THE MAINE GEOLOGIST

THE NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

FEBRUARY

1983

VOL. 9 NO. 3

MEETINGS

SPRING MEETING

GEOLOGICAL SOCIETY OF MAINE

PLACE: Bates College Chase Hall

DATE: March 11, 1983

TIME: Student Presentations 1-4 pm
Business meeting 4-4;45 pm
Social Hour 4:45-5:30 pm
Dinner at Commons ($3.75) 5:30-6:30 pm

EVENING PROGRAM: 7:00 pm

"Geology and Archeological Significance of Chert from the Munsungun Lake Formation"

Professor Steve Pollock, University of Southern Maine

GROUND WATER INVESTIGATIONS AND POLICY IN MAINE
MGS_USGS

TIME: MONDAY , March 14, 1983
8:00am -5:00pm

PLACE: Cushnoc Auditorium, Augusta Civic Center

PARTICIPANTS: Limited to 200, scientists, engineers, planners, legislators, municipal water-supply representatives and students.

REGISTRATION FEES: $10. students, $12 professionals
includes coffee break and lunch

For Information: Andy Tolman at MGS, (289-2801)
or
Dorothy Tepper, at USGS, (622-8208)

NATIONAL ASSOCIATION OF GEOLOGY TEACHERS N.E.SECTION

TIME: Friday evening-Saturday-Sunday Apr.15,16,17,1983

PLACE: Keene State College, Keene, New Hampshire

THEME: New England Glacial Geology southern N.H.

Meeting Saturday and Field Trips Sunday

For Information: Frank Haley, Keene State College,
Keene, New Hampshire 03431
Phone: (603) 352-1909

VERMONT GEOLOGICAL SOCIETY SPRING MEETING

TIME: APRIL 23, 1983

PLACE: Middlebury College

PROGRAM: Student Presentations

For Information: Brewster Baldwin, Science Center,
Geology
Middlebury College
Middlebury,Vermont 05753

PRESIDENT'S LETTER

PRESIDENT'S MESSAGE

John D. Tewhey

I listened to Don Kent, WBZ weatherman, very closely as I commuted between Gorham and Portland during the week of January 24th. The three speakers for our January 28th joint meeting with the MMRA and AEG were traveling to Augusta from Washington, DC, Ithaca, NY and Quebec City. The threat of a snowstorm would have been disappointing in that the scheduling of speakers, auditorium, caterer, etc., looked bleak for alternate dates. As (good) luck would have it, our essentially snowless winter endured another week and Friday the 28th was a beautiful day. We had over 100 people at the program portion of the meeting and a large group stayed on for the social hour in order to talk with the speakers about the deep seismic reflection profile that is proposed for Maine and the Gulf of Maine. Fred Beck used the social hour time to present a premiere of the American Mining Congress slide show on the impact of the mining industry. The presentation features UMF Professor, Tom Eastler. (Tom's narration, by the way, has an impact all its own and is excellent. The packaged slide show and cassette recording is available through the MMRA.) As befits our non-profit status, we came away from the meeting with a $1.93 "profit" on the bar and dinner. The GSM and the MMRA shared the rental and speaker expenses which came to $135. By my estimation, GSM members comprised at least 80 percent of the audience at the meeting. Thank you for your outstanding support of the society. The strong UMO turnout was noted by several.

As Dave Stewart of the USGS pointed out, the plans for the seismic profile across Maine are not cast in concrete. Several alternate routes are being considered and input and support from Maine geoscientists are wanted and needed. The location of the short exploratory profiles that will be perpendicular to the main line should be of interest, especially in geologic problem areas.

Other items:

- It has been suggested that a good program for a future GSM meeting would be computer applications in the geosciences, particularly the applications of the personal computers. If anyone has ideas about the format of such a program, I would like to hear about it.

- I received several letters and comments about Roy Farnsworth's efforts to include more news in the bulletin from the various geologic groups in the state. All gave strong support to the concept and Roy has collected a fair amount of information for this issue.

- A college junior was in the office a few weeks ago to talk about future job prospects. He asked what senior year courses would help him out the most in the job market. The answer...WRITING COURSES!

- Don Kent (see first line of this message) is a good weatherman because he tells the "whys" of the weather as well as the "whats". He is also careful to separate weather facts from forecasts, and his forecasts cover a broad area with respect to time and space. If he wrote a weather book, I'd read it. In "In Memoriam", Tennyson likened geologic history to changing weather patterns. Geologists would do well to emulate Don Kent.

FROM THE COLLEGES

COLBY

Geology is alive and well at Colby College in Waterville. There are 21 undergraduate majors in the Department of Geology, of whom eight will be graduating during this academic year. It has been estimated that as many as twelve new majors may be entering the Department from the new freshman class (Class of 1986) once majors have been officially declared. An additional 14 students are enrolled in interdisciplinary programs of geology-biology or geology-environmental studies.

Seventeen students spent the month of January in the Mojave Desert of California, studying the geology of the area in a variety of contexts. Several senior students were also involved in internships and/or individual studies. Among these, Todd Coffin has completed work as part of a team evaluating present land-use patterns with respect to potential sites for industrial and other development in Pittsfield and Skowhegan. Ted Wallace spent the month conducting a heavy-mineral sampling program in Nevada and Utah. Ted, a junior, will be spending the coming school term analyzing data sets from some 2500 sample sites in the western U.S. Jack Kleinman, a senior, worked as an intern at the U. S. Geological Survey in Menlo Park, California, studying Quaternary deposits of the Arctic Slope of Alaska under the guidance of David M. Hopkins.

One new faculty member was added during the present school year, and the filling of a faculty vacancy for Autumn, 1983, should give the Department of Geology at Colby as much breadth of expertise as is possible in a four-person Department.

BATES

The Geology Department at Bates is very active as usual. This year there are fifteen (15) senior majors doing theses ranging from Tidal Deltas in the Morse River Tidal Inlet at The Morse Mountain Preserve, to a study of paleomagnetism in the dike rocks of Lewiston-Auburn, to studies of cataclastic deformation along the Weary Pond Lineament in the Wiscasset 15' quadrangle as well as several studies concerning aspects of the Androscoggin Lake Complex. The senior thesis program at Bates is considered to be the capstone of our student's geologic education here and requires a professional type of contribution to Maine Geology. Junior and Sophomore majors at the present time number 20 with a few more to be added at major declaration time at the end of the present term.

We have a professional staff of three persons and a professional laboratory instructor. Our structural position which has been filled temporarily for two years will have a tenure track person as of the fall 1983. John Creasy has returned this year to his post as Department Chairman. John spent last year on Sabbatical at the University of Western Ontario studying the origin of strata-bound gold deposits. Roy Farnsworth will be on Sabbatical Leave during the fall and spring of 1983-84 doing further studies on esker systems of Maine. A full year replacement of Roy will give the Department a staff of four during our Winter Term 1983-84.

Bates looks forward to hosting the Geological Society of Maine for its Spring Meeting on March 11th. See you here.

UNIVERSITY OF MAINE ORONO

The Department of Geological Sciences at the University of Maine at Orono has 19 faculty members, about twenty graduate students and graduates approximately 20 Bachelor's students each year. In addition to our strong program in Quaternary Geology we are developing programs in Appalachian Geology and Sedimentology. Eight of our staff members deal with a wide variety of physical and chemical sedimentologic problems and provide strong teaching-research programs at the graduate level. This program benefits greatly through interaction with the Appalachian Research Program, the Institute for Quaternary Studies, and the University's Oceanography Program. The members of the sedimentology group and their interests are: Dan Belknap, marine and coastal geology, amino acid geochronology, archaeological geology; Ken Fink, heavy metals in the environment, geomorphology and dynamics of beaches; Brad Hall, stratigraphy, sedimentology and tectonic relationships of northern Appalachian and southern hemisphere Gondwana layered rocks; Joe Kelley (Maine Geological Survey), estuarine sedimentology, clay mineralogy, suspended sediment transport, computer applications; Tom Kellogg, micropaleontology and sedimentology of high latitude seas, glacial history of the Arctic and Antarctic, chronology and causes of Cenozoic climatic fluctuations; Larry Mayer, marine biogeochemistry, sediment-water reactions involving nutrients, trace metals and organic substances, sediment-biota relationships; Steve Norton, geochemical cycles in natural aqueous environments, diagenesis in sediments; Dan Stanley (Smithsonian Institution), continental margin sedimentation, sediments of the Mediterranean Sea, sedimentology of southern European Alpine rocks.

Six of our staff members are collaborating to develop an integrated and deeper understanding of the northern Appalachians at a time when Paleozoic orogenic belts have become a focus of attention for plate tectonic modelling. Members of the group and their interests are: Joe Chernosky, metamorphic petrology, phase equilibria and thermochemistry of rock forming silicates; Ed Decker, heat flow and gravity studies in tectonically active areas and in acient orogenic belts; Chuck Guidotti, isogradic reactions, polymetamorphism, crystal chemistry and field relationships in metapelites of Maine; Brad Hall, stratigraphy, sedimentology and tectonic relationships of the northern Appalachians and southern hemisphere Gondwana layered rocks; Dan Lux, temporal relationships between metamorphism, strain events and igneous activity using $^{40}Ar/^{39}Ar$ incremental-release methodology; and Phil Osberg, structural geology-petrology, geometry of multiply deformed rocks, thermodynamic considerations of regional metamorphism, regional geology of northern Appalachians.

COLLEGE OF THE ATLANTIC

The College of the Atlantic reports that it does not offer any majors except in Human Ecology. Marion Kane, Director of Public Relations reports "Although principles of geology are included in many of our courses, only one course really fits into a geology framework. Called Landscapes (Geomorphology and Vegetation Development), the course begins with a consideration of geological processes which students can see in action along the seashore. It considers geological processes on larger scales such as the forms and functions of rivers and ends with the control of the major features of landscape by bedrock structure, vegetation, climate etc.."

HYDROGEOLOGY OF SIGNIFICANT SAND AND GRAVEL AQUIFERS IN MAINE

The U.S. Geological Survey, the Maine Geological Survey, and the Maine Department of Environmental Protection are currently involved in the second year of a proposed 5-year cooperative hydrogeologic study of significant sand and gravel aquifers. Major objectives of the study include identification of the significant aquifers and accurate mapping of their boundaries; collection and interpretation of data on yield, stratigraphy, depth to water table, and depth to bedrock; characterization of regional ground-water chemistry; and assessment of potential ground-water contamination sites.

The study area for 1981 (figure 1) covered 875 square miles, which included approximately 170 square miles of significant aquifers. A report, which has recently been approved for publication by USGS, will be published by MGS and should be available in January. Results presented in this report, which consists of four 32X40-inch plates, include the following: identification and mapping of boundaries of significant aquifers; estimated aquifer yields; depth to water table; depth to bedrock/thickness of overburden; bedrock surface topography; stratigraphy and stratigraphic relationships; characterization of regional ground-water chemistry; and assessments of the effects of 37 potential contamination sites on local ground-water quality.

The study area for 1982 (figure 1) covers 2000 square miles, which includes approximately 130 square miles of significant aquifers. The field work was completed in October. Project results for each of the five 1:50,000-scale quadrangle maps covered in the study area will be compiled in a separate interpretive report. The five reports will be published by MGS, about January of 1984. Each report will consist of two maps (1:50,000 scale) and accompanying text. Map #1 will show locations of test holes, geologic sections, and potential ground-water contamination sites. Map #2 will show data on depth to water table and depth to bedrock. Aquifer boundaries and estimated yields will be shown on both maps. The text for each report will include a summary of the project objectives, methods of investigation, results, and conclusions. The following specific data and related interpretive discussions will also be included in the text: well inventory information, test hole logs, geologic sections, seismic profiles, results from chemical analyses, and summaries of site investigations.

Questions concerning these studies can be directed to Dorothy Tepper, U.S. Geological Survey, 26 Ganneston Drive, Augusta, ME 04330 (#622-8208) or to Andy Tolman, Maine Geological Survey, State House Station #22, Augusta, Maine 04333 (#289-2801).

NORTHEAST REGIONAL AQUIFER SYSTEMS ANALYSIS

The U.S. Geological Survey has begun a 5-year Regional Aquifer Systems Analysis (RASA) program to study the glacial aquifer systems in the Northeast. States included in the study are Ohio, Pennsylvania, New York, New Jersey, and the New England States. This study, entitled "The Northeastern Glacial Valley Study, Regional Aquifer Systems Analysis," is headquartered in Albany, New York. Specific objectives of the study include:

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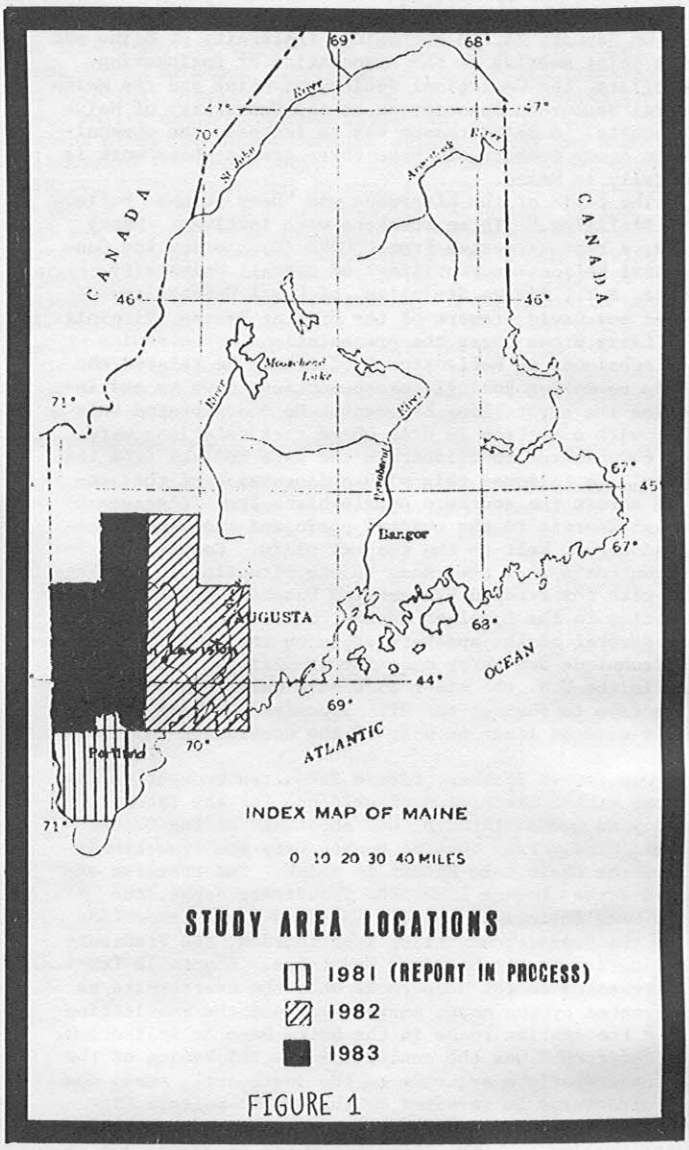

FIGURE 1

(AQUIFER CONTINUED)

1. Description of geologic, hydrologic, and chemical characteristics of the principal aquifer systems.

2. Determination of past and present ground-water withdrawals and an estimation of future withdrawals.

3. Development of models to simulate hydrologic systems and to estimate effects of various stresses on those systems.

4. Establish the principles governing the distribution of permeable materials in the various areas.

5. Determine geochemical controls on water quality.

6. Select representative valley-aquifer systems for information which will have transfer value to other basins in the study area.

(CONTINUED PAGE FOUR)

winter meeting report

by Roy L Farnsworth

On January 28 the geological fraternity of Maine met for a joint meeting of the Association of Engineering Geologists, the Geological Society of Maine and the Maine Mineral Resources Association at the University of Maine at Augusta. A major reason was to increase the communication among members of these three groups whose work is generally in Maine.

The topic of the afternoon was "Deep Seismic Reflection Profiling." Three speakers were involved: Larry Brown, a representative from COCORP (Consortium for Continental Reflection Profiling) of Cornell University, Ithaca, N.Y., Pierre St-Julien, of Laval University, Quebec and David Stewart of the USGS at Reston, Virginia.

Larry Brown began the presentations by reviewing the techniques of Reflection Profiling. He related the system to making geologic cross-sections down to and including the crystalline basement. He demonstrated this first with a section in Utah where rock relations were less complicated to illustrate the data quality from the system. He followed this with a discussion of the sections across the southern Appalachians from Tennessee through Georgia to the coastal plain and the Ouachita folded thrust belt to the coastal plain. Comparisons and contrasts were then made to the situation in New England with the exposed Precambrian basement and the overthrusting in the foreland of the Paleozoics.

Several of the speakers spoke on the logistics of the technique and Larry made the comparison of the COCORP crew in the U.S. who since 1978 have only covered 4000 kilometers to that of the oil companies who have essentially covered lines on most of the continents in just 1 year.

Our second speaker, Pierre St-Julien brought us near to home with a discussion of evidence for the Taconic Orogeny in Quebec through the "shooting" of the Quebec Seismic Line. From west of Quebec City the line trends toward the Chain Lake Massif in Maine. The traverse extended across Logans Line, the Chaudierre Nappe, the Notre Dame Anticlinorium, the Thetford Mines Serpentine Belt, the Connecticut Valley Synclinorium, the Frontenac Synclinorium to the Boundary Mountains. A notable feature revealed in the deep rocks were the overthrusts as represented by the nappe emplacement and the imbrication of the Precambrian rocks in the Notre Dame Anticlinorium. Also reinforced was the concept of the thickening of the Baleozoic platform sequence to the southeast. Asked how deep structures as revealed by the Quebec Seismic Line compared with what already is known from surface mapping, Pierre replied that the correlation was excellent and verified many of the interpretations previously made. His analysis gives encouragement to the COCORP extension of the Quebec Line through the Chain Lakes Massif to the coast of Maine.

Dave Stewart of the USGS discussed the plans and prospects of the proposed line across Maine. This line would extend from Coburn Gore at the Maine-Quebec Border to Lincoln on the coast with an additional line possible from Bangor to Southwest Harbor. Logistically the line is limited by several factors - available roadways and more heavily populated areas. Essentially a 60 km wide strip map will be prepared with all the available data of faults, lithologies, other structures and surficial characteristics. Dave emphasized the necessity of cooperation of all agents - governmental, academic and industry. The more data accumulated the better the constraint in interpretation. All speakers emphasized the need for long survey lines to get the best correlative interpretations. The exact position of the line has not yet been decided, but it would be suggested that it follow State Route 27 from Coburn and Route 16 to the Madison area. From there it is problematical due to the lack of a direct NW-SE route to the coast. The first part of the line will be run for about 100 miles with a number of cross lines to reach places like the Chain Lake Massif during the months of September and October 1983. Dave also indicated that there will be cooperation with Nova Scotia to continue the line across the Gulf of Maine to the north end of the Meguma Zone.

DEP NOTES

by Peter Garrett

Many of you may not be aware that there are now no fewer than four geologists in the employ of the Department of Environmental Protection. Since we consider at least some of our work to be significant, we thought you would like to hear a little news about our goings on from time to time.

Upstairs, in the Land Bureau, Florence Hoar leads a gang of four including a soil scientist (Bill Noble) and two engineers with geological leanings (Alva Achorn and Fred Lavallee). What they do, says Florence with a sign, is not very newsworthy, but consists of reviewing an endless stream of applications for such items as landfills (secure and insecure), subdivisions, disposal of sludge, solid waste, ash, septage, and food processing waste, mining lagoons and waste piles, salt piles, reservoirs and lagoons, and monitoring programs to fit any situation. You name it, they review it. It is people such as those four who try to keep the geo clean for the rest of us.

Downstairs John Williams is nominally the lone geologist in the Environmental Assessment and Lakes Division. But he works closely with Andy Tolman and USGS folks on their sand and gravel aquifer project. John wishes that more people requested the mass of findings from the project, (though final publication of the 1981 study of York County and vicinity will not be published until USGS review is complete... soon).

Peter Garrett, in the Bureau of Oil and Hazardous Materials Control, reviews more newsworthy sites than do his colleagues in the Land Bureau. One, the McKin Site in East Gray, was recently the subject of a modelling study by Bob Gerber and his associates, paid for by an appropriation from the Maine Legislature. Perusal of that study leads to the conclusion that the contamination of groundwater in the area is not nearly such a threat to the health and welfare of the residents as is the presence of an unattended, accessible industrial site with open tanks and a shallow lagoon. Hardly a geological milestone.

Marcel Moreau is the newest comer to the team. He is working on a year-long research project to unearth and clarify all aspects of the leakage of oil from underground tanks. This is actually the most serious hazardous waste problem we have in Maine, there being at least 100 cases of oil in drinking water supplies reported to the DEP each year.

(AQUIFER CONTINUED)

The first step in the study is to summarize available data on glacial aquifers in each of the states involved. The RASA study is supporting short-term projects at the state-level to accomplish this first step of the study. Tom Maloney, a hydrologist in the U.S. Geological Survey Office in Augusta, Maine, is organizing available information in Maine and is supervising the organization of information from each of the other New England States. The summaries of available information should be completed sometime in January 1983.

Also, the RASA study team has requested proposals that address the stated objectives of the study from U.S. Geological Survey offices throughout the Northeast.

The RASA Study will benefit Maine and the other Northeastern States by providing information to be used to better evaluate, develop, and manage water resources in glacial aquifer systems.

THE ANDROSCOGGIN MORAINE

Woodrow B. Thompson

Maine Geological Survey

In his monograph entitled "The Glacial Gravels of Maine", George Stone mentioned an end moraine that is located on the border between Gilead, Maine, and Shelburne, New Hampshire (Stone, 1899). This feature is situated on the flank of Hark Hill, on the north side of the Androscoggin River valley. Stone's description of the deposit was very brief, but he did refer to it as "the terminal moraine of the Androscoggin glacier". Leavitt and Perkins (1935) disputed Stone's identification of the ridge as an end moraine. They first described it as "a mass of bouldery till ... deposited in the angle between the Androscoggin ice tongue and one coming down Ingalls River valley" (p. 41). Later in the same volume, however, Leavitt and Perkins called the deposit a kame terrace (p. 118). The present author examined the Hark Hill deposit in 1982 as part of an investigation of the surficial geology of the Oxford County region. One purpose of this work is to better understand the style of deglaciation above the limit of late Wisconsinan marine submergence in southwestern Maine. Thus, it is important to locate any end moraines, stratified drift morphosequences, or other deposits that might indicate the presence of an active ice margin in late-glacial time.

The feature described by Stone was found to be a prominent till ridge that extends southeastward into the Androscoggin Valley from the bedrock pinnacle of Hark Hill (Shelburne 7.5-minute Quadrangle). The ridge actually consists of two distinct end moraines arranged in an en-echelon pattern. The moraine crests rise in altitude from about 720 ft in the valley to 900 ft on the side of Hark Hill. They are strewn with many large boulders, including one that is 25 ft in diameter, and are cut by meltwater channels. The moraine ridges are tree-covered except where a pipeline crosses them, so they are not so easily visible as in Stone's time. His view of the moraine (Plate XXV,B) appears to have been sketched from a point on the Androscoggin flood plain. It shows fields and farm buildings that are no longer in existence. A bedrock outcrop along the pipeline south of Hark Hill displays a roche moutonnée form that indicates ice flow parallel to the valley (azimuth 100°). To the north of Hark Hill, there is an offshoot of the Androscoggin Valley that is choked with kame-terrace and esker deposits. This area may have been a preglacial course of the river.

Leavitt and Perkins claimed that the moraine does not continue on the south side of the valley, but the present study has shown that this is not the case. Field mapping in the densely forested area south of U.S. Route 2 revealed a high till ridge, which is locally kettled and bouldery. Like its counterpart to the north, this ridge is crossed by meltwater channels and attains an altitude of nearly 900 ft. It has a local relief of more than 50 ft above the adjacent glaciofluvial deposits. From the Maine-New Hampshire border, the moraine system loops around to the west and rises steeply to a sharp juncture with the eastern bedrock spur of Stock Farm Mtn. The latter part of the moraine is a spectacular ridge whose maximum altitude is about 1260 ft. One or more lower ridges occur behind the principal moraine, and may correlate with the younger ridge on the north side of the valley.

It is here proposed to assign the name "Androscoggin Moraine" to the feature described by Stone and to the newly discovered deposits across the valley. The Androscoggin Moraine is believed to have formed as a result of a stillstand or readvance of the ice margin during the late Wisconsinan deglaciation of the White Mountain region. The moraine was built during the "Stagnant Ice Stage" described by Gerath (1978, p. 117-118) in the nearby Berlin-Gorham area to the west. The White Mountains protruded from the ice sheet during this stage, but a tongue of active ice persisted in the upper

(CONTINUED NEXT COLUMN)

(MORAINE CONTINUED)

Androscoggin Valley in New Hampshire. The Androscoggin ice lobe deposited the Success Moraine on the northwest flank of the Mahoosuc Range (Gerath, 1978), and probably the till that overlies lake sediments in the Peabody River valley south of Gorham (Gosselin, 1971). The present study has shown that the active valley ice also extended to the Maine border. The age of the Androscoggin Moraine is uncertain, but it must postdate the separation of the Laurentide Ice Sheet from the large mass of ice that was isolated over southeastern Quebec and adjacent parts of northern New England. The slope of the moraine indicates a steep ice-surface gradient, which suggests that the ice margin was readvancing. A continuation of this investigation is planned in order to locate other deposits related to the Androscoggin Moraine and to assess its regional significance. At present, it appears to be a fine example of a large end-moraine ridge, which is unique or very rare in the White Mountains.

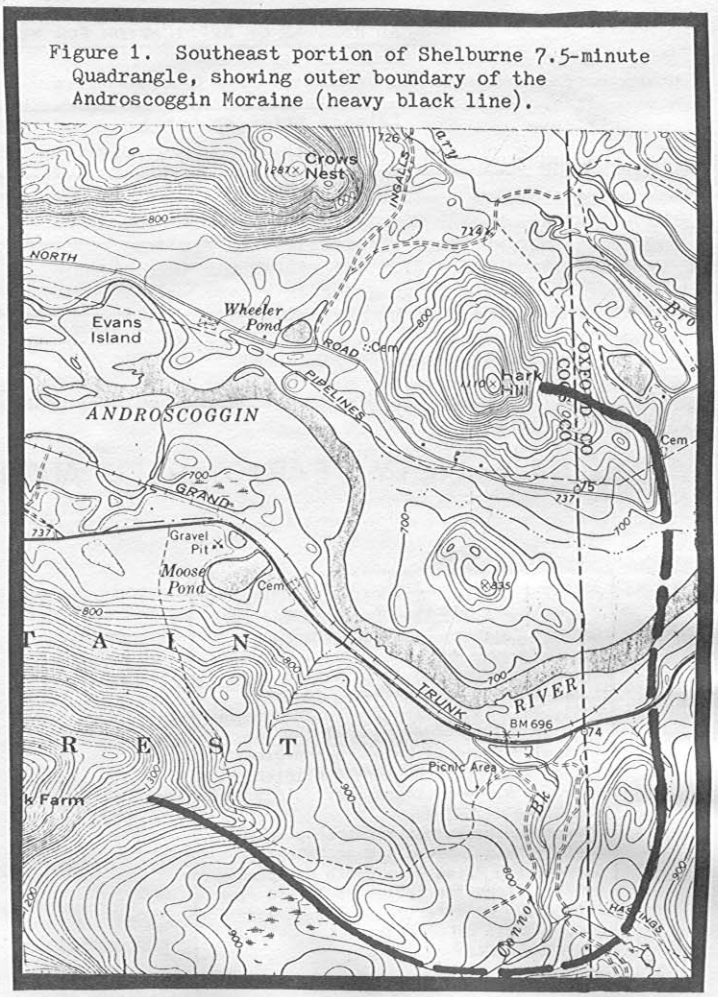

Figure 1. Southeast portion of Shelburne 7.5-minute Quadrangle, showing outer boundary of the Androscoggin Moraine (heavy black line).

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Gerath, R.F., 1978, Glacial features of the Milan, Berlin, and Shelburne map areas of northern New Hampshire: McGill University, unpublished M. S. thesis, 129 p.

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Stone, G. H., 1899, The glacial gravels of Maine: U. S. Geological Survey Monograph 34, 499 p.

MEMBERSHIP DUES STATEMENT

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

The Society holds three meetings each year, in the late fall, early spring and (with the Annual Meeting and sometimes field trips) in mid-summer. A newsletter, THE MAINE GEOLOGIST, is published for all members four times a year (more or less), approximately on a quarterly basis starting in September. The Society year runs from August 1st to July 31st. Annual dues and gift contributions to the Society are tax deductible. There are three classes of annual memberships:

$5 REGULAR MEMBER - Graduate geologists, or equivalent, with 1 year of practice in geology, or with an advanced academic degree in geology

$4 ASSOCIATE MEMBER- Any person or organization desirous of association with the Society

$2 STUDENT MEMBER - Persons currently enrolled as students in college who are interested in geology

$2 APPLICATION FEE - A one-time fee to all new members, payable when applying for membership

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82-83 SOCIETY YEAR STARTED AUGUST 1st - PLEASE SEND IN YOUR DUES

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c/o Arthur M. Hussey, Dept. of Geology, Bowdoin College, Brunswick, Maine 04011

THE MAINE GEOLOGIST is published four times a year, more-or-less, in early Fall, late Fall, late Winter, and maybe June or July, for members of the Geological Society of Maine, a non-profit educational Maine corporation interested in all aspects of the geology of the State of Maine.
Correspondence about membership in the Society should be mailed to Robert G. Gerber, Ash Point Rd., South Harpswell, 04079. Items for inclusion in the newsletter may be directed to Roy L. Farnsworth, Dept. of Geology, Bates College, Lewiston 04240.

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