



Granite State Geologist

The Newsletter of the Geological Society of New Hampshire
Spring 2005 Issue No. 48

www.gsnhonline.org

GSNH

Officers

President – Mike Robinette
Gilmanton, New Hampshire

Vice President-GS – Dave Wyman
Buoy Technology, Inc.
Concord, New Hampshire

Vice President –PG – Tim Stone
StoneHill Environmental
Portsmouth, New Hampshire

Secretary – Chip Crocetti
Sanborn, Head & Associates
Concord, New Hampshire

Treasurer – Suzanne Wall
Lawrence, Massachusetts

Past-President – Lee Wilder
Colby-Sawyer College
New London, New Hampshire

Members-at-Large

Richard Moore
US Geological Survey
Pembroke, New Hampshire

Ralph Wickson
NHDES Waste Management Division
Concord, New Hampshire

Membership

Steve Shope
Exeter Environmental Assoc.
Exeter, New Hampshire

Website

gsnhonline.org

Julie Spencer
ENSR International
Westford, Massachusetts
jspencer@ensr.com

Newsletter

Tania Brice Coffin
Keene, New Hampshire
coffin@cheshire.net

January 2005 GSNH Dinner Meeting

A crowd of geologists met at Alan's Restaurant in January to enjoy Steve Kahl's talk on salt water contamination of ground water. Thanks, Steve. The lucky winner of a copy of Bob Whitmore's book was Don Cederquist. The winner of a set of field guides given to us by Midwest Geosciences Group was Doug Allen.

Please note, our April dinner meeting will be back at the Cat 'n Fiddle Restaurant! Our speaker will be Bob Whitmore; his topic is "The Mines and Minerals of Namibia". Bob will describe his December 2004 mineral prospecting trip to the mountains of west-central Namibia. There he got to explore local pegmatities, ore bodies, some miarolitic cavities and a skarn. In addition to showing us the fascinating geology of these sites, *he will also display some of the wonderful mineral specimens he acquired.*

Ground Water Awareness Week - March 13-19, 2005

"Time to Schedule Your Annual Water Well Checkup". Just as you seasonally check your furnace or smoke detector batteries, spring is a good season to have an annual water well checkup before the peak water-use season begins. The National Ground Water Association will once again stress yearly water testing and well maintenance during Ground Water Awareness Week, for more information go to www.ngwa.org.

Please note!

GSNH returns to our original meeting venue.

The April 14, 2005 Dinner Meeting
will be held at:

**Cat 'n Fiddle Restaurant
Manchester St., Concord, NH**

NHGS Groundwater Level Monitoring for December through February 2005

NHGS

The December 2004 round of groundwater level measurements were collected by NHGS staff members Derek Bennett and Genevieve Al-Egaily on December 27th – December 29th. November precipitation appeared to have an affect on water levels as statewide averages showed a 1.10 foot increase from the previous month. All of the wells in the network showed a slight to moderate increase from last month with the exception of monitoring wells in Concord, Franklin, and Greenfield. However, water levels are down an average of 1.01 feet when compared to December 2003 readings.

The January 2005 round of groundwater level measurements were collected by NHGS staff member Genevieve Al-Egaily on January 18th –January 25th. The statewide average showed a 0.04 foot increase in water levels from last month. The monitoring well in Lee showed the greatest change with an increase of 1.69 feet, while Franklin showed the largest decrease of 0.71 feet. On average water levels showed little change from last year with a slight increase of 0.01 feet.

The February 2005 round of groundwater level measurements were collected by NHGS staff member Genevieve Al-Egaily on February 22nd – February 24th. The statewide average showed a 0.45 foot decrease in water levels from last month. The monitoring well in New London showed the greatest change with a decrease of 1.65 feet. However, five wells showed slight increases. The largest increase was at the Greenfield well which showed an increase of 0.20 feet. The statewide average water levels are up 0.24 feet when compared to the February 2004.

More Good Press for ‘THE PEGMATITE MINE KNOWN AS PALERMO’

The April 2005 issue of Rock and Gem Magazine includes a very nice review of Bob Whitmore and Robert Lawrence Jr.'s fascinating book on the minerals of the Palermo Pegmatites. Fredrick C. Wilda's 130 life-like watercolor paintings of the 140 some species of minerals found in these pegmatites "demonstrate the mineralogical importance of these deposits." Copies can be ordered from Friends of Palermo Mines, 934 Stark Highway, Weare, NH. 03281 or by speaking with Bob at a GSNH event.

GSNH Outreach

GSNH has three successful outreach programs, the School Speaker's Program, the Lincoln R. Page Professional Development Fund, and the Classroom Enhancement Grant. Please help spread the word about GSNH's outreach programs by talking with the teachers in your local school district! These programs are funded with the proceeds from mineral raffles at GSNH meetings and other contributions, as well as GSNH Membership Dues. Thank you for your continued support! Our outreach programs are described below:

School Speaker's Program

Interested members of the Society can volunteer to make Earth Science presentations in schools. A list of these volunteers with a brief description of the presentation they could make, is provided to teachers across the state, who must then make the contact and arrangements with the volunteer.

Lincoln R. Page Professional Development Fund

This fund, named in honor of Lincoln R. Page, will reimburse award winners up to \$300 for expenses related to their continuing education in the earth sciences. Go to www.gsnhonline.org for more information on the fund and the application requirements and the life of Lincoln R. Page.

GSNH Outreach, continued

Classroom Enhancement Grant

Teachers across the state of New Hampshire are invited to submit proposals for a grant of funds (up to \$300) to support the purchase of earth-science related teaching materials (equipment or supplies) for use in the classroom. Go to www.gsnhonline.org for more information on the grant and the application requirements.

Continuing Education Opportunities for Winter and Spring 2005

Julie Spencer

Southbury Environmental is presenting three 8-hour seminars in Marlboro, Massachusetts at the Radisson Hotel in April and repeating the seminars in Plainville, Connecticut at the Ramada Inn in May. Processes and Contaminants of the Metal Finishing, Surface Coating and Dry Cleaning Industries will be held on April 4 and May 9; Processes and Contaminants of Other Light Industries: Electronic and Electric Devices, Textile Processing and Rubber Processing is next on April 11 and May 16; Petroleum Products will be held on April 19 and May 23. Course descriptions can be found at: www.southburyenvironmental.com.

Join the NHDES Waste Management Division for a lunch seminar and gain an hour of continuing education. These technical seminars are structured as town meetings to facilitate discussion. March 18 offers "Potpourri Waste Management Style." Next up on April 15 is "Urban DNAPL Site Remediation – The Vapor Intrusion Problem." The May 20 topic is "MTBE, Odor, Air and Water Cleanup Issues – The Mercury is Rising." Following up on June 17 is "Guidance Document for the Evaluation of Sediment Quality – Remediation or Water Quality?" RSVP to Amy Azeredo at aazeredo@des.state.nh.us or 271-2905 if you plan to attend any of the lunch seminars. After June there will be a summer break from the seminar schedule.

The NH Geological Survey sponsors lunch time lectures generally each month. A schedule of upcoming lectures was not available by the newsletter deadline. Email geology@des.state.nh.us to be added to the email notification list as topics are announced.

These opportunities and more are also listed on the Continuing Education page of our website: GSNHonline.org. If you hear of any continuing education events that are not listed, please contact Julie Spencer at jspencer@ENSR.com. For the PGs out there, remember that the New Hampshire Joint Board does not pre-approve any activity for continuing education hours. A Generic Activity Form to use when certificates are not provided by the sponsor is available at www.state.nh.us/jtboard/pgce.htm. Happy learning!

AWG Announces Four New 2005 GEOLOGIST-IN-THE-PARKS (GIP) Positions

If you are between projects or looking for an internship, why not serve as a GIP? See the AWG website (<http://www.awg.org/about/gip.html>) for detailed position descriptions and application information. Send all inquiries and applications to awg-gip@awg.org by April 15, 2005. AWG will sponsor GIPs in the following National Parks for 2005:

- Knife River Indian Villages National Historical Site & Fort Union Trading Post National Historic Site (North Dakota),
- Bryce Canyon/Cedar Breaks National Parks (SW Utah),
- Mount Rainier National Park (Washington),
- Glacier National Park (NW Montana)

Rock and Mineral "Talk boxes"

To make it even easier to give a geological presentation, Lee Wilder (GSNH Past-President) has assembled two "Talk Boxes" containing NH rocks and minerals.

The Mineral Talk Box: has all you need to give an interesting, hands-on presentation and includes 20 interesting common minerals. The box contains posters, activities, nice hand specimens, specimens for use with the participants, as well as background information to help the presenter feel "comfortable" with the material.

The Rock Talk Box: has all you need to give an interesting, hands-on presentation on the three rock types. This box contains 20 interesting rock samples, with an emphasis on NH Bedrock samples, where appropriate. The box also contains posters, activities, nice hand specimens, specimens for use with the participants, as well as background information to help the presenter feel "comfortable" with the material.

Both of the Talk Boxes are located at the office of the NH State Geologist, at NH DES, in Concord, NH. To schedule the use of one of them, contact Lee Wilder at 603-271-1976, or geology@des.state.nh.us.

GSNH Summer Fieldtrip – August 27 and 28, 2005

GSNH is happy to announce that Doug Rankin of USGS has offered to lead our summer fieldtrip. This trip will be centered in the Littleton NH area and will include some spectacular exposures of mafic Ammonoosuc Volcanics, an Oliverian pluton (Whitefield pluton), Clough, Fitch, and Littleton Formations. The stops will include an inactive quarry near the mouth of the Gale River, a road cut nearby along U.S. 302, crops in the Ammonoosuc River, a traverse along the Gale River for about half a mile upstream from its junction with the Ammonoosuc, and a traverse to and along a power line north of Streeter Pond, all in the southern part of the Littleton 7.5-min. quad, and, all southeast of the Ammonoosuc fault. Doug will show us rocks which he believes are evidence that the Whitefield pluton intrudes the Ammonoosuc (*sensu lato*), nearby photogenic crops of Clough and Fitch above the pluton, a magnificent section through felsic (debris flows and a dated ash) and mafic (pillows) volcanics in the lower part of the Littleton, turbidites of the Littleton with large staurolites, more than one exposure of a regolith developed on the Whitefield pluton (one of which is at the base of the Fitch), and an enigmatic series of sub-parallel zones of round alaskite 'clasts' in the Whitefield pluton near what must have been its Silurian erosionally exposed surface. The last will certainly generate heated discussion. Doug knows of no description of many of the features we will see on the trip, except the Gale River section, which was described by Billings. The outcrops are all relatively easy to get to and would be an excellent resource for future student trips. To make it even more enticing, Doug has only shown these exposures to (again, except the Gale River section) Sam Adams, Tom Evans, and his wife! So save that weekend and watch for details in the June newsletter!

State uncovers geologic oddity: Ancient thermogenic methane discovered in water well

[Ed. For those who missed David's Lunchtime lecture on the methane detected in a Hillsborough County in January, here is a reprint of the press release issued by NHDES on 12/2/04]

NH State Geologist Dr. David Wunsch recently announced the discovery of dissolved methane gas in a sample from a deep water well in south-central New Hampshire. The NH Geological Survey has determined the source of the methane to have an ancient, geological origin (termed thermogenic), and was not derived from leaking gas lines or from swamps, landfills, or wetlands.

Methane is the principal component of natural gas, which is used for heating homes and appliances. The methane detected contained potentially explosive amounts of the dissolved gas. Methane in excess of 5-15 percent in air is considered explosive, and water with high concentrations of dissolved methane can cause the gas to accumulate in poorly ventilated areas. State scientists discovered that the dissolved gases found in one well sample consisted of 49 percent methane.

State uncovers geologic oddity, continued

“Methane is not a common constituent in ground water derived from the hard, crystalline rocks common to New Hampshire, like granite,” said Dr. Wunsch, who led the investigation. “Methane is more common to sedimentary rocks, such as are found in Texas and Oklahoma. Sedimentary rocks are the source of almost all of the natural gas produced for fuel.” Although scientific literature has shown that other areas of the world with similar rock structure as New Hampshire, such as Canada and Sweden, also have had this methane oddity, researchers from the NH Geological Survey believe this discovery to be the first of its kind in the Granite State. The study of the source of the gas included the use of carbon-14 (radiocarbon), and other carbon isotopes, which showed its thermogenic origin. Modern day sources of methane from wetlands, bogs, and landfills were discounted because of other chemical analyses conducted, as well as the presence of trace amounts of helium and argon in the samples collected are consistent with an ancient, thermogenic origin for the methane.

Dr. Wunsch cautioned that comprehensive analyses have only been conducted on one well in southern Hillsborough County. However, anecdotal evidence from drillers and residents in the region suggest that the methane is present in other wells, and its occurrence is probably somewhat regional in nature, but could occur in other parts of the state as well. The geology of the region is probably a controlling factor for the methane’s occurrence.

Methane is a colorless, odorless gas. Well water containing high concentrations of dissolved gases will often look milky when it is viewed in a clear glass after coming directly out of a faucet. However, residents should be aware that many gasses, most of which are not harmful, are common constituents of water and milky water does not necessarily mean the water contains methane. Water well owners who suspect methane in their well water can contact a commercial lab and find out more information on how to have their water tested. A listing of accredited laboratories is provided on the DES website at www.des.nh.gov/nhelap/accredited/labs.pdf. The New Hampshire Geological Survey plans to conduct further research into the cause and occurrence of methane in well water in the region. For further information on this topic, please contact Dr. David Wunsch, NH Geological Survey, at (603) 271- 6482.

“Evolution Roundup”

from the January 2005 AGI Government Affairs Monthly Review

In January, members of state legislatures returned to their capitols and began introducing legislation that reflects their policy priorities. Not surprisingly, given the increased public profile of evolution education, legislators in many states have introduced measures that would require disclaimers be placed in textbooks, require that intelligent design/creationism be taught along side evolution, or requiring that science teachers 'teach the controversy.' Before providing an update on some of the anti-evolution legislation, it is interesting to note that a Montana State Senator from Helena introduced a resolution that, if passed, would communicate to local school districts that there is a separation of church and state clause in the Constitution and that school districts should teach students only sound science. Not to be outdone, a newly elected member of the Montana House, State Representative Roger Koopman (R-Bozeman), announced his intent to introduce legislation (LC 1199) that would allow schools to teach intelligent design/creationism.

Back in Georgia, where a federal judge recently ruled that Cobb County's textbook disclaimers are unconstitutional, a member of the Georgia House of Representatives introduced House Bill 179. This legislation would require that "Whenever any theory of the origin of human beings or other living things is included in a course of study," evidence against evolution would also be included. When the Speaker of the Republican-controlled state House was asked about the measure, he simply noted that any member of the caucus can introduce any legislation they like. Georgia Citizens for Science Education and other organizations that support a strong K-12 science curriculum are not taking the measure lightly.

“Evolution Roundup”, continued

Staying in the south, legislation introduced in the Mississippi State Senate (SB 2286) would require that classic creationism be taught in schools where evolution is taught. The South Carolina Senate will again be able to consider legislation (S 114) designed to provide anti-evolutionists with control over how textbooks dealing with evolution are approved and adopted by school districts. A similar measure was introduced in the last session.

Policy threats to a sound science education are not limited to southern states. As has been previously reported, Grantsburg, Wisconsin spent most of 2004 flirting with ways to introduce intelligent design/creationism into the science curriculum. Following a prolonged process in which local parents, educators, and university faculty and members of the clergy from across the state expressed strong opposition to the district's plans, in December 2004 the board adopted a resolution stating: "Students are expected to analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information. Students shall be able to explain the scientific strengths and weaknesses of evolutionary theory. This policy does not call for the teaching of creationism or intelligent design." While the policy is an improvement over earlier iterations, science education advocates remain concerned that evolution is the only area of science listed in the statement. Local evolution education supporters have pledged to remain vigilant.

The challenges in Dover, Pennsylvania are far from over. Following the school board's decision to approve the teaching of intelligent design/creationism, local parents in conjunction with national organizations filed a lawsuit against the school district. Meanwhile, the school district prepared a four-paragraph long disclaimer statement that high school biology teachers were to read to their classes prior to beginning a unit on evolution. In short, citing their obligation under the state's Code of Professional Conduct and their professional and "solemn responsibility to teach the truth" the district's biology teachers sent a letter to their administrators refusing to read the disclaimer statement. The statement was, however, read before each class by a school administrator.

The latest information on challenges to evolution is available on AGI's website at <http://www.agiweb.org/gap/legis108/evolution.html>.

In related evolution news, Michael D. Lemonick, Noah Isackson, and Jeffrey Ressler wrote "Stealth attack on evolution" in the January 31, 2005, issue of Time magazine. Asking "Who is behind the movement to give equal time to Darwin's critics, and what do they really want?" the article warns of a new wave of assaults on evolution education, coming "not from Bible-wielding Fundamentalists but from well-funded think tanks promoting a theory they call intelligent design." Noting the dubious constitutionality of teaching "intelligent design" in the public school science classroom, the Time reporters explain that its promoters now recommend that "schools should continue teaching evolution but also resent what [the Discovery Institute's John] West calls 'some of the scientific criticism of major parts of the theory.'" NCSE executive director Eugenie C. Scott was quoted, however, as explaining that "[t]eaching evidence against evolution is a back-door way of teaching creationism," and the article later suggests that "[a] look at where the Discovery Institute gets much of its money and at the religious beliefs of many scientists who support I.D. makes it reasonable to suspect that Scott's assertion is correct: intelligent design is just a smoke screen for those who think evolution is somehow ungodly."

To read "Stealth attack on evolution" in Time, visit: <http://www.time.com/time/magazine/article/0,9171,1019856,00.html>.

To read Glenn Branch's 2004 article in Seed, which discusses the "teach the controversy" slogan in detail, visit: <http://www.seedmagazine.com/?p=article&id=100000043&cp=0>

Similar articles have appeared in The New York Times and Washington Post. To read "The crafty attacks on evolution" in The New York Times (registration required), visit: <http://www.nytimes.com/2005/01/23/opinion/23sun1.html>.

To read "God and Darwin" in the Washington Post (registration required), visit: <http://www.washingtonpost.com/wp-dyn/articles/A31521-2005Jan23.html> .



Geological Society of New Hampshire

Spring Dinner Meeting 2005

Speaker: Robert C. Whitmore

Topic: "The Mines and Minerals of Namibia"

When: Thursday, April 14, 2005

******* Where: Cat 'n Fiddle Restaurant *******
Manchester Street, Concord, NH

6:00 pm Social Hour
7:00 pm Dinner

GSNH Dinner Meeting, Thursday April 14, 2005

Dinner will be a buffet.

Reservations: _____ members @ \$18.00 _____ non-members @ \$20.00 (in advance)

Half-price for students (must show student ID card)

Reservations will be taken until Monday afternoon, April 11, 2005

There will be a \$2.00 surcharge for those paying at the door without reservations

Make checks payable to: Geological Society of New Hampshire

Mail to: Dave Wyman, 31 Columbus Ave., Concord, NH 03301

phone: 603-224-9031 or davew@buoytec.com for information

Name: _____

Address: _____

Phone and/or Email: _____

Half the cost of the dinner may be tax-deductible as a business expense.

The lecture part of the program counts as 1.5 hours of CEU contact hour credit.

Dates to Remember!

- GSNH Spring Dinner Meeting
Thursday April 14, 2005

NOTE Location!

Cat 'n Fiddle Restaurant, Concord NH

- Granite State Geologist submission deadlines
(March 1, June 1, September 1, December 1)
- NHSTA Spring Conference
Tuesday March 25, 2005, Phillips Exeter Academy
- NE GSA Sectional Meeting
Saratoga Springs, NY, March 14-16, 2005

**Geological Society of NH
PMB 133, 26 South Main Street
Concord, NH 03301**

