



# THE MINERAL VEIN

## THE MINERAL SOCIETY OF MANITOBA NEWSLETTER

March 2008

The Mineral Society of Manitoba  
c/o The Manitoba Museum  
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### Object and purpose of the Mineral Society of Manitoba:

“The object and purpose of Society shall be to establish and to conduct a non-profit, educational organization to promote, to enjoy, and to develop the study and practices of the various phases of mineralogy and related earth sciences.”

The above is an excerpt of our constitution. Constitutions tend to be dry reading but they always contain interesting bits of information. Copies of the constitution will be available for picking up at our next meeting.

### CLUB MEETINGS

**April 2, 2008:** Speaker Dr Graham Young, topic: fossil record of jellyfish: do they exist in Manitoba? He will presenting information on a fossil specimens never before found in Manitoba

**May 7, 2008:** Speaker Dr Jim Teller with topic “Lake Agassiz”.

**September 3** Speaker Lori Stewart with topic her research done on Gillies quarry. Lori was a past recipient of a MSM bursary.

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### CLUB NEWS

**From Jack Bauer**

1. \*Executive meeting\*, prior to our regular meeting @ 6:30 PM, April 02/08. Interested regular members welcome. \*Agenda\*; to prepare for. \*Work Bee.\*; Date, Time and location?  
\*Fossil collecting\* date and time (@Stony Mountain) if needed.  
\*Volunteer coordinator \*and list.
2. \* BBQ end of May\*. Date and location to be announced at next meeting and next newsletter.

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

## **CLUB NEWS (cont.)**

Questions?  
Contact Jack Bauer @ 632-6934.

3. Support your club.  
\*VOLUNTEERS NEEDED\* to prepare for and man, our first fundraiser of the year, "Manitoba mining week" May 21/08 at the FORKS.

Jack

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### **Canadian Fossil Discovery Centre**

February 22 & 23 members of the Mineral Society of Manitoba went to Morden, to the Canadian Fossil Discovery Centre assisting in their open house.

We had somewhere in the neighborhood of 175 children. Attendants were from MSM: Yvonne and Bill Searle, Chris  
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Lammers, George Green, Marion Foster, Marjorie Turton. Attendants from the Manitoba Museum were Archeology department and Kevin Brown Lee from Anthropology and a group of flint knappers



## **FIELD TRIP REPORT**

Gary Henes (Field Trip Coordinator, Mineral Society of Manitoba), Mike Mirus (Field Trip Coordinator, Winnipeg Rock and Mineral Club) and Jack Bauer (President, Mineral Society of Manitoba) have combined their resources to organize an exciting season of trips to popular collecting localities.

If we reach our maximum numbers on specific trips, priority will go to MSM and WRMC paid up members. On fieldtrips requesting registration, please do so early and avoid disappointment.

Last year, the weather was a significant, and we found it necessary to post pone, change or cancel a particular trip, so please keep in touch in case of last minute unforeseen changes.

### **Stony Mountain, Manitoba April or May? 2008 Depending on weather**

To collect fossils (brachiopods, corals - horn and honeycomb pieces) for the Mineral Society of Manitoba's collector cards

If any member has any coral fossils from this locality, please let us know.

For more information please contact Gary or Sherri Henes at. 275-7883 or Mike Mirus at. 783-7456.

### **Gypsumville Quarries,**

### **Gypsumville, Manitoba Date to be Determined June or July 2008**

This trip will be co-led by James Bamburak from the Manitoba Geological Survey. This trip will involve a number of stops in the crater area. We would like to keep the vehicles to a minimum and would like members to double up where possible and share expenses. Four to six vans, trucks or suvs will then compliment our mobile group nicely (Max capacity 20 participants).

Mr. James Bamburak from the Geological Survey of Manitoba, has volunteered to lead this trip as long as we can co-ordinate with his schedule. Last year this trip was cancelled due to wet accessibility concerns. We will visit other Ordovician and Silurian outcrops in the neighborhood, if the center of the Gypsumville crater remains inaccessible. This will be determined by a pre trip.

Please register w/ Gary or Sherri Henes at 275-7883...or Mike Mirus at 783-7883

### **Gold Trip**

**Bissett or Star Lake, this trip is subject to pre trip confirmation.**

**? June or July, 2008**

**Here the gold is associated with quartz veins. With a little luck, and a good quality metal detector, the possibility of finding VG is good but not guaranteed. I will confirm this trip, after a pre-trip to determine accessibility. Eye protection will be necessary for this trip and bring a lunch.**

For more information please contact Gary or Sherri Henes at 275-7883

or Jack Bauer at 632-6934. Please register w/ Gary or Sherri Henes at 275-7883. ...

### **Red River Floodway**

**Selenites**

**Date to be determined**

\*Tentative- **the Floodway**- those who are interested in this trip, please contact Mike Mirus at 783-7456, when an opportunity presents itself, you shall be called and given details.

### **Thunder Bay, Ontario**

**This trip has been cancelled, until further notice.**

### **Miniota Gravel Pits**

**August 23, 2008**

Cretaceous fossils, ironstone concretions, agate and petrified wood. For more information, call Marion & Marjorie 775-0625 after a pre trip. Please register with Gary or Sherri Henes at 275-7883

### **Morden, Manitoba**

**August 16, 2008**

**Meet at the Canadian Fossils Discovery Center**

Meet at the Canadian Fossils Discovery Centre at 9:30 a.m. A \$5 fee will cover a guided tour of the museum and the dig.

Take a trip back in time as we explore the ancient seabed of the Cretaceous that once covered Manitoba in search of mosasaur and plesiosaur fossils. The area around Morden is also rich in other minerals such as jarosite and selenite.

For more information, contact Mike Mirus 783-7883

### **Stony Mountain, Manitoba**

**Mid September, 2008**

Meet at the Stony Mountain quarry for 9:00 a.m. Explore the quarries of Stony Mountain, consisting of limestone and dolostone formed during the late Ordovician period. Many fossils abound, including brachiopods, corals (horn and honeycomb), cephalopods, and molluscs. Those with a keen eye, although not as common, can also find trilobites/pieces. This field trip coincides with the Oak Hammock Marsh annual Archaeology, Rocks and Mineral Show and is a morning trip only, in order to allow participants to take in the mineral displays and rock auctions at the show in the afternoon.

For more information, contact Jacques Bourgeois at 467-3282.

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### **General Information about Field Trips**

If weather conditions become unfavorable, contact Fieldtrip Co-ordinator

Keep in touch, in case of unexpected changes. Advise Fieldtrip co-ordinator of any health conditions and concerns, eg. Poor hearing or allergies to bee stings.

Register in advance, for the field trips that request it. Contact the field trip coordinator for more information or if your plans unexpectedly change.

Some field trips have limited spots available.

Be prepared to sign a liability waiver

Prior to every "in the field" portion of the trip please gather to the fieldtrip leader for information and safety concerns for site-specific areas.

## Safety equipment, When attending a field trip:

- Protect yourself, bring and wear safety glasses and safety boots
- In Hard Rock country, pieces of rock can fly and hit you in the eye, when struck with a heavy hammer.

## Things to bring with you:

- Lunch and drinking water
- Bug repellent and sunscreen
- Hammers and chisels
- Safety glasses, safety boots
- Field lens or magnifying glass
- Collecting bags and news paper/towels to protect your find
- Notebook (to record locations and geological notes)
- Camera, film, and your sense of adventure

Have Fun, be Safe and Good Luck on our 2008 Fieldtrip season.

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**John Biczok** was lucky enough to visit the Tucson show on the last day of 2007 and saw some of the “American Classics” on display. It really was an amazing “All-Star” show with the best American pieces from private and museum collections. He submitted some pictures for our newsletter..

There’s one photo of our members Margarette and Allan Akins too. He saw quite a few old friends there, including Frank Hawthorne from the U of M and one of his former students, Mike Wise, who’s now at the Smithsonian. The Haslers were there for much of the show and might be good to talk to if we want a first person account.



**A couple of stunning aquamarines**

## In a dealer’s case



**California leaf gold**



**Rhodochrosite from Sweet Home Mine**



**The Atkins enjoying the show**

## Wednesday, March 5, Meeting

John Biczok brought in an unusual pure selenate crystal for evaluation as its first museum quality Manitoba mineral donation to the Manitoba Museum. We hope this is a start for a Manitoba Museum display of Manitoba minerals.

Raffle winners are as follows: George Green, Marion Foster, both our Mikes, Jack Bauer, Marjorie, Mustaffa, and John F.

Wednesday, March 5, Meeting Presenter  
Was Sharon Hull, Dept. of  
Anthropology/geological Sciences from the  
University of Manitoba



### Sourcing Turquoise



It is rare and valuable in finer grades and has been prized as a gem and ornamental stone for thousands of years owing to its unique hue. The substance has been known by many names,

but the word *turquoise* was derived around 16th century from the French language either from the word for *Turkish* (*Turquois*) or *dark-blue stone* (*pierre turquin*). This may have arisen from a misconception: turquoise does not occur in Turkey but was traded at Turkish bazaars to Venetian merchants who brought it to Europe. The colour, however, has been employed extensively in the decorative tiles adorning Turkish places of worship and homes for hundreds of years. Actually, there is evidence that turquoise was first mined 5000 years ago in Egypt.

Turquoise is an opaque, blue-to-green mineral that is a hydrous phosphate of copper and aluminium, with chemical formula  $A_{0-1}B_6(PO_4)_4(OH)_8 \cdot 4H_2O$  where  $A = Cu, Zn, Fe^{2+}$  and  $B = Al, Fe^{3+}$ . Colour is as variable as the mineral's other properties, ranging from white to a powder blue to a sky blue, and from a blue-green to a yellowish green. The blue is attributed to idiochromatic copper while the green may be the result of either iron impurities (replacing

aluminium) or dehydration. Turquoise belongs to a group with 6 members: Aheylite, Chaisiderite, Coeruleolactite, Faustite, Planeritr, Turquoise. Unfortunately their coloured pictures are not provided here. These members have different chemical composition but have the same mineral structure.

Aheylite is very rare, are pale blue, green and blue green, with a dull luster and hardness of 5 to 5.5. Can be found in Bolivia.

Chalcosiderite is apple green, dark green, with a vitreous, glassy luster and hardness of 4.5. It is common at the Cerrillos Hills Mining District, near Santa Fe. The green colour is attributed to its richness of iron concentration.

Coeruleolactite is milk white to light blue with a vitreous, waxy luster and a hardness of 5. It is very rare, aluminum rich and found in Cripple Creek, Co.

There is on the market a "white turquoise" from the White Buffalo deposit, Nevada. Samples were collected and analyzed, it turned out to be calcite and not white turquoise.

When a piece of turquoise is exposed to the atmosphere over a period of time it alters to white clay minerals, pyrophyllite.

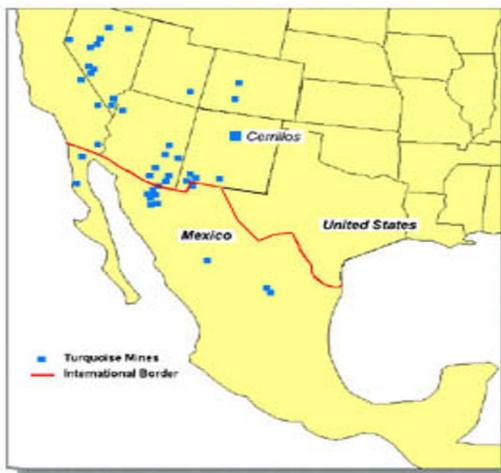
As a secondary mineral, turquoise apparently forms by the action of percolating acidic aqueous solutions during the weathering and oxidation of pre-existing minerals. For example, the copper may come from primary copper sulfides such as chalcopyrite or from the secondary carbonates malachite or azurite; the aluminium may derive from feldspar; and the phosphorus from apatite. Climate factors appear to play an important role as turquoise is typically found in arid regions, filling or encrusting cavities and fractures in typically highly altered volcanic rocks, often with associated limonite and other iron oxides. In the American southwest turquoise is almost invariably associated with the weathering products of copper sulfide deposits in or around potassium feldspar bearing porphyritic intrusives. Typically turquoise mineralization is restricted to a relatively shallow depth of less than 100 meters, although it does

occur along deeper fracture zones where secondary solutions have greater penetration or the depth to the water table is greater.

The one we are most interested in is Turquoise because it was used by native Americans. It has a cultural context used in manufacture of articles, trade, and even as money. So for them this is Turquoise. It is pale green, blue-green, and of course turquoise blue with a waxy luster and a hardness of 5 to 6.

Turquoise from ancient Mesoamerica and Southwestern US/Northern Mexico has been mined for over a thousand years, beginning with the Aztecs and Mayans, followed by the Native Americans and near the turn of the 20<sup>th</sup> century by pioneers, and is still being mined today.

So why source Turquoise? There are a large number of turquoise artifacts recovered from archaeological sites. Many of these were a great distance from any known mines. Where did they get the turquoise? How to tell from where. Trace elements similar to obsidian studies was unfruitful as a single source displayed a great variation. An alternative was an examination of hydrogen and copper isotopes. There are contours of hydrogen and copper isotope values which differ across the Western US and Northern Mexico.



Turquoise mines US and Mexico

Sharon Hull marries anthropology, geological, and chemistry sciences by using the SIMS (secondary Ion Mass Spectrometer) at the University of Manitoba to identify these isotope profile and possible source of Turquoise. She has been

successful in fingerprint source artifacts from many sites and which makes possible reconstruction of local trade networks for Pueblo, Bonito, Chaco Canyon and Aztec communities.

It was enjoyable to have the interplay of sciences to help uncover history. Secondary mineral formation is also an interesting account.

Job well done Susan Hull!

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As you know, the **MSM and WRMC** are trying to work a little more closely together.

The Winnipeg Rock and Mineral Club's next meeting date is April 10 at 7:00 pm at Lions Place, 610 Portage Ave.

The WRMC will be hosting its silent auction on this date. There should be some interesting treasures there. Everyone welcome!

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This newsletter is later than usual because the editor has been ill and was unable to finish the newsletter till now.

Sincerely  
Marjorie Turton