

Secretary's Report May 1989-May 1990

R. Frank Blackwood

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Introduction

The Geological Association of Canada continued to provide members and the community-at-large with an eclectic offering of geoscience, through our journals, special publications (e.g., papers, reprint volumes), the Montreal Annual Meeting, lecture tours and our Divisions and Sections. Membership services were maintained at their usual high levels, despite the increasing financial pressure of doing so. Much time was given by Council in considering ways of ameliorating the impact of rising costs on the activities of GAC, and raising revenue for sustained growth. Some of these issues were discussed by the President in his regular reports in GEOLOG.

Throughout the year, Executive and Council held joint meetings at Vancouver (October, 1989), Toronto (February, 1990) and Vancouver (May, 1990). Separate meetings were held by the Executive Committee at Winnipeg (September, 1989) and Ottawa (December, 1989). At these meetings, routine (but important) matters of business were heard and Council approval sought before taking action — Council is the final authority in managing the affairs of the Association. All GAC committees reported to Council, and a number of them met separately during the year, e.g., Publications, Program, Planning.

Membership Statistics

The following is a breakdown of membership categories within the Geological Association of Canada and a comparison of numbers for the last three years. This year's figures were valid to April 30, 1990.

Membership Category	April 1988	April 1989	April 1990
Honourary Fellows	2	2	2
Life Fellows	3	3	3
Retired Fellows	164	111	178
Fellows	1848	1868	1897
Associates	496	506	469
Student Associates	201	202	235
Undergraduate Associates	2	5	1
Corporate Members	51	37	34
	<u>2767</u>	<u>2734</u>	<u>2819</u>

The geographic distribution of members is given below:

	1988	1989	1990
Canada	2466	2424	2499
Newfoundland	71	74	79
Nova Scotia	89	86	90
New Brunswick	53	55	59
Prince Edward Island	1	1	1
Quebec	259	265	264
Ontario	1023	999	1008
Manitoba	53	45	49
Saskatchewan	74	72	81
Alberta	289	262	266
British Columbia	524	524	573
NWT and Yukon	30	30	29
United States	186	197	203
Australia/New Zealand	31	33	32
South/Central America	11	9	11
Africa and Asia	20	19	20
Europe	53	52	54

Members elected since April, 1989, are as follows:

Fellows	W.C. Bale	F. Chartrand	J.-M.M. Dubois	Associates	W.K. Husak
I.S. Al-Aasm	M. Belanger	M.E. Cherry	D.P. Dudek	P.G. Anderson	C.M.C. Inverno
A. Alsharhan	A. Bensoussan	S. Churchill	R.L. Duess	K.P.E. Andrew	C.L. Jenkins
G.S. Archer	J.D. Blackwell	J.A. Clark	D.A. Eberth	G.G. Arkos	J. Jin
M. Arsenault	L.R. Bottomer	M. Coniglio	P.A. Egginton	A.E. Armitage	K.L. Karchmar
P.E. Ashmore	R.A. Brozdowski	S.A. Crawford	E. Ellingham	S.E. Atkinson	L.A. Kennedy
R.P.B. Aumaitre	T.E. Burns	R. Daigneault	M.E. Enachescu	R.W. Balfour	S.E. Kormos
S.A. Averill	N.M. Caira	P.M.A. Daignault	A.R. Findlay	P. Bambic	G.K. Kulla
C. Baldys	D.F. Cater	D.W. Davis	J. Fox	G.D. Beard	J. Lamirande
				C.J. Beaumont-Smith	W.S. Laturnas

G.E. Gehrels	K.A. Bellefontaine
P.S. Giles	M.M.R. Best
G.N. Goodall	T. Briggs
F. Goupil	G.C. Bruulsema
J. Gray	J.F. Burzynski
J.A. Greig	S.J. Butorac
G.S. Griesbach	M.L. Byrne
D.J. Hanson	S. Castonguay
L.S. Hardy	T.C. Christianson
B.C.W. Haystead	G.T. Clarke
J.D. Hill	A.J. Cole
M.W. Hitzman	J.N. Connelly
K.E. Hudson	M. Constantin
R. Huggins	D.E. Crowe
K.T. James	J. Dehls
M.C. Jensen	J.P. Desrochers
D. Johnson	S.W. Deveau
I. Kaczmarek-Ehrman	M. Dubois
W.C. Kerr	J.L. Duke
K.R. Kivi	C. Dumaresq
R. Laplante	K.M. Edwards
L. Lariviere	M.D. Edwards
D. Lavoie	D.T.W. Evans
R.H. Linden	P.E. Fejer
H.G. Machel	P. Ferland
P. Mazacek	A. Fournier
J.K. Montgomery	J. Freeman
S. Morasse	F. Fueten
I.R. Morrison	K.J. Fysh
P. Morton	M. Gagnon
J.B. Murphy	C. Gamba
C.R. Nash	L. Gauthier
T. Neale	S. Gibbins
D.M. Nelles	T.R. Giles
R.J.E. Niels	S.A. Gladima
G.A. O'Reilly	G. Glady
J. Parker	L. Godin
J.A. Perello	P.-D. Godin
M. Pilkington	J. Goff
G.A. Price	N. Gonthier
W.D.T. Raven	J.C. Gosse
R.R. Redfern	S.E. Grasby
P. Rehn	R. Grenier
P.J. Renders	N. Guillemette
W.F. Ritchie	R.D. Haggerty
J. Rose	R.I. Hall
I.M. Samson	S. Halladay
H.Q. Smit	J.P.M. Hamilton
J.P. Smol	W.R. Harley
J. Starkey	G. Hartley
D.F. Symonds	K.J. Hattie
P.C. Tsui	C.D. Hawkes
J.V. Tully	R.A. Herfst
J.T. Van Berkel	S.J. Hinds
W. Vanderpoll	C.E. Holmden
F. Yacoub	R.B. Hrabí
B. Zayachivsky	T.B. Hubner
	J. Hunt

G. Lawrence
S. Leclair
F.N.F. Lee
T.M. Lewis
R.I. Macfie
P. Mackinnon
K.E. MacLachlan
R.B. MacNaughton
N. Marchildon
D.P. McCarthy
K.M. McCrae
R.K. McEachern
R.G. McGregor
E.E. McIver
D.J. McLean
J.M. Melliush
G. Melo
A. Moukhsil
E.L. Mueller
J.D. Nearing
L.J. Nunes
R.P. O'Leary
J. Palfy
J.J.Y. Pan
S. Parent
M.G. Parsons
B. Pataky
B. Perron
N. Rasul
R.J. Robinson
N. Ross
D.W. Ryan
A. Sadri
E.M. Sakoma
H.A.I. Sanderman
J.M. Savelle
H.C. Schultze
T.C. Schwartz
R.G. Scott
B.E. Seemayer
B. Senechal
A. Simonetti
P.J. Smart
S.E. Stakiw
K.H. Telmer
P.C. Thiersch
L.H. Thorleifson
P. Tomascak
C. Trudel
J.D. Vervoort
M.A. Vice
A.M. Vonk
D.W. Wagner
J.R. Walls

J.R. Walmsley
M.J. Watt
P. Weihed
M.G. Westcott
C. White
M.T.D. Wingate
S. Wu
A. Wunapeera
B. Yan
B. Yokart
G. Zaluski

**Transfer from
Associate to Fellow**

D.E. Ames
M. Archambault
E.S. Barnett
F.W. Baumann
R.A. Bell
L.D. Burden
D.A. Caulfield
M.P. Cecile
J.R. Clark
J.A. Easton
T.W.D. Edwards
D.L.S. Emond
S.G. Enns
G.C. Finn
D.A. Franzl
J.D. Greenough
L. Harnois
R.W. Hulstein
T. Hurlay
P.L. Jones
E.H. Koster
R.T.M. Kusmirski
A. Lichtblau
G.G. Lutes
R.D. Maass
M.A. O'Donnell
C. Patenaude
J.M. Pautler
D. Power-Fardy
J.E. Robins
J.M. Seguin
V. Singhroy
A.L. Smith
G.K. Smith
P.M. Smith
P.B. Thomas
G.D. Trembath
A.C. Weston
E.M. Zaleski
R.A. Zinn

The following members resigned from the Association since April, 1989:

Regular Members

S.J. Edwards
V.G. Ethier
G. Glady
S. Graber
B.L. Hoffmann
H.M. Jones
R.J. Keller
H.J. Klassen
G.D. Klein
K.A. Lowell
J.J. Pinch
D. Pretorius
J.A. Somerwil
G.S. Webb
G.R. Webber
S.J. Woywitka

Corporate Members

Amoco Canada Petroleum Co.
Canadian Occidental Petroleum Ltd.
Kerr Addison Mines Ltd.
Texaco Canada Resources

The Council of the Geological Association of Canada notes with regret the passing of the following members:

F. Charlton
E.H. Kranck
J. McAdam
C. Pepin
Y. Sanschagrín

Medals and Awards

When GAC applied for incorporation under the Canada Corporations Act, one of its stated objects was to promote geoscience "by the granting of awards and distinctions". To this end, the Association awarded four prestigious medals at its annual luncheon held on Wednesday, May 16, during the Vancouver '90 Annual Meeting. The highest award of the Association, the Logan Medal, was presented to R.L. Armstrong of the University of British Columbia; the Past President's Medal to U. Brand of Brock University; the J. Willis Ambrose Medal to H. Gabrielse of the Geological Survey of Canada; and the Duncan R. Derry Medal (selected by the Mineral Deposits Division) to C.I. Godwin of the University of British Columbia. The citations read at the medal presentations are given below.

Logan Medal

The Logan Medal is the highest award bestowed by the Geological Association of Canada. It is awarded to an individual who has made outstanding contributions to geoscientific knowledge in Canada. Dr. Richard Lee Armstrong, this year's Logan Medalist, is an outstanding earth scientist whose contributions span an unusually broad range of topics relating principally to crustal evolution in the Western Cordillera of North America. The quality and breadth of his research are a tribute to him and an honour to the profession. He has developed at UBC one of the most highly regarded geochronology laboratories in the world, and has used this particular field of endeavour as the central focus for his major contributions nationally and internationally. Dr. Armstrong's contributions include the use of radiogenic isotopes in developing a near-steady-state model for crustal evolution, a proliferation of studies concerning the Mesozoic and early Cenozoic magmatic evolution of the Canadian Cordillera, and the origin of metamorphic core complexes from Arizona to southern Canada. These are fundamental questions to which he has applied a variety of laboratory-based "tools" including Rb-Sr age dating, K-Ar age dating, common lead-isotope analyses and, more recently, zircon (Pb-U) dat-

ing. His extraordinary level of productivity is first and foremost based on a strong commitment to field work, which is so fundamental to his research.

His paper on "Mesozoic and Early Cenozoic magmatic evolution of the Canadian Cordillera" is the culmination of a substantial body of his earlier work and will stand as a landmark in this field. In this outstanding paper, he develops an episodic model for magmatic activity based largely on his own work of the past two decades, and integrates his model with modern plate-tectonic concepts. Virtually all of Dr. Armstrong's work contributes to our understanding of plate-tectonic concepts because he develops important geochronological data and basic field work directed to fundamental processes of crustal evolution. In this latter respect, his work on metamorphic complexes throughout the Cordillera is yet another major contribution to our understanding of mountain-building processes.

Dr. Richard Lee Armstrong combines the inquisitive qualities, the dedication and the intellectual capabilities so essential to the progress of science. He has applied these attributes to the benefit of the earth sciences through contributions by himself, by his associates, and by the large number of students who have searched him out as an advisor. He continues the traditions of incisive research and service to the profession exemplified by and embodied in previous winners of the Logan medal. Ladies and Gentlemen, Dr. Richard Armstrong.

(Dirk Tempelman Kluit;
prepared by A.J. Sinclair)

Past President's Medal

Since receiving his Ph.D. from the University of Ottawa in 1979, Uwe Brand has risen to national and international prominence in the fields of trace-element and stable-isotope geochemistry. His detailed and innovative work on trace-element behaviour during carbonate diagenesis was recognized when he was presented with the Outstanding Paper Award for the 1980 volume of *Journal of Sedimentary Petrology*. The theoretical framework established by this research helped lay the foundation for the subsequent development of carbonate geochemistry into a mature geological subdiscipline.

More recently, Uwe turned his attention to biogeochemistry, primarily as a tool for paleo-environmental reconstruction. Along with his graduate students, he has set new standards for biogeochemical research through the development of criteria for the evaluation of the extent of diagenetic change in fossils and by examining the influence of local sedimentary facies on trace element distribution patterns. This work has also contributed greatly to an understanding of secular trends in the composition of seawater through the Phanerozoic. His research is also focussed on paleoclimatic and paleo-oceanographic change

as reflected in stable isotope ratios, and some of this is being applied to current problems of global change. In the field of carbonate geochemistry, particularly in biogeochemistry, he is of world calibre and an outstanding credit to carbonate studies in Canada.

Uwe is not one to rest on his laurels. His latest work on chemical diagenesis of carbonate-hosted oil and gas fields in the Michigan Basin promises to throw new light on the timing and mechanisms of hydrocarbon emplacement. His enthusiasm for his work is infectious and must be a most positive influence on his professorial responsibilities in his undergraduate and graduate student contacts. It is with pleasure that I ask you to join me in welcoming to the podium GAC's 1990 Past President's Medallist: Dr. Uwe Brand of Brock University.

(John Hamilton; compiled from nominators' submissions)

J. Willis Ambrose Medal

When the geology of the northern Canadian Cordillera is discussed, the work of Hubert Gabrielse is pre-eminent. In his 42 years as a student and employee of the Geological Survey of Canada, he has mapped and interpreted sixteen 1:250,000 map areas, covering more than 200,000 km². His papers and talks focus on stratigraphy and regional tectonics, but involve many other aspects of the earth sciences. From these diverse interests, Gabe, as he is known to friends and colleagues, has gained a comprehensive understanding of the geology of the northern Canadian Cordillera, and his influence on Canadian Cordilleran thought has been pervasive. His broad knowledge of the region has made him an obvious choice as collaborator for compilations. Most recently, he is co-editor of the *Cordilleran Orogen* volume of the *Decade of North American Geology* series. His persistence and patience in this project have underscored Gabe's dedication to his chosen profession.

Gabe joined the Geological Survey of Canada in 1953. From 1973 to 1979, he was head of the Vancouver office of the Survey, and under his guidance the activities of the office expanded and diversified. Gabe is a member of several prestigious scientific societies, and a fellow of the Royal Society of Canada and the Geological Society of America. Gabe has also been active as councillor and committee member for the Geological Society of America, and a member of the Canadian Committee on the Dynamics and Evolution of the Lithosphere.

Gabe's contribution to the training of young geologists through his many field operations is impressive. The 163 students who enjoyed a summer of employment with Gabe can be found in industry, as professors in universities, and in federal and provincial geological surveys. As a supervisor of graduate theses, he gave generously of his time, energy, advice, and knowledge.

Gabe's distinguished and varied career, spanning the years from pack-horse days to the present, is one that many young scientists must envy. Our profession continues to be enriched by Hubert Gabrielse in all his activities.

(Jim Franklin)

Duncan R. Derry Medal

Dr. Colin Godwin is an outstanding Canadian economic geologist whose career has spanned exploration, research of exploration techniques and teaching.

Colin was born in Comox, British Columbia, educated in BC and graduated from the University of British Columbia with a B.A.Sc. in 1962. From 1962 to 1964, Colin was employed by the Geological Survey of Canada as assistant to resident geologist Lew Green in Whitehorse. The following year he was part of the GSC's Operation Wager Bay.

It must have been a cold summer in the Canadian Arctic that year because Colin went to Australia immediately after, as exploration manager for Aaro Aho and Atlas Exploration. He was involved with tin exploration there for two-and-a-half years. I asked Colin if the program was successful. He shrewdly replied that it must have been because the project and land were sold for a healthy profit when he left. Colin spent the next six months in Chile, but perhaps that was too hot for him because in 1969 he returned to Canada as a Ph.D. student at UBC.

Colin became a sessional instructor while a Ph.D. candidate, a vocation that has clearly become a major aspect of his career. In 1972, Colin took a three-year sojourn from his Ph.D. efforts at UBC in order to do regional exploration in Yukon as Chief Geologist for Dynasty Explorations, which later became Cyprus Anvil Mining.

Colin saw the danger in becoming known as UBC's longest term geology graduate student, and accordingly returned to UBC in 1975 to wrap up his Ph.D. study on "Geology of the Casino Porphyry Copper-Molybdenum Deposit". He joined the faculty of UBC in 1975 as assistant professor. He moved up to associate professor in 1982 and full professor in 1987. He has been director of the geological engineering program since 1985.

Despite a late start in academia, Colin Godwin has been enormously productive. He has authored or co-authored 32 papers in refereed journals. I checked the Vancouver '90 program and counted five papers for which Colin is a co-author. Colin's publications emphasize three main topics:

(1) design of computer-based exploration data files, (2) metallogeny, (3) Pb-isotope geology, applied to ore genesis.

A point one of your friends made to me, Colin, is that despite your well-known easy-going manner, you are tenacious when it comes to following up on a geological question.

Colin was co-author of a paper published in *Economic Geology* in 1972 on the development of GEOLG. Colin became a pioneer in the development of computer systems for coding, manipulating and displaying geological information. The GEOLG program is now widely used internationally.

Over the past eight years, Colin, with various students and colleagues, has developed a base of lead-isotope data for the Canadian Cordillera that is probably the best of its kind in the world in quality and quantity. The interpretive scheme that has been developed is an integration of conceptual models of ore genesis with crustal-evolution processes. It is a system that can be applied to mineral exploration decision-making.

Colin went to Chile on the MDD field trip. He was very enthusiastic about the trip when I asked him about it a few days ago — he said it had given him some new ideas for research, that it was stimulating. However, Colin, I must pass on to you some concern expressed to me from some mineral-deposit geologists about the role of lambda in economic geology.

Perhaps Colin Godwin's most significant contribution has been as a teacher. He is a motivator who infects others with his own enthusiasm for geology and the challenge of mineral-deposits research. Colin is an upbeat person, the sound of his whistling is well known in the halls of UBC. He is sought out as a thesis advisor, having supervised 30 graduate theses. His courses are popular and his mixed student/industry field trips have been highly successful, both geologically and at promoting contacts between students and the mineral industry. In fact, many of Colin's students land jobs before they graduate. Colin takes a strong personal interest in his students, he enjoys stimulating them by being provocative. By the same token, Colin has the gift of humour and does not take himself too seriously. When I asked one of your friends for an amusing or embarrassing anecdote to relate about you, he replied that he could not recall any time you were actually embarrassed.

Ladies and gentlemen, it is my pleasure to present to you Colin Godwin, an outstanding Canadian economic geologist, who embodies the qualities of past recipients of the Duncan Derry Medal. Colin, it is my pleasure to award you the Duncan Derry Medal for 1990.

(Paul Wojdak)

Headquarters

There are three permanent full-time staff members at the national office in St. John's, Newfoundland. Associate Secretary Karen Johnston has overall responsibility for the office; Associate Treasurer Yvonne Snow is our publications-distribution officer and bookkeeper; Assistant Secretary-Treasurer Arlene Kelly provides membership and secretarial support. These three people worked hard on members' behalf, and made the Sec-

retary's job more effective and rewarding over the last year.

A bilingual booklet containing GAC's Letters Patent, By-Laws, Code of Ethics, and Rules and Regulations was published in time for the Vancouver '90 Annual Meeting. The Rules and Regulations were updated throughout the year and then translated into French (expedited by Councillor Normand Goulet). Councillors will now have GAC's *modus operandi* in one tidy package.

Publications Distribution

Special Papers, Short Course Notes, Geoscience Canada Reprint Series, and all other publications except the journals are distributed from St. John's. Transactions are computerized and volumes are distributed to buyers in an efficient and timely manner. Over the past year, approximately 5,762 copies of GAC publications were sold. Inventory is also monitored and sales figures are forwarded to the Publications Committee on a regular basis.

Advertising Manager

The Advertising Manager normally works out of Headquarters on a half-time basis. At the end of 1989, however, Celeste Andrews resigned to pursue full-time studies for an M.B.A. degree. She agreed to look after correspondence matters related to publication advertising until May. The Secretary-Treasurer is now reviewing the Association's advertising requirements in the context of overall operations at Headquarters.

Advertising and promotional projects throughout the year included updating and printing the publications brochure, doing special mailings to promote particular Special Papers, maintaining exchange-advertising agreements, and attending the IGC meeting in Washington (July) and the PDAC conference in Toronto (March).

Financial Report

1989 Audit

The audited financial statement of the Association for 1989 was prepared by Doane Raymond and sent to all Fellows in March, 1990. The following is a summary of income and expenditures from the auditor's report.

Total income (other than publications) for 1989 was \$258,690. This mostly represents members fees, corporate membership and interest on investments.

Expenditures for 1989 (other than publications) were \$244,232. These include salaries and benefits to Headquarters staff; insurance, telephone and postage costs; subscriptions to *Canadian Journal of Earth Sciences*; computer charges; and the audit.

Publications are treated separately by the auditors, and represented an excess of cost over recoveries of \$62,045 in 1989. This is based on Costs of \$271,173, which include editing, typesetting, printing, distribution

and postage, and Recoveries of \$209,128, which include sale of publications, grants and sale of advertising, for a deficit of \$62,045.

The above figures indicate an overall excess of expenditures over income of \$47,587, i.e.,

Income.....	\$258,690
Expenditures.....	\$244,232
	14,458
Publications.....	(62,045)
Excess.....	\$ (47,587)

This excess of expenditures over income is, in fact, quite close to the figure (\$46,889) projected in the Council-approved budget for 1989. That is, Council deliberately had planned a budget where costs would exceed revenue for that particular year, in order to continue the production work on several Special Papers (one was printed in March, 1990, and two others are expected before year-end). Thus, by drawing on our resources a little in 1989, GAC made a considerable investment in a valuable resource (books) that will pay dividends well into the future. Members should recall, as well, that the Association realized a surplus in the preceding budget year (1988) of \$47,697.

1990 Budget

The 1990 budget was approved by Council at the February, 1990, Council Meeting in Toronto. The following is a statement of its main items:

Income	
Members Income.....	\$259,000
Publications Sales.....	246,000
Publications Grants.....	81,000
	\$586,000
Expenditures	
Members Services.....	340,100
Publications Production.....	225,000
Publications Distribution.....	38,300
	\$603,400
Total Income.....	\$586,000
Total Expenditures.....	603,400
Excess of Expenditures over Income.....	(\$ 17,400)

Here, again, Council has approved a deficit budget, albeit a much smaller one than the previous year. This decision was taken after much careful deliberation and the acknowledgement that it would be foolhardy to hold up topical geoscience publications *currently in the works*, in order to achieve a balanced budget for 1990. Council is aware, however, that there will be a levelling off (even a small reduction) in publication projects beyond 1990, making demands on the budget less onerous. Also, the assets of very valuable book inventories currently being accrued will be returning significant revenue at that time.

Committees

Projects and activities within the GAC are expedited by several committees, each with its own terms of reference and chairperson. Three of the committees select nominees for GAC medals (Logan, Ambrose and Past President's), and one nominates candidates for positions as Officers and Councillors. The Chairpersons of the Publications, Program and Finance committees sit with the officers and the Past President on the Executive Committee.

The **Publications Committee** is chaired by Bob Baragar. It has responsibility for all of GAC's publications, including their editing, typesetting and printing. Not obvious in that statement, of course, is the demanding proactive effort required by the Chairman to identify, secure and review papers, ensuring that GAC's publication program is second to none.

Geoscience Canada is published four times a year. The first three issues for 1989 were under the editorship of Dr. Andrew D. Miall of the University of Toronto. Andrew, of course, had been editor of the journal for seven years when he stepped down in the fall of 1989. There is no doubt that his scientific and editorial leadership contributed significantly to the current eminence of *Geoscience Canada*. Andrew has been thanked formally and informally by the Association, and we also acknowledge with thanks the University of Toronto for its support of the journal over the past several years.

Dr. Michael E. Cherry of the Ontario Geological Survey succeeded Dr. Miall as editor of *Geoscience Canada*. We are grateful to Michael for taking on this onerous job, and to the Ontario Geological Survey for supporting his volunteering and providing office space for the journal. Monica Easton continues as Managing Editor of *Geoscience Canada*, providing valuable continuity during this period of transition.

Our popular newsmagazine, *GEOLOG*, was published five times in 1989. Its sprightly cover, news and entertainment make it a highly visible and anticipated visitor every two to three months. This, of course, reflects the tremendous efforts of *GEOLOG*'s two volunteer editors, Michael and Monica Easton.

One Special Paper was published during the report period: Special Paper 36, entitled *Sediment-Hosted Stratiform Copper Deposits*, was edited by R.W. Boyle, A.C. Brown, C.W. Jefferson, E.C. Jowett and R.V. Kirkham. It was released in March, 1990, at the Prospectors and Developers Association of Canada meeting in Toronto. In the 1990 budget approved by Council in February, funds were allocated for the publication of two more Special Papers during 1990:

37 *The Early Proterozoic Trans-Hudson Orogen in North America*

38 *Middle Proterozoic Laurentia - Baltica*

Production work will continue on Special Paper 39, *Evolution of Western Interior Basin*. The previously planned volume "The Cigar Lake Uranium Deposit" will not be published as a Special Paper, by the mutual agreement of Council and the companies sponsoring the volume. Other avenues of publishing some of the papers will be sought.

Unforeseen delays have kept *Geoscience Canada Reprint Series 4, Diagenesis*, from being published. However, as of May 16, the volume was expected to be available in July. *Methods in Quaternary Ecology, Geoscience Canada Reprint Series 5*, is also expected to be available this summer. It was necessary, due to popular demand, to reprint two other volumes in the reprint series during the past year: Number 1, *Facies Models* and Number 3, *Ore Deposit Models*.

Two volumes of Short Course Notes were also reprinted last fall: Number 3, *Coal Petrology: Its Principles, Methods and Applications* and Number 6, *Mineralization and Shear Zones*. At the Vancouver '90 Annual Meeting, Short Course Notes Number 8 was released: *Theory and Application of Pearce-Element Ratios to Geochemical Data*, edited by K. Russell and C.R. Stanley.

Finally, one issue of the GAC-CSPG-sponsored *Palaeontographica Canadiana* was published. Number 6 in the series is entitled *Sunwaptan (Upper Cambrian) Trilobites of the Cow Head Group, Western Newfoundland, Canada*; it was written by R. Ludvigsen, S.R. Westrop and C.H. Kindle.

The **Program Committee** is chaired by Emlyn Koster and is responsible for all aspects of GAC's technical program, e.g., Annual Meetings, Field Conferences, NUNA Research Conferences. The chairman is an ex-officio member of all of the standing Local Organizing Committees (LOCs).

The Montreal '89 Annual Meeting was an extremely successful geoscience forum. It was one of the largest GAC/MAC meetings ever, with 1,344 registrants. General Chairman Colin Stearn and his committee laboured long and hard to make the meeting a success, and are to be commended for a job well done.

The Program Committee has been closely following the planning for two NUNA Research Conferences to be held in 1990. "Greenstone Gold and Crustal Evolution" is scheduled for late May in Val d'Or, and is being organized by François Robert. The second NUNA Conference will take place in September at Windermere. It will deal with "Late Proterozoic Rifting, Glaciation and Eustasy", and is being organized by Jim Aitken.

Other activities of the Program Committee included updating the GAC/MAC Annual Meeting Guide for a second printing; researching and preparing new guidelines for GAC short courses to ensure topical subjects and high-quality notes; and meeting with its MAC counterpart to deal with issues related to our Joint Annual Meetings.

The **Finance Committee** is chaired by Gordon West. It advises Executive and Council on financial matters, such as our annual dues structure and short- and long-term investment strategies.

The **Howard Street Robinson Fund Committee** is chaired by Hugh Squair. It manages the trust fund and uses fund proceeds to support Precambrian and economic-geology research projects, mostly through the publication of results. This year, however, there were no requests for grants submitted to the Committee. Nevertheless, the fund supported the H.S. Robinson Lecturer by paying the speaker's travel costs. The fund also earned a total of \$7,710, as per the auditor's report, from interest on bonds and deposit accounts.

The **Education Committee** is chaired by Jean-Claude Dionne. This year it administered the awarding of undergraduate prizes to geoscience departments in Canadian universities. Students from 26 universities received free GAC membership for one year and a Special Paper of their choice. The Committee also has been working to organize a Special Session at the Toronto '91 Annual Meeting on "Teaching Earth Science at Pre-University Levels".

The **Membership Drive Committee** is chaired by Janet King. It continued the initiatives implemented last year to encourage students and professionals to become or remain members of GAC. Non-member authors who published in *CJES* were congratulated and invited to join GAC; membership-application forms were distributed to non-member registrants at the Vancouver '90 Annual Meeting; welcoming letters were sent to new members; and contact was maintained with GAC campus representatives to encourage student membership. GAC was also represented by the Committee, through Committee member and Councillor Normand Goulet, at two meetings in Quebec. One was a gathering of earth-science students from universities in Montreal; the other was the annual meeting of L'Association professionnelle des géologues et des géophysiciens du Québec (APGGQ).

The **Membership Review Committee** is chaired by Norman Halden. It reviews all applications to ensure they meet GAC's entry requirements for all categories of membership. Since last May, 235 applicants were approved for membership.

The **Planning Committee** is chaired by Mary-Claire Ward. During the past year the Committee was quite active, and had significant input in the three Council meetings. Many important questions and issues are facing our Association, and the Planning Committee has researched several of these and provided the leadership for Council discussion.

The major areas of Committee involvement dealt with the increasing difficulty of

maintaining members services at current levels in the face of shrinking revenue, and general societal trends that could impact on our Association in the 1990s. At the February meeting in Toronto, much discussion centred around ways of increasing revenue. Comparisons were drawn with similar geoscience societies, and recommendations made to Council on membership dues, corporate and government sponsorship, and how to maximize returns from Annual Meetings. The whole area of GAC publications (being both our most lucrative and most costly venture) was also examined. Finally, a special committee was struck (under the chairmanship of former GAC Publications Committee Chairman Godfrey Nowlan), with specific terms of reference, to recommend how we should handle publications in the future, i.e., status quo; full in-house professionalization; contract out to some publishing house. Nowlan's committee will report to Council upon completion of its investigations.

The Planning Committee also considered the issue of declining enrollment in earth sciences at Canadian universities, and what the Association can (and should) do in the area of public awareness of science. That and other deliberations are ongoing, and are designed to make GAC a vital, relevant player on the Canadian geoscience scene for the 1990s and beyond.

The **Professional Affairs Committee** is chaired by Ron Smyth. It continued to monitor developments concerning professional registration in the provinces. The membership was informed of these matters through a Committee report published in *GEOLOG* (Volume 18, Part 3).

The **Public Information Committee** is chaired by Geoff Norris. It has been trying to organize a short course or workshop on "geoscientists dealing with the media" for the Toronto '91 Annual Meeting. The chairman also contacted the editor of *Geoscience Canada* and secured approval for a series in the Journal on the public awareness of science. In fact, the Committee has been collaborating with the Planning Committee on the public-awareness issue, and led the Council discussion of same in Vancouver in May. Geoff Norris is also concerned by the growing trend of students staying away from science; he has posed related provocative questions to Council as we contemplate the future demand for geoscientists in Canada.

The **Logan Fund Committee** is chaired by John Hamilton. The committee arranged for the publication of a brochure promoting the fund and encouraging donations; the brochure was mailed with the annual dues notice last fall. As a result, a total of \$3,492.50 was donated. The Committee will be soliciting ways, as per the Logan Fund guidelines, of sponsoring worthwhile geoscience projects.

DIVISIONS

GAC has nine Divisions. They all report to Council on a regular basis throughout the year. The following is a summary of major activities for the report period.

Canadian Sedimentology Research Group. The Group's Ontario - Quebec regional meeting took place May 24-26, 1989, at the University of Ottawa. Approximately 50 people attended and the quality of scientific presentations was high. A three-day field trip examined Upper Ordovician and Middle Silurian strata on the Bruce Peninsula and Manitoulin Island. The CSRG Newsletter was published twice during the year (the last for editor Guy Plint, who for years contributed immeasurably to CSRG and GAC by keeping the newsletter going). The Special Session entitled "Shelf Sediments — Ancient and Modern" was co-sponsored with the Marine Geosciences Division at the Vancouver '90 Annual Meeting. Also in Vancouver, the Group had its Annual General Meeting where, for the first time, informal presentations were made on work in progress. It is hoped that this will develop into a tradition at GAC meetings. Finally, the CSRG reports that it is in excellent financial health, due mainly to profits realized from the regional meeting.

Environmental Earth Sciences. Interest in the Division continues to increase — membership now stands at more than 200. During the year work was completed on a new constitution and by-laws; these are in the process of ratification, first by EES members and then by the national body. The Division sponsored a Special Session at Vancouver '90 entitled "Acid Mine Drainage: Designing for Closure — Prediction and Theory". Also, three newsletters were sent to members during the past year.

Geophysics. This has been the first full year of operation for the Division. Most activities have been in conjunction with the Canadian Geophysical Union. Planning has begun for sponsorship of special sessions and short courses at Toronto '91 and Wolfville '92.

Marine Geosciences. The Division sponsored the Continental Shelf Seabed Symposium held at the Bedford Institute of Oceanography in Dartmouth, Nova Scotia, October 2-7, 1989. The meeting provided a forum for the interaction of marine geologists/geophysicists, oceanographers, biologists, chemists and ocean engineers working on the principal shelf regions of Canada. The Special Session entitled "Shelf Sediments — Ancient and Modern" was co-sponsored with the Canadian Sedimentology Research Group at the Vancouver '90 Annual Meeting. The Division plans to continue sponsoring sessions that are of interest to marine geoscientists. Members of the Division have presented courses through the International Centre for Ocean Development, and continue to support the Ocean

Drilling Program. Membership stands at 63, and a regular newsletter is published by the executive.

Mineral Deposits. The Division is in strong financial health and the membership fee remains at \$5.00. The winner of the William Harvey Gross Medal was François Robert — he was presented with his medal at the MDD luncheon in Vancouver. The Julian Boldy Certificate winner for the best mineral-deposits paper at Vancouver '90 was to be selected by a three-member committee. The Division also sponsored the Special Session "Cordilleran Mineral Deposits" and the short course "Ore Deposits, Tectonics and Metallogeny in the Canadian Cordillera" at Vancouver '90. Sponsorship of at least four Special Sessions is planned for Toronto '91. MDD is also working out an agreement whereby it would publish a proceedings volume from the GAC NUNA Research Conference on "Greenstone Gold and Crustal Evolution". Four issues of the Division's newsletter, *The Gangue*, were published during the year; its re-appearance has been well received by the MDD membership.

Paleontology. The Division's financial situation is sound with a membership of 129 (April, 1990). The first "Directory of Canadian Paleontologists" was produced; it contains comprehensive communications information, as well as the stratigraphic interests of those listed. The Division sponsored the Canadian Paleontology and Biostratigraphy Seminar in Dartmouth, September 29 - October 1, 1989. Some 40 geologists attended and 24 participated in a field trip to the Silurian section in the Arisaig area. The Best Student Paper Award was presented to Keith Dowing (University of Western Ontario) for his talk on "Ordovician Stratigraphy of Southampton Island, Northwest Territories". The Division also wrote a letter to Canada Post suggesting that a commemorative stamp be issued to celebrate the sesquicentennial of the Geological Survey of Canada in 1992. Two Division newsletters were published during the year.

Precambrian. Most of the Division's activities centred around organizing the H.S. Robinson Distinguished Lecturer tour. The Division chose Dr. John Percival of the Geological Survey of Canada as the lecturer; some parts of Canada were visited before the Vancouver '90 meeting and other areas will be visited in the fall.

Structural Geology and Tectonics. The Division held its Annual Meeting in conjunction with the Canadian Tectonics Studies Group, which met on November 10-12, 1989, at the University of Western Ontario. At the meeting, the Best Paper Award was presented to Michael R. McDonough and Philip S. Simony of the University of Calgary for their paper "Structural Evolution of Basement Gneisses and Hadrynian Cover, Bulldog Creek Area, British Columbia" (published in *CJES*, v. 25, 1989). The Best Thesis

Award was won by James A. Mott of Queen's University for his Ph.D. thesis "Structural and Stratigraphic Relations in the White River Region, Eastern Main Ranges, Southern Rocky Mountains, British Columbia". Both awards include a certificate and the sum of \$100. The Division has increased its field-trip subsidy to two students who submit the best abstracts in the structure and/or tectonic categories at the GAC Annual Meeting — each of two qualifying students may now receive \$400. (No awards were made at Vancouver '90). A Cordilleran tectonics workshop was sponsored at Carleton University on February 9-11, 1990, and the Special Session "Structural Controls on Ore Deposits" was co-sponsored with the Cordilleran Section at Vancouver '90. The Division's Secretary also reports that membership stands at 214, and three issues of the newsletter, *The Main Thrust*, were published during the year.

Volcanology. The Division has introduced a new formula for its best-thesis award: it will alternate yearly between M.Sc. theses and Ph.D. theses. Last year an M.Sc. thesis was chosen (F. Brissette of the Université de Montréal). For 1990, the Leopold Gélinas award went to John Stix of the University of Toronto for his Ph.D. thesis on "Physical and Chemical Fractionation Processes in Subaerial and Subaqueous Pyroclastic Rocks". At Vancouver '90, the special symposium commemorating the 10th anniversary of the eruption of Mount St. Helens was sponsored by the Division. During the year, the annual compilation of Canadian volcanology research was completed. As well, three issues of the Division's newsletter, *Ashfall*, were published.

Sections

GAC has five Sections. They provide a vehicle for geoscience activities in their respective regions and contribute greatly to the overall effectiveness of the national body. The following is a summary of the Sections' activities.

Cordilleran. Three public lectures on natural hazards in British Columbia were co-sponsored by the Section: "Volcanoes, Mountain Floods and Landslides"; "Earthquakes"; and "Changing Coastlines of British Columbia". These were quite successful and the "Earthquakes" lecture was especially well attended. A short course entitled "Mineral Exploration and the Law" was given in the fall. Government lectures were given by the GAC Past President's Medallist, the H.S. Robinson Lecturer and the SEG Distinguished Lecturer. A major project came to fruition this year with the publication of the 128-page book *Vancouver Geology*. Containing a coloured geology map in the back pocket, this attractive volume was given to registrants at the Vancouver '90 Annual Meeting. Also at the Vancouver meeting, the Section sponsored an evening of public lec-

tures on Global Change. The list of speakers was headed by Dr. Digby McLaren, President of the Royal Society of Canada. A fun-filled curling bonspiel was held last winter, and four newsletters were issued during the year. Finally, the Section sent speakers to local schools to talk about geology, and arranged speakers to discuss earthquake hazards at local community centres.

Edmonton. A two-day field trip to Jasper was held in September, 1989, to examine the structural geology of the area. Twenty geologists participated and thoroughly enjoyed the excellent exposures. The Section's monthly luncheon program was very successful with a total of seven talks given — topics ranged from deep-water carbonates to the Archean evolution of the Superior Province. Finally, the third annual "Pub Night" saw approximately 70 people of the Edmonton geological community attend for a good time.

Newfoundland. Over 60 people, including 20 students, participated in the fall field trip to the Baie Verte Peninsula, where the general geology and several mineral prospects were examined. The Annual Meeting was held in February with the theme "Crustal Structure and Earth Resources". Fifteen papers were presented and a half-day was devoted to examining the Lithoprobe East deep-seismic profiles recorded across Newfoundland. In March, the Section co-sponsored a Teachers Workshop organized by Art King of Memorial University. Approximately 100 science teachers and co-ordinators attended the two days of presentations by university and Department of Mines and Energy geoscientists. The teachers and organizers considered it a major success, and hope that similar workshops will be held in the future. (The organizers acknowledge with thanks a supporting grant from the Canadian Geological Foundation.) Three issues of the Section's newsletter, *Melange*, were published during the year, and two successful social events, Logan Day in the fall and the Lobster Do in the spring, were enjoyed by members.

Pacific. The Section celebrated Dawson Day in June and Logan Day in September, 1989. A one-day field trip last fall examined the Leech River and West Coast faults. The technical program started off with a lecture by Bill Fyfe on global change. This was followed by nine lunchtime seminars held throughout the year, and a major day-long public awareness symposium on "A Day in the Life of the Earth". Eight well-known scientists addressed the public on topics ranging from earthquakes and volcanoes to land use and global change. (The Section acknowledges with thanks a supporting grant from the Royal Society of Canada.) The Pacific Section participated in the Vancouver Island

Science Fair and presented a prize for the best earth-science exhibit. Finally, work on the geological guidebook to Vancouver Island is continuing.

Winnipeg. The Section enjoyed an excellent slate of nine guest speakers throughout the year, including the GAC Past President's Medallist (John Malpas) and the H.S. Robinson Distinguished Lecturer (John Percival). As well, the first annual baseball game and picnic was held in September 1989, and was enjoyed by all.

Associated Societies

GAC has associated-society status with six geoscience groups: Atlantic Geoscience Society (AGS), Canadian Quaternary Association (CANQUA), Canadian Geophysical Union (CGU), Canadian Society of Petroleum Geologists (CSPG), L'Association professionnelle des géologues et des géophysiciens du Québec (APGGQ), and the Toronto Geological Discussion Group (TGDG). We have signed memoranda of understanding with CGU and CSPG. The presidents of GAC and CSPG visit each other's Council to report on their respective organizations, and to investigate ways of further co-operation. Other forms of communication occur throughout the year in order to engender mutual support and co-operation among associated societies. This type of collaboration, for example, has resulted in AGS's hosting of the 1992 GAC/MAC Annual Meeting in Wolfville, Nova Scotia.

Final Comment

This report ends my three-year term as GAC Secretary. Since the Annual Business Meeting on May 16, 1990, the Secretary and Treasurer positions have been re-combined. Hugh Miller, last year's Treasurer, is your new Secretary-Treasurer. I wish him the best of luck, and I'm confident that the membership and Headquarters will be well served during his tenure.

I have thoroughly enjoyed my time serving the national body of GAC. Having been Secretary-Treasurer and President of the Newfoundland Section of GAC, I became involved at the national level as Program Committee Chairman in 1986, bringing a well-developed local perspective on the running of a geoscience organization. I found the Association responsive to geoscience initiatives within the regions, but also quickly learned that a truly national organization has a broader mandate, namely to serve disparate geoscientific interests that transcend regions and single disciplines. GAC's Sections, Divisions and Committees, and our annual collaboration with the Mineralogical Association of Canada at the Joint Annual Meeting, try to ensure a judicious mix of activity for a membership *potpourri* that is

scattered across the country. Maintaining that balance in the face of impossible demographics, immense geography, and the eclectic needs of members is the Association's greatest and most exciting challenge.

In an earlier report, I referred to the remarkable contributions made by busy Canadian geoscientists to the GAC, through service on Committees, Council and Executive. It was a real privilege for me to be associated with these people and to be imbued with their energy and sense of purpose. The *esprit de corps* of the Executive Committee was a particularly gratifying experience. So if I have made some small contribution to the GAC, it pales in comparison to the personal rewards of "rubbing shoulders" with dedicated members from across Canada. I sincerely thank the Association for the opportunity.

Respectfully submitted,

R. Frank Blackwood
Secretary

St. John's, Newfoundland
May 1990