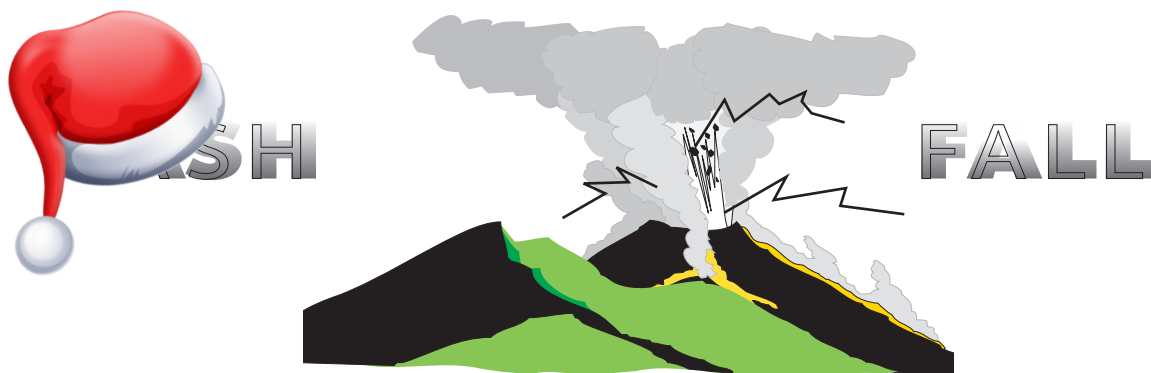




*Newsletter of the Volcanology and Igneous Petrology Division
Geological Association of Canada*

No. 73

November 27, 2010

From the President

Welcome to the Winter edition of Ashfall. We have some exciting activities afoot over the next few months, so please read on to avoid missing the action!

The 2011 annual GAC/MAC meeting is just around the corner. This year's event will be from May 10 to 14 in Ottawa. The deadlines for the submission of the abstracts as well as for the nominations for the divisional awards are fast approaching so don't delay in getting your submissions in. As usual, this meeting is a key component of our division's annual activities. The Ottawa 2011 organizers are planning a broad program in volcanology and igneous petrology. The division is sponsoring two special sessions. One of the sessions will deal with magmatic-hydrothermal evolution of felsic magmas (SS-10) and the other with the textures of igneous and metamorphic rocks (SS-17). Of course, there are many other sessions that will be of interest to VIP members including a general session on igneous petrology and volcanology. We will also be sponsoring a field trip led by Don Hogarth focusing on fenites, carbonates and astrophilite in the Gatineau Hills, an interesting and beautiful area just outside of Ottawa.

The main divisional event during this GAC/MAC gathering is our annual business meeting. During this meeting, where complimentary food and beverages can be enjoyed by all members, we will award the Leopold Gelinas med-

als to our top students and honour this year's winner of the Career Achievement Award, who typically provides an informative and entertaining talk. At this meeting, we will also elect a new slate of officers and councilors of the division. We look forward to receiving your nominations for all of the divisional awards. Visit the VIP web site for details of how to submit your nominations.

The business meeting is also a forum for you, the members, to tell the executive what you would like to see happen in the division in the coming year and to discuss new ideas. It will be a great opportunity to meet and network with other members and to talk about news and current issues in volcanology and igneous petrology. I hope that many members will be able to attend the meeting.

We are seeking more input for Ashfall. The goal of this newsletter is to keep you informed of events in the sphere of volcanology and igneous petrology. Editor Pete Hollings is doing a great job of editing and publishing Ashfall. However, he needs the members of the division to provide him with contributions, such as reports on research activities at the universities and government institutions, reports on field trips and conferences and similar topics. Contributing also gives you the opportunity to share news and views with your fellow division members!

I would like to thank all the members who have contributed to the activities of the division and to Ashfall over past year. Many thanks to Glyn Williams-Jones, Michelle DeWolfe and particularly Pete Hollings whose hard work kept the division run smoothly.

The division plays a critical role in promoting volcanology and igneous petrology in Canada. I invite you to continue to promote the division at all opportunities! The more active our membership – the stronger our division becomes

See you in Ottawa at GAC/MAC 2011!

Jarda Dostal



Molten lava flows from the crater of Mount Merapi captured in a long exposure photograph taken from Klaten district in Central Java province late on November 2, 2010. (Sonny Tumbelaka/AFP/Getty Images).

Field Trip to the Quaternary (and Tertiary) Volcanic Rocks of the Eifel Volcanic Field, Germany

Catrina Russell and Cliff Shaw, University of New Brunswick

The Eifel Volcanic Field sits on the raised western flanks of the Rhine Graben. The graben is the result of extension associated with the collision of Africa and Europe which has driven up the Alpine orogen. Volcanism in the Eifel began in the Tertiary and can still be considered active today even though there has not been an eruption in the last 10,000 years. There is seismic evidence for the presence of magma at depth and there are numerous CO₂ springs which contain trace gases that indicate that there are fracture systems that are tapping into the mantle.



Figure 1. Location of the Rhine Graben (wikipedia.org)

The Eifel field can be divided into two parts: the West Eifel and the East Eifel. Volcanism began in the West Eifel around 1 million years ago. The volcanoes in this field, about 240 of them, are typically small and monogenetic. This area is the type locality for maar volcanism. Volcanism in the East Eifel began in a similar fashion to that in

the west. However, the East Eifel is dominated by the thick and widespread deposits of the Laacher See volcanic complex which erupted 12,900 years ago.



Figure 2. Maars in the West Eifel Volcanic Field (keyhole.com)

Our goal was to examine recent volcanic deposits and the landforms associated with volcanic activity in the Eifel. We also examined several aspects of the geology that give rise to interesting geological engineering problems – in particular the deeply incised valleys – due to uplift on the flanks of the Rhine, the groundwater and its exploitation for drinking water and quarrying techniques in loose and hard rock deposits.

After a long travel day, we spent some time in Frankfurt to recuperate and to visit a few of Frankfurt's tourist destinations. The next day we ventured along the Autobahn towards the Eifel Region. Our first stop was the Meerfelder Maar, one of the largest maars in the Eifel. After this we visited cinder cone deposits at Deudesfeld where we collected numerous well-preserved mantle xenoliths. The final stop of the day was the large lava ball at Strohn.

The weather on day two presented some problems. High winds and driving rain caused numerous fallen trees. De-



Figure 3. Students (from left to right) Catrina Russell, Andrew Fox, Sarah Gordon and Beverly O'Brien in front of a very large lava ball.

spite the inclement conditions we managed to examine the Devonian dolomites and the small craters that are punched through them in the Gerolstein area.



Figure 4. Deposits at Rockeskyllerkopf.

We were fortunate to be able to meet up with a group of German students from the Goethe University of Frankfurt on their spring field school. We spent the day measuring and describing sections at Rockeskyllerkopf, as well as expanding our rock collections. That evening Cliff spent some time instructing us in the finer points of German beer. Even the German students learned something!



Figure 5. UNB students collecting glassy xenoliths at Rockeskyllerkopf.

Day four was spent visiting sites such as Ulmener Maar - the youngest of the eruptive centers in the Eifel and its associated deposits on Cochemerstrasse, as well as the town of Ulmen itself.

After a sightseeing day in Cologne we visited the Booser Doppel maar and its surrounding deposits and an old quarry with rare peridotite xenoliths. We then went to Laacher See to view the spectacular surge deposits of this recently active volcano. Of course no visit to Laacher See is complete

without a stop at the Maria Laach monastery.



Figure 6. One of the Dauner Maars

We also visited the site of the Mülheim-Kärlich power plant. This nuclear plant was complete in 1986 – obviously without consultation with geologists or geological engineers! It is located on a flood plain, on the edge of an area prone to small earthquakes, next to a very large active volcanic field. Thankfully, the plant never became fully operational and was taken offline in 1988 and completely decommissioned in 1998.



Figure 7. Mülheim-Kärlich power plant along the Rhine River.

Our trip was subsidized by the Hale Fund of the Geology Department at UNB. This fund, set up in memory of the late Ernie Hale subsidizes a student led field trip every two years. Other recent trips have been to Iceland, Hawaii and Italy. We are very grateful for generous donations from the UNB student union, John Burzynski of Osisko, the PDAC and the Engineering Endowment Fund.

9th Annual Maine Pegmatite Workshop: A Review

Kristy Beal (University of New Brunswick)

Western Maine, part of the Appalachian geological province, is an area that is well-known for gem-bearing pegmatites that are commonly viewed as Permian age. One of the most precious minerals in the area are the pink tourmalines that have been sold around the world! It was a rewarding experience for myself, a pegmatite enthusiast, to travel to Maine from New Brunswick to see these deposits.

The 9th annual, non-profit, Maine Pegmatite Workshop was held in Poland, Maine from May 28th to June 5th and was a great success with 31 participants of all ages from several countries. The concept of the workshop is to bring people of all backgrounds together to discuss various aspects of pegmatites in both a classroom and hands-on setting. This concept was first discussed in the early 1990s at the Emmons Quarry, Maine between Ray Sprague and William “Skip” Simmons (PhD) of the University of New



Frank Perham, a geologist from West Paris, Maine, shows off beautiful mineral specimens that he has collected in the past 50 years at his museum that is open for fellow rock-hounds and students interested in learning more about mineralogy.

Orleans; both would be future workshop co-directors. The workshop formed and has evolved (excuse the pun) to include a large faculty of pegmatite experts including Karen L. Webber (PhD). Al U. Falster (MSc), and James Nizamoff (MSc) of University of New Orleans, Encarnación Roda Robles (PhD) of the University of Basque Country in Spain, and Frank C. Perham (BSc) and Gary Freeman, who both specialize in various pegmatites of the area. The participants, including mineral collectors, geologists and students, are also sources of valuable information as well.

The local miners provide valuable information about geology, mineralogy, and history of the pegmatite quarries that are visited and they will occasionally give classroom lectures. Frank Perham, one of the local miners, has been

involved in the pegmatite mining community all over Maine for over 50 years, his experiences have given him priceless knowledge of how to find gem-bearing pegmatite pockets and wonderful stories to tell around the campfire. An evening was set aside at the camp to visit his house in Paris, Maine for dessert and to see his mineral museum that contains walls of pristine mineral specimens collected from various pegmatites from the area. He began collecting rocks as a young boy over 71 years ago! This included a five foot long feldspar crystal on his front lawn! Frank hopes that the museum will be a hands-on learning tool for school children to learn about and get interested in geology.



Geologists and mineral-collectors search through a pegmatite quarry for interesting minerals

Poland Mining Camps, where the Maine Pegmatite Workshop is held, is the ideal location because it was built on the concept of Maine pegmatite education. The cabins and meeting lodge were built by a local miner and mineral enthusiast, Irving “Dudy” Groves, in the 1950s from wood that was cut on the site. Today, the camps are run by Dudy’s wife, Mary, with the help from several family members and friends to provide a memorable experience with access to several local mines for mineral collecting; examples of what can be collected are on display throughout the camp. The newest addition to the camp is a mineral shop that exhibits specimens from local collectors and cut or uncut gems that have been fashioned into jewelry.

The days would begin at 6:30 am with a delicious bacon and egg breakfast made by Mary to start a day full of education both in the classrooms and on the pegmatite outcrops. Classroom lectures were given every morning from 8am to lunch from various pegmatite experts. The lectures began with plate tectonics and magma types and evolved to pegmatite classification and modes of formation. The presentations on pegmatite formation were the most interesting for me as the world-recognized pegmatite-experts described several theories they were working on, including rapid crystallization and formation by anatexis, that are

just being introduced in the pegmatite community. These lectures commonly turned into lengthy discussions between students, pegmatologists, and miners as the theories are explained using current pegmatite examples. During the final days, there were several presentations on current or recent research of New England pegmatites, as well as several other notable pegmatites from around the world.

After a classic sandwich lunch, everyone would pack up their hammers and sifting buckets to head to one of the local, well-known pegmatite mines for mineral collecting; some of these mines have been known since the early 1800s! Several of these mines were found in the early to mid 1900s as a mapping initiative from the U.S. government to extract Li-, Be-, and Cs-bearing minerals for strategic purposes. In recent decades, these pegmatites have been explored to find gem-quality, coloured tourmaline, apatite, and beryl crystals that commonly formed in the pockets. The most anticipated pegmatite was the Mt. Mica quarry that is currently being mined by Gary Freeman to find spectacular zoned pink, white, and green tourmalines, coloured beryl, and rose quartz; however, there are over 60 additional minerals that can be found! Each quarry the workshop visited provided different experiences for mineral collecting, field relationships of pegmatites and mining methods, which lead into interesting discussions.

After a few hours in the hot sun looking at the pegmatite and for the various minerals, someone would yell 'KONE-HEADS!' and everyone would pack up their vehicles and head out towards Main St. in Poland, ME. Koneheads is a local ice-cream bar that is considered a must see stop for the geologists, mineral collectors, and students. They even have delicious canine snacks for Karen and Skip's dogs that would, of course, travel to see the pegmatites with us! Once we had returned to camp and cleaned up, Mary and her helpers would have dinner on the table for us around 6pm before the evening events. One night, we had Maine lobster! It was delicious!



Everyone stops at Koneheads for a refreshing treat after a hot afternoon of mineral collecting

The evenings were very informal and filled with fun and learning! There were occasional presentations that included one from Gary Freeman about how he became involved in the Mt. Mica mine. And from Frank, who would enthusiastically tell everyone wonderful stories including when he helped mine 500lbs of flawless pink tourmaline, less than 9.5 inches long in size from the Neville Pit in Newry, Maine! He described how opening these gem pockets made him 'happier than a cat on a hot tin roof'! The evenings were also available for mineral dealers to display their specimens and once the sun set, the UV lamps were turned on to see how the newly collected minerals would fluoresce. Eventually, many people would migrate to the fire pit to reflect on the days events and mineral finds and tell stories of pegmatite adventures.

Other events included the annual Ugly Shirt/Costume Contest, which is always full of laughs. This is generally mandatory and this year highlighted a clown, female WWE wrestlers who put on a show, outrageously dressed bride and groom, male figure skater, Pippi Longstocking, and many other ridiculous shirts and costumes! Prizes for the ugliest dressed included mineral specimens from Maine and prints from a local artist, Fred Wilda.

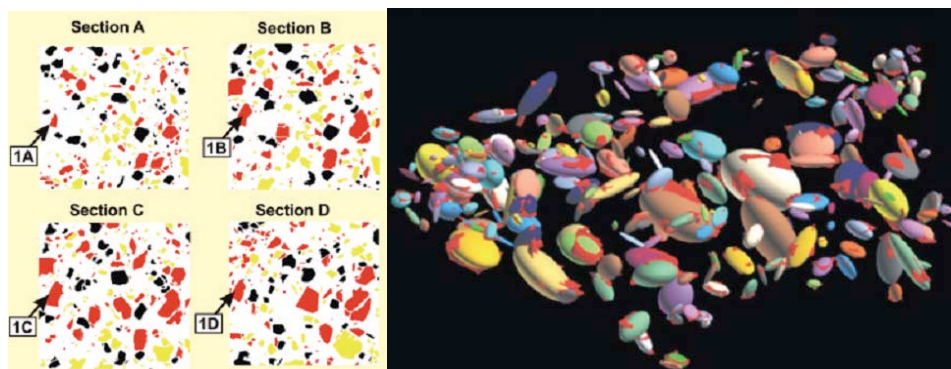
The pegmatite workshop ends with a cookout party in notable Cajun-style provided by Skip's cooking and spices! This is a time to relax and reminisce about the week's events with the participants and organizers, now friends, and discuss future plans. It was a very rewarding experience. I recommend it to any mineral collector, geologist, or student, you'll always learn a lot from both the pegmatites and people at this workshop!

Kristy Beal, who works on U-REE pegmatitic granites (NE Grenville Province, Quebec), and Melissa Anderson, who is studying Li-Ta pegmatites (southern Slave Province), are graduate students at the University of New Brunswick; they extend their thanks to the organizers of the workshop and highly recommend it to any students studying pegmatite systems.



Kristy Beal with a large feldspar crystal collected from a local quarry

GAC-MAC Special Session: Quantifying rock texture (microstructure) and what it can bring to petrology



Michael Higgins and James Scoates are organising the VIP special session at the upcoming Geological Association of Canada meeting in Ottawa on May 25-27, 2011 (<http://www.gacmacottawa2011.ca>). Recent advances in the quantification of aspects of crystalline rock textures (microstructures), such as crystal size, shape, orientation and position, have opened fresh avenues of research that extend and complement the more dominant chemical and isotopic studies. In this session we welcome all contributions that involve a component of textural quantification such as crystal size, shape, orientation, dihedral angle and position from both 2D and 3D studies. Theoretical and applied studies from all fields of petrology (igneous, metamorphic and sedimentary) are welcome. Abstract submissions start Nov. 1 and close Jan. 15 2011.

Michael Higgins (mhiggins@uqac.ca)

James Scoates (jscoates@eos.ubc.ca)



More photos of the recent eruption at Mt. Merapi in Indonesia. The left hand photo shows Mount Merapi spewing lava and smoke as it erupted again on Wednesday as seen from Sidorejo village in Klaten on November 3, 2010. (Reuters/Beawiharta). The right hand photo shows lightning strikes as Mount Merapi erupts, as seen from Ketep village in Magelang, Indonesia's Central Java province November 6, 2010. (Reuters/Beawiharta). More spectacular photos can be found at http://www.boston.com/bigpicture/2010/11/mount_merapis_eruptions.html

Meeting Announcements



The 2011 GAC/MAC meeting will take place at the University of Ottawa in conjunction with the Society of Economic Geologists and the Society for Geology Applied to Mineral Deposits from May 25th to 27th, 2011. The deadline for submitting abstracts is January 15, 2011. Visit the meeting [website](#) for details.

Institute on Lake Superior Geology



The 57th Annual meeting of the ILSG will be held in Ashland, Wisconsin, Minnesota from May 18-21, 2011 with field trips both before and after. Visit the [ILSG website](#) for more details.

VIP reminders

The deadlines for the various VIP awards are fast approaching so bear them in mind if you are thinking of nominating anyone.

The **Career Achievement Award** - the deadline is **31 January 2010** and nominations should be sent to Jarda (jarda.dostal@stmarys.ca)

The **Gold Gelinas medal** for an outstanding PhD thesis in the fields of volcanology and igneous petrology - the deadline is **28 February 2010** and nominations should be sent to Jarda (jarda.dostal@stmarys.ca)

The **Silver Gelinas medal** for an outstanding MSc thesis in the fields of volcanology and igneous petrology - the deadline is **28 February 2010** and nominations should be sent to Pete (peter.hollings@lakeheadu.ca)

The **Bronze Gelinas medal** for an outstanding Honours thesis in the fields of volcanology and igneous petrology - the deadline is **15 April 2010** and nominations should be sent to Michelle (mdewolfe@mtroyal.ca)

Can you help?

Glyn Williams-Jones has asked that we bring this to the attention of the membership. He has recently become involved with a non-profit organisation (with official non-profit status in Washington State and BC), the International Volcano Monitoring Fund (<http://www.ivm-fund.org>), whose mission is to “serve volcanically-threatened communities in low- to middle-income countries by providing instrumentation, training, and education to monitor volcanic activity and raise awareness about the environmental hazards of active volcanoes.” The group currently has an initiative in place to collect donations to help volcanologists at the Santiaguito Volcano Observatory in Guatemala (<http://www.ivm-fund.org/guatemala/>) acquire a variety of simple field equipment and monitoring instruments.

If you can help please contact Glyn at glynwj@sfu.ca

