



MAY 2005

Welcome back to the Cordilleran Section! I'm pleasantly surprised to see the support the Section has received with membership renewals – Thank-You!. The Section's membership has swelled as a result of GAC National's inclusion of GAC Sections on the annual renewal – Thank You GAC National!

The Section has had a very busy few months since our last newsletter, and many of us are now looking forward to getting back into the field . . . if you haven't spent the winter working in some southern venue . . . it seems to be one of those years when geologists, especially explorationists are in high demand and hard to find on the streets of Vancouver. Nonetheless, attendance at most of the Section's events has been very good. I would like to thank those of you who participated in public lectures and brown bag talks and to councilors who have spent much time organizing and coordinating events. With Halifax 2005 just around the corner most will soon be "talked – out". The Section still has a few events planned for the local community. May 18 there is a public presentation: Remembering Mt. St. Helens: 25 years of Discovery— check for details on this and others on page 3.

Unfortunately, I have not been around the Cordillera much this

year as projects overseas have taken me away. Last fall in preparation for one of these ventures I picked up a copy of Simon Winchester's "Krakatoa" – his stuff is generally a good way to while away hours on aircraft or in airports. I am not sure if there was some prescience in this choice of books. But as has been pointed out, lectures at Southampton University (Russell Wynn - Southampton Oceanography Centre: "Canary Island Landslide and Mega-Tsunamis: are we at risk from the Giant Wave?" December 10, 2004) also seem to have had a certain prescience to the events in and around Indonesia on December 26, 2004. One wonders if the various agencies that monitor seismic activity saw the catastrophe coming and whether or not they could have provided some sort of warning – through such agencies as public broadcasting systems such as the BBC world news service? It would seem that there are some pretty effective early warning networks in place for such disasters, but will they be used? And what is the responsibility and liability for failure to warn for earth scientists working in these fields?

This trip I've taken Jarod Diamond's just released "Collapse" as a way to pass the usual unexpected delays in working in third world countries. Diamond takes the reader on a

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rather interesting exposé of sustainability issues and how these have impacted people in the past and are impacting everyone today – especially those in the resource extraction and geohazard sectors. It's always good to know we are not running out of challenges! While work is being done to achieve technical fixes to these problems, it is also good to see that the education system is starting to address some sustainability issues in its programs for youth, but it will take some critical thinking to find the high ground and avoid being caught in the "tsunami" of what often seems to be rampant consumerism that the advertising media constantly flood us with . . . perhaps that is what I like best about being in the bush – albeit a bit of an ostrich solution.

Carl Verley

**MINERAL EXPLORATION ROUNDUP 2005
STUDENT – INDUSTRY NETWORKING EVENT**
January 25th 2005, 5 to 7 pm, Marine Room, Westin
Bayshore Hotel

By 'Lyn Anglin

By all accounts the event was a resounding success and I think that sponsors should be able to consider that their money was well-spent. The Chamber in particular is thanked for underwriting the event, whose costs have probably exceeded my original estimate and sponsorship raised.

Total attendance is estimated to have been over 280. Scanned delegates (delegate-tag bar codes were scanned by Chamber staff at the door) totaled 243, by far the majority of which were students and 75 were industry (i.e. regular delegates, including some government representatives). In addition, 5 to 10 industry and event organizers got in the door before the Chamber started scanning, and an estimated 30 students attended who were not registered delegates at Roundup. The total is therefore on the order of almost 200 students, and about 85 industry representatives. The student attendance was phenomenal, well beyond expectations, and clearly indicates an appetite for this type of event at Roundup.

Unsolicited feedback from many industry participants indicated that they found the event very worthwhile, and a good format (with the anticipated comment that next year, a bigger room would be nice!). By encouraging the students in advance that this was not a "recruiting fair" and instead an opportunity to meet and talk with peo-

ple working in the business to find out what sort of job and career opportunities might be out there, and what one needs to do as a student to get the career you want, seemed to have worked well. Several industry participants that I talked to said that most of the students were well-prepared and asked questions like, "what do you do?" and "what did you have to do to get this career?", though a few approached them with an overt request for a job.

Students were discouraged from bringing resumes by offering those that wanted to distribute their resumes, the opportunity to submit one ahead of time for the booklet produced by the Chamber. This also seems to have worked quite well, as it limited the flurry of paper that might otherwise have distracted from conversation. The resume booklet proved very popular with industry (50 copies were made, and within a few days of the event, all were spoken for). Some enterprising students did bring their own home-made business cards with them, an idea that I would encourage the students to consider for next year.

I am unsure of how this may impact membership in the various associations that sponsored the event. A lot of the information brochures that were made available were picked up by participants, but I am not sure how many students will respond by pursuing membership in GAC, SEG or the Chamber if they are not members already. However, in my opinion, this sort of event reflects very well on each of our associations in terms of providing a valuable service to our members and the geoscience community at large.

Student-Industry Networking Event was sponsored by: Mineral Deposit Division and Cordillera Section of the Geological Association of Canada; Society of Economic Geologists Canada Foundation; Bushrat. Net and The BC & Yukon Chamber of Mines

Cordilleran Tectonics Workshop
Whitehorse, Yukon February 18-20,
2005

Courtesy of Craig Hart

Fifty participants attended the 33rd Annual Cordilleran Tectonic Workshop which was held in Whitehorse, Yukon for the first time ever. There was considerable diversity among the attendees who hailed from 12 different universities from across

Canada, as well as from geological surveys and industry. Nearly 20 oral presentations and 15 or so posters were offered.

There was considerable diversity in the topics presented which ranged geographically from north-western US to northern Yukon, and geologically from the Coast Belt to the Foothills. As well, the age of the studied rock packages ranged in age from Paleoproterozoic to Quaternary. While most presentations were regional in scale, other presentations focused on mechanisms and processes of deformation.

This is the third CTW meeting after running for several years in concert with the Snorcle-Lithoprobe annual meeting. Despite the Lithoprobe contributions, it is clear that first order tectonic problems in the Cordillera still exist. Without the continued input from geophysicists, geologists are taking a stab at interpreting the geophysical data. In particular Derek Thorkelson (SFU) interpreted a several thousand kilometer long fault along the cratonic margin. As well, deep seismic studies undertaken by the Yukon Geological Survey and GSC are providing insightful clues to the Yukon's crustal structure and nature of terrane interactions.

Considerable emphasis in the program focused on the Monashee complex, as has been the case in many previous meetings. Controversies remain and the devil is clearly in the details. No less than seven different tectonic models have been presented to account for the formation of rocks there, and the presentations emphasized the benefits of increasingly detailed structural-kinematic and geochronological studies in the Thor-Odin dome. The long-term payoff for careful detailed work in such complex terrain was expertly illustrated by Philip Simony's presentation (co-authored by Sharon Carr) on the structural geometry and evolution of the Valhalla complex and surrounding region.

This meeting prides itself on student participation almost half of the participants were students. Networking was also clearly a highlight as the posters were the focal points for conversation and were abuzz during the breaks. This first ever meeting in Whitehorse, was organized by Maurice Colpron and sponsored by the Yukon Geological Survey.

Public Lectures and Brown Bag - noon hour talks . . . where we're going:

May 18, 2005 - Public Presentation:

Remembering Mt. St. Helens: Twenty-five Years of Discovery

Time: 7:00 to 8:00 pm

Place: Alice MacKay Room, Library Square Conference Centre Vancouver Public Library, 350 West Georgia Street, Vancouver

Come and hear Catherine Hickson, PhD (Natural Resources Canada, Geological Survey) and Mindy Brugman, PhD (Environment Canada) as they describe the eruption of Mt. St. Helens that shook the Pacific Northwest, sending shock waves of sound throughout southern British Columbia and spreading gritty grey ash to the Atlantic Ocean. The eruption killed 57 people and caused 10s of millions of dollars of damage. But out of the ashes new understanding of how volcanoes erupt has helped tens of thousands of people around the world who live in the shadow of active volcanoes. Dr. Catherine Hickson, volcanologist (Natural Resources Canada) and author of the newly released book "Mt. St. Helens: Surviving the Stone Wind" together with glaciologist Dr. Mindy Brugman (Environment Canada) will take you back to that morning 25 years ago and explain the events as no one but first hand observers and survivors can do. Share with them the terror of that day and learn the secrets of the largest eruption in North America since 1912. Hear what Mt. St. Helens has in store for us in the coming decades. For both, the events of that day changed their lives, and they have been avid observers and researchers ever since. Brugman completed her Ph. D. on Mt. St. Helens and Hickson became one of Canada's leading volcanologists, now responsible for Canada's response and preparedness for possible volcanic eruptions both at home and nearby, including Mt. Baker and Mt. St. Helens.

Upcoming noon hour talk:

Thursday, May 26, 2005

Strangers to paradise: the 2005 GSC Indian Ocean Tsunami Expedition to the Republic of Seychelles By Dr. Lionel Jackson

12:00 noon—all are welcome

Geological Survey of Canada

15th floor boardroom

1501 - 605 Robson Street, Vancouver

. . . where we've been . . .

Lionel Jackson and **Michael Wilson's** "The Ice-free Corridor and the People of the Americas - an Open and Shut Case", December 7, 2004, was a great success for the Section – as well as the presenters, who received many questions and stayed to talk after the formal lecture with a number of the ~140 member audience. Mike and Lionel's tag-team approach worked well in presenting the science, the variety of scientific evidence and the conclusions drawn from these regarding the "legend" of the ice-free corridor as the possible route for early man's descent into North America. The Section was fortunate to get publicity support for this event from a number of community organizations as well as Stephen Hume of the Vancouver Sun.

Dick Tosdal of the MDRU was able to arrange to have **Francois Robert**, the SEG Distinguished Lecturer for 2005, come to the GSC boardroom in December and presented: Orogenic gold vein deposits of the Val d'Or camp.

Dr Robert gave a fascinating account of these important deposits and demonstrated how through careful dating and meticulous attention to detail that relationships between these and other veins were deciphered in and around the important Cadillac and Destor shear zones.

Bob Turner, of GSC-Vancouver, gave a great presentation on the Geoscape poster phenomenon, January 13. How the poster series started, developed and has now taken off with a life of its own. Bob's efforts in the Geoscape poster series have led to greater awareness in communities across Canada of the role and importance of geoscience in their everyday lives as well as the link to very important sustainability questions that many of these communities are now confronted with. A very significant contribution from a local earth scientist!

On February 1, the Cordilleran Section was pleased to host this year's WW Hutchison Lecturer: **Dr Shoufa Lin** from the University of Waterloo. Dr Lin's talk: "Structural thinking: a key to mineral deposit studies in deformed terrain" was the second keynote lecture by an eminent geoscientist involved in the resource sector that we have been able to

sponsor this year.

The abstract for Dr Lin's talk can be found on the GAC National website at:
<http://sparky2.esd.mun.ca/%7Egeo/OutReach/tour.htm>

From time to time the Section is – in co-operation with the GSC – able to bring to the attention of its members talks by visiting geoscientists. Sometimes these talks come together at the spur-of-the-moment.

One such talk recently was by **Dr Oldrich Hungr** of UBC. Dr Hungr's presentation: "Landslide and erosion problems on glacio-fluvial soil escarpments, Greater Vancouver", gave an excellent overview of the sometimes deadly hazards encountered by those who insist on adding fill – un-engineered fill – to some of the steeper escarpments developed in exposures of the Quadra sands around Vancouver.

Another such talk was by **Edith Martel** of the Northwest Territories Geoscience Office, who presented an excellent demonstration of the use of RPM – Remote Predictive Mapping – in assessing areas prior to fieldwork. While some old hands in the audience snickered that they had been doing this for years. Some of the main points of Edith's presentation were the need for and use of digital data and how this can now be handled in a much more rigorous, less subjective way; and how RPM can result in much more effective mapping projects. It is hoped that Edith will be able to come back and educate us on the use of new generation hand-held computers in mapping and her experiences with these systems.

In a joint Cordilleran Section – GSC noon hour presentation, February 24, **Dick Tosdal** of the MDRU gave an excellent overview and summary of the MDRU and its activities.

MDRU initiates and funds research projects on a variety of scales ranging from projects supported by 19 companies to smaller projects supported by a single company. Support for current and past projects has come from industry sponsors, Natural Sciences and Engineering Research Council of Canada, Yukon Geology Program, Geological Survey

of Canada, British Columbia Geological Survey Branch, and Science Council of British Columbia.

Current mineral deposit themes being researched through MDRU include:

- Hydrothermal Systems
- Magmatic Ore Deposits
- Tectonics and Ore Genesis
- Exploration Methodology
- Kimberlites
- Sustainability

Short Course and publications of research are another important contribution of MDRU.

Dick has expanded on the work of his predecessor, John Thompson and the vision of MDRU founders: Peter Bradshaw, Alastair Sinclair and John MacDonald to build a truly global geoscience centre right here in Vancouver. The benefits of his work accrue not only to the industry sponsors, but also to the many students working on projects there.

On March 15, the Section hosted a well-attended brown bag by **Dr. Ken Hickey** of UBC's MDRU, who's talk: "Hotspots and damp swamps: Integrating apatite thermochronology and paleogeographic analysis to constrain the origin of Carlin-type Au-deposits in northern Nevada", did a nice job reviewing current thoughts on Carlin-types deposits, their age and origin of formation. His presentation drove home the importance of funding these type of student-drive research projects.

Dr. Dan Gibson (Simon Fraser University) presented: Timing of Complex Tectonic Processes Using EMP, SHRIMP, and ID-TIMS Analysis: Examples from the Western Canadian Shield and Southeastern Canadian Cordillera, March 23 at the GSC boardroom.

EdGeo Workshop:

On April 22, 2005 a full day EdGeo workshop was held at Riverside Secondary school in Coquitlam.

The workshop focused on the learning outcomes of the grade 10 science curriculum dealing with Earth Sciences. Instruction and hand-on activities covered the Rock Cycle, Geologic Time and Fossils, Structure of the Earth, Plate Tectonics, Earth-

quakes and Volcanoes. Teachers were provided with resource material that can be used in their classroom, including: Rock and Fossil Kits, Geo-Map, GeoScape, Vancouver Rocks and Temperature Rising Posters, Clague & Turner's: *Vancouver, City on the Edge*, J.A. Roddick's: *Capsule Geology of the Vancouver Area*, EdGeo Workshop Notes and a CD packed with additional resources.



Volunteers: **Erica and Adria Williams, Roberta Dunlop and Brett Gilley** organized and ran the event, which was filled to capacity (30 participants) and highly successful . . . so successful that this workshop or variants thereof will likely be run on an annual basis in the lower mainland.

To quote participants responses:

"It really was an excellent resource for teaching Gr. 10 Earth Science."

"This would be great for all Sc. 10 teachers in the province to take. Lots of hands-on ideas, great resource ideas, enthusiastic presenters. "



"Good mix of activities and info. Should be required Pro-D for all Sc. 10 teachers. It lived up to my expectations. Now I feel a little more prepared to teach Earth Science 10. "

Apart from sponsorship by the Cordilleran Section and EdGeo, **BHP Billiton** and **Placer Dome Inc** - with many thanks! - provided funding for the fossil and rock kits.

A follow-up field trip will be run on October 22, 2005 from Caulfeild to Whistler.

New B.C. Centre for Geoscience:

On February 22, 2005, in a Ministry of Energy & Mines news release, it was announced that the B.C. Government will fund, by way of a one time \$25 million grant, a new B.C. Centre for Geoscience. This is really great news for the geoscience community! And that is not all; the release goes on to say that there will be a 10-year extension for the tax credit program in support of mineral exploration in B.C.

What is not clear in the release is what will happen to the "old" geoscience centres throughout the province - of which there are quite a few now; who, how and where the new Centre will be established and administered; nor is it clear how the new Centre will be sustained after the \$25 million is consumed.

The focus of the Centre is not entirely clear, but as government initiative to address mining industry concerns it appears, on the one hand, that the focus may be on far-reaching mining technologies, as the phrase "global centre for excellence in mining" might suggest . . . or is it sustainability issues surrounding mining communities . . . on the other hand Minister of Energy and Mines Richard Neufeld clearly states "Geoscience is a critical element in helping attract new investment and encourage new mineral exploration", but is that new geoscience?

NEWS RELEASE

For Immediate Release

2005EM0008-000155

Feb. 22, 2005

Ministry of Energy and Mines

B.C. FOLLOWS UP ON COMMITMENT TO SUPPORT MINING

VANCOUVER – The Legislature has approved a one-time grant of \$25 million to establish a new B.C. Centre for Geoscience, and provided for a 10-year extension of a tax credit program to support mining exploration in the province, Minister of Energy and Mines Richard Neufeld announced today.

"We committed to the people of B.C. to bring back the resource industries that make communities thrive, and our actions supporting mining exploration investment speak louder than words," said Neufeld. "We've had tremendous growth in our mining sector, and we are in it for the long term,

as the significant geoscience funding and extended tax credits prove."

The funding will further support British Columbia as a global centre for excellence in mining, as requested by industry and the B.C. Yukon Chamber of Mines. Twenty million dollars from the grant will directly support mineral exploration. The \$5 million balance will be used in partnership with the oil and gas sector to create opportunities for both industries in Central B.C.

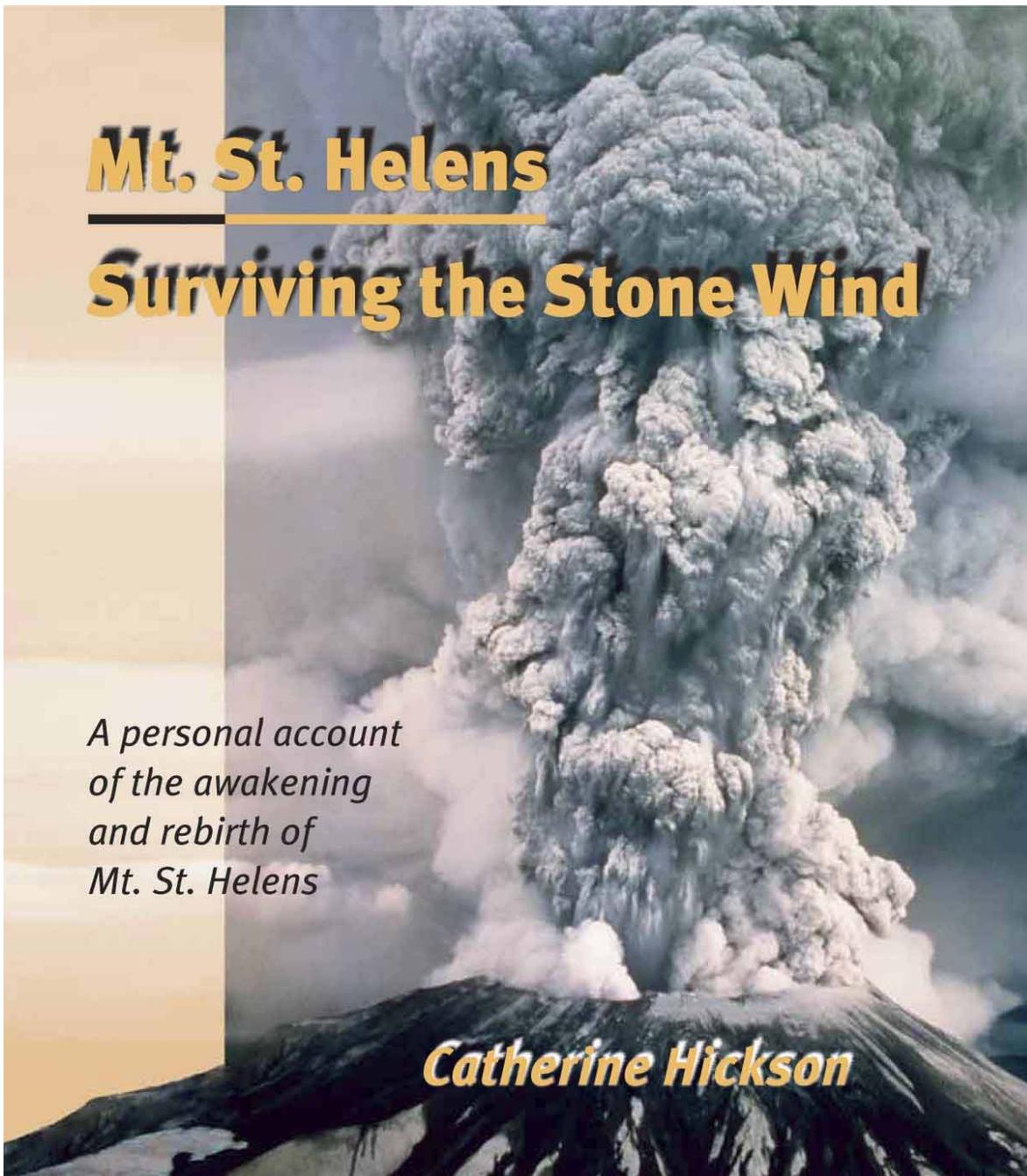
"Geoscience is a critical element in helping attract new investment and encourage new mineral exploration," said minister of state for mining, Pat Bell. "Today's approval of this funding to the B.C. and Yukon Chamber of Mines illustrates that we've heard industry's interests, and have delivered key elements they say they need to ensure mining investment continues to grow beyond the 13-year record high of \$130 million we saw in 2004."

In the 2005/06 Budget, the Province provided a 10-year extension of the Mining Exploration Tax Credit, which is a 20 per cent tax credit to companies undertaking grassroots mineral exploration in B.C. The credit provides a competitive advantage to B.C. by allowing a range of expenditures to be covered by the credit. This is in addition to the current B.C. Mining Flow-Through Share Tax Credit program that allows a tax credit based on specific exploration expenses, and is harmonized with an equivalent federal program.

"The B.C. government is doing many things right to encourage mining exploration expenditures, which translate into jobs and tax revenue," said Peter Tomsett, president and CEO of Placer Dome Inc. "The unveiling of the B.C. mining plan and announcement of \$25 million for investment in geoscience puts substance to the claim that B.C. is a mining-friendly jurisdiction once again. We applaud government's efforts to listen to industry and respond with such strong support."

The extension of the tax credit and the new geoscience funding fulfills action items identified by the B.C. Mining Plan as key ways to enhance global competition.

New Publication!



***There's still time
to get there!***

HALIFAX 2005
Building Bridges - across science, through time, around the world

A Joint Meeting of
*Geological Association of Canada
Mineralogical Association of Canada
Canadian Society of Petroleum Geologists
Canadian Society of Soil Science*

Dalhousie University, Halifax, Nova Scotia May 15 - 18, 2005



What could be more frightening than watching a mountain explode?

Geologist Catherine Hickson is one of hundreds of people who flocked to Mt. St. Helens in the days before the cataclysmic eruption of May 18, 1980. From only 9 miles away she watched the mountain disintegrate, shooting out a devastating “stone wind” that instantly destroyed the surrounding countryside and took the lives of 57 people. Since that day she has spent much of her professional career watching the rebirth and regrowth of the mountain.



Front cover: Mt. St. Helens, May 18, 1980.
Photo by Roger Werth,
© *The Daily News*,
Longview, Washington



Catherine Hickson tells the story of the volcano from her unique perspective as a survivor and a volcanologist. A personal letter to a close friend written immediately after the eruption brings the terror and exhilaration of that day back to life.

Using many never-before-published photos and straightforward language and diagrams, she tells a compelling story of Mt. St. Helens’ birth, destruction and rebirth, and suggests what may happen in the future.

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