

THE ROCKET

November 2021

deadline for next issue
January 14, 2022

Club email: secretary.hrc@gmail.com
Newsletter email: Edrocket18@gmail.com

Future Meetings: Our monthly meetings are on the fourth Friday of the month.

Due to Covid-19, Masks and full vaccination will be required and your status will be checked upon entry to the meeting. Crystal (our club secretary) will send information about access to the meeting and there **may be a zoom link** for other members. Please Stay posted.

Next Meeting: Friday – November 26 at 7PM
at Hastings Community Center Hall

There will not be snacks or drinks but you can bring your own water bottle etc.

Membership: It is membership renewal time. Payment by cash or cheque - \$20 for individuals, or \$25 for a family membership.

You must have a Community Centre membership to get a Hastings Centre Rockhounds membership.

Programs:

It is our Annual General Meeting and we need a quorum to elect a new executive
Paul will be giving a talk on Fluorite. Please bring some of your own samples for show and tell.
We will have a "Bottle Drop" for Ways and Means – more information coming from Crystal.

Last Meeting Programs:



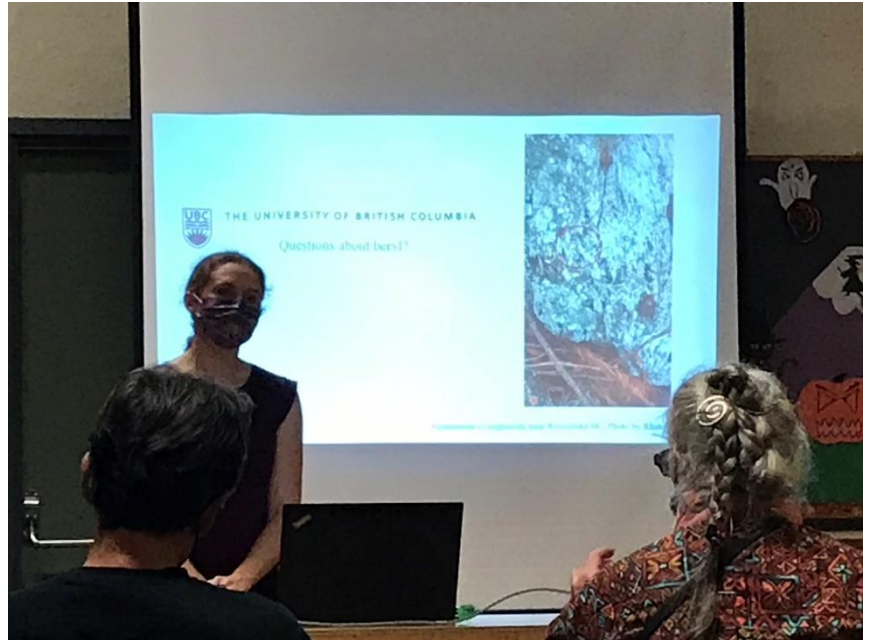
The first in-person meeting of the Hastings Centre Rockhounds in a while, on October 22, 2021, included a presentation by Rhiana E. Henry on details of her research into beryl mineralogy. Rhiana Henry is a PhD candidate at the University of British Columbia in the Department of Earth and Ocean Sciences, studying with Dr. Lee Groat (Mineralogy). She also has a master's degree from University of Colorado and is a certified Gemmologist.

Rhiana studied the crystallographic details of more than 80 specimens of beryl, some of them kindly donated by members of our own Hastings Centre Rockhounds. (She was very grateful for the collections of local rockhounds, not being able to travel to USA during Covid-19 restrictions).

Rhiana's beryl project attempts to characterize the chemical composition and crystallography of different colours of the mineral beryl, concentrating on assessing the relationship between sodium cations (Na⁺) and water (H₂O) content, as well as identifying which minor cation substitutions account for colour differences. Some of the results could be used to tell synthetic beryl from natural beryl (that is, to identify fake emeralds).

*Thanks to Jennifer Getzinger for the summary.
Her article about the presentation topic is on page 5.*

Last Meeting Program photos: As a sign of the times – we are all in masks. Rhiana's maskless photo on the previous page comes from the UBC website. (Photos – Roz)



Simple Viking Weave Bracelet

As a Pilot Project, Bob will be teaching 2 classes of 2 sessions: Simple Viking Weave Bracelet. Each class has a limit of 6 students. First come first serve. During these classes, no other silversmithing drop-ins would be available. Please make sure that you are fully vaccinated.

The project will be \$33 cash (which is the pure cost of the materials) and drop-in fees are separate (\$3 each).

Class times:

Option 1: Wednesday Nov. 24 & Dec. 1 @ 9am - 1pm

Option 2: Saturday Nov. 27 @ 9am - 1pm & Sunday Nov. 28 @ 10am - 2pm

If you would like to register, please fill out the form at this site and Crystal will send you a confirmation later: <https://forms.gle/8yLySqQ7JMJZpH5r8>

Workshop Hours

Hastings Community Centre has removed all restrictions on the number of people that can attend a workshop. Our workshop instructors decided that people no longer needed to make a reservation.

If you are a member in good standing, have taken the required lapidary workshop training course, and are double vaccinated "passport" with ID to show, you can drop in at the workshops and use the equipment on a first come, first served (shared) basis. Be prepared to work on another project if you need to wait to use a particular piece of equipment,

Lapidary:	Monday	6:30 pm - 9:30 pm	Richard
	Wednesday	1:00 pm - 4:00 pm	David
	Thursday	6:30 pm - 9:30 pm	Sante
	Saturday	1:00 pm - 4:00 pm	Bob
Silversmithing	Wednesday	9:00am - 12:00 noon	Marilyn
	Saturday	9:00am - 12:00 noon	Robert

A Photo tour of our renewed/ re-organized Workshop.

(Photos Richard Kotecki)



Club News: Adam's Donation

Adam Zolty has donated most of his collection to the club. He wanted to have a yard sale on October 30 but it was cancelled. He collected these rocks since he was very young, some from around Champlain Heights! Adam has moved to Finland where he entered Sibelius Academy to get his master's in music. We wish him well and thank him very much for his donation.

(Photos: Richard Kotecki)



More on Beryl Mineralogy

By Jennifer S. Getsinger, PhD, PGeo (Retired)

The October 22, 2021, Rhiana E. Henry gave a presentation on details of her research into beryl mineralogy.

Most of us know beryl as hexagonal crystals most commonly occurring as bluish-green aquamarine, and the more valuable clear bright green “precious stone” emerald. Beryl is a ring silicate with common formula $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$, with a hardness of 7.5 to 8 on the Mohs scale (between quartz and topaz), and a specific gravity about 2.4 to 2.9.

Rhiana’s beryl project, supervised by professor Lee Groat, attempts to characterize the chemical composition and crystallography of different colours of the mineral beryl, concentrating on assessing the relationship between sodium cations (Na^+) and water (H_2O) content, as well as identifying which minor cation substitutions account for colour differences. For instance, the bright ruby-red beryls in the study are coloured by minor amounts of iron, magnesium, and manganese; whereas the more familiar green of emerald is caused by chromium and/or vanadium, and aquamarine by iron. Other colours of beryl include yellow heliodor (iron) and pink morganite (manganese), and other rarer varieties.

Cations are positive ions (like Fe, Mg, Mn, Cr) that substitute for Be (or in some cases Al) in the spaces between negative anions such as oxygen atoms in the beryl silicate crystal structure.

For the research at UBC, Rhiana used very small fragments of beryl crystals and collected X-ray diffraction data on these single crystals (and also data from electron microscopes), measuring the sodium (Na^+) component as an approximation of the water content so they didn’t have to destroy valuable samples. Correlations of cations and colours and water content were shown in detail on graphs in these studies of the chromophores, or parts of the mineral structure where the cations substituted into crystal sites responsible for the different colour expressions. Some of the results could be used to tell synthetic beryl from natural beryl (that is, to identify fake emeralds).

Here’s a link to one of the publications about this work:

<https://www.sciencegate.app/document/10.3749/canmin.2000076>

Rhiana said that red beryl (formerly called bixbite, but renamed “red” to avoid confusion with the iron oxide mineral bixbyite) comes from the Ruby Violet Claim in the state of Utah, where they occur along with topaz in volcanic rhyolite rocks. Most emeralds and aquamarines occur more commonly in pegmatite rocks (very coarse-grained metasomatic to igneous rocks on the edges of granitic plutons). The biggest beryl known in the world is from Madagascar, known to be approximately 18 metres long by 3.5 metres in diameter.

As a geology student I collected aquamarine beryl from the Etta Pegmatite in the Black Hills of South Dakota in 1974 (where we also found spodumene, tourmaline, and large mica). When I was working in the mineral exploration industry here in BC in the 1990s, I remember when one of the geology students I knew from UBC discovered emeralds in the Yukon, and what a big deal that was. Bill Wengynowski was working for Expatriate Resources Ltd. in 1998 when he found emeralds near Finlayson Lake at Regal Ridge. This was reported in an article from 2003 called Rocking in the Yukon: an overview of mining in the Yukon. That was when Professor Groat started studying emeralds in Canada.

Link to Rocking in the Yukon: https://emrlibrary.gov.yk.ca/yqs/ebooks/rocking_in_yukon_2003.pdf

An article by Lee Groat, et al. 2004 on Emerald and other gem beryl mineralization in northwestern Canada: http://cmscontent.nrs.gov.bc.ca/geoscience/PublicationCatalogue/Paper/BCGS_P2004-02-05_Groat.pdf

BC Lapidary Society News

Rendezvous

Rendezvous is the British Columbia Lapidary Society's annual gathering and features field trips, displays, auctions, and our annual general meeting.

2022 Rendezvous

Coombs, BC, June 2 — 6, 2022
Coombs Fair Grounds
1014 Ford Rd.
Coombs, BC

Rendezvous 2022 is being organized by a team of Vancouver Island clubs including Victory Lapidary and Mineral Society, Cowichan Valley Rockhounds, Parksville & District Rock & Gem, Courtenay Gem and Mineral Club, Alberni Valley Rock & Gem, Ripple Rock Gem & Mineral Club with the assistance of the British Columbia Lapidary Society.

It will be held at the historic Coombs Fair Grounds. There are many attractions in the area such as Goats on the Roof and The Butterfly Gardens. The Horn Lake Caves, Qualicum Falls and Englishman River Falls Provincial Parks offer great hiking and exploring for those who might like to spend more time in the area. This is a very popular, well-known tourist area so it is great to have such a comfortable venue close to so many alternate activities and attractions.

The BCLS will strive to make Rendezvous 2022 open and welcoming to all while following the required COVID protocols set out by the Provincial Government at the time of the event.

SHOWS

We told BCLS that our show will be in March 12-13, 2022 (the first week of Spring Break.)

PROJECTS



At our last meeting, Elaine wore a pendant she made from a Ruby Zoisite piece she bought at our last show. We look forward to our show for lots of inspiration and finds.

Interesting for Rockhounds

A new member, Jennifer Gomez, says that she follows this really cool channel on Youtube called [NWRockExplorer](#). It is by a BC rockhound and about the various trips he has made looking for different rocks. It looks like there might also be videos on the rocks he finds. I don't know who he is, but there are some interesting looking videos. You might want to check them out.

Editorial Comments/thanks

A Huge Thank You to Jennifer, Crystal, David and Richard. This issue is possible only because of the help and prompt replies from them.

This has been a challenging time to put together a newsletter. I am in Kamloops without access to my usual computer and newsletter files. I expected to be back home by Monday (November 15), but road washouts, landslides and floods have made travel unwise and difficult at this time. Sometime I will get home again, but we try to keep this newsletter to a deadline, so I needed the help.

Others are far more impacted by what has happened; Abbotsford club has had to cancel their show due to flooding. We hope that is the only impact on their club and members.

This month there will not be a "rock" article – except for Jennifer's explaining Beryl Mineralogy. Instead, in a nod to the season ahead, here is a list of some Red and/or Green Rocks.

Red and/or Green Rocks

Red

Garnet – Almandine
Garnet – Spessartine
Garnet – Pyrope
Fluorite
Cuprite
Rhodochrosite
Spinel
Ruby
Red Beryl
Rhodonite
Tourmaline – Rubellite
Fire Opal
Chalcedony
Carnelian
Jasper
Sard
Mexican Flame Agate
Apache Flame Agate
Red Zircon
Red Diamond

Red & Green

Jasper
Watermelon Tourmaline
Tourmaline – Elbaite
Opal
Agate
Bloodstone
Ammolite

Green

Nephrite Jade
Jadeite Jade
Chrysoprase
Emerald
Tourmaline – Elbaite
Zircon
Peridot
Chrysoberyl
Garnet
Spodomene
Fluorite
Malachite
Olivine
Diopside
Vesuvianite
Topaz
Apatite
Epidote
Chalcedony
Moss Agate
Green Sapphire