

February, 2001

Volume 27
Number 1

The President's Message:

January 22nd 2001, The Rectangular Office

"My fellow GSM-ers, I am both proud and honored to be your President and to write this, my first presidential message. After my election last November I have been working hard putting my cabinet together. We have come up with a plan that I am sure you will find interesting and exciting – one that will appeal to all the various groups within this great organization. My first action concerns membership dues, which I plan to abolish over a two-year period. Membership will be free this year to students, retired state geologists and those with artificial knees! Next year membership will be free to all."

Oops I guess this inauguration thing has gone to my head! Seriously though, I am very pleased and honored to be the President of GSM. I hope we will have as active and healthy a membership over the next few years as we have had in the past. I have always found our society to be a unique blend of professionals, students and academics. I hope to continue the tradition of providing a meeting place for all those interested in the different aspects of the earth sciences. I would like to take this opportunity to thank Walter Anderson for all his hard work as President, especially during our 25th anniversary celebrations. It has been a lot of fun working with you Walter. I am looking forward to working with this year's committee of Lisa Churchill-Dickson (Vice-president), Pat Seaward (Secretary), Liz Champeon (Treasurer) and Dan Belknap (Newsletter editor) along with our directors, Marty Yates, Joe Kelley and of course Walter.

We had excellent attendance at the fall meeting, hosted again by Rachel Tardif, Regional Resource Manager for Poland Spring Bottling Co. Our thanks also to Dr. Steve Norton for his evening presentation on the history and current state of the Acid Rain problem.

There is a busy schedule of regional events over the coming months. In February (9th – 10th) the New Brunswick-Maine correlation symposium will be held in Moncton, NB. March (12th – 14th) will see many of us in Burlington, Vermont, for the annual NE GSA meeting. The University of Southern Maine will host the spring GSM meeting on April 6th at their Gorham campus, where I hope we will

have an abundance of student presentations to keep our judging panel busy! I would encourage our academicians to encourage their students to give either an oral or poster presentation of their research at the spring meeting.

More in depth details for all of these and other events can be found on the GSM web page (www.gsmmaine.org). The web page is operated and maintained by the Geology group here at U Maine Farmington, though in fact most of the work falls on the shoulders of Wayne Power. From time to time we have had some student help for Wayne which has been sponsored by our UMF President's Work Initiative program. This year we have hired Seth Barden (seth.barden@maine.edu) to help with the website, so look for an update to the page imminently. In particular we hope to have all the past Newsletters on-line very soon. I would like to encourage you all to use the web page as way of disseminating information about talks or visiting lecturers at the various Geology departments around the state. So please let us know of your upcoming events.

Finally, looking further ahead I would entertain any ideas for the summer meeting and field trip. Some of us had a very ad hoc discussion of this at the November meeting with a range of suggestions from Monhegan Island and down east to Iceland! If you have any ideas please let the committee know so that we can get planning.

Best wishes to you all for the New Year and I look forward to seeing you at upcoming events.

Dave W. Gibson, President
<dgibson@maine.edu>

PS I was joking about the membership dues!

The Editor's Message:

As the GSM Newsletter enters its 27th continuous year of publication, I wish to thank all the faithful contributors, especially Liz Champeon, Carolyn Lepage, Bob Marvinney, and Pat Seward. Thanks to Walter Anderson for his fine leadership and excellent columns as President. We are breaking in a new President, who needs to learn to not make rash promises about dues that are then retracted. At least he didn't mention chads or overcounts. We solicit any column material on

current issues of interest to GSM readers, any news concerning our members, and items such as artwork, fillers, or student contributions that would be of general interest.

Dan Belknap, Newsletter Editor
<belknap@maine.edu>



Geological Society of Maine Spring Meeting

Friday, April 6, 2001

Department of Geosciences
37 College Avenue
University of Southern Maine
Gorham, ME 04038

Host: USM Geology: novak@usm.maine.edu

Agenda:

1:00-4:30: Student Posters and Talks

4:30-5:30: Social Hour and Business Meeting-

5:30-7:00: DINNER

7:00-8:00: Evening Speaker

The Spring Meeting of the GSM will be held at the University of Southern Maine, in Gorham on Friday, April 6th.. Following our long-standing tradition, this meeting will involve student presentations and posters in the afternoon, and a key-note speaker in the evening. All advisors of undergraduate and graduate students are urged to encourage their students to participate, to present their work in a verbal or poster format. Please submit your abstracts as soon as possible, preferably by e-mail to:

Daniel F. Belknap
Dept. Geological Sciences
University of Maine
Orono, ME 04469-5790
belknap@maine.edu

The evening speaker has yet to be determined.
Your ideas are welcome.



GSM Web Site

www.gsmmaine.org

Our new web master is Seth Barden at USM I think you will see some good changes and more up-to-date information very soon. Please send any information or questions to:

<seth.barden@maine.edu>

The State Geologist's Message:

The Maine Geological Survey will conduct an ambitious program of geological mapping during the summer of 2001 with projects extending from the coast to Aroostook County. The key projects we will be working on are:

Aquifer mapping: Our program will focus in Aroostook County this summer as we wrap up the final field effort to upgrade all the aquifer maps to the 1:24,000 scale. Craig Neil and his crew of summer interns will carry out this program, along with Dan Locke and Tom Weddle. With improved data collection techniques, including 12-channel seismic refraction, and improved GIS processing, the products of this work will be timely and greatly improved over the existing generalized aquifer information for the area.

Surficial mapping: Through the past several years, Woody Thompson and contract mappers have been working on the surficial geology around Lewiston and to the west. This effort builds on the geologic framework developed by our earlier mapping of the 1:24,000-scale quadrangles that comprise the Portland 1:100,000-scale sheet. This summer's program will complete the area around Lewiston and will extend the work westward toward the New Hampshire border. This mapping program is made possible with matching funds from the National Cooperative Geologic Mapping Program (NCGMP). An additional project under this program will be mapping the Bath quadrangle and vicinity by Tom Weddle.

Bedrock mapping: Again with assistance from the NCGMP, MGS will carry out bedrock mapping in the Lincolnville area, building on our understanding of the area's complex geology developed through several years of mapping in the area. Several contract mappers, including Dave West, will be part of this project which will cover a number of key quadrangles between Penobscot Bay and Augusta, part of the Survey's longer term goal to map the bedrock of the Augusta 1:100,000-scale quadrangle. Making sense of this complex geology and directing a small group of contract mappers will be Spike Berry's primary responsibility.

Coastal geology: We are continuing work here on several fronts that will be the subject of a future report.

Geologist Certification

Two bills have been entered into the first session of the 120th Legislature to address the high renewal cost for certified geologists, which went from \$80 to \$140 last year. The titles are: "An Act to Move Oversight of the Board of Certification for Geologists and Soil Scientists to the Department of Conservation" sponsored by Representative

Richardson, and "An Act to Revise Registration Fees of Geologists" sponsored by Representative Duplessie. We have not seen the language of these bills at this time. If you are concerned about the high cost of license renewal, inform your local Legislators about your concerns, and suggest they support one or both of these bills.

Robert G. Marvinney, Maine State Geologist:
<Robert.G.Marvinney@state.me.us>

GSM Member News

Jane Gates writes to Walter Anderson: "Many thanks for the special NEIGC 2000 with the dedication to Ollie! It has meant a lot to me to receive the guidebook and map, so thanks again and again."

Steve Pinette is back in Maine, living in Scarborough.

Art Hussey got a new knee on January 22nd and was observed to be getting around pretty well on February 24.

Steve Richardson is now Environmental Program Officer at Banknorth in Portland.

Paul Higgins will be filling in **Camille Parrish's** geologist position at the Maine DEP while Camille serves as Field Coordinator for the Environmental Studies Program at Bates College.

Don Robbins (ERI) is launching a separate division, Quality Water Solutions, supplying water treatment equipment for petroleum and arsenic problems and for GAC carbon and changeouts.

Joe Kelley and **Walter Anderson** have published a historical and geological analysis of the engineering, dredging and beach nourishment issues at Wells and Saco Bay. It is a must read for anyone interested in this continuing issue of the reach for understanding among public and private land owners and land users, engineers, scientists, and environmentalists. The Maine Shore and the Army Corps: A Tale of Two Harbors: Wells and Saco, Maine: Maine Policy Review, p. 20-34, Fall, 2000.

Please send member news to:
Carolyn Lepage at <clepagegeo@aol.com> or PO Box 1195, Auburn, ME 04211-1195 or by fax to 207-777-1370 or just call 207-777-1049

SECRETARY'S REPORT

GSM FALL MEETING - POLAND SPRING - NOVEMBER 3, 2000

Before the business meeting, the group toured the Poland Spring facility and noted the improvements that have taken place under Kristin Tardif's direction since we were here last November.

Chairman Walter Anderson called the business meeting to order at 4:15 p.m.

REPORTS

The Secretary's Report was accepted as printed in the October 2000 Newsletter. Current newsletters also appear on the GSM website, thanks to Webmaster, Wayne Power. Walter would like to see a complete set of Newsletters published on the web, along with the By-laws, and other important documents.

The Treasurer's report, also in the Newsletter, shows a Balance on Hand 9/23/00 of \$11,907.45.

OLD BUSINESS

Doug Reusch's "Missing Oceans and Colliding Continents" is being reviewed by Art Hussey, Bob Marvinney, and Dave Gibson. Walter would like to see this published before the end of 2000.

Bob "BJ" Johnston reminded everyone to check the mailing label on the Newsletter to determine dues status.

Walter acknowledged that Art Hussey had been uni-laterally appointed as GSM Historian, and encourages Art to regularly submit historical notes for future newsletters.

NEW BUSINESS

In spite of much opposition and testimony, the licensing board is increasing Geologist Certification annual fees from \$80 to \$140; and it could increase to \$250 or \$320. Certified Geologists have enlisted Sharon Treat as a potential sponsor of a bill to return the certification board to the Maine Geological Survey, or to privatize that entity. This action could reduce the fees to approximately \$50 per year.

Tom Weddle informed the gathering that Mike Retelle was undergoing surgery and would be at CMMC for 5 - 7 days; and that cards, calls, and visits would be welcome.

Walter received a letter from Jane Gates in appreciation for the dedication to Ollie in the NIEGC Guidebook; agreeing that the draft of Vinalhaven geology still needs some work.

Lisa Churchill-Dickson called attention to a temporary display of fossils and minerals at the Maine State Museum during November and December 2000.

Art Hussey is on the Marginal Way Oversight committee in Ogunquit. He noted, on pages 14 and

15 of a descriptive booklet of the area, some glaring inaccuracies with respect to the geology; emphasizing the need for professional geologists to get involved in educational outreach to make sure good science is the norm. "We need to be more aware; and we should do more mentoring, education, whatever it takes." To that end, Art has published "The Geological Story of Ogunquit, Maine. For details see the October Newsletter.

Patti Millette is working with Wayne Power to include a K-12 earth science section to the Webpage.

Walter thanked the officers and directors for their efforts during his tenure as president. Dan Belknap was recognized for his continuing efforts in putting together our newsletter.

The nominating committee: Bob Johnston, Marita Bryant and Becky Hewitt submitted the following nominees for the upcoming year.

David Gibson	President
Lisa Churchill-Dickson	Vice President
Patricia Seaward	Secretary
Elizabeth Champeon	Treasurer
Dan Belknap	Newsletter editor
Directors:	Martin Yates, Joe Kelley Walter Anderson

Tom Eastler motioned, and Art Hussey seconded, to accept this slate of officers. Tom Weddle moved that nominations cease. Both the motions and the votes were unanimous.

Bob Marvinney updated the audience regarding present Maine Geological Survey activities. These include:

- surficial mapping in the Lewiston/Brunswick area drilling project in the Northport area in collaboration with the University of Maine and the USGS for the purposes of studying the occurrence of arsenic background study of ambient groundwater quality in various areas of the State,
- looking for representative samples for analyzing water chemistry
- SEAGRANT effort by Joe Kelley, Steve Dickson and Dan Belknap in collecting monthly beach profiles from Camp Ellis and others, culminating in a Beaches Conference - The State of Maine's Beaches that was held in July 2000
- groundwater well database evolving under the direction of Marc Loiselle
- upgrading surficial geology maps
- funding - budget from general support is level; cooperative
- relationships with UM/USGS, looking for other opportunities

Bob Gerber referred to arsenic and water withdrawal issues coming to the fore, citing the conflicts between stakeholder/user groups such as ski areas, golf courses, salmon raising, blueberry

irrigation, etc. In defining the problem, the different groups are looking for solutions by way of incentives, regulations, baselines, and what measure to use to define. Included should be what we know about water resources and management, as well as groundwater's influence on surface water. A Land and Water Resources Council report is due by mid-December as to what kinds of policies should be implemented.

Tom Eastler posed a general question for information about the relationship to lake water quality, lower lake levels and increased erosion and algal growth. Tom was advised to review the Sebago Lake Plan for guidance.

Thanks to Poland Spring for providing the place and the meal for this GSM Fall Meeting.

The meeting was adjourned for social hour and buffet dinner hosted by Poland Spring.

Respectfully submitted,
Pat Seaward, Secretary

Patricia.o.seaward@state.me.us

EVENING SPEAKER

The evening speaker, Dr. Steve Norton, Professor at UMaine, gave us an historical perspective on acid rain studies. As early as the 1920's, western Europeans were developing theories that low pH in lakes and rivers was related to massive fish kills. In the mid-1970's the Germans observed thinning canopies and yellowing foliage in the Black Forest, and elsewhere, presumably from acid deposition in forest soils. The U.S. was on board by the late 1970's; and UM was involved from the beginning.

Historically the pH of surface water has been highest west of the Mississippi River, with a "bull's eye" of low pH centered near western New York and Pennsylvania, and Ohio, coincident with coal burning and other industrial processes; Maine having 50% less acidity than elsewhere.

By 1985 the government invited UM and six other universities in the eastern U.S. to become involved in the Watershed Manipulation Project to study the processes of surface water acidification, and how these chemical changes related to fish-kill data. With funding from EPA, USGS, USF&W, and on land owned by Champion (IP), the universities chose the Bear Brook watersheds to study because of the similar characteristics of the East Bear and West Bear catchments. USGS hydrographs showed that East and West Bear were also hydrogeologically equivalent.

The hypothesis is that the base cations (Ca, Mg, Na, K) added to soils by weathering of the tills is in steady state with the cations leaving the watershed by chemical weathering. Prior to the anthropogenic addition of pollutants in the atmosphere, the steady

state was the norm. The increase of H+ exchanges with the base cations in the soil, which are mobilized out of the system by acid rain. Once acidification is reversed, the soils again soak up these base cations, returning the system to steady state. The EPA questioned how long this process should take, and thus the study was designed to monitor both catchments for two years before artificially acidifying West Bear. It was found that the base cations decreased even in East Bear. Why?

Several hypotheses have been put forth; but two that Dr. Norton poses as most viable have to do with the biological uptake of base cations by plant growth and nutrient storage, and the systematic variation of CO2 pressure in the soil. The studies continue.

Respectfully submitted,
 Patricia O. Seaward, Secretary
 <Patricia.O.Seaward@STATE.ME.US>

GSM TREASURER'S REPORT

As of 01/27/01:

The Society currently has 363 members: They are distributed as follows:

Associates:	31
Institutions:	14
Regular:	276
Students:	42

Unfortunately it is easy to let your dues lapse. The dues date is shown on your mailing label.

Anderson Fund (Total)	\$ 5068.64
Education Fund (Total)	\$ 735.70
Checking Account (other)	\$ 6485.10

Receipts

Dues	\$ 6485.10
Anderson fund (intr. + contr.)	\$ 270.64
Education	
Education fund	\$ -
Publications	\$ 10.00
Subtotal	\$ 1,093.64

Expenses

Printing, mailing, stamps	\$ 650.10
Anderson Awards (Plaques etc.)	\$ 314.77
Conference/Meeting Expenses	\$ 60.55
Website	\$ 0.00
Taxes	\$ 1.00
Subtotal	\$ 711.65

Balance on Hand 01/27/01 \$ 12,289.44

Respectfully submitted,
 Elizabeth A. Champeon, Treasurer
 <Lchampeon@aol.com>

Rock and Mineral Collection

The Northern Maine Museum of Science is interested in expanding its very modest collection of Maine mineral and rock materials. If anybody has material to donate they should contact me. Our collections are meager enough that there is a strong likelihood that any good materials donated to the museum will go on immediate display.

In addition, a general collection of specimens for teaching would be helpful. Some of the desired specimens include:

Rock Forming Minerals Igneous Rocks

Quartz (massive)	Peridotite
Quartz (crystal)	Gabbro
Fluorite	Basalt
Hornblende	Diorite
Talc	Granite
Garnet (Almandine)	Scoria
Apatite	Obsidian
Halite	Andesite
Olivine (Forsterite)	Rhyolite
Calcite (rhombohedral crystal)	Pumice

Graphite

Plagioclase
 Orthoclase
 Biotite
 Muscovite
 Gypsum
 Sulfur
 Corundum
 Topaz
 Diamond

Sedimentary Rocks

Shale
 Siltstone
 Sandstone
 Conglomerate
 Breccia
 Limestone
 Dolostone
 Chalk
 Coquina
 Chert
 Diatomite
 Coal – lignite
 Coal – Bituminous
 Rock Salt

Economic Minerals

Sphalerite
 Limonite
 Galena
 Magnetite
 Calcopyrite
 Pyrite
 Hematite

Metamorphic Rocks

Slate
 Phyllite
 Garnetiferous mica schist
 Talc schist
 Quartz-mica schist
 Gneiss
 Metaquartzite
 Metaconglomerate
 Marble
 Anthracite coal

Kevin McCartney, Professor of Geology and
 Director, Northern Maine Museum of Science
 University of Maine at Presque Isle
 Presque Isle, ME 04769
 (207) 768-9482 (fax: 768-9608)
 <mccartney@polaris.umpi.maine.edu>

MEMBERSHIP DUES STATEMENT

The **GEOLOGICAL SOCIETY OF MAINE, INC.** is a non-profit corporation established as an educational Society to advance the professional improvement of its members; to inform its members and others of current and planned geological programs in Maine; to encourage continuing social contact and dialog among geologists working in Maine; and to further public awareness and understanding of the geology of the State of Maine; and of the modern geological processes which affect the Maine landscape and the human environment.

The Society holds three meetings each year, in the late fall (Annual Meeting), early spring, and mid-summer (usually field trips). A newsletter, *The Maine Geologist*, is published for all members three times a year. The Society year runs from August 1 to July 31. Annual dues and gift or fund contributions to the Society are tax deductible. There are three classes of memberships:

\$7.00	REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.
\$6.00	ASSOCIATE MEMBER	Any person or organization desirous of association with the Society.
\$4.00	STUDENT MEMBER	Persons currently enrolled as college students.

A \$2.00 APPLICATION FEE is a one-time fee for all new members, payable when applying for membership.

THE GEOLOGICAL SOCIETY OF MAINE ANNUAL RENEWAL / APPLICATION FOR MEMBERSHIP

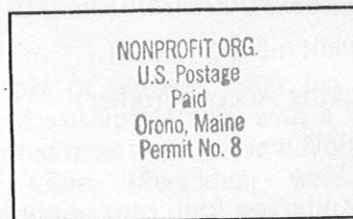
Application Fee	\$2.00	\$ _____	Name _____	Make checks payable to:
Regular Member	\$7.00	\$ _____		Geological Society of Maine
Associate Member	\$6.00	\$ _____	Address _____	Elizabeth Champeon, Treasurer
Student Member	\$4.00	\$ _____		Six Liberty Drive
Contributions to GSM		\$ _____		Bangor, ME 04401
	(please write gift or fund on check)			
TOTAL ENCLOSED		\$ _____		

(Geological Society of Maine funds include the Walter Anderson Fund, the Education Fund, and discretionary gifts as noted by contributor)

1999/2000 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER

THE GEOLOGICAL SOCIETY OF MAINE

c/o Daniel F. Belknap, Newsletter Editor
 Department of Geological Sciences
 111 Bryand Global Sciences Center
 University of Maine
 Orono, ME 04469-5790



THE MAINE GEOLOGIST is published three times a year, in mid-winter, summer, and early fall, for members of the Geological Society of Maine.

Return Service Requested

Correspondence about membership in the Society should be mailed to:
 Elizabeth Champeon, 6 Liberty Drive, Bangor, ME 04401

Items for inclusion in the newsletter may be directed to:
 Daniel F. Belknap, Dept. Geological Sciences, University of Maine,
 Orono, ME 04469-5790 belknap@maine.edu

President	Dave Gibson
Vice President	Lisa Churchill-Dickson
Secretary	Pat Seaward
Treasurer	Elizabeth Champeon
Newsletter Editor	Dan Belknap
Directors	Marty Yates (97-01)
	Joe Kelley (98-02)
	Walt Anderson (00-04)

Thomas K. Weddle	
11 Beech Drive	
Brunswick, ME 04011	
USA	9/1/02