



THE MINERAL VEIN

Official Newsletter of

THE MINERAL SOCIETY OF MANITOBA

MARCH 2017

FEBRUARY PRESENTATION SUMMARY

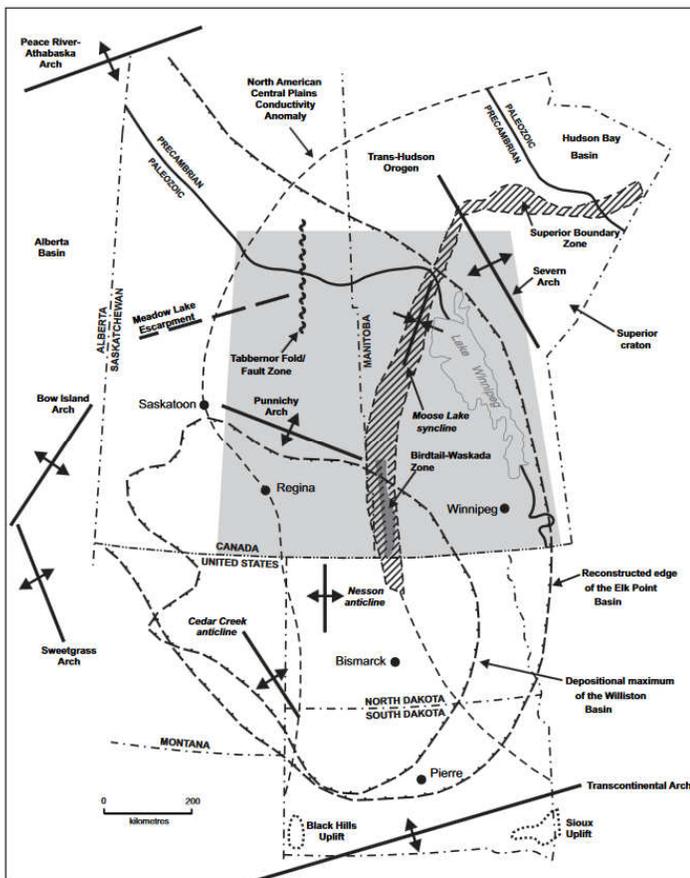
By Jacques Bourgeois

We had the pleasure to have **Kathryn Lapenskie**, Sedimentary Geologist, with the Sedimentary Geoscience section at the Manitoba Geological Survey as a guest speaker in February. She talked about some general geology of Manitoba as well as some specific quarries including The Narrows and Lily Bay. It was a very timely topic as we are currently in the planning stages for our field trips for the summer.

She first described the many sedimentary basins making up the stratigraphy of Manitoba. The sediment deposition in the province occurred in intercratonic sedimentary basins.



Kathryn Lapenskie from the Manitoba Geological Survey



Sedimentary basins of Manitoba

Those basins are defined by their center of deposition as well as their extent. For example, the Williston basin found in the SW corner of our province was deposited on top of the Elk Point basin and the Western Canada basin whose eastern margins follows more or less the east side of lake Winnipeg. This vast sedimentary basin covers 1,400,000 km² including southwestern Manitoba, southern Saskatchewan, Alberta, northeastern British Columbia and the southwest corner of the Northwest Territories.

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THE MINERAL SOCIETY OF MANITOBA

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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 1, 2017: MSM regular monthly meeting begins at 7:30 p.m. at the Manitoba Museum. Our guest speaker will be **Kyle Reid** Geologist, Precambrian Geoscience section at the Manitoba Geological Survey. He will speak about plate tectonic and the formation of ore deposits, particularly in relation to ore bodies found in Manitoba.

April 5, 2017: MSM regular monthly meeting begins at 7:30 p.m. at the Manitoba Museum. This will be our Annual Mineral Auction hosted by none other than our very own auctioneer extraordinaire, **Tony Smith**. Please bring some mineral specimens you wish to donate for the event.

May 3, 2017: MSM regular monthly meeting begins at 7:30 p.m. at the Manitoba Museum. Our guest speaker this month will be **Jim Bamburak**, Sedimentary Geologist, with the Sedimentary Geoscience section at the Manitoba Geological Survey. He will speak about the geology of Shoulderblade Island.

May 21 to 28 2016: Manitoba Mining Week
Archaeology, Rocks and Mineral Event at Oak Hammock Marsh on **May 27 & 28**

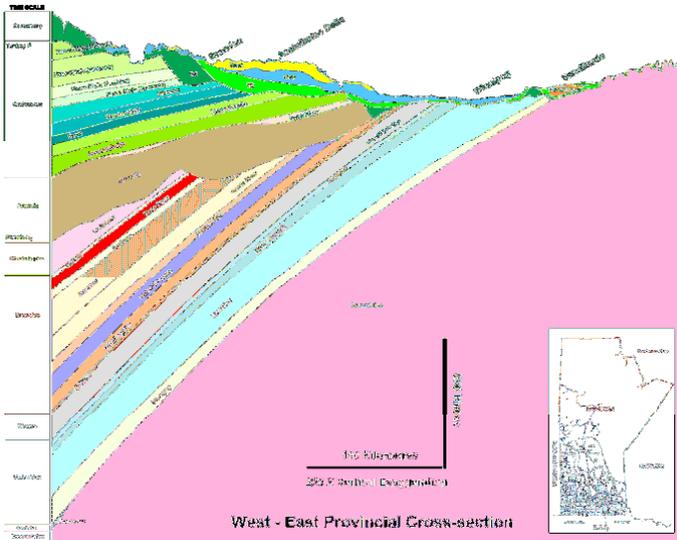


Founded in 1971, the Mineral Society of Manitoba is dedicated to promoting the study of minerals, rocks and fossils for their scientific and recreational value.

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 PRESENTATION (CONT.)

Kathryn described the successive stratigraphic layers in more details with reference to their age and location as well as showing images of some mineral types from each areas and featuring their fossilized fauna.



Phanerozoic stratigraphy of Manitoba

The **Ordovician**, which includes the Winnipeg, Red River, Stony Mountain and Stonewall formations, are rich in fossils (gastropods, brachiopods, cephalopods, trilobites, corals, stromatoporoids). Some of the localities where these Ordovician fossils are easily accessible include Stonewall Quarry Park, Stony Mountain Gillis Quarry in Garson, Hecla island and Herb Lake Landing near Snow Lake.

Following this period, massive glaciers dropped the sea level and caused what is known as the **Ordovician-Silurian** extinction events. Extinction was global during this period, eliminating nearly 85% of marine species. The Ordovician–Silurian extinction event is the second-largest of the five major extinction events in Earth's history.

The **Silurian**, which includes the Interlake group formation, was a period where high purity dolostone was deposited and is not very rich in fossils.

The **Devonian** period features limestone and dolostone deposits from the Elk Point Group and Souris River formation. It consists of four carbonate evaporate sequences and was known for its massive reefs developments and its fish.

The **Mississippian** sub period of the **Carboniferous** period does not outcrop in Manitoba but it is nevertheless very important for the oil and gas industry of our province. It is topped by an major unconformity which features no deposits but lots of erosion.

The **Jurassic** and **Triassic** periods feature sandstone and limestone evaporates capped by carbonates. There is very limited exposure in Manitoba but there is a little piece of Jurassic in just about everyone's house as all the sheet rock in Manitoba is made with gypsum from Amaranth deposited during that period.

The **Cretaceous** period in Manitoba consists of monotonous sequences of shale. Large bivalves shells and marine reptiles can be found in this shale and sandstone. There is also some bentonite deposits originating from the eruptions of volcanoes in Montana and Wyoming which used to be quarried in Manitoba.

The second part of her talk focused more on some quarries where good fossils samples can be found.



Lily Bay quarry near Lundar Beach

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FEBRUARY PRESENTATION (CONT.)

The first quarry discussed was Lily Bay, located on the east side of highway 418 North of Lundar Beach. It is a good example of Devonian Elm point formation with low fauna diversity but with some well preserved brachiopods. One interesting structure is a large fold in the rocks.



Gypsumville quarry

The second quarry discussed was Gypsumville quarry, an abandoned gypsum quarry accessible off Government Road in Gypsumville. It features Jurassic gypsum deposits from the upper Amaranth formation as well as many interesting caves for which one needs to contact the Speleological Society of Manitoba to get access. The many deposited layers show remarkably well in the caves.

The next one was The Narrows quarry located near The Narrows on highway 68 has a rich faunal diversity and is a good example illustrating the reefal carbonates of the upper member of the Winnipegosis formation.

The Mafeking quarry, located on highway 10 north of Mafeking, features limestone from the Devonian Souris River formation. There are some well preserved brachiopods as well as some anomalous "siliceous center" within the quarry. Accessibility to this quarry is often limited due to being filled with water.

The Black Island quarry is the oldest outcropping Phanerozoic strata in Manitoba. It has high purity silica sand that was used in glass making. It is situated on Hollow Water First Nation ground.



Black Island quarry

Several rusty looking formations resembling hoodoos are present in that quarry. The rusty colour is due to weathering pyrite.

Paradise Beach outcrop, located north of highway 269 near the town of Volga, has Devonian carbonates from the Dawson Bay formation. It has a high fauna diversity and is a good place to find trilobites albeit the site is heavily weathered.



Roaring River outcrop

The last quarry Kathryn talked about was the Roaring River outcrop located on the north side of highway 10, east of Swan River. It is the lowermost part of the Swan River formation. One of the interesting features found here are the cross directional ripple marks in the rocks.

The evening ended with a suggestion that Kathryn might be leading a field trip to some of those great quarries this summer... Lets hope she does!