



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

P.O. Box 523, (Metropolitan Toronto), Rexdale, Ontario, M9W 5L4 Canada

President:

K. A. Lovstrom
AMAX Exploration Inc.
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Denver, Colorado 80226
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NEWSLETTER NO. 36

Vice Presidents:

J.H. McCarthy
U.S. Geological Survey
Federal Center, MS 912
Denver, Colorado 80225
U.S.A.

JUNE 1981

PERSONAL COLUMN

L.G. Closs

Geology Department
Colorado School of Mines
Golden, Colorado 80401
U.S.A.

Information on Association Members is received from around the world. To keep your fellow members informed of your latest moves send a brief summary to the Rexdale office.

Secretary:

R.G. Garrett
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario K1A 0E8
Canada

R.L. Andrew has been recently appointed District Manager, Northwest District, for CRA Exploration Pty. Ltd. and is based in Karratha, Western Australia.

Treasurer:

I. Thomson
Ontario Geological Survey
77 Grenville Street
Toronto, Ontario M5S 1B3
Canada

O.K. Bwerinofa has been recently appointed Deputy Director of the Zimbabwe Geological Survey at Salisbury after completing his studies at Queen's University, Canada.

Councillors:

1981-82
G.H. Allcott
L.A. Clark
W.K. Fletcher
S.J. Hoffman
S.E. Kesler
P.K. Theobald

A.K. Chakrabarti has left INGEOMINAS and taken up the post of consulting Geologist-Geochemist with COMINEX, in Medellin, Colombia.

1981-83

R.C. Armstrong
E.H.W. Hornbrook
R.E. Lett
A.W. Rose
D.D. Runnells
F.M. Smith

W.B. Coker has resigned his position with the Geological Survey of Canada, Ottawa, and has joined Gulf Minerals Canada Ltd., Toronto, as their senior geochemist.

N.B. de Carvalho is now Chief-Geologist with Serrara de Mineração S.A. based in Jacupiranga, Sao Paulo, Brasil. He was formerly with S.A. Mineração de Amianto in Minaçu, Goiás.

Australian Regional Councillor:

R.H. Mazzucchelli

P.G. Moeskops late of AMDEL, has joined International Energy Resources Limited in Sydney, Australia, as Exploration Manager.

European Regional Councillor:

G.H.W. Friedrich

C.E. Nichols has transferred with Union Carbide Corp. from non sandstone uranium exploration in Grand Junction, Colorado to tungsten exploration with the Reno Nevada office. His first assignment is to propose targets for major skarn deposits in the Great Basin.

South Africa Regional Councillor:

G.L. Coetzee

A MESSAGE FROM THE PRESIDENT - K.A. Lovstrom

Brasilian Regional Councillor:

R.J.P. Brim

The Annual General Meeting held in Vancouver, British Columbia, April 14, 1981, marked the completion of the eleventh year of the Association of Exploration Geochemists. On behalf of the entire Association I'd like thank Art Rose, the 1980-81 Executive and Council for an excellent year. During 1981-82, the new Executive and Council look forward to a progressive twelfth year for the Association.

I'd like to take the opportunity of this June Newsletter to introduce the Association membership to a number of committees established for 1981-82. The objective of these committees are to consider, investigate and report on the subjects outlined. I would encourage all Association members to get involved by relaying their suggestions and expertise to the appropriate committee.

ADMISSIONS COMMITTEE

The Admissions Committee reviews the application of every candidate for membership in the Association.

L.D. James, Chairman,
L.G. Closs
L.P. James

NEW MEMBERSHIP COMMITTEE

The New Membership Committee shall disseminate information concerning the objects and purpose of the Association to increase its membership.

J.H. McCarthy, Chairman,
R.E. Lett
F.M. Smith
N.G. Lavery

STUDENT PRIZE COMMITTEE

The student prize committee shall consider the creation of a student prize or award.

S.E. Kesler, Chairman
D.D. Runnells,
P.K. Theobald
R.H. Carpenter

SYMPOSIA COMMITTEE

The Symposia Committee will study and propose future Association symposia.

L.G. Closs, Chairman
S.J. Hoffman
W.K. Fletcher
R.C. Armstrong

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ADMISSIONS COMMITTEE REPORT

The following persons have been accepted for Membership in the Association by Council. The Association is pleased to welcome the new members.

VOTING MEMBERS

Alecrim, J.D.	Head Geochemist, Metamig Company, B. Horizonte, Brasil.
Bakker, P.J.	Exploration Geochemist, UNDP, Kenya.

- Barker, A.L. Chief Geologist, Lacana Mining Corp., Toronto, Canada.
- Bogle, E.W. (transfer) Geologist/Geochemist, BP Exploration Canada, Calgary, Canada.
- Broili, C.J. Senior Geologist with Union Carbide, Missoula, Montana, USA.
- Cabello, J.M. Exploration Geologist, Amax de Chile Inc., Santiago, Chile.
- Carr, G.R. Experimental Officer, CSIRO, Div. of Mineralogy, North Ryde, Australia.
- Earle, S.A.M. (transfer) Geochemist, Saskatchewan, Mining Dev. Corp. Saskatoon, Saskatchewan, Canada.
- Elliott, S.M. Exploration Geologist, Anaconda Australia, Mt. Isa, Australia.
- Jenkins, D.M. Senior Geologist, Placer Dev. Ltd., Vancouver, B.C. Canada.
- Kartun, K.G. Exploration Geologist, Windhoek, SWA/Namibia.
- Klusman, R.W. Professor of Geochemistry, Dept. of Chemistry & Geochemistry, Colorado School of Mines, Golden, Colorado, USA.
- Kowalchuk, J.M. Geologist with Placer Dev., Port Coquitlam, B.C. Canada
- Kunzendorf, H. Geochemists / Geophysicist, Riso National Laboratory, Roskilde, Denmark.
- Leitch, C. Research Geologist, Newmont Exploration, Vancouver, Canada.
- Liotta, F.P. Geochemist, Amax Exploration, Denver, Colorado, USA.
- McCallum, M.E. Professor of Geology, & Research Geologist, Dept. of Earth Resources, Colorado State university, Ft. Collins, U.S.A.
- Miller, W.R. Geologist, U.S. Geological Survey, Denver Federal Center, Denver, Colorado, USA.
- Molling, P.A. Exploration Geologist with Molycorp, Inc. Tucson, Arizona, USA.
- Montayo-Lopez, L.M. Exploration Geologist, ASARCO Exploration Co. of Canada, Panama.
- Sharp, W.E. Associate Professor of Geology, Univ. of South Carolina, Columbia, S.C., USA.
- Shmakin, B.M. Technical Advisor at U.N. Secretariat, Minerals Branch, United Nations, New York, N.Y., U.S.A.
- Smith, L.B. (transfer) Senior Geologist, Texasgulf, Inc., Lakewood, Colorado, USA.
- Stendal, H. Assistant Lecturer, Institute of General Geology, University of Copenhagen, Ostervoldgade, Copenhagen, Denmark.
- Stevens, D.L. President of Stevens Expl. Management Corp., Anchorage, Alaska.

Taufen, P. (transfer) Senior Geochemist, Texasgulf Inc., Golden, Colorado, USA.
Van Berkel, F. Exploration Geologist, AAC of SA Ltd., Springbok, South Africa.
Wall, L.N. Geochemist, Carpentaria Exploration Co. Pty.,
Brisbane, Australia.
Zastavnikovich, S. Exploration Geochemist with Falconbridge Nickel Mines Ltd,
Delta, B.C., Canada.

AFFILIATE MEMBERS

Ayras, M.J. Exploration Geologist, Geological Survey of Finland,
Rovaniemi, Finland
Breese, P.R. Geologist/Hudson's Bay Oil and Gas Co Ltd. Minerals Expl.,
Calgary, Alta., Canada.
Fikkan, P.R. Exploration Geologist, Bear Creek Mining, Spokane, Wash., USA
Gogineni, S. V. Exploration Geologist, Cotter Corp. Lakewood, Colo., USA.
Green, R.E. Regional Manager, Reconnaissance, Homestake Mining Co.,
Golden, Colorado, USA.
Kagule-Magambo, N. Senior Geochemist, ESAMRDC-Eastern & Southern African Mineral
Resources Development Centre. Dodoma, Tanzania.
Klein, T.L. (transfer) Manager of geochemical laboratory, Rock Analysis Inc.,
Golden, Colorado, USA.
Knell, B. Geologist/Geochemist, Geological Institute, West Germany.
Kohls, D.W. Vice President Exploration Gold Fields Mining, Lakewood,
Colorado, USA.
Kramer, K.F. Associate Professor, Wright State Univ. Dayton, Ohio, USA
Krysgveld, J.C. Geochemist with Bonder-Clegg & Co.Ltd., Vancouver, BC, Canada.
LaPoint, D.S. (transfer) District Geologist, Texasgulf, Golden, Colorado, USA.
Leger, A.R. Exploration Geologist, Callahan Mining Corp. Reno, Nevada, USA.
Needham, R.B. Glacial Geologist with Shell Canada Resources, Minerals Dept.,
Toronto, Canada
Salzer, T.A. Geologist with Duval Corp., Battle Mt., Nv. USA.
Saunders, D.F. Member of the technical staff of Texas Instruments Inc.,
Dallas, Texas, USA.
Teik, P.A. Geologist/Geochemist with Gustavson Assoc., Inc.,
Boulder, Colorado, USA.
Thomson, K. Geologist/Geochemist with NL Baroid/NL Industries,
Elko, Nevada, USA.

Van Aswegen, G.M. Geologist, Anglo-Transvaal Cons. Inv. Co. Ltd.,
Pietersburg, Rep. of South Africa.

Wilson, J.S. Geochemist, Amok Ltd., Saskatoon, Sask. Canada

Zemmels, I. Uranium Exploration Geologist, with SUNEDCO, Dallas,
Texas. U.S.A.

STUDENT MEMBERS

Amor, S.D. Graduate student at Queen's University, Kinston, Ont. Canada.

Hasenohr, E.J. Graduate student at the Ohio State university, Columbus,
Ohio, USA.

Lindberg, R. D. Graduate student at the University of Colorado, Golden,
Colorado, USA.

Matysek, P.F. Graduate student at the University of British Columbia,
Vancouver, B.C. Canada.

Meyers, R.O. Graduate student with the Dept. of Geology, Michigan State
University, East Lansing, Mi., USA.

Pincus, W.J. Graduate Student at the Colorado School of Mines,
Golden, Colorado, USA.

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GOLD ' 81, A JOINT SUCCESS

The Association of Exploration Geochemists and the Cordilleran Section of the Geological Association of Canada held a joint symposium at the Hyatt Regency Hotel in Vancouver in April on a very topical subject - GOLD and other precious metals in the northern Cordillera. The three day symposium attracted 923 participants, about half from the Vancouver area, a quarter from the rest of Canada, a quarter from the United States, and a handful from Europe, Australia, and other parts of the world (Table 1).

Thirty-three technical papers and nine poster sessions were given. Initial papers discussed methods of gold analysis and potential pitfalls that could be encountered at stage one of the exploration process - that of taking the sample. Dr. Harris of Cominco described the problem in terms of "finding a needle in a haystack". The difficulty associated with the search for gold stems from its property to form discrete grains (flakes or nuggets). These are typically so few and far between that sampling can become a hit or miss operation. The same bulk sample can yield both highly anomalous and background values, depending on whether or not the gold grain(s) find their way into the subsample.

Methods of sample dissolution and analysis were described. Two are available. The aqua regia method provides the most inexpensive technique whereas the classical fire assay is the preferred route for more accurate and reproducible determinations. Final determination of gold is performed by gravimetric, atomic absorption, plasma emission, or neutron activation procedures.

A number of papers described the geology and geochemistry of gold and silver deposits. Authors proposed geological models for predicting the best environments to look for gold. Some of these models are currently used in the Canadian Shield. But, as Dr. Kesler of University of Michigan indicated in a summary paper, models in the Shield do not have universal acceptance and it is likely that they would have to be modified to suit Cordilleran exploration. The old adage that "Gold is where you find it" seems as true today as the day it was coined.

Platinum, a rarer sister precious metal, is not a common exploration target in the west. Nevertheless, with the discovery of significant platinum concentrations in the Stillwater complex of Montana and the abundance of ultramafic rocks in the Cordillera, platinum exploration should be given more serious consideration.

Geochemical exploration methods and precious metal distributions in bedrock and/or overburden were described in many of the papers. Gold appears to be the best pathfinder for gold deposits, but elements such as silver, mercury, arsenic, copper and other base metals could be used to help locate gold bearing zones.

Dispersion of gold from bedrock to overburden appears to be mechanically accomplished by disintegration of the silicate host rock. However, evidence can also be cited for solution of gold by groundwater, which is subsequently precipitated in the soil as gold crystals. Dr. Warren of UBC presented some excellent slides of gold crystals taken from a property near Clinton, B.C. where he has had an active interest for a number of years. Evidence for solubilization of gold by plants, probably by some form of cyanide complexation, was described. Evidently some plants can accumulate enough gold so that, if prices soar as some "gold bugs" predict, agriculture will add a new commodity to its list - gold.

The symposium was the most successful of those held to date by either sponsoring organizations. All sessions were well attended, attesting to the current interest of precious metals in the exploration community. Proceedings of the symposium are currently being compiled for publication in 1982. A prepublication price will be determined later this year for members of either Association. In the interim, copies of abstracts are available from the Association office at a cost of \$4.00 US.

Stan Hoffman,
Symposium Chairman, GOLD'81

TABLE 1

Precious Metals Symposium
Participants by Location and Membership Status

	<u>Vancouver</u>	<u>Rest of Canada</u>	<u>U.S.A.</u>	<u>Europe</u>	<u>Latin America</u>	<u>Australia</u>	<u>Africa</u>	<u>Total</u>	<u>Total %</u>
Members of AEG or GAC	192	135	54	5	2	3	1	329	42.5
Non-Members	202	94	182	1	--	2	--	481	52
Students	19	16	15	--	--	--	--	50	5.5
TOTAL	413	245	251	6	2	5	1	923	
TOTAL (%)	45	26.5	27	0.5	0.25	0.5	0.25		

I.A.E.A. SEEKS GEOCHEMISTS

The International Atomic Energy Agency annually executes technical assistance programmes in response to requests from its Member States. Approximately 10% of these programmes are related to prospecting, mining and processing of nuclear materials. As such there is a constant need of qualified uranium geologists, geochemists, geophysicists and laboratory analysts to serve as IAEA experts. The period of this service varies from less than 6 months (short term) to one year or longer (intermediate term). As in all United Nations assistance projects, there is no guarantee of continuous employment after the termination of a given contract. However, there have been cases where experts served continuously for over five years on different missions. For 1981 IAEA has projects related to nuclear raw material prospecting and development in: Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Greece, Lesotho, Madagascar, Malaysia, Mali, Morocco, Pakistan, Peru, Portugal, Tunisia, United Republic of Cameroon, Uruguay, Yugoslavia, and Zambia. Anyone interested in serving as an IAEA expert should write to:

Mr. M. Schlosberg,
Head, Expert Section,
International Atomic Energy Agency,
P.O.Box 100
A-1400 Vienna, Austria

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FUTURE MEETINGS9TH INTERNATIONAL GEOCHEMICAL EXPLORATION SYMPOSIUM - May 12-14, 1982, Saskatoon

Arrangements are well advanced for this 3-day meeting. The second circular and call for papers has been distributed. Deadline for submission of abstracts is November 30, 1981 at which time registration forms will be mailed out.

Uranium and Base metal litho-geochemistry have been the subject of most abstracts sent in to date.

Interest in field trips is high, particularly the unconformity uranium deposits in northern Saskatchewan, the Yellowknife - Pine Point areas, and the Thompson - Flin Flon areas in Manitoba.

10TH INTERNATIONAL GEOCHEMICAL EXPLORATION SYMPOSIUM - August 28 - September 2, 1983

Helsinki

Alf Bjorklund and his Organizing Committee have preparations well in hand. However, please note that they have had to move the Symposium one week forward, so the new dates are August 28 to September 2, 1983.

The first circular will be available by this coming autumn and will be mailed to all Association members with the Newsletter.

INTERNATIONAL ASSOCIATION OF GEOCHEMISTRY AND COSMOCHEMISTRY SYMPOSIUM ON
METHODS OF APPLIED GEOCHEMISTRY - September 25 - October 2, 1981, Irkutsk

The second circular for this symposium became available in April. The programme will consist of the following topics:

1. Geochemical exploration utilizing primary haloes,
2. Hydrogeochemical methods applied to mineral exploration and earthquake prediction,
3. Geochemical exploration in Precambrian terrane, and
4. Computer data processing of geochemical data.

There will also be an exhibition of geochemical maps. There will be a three day geological excursion on the Lake Baikal coast, and mixed cultural and Research Centre tours in Irkutsk and Moscow.

Further information is available from the chairman of the Organizing Committee,

Dr. P.V. Koval
P.O. BOX 701
664033 Irkutsk
U.S.S.R.

Participants in the Moscow excursion should also contact:

Dr. L.N. Kogarko
Vernadsky Geochemistry Institute
47-a Vorobyov Road,
117975, GSP-1
Moscow, V-334, U.S.S.R.

GOLD 82 - May 24-28, 1982, Salisbury

The first circular for a symposium, Gold 82, being organized by the Geological Society of Zimbabwe with the support of Geology, Metallurgy and Mining Subcommittee of the Scientific Council of Zimbabwe has been distributed.

The Symposium will be divided into five sections:

1. Abundance and distribution of gold in crustal rocks,
2. Transport of gold in hydrothermal solutions,
3. Stratabound gold deposits,
4. Non-stratabound gold deposits, and
5. Exploration for gold deposits.

Field excursions are being organized for both the pre-and post-symposium periods. There is a deadline for abstracts of December 1, 1981. For further information write to:

The Organizing Secretary
Gold 82
Institute of Mining Research
P.O.Box MP167
Mount Pleasant, Salisbury
Zimbabwe

WORKSHOPSADVANCED GEOSTATISTICS - September 6-11, 1981, Stanford

Professor A.G. Journel will be holding a short course in September. For additional information please write to:

Prof. A.G. Journel
Dept. of Applied Earth Sciences,
Mitchell Building,
Stanford University,
Stanford, CA 94305, U.S.A. (Phone: 415 + 497-0847)

GEOSTATISTICS AND DECISION MAKING IN THE MINING INDUSTRY - September 23-25, 1981,
Toronto

This seminar is sponsored by David S. Robertson and Associates Ltd., in collaboration with Prof. A.G. Journel of Stanford University. For further information please write to:

David S. Robertson and Associates Ltd.,
65 Queen Street West
Toronto, Ontario Canada
M5H 2M7

STATISTICAL AND COMPUTER ANALYSIS OF LARGE SETS OF EXPLORATION GEOCHEMICAL DATA
October 1-2, 1981, Athens,

The University of Georgia, Athens, plans a 1½ day short course next September. Methods found useful in aiding the interpretation of data in the U.S.A., U.K. and Canada will be covered. For further information please write to:

Prof. G.S. Koch Jr.,
Dept. of Geology,
University of Georgia
Athens, Georgia, 30602 U.S.A.

FROM THE SECRETARY'S OFFICE - Bob Garrett

The new Association year is upon us and all the formalities were observed at the Annual General Meeting on April 14th. The minutes of the A.G.M. and the annual reports of the President, Secretary, Treasurer, and Chairman of the Admissions Committee are attached. In order to speed up next years' A.G.M. corrections to the minutes will be requested, but the minutes not be read. If any members find the minutes in error please write to me via the Rexdale office.

1981 dues are still coming in, and other problems are coming to light, such as members sending in their dues but their non-arrival in Toronto. Ines Filicetti in the Rexdale office is doing all she can to ensure that everything comes right, please be patient with us. A few members will again be receiving dues reminders, if you have recently mailed in your 1981 dues ignore the notice. If, however, you mailed your dues months ago please write to us and let us know the date and bank etc. If you can check to see if the cancelled cheque was returned that is a great help to us.

As you will notice in Stan Hoffman's report on Gold '81 some excess copies of the abstracts are available to members. They may be purchased through the Rexdale office at U.S. \$4.00 or the current Canadian equivalent.

In the autumn the first of the Handbook of Geochemical Exploration series, edited by G.J. Govett, will be available. The first volume, by W.K. Fletcher, is entitled, Analytical Methods in Geochemical Prospecting. The Association and Elsevier, the publisher, are investigating a special offer to members. I anticipate that full details will be published in the September Newsletter.

For those of you in the northern hemisphere, and other parts of the world, where this is the field season we wish you successful fieldwork; and hope that the Newsletter catches up with you and provides you with some interesting reading.

MAIL STRIKE IN CANADA

If the strike of postal workers continues well into July we will attempt to mail the Newsletter from the U.S.A. to U.S. and outside North America members. Canadian members will have to await a resolution of the present problems.

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BIBLIOGRAPHY

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This list comprises titles that have appeared in major publications since the compilation present in Newsletter No. 35. Journals routinely covered and abbreviations used are as follows: Economic Geology (EG); Geochimica et Cosmochimica Acta (GCA); The USGS Professional Paper (USGS PROF. P); Circular (USGS CIR); and Open File Report (USGS OFR); Geological Survey of Canada Papers (GSC PAPER) and Open File Report (GSC OFR); Bulletin of the Canadian Institute of Mining and Metallurgy (CIM BULL); Transactions of Institute of Mining and Metallurgy, Section B: Applied Earth Sciences, (Trans IMM). Publication less frequently cited are identified in full. Compiled by L. Graham Closs, Colorado School of Mines, Member AEG Bibliography Committee.

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THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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University Park, Pennsylvania 16802
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Minutes of the Annual General Meeting of the
Association of Exploration Geochemists held in the
Regency Room of the Hyatt Regency Hotel, Vancouver, B.C.
on April 14, 1981

Vice Presidents:

G.R. Webber
Dept. of Geology
McGill University
Montreal, Quebec H3C 3G1
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K.A. Lovstrom
AMAX Exploration Inc.
P.O. Box C, Belmar Sta.
Denver, Colorado 80226
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The meeting was called to order at 4:11 p.m. by the President, A.W. Rose. Sixty-two members were present and the meeting was declared quorate. The President stated that the Agenda had been published in the January 1981, No. 34, and March 1981, No. 35, issues of the Newsletter, but that he intended to reorder the Agenda in order to facilitate the counting of Ordinary Councillor ballots.

Secretary:

R.G. Garrett
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario K1A 0E8
Canada

1. Appointment of Scrutineers

The President asked for the nomination of two scrutineers by the membership for the balloting of Ordinary Councillors for the 1981-83 term. W.L. Campbell and R.H. Carpenter were nominated (J.H. McCarthy and P.K. Theobald respectively), it was moved (H.V. Warren) and seconded (W.K. Fletcher) that nominations be closed. There was no discussion of the motion and it was passed unanimously. The 212 sealed ballots brought from the Toronto office were delivered to the scrutineers.

Treasurer:

I. Thomson
Ontario Geological Survey
77 Grenville Street
Toronto, Ontario M5S 1B3
Canada

2. Minutes of the 1980 Annual General Meeting

The minutes of the Annual General Meeting of the Association held on April 14, 1980, were read in summary by the Secretary. There were no matters arising from the minutes, it was moved (J.H. McCarthy) and seconded (E.H.W. Hornbrook) that the minutes be accepted. Passed unanimously.

Councillors:

1980-81
R.C. Armstrong
P.M.D. Bradshaw
R.H. Carpenter
L.G. Closs
W.B. Coker
E.H.W. Hornbrook

3. President's Report

The President, A.W. Rose, delivered his report. A copy is attached.

1980-82
G.H. Alleott
L.A. Clark
W.K. Fletcher
S.J. Hoffman
S.E. Kesler
P.K. Theobald

4. Secretary's Report

The Secretary, R.G. Garrett, delivered his report. A copy is attached.

Australian Regional Councillor:
J.F. Gilfillan

European Regional Councillor:
G.H.W. Friedrich

Southern Africa Regional Councillor:
G.L. Coetzee

5. Treasurer's Report

The Treasurer, I. Thomson, delivered his report. A copy is attached. The Treasurer pointed out that as all accounts were now being consolidated in Toronto it would benefit the Association to obtain the services of a Toronto area Auditor. It was moved (I. Thomson) and seconded (P.M.D. Bradshaw) that H. Rada of Scarborough, Ontario, be appointed Auditor to the Association for the 1981-82 term. Passed unanimously.

6. Report of the Admissions Committee

The Admissions Committee report was delivered by the Chairman, L.D. James. A copy is attached.

7. Introduction of 1981-82 Executive

The President introduced the new Executive to the Members present:

President	K.A. Lovstrom
V. President	J.H. McCarthy
V. President	L.G. Closs
Secretary	R.G. Garrett
Treasurer	I. Thomson

At this point the scrutineers were still counting Ordinary Councillor ballots, so no announcement was available.

8. Any Other Business

There was no other business to be discussed.

9. Transfer of Meeting

President A.W. Rose transferred the meeting to President-elect K.A. Lovstrom.

10. Address by the Outgoing President

President Lovstrom called upon the Outgoing President, A.W. Rose, to deliver his address to the membership. The address, entitled 'Mineral adequacy, exploration success and mineral policy in the U.S.A.' is to be published in a forthcoming issue of the Journal of Geochemical Exploration. At the close of the address the President thanked A.W. Rose on behalf of the Association.

11. Announcement of 1981-83 Ordinary Councillors

The scrutineers reported to the meeting that they had counted the ballots. Of the 212 ballots 11 were found to be spoiled. On the basis of the 201 valid ballots the following Members were elected as Ordinary Councillors for the 1981-83 term:

R.C. Armstrong
E.H.W. Hornbrook
R.E. Lett
D.D. Runnells
F.M. Smith

The Outgoing President, A.W. Rose, also serves as an Ordinary Councillor for the 1981-83 term.

It was moved (P.K. Theobald) and seconded (L.G. Closs) that the ballots be destroyed. Passed unanimously.

12. Adjournment

The Annual General Meeting was moved adjourned by H.V. Warren, seconded by R.G. Garrett, at 5:22 p.m. Passed unanimously. The President declared the Meeting closed and thanked those Members present for attending.

Secretary: _____
R.G. Garrett

President: _____
K.A. Lovstrom

Distribution: Newsletter
All Councillors
J.G.E. Editors



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

P.O. Box 523, (Metropolitan Toronto), Rexdale, Ontario, M9W 5L4 Canada

President:

A.W. Rose
Dept. of Geosciences
Pennsylvania State University
University Park, Pennsylvania 16802
U.S.A.

Annual Report by the President, 1980-81

Vice Presidents:

G.R. Webber
Dept. of Geology
McGill University
Montreal, Quebec H3C 3G1
Canada

K.A. Lovstrom
AMAX Exploration Inc.
P.O. Box C, Belmar Sta.
Denver, Colorado 80226
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1980-82
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L.A. Clark
W.K. Fletcher
S.J. Hoffman
S.E. Keiser
P.K. Theobald

Australian Regional Councillor:
J.F. Gilfillan

European Regional Councillor:
G.H.W. Friedrich

Southern Africa Regional Councillor:
G.L. Coetzee

The year 1980 has been an active and prosperous one for the Association.

One of our major activities, the Journal, continued to bring high quality papers to about 1400 subscribers. Collaboration with Eion Cameron on editing of the Hannover Proceedings has again impressed me of the great debt we owe him for the success of the journal. His excellent judgement on quality and coverage of the journal, along with the efforts of authors and associate editors, bring us an internationally recognized journal covering the core of exploration geochemistry.

The Association is experiencing a spurt in membership, apparently resulting from several recent actions. The 1979 Uranium Symposium at the Geological Society of America in San Diego, organized by Robert Carpenter, attracted favorable attention and members. Follow-up by our Secretary, of members who dropped out, has brought many reinstated members. Finally, many members are responding to our appeal to seek out new members, and applications are pouring in at a high rate.

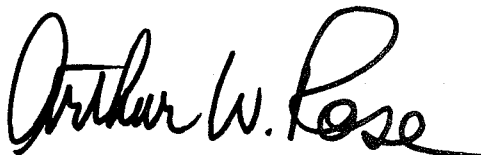
A major effort of the Association goes into symposia and the publication of the proceedings. Sales of "Geochemical Exploration 1978" passed the break-even point about a year ago and are building up our reserves for future ventures. However, the effort involved and the problems encountered in publication by AEG convinced Council that future proceedings would be better handled by established publishers. Therefore, "Geochemical Exploration 1980" will be issued as a special large volume of the Journal, scheduled to come out this summer. It will, of course, come to members at no additional cost. The issue will contain about 46 papers by authors from all over the world. A similar special issue will contain papers from this symposium. A potential problem if we continue this practice may be increased competition for space in the Journal, though this does not appear to be a significant problem at present.

Another major Association publication currently in preparation is a bibliography volume covering all geochemical exploration literature up through 1981. This volume, produced by Herb Hawkes and his bibliography committee, will fill in the gaps in previous coverage, bring the bibliography up to date, and put everything in one volume. The issue should be available in about a year.

Outside North America, the meeting in Hannover, the planned meeting in Helsinki in 1983, and appointment of a Brazilian councillor added to the previous activities of councillors and members in Europe, Southern Africa and Australia. A loose affiliation of AEG with international scientific organizations, perhaps the International Union of Geological Sciences, has been discussed in Council and will be pursued in the current year. This affiliation should allow us to improve services to international members and further establish our international standing.

Financially, the Association has done well this year because of gains from the Hannover Symposium, sales of "Geochemical Exploration 1978", a probable gain from the large turnout for this meeting, and the increasing rebates from the excellent contract negotiated with Elsevier by John Hansuld about two years ago. I believe we are financially in a position to maintain our position or perhaps consider new services without an immediate increase in dues. Council is investigating the establishment of tax-free status in the U.S., which among other advantages will allow much lower postal rates for Newsletters and other mailings to U.S. members.

Finally, and perhaps most importantly, I wish to emphasize my own gratitude and that of the Association, for the effort and skill of our Secretary, Dr. Robert Garrett and our Treasurer, Dr. Ian Thomson. In particular, Bob Garrett has not only put an enormous effort into routine Association affairs, such as membership, the Newsletter, and advising Ines Filicetti in the Toronto office, but also more long-term projects, such as computerizing our membership list and other information. One of the major problems of future presidents and councils will be maintaining the high quality of officers, who are willing and able to continue doing the job that these officers are doing.



Arthur W. Rose
President



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European Regional Councillor:
G.H.W. Friedrich

Southern Africa Regional Councillor:
G.L. Coetzee

Annual Report by the Secretary, 1980-81

As the Association enters a second decade I am pleased to report that we have recorded one of our greatest annual growths, 7.4%, since 1972/73. Our 1980 membership of 651 was drawn from 56 countries, see table 1, and consists of 4 Honorary, 471 Voting, 96 Affiliate, 54 Student, and 20 Corporate members. Additionally, there were 6 new applicants awaiting Council confirmation as to their membership class, who had paid their dues so as to obtain the Journal. We continue to have our largest membership group in North America, 368, followed by Europe, 87, Australia and New Zealand, 78, Central and South America, 54, and Africa, 38.

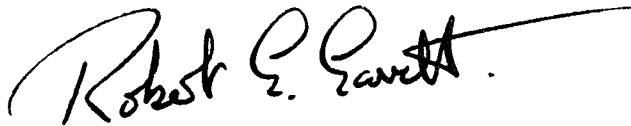
The computerized membership file was completed during the year and has been put to use for preparing the 1981 dues notices and printing mailing labels. The file allowed the office to identify, and write to, a large number of members who had, for one reason or another, become inactive. Response from this mailing was good and helped contribute to our growth in dues paying members. The efforts of the membership in obtaining applicants and others applying as a result of promotional material distributed at Association and other Symposia also contributed significantly to our growth.

A byproduct of the new membership file has been the ability to study the growth history of the Association since it holds information on close to 1000 present and past members. In fact, with all this information our true losses are now apparent, see table 2. The result is that our growth rates are slower than indicated last year. After three years of rapid growth between 1970 and 1973, at an average of 28% p.a., we have settled down to a long term average of 4.4% p.a. As the table reveals, our problem is not so much in gaining new members, but in keeping those we already have. Our first major losses occurred in 1973 when dues rose from \$10 to \$27 with the advent of the Journal. Since 1974 we have lost at least half as many members as we have gained each year. Why? Several possibilities come to mind. Membership in the exploration and geochemical exploration community is volatile. People are active for a few years and then move on to other fields and do not retain any long term interest. Similarly, as many members move up in the corporate structure they often become more concerned with

exploration in general and management in particular and may loose interest in a relatively specialized, largely field oriented, activity. I would invite members to write to Council, preferably through the Newsletter, with any thoughts they might have on the matter, and how we can reduce these losses. The Association must keep growing so that it can support itself at current dues levels through royalty payments to us from Elsevier as a result of Journal circulation.

During the year, following Council's decision in 1979, a Regional Councillor for Brasil was sought. Following the unanimous recommendation of the Brazilian members R.J.P. Brim was appointed for the 1981-83 term. Also this year saw the retirement of J.F. Gilfillan as Australian Regional Councillor following five years of service to the Association in that role. After consultation with the Australian members Council appointed R.H. Mazzucchelli as Australian Regional Councillor for the 1981-83 term. In other regional matters, the Association, continues to be represented and speak for geochemistry in national committees and councils in Brazil, Canada and the U.S.A. This year saw the formation of the Australian Geoscience Council. Association members played a major role in its formation and we will be represented on that body.

I wish to thank all those who have helped the Secretary's office in the last year, in Ottawa, Toronto, and elsewhere. Ines Filicetti works hard to handle the Association's growing correspondence with members, applicants, and other organizations. Without her help in Toronto, and secretarial support at the Geological Survey in Ottawa, my task would be impossible. Lastly, I wish to thank all members who have contributed items to the Newsletter. I would like to encourage all of you to take advantage of the forum you have there for discussing items of importance to our profession.



Robert G. Garrett
Secretary

RGG/mab

Table 1

Association of Exploration Geochemists 1980 Membership by Country

Country	No. of Members	Country	No. of Members
Argentina	1	Lebanon	1
Australia	74	Malaysia	4
Austria	5	Mexico	6
Belgium	4	Netherlands	6
Bolivia	1	New Zealand	1
Brazil	37	Niger	1
Cameroon	1	Nigeria	6
Canada	164	Norway	3
Chile	2	Panama	1
Colombia	2	Papua - New Guinea	3
Costa Rica	1	Phillipines	3
Cyprus	1	Poland	1
Czechoslovakia	2	Rep. of South Africa	16
Denmark	2	Saudi Arabia	2
Dominican Republic	1	Spain	5
Egypt	1	Sweden	5
Fed. Rep. of Germany	17	Switzerland	2
Finland	1	Taiwan	1
France	7	Tanzania	1
Ghana	1	Thailand	1
Greece	3	Tunisia	1
India	4	Turkey	2
Indonesia	2	United Kingdom	18
Iraq	1	United States	204
Ireland	4	Venezuela	2
Italy	2	Zaire	1
Japan	4	Zambia	4
Kenya	1	Zimbabwe	4

Table 2

Association of Exploration Geochemists Paid-up Membership, 1970-1980

	Gain*	Loss	% Wastage	Net Gain	Total	% Growth	Dues \$US
1970	229	0	0	229	229		10
1971	89	0	0	89	318	38.9	10
1972	112	1	1	111	429	34.9	10
1973	95	42	44	53	482	12.4	27
1974	54	33	61	21	503	4.4	27
1975	41	50	114	-9	494	-1.8	27
1976	69	44	64	25	519	5.1	42.50
1977	77	39	51	38	557	7.3	42.50
1978	77	53	69	24	581	4.3	42.50
1979	62	37	60	25	606	4.3	42.50
1980	98	53	54	45	651	7.4	42.50
1981	89						

* Gain includes new members who paid dues for the first time and old members who became active again after one or more years of non-payment of dues.



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Annual Report by the Treasurer, 1980-81

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I am pleased to be able to report to you that the Association continues to have a stable financial base. The 1980 financial transactions are presented in the accompanying statements and summaries in which full details are provided for the U.S. and Canadian dollar accounts in Toronto. Examination of these records shows the Association to be some \$3,500.00 better off at the end of 1980 than at the beginning of the year. The figures, however, must be qualified as follows:

a) Included in these statements are receipts from sales of the Denver Symposium Volume. We have now recovered our costs on this venture and although a final consolidation of the account must be made, it can be stated that we are now making money. This is, however, extraordinary income.

b) Printing costs include the production of the membership list distributed last year. This is an extraordinary expenditure which was undertaken to provide a special service to our membership.

c) Receipts from membership dues are lower than might be expected because the call for subscriptions in the fall of 1979 was remarkably successful. Many members submitted their 1980 dues before the end of 1979 which, therefore, do not show in the accompanying statements.

d) Full details of movements in the Golden account are not included since they have yet to be verified. However, it should be noted that cash on deposit increased from \$14,567.19 in 1979 to \$14,814.19 as a result of sales of the Denver Symposium Volume.

Reappraisal of the statements in the knowledge that receipts from sales of the Denver Symposium Volume and printing of the membership list are extraordinary items could lead you to believe that we actually lost money in 1980. This is, however, a misconception. It is necessary to examine the

position of the Association more completely than is possible from a statement of cash transactions within a calendar year. Revenues from membership dues and our major expenditure, publication of the Journal, do not coincide in time; particularly when we consider 1979-80. Many of the 1980 dues were received in the calendar year 1979. These dues were then applied against our 1980 publishing invoice which was, in fact, received in May, 1980.

Viewed from the perspective of the Treasurer, the financial position of the Association is good. We are running a very tight organization with a small positive margin. Income from membership dues has been essentially stable for three years. In this situation, we are very vulnerable to inflation but are lucky to have some alternate source of income. We receive a royalty from Elsevier from sales of our Journal. This has increased steadily over the past few years through wider sales of the Journal to institutions. We also have a reserve of funds from which we enjoy a modest income from interest payments. This income should grow as the reserves increase. Here I should mention that proceeds from meetings and symposia such as the remarkably successful gathering here in Vancouver are the major, albeit infrequent, source of funds to the Association's reserve account.

But the basic source of income to the Association is from membership dues. We have not raised our dues for a long time and will do everything we can to hold the present rate. We think you get good value for money. You can help us ensure that things stay this way by PAYING YOUR DUES ON TIME, earlier if possible!

You have probably noticed that for a number of years we have operated accounts in both Denver and Toronto. This has had advantages but there are now increasing disadvantages, principally because we have very limited use for the Denver account. I am pleased to report that I am working with Dr. Fred Ward, my predecessor as Treasurer, to effect a transfer and consolidation of the Association's funds in Toronto. With that consolidation, it is hoped that we can operate more efficiently and effectively.

Finally, I must confess that the Treasurer is concerned but confident of our financial position. The Association is faced, like so many individuals, with the problems of living on a limited income during times of inflation. Fortunately, we have some flexibility and some extraordinary sources of funds. In collaboration with your Council, I will be working to ensure that we maintain our existing level of service to you, the member, particularly the newsletter which I regard as a vital line of personal communication for, with and between the membership. With careful management, we can continue to operate within our income and not encroach upon our reserves which are our strength for the future.



Ian Thomson
Treasurer

Toronto

April 6, 1981

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

March 31, 1981

Report of cash transactions conducted through the Association's bank accounts in Toronto for the period January 1, 1980 to December 31, 1981. The bank balances have been verified from the monthly statements provided by the Canadian Imperial Bank of Commerce. Not included is the U.S. dollar account held at Golden, Colorado.

A statement is presented of the Association's financial assets and liabilities on December 31, 1980.

The data for this report have been compiled from the Association's records, bank statements, cancelled cheques and correspondence held by the Treasurer, Dr. Ian Thomson.

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Cash Receipts and Disbursements for the period
January 1, 1980, to December 31, 1980. Canadian Dollars.

Cash in Bank December 31, 1979		\$ 1,242.16
Receipts		
Dues	\$3,590.47	
Publications	350.90	
Symposium Volume	1,276.80	
Transfer from U.S. Account	<u>7,002.00</u>	
Total Receipts		<u>\$12,220.17</u>
Disbursements		
Salary	\$4,003.62	
Office Supplies	62.62	
Printing, Newsletter, etc.	1,789.46	
Printing, Membership List	1,029.27	
Postage and Shipping	2,808.70	
Corporate Registrations	169.00	
Bank Charges	7.50	
Miscellaneous	<u>174.61</u>	
Total Disbursements		<u>\$10,044.78</u>
Income		\$ 2,175.39
Cash in Bank December 31, 1980		\$ 3,417.55

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Cash Receipts and Disbursements for the period
January 1, 1980, to December 31, 1980. U.S. Dollars.

Cash in Bank December 31, 1979		\$33,848.69
Receipts		
Dues	\$16,601.95	
Publications	869.00	
Symposium Volume	5,592.65	
Interest	720.61	
Advertising	40.00	
Total Receipts		<u>\$23,824.21</u>
Disbursements		
Journal Publication	\$15,901.75	
Transfer to Canadian Account	6,000.00	
Meetings	81.00	
Advertising	114.97	
Refunds	60.50	
Bank Charges	3.00	
Total Disbursements		<u>\$22,161.22</u>
Income		\$ 1,662.99
Cash in Bank, December 31, 1980		\$35,511.68

657 members @ \$24.20
32.50 → 24.20
discount of 25.54%

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Financial Assets and Liabilities as of December 31, 1980. U.S. and Canadian Dollars.

	U.S. \$	CDN \$
Assets		
Cash in Bank, Toronto	\$35,511.68	\$ 3,417.55
Cash in Bank, Denver	14,814.19	
Royalty Credit held by Elsevier	2,416.77	
Liabilities		
Accounts Payable		
Salary		\$ 403.09
Postage & Shipping		115.09
Journal Publication	\$ 3,519.00	
Refunds	24.00	
Royalties, A. Sinclair		\$ 264.00



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Annual Report of the Admissions Committee, 1980-81

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Ninety-three applications were processed by the committee during the past year. This includes ten applications for change of membership status. Forty-two of the applications were for Full, forty-one for Affiliate and ten for Student status.

K.A. Lovstrom
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The large number of applications processed reflects a welcome reversal of the trend observed in recent years. New membership applications in fact show a 46% increase over last year! The membership drive certainly appears to be producing encouraging results.

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Lloyd D. James, Chairman
Admissions Committee

LDJ/mab

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G.L. Coetzee

Special Volume Publications of the Association of Exploration Geochemists

- 1 Bibliography of Exploration Geochemistry, January 1965 - December 1971: H.E. Hawkes (1972), 118p., \$7.50.
- 2 *Geochemical Exploration 1974. Proceedings of the 5th I.G.E.S., Vancouver, Canada. Editors I.L. Elliott and W.K. Fletcher (1975), 720p., \$80.
- 3 *Conceptual Models in Exploration Geochemistry. The Canadian Cordillera and Canadian Shield: Editor and Compiler P.M.D. Bradshaw (1975). Reprinted from the Journal of Geochemical Exploration V4, N1, 216p., out of print.
- 4 Applications of Probability Graphs in Mineral Exploration: A.J. Sinclair (1975), 95p., \$8.00. NOW AVAILABLE AGAIN
- 5 Bibliography of Exploration Geochemistry, January 1972 - December 1975: H.E. Hawkes (1976), 195p., \$10.00.
1977 Supplement to the Bibliography of Exploration Geochemistry, January 1976 - June 1977: H.E. Hawkes (1978), 63p., \$2.00 for AEG Members and students, \$4.00 for non-members.
1979 Supplement to the Bibliography of Exploration Geochemistry, July 1977 - December 1978: H.E. Hawkes (1979), 85p., \$2.50.
- 6 *Geochemical Exploration 1976: Proceedings of the 6th I.G.E.S., Sydney, Australia. Editors C.R.M. Butt and I.G.P. Wilding (1977). Reprinted from the Journal of Geochemical Exploration V8, N1/2, 494p., \$45.25.
- 7 Geochemical Exploration 1978: Proceedings of the 7th I.G.E.S., Golden, Colorado. Editors J.R. Watterson and P.K. Theobald (1979). 504p., \$35 for AEG Members, \$40 for non-members.

Note:- those items 2, 3 and 6 marked by an asterisk are obtainable from:

Elsevier Scientific Publishing Co.
P.O. Box 211,
Jan van Galenstraat 335
Amsterdam
The Netherlands

the remaining volumes are available through the Association's Rexdale office.

All prices are quoted in US dollars