulata (Fig.3) – The only type of brachiopod that today supports a minor commercial fishery. These inarticulates are also among the oldest brachiopods, as well as the most morphologically conservative, having lasted since the Cambrian with very little change in shape.



Lingula scutum
Inarticulate Brachiopod
Ordovician
Verulam Formation
Gamebridge, Ontario

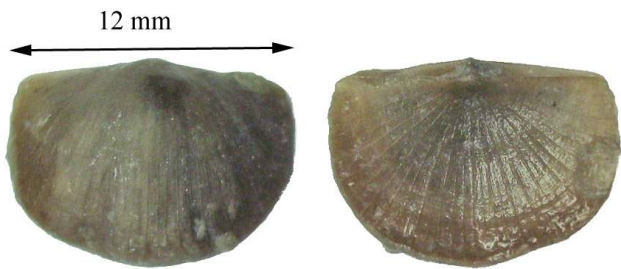
Figure 3

Strophomenida (Fig. 4 & 5) - This is the largest order of brachiopods with over 400 genera. The order had its origins in the Ordovician and survived until the mid-Jurassic. This was also the most morphologically diverse group; some had simple ribs, some had spines and some were cone-shaped. This group usually lived attached to the bottom, or to other objects, by the pedicle valve.



Megastrophia concava
Brachiopod
Devonian Silica Formation Paulding, Ohio

Figure 4



Pedicle (convex)

Brachial (concave)

Sowerbyella sericea
Brachiopod
Ordovician
Verulam Formation
Gamebridge, Ontario

Figure 5

Rhynchotrema increbescens
 Brachiopod
 Ordovician, Verulam Formation
 Gamebridge, Ontario

Rychonellida (Fig.6) - These brachiopods somewhat resemble small nuts. The hinges in this group come to a point, a condition called non-strophic. They are often ribbed and the commissure – the line between the two valves, is zig-zagged. They first appeared during the Ordovician and were the most abundant brachiopod of the Mesozoic. A few species still survive today.

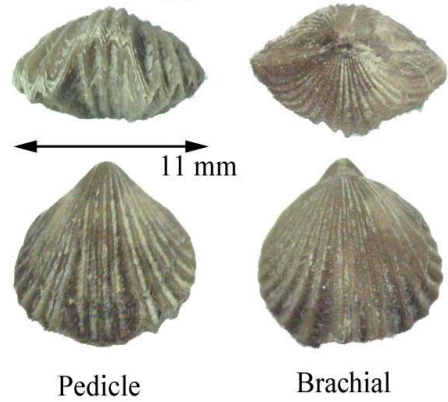
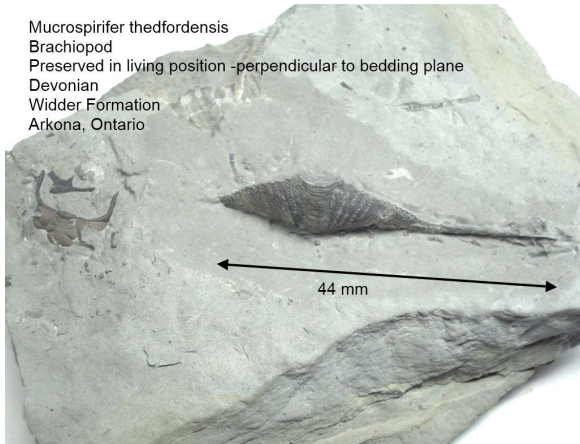


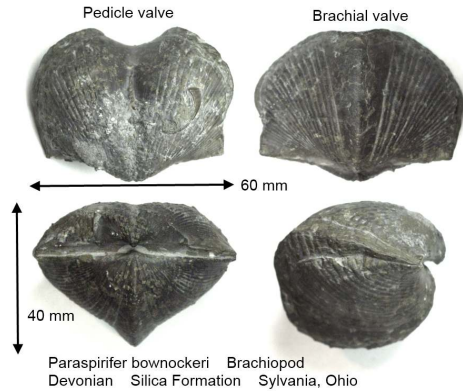
Figure 6

Spiriferida (Fig. 7 & 8) - These brachiopods are easy to recognize, and anyone who has been to the Arkona area likely has several. They have an extended hinge line so wide that they look like they have wings. They also have a deep fold/sulcus in the center.



Mucrospirifer thedfordensis
 Brachiopod
 Preserved in living position -perpendicular to bedding plane
 Devonian
 Widder Formation
 Arkona, Ontario

Figure 7



Parapsirifer bownockeri Brachiopod
 Devonian Silica Formation Sylvania, Ohio

Figure 8

The feature that gives this group its name (“spiral bearers”) is the internal support for the lophophore. Occasionally preserved in fossils that have the outer shell eroded away, this support, called a *brachidium*, is a strip of calcareous material tightly coiled within the shell (Fig. 9 & 10).



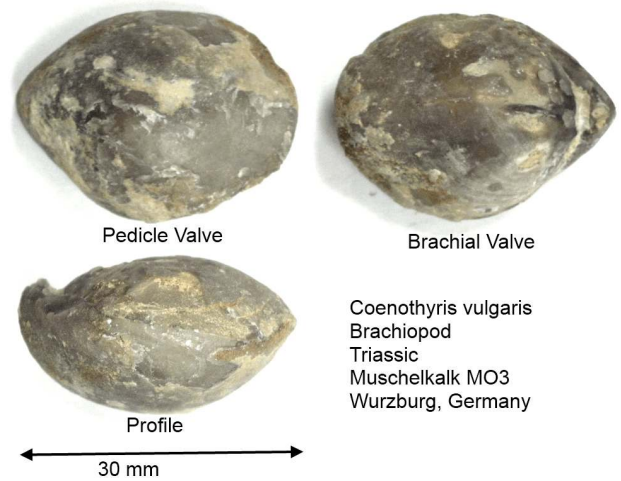
Figure 9



Figure 10

This group (which) made their first appearance in the Ordovician, was extremely diverse during the Devonian, and went extinct in the Jurassic. Figure 7 shows the brachiopod preserved in living position, perpendicular to the bedding plane, an uncommon occurrence to say the least. You can see one of the long "wing-tips", while the other is still buried in the matrix. I chose to preserve the trilobite head rather than expose the entire brachiopod.

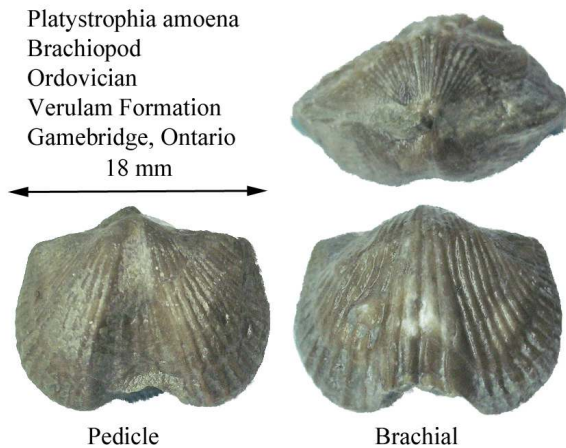
Terebratulida (Fig. 11) - Most of the living brachiopods are Terebratulids. They first appear in the Devonian. This group is responsible for the common term "lamp shells" as they resemble ancient oil lamps, with the pedicle foramen resembling a wick.



Coenothyris vulgaris
Brachiopod
Triassic
Muschelkalk MO3
Wurzburg, Germany

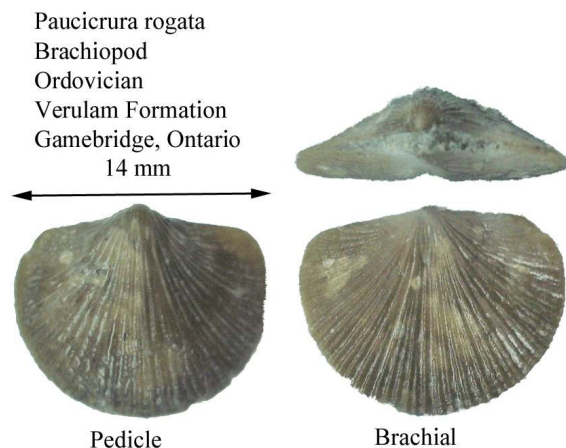
Figure 11

Orthida (Fig. 12 & 13) - This group originated in the Cambrian, was very diverse during the Ordovician and went extinct at the end of the Permian. This is the oldest member of the subphylum Rhynchonelliformea. They are usually strophic –having an extended hinge line, and commonly have radiating ribs along with sulcus/fold structures. One valve, often the brachial, is usually flatter than the other.



Platystrophia amoena
Brachiopod
Ordovician
Verulam Formation
Gamebridge, Ontario
18 mm

Figure 12



Paucicrura rogata
Brachiopod
Ordovician
Verulam Formation
Gamebridge, Ontario
14 mm

Figure 13

There is no shortage of species out there, and a size range from a few millimeters up to several inches. Most are found loose and need no prep work other than a quick rinse. It shouldn't take too long before anyone can have a decent collection of local brachiopods.

Photo credits- Anatomy – <http://paleo.cortland.edu>
Fig. 2 – www.fossilmall.com
Fig 9 and 10 – collection of D. Hayward
All others - personal collection

THE MINERAL CORNER

Pyrite Iron sulphide FeS₂

By Tracey Hawkins

Pyrite is a mineral that catches the eye because of its seductive, golden, metallic lustre. During the gold rush days, pyrite was nicknamed "fool's gold" and is the most common sulfide. It is much harder than gold and occurs in rocks and deposits of all types, in both high- and low-temperature environments. The mineral name is derived from the Greek word pyr, meaning fire, due to the fact that it creates sparks when struck with iron.

Pyrite is sometimes mined for its gold and copper content (present as impurities) and sometimes for iron or sulphur. It is used in the production of sulphuric acid. There are literally thousands of localities throughout the world. Under special fossilization conditions, pyrite can replace marine shells, forming stunning, golden fossils. Native peoples of the American southwest set polished pyrite slices into a wooden base to construct mirrors.

Identification

- * hardness of 6 to 6.5
- * colour is light to brassy yellow, sometimes tarnished to brown
- * lustre is metallic, shiny
- * transparency is opaque
- * specific gravity is 5.0g/cm³
- * streak is powdery greenish brown-black
- * fracture is conchoidal; uneven; brittle
- * there is no cleavage
- * habit can be massive, without crystal faces, granular, nodular, or botryoidal
- * crystal system is cubic; crystal faces are often deeply striated
- * crystal forms are isometric, predominately in cubes and pyritohedrons (pentagonal dodecahedra); less commonly in octahedrons; also in nodules and massive forms; fine to coarse granular, fibrous, mammillary, stalactitic
- * striking with steel will produce sparks

Environment

Pyrite is found in all types of rock (ubiquitous) and is often associated with ore minerals such as magnetite. In the sulphur-containing minerals, called sulphides, pyrite is the most widespread and abundant mineral.

Occurrence

Ontario:

Marmorata, Hastings County (pyrite cubes containing tourmaline); Thunder Bay area (octahedral and cubic crystals up to 1mm); Wawa (cubic, cubo-octahedral, up to 3cm; subparallel aggregates); Levack Mine and Sudbury area (octahedral and cubic crystals up to 1cm; irregular grains); Cobalt area (nodules up to 1cm; grains); MacDonald Mine and Bancroft area (cubic, up to 3mm); Canada Talc Mine, Madoc.

Rest of Canada:

Snow Lake, Manitoba (crystals up to 25cm); Bernic Lake, Manitoba (botryoidal crusts, fine-grained aggregates); Nunavut; Rapid Creek, Yukon (octahedral and cubic crystals up to 1cm); Mont Saint-Hilaire, Québec (cubic, cubo-octahedral, pyritohedral crystals up to 2cm); Francon Quarry, Montreal, Quebec (cubes and modified cubes up to 2mm; spherical aggregates).

United States of America

Tennessee; Virginia; Leadville, Gilman, and Rico, Colorado (large, well-formed crystals); American Mine, Bingham Canyon, Salt Lake County, Utah; Park City, Summit County, Utah (well-developed crystal groups); French Creek Mine, Chester County, Pennsylvania (misshapen octahedral crystals containing

0.2% arsenic have been found here); California; Sparta, Illinois (“pyrite dollars” - spectacular discoidal concretions in coal shales).

World Localities:

Rio Tinto region, Spain (fantastic groups of sharp cubes); Oruro and Colavi, Bolivia (highly modified crystals in fine clusters); Brazil; Quiruvilca and Cerro de Pasco, Peru (outstanding octahedral crystals and pyritohedral groups); Mexico; Japan; Rio Marina, Elba, Italy (many-faced complex and perfect crystals); Norway; Portugal; Greece; Slovakia; Falun, Sweden (pyrite rich in cobalt has been found here); Cornwall, England.

References

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A message from Tracey

Greetings everyone!

I am going to be writing a mineral article for each newsletter now; I very much enjoyed writing about Titanite and Pyrite! I am reaching out to the group for some direction though. I could write about the minerals that are collectably close to most of us (ie. south-central Ontario, Bancroft, etc) or I could write about some members' requests for their favourite minerals. Or maybe one that a member has been wanting to learn more about.

So hit that reply button, and tell me what your fav mineral is and if you would like to see an article about it in our prestigious newsletter!!

Cheers!

Tracy :-)

Phone: (705) 868-0803

Email: laurana_ca@yahoo.ca

THE EDITORS CORNER

My thanks go out to Kevin Kidd, Tracy Hawkins, Bob Beckett and Bob Rawson. Without their input this would be a scanty Newsletter indeed. But it’s not only those who contribute directly to the Newsletter with articles, etc. but our general members who make a difference by suggesting ideas for articles. It appears our members in general are very knowledgeable about geology, minerals, fossils, etc. and have no questions. However, that is hard to believe. Among our membership, we have several families with children. OK Kids, this is your time to shine. You must have a lot of questions about geology, minerals, fossils, mining, etc. Let’s have ‘em!

Congratulations to those members who stepped forward to serve on the Executive. Thank you. It’s good to get new people with different perspectives. Bill Rawson is our new Field Trip Co-Ordinator and is anxious to begin planning field trips. If you are interested in such trips, contact him.

Don Doell Jr. is now “apprenticing” with Bob Beckett for this year’s Show and will take over the Chair for the 2013 Show. Thanks very much. If you have ideas for additions to future Shows, contact the Bob or Don.

The rest of the Executive members are the same. But this will have to change in 2013. Being on the Executive of a Club is a great way to make new friends and learn new skills. Consider being a member of the Executive next year.

COMING EVENTS - 2012

- Feb. 14 KRFC regular Feb. meeting
Orientation Centre, Peterborough Zoo, 7:00 pm
- Mar. 3 & 4 19th Annual Peterborough Gem, Mineral, and Fossil Show.**
Sat. 10-5, Sun. 10-5.
The Evinrude Centre, 911 Monaghan Road, Peterborough, Ontario.
Admission: \$3.00 for adults, children 12 or under are free & must be accompanied by an adult.
Directions: From Highway 115 at Peterborough, take the Parkway to Lansdowne St., then East 4 blocks to Monaghan Rd., then North 1 block. Or travel West on Highway 7 (Lansdowne St.), into Peterborough, turn right at the 6th traffic light onto Monaghan Rd., then North 1 block.
Contact: Robert Beckett at 705 740 4530 or rbeckett@cogeco.ca
Website: <http://www.rockandfossil.com/>
- Mar. 21 ROM ID Clinic**
Wednesday. See Page 3 of this Newsletter for details.
- Mar 31 & Apr 1 40th Annual Brantford Lapidary & Mineral Society Show**
Sat. 10-5, Sun. 10-5.; Paris Fairgrounds, 139 Silver Street, Paris, ON.
Features: One of Canada's Largest Gem & Mineral Shows! Gem, Mineral, Fossil & Stone Dealers Lapidary Equipment, Supplies
Fine Jewellery, Supplies, Beads
Demonstrations,
Exhibits
Silent Auction Saturday & Sunday
'Mine for Gems' Display
Admission: Adults \$5, Children 12 and under - Free
Contact: robert@roberthalloriginals.com, or John Moon 519-752-9756