



# THE MINERAL VEIN

Official Newsletter of

## THE MINERAL SOCIETY OF MANITOBA

October 2015

### SEPTEMBER PRESENTATION SUMMARY

By Jacques Bourgeois

We were fortunate in September to have a special presentation by **Tyler Hodder** on the Quaternary environment, in particular stratigraphy and the implications this has for mineral exploration.

The Quaternary period is typically defined by the cyclic growth and decay of continental ice sheets driven by the associated climate and environmental changes that occurred during the period spanning from 2.5 million years ago to the present.

We can determine the glacial and interglacial information from oxygen isotopes trapped in the glaciers. For example, the isotopes tell us that during the Wisconsin glaciation (approximately 85,000 to 11,000 years ago), the glaciers extended from the pole all the way to Wisconsin and 680 million years ago the whole earth was covered in ice.



Tyler Hodder in Nunavut

The movement of the glaciers (ice sheet) and the ice streams below them are used in applied geology. Glacial dispersal indicate the provenance of minerals. They are good indicators for gold for example. All diamond mines in Nunavut were found that way.

There are no nice shiny mineral in quaternary geology. Most of the work is done using distinctive erratic rocks, geochemistry and hydrostratigraphy.

One way to help is using the distinctive erratic rocks nicknamed "omar" (Omarolluk erratic). Check out the website: "Have you seen an Omar?" for more information.

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The Laurentide ice sheet was made up of two sources: Keewatin and Central Quebec.



[http://www.gov.mb.ca/iem/geo/surficial/omar\\_erratics.pdf](http://www.gov.mb.ca/iem/geo/surficial/omar_erratics.pdf)

## THE MINERAL SOCIETY OF MANITOBA

c/o The Manitoba Museum  
190 Rupert Avenue  
Winnipeg, MB, R3B 0N2

[mineralsocietyofmanitoba.weebly.com](http://mineralsocietyofmanitoba.weebly.com)

### *The 2014-2015 Executive:*

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Marion Foster, *ph. 204-775-0625*

#### **Newsletter Editor**

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#### **Website**

Josh Myers, *ph. 204-330-0076*

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#### **School Programs**

Yvonne Searle, *ph. 204-663 6637*

*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

**October 7, 2015: The Annual General Meeting of the Mineral Society of Manitoba** room P47 (Lower/Planetarium level) in the Manitoba Museum 7:30 p.m. This meeting is also our annual "Show and Tell" and everyone is encouraged to bring any of their mineral or fossil treasures and show them to the group.

**November 4, 2015: Regular Meeting of the Mineral Society of Manitoba** room P47 (Lower/Planetarium level) in the Manitoba Museum 7:30 p.m.

Guest speaker to be announced.

**November 18 to 20, 2015: Manitoba Mining and Mineral Convention** at the RBC Convention Centre. Three days of professional networking, information sharing and diverse showcase of ground-breaking geoscience activities, exploration highlights, development projects, product and service innovation and much more. The MSM will have a booth on site. Hours for the show are Wednesday 12 to 8 pm, Thursday, 8:30 am to 5 pm, Friday & 8:30 am to 4 pm.



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.

Quaternary geology is also about mapping sediments, surface and subsurface. It is used to identify aggregate resources and in reconstructing past glacial events.

## FIELD TRIP ITINERARY 2015

There is still one field trip left for the season:

### Holland, MB. (October)

The Holland field trip to collect pyrite nodules is subject to precipitation and schedule availability. The Fall forecast is for mild temperatures so the trip is still possible.

Those interested in this field trip, please leave your name and contact number, at our next meeting or call Jack at 204-632-6934.

This field trip is subject to the weather. Field trips may require participants to sign a liability waiver as a condition to gaining access.

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## ARCHAEOLOGY, ROCKS AND MINERALS WEEKEND AT OAK HAMMOCK MARSH

### By Jacques Bourgeois

The weather was splendid, the birds were numerous and approximately 420 people came to visit the mineral exhibit during the event.

The Mineral Society of Manitoba as well as the Winnipeg Rocks and Minerals Club and the Archaeological Society of Manitoba had informational booths and beautiful while mineral dealers were giving great deals on beautiful specimens of rocks, minerals and fossils.

The fluorescent mineral display was once again a big hit with the visitors. One of my favourite comment of the day was from a kid who said: "Wow! These rocks are sick!"

Thank you to those who volunteered their time and energy for this event.



Some of the "sick" rocks on display

## Surficial Sediment Mapping



Sampling and studying the till (Arden, Manitoba)

Basically, students are hired to dig holes in the ground (till). The stratigraphy (depth and scale of sediments) over space and time as well as the till fabric and orientation of clasts determine the orientation of glaciers. It is tedious work but luckily it is now done in 3D modelling for future uses.

Sub-glacial landforms such as eskers and drumlins are good source of aggregates and used as landing runways up north.

## Case Study: Reconstructing Glacial Dynamics in a Core Region of the Laurentide Ice Sheet



Aberdeen Lake, Kivalliq, Nunavut

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Tyler's project was taking place near Aberdeen Lake, Kivalliq, Nunavut. The study was done because there was some very good till preserved in drill core from Cameco Corp and there was a grant available for this study. Cameco was searching for uranium, similar to what is found in the Athabaskan Basin.