THE MAINE GEOLOGIST

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

October, 2001

Volume 27
Number 3

The President's Message

Greetings ! I hope you all had a wonderful summer and that you are enjoying this great fall weather we are having. It seems no time since our field trip to Grand Manan in early August and as you will read in this issue we had a spectacular time.

This promises to be a busy year for us with the annual GSA meeting in Boston in November, our own fall meeting (see details below) and the NE regional meeting of GSA in Springfield, Mass next March. It seems we have a plethora of events right in our own back yard (or relatively close) and I hope we will take advantage of this proximity. I was talking recently to Chris Hepburn (chairman, 2001 GSA annual meeting local committee) and he expressed concern about attendance at the meeting given the recent events. I hope that the geological community (professionals, students and academics) here in the NE will take up the slack and get down to the Boston meeting. Likewise, with the NE meeting following so closely on the heels of the GSA in Boston, Sheila Seaman (University of Massachusetts) hopes that attendance will not suffer. I think we have a great opportunity to help out here by encouraging people, in particular our students, to go to these meetings.

Another issue which needs to be addressed soon is the "Geology of Maine' book that has been discussed at some of our meetings. I will be in contact with Joe Kelley, Dan Belknap, Bob Marvinney and Lisa Churchill-Dickson to initiate some progress on this and hope to report to you at our fall meeting. Many of us have had a chance to look at a similar product "The Last Billion Years," which deals with the geology of Maritime Canada, and were very impressed. I hope we will include many people within GSM to contribute in one way or another with this important venture.

Last but not least I would like to thank our current web site guy, Seth Barden (UMF student) for his continuing efforts to make our web site informative, colorful and easy to use. Seth has recently put some pictures of the summer field trip up on the site, as well as updating the events listing, so if you haven't checked those out you can at **www.gsmmaine.org.**

Hope to see you all at our fall meeting November 16th in Poland Spring, and if you have any items for the business meeting please pass them on to me for their inclusion at that time.

Cheers, Dave Gibson <dgibson@maine.edu>

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Geological Society of Maine
Fall Meeting

Friday, November 16, 2001, 3:00 PM

Poland Springs, ME

Host: Poland Spring Bottling Co., Inc., Poland Spring, Me.

Location: On Rt. #26 at Historic Spring House on Ricker Hill (see DeLorme Atlas Map #5)

Agenda:

3:00-4:30: Poland Spring Bottling Co.- Tour of facilities, including new displays of Quaternary geology and hydrology, bottling plant restoration

4:30-4:45: Hal Borns – Establishing an "Ice Age Trail in Maine.

5:00-5:45: Business Meeting- Important!!

6:00-7:00: DINNER - Host - Poland Spring Bottling Co.

7:15-8:00: Evening Speaker – Elizabeth A. Wilson, Ph.D., Adjunct Professor of Geological Sciences, University of Maine and independent petroleum geologist. Topic: "World Energy Resources"

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The Editor's Message:

My sincere apology to Irwin Novak of GSM for the misspelling of his name in the President's column last June.

Please note the date on the mailing label for your dues. Some folks have been renewing for only one year after being in arrears for considerable stretches. Please be fair in catching up, remember that your lapses have been paid for by more conscientious members.

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

GSM Web Site

www.gsmmaine.org

Seth Barden, Webmaster, UMF
< seth.barden@maine.edu>

The State Geologist's Message:

Update on Camp Ellis

The Maine Geological Survey has a long history of working on the coastal erosion issue at Camp Ellis, a problem that was carefully reviewed by Joe Kelley and Walt Anderson in their report "The Maine Shore and the Army Corps: A Tale of Two Harbors" published in Maine Policy Review. Since their first construction in 1867 the jetties, which provide safe navigation into the Saco River, have caused havoc to the beaches of Camp Ellis. Since that time more than 30 properties have been lost to erosion as the jetties reflect wave energy onto the beach and longshore drift carries most sand north to the benefit of residents at Pine Point. This is the state's most critical coastal erosion problem.

Over the years the Corps of Engineers has conducted numerous studies of the situation at Camp Ellis, most often concluding that the jetties play no role in the erosion problem. Their 1992 "Beach Erosion Study, Section 111" analyzed several remedial alternatives including building a beach-parallel breakwater, further hardening of the shoreline, roughening of the jetties, beach replenishment, and combinations of these. Their benefit:cost ratio for these alternatives at that time showed that costs exceeded projected benefits. Nothing was done. The Corps basically closed the books and washed their hands of the problem.

Last year under intensive pressure from the City of Saco, the state agencies, and our Congressional Delegation (in particular Tom Allen), the Corps decided they could take one more look at Camp Ellis. They "updated" their Section 111 report with additional economic information and more realistic erosion rates. Remarkably, those same remedial alternatives that previously had benefit:cost ratios less than 1.0 were suddenly in the 1.3-1.5 range. The Corps could now move forward with a project at Camp Ellis to address the erosion issue.

With these numbers in hand, several representatives from Camp Ellis and Saco and I visited our Senators and Congressmen in Washington last June. The result of these meetings is an appropriation of $350,000 (once the 2002 budget is passed) to undergo the design phase of a project to roughen the north jetty and add sand to the beach. Most geologists agree that roughening the jetty at best would reduce the force of waves reflected from the jetty and at worst would do nothing. Adding dredged sand to the beach from the harbor area and near the mouth of the jetty will mimic the transport of sand from the river to the beach that was disrupted by the jetty. The entire project will cost about $4 million to complete. We also continue to look at ways to fund buy-outs of the most at-risk properties because it will make more sense to place the sand higher on the beach where a dune could form rather than lower.

Will this solve the erosion problem at Camp Ellis? Probably not. This is a short-term step in the right direction. Through this recent study, the Corps has acknowledged responsibility for the erosion and we need to make them commit to a long-term solution.

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

GSM Member News

Bruce Bouley, a long time member of the Geological Society of Maine, died at his home in Golden, Colorado on August 26, 2001 at the age of 54. Bruce's connections to Maine are many and he will be missed by those who knew him, taught him, learned from him and worked with and for him.

Bruce was born in Auburn, Massachusetts. Following high school, he went to Bates College on a scholarship and graduated cum laude in 1969. At Bates, he studied under Roy Farnsworth and continued to communicate with Roy until his death. He was a National Science Foundation scholar at Wesleyan University in Connecticut. His thesis work involved paleomagnetic research investigating the significance of the White Mountain magma series in Atlantic sea floor spreading. He completed his MS degree in 1971. He began his professional career with the minerals division of Midwest Oil Company, doing geochemical research in Alaska, Utah and Idaho. He then began work for the Phelps Dodge Corporation in Henderson, Nevada. After 3 years and with the encouragement of Phelps Dodge, he took a leave of absence and began a doctoral program at the University of Western Ontario in 1974, completing his Ph.D degree in 1977. His doctoral thesis was on the geology and mineral deposits of the Cape Rosier area of coastal Maine. He presented compelling evidence of a facies relationship between the Castine volcanics and the Ellsworth formation, which flew in the face of the generally accepted idea that those two rock units were of radically different ages.

He then opened an office for Phelps Dodge in Bangor and remained there as District Geologist for the northeast, undertaking numerous exploration programs in Maine, New Hampshire and Vermont. In 1980 Bruce was hired at Chief Geologist for Callahan Mining Corporation, working out of the corporate office in Phoenix, Arizona. In 1990 Bruce was repatriated to Alaska as Manager of Cominco Alaska Exploration. In 1995 Bruce joined BHP Minerals in Golden, Colorado as Exploration Manager for North and Central America. In 1998, Bruce became Vice President of North Star

Exploration based in Golden Colorado and remained in that position till his death.

He was very active with many professional organizations, most notably the Society of Economic Geologists. He served as chair of many of its committees and as President of the SEG Foundation. He was named a Thayer Lindsley Visiting Lecturer in 1994 and included Bates College on his lecture circuit.

In May of 2000, he was diagnosed with kidney cancer (renal cell carcinoma) and was given little chance to survive more than one year. (Shawn Walsh, UM hockey coach was diagnosed with identical cancer two weeks later). He fought hard to survive, trying every possible method available. He visited Maine with his wife Alice last September and with several geologist friends spent many days visiting his old thesis site at Cape Rosier, digging clams and eating lobster. Maine and the geological community as a whole have lost a superb geologist and a friend.

Contributions can be made to the Bruce A. Bouley Scholarship Fund, Development Office, Bates College, 2 Andrew Road, Lewiston, Maine 04240

(Obituary by Fred Beck)

Tom Brennan (Magellan Enterprises, Inc.) and his wife Charlotte are the proud parents of a baby girl, Isabel Fiona.

Dee Caldwell officially retired from Boston University this past spring, although he is teaching a course at BU this fall. Dee was honored at the NEIGC banquet in New Brunswick in mid-September and at a well-attended retirement ceremony at the Boom House on September 29th.

Charlie Guidotti (UM) will be awarded a Laurea Honora Causa from the University of Padova, Padova, Italy, December 12. This honorary doctorate is in recognition of his achievements in the fields of mineralogy and metamorphic petrology, and his work with Italian colleagues for many years.

Art Hussey (retired) and **Walter Anderson** (retired) will be running a GSA GeoHostel program in Maine during the summer of 2003. Art has also published "The Geologic Story of Ogunquit". Walter is also teaching Physical Geology at USM this fall.

Alice Kelley (UM) is pursuing a Ph.D. at the University of Maine. She will focus on the interaction of geological, archaeological, and paleoenvironmental conditions in the post-glacial Penobscot Valley.

Steve Pollock (University of Southern Maine) has been named a Fellow of the Geological Society of America.

Keith Taylor has joined Stratex LLC (part of the Bernstein Shur Sawyer and Nelson law firm) as a technical consultant. He will be working in the company's Augusta office.

Tom Weddle (Maine Geological Survey) has replaced **Lindley Hanson** (Salem State College)as secretary for NEIGC.

Tom Weddle (MGS) and **Mike Retelle's** (Bates College) Geological Society of America Special Paper 351, "Deglacial History and Relative Sea-Level Changes, Northern New England and Adjacent Canada", has just been published and will be available at the GSA national meeting in Boston in November.

Please send member news to:

Carolyn Lepage <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 SUMMER FIELD TRIP TO GRAND MANAN

More a travelogue than a geology field trip description, I would be remiss in ignoring the "grandeur" of the place we traveled to on the first weekend in August. The trip to Blacks Harbour would have been unbearable save the air-conditioned vans. Once on the ferry and out to sea, it was almost too cold, but a very welcome, although short-lived, respite against the heat and humidity. I had a preconceived notion that an island in the middle of the ocean would be cooler than the mainland. Not. Of course it had everything to do with the mass of island in the middle of the ocean.

Arriving at the Hole in the Wall campground in plenty of time to pitch tents before dark and dinner, the group (>50?) prepared to share good food, good drink, good friends, and good exploring. The after dinner hike drew us to Swallowtail Light, noted as a "scenic outlook" and vantage point for sunrises. We crossed the bridge to explore the lighthouse and surrounds and were treated to a magnificent sunset, gulls crying in the fish weirs, the sound of porpoises surfacing, and a spectacular full moonrise. Some even thought they heard a whale spouting. The only thing missing was the sound of surf crashing on the rocks. The ocean was perfectly calm, no surf and no ground swell - almost eerie.

Early Saturday morning, we met Les Fyffe, from the New Brunswick Geological Surveys Branch, to explore much of the pre-Mesozoic stratigraphy along the eastern coast of Manan. Space does not permit for adequate description of the geology; therefore, I quote directly from the paper/field trip guide as a very general overview. "Fyffe and Grant

(2001) suggested a Cambrian age for the volcanic sequence on Ingalls Head (Figure 2) by comparison with the Ellsworth Formation in coastal Maine since both contain iron-rich sedimentary rocks. A recent radiometric date indicated that the Ingalls Head Formation is Precambrian."

"The sedimentary rocks of the overlying Grand Manan Group are considered to be Cambrian by comparison with the Cookson Group on the New Brunswick mainland. By implication, Grand Manan must have formed part of the central Gander block of the Appalachian Orogen. Presumably younger volcaniclastic rocks on Grand Manan are included in the Castalia Group. Fossil fragments suggest these rocks are no older than Ordovician; they are tentatively assigned a Silurian age on the basis of regional tectonostratigraphic considerations. An ongoing program with the Geological Survey of Canada and Acadia University will determine radiometric ages of primary zircons in felsic volcanic rocks from the Castalia Group and detrital zircons in sandstone from the Grand Manan Group."

This GSM summer field trip was a precursor to a similar trip, part of the NEIGC held at the end of September in New Brunswick. Folk who were unable to attend either expedition may request copies of the paper through Bob Marvinney at the Maine Geological Survey.

After the guided portion of the trip had ended, the caravan split in search of a view of the Mesozoic columnar basalts on the southwest tip of the island. Also sought was a source for dulse and nori, and other local delicacies before heading back to the campground to get ready for dinner. Our fearless leader, Dave Gibson, had decided that it would be difficult, if not impossible, to orchestrate a potluck supper at the campground. So we trouped off to the Marathon Inn, a local B & B, for "the best outdoor group meal I've ever consumed", according to Belknap. Roast beef and fresh salmon, salad and cooked vegetables fresh from the garden, followed by local blueberries with a honey-nutmeg sauce, served outside on a warm summer evening, will be considered "the Gibson legacy". The "frosting on the cake" was the fireworks display from a local beach across the bay from the campground, part of the celebration of New Brunswick Day scheduled for the following Monday.

Sunday morning found the group going in several directions to see more of the island. One group drove to Indian Beach to collect assorted minerals, with varying degrees of success. Dan Belknap led a coring party to a local marsh in search of the Presumpscot Formation, and I believe he was successful in that endeavor *[Editor's note: yes we were successful]*. We may be able to entice him to expound on that at the fall meeting at Poland Spring.

By mid-morning on Sunday we were on the ferry back to the mainland in dense fog. Again, the ocean was like glass; and again, there were folk attesting to have heard whales spouting. But we still have no proof!

Respectfully Submitted, Pat Seaward, Secretary
<Patricia.O.Seaward@state.me.us>

GSM TREASURER'S REPORT

The Society currently has 364 members: They are distributed as follows:

Associates:	33
Institutions:	14
Regular:	274
Students:	43

Balance on Hand 5/24/01	**$ 12,368.67**
Anderson Fund (Total)	$ 5,151.64
Education Fund (Total)	$ 872.70
Checking Account (other)	$ 5,883.11
Receipts	
Dues	$ 511.00
Anderson fund (interest)	$ 36.98
Anderson fund (contributions)	$ 131.00
Education fund	$ 50.00
Publications	$ -
Subtotal	$ 728.98
Expenses	
Printing, mailing, stamps	$ 374.14
Grand Manan Trip costs	$ 1,729.55
Subtotal	$ 2,103.69
Balance on Hand 10/06/01	**$ 11,907.45**

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

National Speleological Society 2002 Convention: call for papers Camden, Maine June 24-28, 2002.

Are you planning to give a paper at the National Speleological Society Convention this year? This convention of cavers and speleologists will be held in Camden, Maine from June 24-28, 2002. It is time to submit your title, your name, and an abstract of about 250 words or less to the appropriate session chair. An abstract submission form is available on the NSS convention website (www.nss2002.org). Your abstract should be a summary of results of the work accomplished and should contain information on what you actually did. It must not simply outline the topics that you plan to discuss. Along with your abstract, please note the A/V equipment you require. The deadline for sending your abstracts to the session chair is March 1. If you are unsure who

your session chair is, contact Steve Stokowski, Editor, Program & Abstracts <CaverSteve@aol.com>.

Select session chairs and their contact information:

Conservation: restoration and repair workshop:
Rod Horrocks rod_horrocks@nps.gov
Geology-Geography (talks, posters)
George Veni gveni@flash.net
Pseudokarst Symposium
Ernst Kastning ehkastni@runet.edu
Cave Survey and Cartography
Roger Bartholemew rvictor43@aol.com

COLBY COLLEGE RESEARCH

Bob Nelson and Bob Gastaldo at Colby are continuing their work on the Trout Valley Formation in the north end of Baxter State Park, with students Jonathan Allen and Mike Terkla. Jon and Bob Gastaldo have made some significant new strides in better understanding the depositional environments and setting of the unit, including fluvial channel-fills and estuarine tidal environments. Mike Terkla and Bob Nelson have been finding rare, small graphitized fragments of early arthropods. Work continues on both fronts, and preliminary results will be reported at the November GSA meeting in Boston.

Bob Nelson is also working on the paleo-environmental reconstructions for the postglacial Hyde Park mastodon site in New York State, working in collaboration with the Paleontological Research Institute of Ithaca, New York. So far, the beetle remains he's recovered from this unit are consistent with a northern treeline environment - including the ground beetle *Amara alpina* and the rove beetle *Tachinus nearcticus*.

Bob Nelson has also just undertaken work in collaboration with the National Park Service and Richard VanderHoek on the paleoecology of the area of southwestern Alaska that was affected by the 3400 bp catastrophic eruption of Aniakchak Caldera, which left some 1500 square kilometers of the state without so much as a blade of grass standing. The 1912 eruption of Novarupta (Katmai) is seen as a modern analogue, though it only involved about 1/10 the volume of ejecta. The Aniakchak eruption included pyroclastic flows that blew across the Pacific Ocean to blanket islands 5 miles off the coast, as well as northwards to extend the northern coast of the Alaska Peninsula. Bob's job is to figure out what the environment was like immediately before the eruption, and how long it took the landscape to recover after it to the point where it would provide resources capable of supporting prehistoric human populations. Matt Charles, also a student at Colby, is working to reconstruct the paleoenvironment represented by a peat buried by a 9,000-year-old volcanic blast in the same section.

UNIVERSITY OF MAINE RESEARCH

Dan Belknap and Joe Kelley recently acquired a suite of geophysical and coring equipment on an NSF Major Research Instrumentation proposal. The new digital seismic and sidescan gear is anchored by a Triton-Elics data acquisition and processing work station. This topside gear runs the Edgetech DTS 1000 dual-frequency sidescan sonar and the Applied Acoustics Engineering boomer, or alternatively an Octopus minisparker. This single-channel high-resolution seismic and digital sidscan sonar have been used in the ongoing Penobscot Bay pockmarks project, funded by Sea Grant, and the MS thesis work of Allen Gontz. The marine geology research group also used the new equipment this summer for a cooperative project with Steve Dickson and the MGS and Inland Fisheries and Game to map the bottms of Rangley Lake and Mooselookmeguntic Lake. This fish habitat and basic geologic mapping also supports an MS thesis project for Kristi Ferland. The final piece of the new equipment suite is a Rossfelder electric underwater vibracorer, capable of taking 10 cm diameter, 6 m long cores in mud, sand and glaciomarine sediments in water depths from 5 to greater than 100 meters. In a cruise this September, the marine geology group, working with the assistance of Bob Johnston of MGS and using the facilities of the R/V Argo Maine, were able to collect all 25 cores planned in 4 days. These cores are part of the Penobscot Bay project and the start of a Ph.D. project for Allen Gontz. Although they have not all yet been opened, they confirm the presence of the newly named Penobscot Paleodelta, ca. 8-9 ka BP, at 30 m below present sea level, and covered by later estuarine mud. Pictures from the cruise may be viewed at the website: www.rvargo.com.

Another NSF-MRI proposal was also recently funded at UM. Charlie Guidotti, Ed Grew, Scott Johnson, Dan Lux, Marty Yates, and Greg Zielinski combined to acquire a new microprobe to replace the 20-year-old ARL SEMQ probe currently in use. Bids are now underway to obtain a new JEOL or Cameca microprobe, to be installed by next summer. The new system will provide state-of-the-art multi-element mineral and materials analysis capability with lower detection limits and new light element capability. The new system will also be able to record the chemical variations in minerals through scanning electron microscope, chemical mapping, and trace- element mapping capabilities. Research collaboration and student projects will be welcome, as before, and the added capacity and capabilities should make this a truly regional resource.

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 modem 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 ____________________________________
Regular Member	$7.00	$__________	
Associate Member	$6.00	$__________	Address ____________________________________
Student Member	$4.00	$__________	
Contributions to GSM		$__________	____________________________________
(please write gift or fund on check)			
TOTAL ENCLOSED		$__________	____________________________________

Make checks payable to:
Geological Society of Maine
Elizabeth Champeon, Treasurer
S.W. Cole Engineering, Inc.
37 Liberty Drive
Bangor, ME 04401

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

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2001/2002 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER

THE GEOLOGICAL SOCIETY OF MAINE
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Return Service Requested

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

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