THE MINERAL VEIN

Official Newsletter of

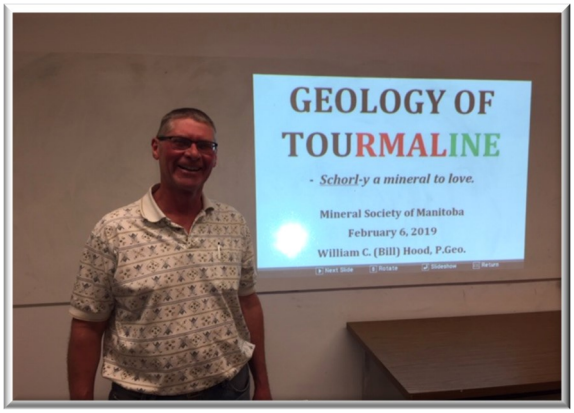
THE MINERAL SOCIETY OF MANITOBA

MARCH 2019

MARCH MEETING PRESENTATION

In the March 6th presentation we will investigate "Amber" with **Dr. Eva Pip**. Come and delve into what amber is, the different kinds, its strange history in folklore, religion, medicine and crime, and its shocking impersonation in the world market. Learn how
to care for your amber and "things NOT to do".

Hope to see you at the meeting!



The February meeting was so interesting, as Bill was our tour guide through the depths of the complex group of Tourmalines. The weather was not the greatest for the February meeting but Bill still came out to educate us about tourmaline. **Thanks Bill!**

FEBRUARY MEETING PRESENTATION SUMMARY

By Jack Bauer

Tourmaline Minerals belong in the trigonal crystal system and have many physical, optical and metaphysical properties. By chemical composition, tourmalines are one of the most complex group of Silicate Minerals.

FEBRUARY MEETING PRESENTATION SUMMARY *(cont.)*

Composition can vary widely due to Isomorphus replacement (solid solution). It's general formula can be written as $XY_3Z_6(Si_6O_{18})(BO_3)_3V_3W$

- X = Ca, Na, K, □ = vacancy
- Y = Li, Mg, Fe^{2+}, Mn^{2+}, Zn, Al, Cr^{3+}, V^{3+}, Fe^{3+}, Ti^{4+}, vacancy
- Z = Mg, Al, Fe^{3+}, Cr^{3+}, V^{3+}
- T = Si, Al, B
- B = B, vacancy
- V = OH, O
- W = OH, F, O

Hawthorne, F.C. & Henry, D.J. (1999). "Classification of the minerals of the tourmaline
group" Archived 201–215.2007-10-16 at the Wayback Machine *European Journal of Mineralogy*, 11, pp. (Si6O18) Silcon & Oxygen (BO3) Boron & Oxygen is the only portion of the chemical formulae that is consistent throughout the many varieties.
Note, positive charged elements at the beginning of the formulae and negatively charged elements at the end of the formulae. *(cont. on page 3 & 4)*

Schorl Tourmaline crystal

Eldorado Mine, Victoria Australia

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The Mineral Vein is published monthly from September to June.

Meetings are held on the first Wednesday of each month from September to May inclusive at the Manitoba Museum in room P47 on the Planetarium level. They begin at 7:30 PM and feature announcements, an invited speaker and a raffle. Members are encouraged to bring along any new, interesting specimens, or specimens appropriate to the speaker's topic.

Field Trips take place from May to September to interesting sites in Manitoba or neighbouring provinces and states.

Membership: A single membership is $15 while a family membership is $20. Memberships run from October to October.

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UPCOMING EVENTS

MARCH MEETING: March 6, 2019 MSM regular monthly meeting begins at **7:30 p.m.** at the Manitoba Museum.

APRIL MEETING: April 3, 2019, MSM regular monthly meeting begins at **7:30 p.m.** at the Manitoba Museum. We will have Dr. Graham Young, *curator at the Manitoba Museum.* He will be speaking about the geology of the Legislature building,.

MAY MEETING: May 01, 2019 MSM regular monthly meeting begins at **7:30 p.m.** at the Manitoba Museum. speaker will be Cornel Rock sharing his story about his Mineral journey from around the world.

JUNE BBQ: Sunday June 02, 2019. BBQ lunch for members to kick of the summer and collecting season. Location will be announced shortly.

Founded in 1971, the Mineral Society of Manitoba is dedicated to promoting the study of minerals, rocks and fossils for their scientific and recreational value.
The Mineral Society of Manitoba hosts monthly meetings covering a variety of mineral related topics.
In addition, the Mineral Society organizes summer field trips to collecting localities, and hosts educational exhibits about minerals and fossils.

FEBRUARY MEETING SUMMARY

(cont. from page 1)

The tourmaline group can be divided into 3 basic species:

Schorl is the most common species of tourmaline. Schorl is the end member, with sodium iron (divalent) dominant in the group. Black tourmaline was first discovered in a tin mine (along with cassiterite) near a small town in Saxony Germany. The town was then named "Schorl". Black Schrol is recognisable by the rounded triangular cross section and striations along the c-axis. It is used in high pressure gauges and sensors.

Dravite, also known as brown tourmaline, is the sodium magnesium rich tourmaline endmember, can be brown to yellow in colors. It can form multiple series with other tourmaline members, including Schorl and Albaite.

Elbaite, is a lithium rich tourmaline and can be almost any color including blue, green, red, yellow, pink and rarely will be colorless. In the 1600 the best Albaite tourmaline came from Shri Lanka (Ceylon). They became popular in Europe due to the distribution efforts by the Dutch East India Company. Due to the use of slaves it was a very profitable shareholder business.

Dravite Specimen; Mwajanaga, Tanzania

Green Elbaite in Quartz,; Minas Gerais, Brazil

Chemical composition of Tourmalines chart below

The 33 minerals in the group (endmember formulas) recognized by the International Mineralogical Association	
Adachiite	$CaFe^{2+}_3Al_6(Si_5AlO_{18})(BO_3)_3(OH)_3OH$
Bosiite	$NaFe^{3+}_3(Al_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$
Chromium-dravite	$NaMg_3Cr_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Chromo-alumino-povondraite	$NaCr_3(Al_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$
Darrellhenryite	$NaLiAl_2Al_6Si_6O_{18}(BO_3)_3(OH)_3O$
Dravite	$NaMg_3Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Elbaite	$Na(Li_{1.5},Al_{1.5})Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Feruvite	$CaFe^{2+}_3(MgAl_5)Si_6O_{18}(BO_3)_3(OH)_3OH$
Fluor-buergerite	$NaFe^{3+}_3Al_6Si_6O_{18}(BO_3)_3O_3F$
Fluor-dravite	$NaMg_3Al_6Si_6O_{18}(BO_3)_3(OH)_3F$
Fluor-elbaite	$Na(Li_{1.5},Al_{1.5})Al_6Si_6O_{18}(BO_3)_3(OH)_3F$
Fluor-liddicoatite	$Ca(Li_2Al)Al_6Si_6O_{18}(BO_3)_3(OH)_3F$
Fluor-schorl	$NaFe^{2+}_3Al_6Si_6O_{18}(BO_3)_3(OH)_3F$
Fluor-tsilaisite	$NaMn^{2+}_3Al_6Si_6O_{18}(BO_3)_3(OH)_3F$
Fluor-uvite	$CaMg_3(Al_5Mg)Si_6O_{18}(BO_3)_3(OH)_3F$
Foitite	$\square(Fe^{2+}_2Al)Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Lucchesiite	$Ca(Fe^{2+})_3Al_6Si_6O_{18}(BO_3)_3(OH)_3O$
Luinaite-(OH)	$(Na,\square)(Fe^{2+},Mg)_3Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Magnesio-foitite	$\square(Mg_2Al)Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Maruyamaite	$K(MgAl_2)(Al_5Mg)Si_6O_{18}(BO_3)_3(OH)_3O$
Olenite	$NaAl_3Al_6Si_6O_{18}(BO_3)_3O_3OH$
Oxy-chromium-dravite	$NaCr_3(Mg_2Cr_4)Si_6O_{18}(BO_3)_3(OH)_3O$
Oxy-dravite	$Na(Al_2Mg)(Al_5Mg)Si_6O_{18}(BO_3)_3(OH)_3O$
Oxy-foitite	$\square(Fe^{2+}Al_2)Al_6Si_6O_{18}(BO_3)_3(OH)_3O$
Oxy-schorl	$Na(Fe^{2+}_2Al)Al_6Si_6O_{18}(BO_3)_3(OH)_3O$
Oxy-vanadium-dravite	$NaV_3(V_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$
Povondraite	$NaFe^{3+}_3(Fe^{3+}_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$
Rossmanite	$\square(LiAl_2)Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Schorl	$NaFe^{2+}_3Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Tsilaisite	$NaMn^{2+}_3Al_6Si_6O_{18}(BO_3)_3(OH)_3OH$
Uvite	$CaMg_3(Al_5Mg)Si_6O_{18}(BO_3)_3(OH)_3OH$
Vanadio-oxy-chromium-dravite	$NaV_3(Cr_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$
Vanadio-oxy-dravite	$NaV_3(Al_4Mg_2)Si_6O_{18}(BO_3)_3(OH)_3O$

A revised nomenclature for the tourmaline group was published in 2011

FEBRUARY MEETING SUMMARY

(cont. from page 3)

Tourmaline is a very powerful group, with many very unique physical and metaphysical properties Tourmaline Crystals are piezoelectric and strongly pyroelectric, some clear varieties can polarize light when it is focused down the C-Axis.
The tourmaline group is complicated and has been a source of debate amongst some mineralogists. Some mineralogists felt this group was too complicated and needed to be simplified by grouping them together. We will refer to this group as the Clumpers.

On the other hand some felt proper identification could not be made if individual characteristics were ignored. The comparison was made with the corundum minerals ruby and sapphire. Chemically they are the same mineral, but they are still different, as one is blue in colour and the other is red in colour and also fluoresces.

The Albaite tourmalines have a similar situation, where chemically they are the same, but all have different characteristics and properties. Many varieties are different, due to colour, piezoelectric, pyroelectric, magnetic and optical properties. I would say this group of Mineralogists have a compelling argument.

This group could be referred to as the Splitters.
In the past twenty years the tourmaline group has mushroomed into a super group, largely due to the work of Frank C. Hawthorne and Henry,D.J.

Schorl Tourmaline with Albite and Aquamarine; Pakistan

FIELD TRIPS FOR 2019

WALLACE BUILDING U OF M. Geology building tour (Spring weekend); *Date; To be determined*

GILLIS QUARRY, MANITOBA (spring); Paleozoic Fossils; this trip will be during the week as Gillis Quarry is closed on weekends *Date, to be determined*

NOTRE DAME DE LOURDES; Septarian nodules; *Date, to be determined.*

SOURIS, MANITOBA; *Date, to be determined*

SELENITE DIG, Red River Flood way (August/ September?) weather permitting; *Date, to be determined.*

WINNIPEGOSIS; Middle to upper Devonian, Fossils; *subject to budget, tentative for 2019*

BANCROFT AREA TRIP; would be subject to interest Canada's largest GEM and Mineral Show, 56th annual ROCKHOUND GEMBOREE in BANCROFT, Ontario. ***Dates:*** *August 1,2,3 & 4th, 2019.* Please note; Accommodations, may be an issue, for this event .

POTENTIAL FIELD TRIPS FOR 2020

SNOW LAKE; due to the 7+hour long drive, this would have to be a min. 3 or 4 day trip

MANITOBA MUSEUM, behind the scenes tour, subject to completion of new changes.

Please, be advised that some trips maybe postponed or dropped due to circumstances beyond our control or due to lack of interest. Weather and availability could be a factor or where permission is required.

Look for sign-up sheets at monthly meetings for upcoming field trips. If you can't make it to a monthly meeting but would like to sign-up please contact Jack Bauer at (204) 632-6934 or jebauer@mts.net. It is important to advise Jack of any changes in your intentions for field trips you have signed-up for.