



# THE GEOLOGICAL SOCIETY OF MINNESOTA

## News

*Volunteer opportunities, field trips, lectures, and public service, since 1938*

**1938  
GSM  
2013**

Celebrating

\*\*

**75 Years**

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### From the President's Desk...

2013 was my fourth year on the Board, and this December brings both my term as a Board member and President to a close. At this time I want to thank all my fellow Board members for four years of great service and camaraderie; Dave Wilhelm, Sherry Keeseey, Roger Benepe, Deb Preece, John Grams, Mark Ryan, and Becky Galkiewicz. For support in other areas of GSM programs I want to thank Bill Robbins, Harvey Thorleifson, Steve Erickson, Joan Furlong, Douglas Zbikowski, Katy Paul, Ed and Sandra Steffner, Lee Preece, Dick Bottenberg, Janet Hopper, Paul Jansen, Randy Strobel and Fran Corcoran.

David Wilhelm will be taking on the position of Vice-President for the rest of 2013, and I am looking forward to turning the office of President over to David for the 2014 term. David is wonderful to work with, a professional in every sense of the word, and I am expecting many great things from him for our entire GSM organization. Also, with David taking on new responsibilities, the Video Library position is now available. I also wish to say good-bye to Board members Allan Bowles, who did an outstanding job as Secretary, and Alan Smith, who to this day continues to do updates on our Web-Page. I also want to thank Lisa Peters for bringing her time and talents to our table, as well.

More recently, at our Annual Meeting on Sept. 23 (the first lecture of the year), we unanimously elected two new members to our Board: Mary Helen Inskeep and Ruth Jensen. Both women are energetic, charismatic, and willing to jump in where needed. Thanks for joining the group, ladies!

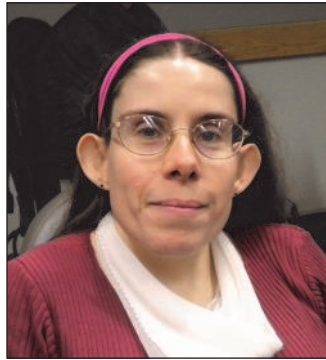
Theresa Tweet



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Newest Board Members:



Mary Helen Inskeep



Ruth Jensen

GSM News

Officers:

Theresa Tweet, President  
 David Wilhelm, Vice-President  
 Sherry Keesey, Treasurer  
 John Grams, Secretary

**Board Members:** Deb Preece; Lisa Peters; Rebecca Galkiewicz; Mark Ryan; and Roger Benepe

**Editors:** Katy Paul; Harvey Thorleifson; Rich Lively

The Geological Society of Minnesota is a 501(c)3 nonprofit organization. The purpose of this newsletter is to inform members and friends of activities of interest to the Geological Society of Minnesota.

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

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

Membership dues are: \$10 Full-time students; \$20 Individuals; \$30 Families

GSM News is published four times a year: **February 15, May 15, August 15, and November 15.** Deadline for

article submission is the first of the month, before the date of publication.

Send all material to:

**Katy Paul**  
[keystone517@hotmail.com](mailto:keystone517@hotmail.com)

Welcome, New Members!

Tom Higgins, Chicago  
 David and Jeanette Decker, Zimmerman  
 Shannon Trego, Lakeville  
 Joanna and Jack Noratake, Eden Prairie  
 Penny Ebritts, Minneapolis  
 Laura Nolan, Minneapolis  
 David Bendickson, Belgrade  
 Barbara Broker, Bloomington  
 Sarah Overby and James Wilwerding, Freeport

Lecture Schedule Update

On March 24, 2014 our lecture will be "The Mount Simon Aquifer" by Jim Berg, Hydrogeologist, Minnesota DNR. This had originally been scheduled for Nov. 4, 2013, but was moved to March 24.

Paleontology Lab

Please mark your calendars for a Paleontology lab at Macalester College on Saturday, **February 8**, from 10 AM to Noon! It will be in the Geology Department, Lower level of Olin-Rice Hall, with much-appreciated lecturer Jeff Thole.

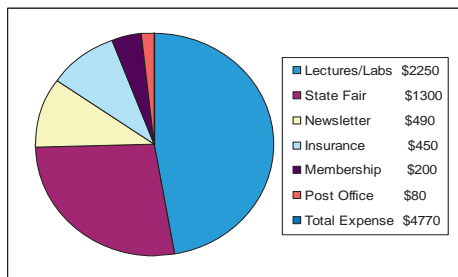
from the archives: A visit to Chippewa Falls, Wi. on a GSM Field Trip Sept. 1939.



### WHERE GSM MONEY GOES

Since it is Membership Renewal time, we thought that you might like to know how your membership dues are spent and why they are so important. Membership dues are the primary income for GSM. Income from our membership dues covers our expenses. Total expenses for 2013 were \$4,770.

- The GSM pays each speaker an honorarium of \$125. We have 14 scheduled for the 2013-2014 season. Labs are \$250/lab.
- The State Fair charges \$830 for the space and we incur additional printing charges for our brochures and handouts. The State Fair is our major source for new members.
- \$490 for printing and mailing of the newsletter (we save a lot by sending the electronic version to the



majority of our members)  
 • \$450 for insurance  
 • \$200 for membership directory  
 \$80 Annual

Post Office Box rental

Our annual membership drive has started and is ongoing. So far we have 52 Individual and 36 Family paid memberships for 2013-2014 for a total income of \$2,120. We have received \$250 in donations.

Thanks to all members for your continued support of the GSM. Remember, as a non-profit organization GSM can accept donations, which are always welcome and which are also tax deductible.

### In Memoriam

#### Thomas L. Cody, Sept. 12, 2013



We were saddened to learn of Tom Cody's tragic traffic accident and subsequent death on Sept. 12. Tom was born in Minneapolis on June 6, 1960 and had lived in St. Peter, and most recently Belle Plaine. Tom is survived by his wife Ruth and two sons, Lee and Hayden.

Tom was a very enthusiastic member of GSM, always cheerful, helpful and extremely interested in all the activities GSM offered. He created art in stone, making numerous works and giving them and his time freely to GSM and its members. He crafted the etched glass mugs that several of our GSM members received as appreciation gifts in May. He was an avid fisherman any time of the year and enjoyed fishing with his two sons. He liked to read, hunt for rocks, snowmobile, work with his hands, and sandblast both glass and stone. Tom will be greatly missed.

### TV and On-line Geology Series

Over the past year and a half, Dr. William S. Cordua, Emeritus Professor of Geology at the University of Wisconsin - River Falls has been making a series of videos ("Rock Talk") about the geology of western Wisconsin. These videos have been airing on local cable Channel 16 - River Falls. They are also available for viewing on-line on-demand. The shows are from 5 to 12 minutes long. In addition to reviewing the local geology, they show how geologists figure things out using evidence in the field and the lab. Geared to the general public, they serve as a great mini-course in local geology. Even though the focus is on western Wisconsin, many of the same rocks, and of course, all of the same geology principles apply to Minnesota. To see them, go to the River Falls Community

TV web site at <http://rfctv.pegcentral.com/>. Look under the tab "All Folders" for "Rock Talk". You can also access the videos from a link on our GSM website, <http://www.gsmn.org/> under 'Geological Links'. So far, Dr. Cordua has made 10 videos, with more to come.



**In honor of the 75th Anniversary  
GSM THROUGH THE YEARS....**

**Compiled from past issues of the  
GSM Newsletter**

**70 Years Ago - 1943**

Our field trips were rather few this summer because of gasoline rationing...Dr. Theil's course on Historical Geology is well underway and is being immensely enjoyed by those in attendance. Average attendance so far is over 80...The article of the month, "Salt of the Earth" was reprinted from Compressed Air Magazine, with their consent.

**60 Years Ago - 1953**

We congratulate Dr. Edward H. Mandell on his new appointment as manager of Veterans Hospital in Saginaw, Michigan. We wish him every success but we shall miss him and Mrs. Mandell very much. Mr. Chas. Havill has been appointed a member of the board and vice president to fill the vacancy created by Dr. Mandell's resignation...

**50 Years Ago - 1963**

No Newsletters were published in 1963

**40 Years Ago - 1973**

Remarks spoken by Dr. Charlie Matsch on the July 14-15 GSM Field Trip as the bus approached the lookout point of Lake Minnewaska near Glenwood: "(This Area)...is marked by the Geological Society of Minnesota's plaque, and a very nice one. I thought many of you would like to see some of your sponsored work out here. ... among many field trips I have led through here I always make this a stop because it is a very informative one. ...in 1965 we were the host of an international group of people...among those were 11 Soviet scientists, several from Japan, Germany and Austria. Many of them remarked on the thoughtfulness of marking areas like this. In their countries, this is not heard of."

**30 Years Ago - 1983**

For the second consecutive year GSM's booth at the State Fair has won an award. Congratulations to Liz Ooten, Exhibits Chair and designer of an interesting and unusual display entitled The Geology of a Car.

**20 Years Ago - 1993**

Approximately 70 members dined and "chewed the fat" prior to the 1993 Annual Meeting September 27. The "feeding frenzy" again took place at the Old Country Buffet in Maplewood. One thing is certain about the GSM crowd: we love rocks, food, and conversation. Membership chairperson, Fran Corcoran, reported a total of 191 members for fiscal year 1993 and began recruiting and collecting renewal memberships for fiscal year 1994.

**10 Years Ago - 2003**

Harvey Thorleifson has been appointed Director of the Minnesota Geological Survey and Professor in the Department of Geology and Geophysics at the University of Minnesota. He assumed his duties on July 1, 2003, succeeding Dave Southwick who fulfilled this role from 1993 until 2002, and Val Chandler, who served as Interim Director over the past year. Dr. Thorleifson is originally from western Manitoba. He completed undergraduate education in geography and biology at University of Winnipeg, and then completed a Masters program in geology at University of Manitoba. His Masters thesis dealt with the history of Lake Agassiz, including a compilation of related investigations across northern Minnesota from the Red River Valley to the Lake Superior Basin. He subsequently spent three years at the University of Colorado in Boulder where he completed a doctoral dissertation on the glacial history of the Hudson Bay Lowland in northern Ontario. He then was with Geological Survey of Canada, since 1986.

## GSM MEMBERS VISIT ICELAND

By Dave Wilhelm

During May of this year, GSM members Diane Lentsch, Mary Kay Arthur, Emily Czerwinski, Tom Higgins, Shannon Trego, I, and eight other persons from around the United States participated in a Chautauqua to Iceland. This trip was organized by the University of Austin in Texas, led by Jim Wysong, Hillsborough Community College, Tampa, FL, with his Icelandic colleagues. We had many wonderful experiences, and I'd like to relate just a few of the highlights.

Iceland lies on the mid-Atlantic rift, straddling the North American and Eurasian tectonic plates. As you would imagine, much of what we saw were manifestations of this tectonic plate boundary. We most vividly saw the plate boundary at Thingvellir (Þingvellir) National Park, a UNESCO World Heritage Site. We walked through the graben where the tectonic plates are diverging. This graben is the result of the land being thrust down,



Walking along the mid-Atlantic ridge

producing a valley with a nearly vertical scarp on each side. We amused ourselves posing for pictures over a narrow point in the rift, with one foot on Eurasia and one foot on North America, although of course the boundary is not that precisely defined.

Besides its geology, Thingvellir has great historical

interest to Icelanders. It was the location of the Icelandic parliament from the first meeting of the various clans at this central location in the summer of AD 930. The foundation of the Icelandic parliament is said to be the founding of the nation of Iceland, and the first parliamentary proceedings in the summer of 930 laid the ground for a common cultural heritage and national identity. Thingvellir continued as the site of the annual summer meetings of parliament until 1798.

With all the volcanic activity, Iceland has abundant geothermal energy. We toured the Hellisheiði Power Station, which is the largest geothermal plant in the world. It produces not only electricity (303MW), but also hot water (400MW), which is piped to Reykjavík 20 miles away. In contrast to the U. S., most homes in Iceland have two water inputs, one delivering cold water and the other delivering hot water. Iceland has a surplus of energy, more than they can consume domestically. One way in which they export this energy is by importing bauxite and processing it into aluminum, a very energy intensive electrolytic process. They then export the aluminum.

We all agreed that a most fascinating stop was Sólheimajökull, which is the snout of a glacier that is the southwestern outlet of the Myrdalsjökull icecap. Jim informed us that the terminus of this glacier has retreated many miles since he first saw it in the 1980s. The edge of the glacier had a very complicated shape, which included a number of arches under which we could walk without



Under the glacier at Sólheimajökull

stooping. The ice was a beautiful blue color wherever the light shone through it, and was constantly dripping water as it slowly melted. The exterior walls of the glacier exhibited undulating embedded layers of sediment that the glacier had pulverized during its lifetime. Beyond the glacier were lateral and terminal moraines of coarse gravel, as well as many large pools of melt water. We also examined occasional large boulders (erratics) that had been polished smooth by the glacier.

The peninsula of Dyrhólaey is the southernmost point of Iceland. It includes a fantastic black



The black sand beach at Dyrhólaey with massive columns of basalt

shingle and ash beach, sea arches, and sea stacks. (Legend says that the stacks originated when two trolls tried to drag a three-masted ship to land; they failed and when daylight broke they became needles of rock.) But the most fascinating sight was a formation of hundreds of hexagonal columns of gray basalt. These were each a few feet across, weathered smooth, and broken off horizontally in a staggered pattern. They provided the perfect setting for a group photo.

We saw numerous beautiful and spectacular waterfalls, including one (Seljalandsfoss) which we hiked behind, but I'll describe only the most unusual: Hraunfossar, which is a series of cascades that seem to flow out of solid rock. The water actually flows underground through a porous lava field and emerges where the Hvítá River has cut



Seljalandsfoss - We walked behind this waterfall

through the layers of the lava field. The water pours from the rock over a stretch of about a half mile, and then cascades down into the Hvítá River.



Hraunfossar cascades from the lava field

We explored the Haukadalur Valley, a geyser/hydrothermal field with many deep blue, bubbling hot pools and steam emanating from various fissures in the rock, giving a very alien look to the landscape. Its most famous hot spring is named Geysir, from which of course the English common noun geyser is derived. Unfortunately, Geysir now erupts very infrequently. But close by is Strokkur, which reliably throws up a 100-foot blast of scalding liquid a few times each hour.

The trip was an incredible experience, not only for all the wondrous geology we saw, but also for the new friends that we made (and the fun nightlife that Reykjavík provides). We enjoyed it so much



Strokkur erupting

that Mary Kay, Diane, Tom, and I extended our trip a few days, during which we took an airplane excursion of southwest Iceland that included a tour of Heimaey in the Westmann Islands. The recent geological history of Heimaey is quite interesting. I'll describe that and our excursion in a future issue of the GSM Newsletter.

*If you would like to see more photos of this trip, visit <https://picasaweb.google.com/dewilhelm53> and select the Iceland albums. (There will eventually be nine.) For a map of our trip, see <http://goo.gl/maps/mYCoz>.*

### 2013 State Fair Recap

Despite the hot weather this year at the Fair, we had a great turnout of visitors at our Booth, and a lot of enthusiasm from our member workers. We had an active Committee this year which included Theresa Tweet, Roger Benepe, Sherry Keesey, David Wilhelm, Deb Preece, Lee Preece, and Ed Steffner. Their creative ideas and extra effort brought us many compliments and attracted more than usual attention. Assembling and then packing and moving the set up for the Fair was made lighter work due to everyone that assisted.

We celebrated our 75<sup>th</sup> Anniversary this year with Bold Banners announcing "Our GSM 75<sup>th</sup> Anniversary" and "Celebrating Our Diamond Jubilee". We also had a display of large minerals on a black draped platform across the back of our booth. This was a "hands on" display of large samples of colored minerals from around the US, some gathered

by the Preece's on our field trips and some chosen from the collection at the Geological Survey. Both the young and old visitors enjoyed walking into the booth and getting a closer look at the large minerals on display and finding out where they were from. Thanks to Lee Preece for his idea and construction efforts to put it all together; Harvey Thorleifson for offering some beautiful samples and carefully packing up the samples we were able to display; and Roger Benepe for constructing an easel stand for the old bronze marker on display that Theresa Tweet purchased at our auction.

There were a lot of shifts to fill for staffing our State Fair Booth and as usual our members were very generous with their time and got all the shifts filled. So many THANKS for all those who served and some who served more than one shift to help us out. Our Volunteers by shift included: Mark Nupen, Jim Nye, Dave Wilson, Nina Ward, Deb Preece, Lee Preece, Dan Japuntich, Nancy Lockard, Dave McGill, Lee Kaphingst, Tom Schoenecker, Paula Pogatchnik, John Maronde, Vern Schaaf, Joel Renner, John Grams, Janet Hopper, Paul Jensen, Roger Willette, Bill Robbins, Dick Bottenberg, Joe Wright, Victoria Bonnsetter, Mary Kay Arthur, Dave Wilhelm, Alfred Kauth, John Matloch, Diane Lentsch, Dick Heglund, Jean Doyle, Judy Jones, Roxy Knuttila, Frank Janezich, Rebecca Galkiewicz, Rosemary Kowalchuk, John Earnst, Dick Heglund, Ed Steffner, Ted Chura, Mary Davitt, Tom Burt, Pat Ryan, Mark Ryan, Allan Bowles, Nancy Halverson, Mark Ryan, Patsy Huberty, Ed Steffner, Ted Chura, Steve Erickson, Lynne Grigor, Galen O'Connor, Don Swensrud, Ken Holmbeck, MaryKay Arthur, John Maronde, Alan Smith, Kay Smith, Marilyn Nelson, Larry Kalina, John Jensen, Ruth Jensen, Joan Furlong, Randy Strobel, Justin Tweet, Elaine Handelman, Francine Corcoan, Mark Nupen, MaryHelen Inskip, Theresa Tweet, Sherry Keesey, Theresa Tweet and Roger Benepe.

Next year will roll around before we know it. I hope all of you who have ideas and are willing to assist us in our biggest annual GSM Membership Drive will join us by helping out on the State Fair Booth.

*Sandy Steffner*





Theresa Tweet, GSM President, presenting an Estwing limited edition rock hammer engraved with the GSM Logo to GSM's long-time partner the Minnesota Geological Survey. Accepting this hammer on behalf of the Survey is Harvey Thorleifson, Director.



Theresa Tweet, GSM President, presenting an Estwing limited edition rock hammer engraved with the GSM Logo to Dick Bottenberg, in recognition of his years of service as President of GSM.



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