GEOLOGICAL SOCIETY OF MINNESOTA

NEWS

SPRING 1998
VOLUME LII NO. 1
www.geolab.geo.umn.edu/orgs/gsm/

CONTENTS

Come Join the Feast!

Kimball Memorial Banquet

April 27, 1998

"Ten Thousand Years and Fifty Miles - A Minnesota Odyssey"

John R. Tester, Ph.D., Univ. of MN

Old Country Buffet
3000 White Bear Ave.
Maplewood, MN

Dinner at 5:30 pm
Meeting at 7:30 pm

Signs of Spring

Marker Update: A proposal for Phase II of the Geological Marker Project is in the works. In the meantime, if you haven't already done so, resolve to get out and visit all 33 established sites before leafout. Check out page 3.

Announcements

- Second pre-trip meeting for the field trip to Eastern Ontario August 3-13 will take place at 7:30 pm on May 30 at the home of Marlys and Alex Lowe, 2206 Caroline Lane, South St. Paul. Guidebooks will be distributed and participants' questions answered.

- Be sure to pick up your copy of this year's GSM directory at the Kimball Memorial Banquet.

- If you would like your e-mail address published in this years' directory, contact the membership chair by same. Do so quickly, time is running short. <bjgoetteman@worldnet.att.net>

GSM *NEWS*

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The purpose of this newsletter is to inform the 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. Deadline for article submission is three weeks before the date of publication. Send all material for *GSM NEWS* to Geological Society of Minnesota c/o Martha Mayou, 2621 E. 24th St. Mpls. MN 55406. Phone: (612) 724-4044, or e-mail adastra@scc.net.

Officers: Sylvia Huppler, *President*; David Christianson, *Vice President*; Don Mattinson, *Treasurer*; Pat Johnson, *Secretary*.

Directors: Tom Burt; Bruce Goetteman; Dick Hegland; Paul Lemke; Marlys Lowe.

Send all GSM membership dues, change of address cards, subscriptions, and renewals to the GSM Membership Chair: c/o Bruce Goetteman, 16125 Delarma Drive, Carver, MN 55315. Subscriptions cost $10 for full time Students, $20 for Individuals, or $30 for Families.

GSM Board News

Thanks to Marlys Lowe for her superb leadership throughout 1997. We've had a wonderful series of lectures and laboratory sessions, and the next series promises to continue the excellent tradition. The 1998 -1999 GSM lecture series is taking shape, with the theme Basics of Physical Geology and Climate Changes. Rick Uthe, chairman of the Program committee, is working with arrangements for the lecturers. The laboratories for this series include sessions on rock and mineral identification, and reading topographic maps and weather maps. We may possibly have a tour this year of a weather office. It all fits together nicely, and promises to be an exciting year.

On our field trip to Eastern Ontario in August, we will study the Proterozoic Eon of mountain-building periods of ancestral North America. Several shorter field trips have also been planned for the summer by Galen O'Conner and her committee [see p.3 for further information].

Martha Mayou is the new newsletter chair. The society appreciates the superb efforts of Judy Hamilton and Dwight Robinson in producing the previous issues of the past five years.

Bruce Goetteman announced at the February board meeting that we have 177 paid members this year. Doug Zbikowski reported that the School Outreach Program is overloaded with requests, and arrangements will be made for a second presenter.

Our membership rosters will be ready for distribution at the Kimball Memorial Banquet, on April 27, 1998, at the Old Country Buffet of Maplewood, 3000 White Bear Ave.

Other dates of interest are a special symposium on "Geological Overview of the Lake Superior Region" on Thursday, May 7th at the Holiday Inn Metrodome, sponsored by the Minnesota Geological Survey. The banquet speaker Thursday evening will be Dr. Bevan French, NASA. The topic will be: "When the sky falls: Large meteorite impacts and the history of the earth and other worlds."

Moose Lake Agate Days will be July 18th.

Sylvia Huppler, President

GSM PUBLIC SERVICE
D. ZBIKOWSKI

Telling the Geologic Story in Minnesota

The Geological Markers Project has now been renamed to the Geological Markers Project - Phase I. This change in nomenclature is to accommodate a proposed Phase II addition to the original project. The Phase II proposal is now being written by GSM's Public Service Committee, under the guidance of Mn/DOT's Environmental Services Department. Phase II, as drafted, would add about 20 markers to the 41 that should be existing after Phase I has been completed late this Fall.

Phase I is progressing nicely with the new and updated plaque texts being reviewed and critiqued by the Minnesota Geological Survey, the DNR, Minnesota Historical Society, U of M English Department, and three GSM volunteers: Martha Mayou (our Newsletter Editor), Dwight Robinson (a master of pen and ink), and me (a mess with pen and ink). The Mn/DOT bid letting should be in May and construction could begin about a month after that.

There may be volunteer opportunities for GSMers to gather together glacial cobbles for a couple marker pedestals, if the winning contractor so desires, which could be a real party! And you could always tell your grandchildren how you helped to build that marker! If you are interested, call me at (612) 784-0201 and your name will go on the list to contact when and if the opportunity arises.

Summer Field Trips

Galen O'Conner

Madison, WI (2-day): private gem museum and outcrops in the scenic Wisconsin Dells area (dates and leader to be announced)

Eastern Ontario (August 3-13): We will study the Proterozoic Eon of mountain-building periods of ancestral North America. The second pre-trip meeting will take place at 7:30 pm on May 30 at the home of Marlys and Alex Lowe, 2206 Caroline Lane, South St. Paul, where guidebooks will be distributed and participants' questions answered. Call (612) 451-6853.

Possible one-day trips to the Cambrian outcrops along the Minnesota River, and to the Cold Spring quarry near St. Cloud (further information to be announced)

Membership - New Members

Reminder: If you plan to attend the Memorial Banquet, make a point to pick up your new membership directory. Those not attending the banquet will receive a copy via US mail.

John H. Gidmark
2829 - 43rd Ave., So.
Minneapolis, MN 55406

John Neess
402 Hall Ave.
St. Paul, MN 55107

James Bukowski
454 Stryker Ave.
St. Paul, MN 55107

Richard Magnuson
2141 Doswell Avenue
St. Paul, MN 55108

Jason Moran
14826 Dundee Avenue
Apple Valley, MN 55124

Carol Osterbauer
2080 Inca Lane
New Brighton, MN 55112

Jane E. Richardson
1955 Walnut St.
St. Paul, MN 55113

Donna & Hilmar Wagner
120 West 35th St.
Minneapolis, MN 55408

Neva J. Key
40 East Pleasant Lake Road
North Oaks, MN 55127

Dan Croswell
2149 76th Ct. No.
Brooklyn Park, MN 55444

rocks, stones & pebbles

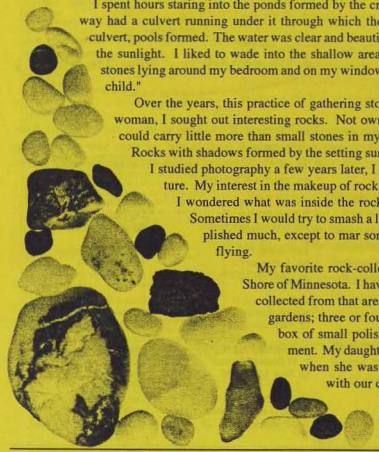
BY JUDY HAMILTON

I've never studied Geology on a formal basis, but I took a class in Ecology several years ago in night school. In that class, I remember learning mostly about pollution and what it was doing to our environment -- especially to our water. While studying pollution of ground water, I became fascinated with the earth's rock structure and how the water tables formed. I was also fascinated with erosion, and how it changed the face of rock cliffs, and with glacial movement depositing different types of rock.

My interest in rocks began in childhood. I really don't know why I had this interest. I guess most children do...but I was enthralled with the composition of the earth. I recall spending a considerable amount of time in the attic reading my brother's books on various scientific subjects. Perhaps that's where my interest was piqued.

I was fascinated with rocks, stones and pebbles on the farm when I was a child. I loved to watch the men move -- sometimes merely attempting to move -- a large rock out of a field they were plowing. Sometimes they used a rope and the tractor and sometimes just rolled it off to the fence line. I would stare at those rocks for a long time, wondering how they got in the fields in the first place.

Being a "klutzy" child, I would frequently fall on my face in wide open places for no obvious reason. My mother told me she would go out to the spot where I fell to see what I fell over. She would say, "I couldn't even find a pebble you could have tripped on." I suspect that was because the pebble was now in my pocket. I often carried stones in my pants pockets, and I even used them in play with my dolls. A large white stone was bread, a brown one was beef, and black pebbles were raisins in my mudpies.



I spent hours staring into the ponds formed by the creek that ran through the farm. Our driveway had a culvert running under it through which the creek flowed, and on either side of the culvert, pools formed. The water was clear and beautiful, and the stones and pebbles sparkled in the sunlight. I liked to wade into the shallow areas and pick them up. There were always stones lying around my bedroom and on my window sills. No doubt about it -- I was an "earth child."

Over the years, this practice of gathering stones continued. In my travels as a young woman, I sought out interesting rocks. Not owning a car or driver's license back then, I could carry little more than small stones in my suitcases. So I photographed the rocks. Rocks with shadows formed by the setting sun were one of my favorite subjects. When I studied photography a few years later, I learned to photograph rocks for their texture. My interest in the makeup of rocks grew deeper and I became more curious. I wondered what was inside the rocks and how they had come to be formed. Sometimes I would try to smash a larger rock with a hammer. I never accomplished much, except to mar some nice specimens and send a few sparks flying.

My favorite rock-collecting spot became, of course, the North Shore of Minnesota. I have many boxes of stones, rocks and pebbles collected from that area. Some are in the garage; some are in my gardens; three or four large ones are on the front porch; and a box of small polished stones is stored in a box in the basement. My daughter developed an interest in polishing stones when she was young and we had a lot of fun together with our collection of stones from the driveway.

A few years ago, I had a great thought. Since I couldn't afford to travel all over the world as I would have liked to, why not

INSTITUTE ON LAKE SUPERIOR GEOLOGY

ANNUAL MEETING
May 6-10, 1998

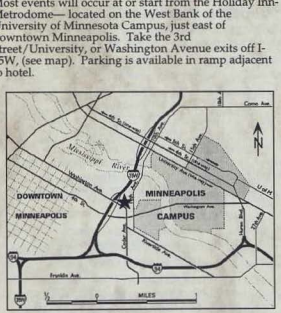
Sponsored by
Minnesota Geological Survey
University of Minnesota
Mark Jirsa and Jim Miller, Co-chairs
Terry Boerboom, Field Trip Chair

Featuring a Special Symposium

"Geological Overview of the Lake Superior Region"

GENERAL INFORMATION

The 44th annual meeting of the Institute on Lake Superior Geology will be held May 6-10, 1998 at the Holiday Inn-Metrodome in Minneapolis, Minnesota. Please register by April 10 to receive discount prices and a seat on the bus to the field trip of your choice. Most events will occur at or start from the Holiday Inn-Metrodome— located on the West Bank of the University of Minnesota Campus, just east of downtown Minneapolis. Take the 3rd Street/University, or Washington Avenue exits off I-35W, (see map). Parking is available in ramp adjacent to hotel.



OVERVIEW SYMPOSIUM

A half-day symposium is offered on Thursday morning, May 7 that overviews the Archean, Proterozoic, Paleozoic, and Quaternary geology of the Lake Superior region. A one-day-only registration option is available for those interested in attending just the special session. The field trips and banquet are open to all registrants.

FIELD TRIPS

The 5 field trips cover a diversity of geological topics. Attendance is on a first-come, first-served basis, with respect to registration forms received. Register early.

Pre-meeting field trips

(1) Early Proterozoic geology of east-central Minnesota

Wednesday, May 6 — Leaders: Terry Boerboom, Mark Jirsa (MGS), D. K. Holm (Kent State University)

Visits outcrops of the Early Proterozoic Stearns granitic complex—within the internal zone of the Penokean Orogen. Includes stops at quarries and stone processing facilities in the St. Cloud area.

(2) Keweenawan (Middle Proterozoic) geology of the Taylors Falls area, Minnesota/Wisconsin

Wednesday, May 6 — Leaders: Karl Wirth (Macalaster College), William Kean (UW-Milwaukee), William Cordua (UW-River Falls), and Zachary Naiman (Univ. of Arizona)

Highlights new studies on the volcanic stratigraphy and structure of the southernmost exposures of the Midcontinent Rift.

(3) Glacial exotica of the Twin Cities area

Wednesday, May 6 — Leaders: Gary Meyer, Howard Hobbs, Alan Knaeble (Minnesota Geological Survey)

Focuses on unique and diverse glacial features in and west of the Twin Cities, including thrusted blocks of glacial till and Cretaceous shale, and aeolian dunes of the Anoka Sand Plain.

Post-meeting field trips

(4) Paleozoic stratigraphy of SE Minnesota

Saturday, May 9 — Leaders: Tony Runkel and Bob Tipping (Minnesota Geological Survey)

Highlights recent interpretations of the depositional environments of Ordovician and Cambrian strata, and application to hydrogeological problems.

(5) Archean and Quaternary geology of the Minnesota River Valley

Saturday-Sunday, May 9 -10— Leaders: David Southwick and Carrie Patterson (Minnesota Geological Survey)

Two-day trip with a dual emphasis: 1. geology, structure, and geochronology of the Archean Minnesota River Valley subprovince; and 2. recent mapping of Quaternary strata showing the protracted and complex history of glacial deposition in southwestern Minnesota.

BASEBALL—Twins vs. Yankees

"Take me out to the ball game..." Join us for an evening of major league baseball under the Dome on Friday, May 8 at 7:05 P.M. Forty seats have been reserved in the lower deck directly up from first base (good foul ball territory); tickets $12 each. Family members are welcome.

OUTLINE OF SCHEDULED EVENTS

All functions at Holiday Inn-Metrodome, I-35W and Washington Avenue, Minneapolis.

Wednesday, May 6, 1998

0800- 1800 Field Trips:
- #1—Early Proterozoic-east-central
- #2—Keweenawan-Taylors Falls
- #3—Glacial exotica

1600 - 2200 Registration

1900 - 2200 WELCOMING PARTY—
Cash bar and poster setup

Thursday, May 7, 1998

0800 - 1630 Continued Registration

0800 - 1200 Technical Session I —
Geological Overview of the Lake Superior Region

1200 - 1300 ILSG Board Meeting

1330 - 1630 Technical Session II

1800 - 1900 Mixer and cash bar

1900 - 2130 **ANNUAL BANQUET**

Goldich Award Presentation to Zell Peterman, USGS

Banquet Speaker: Dr. Bevan French, NASA
"When the sky falls: Large meteorite impacts and the history of the earth and other worlds"

Friday, May 8, 1998

0800 - 1200 Technical Session III
(Posters removed at noon)

1330 - 1630 Technical Session IV

1905- *Baseball—Twins vs Yankees*

Saturday, May 9, 1998

0800 - 1800 Field Trips:
- #4—Paleozoic strata
- #5—Minnesota River Valley—day 1

Sunday, May 10, 1998

0800 - 1800 Continuation of Field Trip:
- #5—Minnesota River Valley—day 2

STUDENTS

Some travel subsidies are available to assist students' attendance. For information, contact Mark Jirsa at the address on this circular, call 612-627-4780, or email *jirsa001@maroon.tc.umn.edu*

In addition, cash prizes will be awarded for the best student oral and poster presentations. The student must be the primary author and presenter of the work considered for this award. The abstracts must indicate that the author is a student.

ORAL AND POSTER PRESENTATIONS

All topics will be considered for presentation. Two slide projectors and an overhead, and poster boards of approximately 3'X4' will be available. Contact us if you have additional presentation needs (e.g., electric outlet, more space, and display table).

Abstracts should be submitted by March 27, and follow GSA or GAC-MAC format.

REGISTRATION FORM

Preregistration deadline: April 10, 1998

Name: _____

Institution/Company: _____

_____

(for I.D. badge)

Address: _____

_____

_____

E-mail: _____

MEETING REGISTRATION
(includes Volume 44, Part 1—Program and Abstracts)

Professional { $90 pre- to syn-April 10 $_____ ; $95 post-April 10 $_____

Student $50 $_____

Overview only { $40 pre- to syn-April 10 $_____ ; $50 post-April 10 $_____

BANQUET $27 Thursday evening, May 7 $_____

BASEBALL *Twins vs Yankees* 1905 hrs.
Friday, May 8: ____Tickets @ $12 ea. $_____

FIELD TRIPS (includes Volume 44, Part 2—Field Trip Guidebook, transportation, and lunch):

(1) *Early Proterozoic geology of east-central MN*
$40 Wednesday, May 6 $_____

(2) *Keweenawan geology of Taylors Falls area*
$40 Wednesday, May 6 $_____

(3)*Glacial exotica of the Twin Cities Area*
$40 Wednesday, May 6 $_____

(4) *Paleozoic stratigraphy of SE Minnesota*
$40 Saturday, May 9 $_____

(5) *Archean and Quaternary geology of the Minnesota River Valley*
(includes transportation, lodging, and lunches)
$100 Saturday and Sunday, May 9+10 $_____

TOTAL ENCLOSED $_____

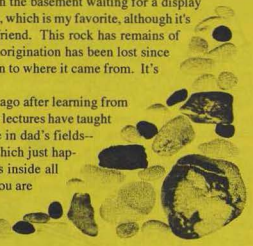
payable in U.S. dollars
by check, PO, or money order to: "98 ILSG"

No refunds for cancellation after April 30, 1998

Please detach this form and mail to:

98 ILSG
Minnesota Geological Survey
2642 University Avenue W.
St. Paul, MN 55114-1057

have people who do travel bring back rocks for me. Needless to say, that began what is now a good-size collection of rocks from all over the world. They used to adorn every ledge and window sill in my house, but I have since labeled most of them and they are stored in boxes in the basement waiting for a display shelf. The place of honor will go to a stone from the Arctic Circle, which is my favorite, although it's really quite nondescript. I also favor a rock given to me by a friend. This rock has remains of shells, small fish and some kind of creature I can't identify. Its origination has been lost since my friend received it from his friend and they didn't pay attention to where it came from. It's a wonderful specimen.



I joined the Minnesota Geological Society about 6 years ago after learning from a friend that membership doesn't require a degree in geology. The lectures have taught me so much about Geology. I now know why those rocks were in dad's fields--glacial deposit. Those photos of the sun setting on big rocks (which just happened to be in the Rocky Mountains) -- plate tectonics. What's inside all those rocks -- lots of stuff and it depends on what composition you are looking at. Why my attraction to the North Shore -- agates, of course. I attend most of the field trips in hopes of seeing and studying rock formations around the country, traveling as widely as possible to collect my rocks, stones and pebbles.

One of my fellow GSM'ers tells me I have "rocks in my head." I guess she's right.

Geology from Space

Martha Mayou

The crater site on the Yucatan Peninsula is up to 180 miles wide and may have played a part in the extinction of the dinosaurs. As part of NASA's Mission to Planet Earth, a shorter mission than most, radar is used to shed light on this and other features of Earth that cannot be seen any other way. Invisible to scientists (much less picnickers) up till now, the Chicxulub impact crater is buried by 1000 to 3000 feet of limestone. But in the radar image on the web site, you can get a hint of the shape of the buried crater rim, because the patches of tropical forest created by springs that emerged through fractures in the limestone are most abundant above the rim. If you have a computer with a color monitor, the patches of forest will be blue. The asteroid or comet that seems to have rammed the Earth here came to its untimely end about 65 million years ago, just about when 50% of the Earth's species died out, including the dinosaurs. Coincidence? Perhaps. The radar imaging system, which has the unpronounceable acronym of SIR-C/X-SAR, is a joint project with the German and Italian space agencies; images were captured on two Endeavour flights in 1994. The web site is at <http://www.jpl.nasa.gov/radar/sircxsar/>, whose categories besides geology are archaeology, cities, ecology and agriculture, interferometry, oceans, rivers, snow & ice & glaciers, and volcanoes.

I found this and other geological links (<http://www.dc.peachnet.edu/~pgore/censci/sitelist.htm>) courtesy of the web site (<http://www.dc.peachnet.edu/~pgore/>) of Dr. Pamela Gore, a professor of geology at DeKalb College in Georgia, who kindly gave her permission to mention the links. Other links include the Chicago Field Museum, the earthquake information page of the U.S. Geological Survey, and a "Rockhound Information page".

Report from Dinosaur Country

by: Martha Mayou

A low honking roar echoed through the museum, sounding lonely despite the crowd of young sters. Overlooked by the Sandia Mountains, the Albuquerque Museum of Natural History & Science is a haven for dinosaur hunters. But the booming creature was not their prey, for it was only a duck-billed dinosaur in ghostly form—a computer simulation of its cry using the shape of its elongated skull as a guide. Herds of them once roamed the land there; now it was small packs of kids (all in bright green T-shirts for easy identification) who brought the long-dead reptiles to life by pressing a button on a case. Unearthed in the Bisti badlands in northwestern New Mexico, the skull found of the Parasaurolophus (a large, plant-eating hadrosaur last seen 75 million years ago during the late Cretaceous) is one of only two relatively complete skulls of this dinosaur in the world. As a matter of fact, only five or six fossils of the animal have ever been found. The honks that would have made the Parasaurolophus a bad neighbor were created by analyzing CAT scans of the crested skull with its passages and cavities. Computers then calculated what sounds would be produced if air were blown through the spaces; naturally scientists had to do without the soft tissues, which were not preserved. If you have a computer with a sound card, you can hear the roar at the Scientific American web site, at <http://www.sciam.com/explorations/121597dinosaur/>, which also has Parasaurolophus movies.

New Mexico is fertile territory for fossil hunters, because it is so dry and there is little or no ground cover. Indeed, the dinosaur called Pentaceratops has been found only in that state. Children sometimes find important fossils, like the young boy who was out walking west of Albuquerque with his father and found an egg, insisting it was a dinosaur egg. The father stored the egg but eventually (probably yielding to pressure) brought it into the museum for identification, and lo and behold, the egg had actually been laid by a dinosaur. Until the museum opened in 1986, however, there was no convenient base of operations for enthusiasts. With the museum as a center for research, and with the work of its three resident paleontologists, the number of species known to exist as fossils in the state has tripled or quadrupled. The 'earth-shaker-lizard' in particular is the feather in the museum's cap, because Seismosaurus is a completely new genus of dinosaur. A long-necked sauropod like the brontosaur (Apatosaurus) and weighing about 40 tons when it lived, the dinosaur was discovered by hikers in 1979 and named and described only in 1993. Some possible gastroliths (literally 'stomach stones') were found along with the fossils, polished stones that may have aided in digestion by grinding food, like the gizzard or crop of modern birds. Fossils still in bandages, from Seismosaurus and others, are visible to museum-goers through a glass wall, each on a separate table and with its own flexible lamp to aid in careful cleaning.

Parasaurolophus image by Bob Penney, Sandia National Laboratories

Far less hefty than Seismosaurus are the remains of the pitter patter of little Permian feet in the next room. In 1986, an amateur paleontologist discovered these and thousands of other tracks of early animals that lived 280 million years ago (mostly reptiles and amphibians) on a mudflat along a shallow sea in what is now southern New Mexico. The tracks were preserved when the mud hardened to rock after being covered by other sediments; all is described in the book by the discoverer, Jerry MacDonald:

Earth's First Steps: Tracking Life before the Dinosaurs. The museum now holds about 2000 rock slabs covered with these fossils. Technically called locomotion traces (as opposed to locomotive traces, which are bigger), such tracks can tell us a lot about how animals moved, whether they waddled or strutted, even how fast they were going. I wouldn't hold my breath for a computer simulation of an extinct amphibian plish plosh on a Permain mudflat though.

sources include the museum's web site:
http://www.nmmnh-abq.mus.nm.us/nmmnh/

GSM PUBLIC SERVICE
D. ZBIKOWSKI

It's All Happening at the ... Museum

The Geological Society of Minnesota has teamed up with the Bell Museum of Natural History to offer Rocks & Fossils presentations and museum Discovery tours, together, on selected weekend afternoons! This way, both educational activities can be enjoyed with one visit! It's all happening at the Bell Museum of Natural History, 10 Church St. SE, Minneapolis; which is at the corner of Church and University Ave. on the University of Minnesota campus.

GSM "ROCKS & FOSSILS"

The geological presentation follows a general introduction to the three rock types and the fossil record, as adapted to the learning-level of the audience. Although these presentations are for mixed ages, we will try to group children into two learning-levels to help ease communication. Ages 4-7 will see the younger group session from 1:00 to 1:55 p.m.; and ages 8 and up, the older group session from 2:00 to 2:55 p.m. Special topics can be covered by request to the presenter prior to each session. The "talk" portion of a presentation is punctuated with spontaneous Q&A, and usually runs about thirty minutes. The many ideas and relationships are illustrated with examples from a very large collection of carefully chosen and clearly identified rocks, minerals, and fossils. Rocks from Minnesota are abundant in the collection and are used as examples whenever possible. Fossils from Minnesota are also shown and discussed. After the talk, the students are invited to come up and enjoy a hands-on examination of the entire collection while the presenter answers their questions, typically with small-group dialogue. They can also examine some field tools of a geologist: rock pick, rock chisel, hand loupe, map compass, magnets, etc. This hands-on, participative portion has proven to be a most exciting and memorable learning experience!

Geological handouts will be supplied to all paid participants for follow-up exercises.

PRESENTERS

The presenters are college students with a Geology major and typically in their third or fourth years. They are usually accompanied by a qualified, volunteer GSM assistant who helps in carrying and setting up the collection and answering questions during the hands-on period.

BELL "DISCOVERY" TOURS

By special arrangement, one hour Discovery tours of the museum will be available during the Rocks & Fossils presentations. This coordinated program approach allows families with children in both learning-levels to experience both activities and finish at the same time. The Discovery tour is guided by museum staff and will spend one third of the time in each of the following areas: Touch & See Room, the bird dioramas, and the mammal dioramas.

COST AND PAYMENT

The package cost for both a Rocks & Fossils presentation and a Discovery tour is just $6.00/ child. Admission to the Bell Museum is included for additional learning! Parents are free, when accompanied by a child. Reservations are required. Reservations should be confirmed and paid for at the reception desk upon entering the museum.

MORE INFO. AND RESERVATIONS

Have your calendar handy, and call the Bell Museum at (612) 624-9050. Preliminary dates are Sunday, May 3; Saturday, May 23; and Saturday, June 6, 1998. Further scheduling is anticipated.

Geological Society of Minnesota
c/o Nora & Don Mattsson
1235 Yale Place #1706
Minneapolis, MN 55403

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Judy HAMILTON
1439 Sargent Ave.
St. Paul, MN 55105

The warm weather has kindled the urge to get out for some rockhounding. But beware! Just as it's too early to get into the garden, the lure of a pristine outwash or back road is a deception. Hidden from our eyes is the gatekeeper of rock collecting pleasures. Its name is **Mud**.

Mud. It's so terrible, it should be a four letter word. Lousy coffee is called mud. A dull person is a stick-in-the-mud. Most of the time, my name is mud.

What a sticky, messy experience. Now I know how the dinosaurs felt when they became trapped in the tar pits. At one particularly muddy spot I was stuck up to my knees, my pockets full of rocks. And I imagined that centuries from now, some higher form of life would dig up my fossilized remains and speculate as to how, in the process of natural selection, the era of the rockhound had come to an end.

bjg