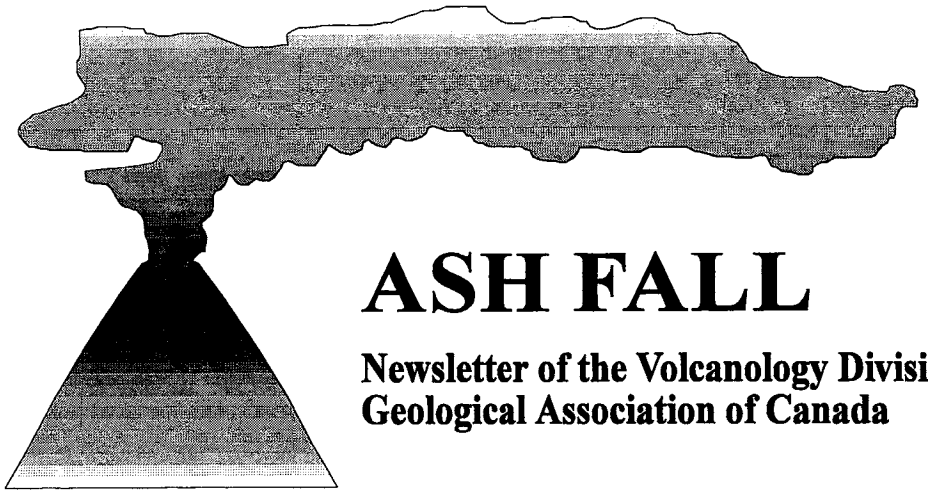

# ASH FALL

**Newsletter of the Volcanology Division**
**Geological Association of Canada**

**#33** **November, 1993**

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## MESSAGE FROM THE CHAIRMAN

First Paul and I must apologize for not getting an issue of Ash Fall out before the summer field season. It seems that the field season was upon us both before we managed to get through everything from the spring to do list! Then in September I was off to the IAVCEI meeting in Canberra (see report) and Paul was off on his second stint of field work! Anyway, no further excuses!

The GAC/MAC meeting in Edmonton was a great success for the Division. Some 30 members attended our annual general meeting to congratulate Bob Baragar on being the first receipt of the Division's new medal the Career Achievement Award. The presentation was made during the Volcanology Session to a most deserving recipient. For those that did not see the citation and reply printed in GEOLOG we have included it here along with a couple of pictures of the momentous event. The Division also presented the Leopold Gelinas Award for a Master Thesis to Ms. Sabrina Trupia for her thesis entitled Petrology of nephelinites and associated ultramafic nodules of Volcano Mountain, Yukon territory. Ms. Trupia completed this work at the University of Calgary under the supervision of Dr. Jim Nicholls. The medals for both of these awards were made possible by the generosity of Mr. Jerry Rémick. His support of the Division is very much appreciated.

Another landmark decision reached at the Edmonton meeting was changing of the name of the Division to the Division of Volcanology and Igneous Petrology. It was felt by the members present that this name more accurately reflects the interests of our membership. I hope that members not present for this discussion concur, I personally am delighted with the change.

Remember GAC/MAC Waterloo '94 meeting in the spring (May 16-18). Kelly Russell (UBC) and I will co-chair a Special Session called "Physical and chemical volcanology: ancient and modern regimes". We look upon this session as a way of bringing together many of the presentations on volcanology and igneous processes that are related, but often end up in very disparate sessions. Plans are also underway for Victoria '95. Wulf Mueller and I have proposed a Symposium on physical processes at Volcanoes. This will be meshed with two volcanological field trips and a short course. So mark Victoria '95 on your volcanological calendar as the place to be in May '95.

**ANNUAL MEETING OF THE VOLCANOLOGY DIVISION; GAC**
May 19th, 1993
**Minutes**

Attending: Cathie Hickson, Chairman; Les Coleman, Past Chairman; Georgia Pe-Piper, Councillor East; Bob Baragar; Monica Easton; Richard Ernst; Don Francis; Sumil Gandlu; Terry Gordon; Michael Higgins; John Ludden; Wulf Mueller; Jim Nicholls; John Stix; Mavis Stout; Sabrina Trupia; Paul Metcalfe, Secretary-Treasurer.

**1. The meeting was called to order** by C. Hickson at 12:15 p.m., Wednesday May 19th, 1993 in room V-107; University of Alberta, Edmonton.

**2. Agenda** for the meeting was presented by the Chairman and approved as presented, after minor discussion (Moved L. Coleman, 2nd M. Easton)

**3. Minutes of the previous annual meeting** were distributed and approved (Moved L. Coleman, 2nd R. Baragar).

**4. Business arising from the minutes.**
Re: New Division Medal. The Chairman reported a conflict of name between the proposed name: "N.L. Bowen Award" and a similar award in the United States; noted that several people in the division had made suggestions and that the name of the award had been changed to "Career Achievement Award". J. Ludden raised the point that Mme Gelinas had received a copy of the Leopold Gelinas Award and had requested three copies for her children.
**Action: C. Hickson** to send copies to Mme Gelinas.

**5. Report of the chairman** was presented and accepted.
**a.** NSERC Solid earth committee recommendations. The chairman reported that the division chair can make recommendations for people to sit on the committee and noted that such recommendations had already been made for 1993, requesting that names be submitted by division members, for future recommendation
**b.** The chairman announced that Bob Baragar was the first recipient of the Division's Career Achievement Award. The award would be ready very shortly (error in French translation); Bob received enthusiastic applause.
**c.** Les Coleman raised the point that the award design and striking were due to a generous contribution by Jerome Rémick and moved a vote of thanks; 2nd R. Ernst.
**d.** CNC/IUGG; The chairman reported that she was the CNC representative for a four year term. Two such representatives are allowed; the Chairman called for recommendations for the second representative.

**6. Report of the Secretary-Treasurer** was presented and accepted.
**a.** The division has 105 members as of April 8th, down from a membership of 139 on December 31st 1992. The account is $2433.92 in the black.
**b.** The secretary-treasurer was asked about production costs for Ash Fall; replied between $90 and $140 per issue, adding that a minimum float of $500 should be kept in Division funds, to cover such production.
**c.** Les Coleman noted that charitable donations made to the GAC could be "earmarked" specifically for the Division. The Chairman remarked that, although Division membership was down, it was in proportion to the general decline in GAC membership.

**7. The Leopold Gelinas Award** for the best M.Sc. thesis was awarded to Sabrina Trupia for her thesis entitled Petrology of nephelinites and associated ultramafic nodules of Volcano Mountain, Yukon Territory, completed at the University of Calgary. Ms Trupia accepted the award amid applause.

**8. Field trips; future.**
The Chairman noted that foreign field trips had been less well attended of late and reiterated the Division's policy of organizing more local field trips, including a GAC conference trip to the Wells Gray - Clearwater area of British Columbia, a few days previously; called for suggestions for trips to be scheduled around the Waterloo '94 and Victoria '95 GAC conferences
Les Coleman proposed Costa Rica as a relatively inexpensive venue for a field trip. Bob Baragar suggested contacting Karen Stamatelopoulou-Seymour as a possible source of information.

The Chairman noted that two international field trips, one to Chile and one to Hawaii, were already planned for Victoria '95.
Sumil Gandlu suggested Fe-rich tuffs of Savo del Mercado for Victoria '95. The Chairman announced the intention of re-running the Wells Gray - Clearwater trip for Victoria '95. John Stix suggested the Cascades for Victoria '95.
The Secretary-Treasurer suggested Yellowstone - Snake River Plain for Victoria '95.

**9. Scheduled activities.**
Waterloo '94. A special session entitled "Physical and chemical volcanology: ancient and modern regimes" is planned for Waterloo '94.
Victoria '95. Georgia Pe-Piper announced that a special session entitled "Volcanic activity in extensional zones" was scheduled. Wulf Mueller inquired as to the possibility of a short course entitled "Volcanic processes". Les Coleman suggested the possibility of running this as a workshop.
Monica Easton noted, for those planning field trips, that the Victoria conference falls on a Wednesday-Thursday-Friday.
Winnipeg '96. A session on planetary volcanism is planned (Richard Ernst).
Ottawa '97. This will be the centennial celebration; the Chairman noted that the Division should plan something special for the occasion.

**10. New business**
**a.** Divisional name change to *Division of Volcanology and Igneous Petrology* (moved J. Nicholls, 2nd J. Ludden). Unanimously carried.

**b.** Election of officers. The Chairman noted that there were no positions to be filled for 1993 and called for nominations for the following positions, to become vacant in 1994:
Secretary-Treasurer
Councillor on Research
Councillor East
A call for nominations will also be published in the next Ash Fall.

**c.** Publications
Monica Easton asked for titles of forthcoming publications

**11. R. Ernst moved that the meeting be adjourned**; 2nd by W. Mueller. Carried unanimously.

## EDITOR'S CORNER

First, let me add my apology to Cathie's; three jobs in as many months wreaks havoc with the schedule. Secondly, let me add my own congratulations to this years' medal winners. Thirdly, my sincere thanks to John Stix, Eric Fontaine and Cathie Hickson for their contributions to *Ash Fall* #33.

To continue and end on a bright note, the Division's updated membership is 129, much better than the 108 that I quoted in May. By my calculations, that leaves (lessee...) 126 of us to write and submit articles for *Ash Fall* #34! Preferably on disc, in ASCII format (Thank you again, John, Eric and Cathie). Looking forward to hearing from you.....Merry Christmas to all.

Paul Metcalfe

# DR. W.R.A. BARAGAR
## CAREER ACHIEVEMENT AWARD
## DIVISION OF VOLCANOLOGY AND IGNEOUS PETROLOGY

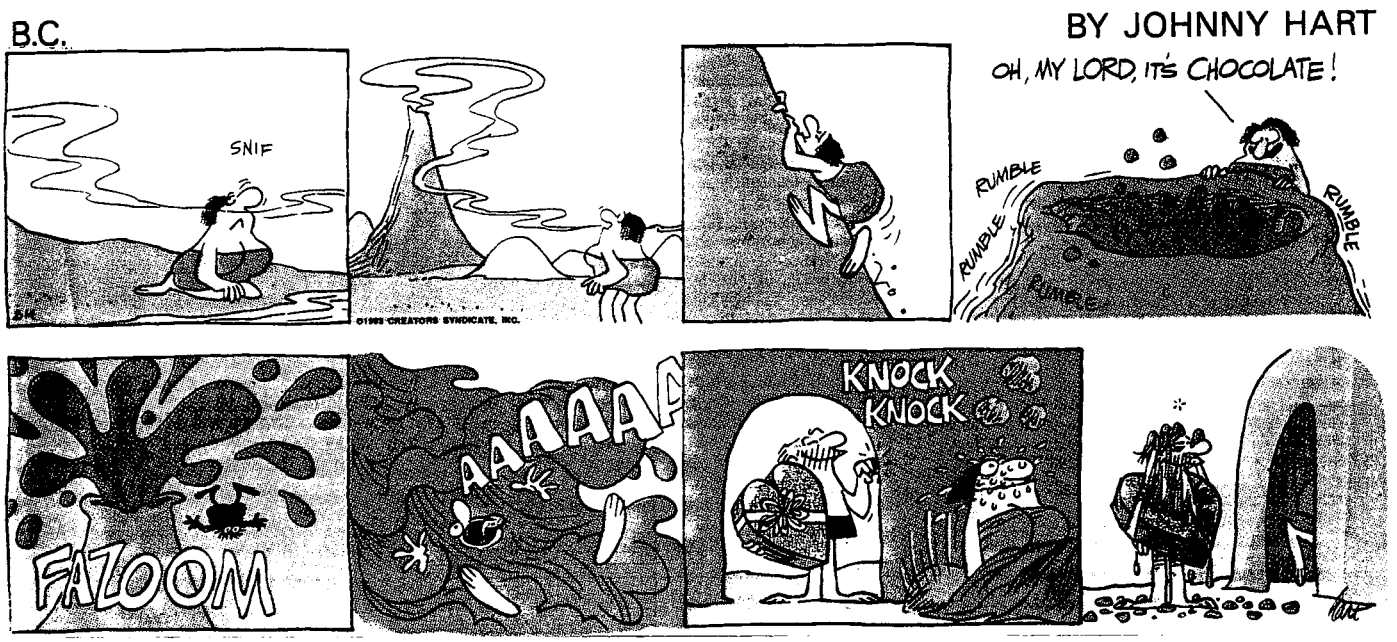
Dr. W.R.A. (Bob) Baragar has made significant contribution to the betterment of volcanological and petrological studies in Canada. These contributions have been made at all levels; from research, to essential administrative tasks.

Bob's major research roles lie in the understanding of Precambrian volcanic sequences. His work in the Superior and Slave provinces and in the Trans- Hudsonian orogen serve as the basis for much of our current research. Through his work in younger volcanic (for example Troodos), Bob helped bring together petrologists studying Phanerozoic and Precambrian petrogenesis - to the benefit and scientific advancement of both groups. Bob has played a major role in sponsoring volcanological research in Canada.

As one of the organizers of the volcanology division of the GAC he edited the first significant volcanological contribution to the GAC: Volcanic Regimes in Canada. He serves as a model for young scientists and students. His mentoring role has guided many enthusiastic young academics, and his interventions at international colloquia still serve to promote Canadian geoscience.

### BOB'S ACCEPTANCE

Cathie and colleagues: I am not going to make a formal acceptance speech, but I do want to say how pleased and grateful I am to have been selected as the first recipient of this award. It is especially gratifying that it represents the approval of colleagues who share my interests and might be expected to know my work; one can therefore hope that something more than kindness was a contributing factor. Nevertheless, it was thoughtful to have provided it on a career achievement which is so marvelously diffuse that I need feel no obligation to defend any part of it. To be made the first recipient of this award is a particular honour and, knowing the calibre of colleagues who will undoubtedly follow, one can be assured that the medal will do nothing but gain in lustre with the passage of time. My thanks go out to the selection committee for bestowing this honour and to you all for your kind support



# SAKURAJIMA AND UNZEN VOLCANOES, KYUSHU ISLAND, JAPAN,

3-12 October 1993

**John Stix and Eric Fontaine**
Université de Montréal

After the IAVCEI General Assembly, we decided to go volcano- hopping on Kyushu Island, Japan. After Australia, arriving in Japan was a bit of a change. Most Japanese speak only a little English, so communication was very basic. Driving on the left through millions of small streets makes for interesting navigation; when the road maps are in Japanese, the most useful item to have in a car is a Brunton compass.

We flew from Sydney to Osaka and thence to Kagoshima, where our first stop was Sakurajima volcano. The city of Kagoshima is literally in the volcano's shadow; when the volcano is erupting and when the winds are blowing west, the city gets sprayed with ash. So, Kagoshimans know how to live with an active volcano. Children wear helmets when walking to school, and homeowners take tax write-offs if the cost of ash removal exceeds a certain amount.

Sakurajima volcano sits in the middle of Kagoshima Bay and on the southern margin of Aira caldera. The caldera was formed about 22,000 years ago, erupting large volumes of felsic pyroclastic falls and flows. Sakurajima may have started growing 20,000 years ago, soon after caldera collapse. It is composed of andesite and dacite pyroclastics and lava flows. A large eruption occurred in January 1914, forming pyroclastic flows and lava flows totalling 1.6 $km^3$.

When we were there, Kagoshima was degassing but not erupting. This was unusual, because the volcano has generally been continuously erupting since 1955, mainly as explosive eruptions from the summit. It appears that at least some of these explosions were caused by overpressure and plugging of the conduit by small lava domes. While we were there, we measured an $SO_2$ flux of about 700 metric tons per day, which is on the low side for the volcano. This could correlate with the relatively calm state of the volcano. It will be interesting to see the nature of the next eruptive period, given the fact that the volcano has been degassing passively since April 1993.

The main reason for going to Japan was to visit Unzen volcano, which has been building a dome complex since May 1991. There are so far 11 dome lobes which have been extruded. Numerous Merapi-type pyroclastic flows have been generated as the domes collapsed; only 1-2 pyroclastic flows have been the result of explosive eruptions from the crater. The pyroclastic flow of 3 June 1991 killed 43 people.

We arrived in the middle of a typhoon, but the weather cleared on the second day. We were accompanied by Setsuya Nakada of Kyushu University, who has been studying the pyroclastic flows, so we were able to examine the deposits in some detail. During most pyroclastic flows, a dense basal avalanche develops whose areal extent is limited by the topography. In contrast, the overlying ash cloud segregates and forms a mobile surge deposit which is more extensive. Beyond the surge deposit is a sear zone where trees and vegetation have been broken, stripped of bark, and burned.

During the rainy season at Unzen (May-September), the loose pyroclastic deposits are eroded to form lahars which have devastated buildings and property in the lower reaches of the Mizunashi valley near the coast. The damage was particularly bad during the wet summer of 1993.

We also conducted gas studies at Unzen and measured 200-300 tons/day $SO_2$ being emitted from the volcano. We made gas ratio measurements at the dome using Kitagawa gas sampling tubes. Our results showed a $SO_2$/HCl ratio of about 0.7.

While pyroclastic flows at Unzen cannot be predicted, the activity is fairly regular. As long as the dome continues to extrude at the current rate (0.04-0.07 $km^3$/yr), pyroclastic flows may be similar to those observed during 1991-1993 (i.e., 1-5 km in length). On the other hand, the dome has been growing larger, and there is always the possibility of a larger collapse event, and therefore, larger pyroclastic flows. If the extrusion rate increases, the pyroclastic flows also may lengthen and pose additional hazards to the people living near the coast. Once extrusion stops, on the other hand, the dome may serve as a plug, allowing pressure to accumulate. If this happens, sudden vulcanian eruptions may occur with little or no warning, such as has occurred at Galeras volcano in Colombia during 1992-1993. This is a possible future hazard at Unzen.

## COSPECING IN GUATEMALA
## or
## EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT SMELLY GASES*

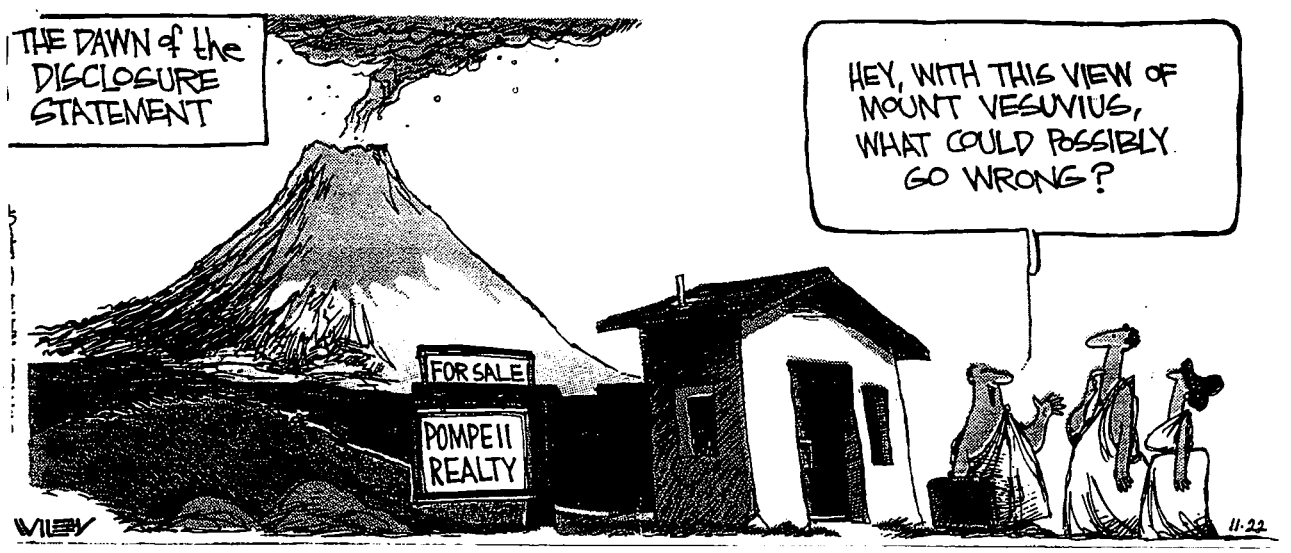
**John Stix and Catherine Hickson**

During the first part of July 1993 we travelled to Guatemala to assist volcanologists of INSIVUMEH (the Guatemalan Geological Survey) in setting up their new COSPEC correlation spectrometer. The Canadian made instrument measures $SO_2$ from volcanoes, (as well as nasty industrial polluters) and was purchased through the good auspices of the Canadian International Development Agency (CIDA). Our purpose was to work with the INSIVUMEH volcanologists in the field doing actual $SO_2$ measurements beneath volcanic gas plumes and to show them how to reduce the data in the laboratory . The instrument was supposed to have been uncrated and tested before we arrived. However, surprisingly enough, this was not the case, so we spent the first day using a crowbar to get to the $ 85,000 instrument. Fortunately, we were successful, and a big blue box finally emerged from the layers of packing (a scientific birth). Then there was the official presentation of the instrument by the Canadian Ambassador to the Government of Guatemala (actually, we wouldn't have minded keeping the COSPEC for ourselves, but rules are rules). Although we were chomping at the bit to get in the field, it was raining cats and dogs (well, not actually), so we behaved ourselves.

For the next few days, we worked with the "muchachos" of INSIVUMEH measuring gas from Pacaya volcano. Pacaya is very active and very accessible; it is an ideal volcano on which to train. The only drawback are bandits on the volcano who kill and rob people (particularly white anglo males with curly blonde hair who are hard to hide in a Latin American crowd). However, we did not encounter any of these people though we did spend a considerable amount of time hiding behind bushes attending to other more pressing matters. We were able to show the Guatemalans the optimum technique for COSPECing, always pointing the telescope vertically while traversing under the plume. We also excelled at demonstrating the improper technique, that of setting up the instrument on a tripod in the middle of the gas plume next to high-voltage communications antennae.

All in all, the week went very well, and we plan to return to Guatemala in 1994 to continue our collaboration with the Guatemalans. Thanks to this gift from the Canadian Government, the volcanologists of INSIVUMEH have an excellent opportunity to make continuous, long-term measurements at three of their active volcanoes (Pacaya, Fuego, and Santiaguito). This data will enhance our understanding of eruptive behaviour and $SO_2$ emissions to the atmosphere from volcanoes -- and despite this fairly glib report, we are both delight to be involved in this worthwhile and extremely important project.

* but were afraid to sniff



## IAVCEI '93 - CANBERRA, AUSTRALIA

**Cathie Hickson**

I had the good fortune to be able to attend the IAVCEI General Assembly in Canberra Australia, September 25th to October 1st -- and the further good fortune of being able to take in one of the Assembly's field trips so had my first view of the volcanoes of New Zealand - but, back to Canberra. The assembly brought together over 500 volcanologists from around the world including 16 Canadians. Papers were presented both aurally and in poster format. Some of the work presented by the Canadian contingent included:

**Geochemistry of magmas from the Ungava orogen, Québec, Canada: Implication for mantle evolution prior to 2.0 Ga**, J.M. Dunphy, J. Ludden and D. Francis, U. of M and McGill

**Stratigraphy and volcanic history of Azufral volcano Colombia, South America** ; Fontaine, E. and J. Stix, U. de Montréal.

**Picritic lavas as analogues of terrestrial primary magmas form the present and past**; D. Francis, McGill

**Regional-scale semi-conformable alteration zones associated with VHMS deposits in the Snow Lake massive sulphide district, Canada**; A. G. Galley and Bailes, A.H.; GSC, Manitoba GSB

**Magmatic processes at upper mantle-crustal boundary zone: Garrett transform;** Hekinian, R., Bideau, D., Niu, Y., and Hébert, R., France, Columbia U., Laval

**Volcano hazards warning procedures and mitigation in Canada**; Hickson, C.J. and Spurgeon, T.; GSC, Transport Canada

**The platinum group elements: pathfinders to and petrogenetic indicators of Ni-Cu-PGE mineralization**; Keays, R.R. Laurentian U.

**Chemical stratigraphy of a Proterozoic volcano, Flin Flon greenstone belt, Canada**; Leybourne, M.I., van Wagoner, N.A., Ayres, L.D.; GSC, Acadia U., U. of Manitoba

**Infrared remote sensing measurements of CO and $CO_2$ gas at Galeras Volcano, Columbia, 9-10 January, 1993**; Marrow, W.H., Stix, J., Charland A., Nicholls, R.W.; Resonance Ltd., U de Montréal, McGill, York University

**Explosive analcite phonolite volcanism, Crowsnest volcanics, Alberta, Canada**; Peterson, T.D., Currie, K.L., GSC

**Volatile production attending magmatic assimilation processes**; Russell, J.K., and Snyder, L.; UBC

**Temporal and geochemical characteristics of the transition between two caldera-forming eruptions: The Cerro Toledo rhyolite, Jemez volcanic field, New Mexico**; Spell, T.L., Kyle, P.R., Stix, J, McDougall, I, and Doulgeris, A.P.; Australia, New Mexico Tech., McGill, Australia

**Melt-upper mantle interactions in North Arm Massif, Bay of Islands ophiolite, Newfoundland, Canada: implication for genesis of Boninitic magmas**; Varfalvy, V., Hébert, R., Bédard, J.H.; Laval, CG de Québec

I'm sure there were a number of expatriates there as well! Three aural sessions were run concurrently so there always seemed to be a conflicting session that was important! Generous breaks were allowed though, so there was plenty of time to visit the poster sessions and get a cup of absolutely disgusting coffee (despite Australia's scientific leadership they don't seem to have figured out how to make coffee)! There really were Kangaroos hopping around most everywhere and the bird life was nothing less than spectacular. Canberra is a beautiful city and the weather cooperated very nicely - cool evenings and warm days.

Several important issues were discussed during the business meeting of IAVCEI. For those who don't know how IAVCEI is structured a few words in that regard. IAVCEI is an association that represents the primary international focus for (1) research in volcanology, (2) efforts to mitigate volcanic disasters, and (3) research into closely related disciplines, such as igneous geochemistry and petrology, geochronology, volcanogenic mineral deposits, and the physics of the generation and ascent of magmas in the upper mantle and crust. As such it is a member Association of the International Union of Geodesy and Geophysics (IUGG). Countries, not people belong to the IUGG. Canada pays a subscribing membership to the IUGG, which is distributed among the member associations of the IUGG. Canada has what is called a Canadian National Committee - IUGG which has 10 members, 2 for each of the member associations. Terms run for 4 years and are staggered. Currently I hold one of the position for IAVCEI and the other position needs to be filled. The senior member becomes the voting delegate at an IAVCEI General Assembly.

In the past there have been a number of problems with this system. Many countries do not have strong national committees, nor do members necessarily know that much about volcanological research in their country. This has meant a lot of frustrations for the IAVCEI executive and they are trying to change the rules. They would like each volcanologist to be a paying and voting member of IAVCEI. This suggestion received a considerable amount of discussion at the meeting - the bottom line is that most members are concerned that they will have to pay out to yet another society, but yet another journal and will see very little return for their money. The fees that would be charged were not discussed in detail, but figures ranging from US $20 to $100 were batted about. It was clear that people did not want the Bulletin of Volcanology made a mandatory part of any fee structure. I will have the vote for Canada at the IUGG General Assembly in Boulder Colorado, August 1995. I need to know how you feel about joining another organization. As more details are made available from the IAVCEI executive I will pass them along. In the meantime put **Boulder '95** on your calendar.

## UPCOMING DIVISION FIELD TRIPS - GAC VICTORIA '95

**SOUTH-CENTRAL NEOGENE TO HOLOCENE VOLCANISM IN THE CANADIAN CORDILLERA**
Leaders: **Dr. Catherine Hickson, Dr. Paul Metcalfe,**
Geological Survey of Canada, Cordilleran Division
**(604) 666-3955** or **666-1129, FAX 666-1124**
Premeeting Trip: 5 days, May 12 - 16. Approximate cost $400.00

This field trip will focus on the immense variety of volcanic rocks and processes found within the southern Canadian Cordillera. The trip will be run as a circle tour, starting in Vancouver. Heading east past Mount Baker through the active Cascade Magmatic Belt the first stops will be to look at 22 Ma Coquihalla complex. The trip will head north to the Wells Gray Volcanic Field then swing west and south back through the Garibaldi Volcanic Belt, the northern part of the Cascade Arc. Localities visited will demonstrate sub- and intraglacial volcanism, volcano-glacial and volcano-fluvial interactions including secondary debris flows, slope hazards, various types of subaerial pyroclastic deposits and resultant volcanic hazards, all set against the spectacular backdrop of British Columbia's Interior Plateau and Coast Ranges. The trip will be on interest to researchers in volcanic processes, volcanic hazards, Cordilleran magmatism, and to those looking for a fun filled five days of volcanoes!

**MOUNT SAINT HELENS: A 15 YEAR RETROSPECTIVE**
Leader: **Dr. Catherine Hickson**
Geological Survey of Canada, Cordilleran Division
**(604) 666-3955 FAX 666-1124**
Postmeeting Trip: 3 days, May 19 - 21. Approximate cost: $250.00

1995 will mark the 15th Anniversary of the May 18th eruption of Mount St. Helens. Catherine Hickson, a witness of this event, will guide participants around the mountain recreating events of 15 years ago as well as investigating the geomorphic changes that have occurred over the intervening 15 years. New access, due to open for the 15th anniversary will allow field trip participants to drive to Coldwater Ridge and give direct access to the Pumice Plains and debris avalanche deposits. Access to the dome may also be possible. The trip will also include a visit to magnificent interpretative centre opened May 1993. This trip will be of interest to physical volcanologists, geomorphologists and hydrogeologists as well as anyone interested in volcanoes.

## DIVISION EXECUTIVE

Waterloo '94 will see some changes in your executive as the terms of a number of people end. We are seeking nominations for the following positions:

Vice- Chairman May 1994 - May 1996,
Secretary-Treasurer May 1994 - May 1996,
Councillor on Research: May 1994 - May 1997,
Councillor, East: May 1994 - May 1997.

Please send in your nominations for these positions. We will be sending out the ballots before the Waterloo meeting. Normally the Vice- Chairman succeeds the Chairman. Your present executive is as follows:

Chairman: May 1992- May 1994
Dr. C.J. (Cathie) Hickson
Geological Survey of Canada
100 West Pender Street
Vancouver, British Columbia
V6B 1R8
phone: (604) 666-3955
FAX: (604) 666-1124
email: chickson@gsc.emr.ca

Past Chairman: May 1992 - May 1994
Prof. L. (Les) Coleman
Dept. of Geology
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0
phone: (306) 966-5690
FAX: (306) 966-8593

Vice-Chairman: May 1992 - May 1994
Prof. T.H. (Tom) Pearce
Department of Geol. Sc.
Queen's University
Kingston, Ontario
K7F 3N6
phone: (613) 545-6174/545-2597
FAX: (613) 545-6592

Secretary-Treasurer: May 1992 - May 1994
Dr. P. (Paul) Metcalfe
Geological Survey of Canada
100 West Pender Street
Vancouver, British Columbia
V6B 1R8
phone: (604) 666-1129
FAX: (604) 666-1124

Councillor on Research: May 1991 - May 1994
Prof. J.K. (Kelly) Russell
Department of Geol. Sc., U.B.C.
6449 Stores Road
Vancouver, British Columbia
V6T 2Z4
phone: (604) 822-2703
FAX: (604) 822-6088
email bcrx@unixg.ubc.ca

Councillor, East:
May 1991 - May 1994
Prof. G. (Georgia) Pe-Piper
Department of Geology
St. Mary's University
Halifax, Nova Scotia
B3H 3C3
phone: (902) 420-5746
FAX: (902) 420-5261

Councillor, Central:
May 1992 - May 1995
Prof. A.D. (Tony) Fowler
Chairman, Dept of Geol Sc.
University of Ottawa
770 King Edward Street
Ottawa, Ontario
K1N 6N5
phone: (613) 564-3481/564-5750
FAX: (613) 564-9916

Councillor, West:
May 1992 - May 1995
Dr. S.J. (Stephen) Juras
Myra Falls Operations
Westmin Resources Ltd.
P.O. Box 8000
Campbell River, BC
phone: (604) 287-9271
FAX: (604) 287-7123

Councillor, Student:
May 1992 - May 1995
Ms. S. (Shirley) Péloquin
Department of Geology
University of Montreal
Montréal, Quebec
H3C 3J7
phone: (514) 343-6820
FAX: (514) 343-5782

# CALL FOR NOMINATIONS

# AWARDS OF THE DIVISION OF VOLCANOLOGY AND IGNEOUS PETROLOGY

## Career Achievement Award

A medal for Career Achievement is awarded by the Division Volcanology and Igneous Petrology of the Geological Association of Canada in recognition of career achievements in the field of volcanology and/or igneous petrology. Candidates are judged on their lifetime scientific contribution. The award is made only when a suitable candidate is found who is judged to have made major contributions to basic knowledge or clear and significant breakthroughs in volcanology or igneous petrology.

***Nomination Procedure*:** Nominations for this award are due in January, and should be sent to the Secretary-treasurer, Division of Volcanology and Igneous Petrology. The nomination should include the nominee's curriculum vitae and a clear statement from the nominator describing the candidates significant contribution to the field. Each candidate will be considered three consecutive years.

## Leopold Gelinas Award

The Volcanology and Igneous Petrology Division of the Geological Association of Canada annually present two medal for the most outstanding theses, written by Canadian or submitted to Canadian universities, which have contents that are at least 50% volcanological or igneous petrology related. A gold (plated) medal is awarded for the best Ph.D. thesis and a silver medal is awarded for the best M.Sc. thesis. Nominated theses are evaluated on the basis of originality, validity of concepts, organization and presentation of data, understanding of volcanology, and/or igneous petrology, and depth of research. Awards will not be made if the panel of judges considers that there are no worthy nominations.

***Nomination Procedure:*** Nominations for this award are due in January, and should be sent to the Secretary-treasurer, Division of Volcanology and Igneous Petrology. The nomination must include a copy of the thesis (to be returned), a letter of nomination which must include a clear statement from the nominator describing the contribution the thesis makes to the field of volcanology and/or igneous petrology.

Secretary-Treasurer: Dr. P. (Paul) Metcalfe
Geological Survey of Canada, 100 West Pender Street, Vancouver, British Columbia, V6B 1R8
Phone: (604) 666-1129
FAX: (604) 666-1124

*(please post)*