



QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

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UVM PROFESSOR ALLEN S. HUNT – A REMEMBRANCE

Workers of each generation have lasting influence on their successors. Geology is no exception and with the loss of Dr. Allen S. Hunt on August 27, 2013, it important to remember his science and his quiet but very significant influence on his students, geology and the State of Vermont. As my graduate school advisor at UVM, I am indebted to Allen for his guidance and mentorship.

Dr. Hunt's work on Lake Champlain represents the core of a generation of Lake Champlain scientists with earlier data collection tools forming a quantitative base for subsequent studies. In recent years, we think of an extensive application of research funds through the support of Senator Patrick Leahy prompted by heightened concern for this spectacular water resource - but every step has a precursor.

In 1968, as a founding member, the Lake Champlain Study Center issued its first Champlain Research Report establishing a comprehensive study approach for the Lake. Allen Hunt's geologic studies integrated his science with botanists, limnologists, microbiologists and zoologists. A bathymetric map by Hunt and Boardman, a student, makes up the first report. The Melosira research vessel as the platform for soundings and core sampling continues work today through the support of the Lintilhac Foundation. From this vessel, Allen and his students made first and major contributions in bathymetry, sedimentology, paleontology, and paleomagnetism. Cognizant of environmental issues, his masters students studied oil and arsenic contamination and heavy metal dispersion. In recognition of his work, the Hunt Rise is named for a bathymetric high northwest of Burlington.

My own work centered on a growing concern of the time related to shoreline erosion. We started with bank profiles on Arnold, Potash and Appletree Bay. For Allen, we conducted a study for the New England River Basins Commission creating a map of lakewide shoreline erosion potential and my thesis focused on the nearshore, beach, and banks of Appletree Bay in Burlington. As development pressures increase, the shoreline erosion concern continues to this day. We worked together to show how wave energy and sediment transport on the beach and bank are part of one system that must be understood for effective management. The work has influenced the City of Burlington and the Department of Environmental Conservation's approach to shoreline questions as well as studies related to causeway removal in Missisquoi Bay.

In remembering a professional who showed the importance of data to make the case, the personal is not far from the surface. I found my graduate school desk in the basement of Perkins across from his office and outer work area with numerous map cabinets and fossil drawers. As we talked, I learned of his projects. His wall of student fame with a picture of each showed his real care for the young scientists in his charge. While helping with his research vision, he brought us along with his advice and counsel. It was a give and take as there was always easy access for the exploration of the research direction. My images of those office visits involved a lot of laughter. I can still hear the sound of his enjoyment in the work that gave me direction when it was most needed. Aspects of his legacy are numerous while his science integrity stands out as a personal guide for my public service work.

Condolences go out to his wife Nancy Hunt and family. Nancy was always there in the graduate school years and with exceptional loving care as his passing approached.

If you want to learn more please see the Times Argus:

<http://www.timesargus.com/article/20130904/OBITUARIES/709049999/1042/IRENE>

Respectfully submitted,
Laurence R. Becker, Vermont State Geologist



Southwest view along Lake Champlain from Split Rock Point, VGS Summer Field Trip

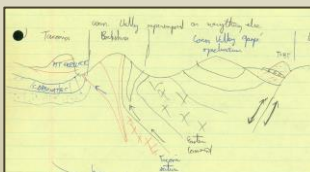
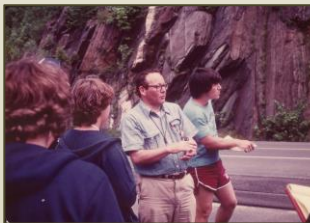
PRESIDENT'S LETTER

Field trips are certainly one of the best activities supported by the Vermont Geological Society. I'm sure that most of us can think of a field trip or two that "sealed the deal" for pursuing geology as a career or hobby. For me, I used to go fossil collecting with my father at Akron Falls State Park near Buffalo, New York when I was 8-10 years old. I was reminded of these "georoots" last Memorial Day weekend, when I returned there with family (see left) and saw where I had once sought fossils in a stream valley lined with the Devonian Onondaga Limestone.

At Colgate University, it was required that geology majors attend a 12-week summer field camp that had multi-week modules in western Massachusetts, and the Taconic Mountains, St. Lawrence Lowlands, and Adirondacks of New York State. In the photo (left sidebar) from 1980, Leo Hall, a Structural Geologist who used to teach at UMass/Amherst, led us on a field trip across the Berkshire Mountains of Massachusetts. The enthralled person to Leo's right in the blue T-shirt and maroon shorts is me, at the moment when I knew I would be a geologist for life. In fact, I still have the western Massachusetts cross section that Leo drew in my notebook from that memorable field trip. I now segue to the VGS summer field trip that was run last August.



Akron Falls State Park, NY

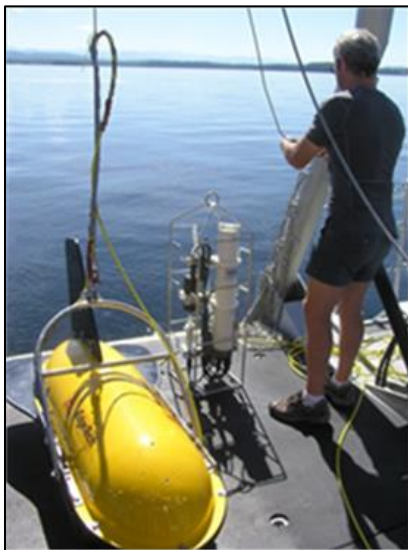


Summer Field Trip: On August 24th, Pat and Tom Manley of Middlebury College led a two hour cruise on Lake Champlain on the R/V David Folger. The trip left from the Point Bay Marina in Charlotte with 12 Vermont Geological Society members aboard.



VGS members on board the David Folger with Pat and Tom Manley.

The purpose of the trip was to explain the geologic history of Lake Champlain and to demonstrate the operation of three instruments that have been critical in deciphering this history, which are: 1) Edgetech CHIRP sub-bottom profiler / side scan system (stratigraphy of lake bottom deposits), 2) Seabird CTD (conductivity–Temp–Depth) instrument (data that constrains signal velocity in water), 3) Reson 7125 dual-frequency Multibeam transmitter & receiver (wide-angle bottom topography).

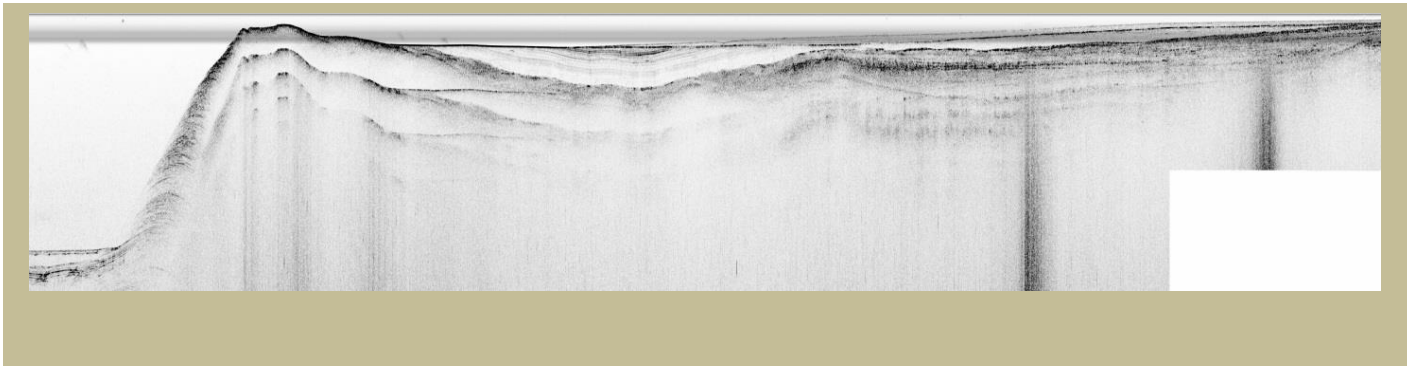
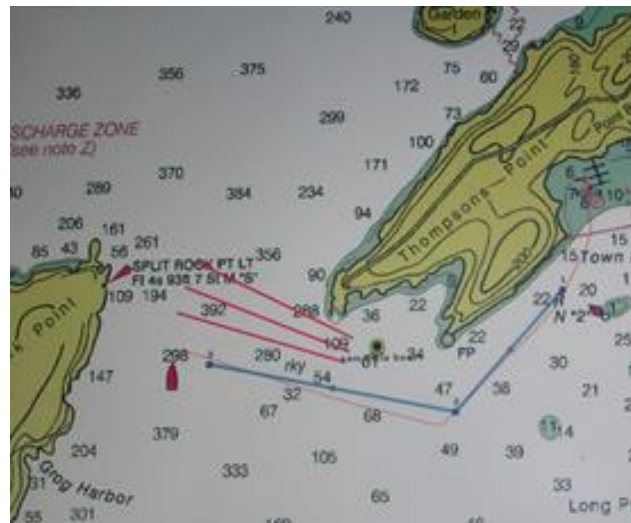


Chirp(left-yellow) and CTD



Multibeam Instrument

After leaving the dock, Pat and Tom narrated a slideshow that gave an overview of the lake history. Each of the instruments described above was then sequentially deployed and the data from each was acquired and observed in real-time. The boat surveyed a generally westward course that followed the southeastern shoreline of Thompson's Point and then crossed the deepest part (~400') of Lake Champlain toward Split Rock Point.



Chirp profile from Thompson's Point (right=east) toward Split Rock Point (left=west). Note the rapid increase in water depth.

Many thanks to Pat and Tom Manley!

Respectfully submitted,
Jon Kim, President

TREASURER'S REPORT

Finances: The Society is in the best financial position of its history. In my last report I acknowledged the loss of one of our longest-term members, Sanborn "Sandy" Partridge (1915-

2013). I was very pleasantly surprised when his niece, Laura Partridge, contacted me in July on behalf of Sandy's Trust, telling me that Sandy had left a gift to the Vermont Geological Society. A check for \$4,000 arrived shortly thereafter and went straight to the bank. The VGS Executive Committee is developing alternatives for consideration as to how we might best use these unexpected funds, but in the meantime, they bring our current balance to \$10,606. Other than this gift, things have been quite stable as we approach distribution of the next round of Research Grants to deserving students.

New Members: Please join me in welcoming the following new and returning Members:
Greg and Nancy McHone (returning members), Grand Manan, CAN
Ethan Thomas (new member), East Hardwick, VT

Respectfully submitted,
Dave Westerman, Treasurer

ANNOUNCEMENTS

In Press: Ryan, P., Kim, J., Mango, H., Hattori, K., and Thompson, A, Dissolved Arsenic in a Fractured Slate Aquifer System, New England, USA: Influence of Bedrock Geochemistry, Groundwater Flow Paths, Redox and Ion Exchange: *Applied Geochemistry*.

Internship Work Group: A small workgroup has formed but has not yet met to research existing internship programs/opportunities and to investigate roles the VGS membership and organization could pursue. The work group is Marjie Gale (VT Geological Survey), Helen Mango (Castleton State College), Miles Waite (Waite Environmental), and Michelle Nucci (Wilcox and Barton, Inc.). If any other members wish to be involved in this early stage, please contact Marjie Gale at 802-522-5210 or e-mail Marjorie.gale@state.vt.us.

CALENDAR

November 18, 2013, 4:15 - 5:15 pm, UVM Guest Lecture, Delehanty Hall, Rm 219: Tony Fowler, University of Ottawa, "Non equilibrium mineral growth and pattern formation in igneous rocks"

January 10, 2014, 12:30 pm, Middlebury College Guest Lecture, McCardell Hall, Rm 417: John Garver, Western Ontario

March 14, 2014, 12:30 pm, Middlebury College Guest Lecture, McCardell Hall, Rm 417: John Rayburn, SUNY

March 23-25, 2014, Geological Society of America Northeast Section Meeting, Lancaster, PA

April 18, 2014, 12:30 pm, Middlebury College Guest Lecture, McCardell Hall, Rm 417: Albert Malinverno, Lamont-Doherty Earth Observatory, Columbia University

The **Vermont Geological Society** is a non-profit educational corporation. The **Executive Committee** of the Society is comprised of the Officers, the Board of Directors, and the Chairs of the Permanent Committees.

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ADDRESS CHANGE?

Please send it to the Treasurer at the above address