



October, 2005
Volume 31
Number 3

THE PRESIDENT'S MESSAGE

The annual Summer Field Trip of the Geological Society of Maine held in honor of Bob Neuman was a success. Geologists, friends, and family members feted Bob for two days and two nights based at the Shin Pond Village Campground. Intrepid field man that he is, Bob was able to get to every outcrop along the way and provide a geologic interpretation at each stop. On Saturday the group started the day by visiting the unconformity marking the Penobscot Orogeny, took in an overview by Dee Caldwell of the physiography of northern Baxter State Park at a locality known as Hurricane Deck, and was educated by Gary Boone on the fine distinction between Traveler Mountain and The Traveler.

We then visited outcrops of Matagamom Sandstone and the overlying Traveler Rhyolite at the Northern Entrance to Baxter State Park and had lunch at the picnic area at the Matagamom Gate overlooking the lake. Discussion turned to features found near the contact between the rhyolite and the sandstone that appeared at first look to be clam fossils in the sandstone, giving us pause to consider whether or not we were looking at a volcanically derived Devonian clam bake. Others thought that idea was only half-baked, pointing out that the smooth impressions could have been made by oval-shaped rounded pebbles, leaving the clam-bakers stewed.

Turning south, we had a slow journey due to near-off road travel along the East Branch Penobscot to Haskell Rock Pitch, where an Ordovician fossiliferous unnamed conglomerate is well exposed in the river. Bob stated that this section is unique for its completeness, the apparent amount of time that it represents, the abundance and diversity of its fossils, the variety of rocks found there, and its relatively simple structure. He also proposed that the conglomerate may have had a tsunamigenic origin. The final stop of the day was a pavement of rocks in the Seboomook Group along the Scraggly Lake Road. The outcrop is rhythmically bedded fine grained sandstone and siltstone, with excellent examples of tangential cross beds and graded beds, and represents turbidity current deposition.

Returning to Shin Pond for the annual banquet, an impromptu concert of beautiful traditional folk music was held on the deck of the new Shin Pond House by the Putnam family, Dave, Aaron, and JoAnne, getting people in the proper mood to honor Bob at the banquet. The meal prepared by hosts

Craig and Terry Hill was delicious with plenty for all. After the meal, Bill Forbes was asked to speak about Bob's career and especially of his work in Maine and gave a wonderful and humorous heartfelt overview of the man being honored. Bob was then awarded a plaque, which reads "The Geological Society of Maine presents this plaque to Robert E. Neuman in recognition and appreciation of his contributions to the geology of the State of Maine, July, 2005" Bob accepted the honor with sincere thanks, graciousness and a beaming smile. The group then retired for the night.

Sunday morning found the group smaller as several had to leave, but a good crowd remained for what proved to be as much a remarkable day for geology as Saturday had been. As we headed south of Patten on Route 11, the overlook of Katahdin afforded the clearest view of the region that I have ever seen there; the sky was brilliant and the mountain awesome, setting the stage for what we were about to see. Taking the Stacyville Road off of Route 11, we made our way to an exposure of the Ordovician Wassataquoik Chert, a finely laminated gray and green thinly-bedded chert with thin siliceous slate layers. Graptolites and conodonts have been found at this locality, and in one zone of the chert, cephalopod and gastropod fossils are present. The group remained at this outcrop admiring it for a long time and had lunch before proceeding to the last stop at the Whetstone Falls on the East Branch of the Penobscot, several exposures of rocks similar to the Silurian Allsburry Formation are found here. The outcrops are bedded gray slate and thin fine-grained sandstone layers. These outcrops are at the western edge of the belt of fine-grained Silurian rocks in much of northeastern Maine. Steeply plunging folds are found in the outcrops along the east bank of the river; a prominent cleavage makes it difficult to see bedding except in areas worn smooth by the river. On the west bank a smoothed outcrop has primary cross bedding preserved in coarser sandstone layers; however, it appears in places that the primary bedding between the slate and sandstone layers has been distorted by shearing parallel to the bedding plane. The group was split about whether the beds were tectonically sheared during regional deformation or if the disruptions represent syndepositional deformation, and did not come to agreement but left with a better understanding of some of the rocks of the Lunksoos anticlinorium and the adjacent region.

I want to thank Bob Neuman and his family, especially his daughter Libby for getting Bob up to Maine and for a marvelous opportunity to share the weekend with her father. I thank the owners of Shin Pond Village Campground, the Hills, for a delightful stay and banquet. I thank Dee Caldwell for providing a field trip stop and Gary Boone for providing assistance with helping find outcrops to visit. Finally, I thank Walter Anderson and Bill Forbes who also helped with outcrop locations, visiting them in the field with me, and with assisting with access permission from landowners.

Tom Weddle, President (2004-2006)
<Thomas.K.Weddle@maine.gov>

THE EDITOR'S MESSAGE:

I draw your attention to the passing of Jim Petersen, an outstanding archaeologist who worked in Maine for many years. I had the pleasure of working with him on the Seabasticook fish weir site, and interacting in several other conferences and field trips. His colleague Brian Robinson, of UMaine, has written a memoriam, which is to be found on page 4. This senseless loss should remind us all of the potential for tragedy in the field, and the ephemeral nature of our careers and lives.

Please send any items from individuals, schools or organizations for inclusion in the Newsletter to my e-mail address. Also, please note in the treasurer's report that many members are NOT paid up. Remember that **the date on your mailing address refers to when your current dues run out**. Please help the Society by paying up to date or beyond, and most especially, making good on any arrears. In a policy decided at the Spring 2005 Meeting, a number of long-time non-paying members were dropped from the roles of the Society with the last Newsletter.

Thanks.

Dan Belknap, Newsletter Editor (1998 – present)
<belknap@maine.edu> (207) 581-2159, FAX: -2202

GSM WEBSITE

www.gsmmaine.org

The GSM website contains copies of present and archived Newsletters, a calendar of events, and other items of interest to the Society, including the updated Bylaws. There are many important links to geology items in Maine and elsewhere. There is a page on Maine geology and the Photo of the Month. Let us know what you think.

Webmaster, Mike Lerley mike@rentageekme.com



2005 GSM Fall Meeting

October 28th,

2 p.m. to 8 p.m.

Poland Spring Golf Course Clubhouse,
41 Ricker Road (off Rt. 26),
Poland, ME

This year's meeting is being hosted by **Tom Brennan** of the Perrier Group/Poland Spring. If you are planning to attend, please contact: Clifford R. Lippitt at clippitt@swcole.com
As soon as possible so we can get a headcount for dinner.

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2 p.m. to 4:30 p.m.

Mini-Symposium

Practical Applications of Geology

- 2:00 - Mark Dubois (Poland Spring): Big Basin, Big Water: Searching Maine's Glacial Lake Basins for Springs in Northwestern Maine
- 2:30 - Peter Garrett (Emery & Garrett): Sustainability of Water Supplies
- 3:00 - John Tewhey (Tewhey Associates): Geology and Lessons Learned from Site Exploration
- 3:30 - Elizabeth A. L. Champeon (S. W. Cole Engineering, Inc.): Applicability of Geological Investigations to Design of Geothermal Systems
- 4:00 - David Andrews (URS) Geology and Superfund Site Clean-up in New England

4:30 p.m. to 5 p.m. **Business Meeting**

5 p.m. to 6 p.m. **Social Hour**

6 p.m. to 7 p.m. **Dinner** - complimentary meal provided by Poland Spring

7 p.m. to 8 p.m. **Keynote Address** –

Jennifer D. Shosa (Colby College)

ALVIN Dive 3986: Investigating Fluid Flow through Mid-Ocean Ridges and Ridge Flanks.

The museum at Poland Spring will also be open during the meeting for anyone wishing to tour the exhibits.

THE STATE GEOLOGIST'S MESSAGE

Marine Program Highlights

Robert Marvinney

State Geologist

The devastating landfalls of Hurricanes Katrina and Rita serve as reminders of the vulnerability of our coastal communities to natural disasters. As Americans have streamed to coastal communities in record numbers in the past several decades, so too have the costs of disasters reached record levels. Many factors have contributed to this escalation in disaster costs, including to some degree the general public's unwillingness to accept information presented by scientists. It's too easy to reject science as being incomplete, inconclusive, flawed, biased, etc.

While we have not had a devastating storm on the Maine coast for many decades, smaller storms are still a serious concern. In an effort to improve our scientific understanding of Maine coastal dynamics, in 2003, marine geologists Steve Dickson and Pete Slovinsky acquired a nearshore survey system (NSS) through a grant from the Maine Technology Institute. This system consists of a personal watercraft (PWC) outfitted with a Real Time Kinematic (RTK) GPS system, a high-resolution fathometer, a base station with a companion GPS system, and radio telemetry between the PWC and the base for data logging to a portable PC at the base. With the NSS, it is possible to collect very detailed bathymetry in the nearshore zone in a short period of time. Repeat surveys will reveal bathymetric changes from which shoreline change rates, in addition to volumetric changes, can be determined. This system forms the basis for the Maine Geological Survey's efforts at mapping erosion hazard areas along the southern coastal dune system. Steve and Pete have used the system to establish baseline bathymetry at Camp Ellis, and have begun using the RTK GPS for terrestrial-based surveys of vegetation line positions along the coast.

Recently the marine geologists have used the system to assist the Department of Transportation. The DOT is currently developing several possible bridge replacement projects and called on our NSS to produce detailed bathymetry in places too tight or shallow for a traditional boat survey.

With the addition of an acoustic Doppler current profiler (ADCP), it is also possible to use the NSS to establish detailed current data. Steve and Pete used this capability to analyze peak flood and ebb currents at the mouth of the Presumpscot River for DEP's oil-spill response planning efforts involving proper boom placement.

The ADCP capability was critical this past summer, when several southern beaches had closures

due to high bacterial counts in the water. Water quality data is monitored by volunteers of the [Maine Healthy Beaches Program](#) and is collected, on average, once a week, at Maine's swimming beaches. Currently, beach advisories and closures rely strictly on weekly (sometimes daily) sampling, with a 24-hour delay for results, and no predictive capability. This could result in a day of exposure and a day of unnecessary closure, plus considerable sampling expense. To see what role currents might play in the issue, Steve and Pete mounted the ADCP on a small boat and collected current data off Goose Rocks Beach during several tidal stages. With the analysis of current, wind, and wave data, we were able to determine the combination of conditions that possibly lead to high bacterial counts, and thereby help the Maine Healthy Beaches Program better predict when to post closures or advisories, and when sampling should be done.

This is good science that is contributing critically needed understanding of the dynamics of our coastal environment.

You can read more about the NSS at the [April, 2004 MGS Site of the Month](#).

Robert G. Marvinney, Maine State Geologist:

[<Robert.G.Marvinney@state.me.us>](mailto:Robert.G.Marvinney@state.me.us)

New MGS Website

Colleagues:

After nearly a year of effort, the Maine Geological Survey (MGS) has launched a completely redesigned website:

<http://www.state.me.us/doc/nrimc/mgs/mgs.htm>

Thanks to the web design team at MGS who spent countless hours developing and testing the site, users will find improved navigation and greatly enhanced geological content of the MGS site.

Particularly useful is the new publications search section which allows an interactive search of publications via a graphical map interface. Most importantly, users may now search for and chose from thousands of geological maps for free on-line downloading.

I am very enthusiastic about this new site and think you will find it to be a vast improvement over our previous web site.

Best regards,

Robert G. Marvinney, Ph.D.
State Geologist and Director
Maine Geological Survey
22 State House Station
Augusta, ME 04333-0022

IN MEMORIAM
James B. Petersen 1954-2005

James B. Petersen, Chair of the Department of Anthropology at the University of Vermont, was killed in a robbery at a restaurant in a small town in Brazil on August 13, 2005, apparently the victim of a random act of violence. At the time, he was doing research that he loved with colleagues in Brazil.

Before going to UVM, Jim was the long-time director of the Archaeology Research Center at the University of Maine at Farmington and a frequent colleague on the Orono campus. He worked extensively in Maine, Vermont, the Caribbean, and Brazil, among other areas.

A wide variety of scholars in varied disciplines thought of Jim as a colleague. He was well known as a specialist in Native American ceramics and fabric impressions, certainly the authority on the topic in northern New England. In the mid 1980's his dedicated crews excavated the first deeply stratified interior riverine site in Maine, demonstrating how much we still had to learn about early Holocene human occupation in northern New England. At Farmington he helped train and employ large numbers of students and technicians. Massive amounts of feature fill and sediments were transported to the laboratory to be fine screened and processed. Picking feature fill was a rite of passage, sometimes with exciting results such as the 6,000 year old squash, and the level in which burned bone fishhooks were the most abundant artifact type, both at the Sharrow site. In addition to the miniscule, Jim constantly expanded his regional and anthropological interests, working on settlement patterns in Montserrat and in Brazil among other places. When limited funding was available, he enlisted large numbers of volunteers to salvage endangered sites. He recently worked with the Abenaki of Vermont to gain state recognition.

Lithic identification, deeply stratified sediments, water saturated deposits at an ancient fish weir, and most recently the formation of rich cultural soils in the tropical forest of Brazil are among the many geoarcheological pursuits that he shared with colleagues. Nearly 400 people gathered at a memorial service in Shelburne Vermont on August 22, a diverse crowd of researchers and friends. Many of us counted on Jim for his expertise. He leaves behind a wealth of publications, reports, letters and memories of his enthusiasm.

Brian S. Robinson,
Dept., Anthropology, University of Maine
September 18, 2005

GSM MEMBER NEWS

Lisa Churchill Dickson (past President of GSM) and **Stephen M. Dickson** (MGS) announce the arrival of their second son, Nathaniel Douglas Dickson, born on September 25th in Augusta. Baby, mother, father and brother are all a bit sleep deprived, but otherwise very happy and doing well.

Keith Taylor is now Senior Hydrologist at St. Germain and Associates, Westbrook, ME.

Please send member news to:

Carolyn Lepage, Member News Correspondent
(1996-present) <clepagegeo@aol.com> or
PO Box 1195, Auburn, ME 04211-1195 or
Fax: (207)-777-1370; Phone: (207)-777-1049

GSM SECRETARY'S REPORT
Geological Society of Maine
Summer Field Trip

There was no Society meeting held during the summer field trip, and the Secretary was unable to attend. President Weddle has provided an excellent summary of the trip on page 1.

Respectfully submitted,
Sean R. Dougherty, Secretary (2004 -)
<sean.dougherty@maine.gov>



Roche moutonnée, Pemaquid Pond, Damariscotta, ME.

Devonian granitic dike in Bucksport Fm. Ordovician-Devonian schist.

D.F. Belknap photo 7/08/2000

GSM TREASURER'S REPORT

The Society currently has 350 members, a distinct drop from the last report as we have dropped a number of former members for non-payment of dues. The present membership is distributed as follows:

Students:	33
Associates:	28
Regular:	235
Institutional:	7
TOTAL:	303

Total Paid Up 105

Previous Balance: Funds as of June 1, 2005

Anderson Fund Savings	\$ 356.71
Anderson Fund CD	\$ 5,081.81
Education Fund Savings	\$ 895.01
General Fund Savings	\$ 7,909.91
General Fund Checking	\$ 1.03
Total Funds	<u>\$ 14,244.47</u>

Receipts 6/2/05-10/04/05

Dues	\$ 2,290.00
Interest	\$ 79.41
Anderson Fund Donations	\$ 152.00
Publication sales	\$ 17.00

Receipts Subtotal **\$ 2,538.41**

Expenses 6/2/05-10/04/05

Postage	\$ 6.59
Field Trip	\$ 981.15
Web Site	\$ 49.95

Expenses Subtotal **\$ 1,037.69**

Balance on hand as of June 1, 2005

Anderson Fund Savings	\$ 510.01
Anderson Fund CD	\$ 5,128.94
Education Fund Savings	\$ 898.01
General Fund Savings	\$ 9,208.23
General Fund Checking	\$ 0.00

Total Funds **\$ 15,745.19**

Net gain or loss: **\$ 1500.72**

Respectfully submitted,
Rob N. Peale, Treasurer (2004 -)
Rob.N.Peale@maine.gov

SOME USEFUL WEBSITES:

GSM Geological Society of Maine:
<http://www.gsmmaine.org/>

BATES COLLEGE:
<http://www.bates.edu/GEO.xml?dept=GEO>

BOWDOIN COLLEGE:
<http://academic.bowdoin.edu/geology/>

COLBY COLLEGE:
<http://www.colby.edu/geology/>

UNIVERSITY OF MAINE:
<http://www.geology.um.maine.edu/>

UNIV. MAINE FARMINGTON:
http://www.umf.maine.edu/academics/dept_natural.php?location=academics

UNIV. MAINE PRESQUE ISLE:
<http://www.umpi.maine.edu/programs/Scimat/>

UNIV. SOUTHERN MAINE:
<http://www.usm.maine.edu/~geos/>

MGS: Maine Geological Survey: NEW Oct, 2005:
<http://www.state.me.us/doc/nrimc/mgs/mgs.htm>

MEDEP: Maine Dept. Environmental Protection
<http://www.maine.gov/dep/index.shtml>



Black Head, Monhegan Island, ME. Devonian gabbro and diorite, 40 m cliffs on the Gulf of Maine. D.F. Belknap photo, 6/22/2002

MEMBERSHIP DUES STATEMENT

The GEOLOGICAL SOCIETY OF MAINE, INC. (often referred to as **GSM**) 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:

\$12.00 REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.	PLEASE NOTE NEW FEE SCHEDULE AS OF August 1, 2003
\$12.00 INSTITUTIONAL MEMBER	Libraries, societies, agencies, businesses with interests in or practicing geology and related disciplines.	
\$10.00 ASSOCIATE MEMBER	Any person or organization desirous of association with the Society.	
\$ 5.00 STUDENT MEMBER	Persons currently enrolled as college or university students.	

THE GEOLOGICAL SOCIETY OF MAINE ANNUAL RENEWAL / APPLICATION FOR MEMBERSHIP

Regular Member	\$12.00	\$ _____	Name _____	Make checks payable to: Geological Society of Maine Rob Peale, Treasurer Maine Dept. Environmental Protection, State House Station 17 Augusta, ME 04333-0017
Institutional Members	\$12.00	\$ _____		
Associate Member	\$10.00	\$ _____	Address _____	
Student Member	\$ 5.00	\$ _____		
Contributions to GSM		\$ _____		
(please write gift or fund on check)				
TOTAL ENCLOSED		\$ _____	_____	

Email Address _____

(GSM funds include the Walter Anderson Fund____, the Education Fund____, and discretionary gifts____as noted by contributor)

2005/2006 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER.

The DATE on your mailing address refers to PAID UP DUES DATE

THE GEOLOGICAL SOCIETY OF MAINE

c/o Daniel F. Belknap, Newsletter Editor
Department of Earth Sciences
111 Bryand Global Sciences Center
University of Maine
Orono, ME 04469-5790 <belknap@maine.edu>



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

Return Service Requested

Correspondence about **membership** in the Society, **publications** and **dues** should be mailed to:
Rob Peale, Department of Environmental Protection
State House Station 17, Augusta, ME 04333-0017 <rob.n.peale@maine.gov>

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

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|-------------------|---------------------------------|--------------------------------------|
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| | Liz Champeon (04-08), | S.W. Cole, Inc. |
| | Lisa Churchill-Dickson (05-09), | Registered Professional Geologist |