

Secretary's Report: May 1984

John Malpas

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Membership

Membership of the Geological Association of Canada as of April 14, 1984 is:

	Dec. '82 year-end	Dec. '83 year-end	April 14/83	April 14/84
Honorary Fellows	5	5	5	5
Life Fellows	5	5	5	5
Retired Fellows	71	72	71	73
Fellows	1,855	1,872	1,750	1,718
Associates	957	696	888	560
Student Associates		281		243
Corporate Members	70	61	59	67
	2,963	2,992	2,778	2,670

The geographic distribution of membership (Fellows, Associates and Corporates) is:

	86	90	85	77
Newfoundland	86	90	85	77
Nova Scotia	98	102	96	87
New Brunswick	50	51	49	49
Prince Edward Island	1	1	1	1
Quebec	281	299	271	257
Ontario	1,023	1,016	947	941
Manitoba	65	59	61	58
Saskatchewan	94	100	88	88
Alberta	418	396	385	344
British Columbia	480	502	465	449
NWT and Yukon	22	23	19	22
United States	208	210	189	182
Australia/New Zealand	32	29	28	25
South/Central America	12	26	10	16
Africa and Asia	24	22	23	19
Europe	69	66	62	55

The 149 members elected since April 14, 1983 are as follows:

Fellows:

A. Achab
T. Alabaster
C. Aussant
J.M. Barry
J.R. Bellamy
A. Birkeland
R.R. Boudreau
J.M. Britton
P. Brown
J. Brun
G. Bylund
X. Chen
J.F. Childs
J.P. Coakley
P.T. Coyle
R.A. Felix
A. Floyd
J.A. Fowler
B.A. Frey
M. Gent
D.J. Gillis
R. Griffis
K. Hattori
L. Haynes
E.J. Hickin
P.R. Hill

C. Hillaire-Marcel
T.B. Holst
J. Horgan
D.S. Jennings
S.K. Kakar
G.A. Keevil
T.L. Klein
Y.T.J. Kwong
H. Laanela
A.S. Legun
I. Lyn
J.D. Mason
R.G. McEachern
T.N. McKillen
F. Mengel
W.J. Mullins
J.G. Patterson
J. Peck
G. Quinlan
R.P. Raeside
M. Reeves
R.W. Renault
M.A. Roberts
P.A. Ronning
D.A.D. Scott
T.C. Scott
M.L. Senkiw

R.G. Simpson
W. Tompson
R.A. Trevail
R.P. Trodler-Laine
J.S. Vincent
T.L. Wallis
A.F. Wilcox
G.R. Winkler
J. Wong
C.M. Woodworth-Lynas
N. Zhou

Associates:

E.G. Anthony
C.N. Antonuk
K.T.J. Atkin
A. Beaudoin
G.I. Bibby
D.L. Billard
G. Bouchard
R. Bowins
L.J. Brooks
S.S. Brunelle
D.J. Bush
B. Cadieux
J.E. Campbell

R.H. Campbell
P. Campeau
D.A. Cauffield
N. Chabot
A. Charland
M.A. Dagenais
G. De Broucker
Y. Dembele
R. Devoto
R.S. Dhindsa
Y. Dumont
B. Durand
R.B. Ejeckam
L. Fauteux
R. Forest
P. Fralick
E. Gagnon
A. Gaumond
L. Gauthier
D.J. Gillis
K. Gillis
C.A. Gittins
R.E. Goad
R.G. Goodson
R.T. Henneberry
T.W. Hodson
L.M. Jones

P.L. Jones
R.P. Jordan
G.W. Kavanagh
M.A. Kavanagh
J. Kenwood
A.A. Khan
B.N.G. King
D. Kinkle
S. Lacroix
C. Lapierre
S. Levesque
V.M. Levson
P.G. Lhotka
S.B. Lowe
E. Lyngberg
K.E. Maya
J.E. McAllister
P.M. Moddie
E.B. More
G.R. Nyberg
M.R. Nyman
P.P. O'Neill
K.E. Orr

B.C. Otton
V. Pearson
A. Pelletier
A.S. Peloquin
P. Pelz
J. Pily
H. Pintson
C. Plouffe
J.R. Rhind
D.L. Safton
M. Savell
A.J. Sexton
R.E. Shearing
T. Skulski
K. Snyder
B.J. Todd
J. Trottier
C. Trudel
A.G. Tworo
B.W. Watson
H. Wilson
J.B. Wilson

Transfer from Associate to Fellow:

A.J. Aubult
R.C. Bald
P. Born
N.G. Cawthorn
B.C. Clattenburg
S.K. Frape
J. Hardy
G.A. Harron
C.W. Jefferson
W.J. Koski
W.E. Macrae

H.E. Madeisky
F.C. Mengel
W.C. Ng See Quan
C.E. Page
J.W. Pelletier
L.C. Pigage
J.L. Porritt
M.N. Rogan
P.J. Wojdak
E.M. Wray
J.A. Wright

Resigned:

R. Auger
J.P.N. Badham
G.A. Bartlett
N.S. Beaton
G.W. Booth
A.V. Boud
J.F. Brondijk
A. Brovedani
H. Christmann
M.P. Coppold
A. Cordsen
E.K. Cullingham
D.A. Firth
P.D. Flach
F.G. Fox
P.A. Goetz
W.A. Gordon
A.C.A. Howe

R.E. Jonasson
M.W. Kalin
T.C. Keefer
C.F. Lamb
C. McAulay
I.J. McLaws
J.R. McLean
A. Pelletier
C.H. Pharo
J.J. Purdie
R. Rice
G.D. Springer
R.D. Stevens
B. Sundby
C.M. Tucker
B.D. Vincent
W.G. Wegenast

Corporate Members Resigned:

Dupont of Canada Exploration Limited

Deceased:

The Council of the Geological Association records with regret the names of the following deceased members:

A.L. Barry
R.A. Bell
G.D. Mason
J. Steiner
W.R. Sutton

At the time of this report, 110 applications are being processed.

Logan Medal

The Logan Medal, the Association's highest award, was presented to Dr. David Strangway of the University of Toronto during the Association's annual luncheon, Monday, May 14, 1984.

D.W. Strangway attended the University of Toronto from 1952 to 1960, receiving in 1956 the Bachelors Degree in Physics and Geology, a Masters Degree in 1958 and his Ph.D. in 1960. His thesis work was on the magnetic properties of rocks from the Precambrian Shield and the use of this information in interpreting airborne geophysical surveys.

In 1960 he joined Bear Creek Mining Company (the exploration arm of Kennecott Copper Corp.) in Denver, and then, in 1965, he moved to MIT where he continued to teach courses in paleomagnetism and exploration geophysics.

In 1968 he returned to the University of Toronto as a member of the Physics Department and, shortly after, he was appointed a principal investigator for the study of the returned lunar samples. He returned the first lunar samples to Canada and detected clear signs of an ancient lunar field. In 1970 he was invited to join NASA as the Chief of the Geophysics Branch and was involved in summarizing the findings of the first Apollo mission.

Dr. Strangway was responsible for the geophysical aspects of the Apollo mission and also chaired the Science Working Panel which was responsible for the allocation of available surface time to various scientific experiments. He continued his research into the magnetic history of the moon and designed and assumed responsibility for an electromagnetic sounding experiment carried on the last Apollo mission that was eventually able to penetrate and characterize the upper two kilometres of the moon. During his final few months in Houston he became Acting Chief of the Planetary and Earth Sciences Division, responsible for all aspects of planetary science in Houston.

In 1973 he returned to the University of

Toronto where he served as Chairman of the Geology Department until 1980, while retaining an appointment in the Physics Department. He taught courses in Geophysics and in Solar System Exploration, and carried out research on lunar samples, on meteorites and on electromagnetic methods of sounding. During this time he also was the first Chairman of the Lunar Science Council, representing universities in North America. Research on meteorites has shown that strong magnetic fields were present during the formation of the solar system. Recent work using MAGSAT data has shown that regional magnetic anomalies mapped from satellites correlate with ancient hot spots.

David Strangway coordinated a proposal for a major Negotiated Development Grant from the National Research Council (now NSERC) which was the largest such grant ever awarded in the earth sciences (\$1,000,000). NASA also permitted the transfer of a laboratory worth about \$750,000 to Erindale College, and this is where much of Dr. Strangway's research is carried out. At the same time, close ties with the mineral exploration industry were considerably strengthened by appointing people from industry and offering workshops of interest to industry. During this time, he also played a role in various national and international geoscience groups, serving as Chairman of the Canadian Geophysical Union, President of the Geological Association of Canada and Vice-President of the Society of Exploration Geophysicists. He also promoted the development of the Ontario Geoscience Research Fund and served as its first Chairman. Similarly, he promoted development of the Exploration Technology Development Fund which supports the development of instruments in the high technology sector. He coordinated faculty members in the Physics and Geology Departments in raising financial support for Isotrace – the world's most sensitive mass spectrometric analytical facility, which is now under construction.

Strangway led the endeavour to develop a strategy for the southwest Campus – a Centre for Natural Resources – at the University of Toronto. The establishment of this centre involves the redevelopment of a major portion of the campus and it provides new avenues for the University in mineral science, geoscience, plant science and forestry.

In 1980 David Strangway became Vice-President and Provost of the University of Toronto, and thus assumed the role of the chief academic officer. He is working to support the quality of the University as a major national resource in research and teaching. In this role, he is responsible for academic policies and the budgets of the

academic divisions of the University. Following the sudden death of the President-Elect he served as President until the summer of 1984. During his career Dr. Strangway has authored or co-authored one hundred and thirty-five scientific papers and one book. He has supervised twelve Ph.D. and sixteen M.Sc. candidates and fourteen Post-Doctoral Fellows or Research Associates. He has been awarded the NASA Medal for Exceptional Scientific Achievement, the Virgil Kauffman Gold Medal of the Society of Exploration Geophysicists for an outstanding contribution to Geophysics, has been elected a Fellow of the Royal Society of Canada, been made an Honorary Member of the Canadian Society of Exploration Geophysicists and an Honorary Member of the Society of Exploration Geophysicists. He was awarded the Senior Izaak Killam Memorial Scholarship, Canada's most prestigious such award in the sciences. He has also served on a dozen advisory committees to universities and governments.

In summation, D.W. Strangway is a man of many talents, and well worthy of the Association's Logan Medal. He has developed an international reputation as an outstanding expert in Earth and Planetary Magnetism, Paleomagnetism and Electrical Properties based upon his publications and an equally prolific array of scientific invited lectures, talks and television appearances – a veritable Wayne Gretzky of the geophysical fraternity and a Pooh-Bah of geoscience societies!

Past President's Medal

The recipient of the Past President's Medal for 1984 is Dr. Rolf Ludvigsen of the Department of Geology, University of Toronto. Dr. Ludvigsen was presented with the award during the GAC Annual Luncheon, May 14, 1984.

Rolf Ludvigsen, since his graduation with a Ph.D. from the University of Western Ontario, has worked with diligence and brilliance in his chosen field of Cambro-Ordovician trilobite faunas of Canada. He has followed the rocks that bear them from Newfoundland to the Yukon in his search for excellent exposure of strata carrying the most complete and best preserved record. By enormously time-consuming, meticulous preparation techniques and superb photography (backed by the equally skilled and careful processing performed by Brian O'Donovan), he has documented the rise and fall of both the cute and the ugly squashed lobsters of yesterday! Any of us who have dropped in on Ludvigsen working at his bench with microscope and needle, or vat and acid, have realized that many trilobites are made, not found. Most of us would have left behind specimens that Ludvigsen, with the skill of

a craftsman, backed up by knowledge of the minutest morphology of his beloved but coyly hiding prey, has excavated, bathed and documented by word and film. He has, however, been far more than a fossil collector and paleozoologist. He is an accomplished field geologist and has, as well, used the new information he is unearthing in remote and often arduous areas of Canada to give added confirmation to, or to revise, the early history of Canada. He has been amazingly productive, for a still young man, to the extent that no account of Cambro-Ordovician times for Canada could be written now without reference to his efforts and it is, we submit, entirely fitting that the Society dedicated to the unearthing of the evidence and synthesizing the history of our country should recognize and encourage the efforts of one of its most successful members.

Quite apart from Ludvigsen's specialization in Cambro-Ordovician trilobite faunal studies, he has first campaigned for the sponsorship, and now as editor is nurturing, the growth of a Canadian Paleontological Monograph series that will be of value to paleontologists worldwide. The high standard, professionalism, format and display of this new publication is largely due to Ludvigsen's leadership and attention to detail which has involved long hours of volunteered time which, in itself, is an effort and undoubtedly demands timely recognition by the members of the GAC.

We cite Rolf Ludvigsen on these grounds, as well as citing him as a maturing scientist already of international reputation and bound to render service of exceptional merit to Canadian geological studies in the future.

Duncan R. Derry Medal

It is a pleasure to announce that the Mineral Deposits Division of the GAC has selected Dr. J.J. (Joe) Brummer as recipient of the 1984 Duncan R. Derry Medal.

Let me refresh your memory as to the criteria applied in making this award. Candidates must be outstanding Economic Geologists who have made major contributions to Economic Geology in Canada. In addition, they must be recognized for their skill and stature as Economic Geologists and also by their public contribution to the science.

Joe Brummer formally entered our profession after graduation from the University of Witwatersrand in 1945 with a B.Sc. in Mining Geology, having already attained a B.Sc. in Mining Engineering from the same university two years previously. After early experiences on the Rand Goldfields, Joe moved to the Rhodesian Copperbelt in 1947 as a mine geologist. He became Chief Geologist at the Mfulira Mine in 1949, and then Chief Geologist of

Rhodesian Selection Trust in 1951. During this period, the intimate relation between the copper-cobalt ores and sedimentary features captured his imagination and, in characteristic fashion, he did something about it. He returned to university, where the object of his Master's thesis was "The Geology of the Roan Antelope Orebody". His published results contained what were then radically new ideas on ore genesis, which helped set the stage for subsequent development of prospecting methods that led to the later discovery by others of two new orebodies, both well-removed from the established part of the then-known Copperbelt. Joe's next move was to Canada, in 1953, where he undertook a study of the Gaspé Copper Mine which he completed as a Ph.D. degree from McGill University in 1955.

Later in the same year he became an employee of Kennco, where he helped pioneer stream sediment geochemistry in Labrador and, subsequently, in the Western Cordillera, using methods and techniques he had utilized and helped evolve in Rhodesia.

During the period from 1961-1970 Joe was Exploration Manager for Falconbridge Nickel in Central Canada, during which time the company found three deposits in the Manitoba Nickel Belt and a fourth in the Snow Lake district, as well as the sediment-hosted George Lake zinc deposit in Saskatchewan.

From 1970 until earlier this year Joe was Exploration Manager of Canadian Occidental. Again, his group was responsible for significant mineral discovery, this time within the Athabaska Basin where the uranium deposits of the JEB and McClean Lake North and South were discovered.

Four qualities come to my mind which distinguish Joe's character:

- His scientific integrity and curiosity;
- His unbridled energy which, together with the above, has permitted him to understand and to explore successfully a wide range of geological environments;
- His ability to transmit his knowledge directly or in combination with others into an enviable series of discoveries with which he has been directly or indirectly associated; and, finally,
- His sense of responsibility to economic geologists at large in communicating his ideas, techniques and results through twenty-six publications that he either has written or co-authored with others.

For all of these reasons, J.J. (Joe) Brummer is a most deserving recipient of the Duncan R. Derry Medal.

Billings Medal

The Paleontology Division of GAC presented the Billings Medal again in 1984. This medal is a biennial award made by the

Paleontology Division in recognition of distinction in research and publication in Canadian paleontology.

This year Dr. Lorin Shano Russell received the award for his highly significant contributions to knowledge of Canadian vertebrate fossils. In many ways, Dr. Russell may be considered one of the founding scientists in the exploration of the western Canadian Mesozoic and Cenozoic vertebrate history. Earlier pioneers noted occurrences, described interesting sections and made shrewd guesses as to their geological history or correlation with the Great Plains and Basin Provinces of the United States. Lorin Russell was the first to demonstrate that the Canadian Prairies held sequences similar to those in the United States, and that those sequences differ in details that allow the construction of more accurate historical pictures and assessments of climatic, physiographic or latitudinal differences. His work has spanned a lifetime since 1926, the year before he graduated from the University of Alberta with a B.Sc. and four years before completing his doctoral work at Princeton University. He has contributed some 115 scientific papers over a period of some 58 years, most dealing with vertebrate fossils and stratigraphy. He continues to be very active, each year successfully competing for research grant funds, which allows him to spend the summers in the field collecting and observing Cretaceous-Tertiary rocks and fossils and the winters working up his findings in the laboratories of the Royal Ontario Museum. In an age when it has become fashionable to link mass extinctions to extra-terrestrial impacts and geochemical anomalies, Lorin Russell's careful observations and analyses are crucial in determining precisely which dinosaurs and mammals became extinct, at which horizon, and how these relate to corresponding data on molluscs, plants and systemic boundaries.

Special Service Award

A Special Service Award was presented to Mr. Jurgan Lau of Vancouver, who has acted as the Association's lawyer in the facilitation of the recent incorporation of the Association. This award was presented to Mr. Lau on behalf of the Association by Hugh Morris, Past-President, at a ceremony in Vancouver. The Association wishes to express its sincere thanks to Mr. Lau for all his efforts on its behalf.

Incorporation

As a result of the efforts of the Executive and Council and, principally, Past-President Hugh Morris, the Association was officially incorporated and registered with the Registrar General of Canada on January 24, 1984. The Association was incorporated

under the Canada Corporations Act as THE GEOLOGICAL ASSOCIATION OF CANADA – L'ASSOCIATION GÉOLOGIQUE DU CANADA, and has been provided with a new bilingual constitution.

Move to St. John's

The move of headquarters from Waterloo to St. John's was accomplished during the summer of 1983, at which time residence was taken up at 4 Clark Place in a university-owned house. Three small offices are run by Maureen Penney, Associate Secretary-Treasurer, and Cynthia Pitts, Assistant Secretary-Treasurer. The move was financially assisted by a grant from the Canadian Geological Foundation of \$20,000, which allowed the purchase of an IBM-XT personal computer which now forms the major data storage unit of the Association. It has taken some months to produce an efficient headquarters system and many thanks are due to the staff for their efforts and time. Perhaps many members of the Association do not appreciate the amount of time consumed in printing, handling and mailing of such items as dues notices, and I must congratulate Cynthia and Maureen for keeping to schedules while learning and devising new procedures at the same time.

Finances (Figs. 1 and 2)

The audited financial statement was prepared by Doane Raymond, the Association's auditors, and was sent to all Fellows during April of 1983. The financial statement has been broken down into two sections this year, in order to clarify the position of the Howard Street Robinson Trust Account. Income from members' fees, corporate membership, annual meetings and interest on investments was substantially lower than in 1982, due mainly to a large drop in relative income from the Annual Meeting in Victoria compared to that from Winnipeg, 1982. The balance of income now stands at \$191,357, representing a decrease of 1.2%. The cost of mem-

bers' services rose by 1.5% to \$158,014 between 1983 and 1984, with major increases being shown pertaining to the move to St. John's and the purchase of new equipment. Other increases of note were in professional fees and travel costs, but supplies and stationary and postage costs have been reduced. The financial standing of the Association changes from year to year as a result of its being organized on an accrual basis, but not including grants received for publications, which are recorded as income only when the works are published. This year the members' equity surplus increased from \$90,242 in 1982 to \$158,695 in 1983. However, budgeting for the 1983-84 fiscal year calls for a large increase in cost of members' services, particularly in special projects, advertising and promotion of the Association and in grants to some sections and divisions, resulting in a projected budgetary shortfall of \$27,695.00. It is hoped that with the recent incorporation of the Association and its proposed registration as a charitable non-profit organization, the new structure will provide financial benefit in the long term.

Committee Activities

The Executive and Council of the Association met in Council meetings held on May 13, 1983 in Victoria, British Columbia; September 20, 1983 in Ottawa, Ontario; March 2, 1984 in Fredericton, New Brunswick; and May 13, 1984 in London, Ontario. In addition, the Executive met in St. John's, Newfoundland prior to the Fredericton Council Meeting, and an Executive Conference Call was conducted on December 22, 1983.

The President, C.R. Barnes, encouraged a definition of the Terms of Reference for all committees of Council, and endeavoured to streamline committee activities and the relative positions of Council and Executive in an administrative structure that would work within the new guidelines of incorporation. Sections and Committees were encouraged to report regularly to Council and to actively consider ways in which the Association, once incorporated, might improve its image and services to members.

The Publications Committee (Fig. 3), under the chairmanship of J.W. Kramers of the Alberta Geological Survey, met three times during the year in association with Council meetings at Victoria, Ottawa and London. Publications are perhaps the most visible outward sign of GAC's activities and the success of the publications program is due to the tremendous efforts of this committee, its Chairman and a number of staff in various centres across the country.

Geoscience Canada, under the capable leadership of Editor Andrew Miall and Managing Editor Naomi Frankel, University of Toronto, has appeared at regular intervals throughout the year. The Publications Committee encourages members of the Association to submit short original papers and topical reviews for publication in *Geoscience Canada*. All manuscripts submitted for publication as articles are sent out for peer review.

The first of the *Geoscience Canada* reprint series, *Facies Models*, which was originally published in August, 1979, was reprinted for the fifth time during December, 1982. It is without doubt the most popular

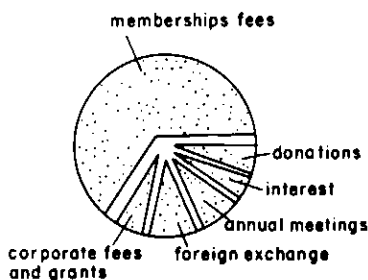


Figure 1 GAC income 1982-1983

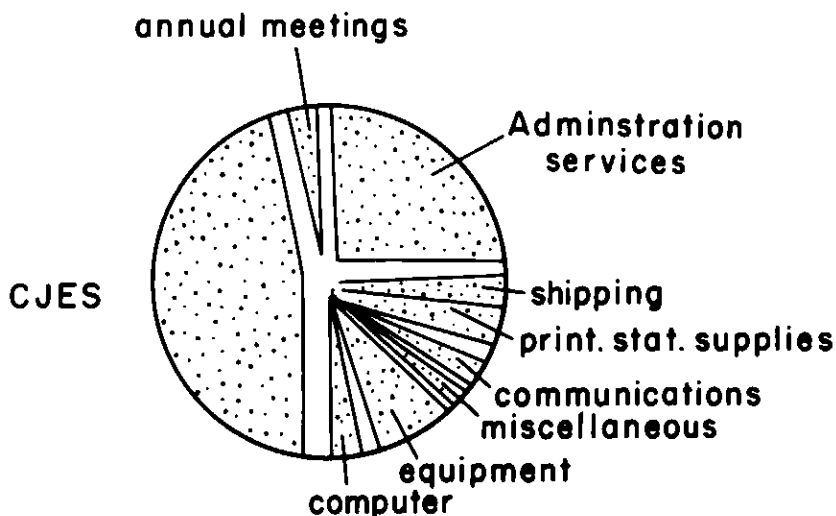


Figure 2 GAC expenditures, Member Services 1982-1983

publication of the Association to date, and as of December 1983 only several hundred copies remained in stock. Well over 15,000 copies have been sold. *Facies Models* is now undergoing revision by the various authors and the editor, Roger Walker. The second revised edition should be available from the printers in August, 1984, ready for the fall sessions of university. The second series in *Geoscience Canada*, *Pleistocene Dating Methods and Their Problems*, is currently being put together as the second of a *Geoscience Canada* reprint series, and should be available from the printers in the summer of 1984. The *Diagenesis* series is coming along well. Several new series are in the planning stages, one of which, *Paleontology*, is well advanced.

The Association's newsletter, *Geolog*, continued to thrive in the last year, due in large part to the outstanding efforts of Godfrey Nowlan of the Geological Survey of Canada in Ottawa. It, too, has appeared at regular intervals. Thanks to the hard work by the editor, costs to the Association for publishing *Geolog* have actually decreased during 1983. GAC Special Paper 26, *Glacial Lake Agassiz*, arrived from the printers during November, 1983. The editors, Jim Teller and Lee Clayton, as well as the authors, deserve congratulations for a job well done. GAC Special Paper 27, *Jurassic-Cretaceous Biochronology and Biogeography of North America*, edited by G.E.G. Westerman, should be going to the printers early in the new year. Other Special Papers approved in principle by GAC Council and in advanced stages of preparation, include *Evolution of Archean Supracrustal Sequences*, edited by L.D. Ayres, and *The Carswell Structure Uranium Deposits, Saskatchewan*, edited by R.T. Laine, D. Alonso and M. Svab. Further Special Papers are in the early planning stages.

At the Council meeting in Victoria in May 1983, GAC Council authorized a special sale of some of the older GAC publications. This sale was intended to reduce the stock of older publications and to give all members of the Association a chance to acquire publications that they may not have in their libraries. This sale has been a success.

The principal medium for the publication of original research papers by members of the Association continues to be the NRC-sponsored *Canadian Journal of Earth Sciences*. Almost all associate editors come from the ranks of the Association. The editor of *CJES*, W.G.E. Caldwell, long associated with the GAC publications program, has continued to strive for excellence in the papers published, and the committee looks forward to a continuation of the close liaison of the past years. The

Publications Committee and GAC Council wish to record the indebtedness to various agencies for the support they have received toward publications in the last year. These agencies include the Natural Sciences and Engineering Research Council of Canada, the Geological Survey of Canada, and the Canadian Geological Foundation. In addition, various universities, government agencies and private companies across Canada have continued to provide support to the Association, leading to cost reductions in a number of the Association's publications.

Fred Longstaffe of the Department of Geology, University of Alberta, has assumed special responsibility for publicity and advertising of Special Papers. In this area, the following was accomplished: full page advertising for Special Paper 25 in *Economic Geology*, *CJES*, *Geoscience Canada*; full page advertising for Special Paper 26 in *Geoscience Canada* and *CJES*, with a possibility of advertisements in four other journals; advertising for all GAC Special Papers and *Geoscience Canada* reprint series appeared in the June 1984 issue of *Geotimes*. A number of other projects are at present underway, including preparation of an advertising display.

The **Finance Committee**, chaired by Pete Gordy, examined in detail the financial operation of the Association. The main concern of the Finance Committee during the year was to restructure the budgetary and financial statements in order to clarify the actual fiscal standing of the Association. It was not apparent in previous financial statements exactly what the contributions of grants for publications were, and statements were produced only at the year's end, for auditing purposes, and immediately prior to Council meetings. Statements now contain separate accounting for grants for publications and are produced every quarter.

At the Annual Meeting in London, Ontario the long-serving chairman of the Finance Committee, Pete Gordy, resigned. The Association, through Council, expresses its thanks to Pete for all his efforts on behalf of the Association over the last several years.

In the coming year, under its new terms of reference, the Finance Committee will look into long term financial planning of the Association, the relative position of short term and long term deposits, trust accounts, and means whereby financial affairs of the Association might be broadened and strengthened.

All Fellows of the Association and Corporate members will by now be aware of the incorporation of the Association and the provision allowing members to make donations to the GAC on a tax-deductible basis. A tax exemption status is now being

sought with the aim of fulfilling the financial objectives of the Association.

The **Membership Committee**, chaired by D. Piper and including J.D. Aitken, R.S. Hewton, J.H. Remick and D.A. St-Onge, reviewed some 171 membership applications during the year. 149 members were elected with 22 transfers. At present, 110 applications are being processed. Membership breakdown according to regions is shown in Figure 4, with total membership standing at 2,670.

Various means of increasing the membership of the GAC were considered by the Membership Committee. A membership drive was initiated, especially at the student level, and posters and flyers were sent to all university Earth Science Departments. In various Earth Science institutions individuals were identified who were requested to aid in the promotion of the GAC in their local area. A booklet outlining the advantages of GAC membership is in production, as are a number of advertising posters. The Membership Committee also has proposed the production of a small, portable membership display booth.

This committee undertook a complete revision of the membership application form, which should appear during the summer of 1984, and it is hoped that one of the activities of the Committee in the next

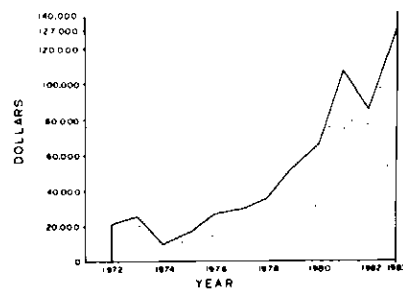


Figure 3 GAC publication sales, 1972-1983

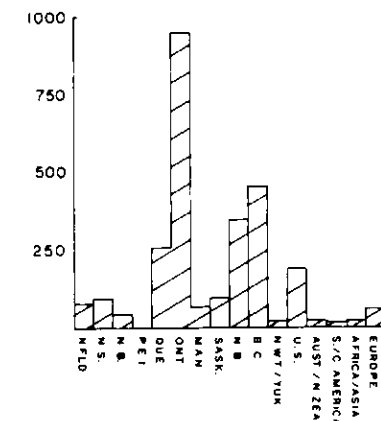


Figure 4 Geographic distribution of membership, 1984

year will be to produce an updated membership booklet.

One of the major concerns of the Committee has been to establish the reason for the difference between the number of new members in the Association and a smaller total growth. It was thought that perhaps student members were dropping their membership upon graduating, possibly due to the substantially increased cost of membership at that point. Statistics are still being collected in an attempt to resolve the disparity.

The **Program Committee**, again chaired by R.S. Harrison, has continued to organize the tours made by the Past-President's medallists of GAC. This year realized tours by two lecturers, Dr. Andrew Miall and Dr. Noel James. Dr. James' tour had been postponed since 1982. During the past year the Committee has been extensively involved with both facilitating the planning of future Annual Meetings and evaluating various aspects of the Annual Meeting program, especially the relationship of Short Courses to the rest of the Annual Meeting, a topic under discussion with the executive of MAC. The Committee has also undertaken revision of the Abstract form.

The **Special Projects Committee**, under the direction of Graham Williams, has produced a number of recommendations to Council for promotional and educational projects. It has been suggested that one major project would be the production of a series of video films on regional geology. The first, on the Atlantic region, is at present under production. The newly proposed mandate of the Special Projects Committee is to generate and promote innovative approaches to information dissemination; to advance communications within the geosciences, both within GAC and the world at large; to interact with other geological societies and to produce displays and publications; to pursue issues of concern to GAC, such as certification of geologists and involvement in major projects, e.g., the Ocean Drilling Program.

Obviously, overlaps exist between the Special Projects Committee and the **Public Information Committee** chaired by R. Riddiough. This has led to a suggestion that the two committees should be merged to produce one strong committee. The Public Information Committee has spent much of the year in resolving the nature and role of communication in GAC, a topic which will spin over into the upcoming year. Other activities underway include the preparation of a bibliography and collection of all available free information on Earth Sciences produced in Canada; the compilation and maintenance of reports, recommendations by Annual Meeting Publicity Chairmen into a continuously updated

handbook for meeting publicity; and the planning and preparation for a geological information package for Western Canada.

The **Robinson Committee** is chaired by A. Soregaroli, with T. Bottrill, L.D. Ayres, E. Gaucher, J. Baldy and A. Panteleyev making up the balance. The Robinson Committee has continued to support work for the Mineral Deposits Division, including financial support for Special Paper 25, the Ayres Volume and the Ore Deposits Monograph Series. The Robinson Committee is continuing to support the establishment of a Robinson Visiting Lecturer to be arranged for alternate years for the Mineral Deposits and Precambrian Divisions. Funding was also made available this year for the GAC Symposium "The Role of Organisms and Organic Matter in Ore Deposits", organized by J.A. Coope and R.W. Macqueen.

The **Education Committee**, under the chairmanship of P. Williams, has continued with the preparation of the Urban Guide Series and has undertaken the organization of the student prizes. Student prizes in the form of Special Papers of the Association and a one-year membership in GAC were awarded to nominated students across the country. Paul Williams also is planning to start an education column in one of the Association's journals. Late in the year a move was made to start a national journal of geological education. At this stage, Alan Coope is looking into the feasibility of producing such a journal for national distribution.

The **Professional Affairs Committee**, under the chairmanship of H. Morris, has been considering the methods whereby qualified geologists might be nationally registered. Cooperation is being sought between a number of earth science organizations in Canada in order to develop guidelines for national accreditation.

With the incorporation of the Association, Council established the **Logan Foundation** as a trust fund administered by a committee comprising three ex-officio members of Council and at least three other members. Hugh Morris was appointed as the first Chairman. The aims of the Logan Foundation are to support major efforts in earth science as deemed important by the Council and administering Committees. It was agreed that Alan Morgan would prepare a summary of the history of GAC activities, emphasizing recent events, which could be used in promotion of the Logan Foundation.

Sections

The **Newfoundland Section** now has a membership of 200 and is increasing in size as new members of the offshore petroleum exploration program arrive in St. John's. Activities during the year included

the annual lobster dinner on May 8, the Spring Field Trip to the southern Avalon Peninsula on May 28, the annual Logan Day get-together, the Fall Field Trip to the Bay d'Espoir area, the winter social (without snow!) and dinner and the Annual Spring Meeting held April 5 and 6. The theme of the annual May meeting was "Volcanoes and their ores: volcanogenic mineralization in Newfoundland". Twenty talks were given with invited speakers John Edmund (MIT) and Steve Scott (University of Toronto) heading the program.

Three issues of *Melange* were distributed to the membership and to the oil rigs offshore. The *Newfoundland Journal of Geological Education* has been published twice, one issue on volcanoes appearing in April 1983 and the second, on petroleum, appearing in 1984.

The GAC scholarship was awarded to Chris Grandy, a third-year earth science student at Memorial University.

The **Atlantic Geoscience Society** held the Amherst Colloquium, seven meetings in the Halifax-Dartmouth area and the Robert Westmiller lecture tour to New Brunswick and Nova Scotia universities, which was jointly sponsored with APICS and the N.S. Institute of Science. Seven Executive Committee meetings were held with attendance varying from six to twelve people. In addition to its formal affiliation with the GAC, the Society also keeps in touch with APICS, the Nova Scotia Institute of Science, the N.S. Museum, the Mining Society of Nova Scotia, the Geological Societies of Cape Breton and Maine, and the GSA (NE section). Society members were largely responsible for running an EdGEO workshop at BIO in November, which was financially sponsored by the Geoscience Council of Canada. The President, L. Ferguson, reported that initial work on a geological highway map of New Brunswick had commenced and applications for "seed money" had been made to the Canadian Geological Foundation and CSPG. In thanking members of the Executive for their work over the past year, the President noted particularly the contributions of the Program Chairman, Mike Lewis, and the organizers of the Fredericton Symposium, J. Noble, R. Pickerill and W. Van de Poll.

The **Toronto Discussion Group** has had a successful year, as ever, hosting more than ten meetings, and being involved in the organization of three events related to the giant Hemlo gold deposit in Northwestern Ontario – a conference, field trip and a banquet.

The **Edmonton Geological Society** inaugurated a noon-hour speaker program with R. Harrison leading off the series on September 22 (1983). The Society's annual fall field trip was held on September 24

and 25 and visited Grand Cache under the leadership of W. Langenberg of the Alberta Geological Survey. In August, the Edmonton Geological Society ran a very successful four and a half day EdGeo workshop. Since in Alberta the Grade VIII science curriculum is basically earth sciences, teachers attending the workshop were very enthusiastic about its timing and content.

The **Cordilleran Section** was extremely active during the seven months commencing in October 1983 and ending in April 1984. It sponsored five lectures, three one-day short courses, two half-day forums, one two-day symposium and one one-day field excursion.

The lectures were given by Geri Eisbacher of the GSC; Marco Eianadi of Stanford University; Trygve Hoy of B.C. Ministry of Energy, Mines and Petroleum Resources; Ken McClay of the University of London; and S. Gordey of the GSC (average attendance, 60). The three one-day short courses were as follows: 1. Carbonate Sedimentology for the Explorationist, lecturer, Professor Roger MacQueen, University of Waterloo, attendance, 112; 2. Structural Geology Applied to the Interpretation of Clastic Hosted Base Metal Deposits, lecturer Dr. Ken McClay, University of London, attendance, 70; and 3. Application of Geothermal Research to Mineral Exploration and Ore-Genesis, lecturer, Dr. R.W. Henley, head of Geothermal Chemistry Section, Department of Scientific and Industrial Research, Wairakei, New Zealand, attendance, 118. All three short courses were considered by the participants to have been very informative. The following publications were issued for these short courses, and may be purchased from the Cordilleran Section of the GAC, Box 398, Station A, Vancouver, B.C. V6C 2N2. Orders must include \$1.50 for postage and handling of Courses 1 and 3, and \$4 for Course 2:

Short Course No. 1:

Carbonate Sedimentology for the Mineral Explorationist, 37 p., \$5.00

Short Course No. 2:

Structural Geology Applied to Interpretation of Clastic Hosted Base Metal Deposits.

Pt. 1: Mapping Geological Structures, 215 p.

Pt. 2: Structural Geology of Stratiform Lead-Zinc Deposits: Case Histories, 150 p.

Parts 1 and 3 form a set at \$25.00

Short Course No. 3:

Application of Geothermal Research to Mineral Exploration and Ore Genesis (orig. pub. in *Earth Science Reviews*), 50 p.; \$5.00

The two half-day forums were as follows:

1. The University of British Columbia Geosciences staff presented an update on their current research programs. This was a most informative and friendly forum; attendance, 135. 2. Dr. George Patterson of the Ontario Geological Survey, Thunder Bay, conducted a half-day forum on the Hemlo area. Several companies provided additional material in the form of rock and mineral suites, maps and thin sections. All 90 participants found the forum of much interest.

The two-day symposium was on Cordilleran Geology and Exploration: Status and Future Trends. Twenty-one papers were delivered. The speakers are employed by the following: mining industry, 7; universities, 4; Geological Survey of Canada, 3; British Columbia Department of Energy, Mines and Petroleum Resources, 3, including the deputy minister H.F. Bonham; United States Geological Survey Alaska Branch, 2; and W.W. Hutchison, A.D.M., E.M.R. A volume of abstracts, consisting of 51 pages, was published and is available for \$2 per copy. The total registration for the symposium was 394.

The one-day field trip featured Slope Stability Problems in the Southern Coast Mountains. The leaders were Geri Eisbacher and John Clague of the GSC. Forty participants enjoyed the excursion.

During the past year the Cordilleran Section established the C.S. Ney Lecture-ship. The first recipient was Dr. Ken McClay, University of London. The Section also continued to subsidize students, charging them only 40 per cent to 50 per cent of the fees charged to full members. This included membership, short courses, symposium and field trips. In addition, contributions were made to a graduate field trip and the University of British Columbia mineral collection.

The Section has granted honorary memberships to Vic Hollister and Bob Hewton, both hard working past-presidents of the Section. The overall membership of the Section currently is 575.

The **Victoria Section** of the GAC was, naturally, extremely active with the organization of the 1983 Annual Meeting. It was hoped that the impetus created by the National Meeting in May would carry over and that there would be a demonstrated need for an active Victoria Section.

The new executive committee held its first meeting at the end of August (1983). A Logan Day Picnic was held in October, a fall field trip was made around Victoria and southern Vancouver Island and the first day-long annual meeting of the Section was held in the spring of 1984. A one-day symposium was held on the geology of Vancouver Island and the adjacent offshore regions on April 6, 1984.

As there is no geology department at the University of Victoria, and as Vancouver is a three-hour road/ferry trip away, Victoria tends to be isolated from the world of academic and technical meetings. Consequently, the executive perceived GAC as having an important role to play in hosting technical lectures throughout the year and in helping to keep the two earth science communities of the Federal and Provincial governments in close communication. The executive of the Victoria Section has proposed to change the name of the section to the Pacific Section in order to be less parochial.

Divisions

The respective divisions of the Geological Association continue to be well represented. Membership is illustrated in Figure 5.

The **Canadian Geophysical Union (CGU)** was founded in 1973 to provide a forum for Canadian geophysicists. The Union was formed as a joint division of the Geological Association of Canada and the Canadian Association of Physicists. The CGU contingent of the official national delegation to IUGG general assembly in Hamburg in August, 1983 consisted of A.E. Beck (University of Western Ontario) and M.J. Berry (EPB/EMR, Ottawa). The official delegation was augmented by five other delegates of which three were also CGU members. It seems likely that Canada will host the 1987 IUGG meeting in Vancouver, and preliminary arrangements already are underway. Plans are being made to organize an international conference in Toronto in 1985 on Global Dyke Swarms, an important component of which will be a display of world-wide aeromagnetic maps. In 1983, the CGU awarded its J. Tuzo Wilson medal to D.I. Gough.

The **Mineral Deposits Division** awarded the Duncan R. Derry Medal for 1983 to

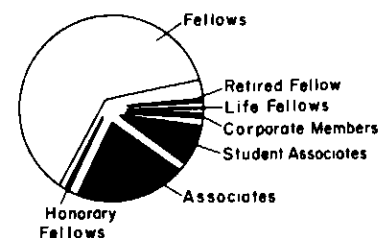


Figure 5 GAC membership, 1984

Membership of Divisions:

Mineral Deposits - 729

Structural Geology - 168

Precambrian - 210

Paleontology - 96

Canadian Geophysical Union - 135

Volcanology - 203

Environmental Earth Science - 111

R.W. (Dick) Hutchinson at the Annual GAC luncheon in Victoria in May (1983). The award was presented by Alan Coope, then chairman of the Mineral Deposits Division. The MDD sponsored sessions at the CIM Annual Meeting (April 17-20, 1983) and GAC/MAC 1983 (May 11-13), highlighted "Gold in Central Canada", "Tin and Tungsten, Deposits of the Canadian Cordillera" and "Gold Deposits of the Canadian Cordillera". These sessions were well attended. The symposium "Economic Geology of the Canadian Cordillera" was held in Whitehorse on December 5-7, 1983. In 1984 the MDD sponsored two special sessions at the GAC/MAC Annual Meeting in London, Ontario. One of these, entitled "Gold in Iron Formation Sequences" was chaired by R.J. Shegelski and J. MacDonald and the other, "The Role of Organisms in Ore Deposition", was organized by R. Macqueen and J.A. Coope.

The Mineral Deposits Division continues to publish *The Gangue* regularly, and two field and reference manuals describing mining camps are in final planning stages. These are the first of what is hoped to be a comprehensive series of manuals on the mining camps of Canada.

The Canadian Geoscience Council named a Task Force to examine "Research in Exploration for Mineral Deposits". Funds from the Howard Street Robinson Fund are supporting this Task Force.

The MDD is perhaps the most active and strongest of the GAC divisions. Continued active participation by the membership is essential for future success and progress.

The **Structural Geology and Tectonics Division** had its annual meeting during the GAC Annual Meeting in Victoria in May (1983). The two main topics of discussion at the meeting were membership fees and arrangement of sessions for the London GAC meeting in 1984. It was decided to raise annual fees to \$3.00 to cover annual prizes and some support for two workshops. Arrangements were made for review and scheduling of papers on structural geology into coherent sessions at the 1984 Annual Meetings. Its winter activities included the third Canadian Tectonics Research Conference in Edmonton and Jasper, Alberta on October 21 and 22. The meeting was organized by Henry Charlesworth (University of Alberta) and William Langenberg (Alberta Research Council) and included a spectacular field trip across the Rocky Mountain Fold and Thrust Belt.

Membership of the division now stands at 168. Two awards are made on behalf of the division at the GAC annual luncheon. These awards are for the best paper on structural or tectonic topics published in 1983 by a Canadian geologist or on a Canadian subject, and for the best M.Sc.

or Ph.D. thesis on structural or tectonic problems.

At the GAC luncheon in Victoria (1983) two awards were presented. The award for best thesis went to Ms. Janet King of Queen's University for her M.Sc. thesis entitled "Low-pressure regional metamorphism and progressive deformation in the Eastern Point Lake area, Slave Province, N.W.T.". The thesis was supervised by Dr. H. Helmstaedt. Honourable mentions were accorded to Tekla Harms of Queen's University and to Randall Parrish of the University of British Columbia.

The award for the best paper of the year went to Simon Hanmer of the Geological Survey of Canada for his paper entitled "Microstructure and Geochemistry of plagioclase and microcline in naturally deformed granite", which appeared in volume 4 of the *Journal of Structural Geology* p. 197-213). In this category, honourable mentions were made for papers by Dick Brown and Don Murphy (Carleton University) on mylonitic rocks in the Shuswap Terrane (*CJES*, v. 19, p. 456-465) and by Margaret McMechan and Ray Price (Geological Survey of Canada) on transverse folding and superposed deformation in the Mount Fisher area (*CJES*, v. 19, p. 1011-1024).

The **Volcanology Division** is expanding its horizons. As indicated in the regular publication of *Ashfall*, the division's newsletter, the field excursion is proving most successful with trips to Mount Saint Helens and Hawaii in the spring of 1983 and a trans-Mexico trip in the spring of 1984. The division also sponsored a special session and field trip of the GAC in London, and sponsored a short course at the same meeting entitled "Growth and Evolution of Volcanic Edifices - With Implication for Precambrian Volcanism". This course presented a state-of-the-art summary of the development and evolution of volcanic edifices and large-scale volcanic features.

It is planned to award a prize for the best published thesis on volcanology or a related topic.

Membership of the **Paleontology Division** continues to grow, and the division's newsletter is sent to all paleontologists across the country. Members of the division, as representatives of GAC, have been actively involved in the establishment of *Palaeontographica Canadiana*, the new monograph series sponsored jointly by GAC and CSPG. The first volume, entitled *Silicified Silurian Odontopleurid Trilobites from the Mackenzie Mountains*, appeared in November, 1983. The division presented the Billings Medal again in 1984. This medal is a biennial award made by the Paleontology Division in recognition of distinction in research and publication in Canadian paleontology.

The Department of Geology at the University of Toronto hosted the 1983 Canadian Paleontology and Biostratigraphy Seminar. This seminar is held annually under the auspices of the Paleontology Division and is the only national meeting in Canada devoted exclusively to paleontology.

The **Precambrian Division** is considering the production of a medal, and has polled its membership for their reactions. A \$100.00 donation was made to the George Mannard scholarship fund at McGill University in recognition of George's interest in and support of the GAC and the division.

A series of articles on topics in Precambrian Geology is in preparation for *Geoscience Canada*.

Council has attempted this year to resurrect the **Environmental Geology Division** and to establish a **Sedimentology Division**. These items are under discussion by Council at the time of writing this report.

Conclusions

I would like to offer some general comments: This has been a somewhat difficult but highly interesting year, especially for the new headquarters staff. The new Secretary-Treasurer had an extremely hard act to follow, and picking up the reigns from the efficient staff at Waterloo has been no easy task. Alan Morgan, Heather Sokolowski and Nancy Riley built upon the base established at Waterloo, providing a strong and vibrant association management. Their enthusiasm was unique. Transfer of headquarters to St. John's provided less headaches than expected initially, although the transfer of computer files and production of software to handle them was a little more difficult. It was finally accomplished with the help of Ian Gibson at Waterloo and David Press at Memorial University. I would personally like to thank them for their help.

In so far as preparation of the Secretary's Report is concerned, it would appear necessary that all sections and divisions should attempt to provide the Secretary with some form of annual report in the month of February, including a summary of the year's activities and a financial statement. These reports may then be incorporated into the annual report to Council. Indeed, with the new position of GAC as an incorporated body, it is a requirement. I would be most grateful if section and division executive continue to communicate on a regular basis with the headquarters staff.

The headquarters staff have now begun to settle in at 4 Clark Place, and both Maureen Penney and Cynthia Pitts had a chance to meet Executive Committee members in February. It might be a practice to follow in future years in holding one

meeting of the Executive in the headquarters facility.

With the Association now incorporated, with a new constitution, an enlarged and more representative Council and a rejuvenated committee structure, it is hoped that the growth of the last few years will be improved upon.

Just as Alan Morgan always expressed his appreciation for the headquarters staff in previous years, may I do the same this year. The running of the Association depends upon their efficiency and enthusiasm. This last year has caused many hours of overtime and learning. To Maureen Penney and Cynthia Pitts – many thanks to both of you.

Respectfully submitted,

John Malpas
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