



# THE GREEN MOUNTAIN GEOLOGIST

QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

Summer 2000

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## SUMMER FIELD TRIP TO CRREL and ELIZABETH MINE

Sat., July 22, 2000  
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THE GREEN MOUNTAIN GEOLOGIST  
 VERMONT GEOLOGICAL SOCIETY  
 DEPARTMENT OF GEOLOGY  
 UNIVERSITY OF VERMONT  
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Please send it to the Treasurer at the above address.

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## PRESIDENT'S LETTER

Dear Members,

The student papers in April were all wonderful. Congratulations to those who were recognized with awards. Thank you judges Barry Doolan, Steve Howe and Kristen Underwood for making the hard decisions.

Thomas Christopher Lamon applied for and received the Vermont Geological Society Research Grant. He will be mapping the evolution of pre-Acadian collapse structures in the Quebec-Vermont Appalachians. We look forward to hearing about his research at a future VGS meeting.

The spring meeting really brings into focus one of the goals of the Vermont Geological Society. That goal is to support and encourage the study of geology. To that end I would like to encourage you all to consider being a mentor to a student, teacher, or colleague. In the May 2000 Geotimes, Dean A. McManus issues a call for mentors primarily in higher education. I would like to extend that call to include teachers and student teachers in elementary and high schools as well. During Earth Science Week in early October I hope that you all will become involved in some facet of public education, by talking to a group of school children, encouraging a colleague, or leading a field trip. Whether you are in public or private sector, education or retired, you can mentor another. To mentor is to be an advisor, role model, coach and friend to a student or colleague.

The summer field trip will be a site visit to the Cold Regions Research and Engineering Laboratories in Hanover, New Hampshire. It has been several years since the Society has visited this facility. It should be exciting. Thank you Larry Gatto for doing this for us.

Yours,

Shelley F. Snyder  
Mt. Abraham Union High School  
Bristol, VT 05443  
802-453-2333

ssnyder@mtabe.k12.vt.us

## Vermont Geological Society Summer Meeting

**Cold Regions Research Laboratory in the morning and the  
Elizabeth Mine in the afternoon.**

**Saturday, July 22, 2000, at 9:30 am**

*Pre-registration is required \*  
(call or e-mail Shelley by July 19)*

We will meet at CRREL, Hanover, NH at 9:30 am for coffee and donuts. The tour will run from 10:00 am-11:00 am, followed by a lunch break and drive to the Elizabeth Mine. The Elizabeth Mine tour will run from 1:30-3:00 pm and has the following requirements:

- everyone on the mine-site tour must read and sign a Release of Liability form
- all Liability forms will be collected before the tour starts
- no one will be allowed on the tour without signing the form
- no pictures can be taken during the mine tour
- no one can explore the old buildings on the mine site; they are dangerous

\*For more information contact Shelley F. Snyder, VGS President, at 802-658-0575 or e-mail [ssnyder@mtabe.k12.vt.us](mailto:ssnyder@mtabe.k12.vt.us)

### Directions to CRREL:

Take Exit 13 from I-91 North;  
East across Connecticut River to Hanover;  
Continue east thru light in Hanover;  
Left on the road along the east side of the Dartmouth Green;  
Continue north straight thru light on Rt. 10;  
1.5 mile to CRREL on west side of Rt. 10.

Directions to CRREL are available on the web page:

[www.crrel.usace.army.mil](http://www.crrel.usace.army.mil)

Click on: About CRREL Local travel information for maps and directions.

## STATE GEOLOGIST'S REPORT

### Rolfe Stanley

Almost 20 years after graduate school, I had the privilege of getting to know more of Rolfe Stanley. As some of you remember him from the late 70's, he was a strong leader who sometimes seemed hard to approach outside of his immediate circle of structure students and colleagues. I asked to take his New England geology class as a chance to understand the developing plate tectonics framework for the region. A most enjoyable class that still provides me a base to understand new concepts and where they fit in the regional picture.

Fast forward to 1996 and the Northeast GSA meeting in Buffalo, N.Y.. Now as new State Geologist, we met with USGS and other interested parties to make plans to complete the field mapping for the new State Bedrock geologic map. I acted as moderator and experienced a small measure of acceptance in a world that I had only been looking into from the outside. After the session, Jon Kim took Rolfe and a few of us to the home of the original buffalo wings - a kind of ground zero for pepper loving palates. Around the table Rolfe and I had a chance to catch up and share some stories.

As the new map developed, he made a number of visits to the office and I got to know him better. I found whatever hard exterior there may have been had long since passed. He was gregarious and funny with a very human side. Sort of an open heart in rough field clothing.

I find that I am much affected by his passing. He represents much that is good about standing up for what you believe in; mentoring with complete commitment students who showed a desire and commitment themselves; a pull-no-punches honesty; and dedication to family during the hard times.

He would sometimes talk with us of his role as caregiver, I think, as a way to lift some of the weight when away from home. With experience we come to understand what is most important in life and Rolfe showed himself to be a kind and loving person that anyone could admire and want to emulate.

As a geologist, this office intends to honor his legacy by completing the new bedrock map by designating Rolfe Stanley as Editor (Posthumous).

Please see the following news item that explains the plan for map completion.

#### Bedrock Map Completion

The new State bedrock geologic map project was scheduled for delivery for scientific review this winter, but suffered a serious setback with the untimely death of Rolfe Stanley. The State Geologist and Marjorie Gale, met with P. Patrick Leahy, Chief Geologist of the USGS Geologic Division, John Pallister, Program Coordinator for the National Cooperative Geologic Mapping Program, David Russ, Eastern Regional administrator, and Nick Ratcliffe, USGS map editor, to discuss the level of commitment, cooperation and funding involved in completing the map project, the seriousness of the loss of Rolfe, and our plans for both digital data and paper copy map. Our agreed upon proposal retains Rolfe Stanley (posthumously) and Nicholas Ratcliffe as Chief Editors and adds Marjorie Gale and Peter Thompson (now affiliated with University of New Hampshire) as Associate Editors. We are fortunate to have a group of dedicated regional compilers-Nick Ratcliffe, Barry Doolan, Charlotte Mehrtens, Peter Thompson, Doug Rankin, Marjorie Gale, Jon Kim, and Greg Walsh - who continue to actively work on the map.

We expect a delay of approximately a year to enter scientific review. The meetings were productive because we affirmed our mutual commitment to the completion of the Vermont State Bedrock Map project and established a plan, preliminary time frame, and communication needed for our team effort to be successful.

#### Earth Science Educational Outreach - National Committee

The Vermont State Geologist is Chair of the Association of American State Geologists Earth Science Education Committee. At the invitation of the American Geological Institute (AGI), the State Geologist attended the kick off meeting of AGI's Earth Science Outreach Advisory Committee (Publisher of Geotimes). Vermont and many state geological surveys have been active in Earth Science Week sponsored by AGI. Meeting topics

included: action items for advancing Earth Science Week; government affairs, Inside Science TV, coordinating press and public affairs activities; the AGI Environmental Awareness Series; and developing effective outreach strategies. In addition to giving Vermont a national outlook on educational outreach issues, Vermont will go back to the state geological surveys for consideration of action items.

Laurence R. Becker, State Geologist  
Vermont Geological Survey

### VGS Calendar

- July 22: Summer Field Trip, CRREL, Hanover, NH  
 July 29-30: Burlington Gem & Mineral Club Annual Show\*  
 Sept. 1: Deadline for articles and news items for Fall GMG  
 Sept. 15: Publish Fall GMG  
 Sept. 23: Fall Field Trip led by Stephen Wright  
 Business meeting, election of officers and dinner to follow field trip  
 Oct. 6 – 8 NEIGC, Orono, ME  
 Oct. 8-14: Earth Science Week  
 Oct. 12: Geologists-in-the-Park  
 Dec. 28: Deadline for articles and news items for Winter GMG  
 Jan. 15: Publish winter Green Mountain Geologist (GMG)  
 Mar. 12-14: NE Geological Society of America, Burlington, Vermont  
 March 28: Deadline for student abstracts, Deadline for submission of articles for Spring 2001 GMG

### \*Burlington Gem and Mineral Club Annual Show

JULY 29 – 30, 2000  
 Tuttle Middle School - off Dorset Street  
 South Burlington, VT

Contact Bill or Ethel Schuele for more information:  
 (802) 863-5980

[www.burlingtongemandmineralclub.org/](http://www.burlingtongemandmineralclub.org/)

## NEWS FROM THE PERKINS MUSEUM

### Geology in the News!

Three fifth grade home-schooled students from Jericho, Vermont were honored at the Perkins Museum on May 10, 2000 for their proposal to NASA's "Mission to Mars" program. The students won the New England contest for their project titled 'Marsmology' - a proposal to study the interior of Mars using seismic waves. Their proposal went on to win NASA's national competition as well!

Keith Klepeis, UVM Geology Dept., and Gabriela Mora-Klepeis, UVM Geology Dept., acted as science mentors for the students. Keith, Gabriela, other representatives from the UVM Geology Dept., and representatives from the Vermont Space Consortium at UVM were on hand to present the students with certificates of merit and honor the students' creative scientific work. The local press and television were on hand to document the ceremony.

### New Minerals and Rocks

The Perkins Museum recently acquired a collection of rocks from the State Geologist's office which were collected and curated by Charles H. Richardson of Syracuse University, Syracuse, New York. Charles Ratte volunteered many hours during the past two years sorting and weeding through the collection. The collection is not believed to be the "cabinet collection" lost after the 1927 flood. However, the collection does contain the Richardson "graptolites" which have since been discounted as flakes of mica.

The museum also just received many rock and mineral samples from a private collector in Shelburne, Vermont. Most of the samples are syenite from the Mount St. Hilaire region of Quebec. If you know of interested collectors or teachers who might want a sample of an interesting fluorescent rock, please contact: Christine Massey, (802) 656-1344 or [cmassey@zoo.uvm.edu](mailto:cmassey@zoo.uvm.edu).

### Digital Archive of Human-Induced Landscape Change

This program is designed to involve high school science students and their teachers directly in active geologic research at the University of Vermont. High school students will compile historic photographs that show human impact on landscape in New England as a result of development, clear-cutting, floods, storm damage, landslides, etc.

Such photographs can be found in the students' homes, in the homes of their older relatives and neighbors, in local historical societies, and in local libraries. Students will attempt to relocate the place from which each photo was taken. The site will be mapped using a hand-held GPS and the scene photographed using a digital camera provided by our program. Students will caption their photographs in detail using local reference sources including interviews, library research, and field observations. All images will be brought to the students' school and scanned using NSF-funded equipment that will be loaned to each high school for 6 to 8 weeks. The final result will be a pair of photographs, new and old, located on a map and captioned by the student explaining the historic impact and the landscape response. Photographs from around the state will be accessible in an interactive and educational web-database on the internet to be located at <http://geology.uvm.edu.landscape> when complete.

For more information, please contact: Laura Mallard, (802) 656-8694 or [lmallard@zoo.uvm.edu](mailto:lmallard@zoo.uvm.edu).

### Earth Science Week Poster Contest

The Perkins Museum is proud to help facilitate the upcoming Earth Science Week 2000 Poster Contest for Vermont K-12 students. Posters will be accepted next fall during Earth Science Week, October 8-14, 2000, at the museum. Judges from UVM and VGS will award prizes in a late afternoon award ceremony at the Perkins Museum. Please spread the word to your favorite student or teacher. For more information, please contact: Christine Massey, (802) 656-1344 or [cmassey@zoo.uvm.edu](mailto:cmassey@zoo.uvm.edu).

### PERKINS GEOLOGY MUSEUM T-SHIRTS

T-shirts are now on sale from the UVM Perkins Geology Museum depicting the Vermont State Fossil, the Charlotte Whale. The artwork is a detailed line drawing of the Charlotte's front half created by Ian Hodgdon, UVM Geology major class of 2001, and is quite handsome. T-shirts are 100% cotton, long-sleeved, charcoal ink on a dark khaki shirt, and cost \$15.00. Stop by the museum and speak with Christine Massey (802) 656-1344 or send a note and a check for \$18.00 (to cover postage) to her at the UVM Geology Dept., Perkins Hall, Burlington, VT 05405-0122. Please make checks payable to UVM.

### STUDENT PRESENTATIONS

Thank you to all the students for the presentations at our Spring Meeting. Congratulations to Joshua Cole from Middlebury College for receiving the Charles Doll Award for Outstanding Undergraduate Presentation. Joshua presented a paper on strain analysis at the Victory pluton. The first place award winner was Joshua Nothwang, also from Middlebury College, and the second place award winner was Caleb Holyoke III from the University of Vermont. We look forward to more great presentations of student research at next year's meeting!

Web Site: <http://www.anr.state.vt.us/geology/vgshmpg.htm>  
 NEW! 1961 Centennial Geologic Map of Vermont  
 available on CD-ROM ---> \$10.00

### Vermont Geological Society Student Research Grants

are designed to aid our future geologists investigate Vermont's geo-history.

Help the VGS to promote a deeper insight into Vermont Geology.

Students receiving assistance through the program will present their research results at the VGS Spring Meetings. Your generosity will help cover a lot of terrane!

To contribute to the **VGS Student Research Grant Program**, clip or copy this form and send it, along with your check or money order made payable to VGS, to:

Kristen Underwood, Treasurer, Vermont Geological Society  
Department of Geology, University of Vermont  
Burlington, Vermont 05405-0122

- ***I'VE ENCLOSED MY TAX-DEDUCTIBLE CONTRIBUTION TO BE DEDICATED TO THE VGS STUDENT RESEARCH GRANT PROGRAM.***

**TOTAL GIFT:** \$ \_\_\_\_\_

**NAME:** \_\_\_\_\_

**ORGANIZATION:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CITY:** \_\_\_\_\_ **STATE:** \_\_\_\_\_

### ANNOUNCEMENTS

The cost of the 1997 NEIGC guidebook has risen to \$22.00 plus \$3.00 shipping. Please make checks payable to "Castleton State College - 1997 NEIGC"

The 1961 Centennial Geologic Map of Vermont is now available on CD-ROM as jpg files. Plot files are included. The CD is available for \$10.00 through the Vermont Geological Survey, 103 South Main St., Laundry Building, Waterbury, VT 05671 or call 802-241-3608.

**New Web Site:** The Burlington Gem and Mineral Club is now on the web! The address is: <http://www.burlingtongemandmineralclub.org/>

### EARTH SCIENCE WEEK 2000

#### HELP WANTED!!!

Earth Science Week 2000 will again feature a poster contest at Perkins Museum and a Geologist-in-the-Parks day at six Vermont parks. The Vermont Geological Survey and the Department of Forest and Parks are working together to schedule school group visits to several parks throughout Vermont on Thursday, October 12. We already have 450 children scheduled to visit and hike with our volunteers.

Volunteers and parks are listed below: Larry Becker, Hubbard Park in Montpelier; Helen Mango, Emerald Lake State Park; Marjorie Gale, Mt Philo State Park; Laura Mallard, Button Bay State Park; John Warren and Roger Haydock, Mt. Ascutney State Park; and Jon Kim and Rob Farley at Little River State Park. Demand is high for this activity and we need to run it for two days to accommodate all requests and keep the sizes of groups manageable. Additional volunteers are needed for Ascutney on October 10, Button Bay on October 10 & 12, and Emerald Lake on October 10 & 12). Please contact Marjie Gale at 802-241-3608 if you can help out!

### VGS TREASURER'S REPORT

June 16, 2000

Dear President and Board:

The financial condition of the Society remains strong. The checking account balance is \$3,009.03 as of June 16, 2000. All bills received by me have been paid and are reflected in the above balance. I welcome feedback and suggestions from the Board and membership. The Society gratefully acknowledges the generous contributions to the Student Research Grant funds received from the following members during the second quarter of 2000: A. P. Nason, Ron Miller, and Cassie Major - Thank You!

Sincerely,  
Kristen L. Underwood