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ASH FALL

Newsletter of the Volcanology Division
Geological Association of Canada

Ashfall #20 - December 1988

All officers of our division are new this year, including new editorship for "Ashfall". This situation requires some reorganization and testing. The new staff is:

| | | |
|--|------------------|-------------|
| - Chairman: | Roger Laurent | (1988-1991) |
| - Vice-chairman: | Les Coleman | (1988-1991) |
| - Secretary, treasurer, and Ashfall editor: | E.W. (Ted) Grove | (1988-1991) |
| - Special councillor on research: | Tark Hamilton | (1988-1991) |

REPORT ON PLANNED ACTIVITIES FOR 88-89

1. Publication of Ashfall. Ted Grove is the new editor and will continue the trend defined during the last years by Mike and Monica Easton.
2. Selection of the 1989 Leopold Gelinias Thesis Award.
3. Annual compilation of volcanological work in Canada for the Canadian Geophysical Bulletin. Tark Hamilton is responsible for this job.
4. Volcanological field trip in Italy, organized by Les Coleman, as field trip #19 of the 1989 Montreal GAC Meeting. This pre meeting trip is scheduled between April 29 and May 14, may be cancelled if the number of subscribers is under 20...
5. Preparation for several events of the GAC 1990 Meeting in Vancouver, including a Symposium on Mount St. Helen (10th Anniversary), 2 special sessions (Pyroclastics, ODP Drilling in the Pacific) and 2 field trips (Mt. St. Helen and Hawaii).

After a dormant and transitional stage in 1988-89, we plan to display some explosive activities in 1989-90!

ANNOUNCEMENT: LEOPOLD GELINAS AWARD 1987:

The winner of the Leopold Gelinias award for 1987 was Dr. Charles F. Roots of Carlton University whose Ph.D. thesis entitled Regional Tectonic Setting and Evolution of the Late Proterozoic Mount Harper Volcanic Complex, Ogilvie Mountains, Yukon utilizes

a wide range of approaches, including mapping, regional tectonics, physical volcanology, petrology, geochemistry and geochronology. The thesis is a significant and comprehensive study on Proterozoic volcanology and Cordilleran geology.

A close second, was the Ph.D. thesis of Dr. Michel Boily of the Universite de Montreal. His thesis on the geochemical and isotopic evolution of Andean Magmatism in Southern Peru is a first rate contribution to the understanding of subduction-related volcanism. The third thesis which made it to the final round was the Ph.D. thesis of Dr. D.A. Baldwin of the University of Manitoba on the physical volcanology of the northwest segment of the Karsakuwigamak block. Submitted by Roger Laurent

SOUTHERN ITALY - SICILY FIELD TRIP - 1989

After failing to get off the ground in 1988 due to insufficient response that, almost certainly, resulted from a mixup in advertising, the Volcanology Division fieldtrip to southern Italy and Sicily will take place from April 28 to May 14 as one of the pre-meeting trips of the 1989 GAC/MAC Annual Meeting in Montreal. The trip will examine volcanoes, volcanic features, and volcanic deposits in the vicinity of Naples, in Sicily, and in the Aeolian Islands.

In all, 28 persons have subscribed. Those flying from Montreal on April 28 will join the rest of the group, who have gone ahead, in the Rome airport on April 29. From there, they will proceed by coach to Naples. After a visit to solfatara and the Phlegrean Fields the following day, they will go to Sorrento which will be the base for the next 3 nights. Two days will be spent visiting Mount Vesuvius, Herculaneum and Pompeii and then, on May 3, the group will travel by train from Naples to Villa San Giovanni, then take the ferry across the Straits of Messina and go by coach to Taormina where they will stay for 4 nights. The next three and a half days will be spent visiting Aci Castello, Palagonia and Mount Etna. In the afternoon of May 9, the group will take the hydrofoil to Lipari where they will stay for 3 nights. After a day touring Lipari and another on Vulcano, they will take a morning steamer to Stromboli for a stay of 2 nights. May 11 and 12 will be spent viewing volcanic activity and deposits on Stromboli and then the group will sail by overnight steamer to Naples, arriving there in time to take the train to Rome where they will spend the last scheduled night. The next day will represent the official end of the fieldtrip with the participants dispersing either to return to Montreal in time for the start of the GAC/MAC meeting or else to stay on in Europe for a holiday or for more geological touring.

As has been the case with other fieldtrips that the Volcanology Division has sponsored (the Canary Islands; St. Vincent and

Martinique; Hawaii, Maui and Oahu; and the Trans-Mexican Volcanic Belt), the trip will be led by geologists who recently have been carrying out research in the areas visited. To date, who they will be is not completely determined but they are expected to include Dr. R. Romano of the International Vulcanological Institute (Catania) who will lead the Etna excursions.

Submitted by Les Coleman

SOLICITATION OF NOMINATIONS FOR THE 1989 GELINAS AWARD:

Nominations are currently being accepted for the 1989 Gelinas Award. Each year to commemorate Leopold Gelinas, the Volcanology Division of the GAC presents this award to the Master's or PhD thesis which makes the best contribution to the science of volcanology. To qualify the thesis must be at least 50% on a topic of volcanological interest, and defended at a Canadian university or abroad by a Canadian student by December 31, 1988. Nominations may be submitted directly to Dr. Roger Laurent or through any member of the Volcanology Division executive.

Pre-Publication Notice: Volcanoes of North America, C. Wood (ed.)

Chuck Wood is currently preparing a volume on the Volcanoes of North America to be published by Cambridge University Press and released in time for the 1989 IAVCEI Meeting in Phoenix. In attempting to cover as many examples of post 5 Ma volcanism as possible, and to reach a wide readership, the format stresses location, access, physiography, photos, maps and a brief geological description. Canadian contributions have been overseen and reviewed by Jack Souther. This book should provide a useful guide to practicing volcanologists and interested laymen alike. It should also attract attention to many of the lesser known vents and flows, particularly in the Canadian cordillera and stimulate a broader base of future volcanological research.

VGP CONTRIBUTIONS TO THE 35th ANNUAL PACIFIC NORTHWEST AGU REGIONAL MEETING

The 35th Annual PNAGU Meeting was held at Royal Roads Military College on September 28-30. Eleven of sixty six papers and poster sessions dealt with VGP topics. The special session on the "Tertiary Magmatism of the Pacific Northwest" addressed the genesis, significance and internal problems of a variety of Eocene to Pleistocene units between 45° to 55° N.Lat. Phillips and Walsh discussed the complex facies relationships and partial diachroneity across the Columbia River between the correlative Tillamook Volcanics of Oregon and the Gray's River Formation of Washington. Their analysis of this stratigraphic problem provides

an instructive example for understanding regional variation in active margin volcanic assemblages. Tholeiitic and calc alkaline plutons, discussed by Anderson et al., and volcanics, discussed by Hamilton, characterize the northern portion of the Canadian continental margin. These chondritic to slightly enriched magmas provide constraints on extensional tectonics and the development of Queen Charlotte Basin. Paleomagnetic data for the Masset volcanics (Wynne and Hamilton) are used to construct a composite magnetostratigraphy for internal correlations within the basin and to test prevailing tectonic hypotheses for its Neogene structural deformation. Cousens spoke on plume-rift interaction in the NE-Pacific. Presenting radiogenic isotope data for alkalic lavas from Bowie and Tuzo Wilson Seamounts, he argued that Tuzo Wilson on the Explorer-Dellwood segment is the present locus of the Pratt-Welker hotspot. In contrast, by fitting great circle paths through the Euler poles for some of the alkalic lavas of central British Columbia (King Island to Nazco Cone), Hickson argued that the lavas of the Anahim-Chilcotin region represent the same hotspot trace. Keep and Russell's presentation on the Averill plutonic suite made contributions to the regional geology of the Grand Forks area and to understanding Tertiary alkaline magmatism of the back arc region.

Of more general petrological interest, Whittington gave a model for incremental polybaric fractionation which is relevant to magma evolution in ascending dykes. Driven by density differences between the magma and surrounding crust, magma bodies go through a repeated cycle of: ascent, stagnation, cooling and differentiation, renewed buoyancy, fracture tip dilation and further ascent. Russell and Stanley continued their development of the Pearce Element Ratio technique for testing petrological hypotheses with a demonstration of their new program for deriving the appropriate axis coefficients and an analysis of the differentiation of the 1954-1960 Kilauea lavas. With this technique they conclude that combined OL + CP + PL fractionation or sorting from a single batch of magma can account for the observed petrochemical variation. With Russell's accession to the position of VGP representative for the PNAGU, a special session on the application of the Pearce Element Ratio Techniques is planned for the upcoming 1989 meeting in Portland, Oregon.

Submitted by Tark Hamilton

**VANCOUVER G.A.C. - M.A.C. ANNUAL GENERAL MEETING --
COUNTING DOWN TO 1990!**

In springtime a geologist's fancy turns (partly) to slide and poster presentations, short courses and fieldtrips at the Geological Association of Canada (GAC) - Mineralogical Association of Canada (MAC) annual general meeting. Why not visit an exotic terrane (or two) in 1990? Make plans to join us May 16-18, 1990 at the Hotel Vancouver for what looks to be one of the best annual meetings ever.

The Local Organizing Committee, under the able leadership of co-chairmen Bob Thompson (for GAC) and Ken Dawson (for MAC), is bursting with energy, enthusiasm and new ideas.

We invite your participation. Consider helping to organize the meeting either as a volunteer on the Local Organizing Committee, as a session convenor in the technical program or as a participant in the meeting.

The program will reflect the local Canadian Cordilleran themes as well as the national Canadian geoscience scene. Bob Anderson (GAC; 604-666-2693) and Catherine McCammon (MAC: 604-228-3514) are assembling a comprehensive program of short courses, symposia, special sessions and general sessions. There are a few suggestions for Cordilleran volcanological topics for the program but there is still time for more suggestions. Got a topic you want to see discussed at the Vancouver '90 meeting? Contact Bob or Catherine directly or through the Secretariat address below.

Jerry Blackwell has some terrific ideas for new pre- and post-meeting domestic fieldtrips to supplement the "tried-and-true" Cordilleran standards. Ken Dawson is working on the details for some truly exotic fieldtrip locales which are especially accessible from the West Coast. Harlan Meade has contributed some outstanding suggestions for the program, field trips and fundraising.

At least as important as the technical sessions to any annual meeting is the social program. We've got some surprises in store; one hint: don't forget your life preserver!

If you want to find out about any of the early developments for the Vancouver '90 meeting, or, better yet, to volunteer, contact us at: Submitted by R.G. Anderson

GAC-MAC '90 SECRETARIAT,
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CHANGE OF ADDRESS

Please contact the secretary to ensure you receive Ashfall #19 and future issues.

IAVCEI MEETING, SANTA FE 1989

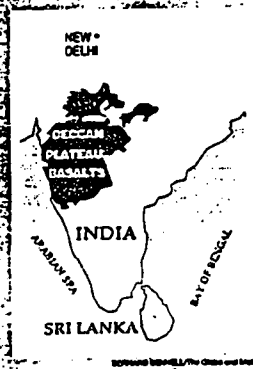
For details see EOS, Vol. 69, Feb. 9, 1988, p. 80-85.

ITEMS

RESURGENCE

End of the dinosaurs linked to giant eruption

Is volcanic area of India a 65-million-year-old scab on 'cosmic bullet' wound?



The barren-looking Deccan Traps, also known as the Deccan Plateau Basalts, are mountains and hills formed out of molten lava from a gigantic ancient eruption. The area covers a quarter of a million square kilometres in western India.

From the Globe and Mail November 26, 1988: "Two recent papers in the journal 'Nature' present new dating results on the Deccan Traps, which show that this enormous geological feature was formed at about the same time the extinctions of the Dinosaurs occurred". - catastrophic volcanism indicated.

NUCLEAR WINTER

Meteorologist adds weight to 'Nuclear Winter' theory (Times-Colonist, November 27, 1988). Meteorologist Alan Robock of the University of Maryland after studying last years devastating California forest fires has partially confirmed the theory that smoke from a nuclear holocaust (or major volcanic eruption - ed.) could sharply reduce temperatures on the surface of the earth. He found the high temperature for one day in the small town of Happy Camp, Ca., dipped to 12°C (20°C below normal) because of thick smoke hovering over the Klamath River canyon. Daily maximum temperatures throughout the area of Happy Camp and Orleans, about 270 miles north of San Francisco, were an average

of 27° below normal Sept. 4-12. The effect of the inversion and accumulating smoke was much larger and longer than recorded in the past.

KRAKATAU, 1883

Volcanologists will remember that following the 1883 eruption of Krakatau North America experienced what was called the year without summer (ed.)

BOOKS

Mount Etna - The Anatomy of a Volcano by Chester, Duncan, Guest, and Kilburn, Stanford University Press, 1985. - for the trippers to Sicily 1989.

CONTRIBUTIONS TO ASHFALL should be sent to:

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MERRY
CHRISTMAS
AND
A HAPPY
NEW YEAR