



THE MINERAL VEIN

Official Newsletter of

THE MINERAL SOCIETY OF MANITOBA

OCTOBER 2017

SEPTEMBER PRESENTATION SUMMARY

By Jacques Bourgeois

We were fortunate to have Scott Falkingham, president of the Manitoba Speleological Society, as a guest speaker this past month.

When we think of caves, we often think of the large underground passageways and rooms covered in stalactites and stalagmites such as the ones found in the Black Hills of South Dakota, in New Mexico and in Tennessee. However, Scott warned us that Manitoba's caves are a little different than what we often picture but can be just as exciting to explore.

For example, during one of his first explorations of a cave in Manitoba, he drove north, then entered a bush and climbed down into a hole using a ladder. It was a very foreign experience for him but before long he was hooked and has been doing it regularly ever since.

Manitoba has lots of "wild" caves. They are often a simple hole in the ground, with no infrastructures, and can sometimes be dangerous.



Scott Falkingham, president of the MB Speleological Society

There are 4 main types of caves found in the province.

Talus caves

They are created when boulders have fallen down from the side of a hill or a cliff. Openings between boulders can be explored and can sometimes lead to passages and small "rooms" to explore. Those are usually very small and not very exciting. There are a few examples of those caves in the Whiteshell.

Crevice caves

Those caves occur when soft rocks get eroded by water and harder rocks fall over which create caves. Good examples of these caves are found in Grindstone provincial park near Hecla.

Wave cut caves or littoral caves

They are created by the repeated wave action along the littoral along rocky cliffs. They are primarily found along the shores of the large lakes in our province such as Steep Rock on Lake Manitoba, along the shores of Lake Winnipegosis, as well as along the Manitoba escarpment, the former shoreline of the glacial Lake Agassiz.



Typical cave found in Manitoba, just a hole with a ladder

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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

October 4, 2017: MSM regular monthly meeting and AGM begins at 7:30 p.m. at the Manitoba Museum. This is our **Annual General Meeting and Election** night. It is followed by a **Show and Tell**. Please make sure to bring some of the great specimens collected your summer field trips.

November 1, 2017: MSM regular monthly meeting begins at 7:30 p.m. at the Manitoba Museum. Our guest speaker this month will be Jack Bauer who has spent a lot of time and energy organizing the signature field trip of the year in the Winnipeg Floodway. His work paid off as many participants found some beautiful selenite specimens. Jack will share his experience planning and organizing this trip.

December 3, 2017: MSM annual Christmas Party. This year, our Christmas party will be held at the Aaltos restaurant at the Canad Inn Polo Park. Our annual Mineral auction will take place during this event.



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.

SEPTEMBER PRESENTATION (CONT.)

Solution caves

These are the most exciting ones. They are the largest and the most common caves found on the planet. They are formed by dissolution of soluble rocks like limestone and dolomite. Limestone is composed mostly of calcium carbonate in the form of the mineral calcite whereas dolomite consists of calcium magnesium carbonate. Both these carbonate minerals are somewhat soluble in the weak acids formed by carbon dioxide dissolving in groundwater. Water seeping through the soil and into the bedrock as well as water collected by sinkholes, and surface streams sinking underground at the margins of karst areas all percolate along fractures in the bedrock and gradually create sizable passages by chemical action. This process dissolves the rock as opposed to eroding it and can create very large caves such as Mammoth Cave in Kentucky. This cave, with over 650 km of surveyed passageways is by far the longest known cave system in the world.

The solution caves in Manitoba are not quite that extreme, or at least, we haven't found any that are of gigantic proportion yet. We do, however, have some very promising areas as the province has many flat karst features including small caves, sinkholes (caves that got too weak and eventually collapsed) and artesian springs.

Most caves in Manitoba are dry but some can be flooded in spring.

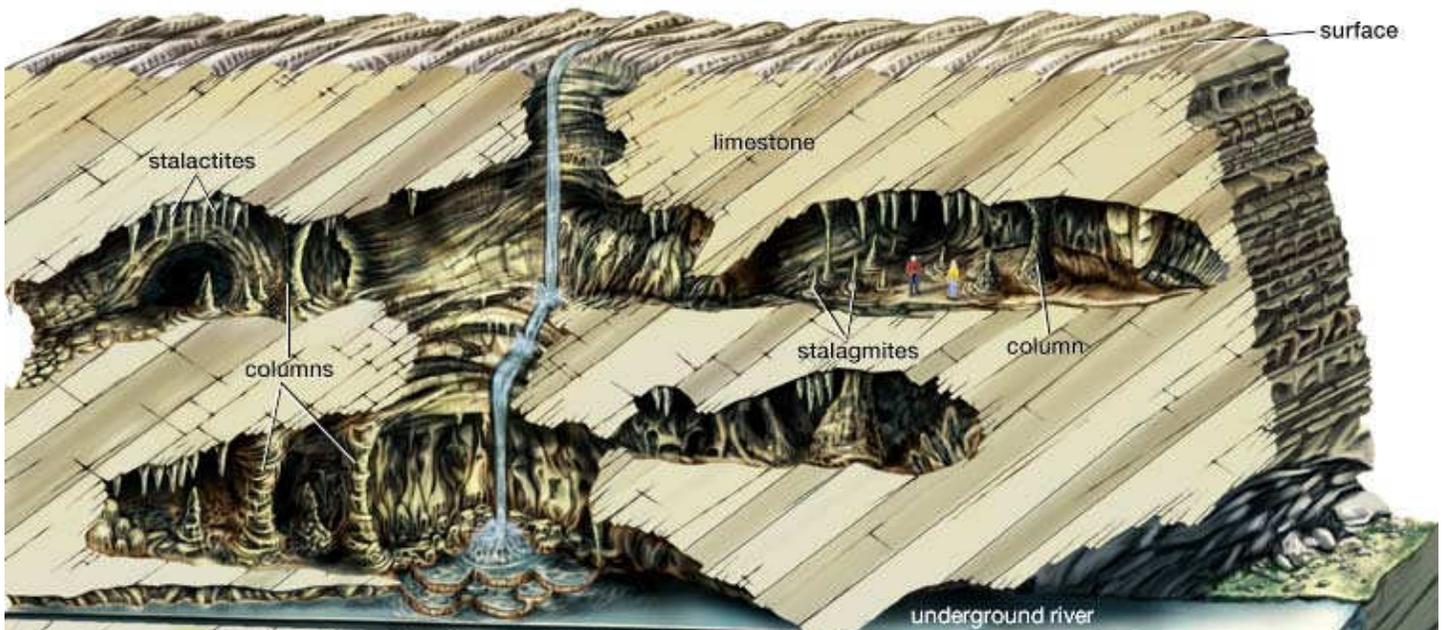
Some speleothems can be found in some of the caves but since the majority of the caves are fairly young, those are usually quite small. Speleothems include:

- stalactites, dripstones and soda straws when they're coming from the ceiling of the cave
- Stalagmites and cave pudding when they are forming from the ground up
- flowstone and ribbons when they are forming on the walls
- cave popcorn which is a corral-like structure formed in extremely humid caves

Icicles can also be considered speleothems

Caves can also be a perfect habitat for several wildlife species. Bats for example will be a prime example of an animal that is well adapted to live in caves. They tend to prefer caves that remains at 3 degrees Celsius above zero in winter. Bears will also use caves during the winter as well as for denning. Apparently, Manitoba caves are the perfect size for our bears.

Other species that can often be found in caves include salamanders, snakes (think of Narcisse...), porcupine and even some species of moths such as the Tissue and the Herald moths. Caves can also create a dangerous hazard for wildlife as several dead creatures can be found in them. There is a cave near Fisher Branch filled with animal bones.



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SEPTEMBER PRESENTATION (CONT.)

The main objectives of the Speleological Society of Manitoba are to promote safe recreational caving in Manitoba, to protect Manitoba's caves and their natural contents, to foster an awareness of and appreciation for Manitoba's speleological features as well as advance by any and all means the study and science of speleology in Manitoba.

They are mostly using ladders to climb down the caves as most caves are 30' deep at the most in Manitoba. Cable ladders work best. They also attend regular climbing courses to familiarize themselves with proper climbing techniques.

To protect Manitoba caves, they pick up litter every time they go caving. Some caves seem to be particularly attractive for party goers and a convenient place to discard empty bottles. For that reason, they often keep the cave locations secret among members. Many caves have been filled in by landowners to prevent injury to livestock. There used to be some in Stony Mountain and Stonewall but they have been filled up. They worked on a designation for an ecological reserve for caves such as the one in Lake St. George in the Interlake.

They advanced science and research by constantly searching for new caves, looking for topographical cues like yellow trees and GPS tracking the caves. The prize and glory is to be the first one to find a cave! Once a cave is found, they explore and make a map or cave survey (top down view and side view). The longest cave in Manitoba is 250 meters long.

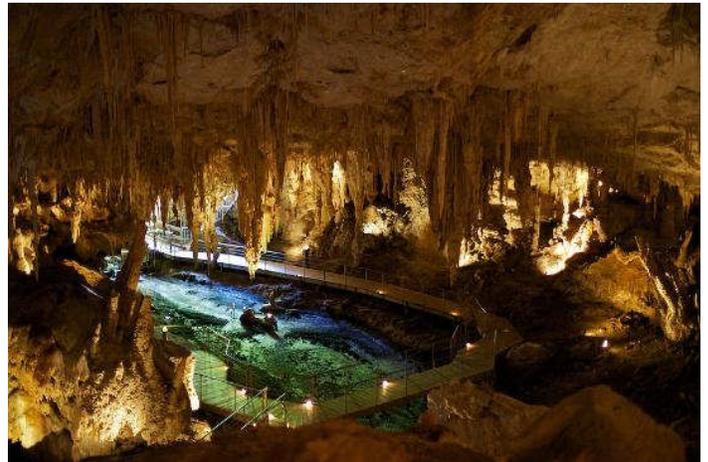
Scott has also worked on a project to put temperatures sensors in caves to determine best bat habitats. Some bats migrate 500 km from Peguis to Kenora to find the best suited caves. Cave diving is perhaps in the near future as some artesian springs show some potential for discovering new caves.

And finally, they foster awareness and appreciation by doing presentation such as this one tonight and taking people on field trips. Coincidentally, the next field trip was scheduled for the following weekend in Lake St. George.

INTERESTING CAVES AROUND THE WORLD

By Jacques Bourgeois

The longest cave in the world is Mammoth Cave near Brownsville, Kentucky. It measures **651.8 km**. It was discovered in 1791 and it is now part of the Mammoth Cave National Park. It is also a World Heritage Site and International Biosphere Reserve.



Mammoth Cave– Mammoth Cave National Park

The longest underwater cave system in the world is **Sistema Sac Actun / Sistema Dos Ojos** located near Tulum, Quintana Roo, Mexico. It is **346.7 km** long.



Dos Ojos cave entrance -Dag Lindgren

Hang Son Doong in Vietnam is the world's largest cave. At more than **200m high, 150m wide and 5km long**, it is so big that it has its own river, jungle and climate.

