

ASH FALL

*Newsletter of the Volcanology Division
Geological Association of Canada*

Ashfall #16 - Feb 1987

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Contributions to Ash Fall should be sent to (the):
Secretary, Volcanology Division
Geological Association of Canada
M. Easton
c/o Ontario Geological Survey
77 Grenville Street
Toronto, Ontario M7A 1W4

*Flyers supplied by the publishers, not reproduced by the Division

CHAIRMAN'S REPORT

Now that the Annual Meeting is behind us, I would like to take this opportunity to summarize some highlights of the past year, and give some details of future plans.

The Leopold Gelinas Award for Best Thesis in Volcanology was presented to John Stix from the University of Toronto for his M.Sc. thesis on the "Volcanic Facies and Geochemistry of Archean Lava Flows and Pyroclastic Rocks near Kenora, Ontario." Mr. Stix was unfortunately unable to attend the business meeting where the award was presented, but the award was accepted on his behalf by Mike Easton. There were a number of excellent submissions for the award and the decision was a difficult one. Notable among the nominations considered were theses by:

Linda Erdman of the University of British Columbia on the Chemistry of Neogene Basalts of British Columbia on the "Chemistry of Neogene Basalts of British Columbia and the Adjacent Pacific Ocean Floor".

Mathieu Piche of the Universite du Montreal a Chicoutimi on "La Formation de Haux l'Ouest de Chapais Volcanisme Sub-aerien en Milieu Fluviatile".

Greg Davidson from Brock University on "Physical Volcanology, Sedimentology, Stratigraphy and Petrochemistry of the Berry Creek Metavolcanics".

John Greenough from Memorial University on "Cambrian Volcanism in Atlantic Canada".

Many thanks are due to the councillors who solicited the theses and the faculty members who submitted them.

The final version of the field guide for the Volcanology Trip to Mexico was published in time for sale at Ottawa'86. The guide is a comprehensive description of the field trip held in January 1986, and also gives a good overview of the Trans-Mexican Volcanic Belt.

Regarding future trips, it was decided that the Volcanology Division should sponsor an international field trip every second year with North American field trips in-between. The Division itself will not sponsor a field trip in 1987 because there are already several volcanology-related trips planned, some organized by members of the Volcanology Division. These include field trips during the GAC Yellowknife'87 meeting, trips associated with the IUGG meeting in Vancouver in August 1987, and a volcanology trip to Flin Flon during Saskatoon'87. In 1988 the Division is planning to sponsor a field trip to southern Italy which will look at Mount Vesuvius, Mount Etna, the Aeolian Islands, and some other volcanic areas. The organizer of this trip is Les Coleman, who will give more details in a future issue of Ash Fall. The following year, a trip is being planned to the Noranda area of Quebec, and in 1990, the Division is considering a trip to Japan in association with the GAC meeting in Vancouver.

For the GAC/MAC Annual Meeting in Saskatoon, the Volcanology Division will be sponsoring a special session on "Trace Elements and Volcanic Processes". Organizers are Denis Shaw and myself.

Ashfall will once again be published regularly now that it is in the capable hands of Monica Easton. There will be three issues a year to keep you informed of current activities and upcoming events.

J. Dostal

1985 GELINAS AWARD

John Stix of the University of Toronto received the first annual Volcanology Division best thesis award for his M.Sc. Thesis titled "Volcanic Facies and Geochemistry of Archean Lava Flows and Pyroclastic Rocks near Kenora, Ontario", which was submitted to the University of Toronto in January 1985. John receives \$100 and a certificate for his achievement. John had a few comments for the membership with respect to his award; these are reprinted below:

"I am very grateful (and very surprised!) that the Volcanology Division saw fit to select my thesis. It is always nice to receive outside recognition beyond the department. I did enjoy the research and writing of the thesis, sometimes to my amazement.

I enjoy looking at Archean volcanic rocks because they contain a wealth of information regarding physical and chemical processes. I am particularly interested in the information they provide regarding subaqueous volcanic phenomena. I believe certain Archean pyroclastic rocks are amenable to study on an extremely detailed scale. In such cases, bed-by-bed stratigraphy can yield important results.

For my Ph.D. I hope to combine experimental and field studies of subaqueous pyroclastic rocks. One thing I've learned is that granular flows, whether volcanic or not, are dynamic systems in terms of turbulence, sedimentation, and transformation. How changes in a flow occur is what interests me."

1986 GELINAS AWARD

Now that a new academic year has begun, it is time to start soliciting nominations for the 1986 Leopold Gelinus Award for the best thesis in Volcanology. To refresh your memory, the rules are as follows:

1. The nomination can be either a M.Sc. or Ph.D. thesis and must be defended (i.e. accepted by the thesis committee and university after defence, but in some circumstances, before university convocation) before the beginning of 1987.
2. The thesis must be written by a Canadian, or if a non-Canadian, be done at a Canadian university.
3. At least 50% of the thesis must be on volcanology or a volcanology-related topic.

Nominations will be evaluated on the criteria of originality, validity of concepts, organization and presentation of data, understanding of volcanology, and depth of research.

The universities to be contacted for nominations have been divided among the councillors and executive members as outlined below:

Glen Johns: Brock, Lakehead, Univ. of Toronto, Queens, Univ. of Manitoba.
Mike Higgins: Carleton, Univ. of Ottawa, McMaster, Univ. de Québec a Chicoutimi, Univ. de Québec à Rimouski.
Roy Watanabe: Laurentian, Western, Waterloo, Windsor, Guelph.
Roger Laurent: École Polytechnique, McGill, Univ. de Québec a Montreal, Univ. of Montreal, Laval.
Walter Gibbins: Univ. of British Columbia, Edmonton, Calgary, Alberta, Regina, Saskatoon.
Nancy Van Wagoner: Univ. of New Brunswick, Memorial Univ., Dalhousie, Acadia.

Good luck with the search! And, remember, it is not too early to be thinking about the 1987 Gelinis Award.

VOLCANOLOGY DIVISION - HISTORICAL BACKGROUND

As one of my last tasks as Councillor-Central for Volcanology Division, I undertook to write a brief note on the Division for inclusion in Volcano News. While preparing this note, I came across a few interesting facts in the records of the Division (scarce as they are). These facts are outlined below, and provide a bit of historic background on the Division, and are relevant to future planning by the executive of Volcanology Division.

Michael Easton

Inaugural Meeting GAC Annual Meeting in St. John's, May 1974.
First Meeting GAC Annual Meeting in Waterloo, May 1975.
Twelfth Meeting GAC Annual Meeting in Ottawa, May 1986.

Newsletters

Newsletter #1	May 1978
Newsletter #2	Nov 1978
Newsletter #3	Feb 1979
Ashfall 1	May 1978
Ashfall 2	Nov 1978
Ashfall 3	Feb 1979
Ashfall 4	May 1979
Ashfall 5	Oct 1979
Ashfall 6	Mar 1980
Ashfall 7	Fall 1980
Ashfall 8	Spring 1981
Ashfall 9	Spring 1982
Ashfall 10	Dec 1982
Ashfall 11	Spring 1983
Ashfall 12	Fall 1983
Ashfall 13	Spring 1984
Ashfall 14	Sept 1985
Ashfall 15	Apr 1986
Ashfall 16	Feb 1987
Ashfall 17	Apr 1987(planned)

Finances

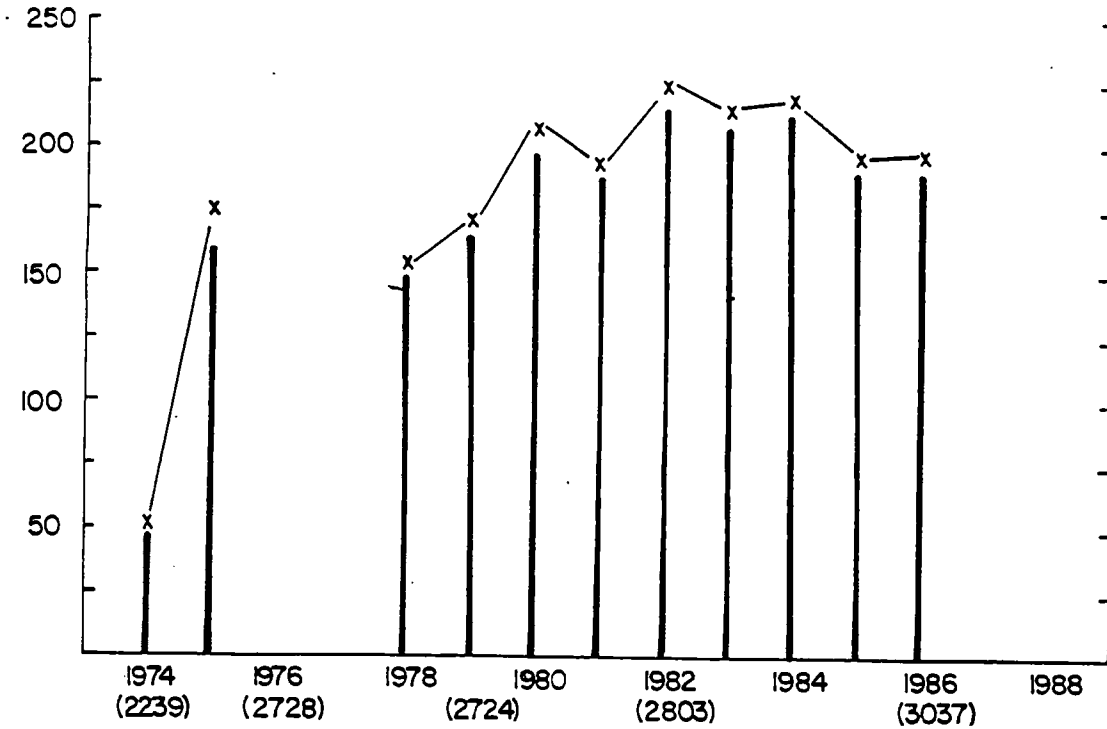
April 1977	\$1010.67
May 1978	\$1413.17
May 1979	\$ 543.71
May 1980	\$1326.07
May 1981	\$ 304.21
May 1982	\$ 767.32
April 1983	\$ 964.21
May 1984	\$ 987.82
May 1985	\$1879.00
March 1986	\$1744.89
Jan 1987	\$1691.30

Field Trips Held

Canary Islands - 1979
Yellowstone - 1979
Lesser Antilles - 1981
Mt. St. Helens - 1983¹
Hawaii - 1983^{1,2}
Mexico - 1986²

¹with GAC Annual Meeting
²guidebook available

Membership



Numbers in brackets are GAC membership for the same year. Dues have always been \$2.00 since 1974 (13 years).

Comments

Membership has been extremely constant at about 6.5% of GAC total membership over the life of the Division. This indicates we have not been totally successful in attracting new members.

Dues have been constant over the last 13 years, although in net purchasing power they have steadily decreased. The current surplus is due to the fact that few Ashfalls were produced in 1983-1985. Revenue has been constant, and is derived mainly from membership dues and some bank interest. Expenses to date have mainly been from the Newsletter. Given the geographic distribution of the membership, the Newsletter must still play an important role in Division activities. Field trips have occurred on a regular basis, and obviously this should continue.

FINANCIAL STATEMENT FOR 1986

Balance Forward From 1985	\$1744.89
<u>INCOME</u>	
Membership Dues	\$ 510.00
Bank Interest Jan-Dec 1986	\$ 83.73 ¹
Sale of Guidebooks	\$ 16.00 ¹
	<u>\$ 609.73</u>

EXPENDITURES

Production of Ash Fall	\$ 263.30 ²
Registration of Mexico Trip Leaders at Ottawa'86	\$ 190.00
Gelinas Thesis Award	\$ 100.00 ³
Envelopes (for future Ash Falls)	\$ 110.02
	<u>\$ 663.32</u>
Present Balance	\$1691.30

¹Further sales have yet to be reported

²Cost of Ashfall includes GAC mailing labels, postage, envelopes, typing and printing

³1986 Gelinas Award went to John Stix, Univ. of Toronto

Glen W. Johns, Treasurer, Volcanology Division, 5/1/87

DIVISION NEWS

This edition of Ash Fall was prepared by Monica Easton, Glen Johns, and Mike Easton. The last issue of Ash Fall was in April 1986; the lack of much division news has prevented us from producing a second issue of Ash Fall in 1986. Part of the rationale for sending out this large edition of Ash Fall is to beat the Canada Post rate increases scheduled for 1 April 1987, and to encourage the membership to submit items for future editions of Ash Fall. We would like the produce Ash Fall three times a year, hopefully in September, January and late April.

A few reminders of upcoming Volcanology Division events. A special Session on "Trace Elements and Volcanic Processes" is being organized by the Division at Saskatoon'87 (see details on next page). Please attend this session as well as the general session on Volcanology at Saskatoon'87.

At the Ottawa'86 meeting, Division dues were raised from \$2.00 a year to \$4.00 a year, effective 1 January 1987. Due to a number of reasons beyond our control, this increase was not shown on the 1987 dues notices sent to GAC members in late December. Consequently, dues will remain at \$2.00 for 1987, and increase to \$4.00 in 1988. Fortunately, the Division has a reasonable bank balance at present because Ash Fall did not come out in late 1986.

Sales of the Trans-Mexican Guidebook have been slow, mainly due to the lack of advertising of the volume. In part this has been due to the vacant Executive Director position at GAC Headquarters. A draft flyer is attached to this issue of Ash Fall, and a more professional appearing flyer is being prepared by GAC for the Division. The guidebook is being sold for the Division by GAC through its distributor, Business and Economic Services Ltd. of Toronto. This saves the division many hassles and hidden costs, and costs us very little.

With respect to the 1988 field trip to Italy being led by Les Coleman, of the Department of Geological Sciences, University of Saskatchewan, Saskatoon, we have no further details than what was reported at Ottawa'86. The trip is 14 days in length. Estimated costs are \$2800 a person for 15-19 people to \$2300 a person for 40-44 people. The trip will be held prior to the May 1988 GAC Annual Meeting. Trip stops include Pompeii, Herculanium, Etna, Vulcano, Stromboli, and Naples. Contact Les for further information.

A conference report on the symposium on "How Volcanoes Work" recently held in Hilo, Hawaii is being prepared for Geoscience Canada and should appear in the June issue of that journal.

In this issue, we have reproduced or included a number of notices for recent volcanology publications. Let us know if you think this is a good idea and if we should continue it. Also, it is not too late to think ahead for Special Sessions and Field Trips at the GAC Annual Meetings in St. John's in 1988, and Montreal in 1989. Send your ideas to Jaroslav Dostal or Ash Fall.

Monica Easton, Glen Johns, Michael Easton
February 1987

VOLCANOLOGY DIVISION SPONSORS SPECIAL SESSION AT SASKATOON'87

11. Trace Elements and Volcanic Processes

ORGANIZERS: J. Dostal and D.M. Shaw; SPONSOR:
GAC (Volcanology Division)

The session will deal with the application of trace element geochemistry in solving problems related to volcanic processes. Topics include the evolution and petrogenesis of volcanic rocks, fractional crystallization, magma mixing, the composition of the source rocks, mantle metasomatism, and crustal contamination.

ORGANISATEURS: J. Dostal et D.M. Shaw; PARRAINÉ par
l'AGC (Volcanology Division)

Cette séance concernera l'application de la géochimie des éléments en traces aux problèmes reliés aux processus volcaniques. Les sujets à l'ordre du jour comprennent: l'évolution et la formation des roches volcaniques, la cristallisation fractionnée, le mélange de magmas, la détermination de la composition des roches-mère, le métasomatisme du manteau, et la contamination par la croûte terrestre.

OTHER NEWS

A special meeting on the subject of paleovolcanism was organized by the French Geological Society and the French Mineralogical and Crystallographical Society in Paris, February 9-10, 1987. The meeting covered topics dealing with the effects of metamorphism on volcanic geochemistry; paleovolcanism in relation to constraining plate tectonic models for orogenic belts; and identification of paleovolcanic suites. Papers presented at the meeting will be published in a Special Bulletin of the Societe Geologique de France. Contact Dr. Bruno Cabanis, Universite Pierre et Marie Currie, Laboratoire de Geochimie Comparee et Systematique, Tour 16-26, E#, 4 Place Jussieu, 75230 Paris, Cedex 05.

NEW PUBLICATIONS ON VOLCANOLOGY

US GEOLOGICAL SURVEY, PROFESSIONAL PAPER 1350, a two-volume set on the Geology of the Hawaiian Islands was published in January 1987 as part of the 1987 celebrations of the 75th Anniversary of the Hawaiian Volcano Observatory. The table contents of this massive tome are given on pages 9-11 of this issue of Ash Fall. This will be the reference on Hawaiian Volcanism for years to come.

MOUNT ETNA: THE ANATOMY OF A VOLCANO by D.K. Chester, A.M. Duncan, J.E. Guest, and C.R.J. Kilburn, Stanford University Press, 404p., 1985, \$55 US, cloth. Reviewed in Episodes, vol 9., #3, p. 190-191, 1986. An excellent source book on the geology of the Mount Etna region. Useful to most volcanologists, particularly those interested in basaltic volcanism, volcanic hazards, or the 1988 Division field trip.

VOLCANIC ASH by Grant Heiken and Kenneth Wohletz, University of California Press, 258p., 1985, \$40 US, cloth. Reviewed in Bulletin of Volcanology, 1986, v. 48, p.240; Journal of Geology, 1986, v. 94, p. 445; and Geology, 1986, v. 14, p. 366-367. Atlas of textures of various volcanic ashes, superbly illustrated with many SEM and photomicrographs, containing both new material and material from the literature. Complements "Pyroclastic Rocks" by Fisher and Schmincke as a laboratory volume.

MT. TARAWERA by Geoff Conley, Grantham House, New Zealand, 160p., 1985, \$30 NZ, cloth. Historical account of the 1886 eruption of Mt. Tarawera, well-illustrated.

VOLCANOLOGY AND MINERAL EXPLORATION edited by John Wood and Henry Wallace, Ontario Geological Survey Miscellaneous Paper 129, 1986, 183p., \$5 CDN, paper. See flyer attached to this issue of Ash Fall. A collection of 9 papers on the use of volcanology in mineral exploration, with case studies from Ontario. Over 1,500 copies sold since its release in July 1986.

TRANS-MEXICAN FIELD TRIP GUIDE edited by W.A. Gibbins, by S. A. Nelson and G. Sanchez-Rubio, Volcanology Division, Geological Association of Canada, 1986, 108p., \$12 CDN + \$3 CDN postage and handling, paper. See flyer attached to this issue of Ash Fall. Prepared for the Volcanology Division Mexico field trip held in January 1986.

HIGHWAY GEOLOGY OF THE HAWAIIAN ISLANDS by R.M. Easton and M.G. Easton, Easton Enterprises, Brampton, 1986, 160p., \$20 CDN + \$2 CDN postage and handling, paper. See flyer attached to this issue of Ash Fall. Revised and updated field trip guides to Hawaii, Maui, Oahu, Kauai, and Molokai, expanded from 1983 GAC - Victoria Trip to Hawaii.

BULLETIN OF VOLCANOLOGY, VOLUME 48(1986) and VOLUME 49(1987), Springer-Verlag, New York, \$34 US for 6 issues if you are an IAVECI Member. For discount rate, you must order through Hans-Ulrich Schmincke, Secretary of IAVECI, Institut für Mineralogie, Ruhr-Universität Bochum, Postfach 102148, D-4630, Bochum, FRG. This is a continuation of Bulletin Volcanologique. In less than a year it has revitalized that tired old journal, and it is likely that Bulletin of Volcanology will become the major volcanology journal, surpassing even Journal of Volcanology and Geothermal Research. And, at \$34 US it is even affordable.

VOLCANO LETTER, edited by R.S. Fiske, T. Simkin, and E. Nielsen, Smithsonian Institution, 1987, 1400p., \$30 US, cloth. Reprint collection of all issues of the Volcano Letter, published by the Hawaiian Volcano Observatory from 1925-1955. Includes much data on non-Hawaiian volcanoes.

VOLCANOLOGY AT THE IUGG MEETING IN VANCOUVER, AUGUST 1987

On pages 13 and 14 are attached excerpts from the second circular for the 1987 IUGG meeting. Only items related to volcanology are attached. Contact R.D. Russell, Dept. of Geophysics and Astronomy, Univ. of British Columbia, Vancouver, BC V6T 1W5 for further details.

VOLCANOLOGY AT THE INTERNATIONAL VOLCANOLOGICAL CONGRESS SANTA FE, NEW MEXICO 1989

Write-off the summer of 1989 for field work and travel to the Volcanological Congress in New Mexico prior to attending the International Geological Congress in Washington two weeks later. The first circular for this meeting is attached on pages 15 and 16 of this issue of Ash Fall.

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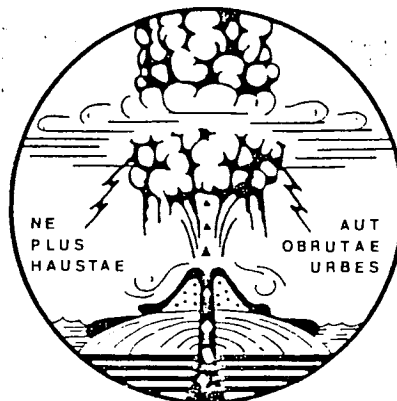
Guide to pronunciation of Hawaiian words 1663
Compiled by Taeko Jane Takahashi



In God's kitchen

reprinted by the Smithsonian Institution on the occasion of the
75th Anniversary of the Hawaiian Volcano Observatory

The Volcano Letter



*** published from 1925 to 1955 ***

Edited by: Thomas A. Jaggar (1925 - 1940)
Ruy Finch (1940 - 1951)
Gordan Macdonald (1951- 1955)

All 530 issues (over 1400 pages) are reprinted

This Single Cloth-Bound Volume Contains:

- * reports of volcanic eruptions, earthquakes, and tsunamis in Hawaii
- * accounts of volcanic activity around the world
- * articles on volcanism, eruption phenomena, geothermal energy, volcanic hazards, geysers, calderas, and more
- * more than 500 maps, line drawings, and photographs

And New in this Volume:

- * an outline of the history of The Volcano Letter
- * a comprehensive index of all 530 issues including references to:
 - * volcanoes and their eruptions
 - * eruption phenomena
 - * volcanic hazards and techniques of volcano monitoring
 - * individual scientists and scientific organizations
 - * authors of Volcano Letter articles

The volume will be available after February 1, 1987 for \$30.00 (including shipping) from the Smithsonian Institution. Only prepaid orders will be accepted. For more information contact Elizabeth Nielsen, NHB Mail Stop 119, Smithsonian Institution, Washington, DC 20560 USA.

VOLCANOLOGY DIVISION OFFICERS

	<u>TERM</u>
Jaroslav Dostal (Chairman) Department of Geology St. Mary's University Halifax, Nova Scotia B3H 3C3 (Tel. 902 429-9780)	1986-1988
Roger Laurent (Vice-Chairman) Dept. de Geologie Universite Laval Ste. Foy, Quebec G1K 7P4 (Tel. 418 656-7479)	1986-1988
Monica Gaiswinkler Easton (Secretary) 19 Gable Drive Brampton, Ontario L6V 2H2 (Tel. 416 978-6588 --Bus.)	1985-1988
Glen Johns (Treasurer) Ontario Geological Survey 9th Floor, 77 Grenville Street Toronto, Ontario M5S 1B3 (Tel. 416 965-7046)	1985-1988
B. Neil Church (Past-Chairman) B.C. Ministry of Energy, Mines and Petroleum Resources, Douglas Building Victoria, British Columbia V8V 1X4 (Tel. 604 387-5068)	1986-1988
Walter A. Gibbins (Councillor-West) Geology Office, P.O. Box 1500, D.I.A.N.A. Yellowknife, N.W.T. X1A 2R3 (Tel. 403 920-8216)	1986-1989
Mike Higgins (Councillor-Central) Department of Geology McMaster University Hamilton, Ontario (Tel. 416 525-9140-2014)	1986-1989
Nancy Van Wagoner (Councillor-East) Department of Geology Acadia University Wolfville, Nova Scotia BOP 1X0 (Tel. 902 542-2201)	1984-1987
Roy Y. Watanabe (Economic Geology Councillor) 1792 Sherwood Forest Circle Mississauga, Ontario L5K 2H7	1984-1987
Ray J. Goldie (Special Councillor on Research) 9 Palmerston Gardens Toronto, Ontario M6G 1V8 (Tel. 416 860-3400 --Bus.)	1986-1989
Tark S. Hamilton (Representative to CNC/IUGG) Pacific Geoscience Centre, Box 6000 Sidney, British Columbia V8L 4B2 (Tel. 604 656-8423)	1985-1988



INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS (IUGG)

**XIX General Assembly
Vancouver, Canada
August 9-22, 1987**

Title: U7. Lower Crust Properties and Processes

ICL, IASPEI, LAVCEI, LAGA

Scope: The principal objective of this symposium is to update our understanding of the properties of the lower crust and to review the physical and chemical processes which may have taken place. Recent high resolution seismic experiments have thrown new light on the structure of the lower crust and the crust-mantle transition which shows a much greater degree of complexity than had previously been assumed. It is our hope that this complexity problem can be examined from a multidisciplinary approach, and hence we hope to attract papers from the seismological, geological, geochemical, geothermal, geoelectric, geomagnetic and tectonophysics communities. Themes: Structure and properties of the lower crust and the crust-mantle transition (seismic reflection and refraction and potential field inversion studies); Geochemical processes (lower crust chemistry, fluids, evolution, crust-mantle transition); geophysical processes (tectonic effects, thermal, electrical, magnetic, rheologic properties, seismicity).

Convenor:
Prof. R.F. Mereu
Department of Geophysics
University of Western Ontario
London, Ontario N6A 5B7, Canada

Coconvenors:
Prof. St. Mueller, Zürich

Association Representatives:
Prof. S.B. Smithson (ICL), Laramie
Dr. R.E. Zartman (LAVCEI), Denver
Dr. A.G. Jones (LAGA), Ottawa

Title: U9. Evolution of Mid-Oceanic Ridges

ICL, IASPEI, LAVCEI, LAGA

Scope: This symposium is intended to be a forum for exploring the interrelationships between tectonic, magmatic and hydrothermal processes along mid-oceanic ridges over the spectrum of accretion styles and rates. We hope to attract submissions and spectators with interests in the structural, geomagnetic, seismic, petrological and geochemical evidence for variations in the genetic and evolutionary processes affecting oceanic lithosphere at mid-oceanic ridges. Themes: Magma genesis and ascent — mantle sources, melting processes, ridge-hotspot interactions, magma segregation, ascent; Crustal accretion processes — variations in rates and geometry, associated bathymetric, magmatic and tectonic characteristics; Hydrothermal processes — space/time variations, hydrothermal deposits.

Convenor:
Dr. J.M. Sinton
Hawaii Institute of Geophysics
University of Hawaii
Honolulu, Hawaii 96822, U.S.A.

Coconvenor:
Dr. P.E. Tapponier, Paris

Association Representatives:
Prof. T. Hilde (ICL), College Station
Dr. R.B. Whitmarsh (IASPEI), Wormley

INTERNATIONAL ASSOCIATION FOR VOLCANOLOGY AND CHEMISTRY OF THE EARTH'S INTERIOR (LAVCEI)

PARTICIPATION IN IUGG INTERDISCIPLINARY SYMPOSIA

LAVCEI leadership — 9 and 10

LAVCEI associated — 1, 2, 5, 6, 7, 8, 12, 14, 15, 19, and 20

LAVCEI SYMPOSIA

Title: V1. Physical Models of Volcanic Eruptions

Scope: This symposium is intended for presentation of recent progress in the research on the dynamics of volcanic eruptions, particularly on the physical modeling of volcanic eruptions. Speakers are invited to submit papers for presentation on the ascent of magma through planetary crusts, the explosive and effusive eruption of magmas, numerical and computer modeling of eruption columns, dispersal of tephra, volatiles and aerosols in volcanic plumes.

Convenor:
Prof. H. Sigurdsson
Graduate School of Oceanography
University of Rhode Island
Kingston, RI 02881, U.S.A.

Title: V2. Dating Magma Genesis

Scope: How old is magma when it erupts? That is, what is the time interval between initial melt formation and extrusion? What are the appropriate time constraints for kinetic and dynamical models of magmatic systems? Modern estimates range from decades to scores of millennia, but are usually minima. The topic is important to igneous petrology, volcanology, and mechanics, but rarely is studied quantitatively. Contributions are sought from researchers concerned with rates of crystal growth, dissolution, and diffusion; radioactive disequilibria; petrologic/stratigraphic evidence for the longevity of magma "batches"; and the physics of melt formation and ascent.

Convenor:
Prof. J.B. Gill
Board of Earth Sciences, UCSC
Santa Cruz, CA 95060, U.S.A.

Coconvenor:
Prof. A.T. Anderson, Chicago

Title: V3. Volatiles in Magma

Scope: Emphasis is on the role of magmatic volatile components in volcanic processes and in affecting the properties of magmas that erupt. Papers on such topics as plutonic rocks, phreatic eruptions, or thermodynamic solution models are discouraged here unless explicitly (or very cleverly) linked to both magmatic behavior and volcanology. Specific topics include: Mantle vs. subducted sources of volatiles; Evidence for crustal derivation of volatile components in magmas; Trace-metal transport associated with magmatic volatiles; Degassing mechanisms before, during, and after eruptions; Variable retention of volatiles in quenched ejecta; Significance of solution mechanisms, speciation, and concentrations of volatiles for eruptive behavior; Experimental constraints on estimating volatile contents of pre-eruptive magmas.

Convenor:
Dr. W. Hildreth
U.S. Geological Survey MS910
Menlo Park, CA 94025, U.S.A.

Title: V4. Scientific Drilling in Calderas (Joint with IASPEI and ICL)

Scope: Drilling is becoming an increasingly important tool for investigating the magmatic and tectonic processes that comprise caldera systems. Purely scientific objectives, as well as exploration for mineral deposits and geothermal energy, have motivated recent drilling operations. This session will cover results and plans for integrated surface and subsurface investigations of the structure and stratigraphy, igneous intrusions, hydrothermal systems, and ore deposits of active and fossil calderas.

Convenor:
Dr. J.C. Eichelberger
Geochemistry
1543 Sandia National Laboratories
Albuquerque, NM 87185, U.S.A.

Coconvenors:
Dr. A. Whittaker (IASPEI), Keyworth
Prof. F. Stehli (ICL), Oklahoma
Dr. P. Bethke, Reston

Title: V5. Mechanics of Lava Flow and Dome Growth with Hazard Implications

Scope: The goal of the session is to present a series of papers concerning mechanical and thermal models for the emplacement of lava flows and domes. Most such modeling studies have traditionally been motivated by the need to mitigate hazards associated with active eruptions, or by the desire to identify remotely observed flows on other planets based on their surface morphology. The emphasis of this session will be on the models themselves, but papers citing case histories of attempted lava diversion, or applications of models to extra-terrestrial lava flows are also welcome.

Convenor:

Prof. J.H. Fink
Department of Geology, Arizona State University
Tempe, AZ 85287, U.S.A.

Title: V6. Structure and Magmatism of Seamounts: Modern and Ancient

Scope: For modern and recognized ancient seamounts: Volcanology — types of flows and eruptions, seamount forms and origin; Petrology/geochemistry — mantle sources of seamounts in various tectonic settings; Volcanologic, geologic, and magmatic evolution of seamounts and their significance.

Convenor:

Prof. R. Batiza
Department of Geological Sciences
Northwestern University
Evanston, IL 60201, U.S.A.

Title: V7. Recent Eruptions of Explosive Volcanoes: Hazards, Monitoring, and Forecasts

Scope: In the 1980's, several major eruptions have challenged scientists and government officials: Mount St. Helens, El Chichón, Galunggung, Nevado del Ruiz. Furthermore, signs of restlessness at Long Valley, Rabaul, and Philgraean Fields have posed the threat of possible future activity and prompted increased monitoring in these areas. The symposium will focus on selected aspects of these volcanic disasters or crises (eruptive phenomena, hazards, seismicity and ground deformation, etc) as well as more general topics of volcanic-hazards zonation, volcano monitoring, eruption forecasting, and interaction between scientists and emergency-response officials. An attempt will be made to include speakers representing diverse geographic regions and scientific disciplines.

Convenor:

Dr. R.L. Tilling
U.S. Geological Survey MS951
Reston, VA 22092, U.S.A.

LAVEEE PLENARY SESSIONS AND WORKING GROUP MEETINGS

Plenary sessions will be held on the mornings of August 10 and 20. There will be meetings of the following working groups: Explosive Volcanism, Mitigation of Volcanic Disasters, Volcanic Gases, Antarctic Volcanology, Radiogenic Isotopes. Times will be given in the Programme.

SCIENTIFIC EXCURSIONS (See Field Trip Registration Form "C")

The longer scientific excursions will take place both before (A excursions) and after (C excursions) the meeting. Shorter excursions (B) will occur on the weekend during the meeting. The excursion fee will cover bus transport, guidebooks, and accommodation. It is assumed that participants will share double rooms with two beds. The costs quoted are per person. Note that a few excursions will not start or end in Vancouver. Participants are responsible for arranging their own travel to or from starting or ending points outside of Vancouver. Full payment for all Category "B" Field Trips, and a deposit of C\$100 for all Category "A" and "C" trips is required by March 1, 1987. Any excursion that is not sufficiently subscribed by that date will be cancelled without penalty. Full payment for Category "A" and "C" trips will be due on May 1, 1987. Cancellation will be possible up to June 1, 1987 with a service charge of C\$20. After June 1, 1987 refunds will be granted (less C\$20 only) if the space is sold to another person. Those individuals affected by cancellations will be assisted in making alternate arrangements where space is still available. The following scientific excursions are offered:

A1. Cordillera Cross-Section: Calgary to Vancouver

(R.A. Price, R.R. Parrish, J.W.H. Monger, and J.A. Roddick)
The trip proceeds from undeformed strata on the North American craton, through the fold and thrust belt into metamorphic rocks, and then volcanogenic and sedimentary, strata accompanied by extensive granitic rocks of the western Cordillera. It emphasizes the stratigraphic, structural, metamorphic and plutonic evidence bearing on the hypothesis that the Canadian Cordillera evolved in response to crustal convergence, accretion of ensimatic allochthonous terranes, post-accretion deformation, and late extension and movement on strike-slip faults. Route of excursion: Calgary (gathering on the evening of August 4, departing early on August 5) — Golden — Salmon Arm — Cache Creek — Lillooet — Vancouver (arriving on the afternoon of August 9). The fee includes 5 nights accommodation, meals on trip, and guidebooks.

Capacity: 43 participants. Cost C\$460, including the pre-trip night in Calgary.

A2. Vancouver Island LITHOPROBE Trip

(C.J. Yerath and A. Sutherland Brown)
The trip will follow the east to west corridor across Vancouver Island investigated by LITHOPROBE, and will emphasize the structural and tectonic relationships imaged by deep seismic reflection profiling. Route of excursion: Vancouver (leaving early August 7) to Vancouver Island via Nanaimo, across to west side of the island, return to Vancouver (late August 9).
Capacity: 15 participants. Cost C\$220, includes two nights and three lunches.

B2. Debris Torrents: Phenomena and Engineering Management in Coquihalla Valley

(O. Slaymaker and O. Hungr)
An excursion in association with IASH symposium on debris torrents. Route of excursion: Vancouver — Coquihalla Valley — Vancouver (August 13 only).
Capacity: 45 participants. Cost C\$35.

B3. Lower Fraser River Gravel Reach

(T.J. Day)
Four-stop tour of lower Fraser River to look at estuary sand-gravel river reach and gravel reach. Purpose is to show critical sites for sediment budget analysis and to discuss implications for gravel results. Route of excursion: Vancouver — Agassiz — Vancouver (August 16 only).
Capacity: 30 participants. Cost C\$30, including box lunch.

B4. Bedrock Geology of the Vancouver Area

(J.A. Roddick)
Geology of the Vancouver area includes Oligocene volcanic and Eocene sedimentary rocks, overlying a basement complex of plutonic and metamorphic rock. Stops will be both geologically and scenically interesting. Route of excursion: Vancouver area (August 16 only).
Capacity: 45 participants. Cost C\$30.

B7. Volcanology of the Southern Coast Mountains — Mount Garibaldi to Meager Mountain

(J. Souther and W. Mathews)
Quaternary volcanic rocks of the Garibaldi Volcanic Belt: geothermal phenomena, and scenery. Route of excursion: Vancouver (departing early August 13) — Whistler Village (overnight) — Meager Creek area — Vancouver (returning evening of August 16).
Capacity: 40 participants. Cost C\$130, includes lunches but no breakfast and dinner at Whistler where there are many restaurants to explore.

C2. North Cascade Transect

(E.H. Brown and S. Babcock)
Trip will proceed from west to east through the North Cascades of western Washington, from the complex thrust and strike-slip fault regime affecting low-grade metamorphic rocks into the central crystalline core. We will show evidence for the structural and tectonic evolution of the region, including the relationships between blueschists, amphibolites and alpine-type peridotites. Be prepared for cool wet weather and a 1 km off-trail hike. Route of excursion: Vancouver (07:00 August 23 from Gage Residence) — North Cascades, U.S.A. — Vancouver (return by 20:00 on August 24).
Capacity: 35 participants. Cost C\$145.

C3. Eocene Volcanism and Tectonics, southern British Columbia

(D. Tempelmann-Kluit and N. Church)
A detailed look at the Eocene volcanic rocks of the Okanagan — Kettle River Valley — Greenwood area and the evidence for large-scale crustal extension at about the same time as the volcanic eruptions. Low-angle fault along the Okanagan Valley with displacement of tens of km. Route of excursion: Vancouver (departing morning of August 23) — Oliver — Greenwood — Vancouver (return evening of August 25).
Capacity: 45 participants. Cost C\$270.

C4. Mount Saint Helens

(D. Swanson and Catherine Hickson)
Both the east and west sides of the mountain will be visited for examination of lahar, debris avalanche and blast deposits. A 3 km hike (one way) on an improvised trail will lead through the devastated area for a view of the dome. Route of excursion: Vancouver (departing 08:30 from Gage Residence on August 23) — Mount St. Helens, U.S.A. — Vancouver (returning evening of August 23).
Capacity: 42 participants. Cost C\$300, includes transport, lodging for 2 nights, 3 lunches and 2 dinners.



OBJECTIVES OF THE CONFERENCE



SESSION CONTENTS

-Towards Better Coexistence between Human Beings and Volcanoes-

Japan is widely known as one of the volcanic countries in the world. Volcano Sakurajima in Kagoshima Prefecture, in particular, has been continuing its eruptive activities since 1955

Within 10 km from the active crater of Sakurajima is a part of Kagoshima City, the capital of the Prefecture, and about 560,000 people live within the administrative limits, some of them living in the number of hamlets at the foot of Sakurajima.

This situation gives a wide-ranging, tremendous influence on the life of people and neighboring industries due to volcanic cinders, ash, and debris flows ruining crops and building in the region.

With the above understanding, the "KAGOSHIMA INTERNATIONAL CONFERENCE ON VOLCANOES" sponsored by the Kagoshima Prefectural Government, will be held in Kagoshima, a place equipped with one of the world's leading volcano observatories.

The Conference will provide a forum for communication and discussion by scientists, public officials, news media and concerned citizens from Japan and overseas, aiming at better coexistence between human beings and volcanoes and at regional vitalization.

The aim of the Conference is three-fold:

1. Exchange of knowledge concerning volcanoes through studying eruptive mechanics, methods of forecasting volcanic events, as well as the mitigation of volcanic disasters, and future research and surveillance systems.
2. Exchange of information concerning the effects of eruptions on industry and residential environment, as well as information concerning volcanic disasters and prevention measures.
3. Promotion of research on the utilization of volcanic energy and products, and promotion of volcano-related tourism

Session I KNOWING ABOUT VOLCANOES

This session will focus on volcanic research of the mechanics and dynamics of eruptions, methods of forecasting volcanic eruptions, scientific approach to various aspects and effects of volcanic hazards, and future research and surveillance systems.

Session II LIVING WITH VOLCANOES

The aim of this session is to search for effective measures for civil defence, industry promotion, and comfortable living conditions by discussing the present state of volcanic disasters and prevention measures, and the effects of volcanic eruptions on industry and residential environment.

Session III MAKING THE MOST OF VOLCANIC RESOURCES

This session is to discuss effective measures for the utilization of volcanic energy, natural resources from volcanoes, and promotion of volcano-related tourism, etc. towards regional development.

SCHEDULE (tentative)

(Details will be issued in the Second Circular.)

	Morning	Afternoon	Evening
Day Before	Registration	Programs for Citizens	Programs for Citizens
1st Day	Opening Ceremony Keynote Speeches	General Session	Programs for Citizens
2nd Day	General Session	Session · Symposium · Poster	Programs for Citizens
3rd Day	Session · Symposium · Poster	Session · Symposium · Poster	Programs for Citizens
4th Day	Session · Symposium · Poster	Session · Symposium · Poster	Programs for Citizens
5th Day	Closing Plenary Session Closing Ceremony		

- * Several related events will take place during the Conference.
- * Excursions will be planned before and after the Conference.

KAGOSHIMA INTERNATIONAL CONFERENCE ON VOLCANOES 1988

DATE: FIVE DAYS IN MID OR LATE JULY, 1988

PLACE: KAGOSHIMA, JAPAN

SPONSORED BY KAGOSHIMA PREFECTURAL GOVERNMENT

1st Circular
(December, 1986)

Places: Kagoshima City and other towns

Official Languages: Japanese and English
(Simultaneous Interpretation)

Registration and Accommodations:

Details will be issued in the Second Circular.

Call for Papers: Papers will be called for in the Second Circular

If you wish to receive the Second Circular and Registration Form, please fill and mail the attached Questionnaire Form to the Secretariat by the end of March, 1987.

The Second Circular will be delivered in July, 1987.

CO-SPONSORS AND SUPPORTERS

(under negotiation)

- Volcanological Society of Japan,
- International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI),
- Science Council of Japan,
- Japan Society for the Promotion of Science,
- National Institute for Research Advancement (NIRA),
- Japan International Cooperation Agency (JICA),
- Kagoshima University,
- Earthquake Research Institute, Tokyo University,
- Disaster Prevention Research Institute, Kyoto University,
- Japanese Governmental Agencies concerned,
- Related Municipalities and other local Organizations, etc.

Organizing Committee

- | | |
|--------------------------------|--|
| Chairman / Kaname Kamada, | Governor, Kagoshima Prefecture |
| Councilors / Takeshi Nagata, | Professor Emeritus, Tokyo University |
| / Jiro Kondo, | Chairman, Science Council of Japan |
| / Toshio Sawada, | Chairman, Japan Society for the Promotion of Science |
| / Keisuke Arita, | President, JICA |
| / Atsushi Shimokobe, | President, NIRA |
| / Saburo Nagakura, | Chairman, Kyushu/Yamaguchi Economic Federation |
| Vice-Chairmen/ Kenjiro Harada, | Speaker, Kagoshima Prefectural Congress |
| / Kanelumi Ishigami, | President, Kagoshima University |
| / Setsuko Imamura, | Chairwoman, Kagoshima Prefectural Board of Education |
| Members / Daisuke Shimozuru, | Professor Emeritus, Tokyo University |
| / Shigeo Aramaki, | Professor, Tokyo University |
| / Kosuke Kamo, | Professor, Kyoto University |

etc.

QUESTIONNAIRE FORM

KAGOSHIMA INTERNATIONAL CONFERENCE ON VOLCANOES - 1988 (Please TYPE or PRINT)

Mr Mrs Miss
Prof. Dr. Family Name Given Name

Affiliation

Address

Telephone

Field of Specialization

Questionnaire

Have you visited Volcano Sakurajima?
Yes [] No []

Do you plan to attend the Conference?
Yes [] No []

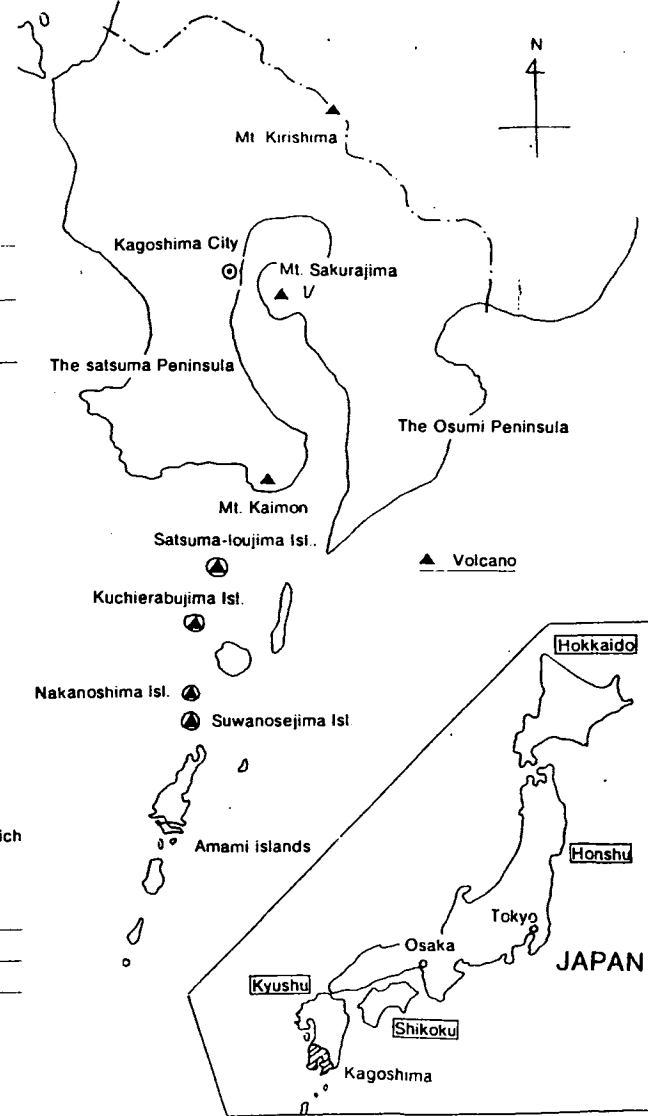
In which topic in the Conference do you have the most interest?
Session 1 [] Session 2 [] Session 3 []

Please give the name and address of the institutions or organizations for which the Circular should be mailed in your country.

Signature

Please complete and return by the end of March, 1987, to:
Mr Nario Ankawa, International Affairs Division,
General Affairs Department,
Kagoshima Prefectural Government
14-50, Yamashita-Cho, Kagoshima City, 892 Japan
Telephone: Japan 0992-22-1959 Telex: 782622 KOJPRG
Fax Japan 0992-22-7405

Map of Kagoshima Prefecture





SCIENTIFIC ASSEMBLY

International Association of Volcanology
and Chemistry of the Earth's Interior

Santa Fe, New Mexico USA
June 25—July 1, 1989

FIRST CIRCULAR
NOVEMBER 1986

Organizing Committee

Chairman:
Michael Dungan, Dallas

Secretary:
W. Scott Baldrige, Los Alamos

Program:
Peter Lipman, Denver

Field Trips:
Wolfgang Elston, Albuquerque

Publications:
Charles Chapin, Socorro

Local Arrangements:
Grant Heiken, Los Alamos

Local Arrangements:
Kenneth Wohletz, Los Alamos

Secretary-General IAVCEI:
Hans-Ulrich Schmincke, Bochum

Sponsors

U.S. Geological Survey
Institute for the Study of Earth
and Man, Southern Methodist
University
Los Alamos National Laboratory
U.S. Department of Energy
New Mexico Bureau of Mines
and Mineral Resources
National Aeronautics and Space
Administration
Institute for Geophysics and
Planetary Physics, University
of California
National Science Foundation
American Geophysical Union
University of New Mexico

LOCATION

The 1989 Assembly of the International Association of Volcanism and Chemistry of the Earth's Interior will be held in Santa Fe, New Mexico, the "City Different." Santa Fe is located in the foothills of the Sangre de Cristo Mountains (2100 m above sea level) on the margin of the Rio Grande rift, near Cenozoic volcanic fields in New Mexico, Colorado, and eastern Arizona. Summer weather is generally dry and sunny, with warm days, cool nights, and occasional afternoon thunderstorms. Since its founding in 1610, Santa Fe has served as the political capital of New Mexico under the flags of Spain, Mexico, the Confederacy, and the United States. The rich architectural and cultural heritage of Santa Fe is a blend of Pueblo Indian, Spanish, and Anglo influences. Today Santa Fe is a major artistic center, virtually unique in North America.

ORGANIZING COMMITTEE

Chairman Michael Dungan (Dallas)
Secretary Scott Baldrige (Los Alamos)
Program Peter Lipman (Denver)
Field Trips Wolfgang Elston (Albuquerque)
Publications Charles Chapin (Socorro)
Local Arrangements Grant Heiken and
Kenneth Wohletz (Los Alamos)

Ex-Officio Member.
Secretary-General,
IAVCEI Hans-Ulrich Schmincke (Bochum)

SPONSORS

Several institutions have joined IAVCEI in sponsoring this meeting. The Organizing Committee is grateful for the support of the U.S. Geological Survey, the Institute for the Study of Earth and Man (Southern Methodist University), the Los Alamos National Laboratory, the New Mexico Bureau of Mines and Mineral Resources, the University of New Mexico, the Department of Energy, the National Aeronautics and Space Administration, the Institute for Geophysics and Planetary Physics (University of California, Los Alamos), the American Geophysical Union, and the National Science Foundation. Additional sponsors may be involved and several institutions have offered some assistance.

SCIENTIFIC PROGRAM

The program, organized around the broad theme of Continental Magmatism, will emphasize two major concerns of IAVCEI: volcanology and geochemistry-petrology. Special attention will be given to applying observations of modern eruptions to studies concerned with the volcanic record, physical modeling of volcanic processes, the climatic impact of large eruptions, and volcanic hazards. Where possible, symposia subtopics will be integrated with the volcanic rocks and processes featured by the field excursions. General topics are listed below. The Program Committee will publish specific subtopics in the Second Circular (1987-88).

- I Continental Arc Volcanism
- II Intraplate Alkaline Volcanism
- III Continental Rift and Flood Basalt Volcanism
- IV Geothermal Energy and Metallogenesis
- V Active Volcanism and Volcanic Hazards
- VI Explosive Volcanism and Physical Volcanology
- VII Petrology, Geochemistry, and Evolution of Continental Magmas
- VIII Planetary Volcanism

The symposia will include concurrent oral and poster sessions. Three or four oral sessions on diverse topics will run simultaneously.

PUBLICATIONS

The Abstract Volume will be published and distributed by mail prior to the conference. Registrants will have the option of purchasing (at a discount) a reprint volume entitled *Volcanism of the U.S. Cordillera* that will encompass 25 years of research. The New Mexico Bureau of Mines and Mineral Resources will publish new field guides for all conference field excursions. Every effort will be made to integrate new scientific data with exceptionally well illustrated field guides.

FINANCIAL AID

We anticipate being able to provide some financial assistance to scientists from developing countries, young scientists, and students. An independent committee has been established to identify recipients of aid, and to work with scientists eligible for assistance from the U.S. Agency for International Development to help them obtain additional travel funds. Details will be provided in the Second Circular. (See attached questionnaire.)

FURTHER CIRCULARS AND DATES

The Second Circular will be published in late 1987 and will contain detailed updates of many of the topics only outlined in the First Circular. Estimated costs, an updated list of excursions, information concerning availability of financial aid, options offered in the Accompanying Person's Program, travel and insurance information, and a more detailed Scientific Program will be included with the circular.

The Third Circular (January 1989) will contain final cost information, meeting and housing registration forms, and abstract forms. Abstracts and registration fees will be due in February or March 1989, the Scientific Program will be established by mid-March, and abstract volumes will be shipped to registrants in April.

Conference information will appear periodically in the IAVCEI Newsletter in *Bulletin of Volcanology*.

ACCOMPANYING PERSON'S PROGRAM

A program of daily activities will be organized for the families and friends of conference participants if demand is sufficient. Northern New Mexico offers an incredibly diverse array of recreational opportunities to visitors, and we encourage subscription to this program. Activities could include bus tours to museums, Indian Pueblos, archaeological sites and special restaurants in and around Santa Fe, Taos, and Albuquerque. Outdoor activities such as horse riding, hiking, river float trips, hot-air ballooning, and chartered overflights are also possible. Please indicate your interest on the attached questionnaire.

ACTIVITIES

Early evening social events (Happy Hours) are planned for most days. In addition, there will be a Plenary Banquet, an evening of volcanic eruption movies, and a "Fiesta in the Street." No scientific sessions will be held on 28 June when one-day field excursions to the Jemez volcanic field—Valles caldera and the Taos Plateau volcanic field will be offered. A variety of alternative cultural and outdoor activities (integrated with Accompanying Person's Program) will also be organized.

ACCOMMODATIONS AND DINING

Lodging available in Santa Fe ranges from a low-cost (\$14/night—double occupancy) dormitory option to luxury hotels. Reservations for participants and accompanying persons will be handled by the Santa Fe Convention Center and Visitors Bureau as part of the meeting registration. A low-cost option for meals will be offered to dormitory residents. Santa Fe currently supports a highly diverse collection of over 200 restaurants offering a remarkably wide spectrum of cuisines and prices.

REGISTRATION FEES AND OTHER COSTS

Below we have attempted to estimate conference fees and costs in U.S. currency to aid participants in planning. These do not represent final figures and some could vary by as much as 20%. We will update these estimates in the Second Circular.

Registration.....\$130
Accommodations
Dormitory and meals.....\$150/7 days
Hotel and meals
(multiple occupancy).....\$350/7 days (med.)
\$600/7 days (high)

Jemez or Taos Field Excursion...\$ 25
(28 June)

Extended Excursions (5-7 days)...\$400

Transportation in U.S. to Albuquerque
from NY, SF, LA, or Miami\$300 roundtrip

MAILING LIST

The direct mailing list currently is comprised primarily of attendees of the 1986 IAVCEI Volcanological Congress in New Zealand. It is important that this list be expanded to include as many potential participants as is possible prior to the Second Circular. Return the attached questionnaire to ensure that you are included on the list that will be used to mail the Second Circular. Please encourage students and colleagues not currently on our list to request inclusion by sending their names and mailing addresses to: IAVCEI/1989, c/o Protocol Office, Los Alamos National Laboratory, Mail Code P-366, Los Alamos, New Mexico 87545 USA.

- 1A* WASHINGTON CASCADES AND COLUMBIA PLATEAU: Mt. Rainier, Mt. Adams, Oligo-Miocene arc volcanic and intrusive rocks, Columbia River Basalt.
- 2B WORKSHOP ON VOLCANO MONITORING AND VOLCANIC HAZARDS—MT. SAINT HELENS, WASHINGTON: Sponsored by IAVCEI Working Group on Mitigation of Volcanic Disasters.
- 3B* SOUTH CASCADES ARC VOLCANISM, OREGON AND CALIFORNIA: Crater Lake—Mazama, Newberry Volcano, Lassen Peak, Mt. Shasta.
*Optional one-day excursions to Mt. Saint Helens may be offered in conjunction with 1A and 3B.
- 4B SIERRAN VOLCANISM AND PLUTONISM, CALIFORNIA: Yosemite, Tioga Pass, Long Valley caldera—Bishop Tuff, Inyo-Mono Craters.
- 5A GREAT BASIN CENOZOIC VOLCANISM, EASTERN UTAH AND WESTERN NEVADA: Tertiary volcanic rocks; calderas, ore deposits, geothermal resources.
- 6A EASTERN SNAKE RIVER PLAIN—YELLOWSTONE, IDAHO AND WYOMING: Holocene Basalts, Quaternary silicic volcanism and hydrothermal activity.
- 7A HIGH-TEMPERATURE RHEOMORPHIC TUFFS AND LAVA-LIKE RHYOLITES OF THE WESTERN SNAKE RIVER PLAIN AND OWYHEE PLATEAU, IDAHO AND OREGON: May be run in conjunction with 6A.
- 8B MESOZOIC AND TERTIARY MAGMATISM AT VARYING CRUSTAL LEVELS, NORTHERN IDAHO AND WESTERN MONTANA: Idaho Batholith, Challis volcanic field, Boulder Batholith, Elkhorn Mountain volcanic field (and associated mineralization).
- 9A/B MONTANA HIGH-K ALKALIC PROVINCE: Volcanic and intrusive rocks of the Highwood and Crazy Mountains, Montana.
- 10A COLORADO PLATEAU VOLCANISM AND XENOLITHS, ARIZONA: San Francisco Volcanic Field, Colorado Plateau diatremes, Shiprock, Springerville volcanic field.

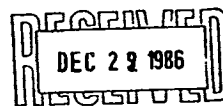
FIELD EXCURSIONS

The western United States offers many opportunities to examine a wide variety of volcanic rocks in classic field areas. Each of the 18 excursions listed here will highlight recent or ongoing investigations. Most excursions will be relatively small (20-50 participants), will be designed for the working specialist, and will focus on important and controversial problems. Several trips will be organized to provide overviews of volcanic provinces. There will be both pre- and post-conference extended excursions, generally lasting 5-7 days. A few may be offered a second time in conjunction with the International Geological Congress (Washington, D.C., 9-19 July 1989). More detailed descriptions will be provided in the Second Circular. Excursion leaders have been asked to arrange logistics that will minimize costs. Fees will vary, but \$300-\$500 will be typical. In the list that follows, excursions are tentatively designated pre-conference (A) or post-conference (B).

It is imperative that potential participants supply us with expressions of interest concerning the specific excursions they would most like to attend. Please indicate your first three preferences on the attached questionnaire.

VOLCANIC HAZARDS SHORT COURSE

A post-meeting short course on volcano monitoring, hazard assessment, and hazard mitigation will be held 2-4 July at the College of Santa Fe. This short course will be jointly sponsored by the 1989 International Geological Congress and IAVCEI. Financial aid will be available to scientists from developing countries. Estimated cost of attendance (including food and accommodations) is \$150-\$200.



- 11B SOUTHERN ROCKY MOUNTAINS BATHOLITHS, VOLCANISM AND MINERALIZATION—COLORADO AND NEW MEXICO: Henderson and Climax Mo-deposits, Grizzly Peak, Mount Aetna, Questa caldera and mining district.
- 12B SAN JUAN VOLCANIC FIELD, COLORADO: Oligocene calderas and related volcanism (plus associated mineralization).
- 13A MOGOLLON-DATIL VOLCANIC FIELD, NEW MEXICO: Oligocene calderas and related volcanism, volcanoclastic rocks, and gravity slide deposits.
- 14A SOUTHERN ARIZONA/NEW MEXICO VOLCANISM AND MINERALIZATION: PRECAMBRIAN-MESOZOIC-CENOZOIC: Chiricahua and Dos Cabezas Mountains, Geronimo volcanic field (and xenoliths), Silver City, Kilbourne Hole maar (and xenoliths).
- 15A* JEMEZ VOLCANIC FIELD, NEW MEXICO: Valles caldera, Bandelier Tuff, pre- and post-caldera volcanic rocks.
*Two extended Jemez excursions will be organized: a generalist's trip (open to all participants) and a special excursion organized for the IAVCEI Working Group on Explosive Volcanism.
- 16B RIO GRANDE RIFT VOLCANISM, NORTHEASTERN JEMEZ VOLCANIC ZONE: Taos Plateau, Ocate and Raton-Clayton volcanic fields, Spanish Peaks intrusions, Questa caldera and mining district, San Luis Hills volcanic rocks, Los Mogotes volcano.
- 17A RIO GRANDE RIFT VOLCANISM, SOUTHWESTERN JEMEZ ZONE: Cerros del Rio, Lucero, Zuni-Bandera, and Mount Taylor volcanic fields.
- 18A TRANS PECOS—BIG BEND ALKALIC VOLCANISM, SOUTHWESTERN TEXAS: Calderas, ignimbrites and rheomorphic tuffs.

Please return questionnaire by AIR MAIL to:

IAVCEI/1989
Protocol Office
Los Alamos National Laboratory
Mail Code P-366
Los Alamos, NM 87545 USA

**MINUTES - Volcanology Division Business Meeting
21 May 1986, Ottawa, Ontario**

The meeting was called to order by the Chairman, Jaroslav Dostal at 1730 hrs who acknowledged quorum based on 13 members and a number of proxies.

The minutes from the previous meeting in Fredericton (published in Ashfall, Sept., 1985) were read and approved. Lambert/Padgham/ unanimous. In business from that meeting, the expenditure of \$200.00 to cover the cost of registration at Ottawa '86 for Trans-Mexican Trip Leaders Steven Nelson and Gerado Sanchez-Rubio was moved and approved. The agenda for the meeting (published in Ashfall, April 1986) was then read and approved.

The Chairman summarized the activities of the Division for the previous year; including the successful Trans-Mexican Field Trip co-ordinated by W.A. Gibbins; the revival of Ashfall; the introduction of the Gelinis Award, which was awarded to John Stix of the University of Toronto for his M.Sc. thesis entitled "Volcanic Facies and Geochemistry of Archean Lava Flows and Pyroclastic Rocks near Kenora, Ontario, Canada"; the annual compilation of volcanological work in Canada completed this year by Ray Goldie, which included 35 reports from 16 institutions and which will be published in the Canadian Geophysical Bulletin; publication of the field guide for the 1986 Trans-Mexican Field Trip. Further details on the Gelinis award were that 11 thesis were submitted, of these, 10 were for the 1985 award, 1 was from the 1984 award. The prize for 1984 was not awarded. This concluded the Chairman's report.

The Treasurer G.W. Johns gave a report on the financial status of the Division, as outlined below. The report was accepted by the members present. Bailles/Padgham/unanimous.

Financial Statement 21 May 1986

Carry Over from 1985	\$1879.00
Income - 1985 Membership Dues	\$ 346.00
Interest	\$ 61.94
Total	\$ 407.94
Expenditures - Ashfall (Sept. 85)	\$ 196.05
Total Funds on hand	\$1744.89

The Secretary did not give a report. Under publications, Jaroslav Dostal reported that the Trans-Mexican Field Trip Guide had just been published. It was available for \$8.00 a copy at Ottawa '86. After the meeting, it was to be distributed by GAC for the Division through Business and Economic Services in Toronto. Cost would be \$12.00 plus \$3.00 postage and handling. Of this, \$10.00 would be remitted to the Division by GAC. The guidebook for Hawaii published in 1983 by GAC Victoria was now out-of-print. It was being revised by Mike and Monica Easton. Seed money for reprinting this volume was absent, and the Eastons were looking into various ways of publishing the guide. Jaroslav Dostal and Mike Easton were preparing a proposal for a series on Volcanology for Geoscience Canada, and it was hoped that an outline would be circulated within a few months.

A report on field trips was given. Bob Baragar reported that Les Coleman was organizing a field trip to Italy for 1988, to be held prior to the GAC meeting in St. John's in May. The 14-day trip was to include stops at Rome, Pompeii, Herculanium, Vesuvius, Sicily and Mt. Etna, the Lipari Islands, Vulcano, Stromboli and Naples. The cost was estimated at \$2800.00 for 15-19 people and \$2300.00 for 40-44 people. If demand warranted, a parallel trip for spouses might be arranged. Discussion followed with respect to future trips. It was suggested that international trips be held every 2 years and that North American trips in intervening years. Bill Padgham told the membership about the 1987 Yellowknife Field Conference, which will have a volcanological focus as well as a number of volcanology field trips. A field conference in Noranda was suggested in 1989, perhaps associated with GAC in Montreal in 1989. Harold Gibson was suggested as a guide for such a trip/conference. Allan Bailes noted that the 1987 GAC Flin Flon field trip as part of Saskatoon'87 will have a volcanological aspect. A number of field trips with a volcanology aspect were being planned for IUGG in August 1987.

Future activities of the Division included a Special Session on "The Use of Trace Elements in Volcanology" planned for Saskatoon'87 and organized by Jaroslav Dostal and Denis Shaw. A request was made for ideas for 1988 and 1989 activities to be submitted to the Chairman by December 1986. Suggestions included "Oceanic Volcanism" and "Volcanic Stratigraphy".

The following officers were elected at the meeting, based on the list published in Ashfall (April 1986). Padgham/Lambert/unanimous.

Chairman (1986-1988)	Jaroslav Dostal
Vice-Chairman (1986-1988)	Roger Laurent
Councillor-West (1986-1989)	Walter Gibbins
Councillor-Centre (1986-1989)	Mike Higgins
Special Councillor on Research (1986-1989)	Ray Goldie

Under new business, the status of the Division's finances and a possible dues increase were discussed. The present surplus of funds in the Division were due to irregular production of Ashfall in 1983-1985. New initiatives such as the thesis award and regular production of Ashfall would deplete this surplus rapidly. It was noted that dues have been held at \$2.00 a year since inception of the Division in 1974. It was felt that an increase to \$5.00 a year was too much. It was eventually moved and approved that division dues be increased to \$4.00 a year effective in 1987 Gibbins/Padgham/10-2.

The meeting adjourned at 1855 hrs Johns/Lambert/unanimous.

Volcanoes of the World

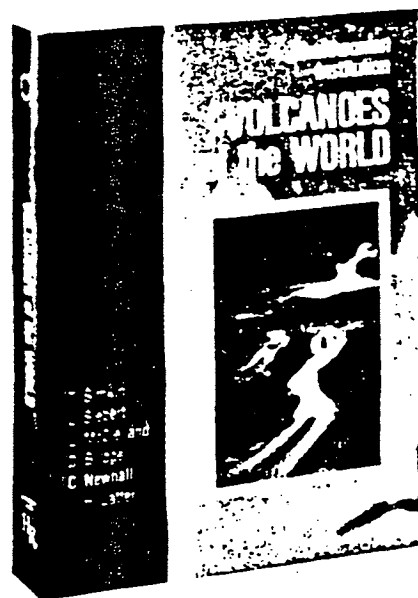
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GEOLOGICAL SOCIETY OF AMERICA SPECIAL PAPER 212

THE EMPLACEMENT OF SILICIC DOMES AND LAVA FLOWS

EDITED BY

JONATHAN FINK
GEOLOGY DEPARTMENT
ARIZONA STATE UNIVERSITY
TEMPE, ARIZONA 85287

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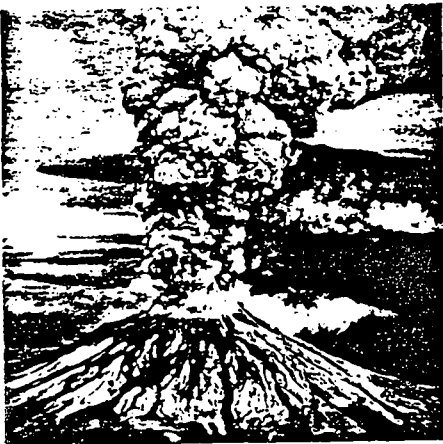
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