



THE MINERAL VEIN

THE MINERAL SOCIETY OF MANITOBA NEWSLETTER

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2005 – 06 EXECUTIVE

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Society News

Our next meeting is Wednesday, October 3. It is also our Annual General Meeting.

We have the following permitting their name to stand for executive positions:

- Jack Bauer for President
- Marion Foster for Vice President
- George Green and Yvonne Searle for Members at Large
- Marjorie Turton as Newsletter Editor

The following positions require volunteers:

- Secretary,
- Field Trip Chairman
- Jack Bauer's wife kindly consented to do our book keeping; but a participating member as treasurer would be nice.

It is also time for us to renew our membership and participation.

Brief field trip notes:

This has been a wetter than average year. The high water levels created access problems for some of our field trips and forced some cancellations this year. We will reschedule the Gypsumville field trip for next year, hoping Mother Nature will co-operate.

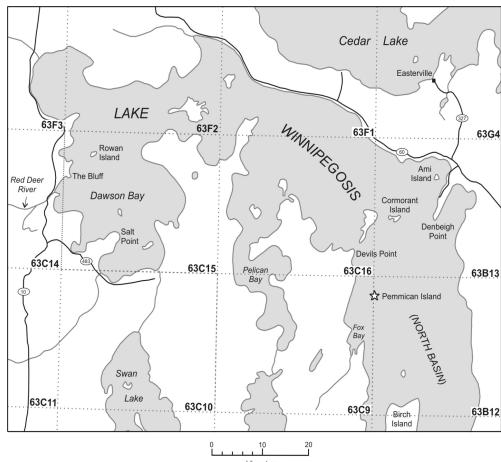
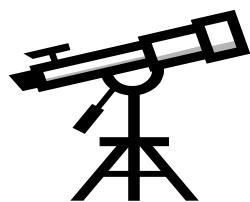
Mineral Society of Manitoba General Meeting

1. This meeting will be a show and tell, so bring your new and special specimen, picture and/or story. (*setup 6.45 PM*)
2. **Coffee and muffins will be available from 7 PM. To 9 PM.**
Compliments of MSM
3. We will have a minimum of ten raffle draws, *this meeting only*.
4. Manitoba Geological Highway maps for registered Gypsumville trip participants. *Complements of Mr. James Bamburak from Energy and Mines, Manitoba.* Ten maps have not been claimed. First come first served. Any maps that are not claimed will be added to the raffle.

Dues are \$15/year (\$20 for families) and are payable at the October meeting or by mail during October.

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 draw. 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, neighboring provinces and states.



North basin of Lake Winnipegosis, showing location of Pemmican Island

Last meeting, we had the excellent speakers James Bamburak presenting "An occurrence of Mississippi Valley Type (zinc-lead) mineralization, within Silurian Interlake Group, on the east side of Pemmican Island in the north basin of Lake Winnipegosis".

The following provides us with some extracts from his presentation and **Manitoba Geological Survey GS-26. "A possible new Mississippi Valley-type mineral occurrence near Pemmican Island in the north basin of Lake Winnipegosis, Manitoba (NTS 63B12 and 13,63C9 and 16) by J.D. Bamburak and K. Klyne."**

Summary

Manitoba has been investigated for over 30 years by government and mining company geologists interested in finding Mississippi Valley-type (MVT) Pb-Zn mineralization. A joint study by Klyne Exploration and the Manitoba Geological Survey, underway since 2001, has focused on the MVT potential of the north basin of Lake Winnipegosis, near the northeast end of Pemmican Island. Drilling in 2004 intersected 15 cm of sulphide-bearing dolomite, grading 4.59% Zn, 0.41% Pb, 0.014% Cu, 10.4% Fe and 14.05% S, at a depth of about 15 m below lake level

The mineralization is situated • within dolomite of the Cedar Lake Formation (Silurian Interlake Group);

- below the argillaceous Devonian Ashern Formation and the pre-Middle Devonian unconformity, with associated karst development;
- adjacent to the faulted eastern margin of the buried Precambrian Superior Boundary Zone;
- on the southwest flank of the Precambrian Severn Arch;
- near the edge of the composite Elk Point-Williston sedimentary basin; and
- on the southeast limb of the Moose Lake Syncline.

Introduction

The area of interest is located in the north basin of Lake Winnipegosis, which is that part of the lake situated north of Birch Island and extending westward to include Dawson Bay,

As documented by Gale and Conley (2000), the potential for **Mississippi Valley-type (MVT)** lead-zinc (Pb-Zn) mineral occurrences within Paleozoic carbonate rocks of Manitoba has been suggested by many geologists over the past 30 years. Various companies (Gulf Minerals Canada Limited, Husky Oil Limited, Canadian Nickel Company, Limited, and Cominco Ltd.) have attempted to search for Paleozoic MVT Pb-Zn deposits in the province (Bamburak et al., 2000). Fedikow et al. (1998) discussed the potential for sediment-hosted disseminated sulphide deposits (Au, PGE and base metals).

Where are MVT mineralization occurring?

Geological setting

Jackson and Beales (1967) stated that the most striking structural features associated with Pb-Zn orebodies are that the mineralization occurs near the margin of sedimentary basins and at the edge of major synclines. Further,

Anderson and Macqueen (1982) commented that MVT deposits tend to be found on arches between basins.

The study area, in west-central Manitoba, is situated within the Paleozoic outcrop belt, on the northeast margin of the composite Elk Point–Williston sedimentary basin (600 km southwest of the Severn Arch axis) and on the southeast limb of the Moose Lake Syncline. The latter is also coincident with the Precambrian Superior Boundary Zone (SBZ), as depicted by McCabe (1967).

Most of the eastern portion of the north basin of Lake Winnipegosis is located within the Silurian outcrop belt. **Previous investigations**

Geological Survey of Canada (1889–1964)

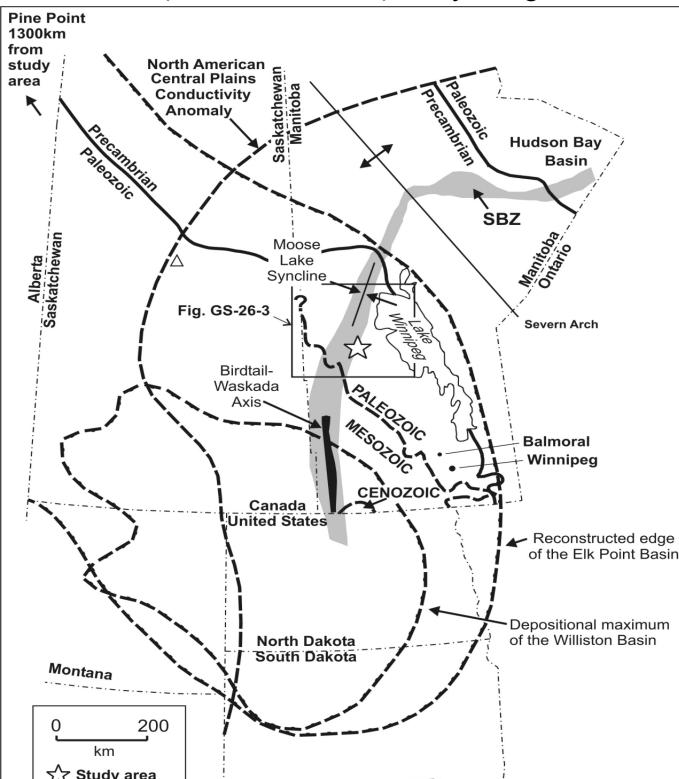
In 1889, J. B. Tyrrell documented the presence of nodules of marcasite and fragments of lignite, associated with white sandstone at Pemmican Island. He interpreted this to be a Cretaceous “outlier of Dakota sandstone deposited in a hollow of the Devonian rocks” (Tyrrell, 1892). Similar concretions were also described on Ami Island, Devils Point and Cormorant Island by Tyrrell (1890). On Ami Island, he noted “small rounded masses of white sandstone holding nodules of Marcasite.” Tyrrell also speculated that the nodules or concretions had been ice-pushed from the bottom of Lake Winnipegosis.

In 1964, A.W. Norris and M. Oullet noted “numerous loose fragments of iron sulphide” on the northeast shore of Pemmican Island, 0.32 km northwest of the east tip of the island (Norris et al., 1982). They recognized

The Interlake Group occupies this portion of the outcrop belt. The Silurian beds were exposed to a major erosional event before deposition of the overlying Middle Devonian Ashern Formation.

The western portion of the north basin of Lake Winnipegosis is underlain by the Devonian outcrop belt, which includes the Ashern, Winnipegosis and Dawson Bay formations. The Prairie Evaporite above the Winnipegosis Formation has been removed through salt solution and the overlying beds have collapsed onto the Winnipegosis Formation (Norris et al., 1982).

argillaceous dolomite of the Lower Member of the Devonian Winnipegosis Formation in a cliff on the island, and also believed that the underlying Devonian Ashern Formation was present near the edge of the lake



Manitoba Geological Survey (1950–2002)

Baillie (1951) could not find any evidence that the Ashern Formation was present at the base of Pemmican Island; however, a sample of Ashern Formation from Pemmican Island, provided by R. Chartrand of The Pas, was tested for brick making by Bannatyne (1970).

◀ Major structural features and geology of the Williston and Elk Point basins, Manitoba and vicinity (modified from Fedikow et al., 2004).

In 1969, a small well-rounded pebble of almost pure galena was found in the NE ¼, Sec. 26, Twp. 14, Rge. 1, E 1st Mer., **near the town of Balmoral** 250 km southeast of Pemmican Island and 35 km northeast of Winnipeg. McCabe

(1969) suggested that the pebble might have been glacially transported from a site, possibly in Manitoba, similar to the Phanerozoic Pine Point deposit in the Northwest Territories. In response to the discovery of the pebble, the Manitoba Geological Survey carried out two lines of investigation:

Gale and Conley (2000) reported that the maximum Pb concentration (200 ppm) in the drillcore samples was obtained from the Winnipegosis Formation. The highest Zn (740 ppm) and Ni (120 ppm) values were from the Red River Formation. The maximum Cu value