



GEOLOGICAL SOCIETY OF MINNESOTA

NEWS

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WELCOME NEW MEMBERS

Lawrence Aanonson
Ronald Anderson
Mark Andreason
Lynn Arnsdorf
Julie and Scott Bartley
Allan Bowles and Family
Robin De Long
Rebecca C. Galkiewicz
Chip Hecimovich
John & Ruth Jensen
Julie Johnson
Michael Kingsley
Kris & Robert Meller
Roger Nielsen and Molly Wells
Earl Rook
Tony, Janet & Alice Schweigert

Something New and Different

A GSM Member Recognition Banquet will be held on January 23, 2010, from 4:00 p.m. to 7:00 p.m. at the Eisenhower Community Center, 1001 Hwy 7, Hopkins, MN 55305. **This will be a potluck event.** Set up will be from 3:00 p.m. to 4:00 p.m. with the dinner to follow shortly thereafter.

We are trying something new at this banquet. We will be holding a Silent Auction which will run from 6:00 p.m. until all items are sold. In order for this to be a successful event, we need donated items, such as, books on minerals and geology; rock samples; fossil samples; tools; hiking maps; etc.

If you would like to donate something and/or tell us your potluck item, or for further information, please contact Theresa Tweet - phoenix8185@gmail.com or Dick Bottenberg - dbottenberg@hotmail.com. Donated items need to be in to us by January 16 so they can be itemized.

A Field Trip Gathering



GSM NEWS

Editor: Judy Hamilton
Production Mgr: Katy Paul

Geological Society of Minnesota is a 501(c)3 nonprofit organization. The purpose of this newsletter is to inform members and friends of the activities of the Geological Society of Minnesota. GSM NEWS is published four times a year:

February 15, May 15, August 15, and November 15. GSM NEWS welcomes unsolicited Geography and Earth Science related articles and photographs. Deadline for article submission is the first of the month, before the date of publication. Send all material for GSM NEWS to the address below.

OFFICERS:

Ly Preece, *President*
Dick Bottenberg, *Vice President*
Paul Jansen, *Treasurer*
Sandy Steffner, *Secretary*

Directors in addition to the officers listed above: Megan Jones, Alan Smith, Edward Steffner; Harvey Thorliefson; one vacancy.

Send all GSM membership dues, change of address cards, and renewals to:

GSM Membership Chair
P.O. Box 390555
Edina MN 55439-0555

Membership levels are \$10 Full-Time Students; \$20 Individuals; \$30 Families

Summer 2009 Field Trips

In May, GSM Members Steve Erickson and Roger Benepé led a field trip to the **Brick Yards in Lilydale Regional Park**. It was a cold, wet day and we slogged around in the Decorah Shale and found slabs of fossilized sea creatures. Good grubby fun!

Two weeks later it was a lovely, sunny day for GSM member Randy Strobel's trip to **Barn Bluff in Red Wing**. We learned about the Twin Cities basin and the Red Wing anticline which exposed the older, deeper layers at the surface.

We went to Sorin Bluff to see the contact between the Jordan Sandstone and the Oneota dolostone. We climbed to the Red Wing fault on Barn Bluff and saw the displacement where Jordan sandstone has dropped down adjacent to the green colored Franconia Formation. We saw Coon Bluff in the distance and learned these bluffs were once islands in the ancestral Mississippi.

We located and read GSM plaques in the area and toured the Goodhue County museum which had a section devoted to geology of the county—including a really cool mechanical model of the Red Wing fault. We visited the old Carlson Kiln, built in 1882, which is now on the National Historical Register. The kiln was used to heat limestone to extreme temperatures ("calcining") to produce lime which was used in mortar and was important to the local economy.

After that, we hiked to the top of Barn Bluff on trails through restored prairie. There, Randy pointed out where the glacial till is covered by windblown fine sediment called loess. An unscheduled stop at the falls of the Vermillion River in Hastings and dinner at the Bier Stube rounded out the day.

In July, we traveled up the **Minnesota River** on an over night trip organized by GSM member Bill Robbins, and led by Carrie Jennings of the MN Geological Survey. Carrie referenced a historical work "A Canoe Voyage up the Minnaway Sotor" by George W. Featherstonhaugh and we learned his name is pronounced "Fan-shaw". We learned that Glacial Lake Agassiz drained about 10,000 years ago via Glacial River Warren which scoured the wide valley where today the relatively small Minnesota River flows. We stopped to examine some of the effects human activity has had on the river—how clearing the forests caused run off and more sediment load and how tiling the fields contributes to erosion and shifted the balance between erosion and deposition.

(Continued on page 7)

BOOK REVIEW:

Roadside Geology of Minnesota, by Richard W. Ojakangas

For those of you who have been members of GSM for several years, my guess is that most have had the fortunate experience of attending a lecture or participating in a field trip lead by Dick Ojakangas. If you haven't, reading the *Roadside Geology of Minnesota* is the next best thing. And even if you have been in attendance, you have most likely forgotten much of what you learned. Just like his lectures and field trips, Dr. Ojakangas sprinkles this book with humorous anecdotes, bits of Indian Folklore, obscure facts about Minnesota's history, and of course, a lot of geology. If you learned a lot from Dr. Ojakangas's book, *Minnesota's Geology*, coauthored with Charles L. Matsch in 1982, you will be delighted with *Roadside Geology of Minnesota*.

The book's introduction begins with an extensive overview of Minnesota's geology. A discussion of plate tectonics with illustrative diagrams and maps, sets the stage for a review of the Midcontinent Rift System, which is responsible for the volcanic rock found along Lake Superior's shore. Beginning with Archean Time 4.5 billion years ago, down through the Proterozoic, Paleozoic, Mesozoic, Tertiary, through the glacial periods of the Pleistocene, Minnesota has geological evidence of it all (except for what the glaciers may have removed or redistributed.)

Following the primer on basic geology, the book is divided into four sections, based upon the regions of the State: Northeastern, Northwestern and Central, Southwestern, and Southeastern. If you know anything at all about the geology of Minnesota, you will not be surprised to find that the section on the Northeast is the longest, and the most interesting, geologically. The Northeastern section is home to the mines of the Mesabi, Biwabik and Cuyuna iron ranges, scenic Highway 61, amazing road cuts, the Sudan Underground Mine State Park, classic examples of greywacke, agates, and Warba, the home town of Dick Ojakangas. And if you thought that "Cuyuna" was an Indian word, you will be surprised to find out where it really came from when you read the book.

The road guides in each section give detailed descriptions of the geology to be found, what caused it, and the mile marker numbers that correspond with interesting stops. From the Sioux Quartzite of southwestern Minnesota to the pillow basalt in Ely, from the karst country of southeastern Minnesota to the ancient Lake Agassiz shorelines in the northwest, and all the glacial lakes, till, drumlins, eskers, kames and kettles in between, Dick Ojakangas includes it all. (Did you know that iron ore was mined in southeastern Minnesota, south of Spring Valley, from 1942 - 1968?) There are many color photographs of geologic features throughout the book, many of which I recognized from field trips past.

This book is great for armchair geologists. If you don't want to follow the road guides and explore further, you should still read the book. After you read it, keep it in your car, for you never know when you might be on the road and come across an interesting geological feature that piques your curiosity. Having a geologist in the car while traveling in Minnesota is something I've often wished for. Traveling with the *Roadside Geology of Minnesota* goes a long way to help make up for that deficit.

Submitted by Katy Paul

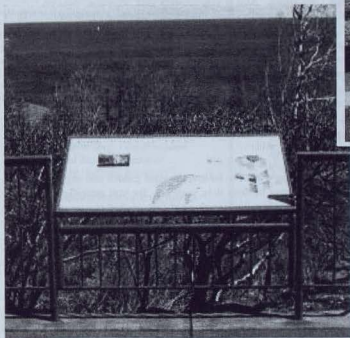
HISTORICAL MARKER PHOTOS



Flood Bay



Frontenac



Split Rock

HISTORICAL MARKER NEWS

Your Historical marker committee has been busy completing six of the seven installations contracted by the GSM with the State of Minnesota. The Historical Society has been responsible to the State for our work projects and the financial accounting. Our final reports to the MHS are completed and filed even though the last (seventh) installation, that being Interstate State Park, will not be completed until the spring of 2010. This delay is due to park construction and we are accommodating their necessary rescheduling. The expenses for Interstate have been projected and included in the final report to the MHS.

Now for the most rewarding aspect of this project. Six locations are completed and you will be very proud as you view the structures, noting that our GSM is clearly named as one of the responsible parties for the installations. The locations are very well chosen, surrounded by the scenic beauty of our State.

The **Flood Bay** bronze marker is mounted on a dark gray gabbro boulder adjacent to the beach of Lake Superior.

Gooseberry Falls required the replacement of the plaque, only. More accurate information was available, with regard to the bridge structure, affording appropriate updating of this monument.

Split Rock's installation presents to the public a stunning graphic describing the surrounding geology. It is mounted on a redesigned segment of fence behind the park center main building with a magnificent elevated view of Lake Superior.

The **McCarthy Beach** pedestal structure is located on the shores of Sturgeon Lake. Again, an elevated view of the lake as you read the history of this kettle lake area cast in bronze. McCarthy Beach is located near Chisholm and even closer to Side City.

Both McCarthy Beach and **Frontenac** have manufactured capstones cemented to the pedestals as a base to support and secure the plaques. The capstones provide a strong and attractive foundation for the bronze. The color contrast is excellent. Frontenac's pedestal is of dolostone from the immediate area, blends in well with surrounding structures and the setting is breath-taking as you overlook the Mississippi River for miles downstream.

Lastly is **Beaver Creek Valley**. This setting is quite different as you access the site through a narrow valley and driving through a stream as it crosses the road. A small campground is approached and within is located a placed dolostone boulder. Peter Morales, the carver for the boulders at both Flood Bay and Beaver Creek, cut and sanded a recessed flat in which the plaques are mounted. Behind this monument, about 200 ft. Distant, from the side of a rise, is a gushing spring water flow located about two feet above the stream. This park valley setting is located 5 miles from Caledonia. Surely, worth a visit and maybe an overnight stay.

This remarkable Historical Marker project was successful because of the creativity and contributions of Doug Zbikowski, Paul Jansen, Theresa Tweet, Dick Bottenberg, Gerry Paul, myself and the support and confidence of the Geological Society of Minnesota. Contributing agencies are The Department of Natural Resources, The Department Of Transportation, The Minnesota Geological Survey, and The Minnesota Historical Society. We are grateful to them all.

Some photos of the project have been shown after the last two lectures at "cookie time" More will be shown in the future.

Submitted by Ed Steffner
Historical Marker Committee, Chair

HISTORICAL MARKER PHOTOS
(continued)



Beaver Creek Valley – Big Spring
with Peter Morales and
Doug Zbikowski



McCarthy Beach



Gooseberry Upper Falls
with Ed Steffner

Notes

British Idiom:

During his lecture on October 5, 2009, William Cordua used the phrase "around Robin Hood's barn" to describe the work he had done near the Rock Elm disturbance site. During the question time, someone asked him what he meant.

He did not explain the meaning of the British idiom. What he was referring to was the fact that diamonds have been found near Rock Elm and he was hoping to find the diamond source. But after all the research, they learned that Rock Elm was an impact site and still no clue about the diamonds.

This is what I found when I Googled the phrase:

It is a reference to Robin Hood, the legendary outlaw, whose barn was simply the fields and pastures surrounding Sherwood Forest, his home. "Around Robin Hood's barn" simply means all around the countryside, all through the fields and pastures."

Submitted by Diane Lentsch

State Fair:

The State Fair Committee wishes to thank all the people who worked the Minnesota State Fair booth this year. The Fair is a major source of new members, but it also serves to let people know we exist. And the children, especially, like our rocks.

The Committee also would like to solicit any current field trip photos you may have and would share with us. We decided it is time to update the photos on the booth backdrop. We need to get them early enough in the year so they can be enlarged and glued to poster board. Please let Katy Paul know what you might have. E-mail her at keystone517@hotmail.com.

Also, we do respond to questions written in our notebook at the booth...if we can answer them. For example, the question was asked where Scott Wolters book about Lake Superior agates has gone to. That book fell apart, literally, from much handling by visitors. Judy Hamilton tried to tape the pages together and put them back in the book, but they came out poorly and the decision was made to not put it in the display.

A request for brochures for the field trips in the booth is not feasible (we assume meaning for upcoming field trips.) The field trip events are not planned until the following spring after the fair, so there would not be information available.

Someone wanted to know if the website is up to date. That is in the works.

Submitted by Judy Hamilton

(Summer Field Trips - Continued from Page 2)

The caravan drove past several dimension stone (Oneota dolostone) quarries in the area and stopped at a sand and gravel operation. A remarkable cliff of crossbedded sand about 3 stories high was interpreted to have been a sand bar in Glacial River Warren. We were told to enjoy and study it that day because they were mining it the next day.

Several of us camped at Minneopa State Park and the next day we rendezvoused at Minneopa Falls—a double waterfall caused by cementation differences in the Jordan sandstone.

From there, we headed to Rapidan and launched the canoes below the dam on the Blue Earth River—a tributary to the Minnesota River. Recent rains in the area allowed just enough water to float the canoes. We canoed for about 8 miles and looked at outcrops along the way. All but the leader and one of 11 canoes dumped on the final rapids. The water was warm and shallow yet challenging enough for some of us.

Thanks again to the members who organized these adventures. If you have ideas for trips and leaders, please contact or join the Field Trip Committee.

Submitted by Diane Lentsch

And thanks to Roger Knutson for the field trip photos.



REMINDER... if the address label on this newsletter has the date 10/1/09, your GSM membership has EXPIRED. This will be your last newsletter....unless you renew your membership now. With your support, GSM can continue to offer a fine lecture program, provide area schools with an invaluable resource through the Outreach Program, and introduce you to the pool of talented professionals in the field of geology. Please renew your membership! ...mail your check to:

GSM, PO Box 390555, Edina MN 55439-0555

THANK YOU!



P.O.Box 390555
Edina MN 55439-0555



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10/1/2010
Harvey THORLEIFSON
3240 - 48th Ave. So.
Minneapolis, MN 55406-2338