



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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

President:

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

NEWSLETTER NO. 40

Vice Presidents:

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

JUNE 1982

R.G. Garrett

Geological Survey of Canada
601 Booth Street
Ottawa, Ontario K1A 0E8
Canada

PERSONAL COLUMN

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.E. Lett
Association of Exploration Geochemists
P.O. Box 523
Rexdale, Ontario M9W 5L4
Canada

Dr. Brad L. Farrell has resigned from his position as senior geochemist with Australian Anglo American to take up private practice as Farrell and Associates, First Floor, 54 Bay Road, Sandringham, Victoria, Australia 3193. Telephone: (03) 597 0150.

Treasurer:

I. Thomson
Placer Development Ltd.,
P.O. Box 49330
Bentall Postal Station
Vancouver, British Columbia V7X 1P1
Canada

Dr. W.K. Fletcher has obtained a one year leave of absence from the University of British Columbia to join SEATRAD at Ipoh, Malaysia.

Councillors:

1982-83
R.C. Armstrong
L.A. Clark
E.H.W. Hornbrook
R. Jackson
A.W. Rose
D.D. Runnells

A MESSAGE FROM THE PRESIDENT - J.H. McCarthy, (Jr.)

It is with great pleasure that I assume the presidency of this healthy and growing organization. Our increasing membership and expanded activities have made our Association all the more valuable not only to members but to the worldwide geochemical exploration community.

1982-84
G.H. Allcott
W.K. Fletcher
S.J. Hoffman
S.E. Kesler
N.G. Lavery
K.A. Lovstrom
P.K. Theobald

The 9th International Geochemical Exploration Symposium held in Saskatoon, Saskatchewan was a resounding success. I would like to express our thanks to Vlad Sopuck and his colleagues for arranging a meeting that proved professionally rewarding and personally satisfying.

Australian Regional Councillor:
R.H. Mazzucchelli

Our next meeting is scheduled for March, 1983 in Atlanta, Georgia and will be held in conjunction with the AIME. The next international symposium will be held in late August, 1983 at Helsinki, Finland.

European Regional Councillor:
B. Bølviken

Southern Africa Regional Councillor:
G.L. Coetzee

Your continuing contributions of papers for meetings and for the Journal, work on Council and Committees, and general participation will assure a viable Association.

Braslian Regional Councillor:
R.J.P. Brim

I look forward to working with you throughout the year.

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

Arp, G.K. Senior Research Geobotanist, ARCO Oil & Gas, Dallas, Texas, USA.

Boyd, R.T. Project geologist, Gulf Minerals Canada, Toronto, Ont. Canada.

Bolivar, S.L. Staff Geochemist, Los Alamos National Laboratory, Los Alamos, New Mexico, USA.

Chao, T.T. Research chemist, U.S. Geological Survey, Denver, Co., USA.

Filipek, L.H. Research chemist, U.S. Geological Survey, Denver, Co., USA.

Koop, D.J. Analytical chemist with Terramin Research Labs Ltd., Calgary, Alberta, Canada.

Leinz, R.W. Research chemist, U.S. Geological Survey, Denver, Co., USA.

Murray, A.D. Vice President of Barringer Magenta Ltd., Toronto, Ont. Canada.

Salpeteur, I. Has just completed another assignment for UNDP as geochemist. Currently resides in Nancy, France.

Smith, C.L. Geologist-geochemist with the U.S. Geological Survey, Denver, Co., USA.

AFFILIATE MEMBERS

Bonelli, D.T. Exploration geologist with Frisco Land & Mining, Corvallis, Oregon, USA.

Boxell, J.R. Geochemist with G. Wahl Ltd., Toronto, Ont. Canada.

Dion, E.P. Research geochemist, Mobil Reserach & Development Corp., Dallas, Texas, USA.

Ernst, D.R. Geologist for Noranda Exploration Inc., Sparks, Nevada, USA.

Eyrich, H.T. Vice President, Mining for Continental Materials Corp., Tucson, Arizona, USA.

Hahn, P.H. Chief geologist for Nevada Resources, Reno, Nevada, USA.

Harpel, G.A. Exploration geologist for Chevron Resources, Golden, Co., USA.

Lindgren, D.W. Consultant. Plymouth, Minnesota, USA.

Osborne, Jr. L.W. Staff geologist with Molycorp, Questa, N.M., U.S.A.

Perkins, R.A. Senior geologist with Superior Oil Co., Sparks, Nevada, USA.

AFFILIATE MEMBERS (con't.)

Rivera, R.A. Vice President of Coca Mines Inc., Lafayette, Co., USA.

Schwebel, P.J. Geologist with J.F. Gilfillan & Associates, Sydney, Australia.

Sheer, H.H. Self employed geologist, Vancouver, B.C. Canada.

Sidle, W.C. Senior geologist with Gulf Research, Oakmont, Pa., USA.

Snyder, D.M. Exploration manager with Mapco Minerals, Golden, Co., USA.

Stevens, M.G. Exploration geologist with Bear Creek Mining Co., Anchorage, Alaska, USA.

Thomas, R.D. Exploration geologist with Callahan Mining Corp., Reno, Nevada, USA.

Walton, G.J. Geologist with Chevron Standards Ltd., Vancouver, B.C. Canada.

Wolfhard, M.R. Manager, Minerals Div., Superior Oil, Tucson, Arizona, USA.

Wyman, W.F. Geologist with Anaconda Minerals, Anchorage, Alaska, USA.

Young, R.J. Geologist with FLUOR at Redwood City, Calif. USA.,

STUDENT MEMBERS

Schultz, C.A. Undergraduate student at University of Wisconsin, Milwaukee, Wisconsin, USA.

Stein, H.L. Graduate student at the University of New Mexico, Albuquerque, New Mexico, USA.

Tejada, R.L. Graduate student at the Colorado School of Mines, Golden, Co., USA.

Whyte, J.B. Graduate student at Queen's University, Kingston, Ont. Canada.

THE 9TH INTERNATIONAL GEOCHEMICAL EXPLORATION SYMPOSIUM -Vlad Sopuck

Four hundred and thirty delegates representing 29 countries attended the 9th IGES in Saskatoon. About 80 of these were from the Province of Saskatchewan. Presumably Saskatoon is now on the "Geochemical map of the World".

The Organizing Committee felt fortunate with the number attending, considering the economic climate. The smaller number did lead to a more manageable and spirited group.

Spirits, by the way, created financial losses at certain functions. Excessive consumption will result in direct billing of guilty individuals at the next symposium. All things taken into account a small profit is anticipated.

The speakers are to be congratulated for providing interesting and well presented research during the three days. No speaker dramatically violated the time limit. This factor contributed to the over-all smooth operation of the conference.

Thirty-five papers have now been submitted for editing. Ten more have been promised. Geof Parslow will head the editing sub-committee over the next few months.

The conference would not have been possible without the generous support of numerous organizations in Saskatchewan. These organizations include the Saskatchewan Mining Development Corporation, the Saskatchewan Geological Survey, the University of Regina, Asamera Inc., Getty Mines Ltd., Uranerz Exploration and Mining Ltd., the Saskatchewan Department of Tourism, the Saskatchewan Mining Association and the City of Saskatoon.

On behalf of the Organizing Committee I would like to thank all the visiting delegates for their participation in an event which will fondly be remembered by us for years to come.

=====

1982 EXPLORATION GEOCHEMISTRY BIBLIOGRAPHY, Special Volume II

Printing of the 1982 Exploration Geochemistry Bibliography compiled by H.E. Hawkes is now complete and free copies will shortly be mailed to all active Association members. Those of you who attended the 9th IGES in Saskatoon will have seen the bibliography on display at the Association desk and will appreciate the dedicated efforts by Herb Hawkes in compiling this volume.

The Bibliography will be on sale to non-members from the Association Rexdale office at US \$20.00. Members may purchase additional copies at US \$7.50. Please forward payment with requests.

FUTURE MEETINGSThird Meeting of the European Geological Societies, May 24th-31st, 1983, Erlang, F.G.R.

This Symposium to be held under the title of "Europe on the Geological Map" follows two previous highly successful conferences in Reading, U.K., and Amsterdam, The Netherlands. The Symposium coincides with the Centenarium of the Commission for the International Geological Map of Europe (CIGME) and the theme will be to emphasize the importance of geological mapping surveys in solving present problems in addition to past achievements. A preliminary program includes the CIGME Centenarium, two days of scientific lectures, four field trips and a map exhibition.

Further information may be obtained from,

Prof. Dr. G. Luttig,
Institute of Geology and Mineralogy
Chair of Applied Geology
Schlossgarten 5
8520 Erlangen
Federal Republic of Germany

Workshop - Colloquium on Organic Matter, Biological Systems and Mineral Exploration for Mineral Explorationists and Research Scientists, February 14-18th, 1983, Los Angeles, USA

The purpose of this workshop - colloquium is to focus on an exploration method that has had a variable success and interest, but which may have great potential because of recent developments in technology and concepts. The program involves two days of workshop on the state-of-the-art biogeochemical exploration followed by a critical evaluation of case histories. This will be followed by three days of colloquia on recent concepts in higher plant-metal relationships, the new area of micro organisms and metal response and organic/humic matter and geochemical exploration. Papers will be conceptual in nature and relevant to the overall topic rather than limited research reports, though many will incorporate results from current research. There will also be invited poster sessions and a concluding interdisciplinary forum.

Attendance at the colloquium is independent of the workshop. Further information may be obtained from,

Donald Carlisle, Prof. Geology and Mineral Resources,
Wade L. Barry, Environmental Sciences Group,
Ian R. Kaplan, Prof. Geology, Geochemistry,

University of California
Department of Earth and Space Sciences
3806 Geology Building
Los Angeles, California, 90024, USA:

or

John R. Watterson, Geological Exploration Group,
U.S. Geological Survey,
Federal Center,
Denver, Colorado, 80225, USA.

FROM THE SECRETARIES OFFICE - Ray Lett

Despite a rather gloomy economic outlook the 9th IGES in Saskatoon was very successful with over four hundred delegates attending the meeting. I was particularly encouraged by the number of people who visited the Association's desk and expressed an interest in membership and publications. Several new membership applications were received at our desk and a number of existing members renewed their 1982 dues. Unfortunately, there are still over 70 members who have still to pay their annual dues for 1982. Before leaving the topic of the 9th IGES Vlad Sopuck and members of his organizing committee must be congratulated on their work which led to the success of the meeting. Also special thanks must be made to those members who almost continuously manned the Association's desk over the three day period.

Plans for the 10th IGES - 3rd SMGP to be held in Finland on August 29th-September 3rd, 1983, are well advanced and most of you will have already received a preliminary outline of activities in the 10th IGES Circular No.1.

Lloyd James has announced his resignation as chairman of the membership committee and his place will be taken by Larry James. I am sure all members will join me in thanking Lloyd James for the hard work he has put into this key post and wish him luck during his visit to Europe.

I would like to welcome Dr. W. Goodfellow to council following his appointment to replace K. Fletcher who has resigned in order to take up a post with SEATRAD in Malaysia.

I would like to point out that the 1982 Membership List is enclosed with this newsletter. Our apologies for the delay.

It seems inevitable that as the Annual General Meeting approaches there is always a shortage of nominations for council. Therefore, even at this early date I would strongly urge members to consider individuals who they would like to nominate for council and send the names to me. Finally, I look forward to serving you as Secretary and hope that you will continue to contribute items of interest and news of members to the Newsletter.

AWARDS

Remarks by J. Alan Coope during the Presentation of Awards
to
Dr. E.M. Cameron and Dr. J.A. Handsuld
at the
9th International Geochemical Exploration Symposium, Saskatoon,
May 12, 1982
for their services and contributions to the
Journal of Geochemical Exploration and the Association of Exploration Geochemists

Ladies and Gentlemen,

The Association of Exploration Geochemists is now 12 years old. The initial formative meetings were held in Toronto at the 3rd International Geochemical Exploration Symposium.

At the end of the Association's first year, Council received a proposal recommending the AEG sponsor a Journal devoted to geochemical prospecting.

Considerable research of the literature had indicated that there was a growing supply of papers on geochemical prospecting and an equally eager market for a speciality journal.

Council endorsed the proposal.

In 1971/72 two founding members of our Association devoted much of their time soliciting proposals from numerous publishing houses both in North America and overseas, in setting up editorial boards and in arranging all the myriads of details required to ensure the scientific quality and proper organization of a specialized scientific journal.

Volume 1, Number 1 of the Journal of Geochemical Exploration appeared in 1972. It became one of the benefits of membership in the Association of Exploration Geochemists.

In these early years the Association had no money. Elsevier Publishing Company of Amsterdam was the publishing house that accepted the considerable financial risk in launching the Journal. The Association is fortunate to have found such a fine business partner.

The Journal has enjoyed a rapid subscription growth. At the end of 1981, institutional and membership subscriptions to the Journal totalled 1285. Subscriptions in 1982 are running approximately 180 ahead of 1981.

It is one of the most successful scientific journals in the Elsevier fold. The high scientific quality of the Journal has proven to be a significant factor in the success and growth of the Association of Exploration Geochemists. The Journal is the authoritative source of reference in geochemical exploration at the international level. We are fortunate and we are grateful.

The Council of the Association has elected to pay a sincere tribute to the two members who have been most prominent in the success of the Journal. I have been privileged to see these two members work and produce at close range and I am very pleased to be asked to present two plaques as a token of the Association's appreciation.

The gentleman who submitted the original proposal to Council in 1971, who researched the literature and the market, who set up the editorial structure and who established the high standards of scientific integrity that the Journal exemplifies is now entering his second decade as your Editor-in-Chief.

As a token of the Association's appreciation for his excellent contribution and service on this 10th anniversary year of the Journal, I ask Eion Cameron of the Geological Survey of Canada to come forward and accept this award.

The other player in this successful story was President of the Association in 1971/1972 - the formative year of the Journal. Afterwards he became the Business Manager of the Journal and continued to liaise and negotiate with Elsevier. Not only did he persuade Elsevier that exploration geochemistry was the coming science, but also negotiated with skill on behalf of the membership.

The Association dues have not increased during the past 6 years and in these times of inflation this record cannot be matched. It is a tribute to the Journal's Business Manager and a reflection of his business acumen.

Ladies and Gentlemen, as a measure of appreciation, the Association takes great pleasure in awarding this 2nd plaque to John Hansuld of Amax Exploration.

EXPLORATION GEOCHEMISTRY BIBLIOGRAPHY - A Review by H.E. Hawkes

Two questions were brought up about the AEG Bibliography during discussions at the Saskatoon meeting: (1) what was the distribution of citations by date of issue, and (2) what were the commonest vehicles for the citations. Following are the printouts:

Decade	Years within decade										Totals	Growth factor
	0	1	2	3	4	5	6	7	8	9		
1890s	0	0	0	0	1	0	0	1	0	0	2	
1920s	0	0	1	1	0	0	0	4	0	2	8	
1930s	0	0	0	0	0	3	6	6	7	8	30	2.87
1940s	5	9	5	5	1	4	6	7	13	18	73	3.17
1950s	24	26	21	18	22	41	53	76	103	92	476	6.52
1960s	38	84	86	106	86	117	141	204	178	255	1395	2.93
1970s	244	355	399	504	404	481	523	450	360	417	4137	2.97
1980s	309(incomplete)										<u>309</u>	
Total											6430	
Average growth factor per decade												3.69

A few projections are possible on the basis of 3.69 as the average growth factor per decade: in the 1980s, 15266 papers will be published; in the 1990's 56330 papers; and in the decade starting with the year 2090 we will have 2.636×10^{10} papers for our bibliography, which will then require a shelf 1005 miles long.

No. of Citations	Publications, in order of frequency of appearance in the Bibliography
791	USGS publications
479	IGES volumes (incl Mexican symposium)
366	Journal of Exploration Geochemistry (not incl IGES vols)
337	Russian translations
301	University theses
298	Economic Geology
284	GSC publications (not incl IGES vol)
206	IMM publications (not incl IGES vol)
159	AIME publications
157	United Nations publications
<u>3378</u>	= 52.5% of total
740	Total of next 10 pubs in order, 11.5%
327	Total of next 10 pubs in order, 5.1%
180	Ditto 2.8%
129	Ditto 2.0%

Anyone interested in the identity of the publications that rank between 10 and 50 can have a xerox of the complete list showing number of citations for each by writing the Secretary of the AEG at the Rexdale office.

BIBLIOGRAPHYRECENT PAPERS ON EXPLORATION GEOCHEMISTRY

This list comprises titles that have appeared in major publications since the compilation presented in Newsletter No. 39. 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). Publications less frequently cited are identified in full. Compiled by L. Graham Closs, Colorado School of Mines, Member AEG Bibliography Committee.

- Aleksandrov, I.V. and Garanin, A.V. 1980. Factors governing rare and ore element distributions in granitoids. *Geochem. Intern.* 17(6): 61-65.
- Anderson, J.A. 1982. Characteristics of leached capping and techniques of appraisal in Titley, S.R. (Ed.). *Advances in Geology of the Porphyry Copper Deposits: Southwestern North America*. University of Arizona Press: 275-295.
- Andrews, R.L. 1980. Supergene alteration and gossan textures of base-metal ores in southern Africa. *Min. Sci. and Eng.* 12(4): 193-
- Anon. 1982. Resource Geophysics and Geochemistry colour compilation maps for Nova Scotia GSC OFR 846 (Radiometric) and 847 (Lake Sediment Geochemistry) 1:2,000,000.
- Armstrong, F.C. (Ed.) 1981. Genesis of Uranium- and Gold-Bearing Precambrian Quartz-Pebble Conglomerates. Proceedings of a Workshop, October 13-15, 1975, Golden, Colorado. USGS Prof. Paper 1161-A to BB.
- Barakso, J.J. and Tegart, P. 1982. Revised stream sediment geochemistry at selected precious metal deposits in British Columbia. *Western Miner* 55(4): 53-65.
- Bernasconi, A. 1981. The Marinkas Kwela alkali-granite intrusive, a probable porphyry molybdenum system of Cambrian age, Namibia. *Mineralium Deposita* 16(3): 447-454.
- Bevans, H.E. 1982. A procedure for predicting concentrations of dissolved solids and sulfate ion in streams draining areas strip mined for coal. USGS OFR 80-0764. 22 p.
- Boissavy-Vinay, M. and Roger, G. 1980. The TiO_2/Ta ration as an indicator of the degree of differentiation of tin granites. *Mineralium Deposita*. 15(2): 231-236.
- Boyko, T.F. and Miller, A.D. 1980. Behavior of Rhenium during weathering of igneous rocks. *Geochem. Intern.* 17(3): 91-94.

- Brown, C.E. and Siems, D.F. 1982. Geochemical Survey of the James River Face Wilderness, Bedford and Rockbridge Counties, Virginia. USGS MP 1337B.
- Callahan, J.E., Cooley, E.F. and Neuerburg, G.J. 1982. Selected Mo and W assays from stream-sediment samples and panned heavy-mineral concentrates, Challis 2° Sheet, Idaho. USGS OFR 81-1344.
- Campbell, W.L., McDanal, S.K. and Hopkins, R.T. 1982. Analytical results for 130 rock, 135 stream sediment and soil, and 110 panned concentrates samples from the Rattlesnake Wilderness Study Area, Missoula County, Montana. USGS OFR 81-1219. 34 p.
- Cerny, P. (Ed.). 1982. Short Course in Granitic Pegmatites in Science and Industry. 8 Min. Assoc. Can. 555 p.
- Chaffee, M.A. 1982. A geochemical study of the Kalamazoo porphyry copper deposit in Titley, S.R. (Ed.) Advances in Geology of the Porphyry Copper Deposits: Southwestern North America. University of Arizona Press: 211-225.
- Chaffee, M.A. 1982. Geochemical prospecting techniques for porphyry copper deposits. in Titley, S.R. (Ed.) Advances in Geology of the Porphyry Copper Deposits: Southwestern North America. University of Arizona Press. 297-307.
- Cherry, M.E. et al. 1982. Gold - Selected References. Ont. Geol. Surv. OFR 5382.
- Clem, B.M. 1982. Heap leaching gold and silver ores. Eng. Min. J. 183(4): 68-76.
- Davies, J.F. et al. 1982. Grant No. 30. - Regional and local patterns of CO₂-K-Rb-As alteration: A guide to gold in the Timmins area. ²Ont. Geol. Surv. OFR 5376. 77 p.
- Dejonghe, L. and de Walque, L. 1980/81. Petrologie et geochemie du filon sulfere de Heure (Belgique) de chapeau de fer associe et de l'encassant carbonate. Bull. BRGM. II Geologie des Gites Mineraux. Sec. II: 165-192.
- Duchscherer, W. 1980. Geochemical methods of prospecting for hydrocarbons. Oil and Gas J. 78(48): 194-208.
- Duchscherer, W. 1981. Nongasometric geochemical prospecting for hydrocarbons with case histories. Oil and Gas J. 79.
- Erickson, R.L., Mosier, E.L. and Viets, J.G. 1978. Generalized geologic and summary geochemical maps of the Rolla 2° Sheet, Missouri. USGS MF 1004A.
- Feiss, P.G. 1982. Geochemistry and tectonic setting of the volcanics of the Carolina Slate Belt. EG 77(2): 273-293.
- Ferguson, J. and Burne, R.V. 1981. Interactions between saline redbed groundwaters and peritidal carbonates, Spencer Gulf, South Australia: significance for models of stratiform copper ore genesis. BMR. J. Australian Geol. and Geoph. 6: 319-325.

- Finlow-Bates, T. and Stumpfl, E.F. 1981. The behavior of so-called immobile elements in hydrothermally altered rocks associated with volcanogenic submarine-exhalative ore deposits. *Mineralium Deposita*. 16(2): 319-
- Fletcher, W.K. 1982. Analytical Methods in Geochemical Prospecting V 1. Handbook of Geochemical Exploration. Elsevier.
- Gale, G.H. and Pearce, J.A. 1982. Geochemical patterns in Norwegian greenstones. *Can J. Earth Sci.* 19(3): 385-397.
- Good, R.S., Fordham, O.M., Jr., and Halladay, C.R. 1977. Geochemical reconnaissance for gold in the Caledonia and Pendleton quadrangles in the Piedmont of central Virginia. *Virginia Minerals*. 23(2): 15-22.
- Gornitz, V. 1982. Volcanism and the tectonic development of the Rio Grande Rift and environs, New Mexico-Colorado, from analysis of petrochemical data. *The Mountain Geologist* 19(2): 41-58.
- Gray, F. and Peterson, J.A. 1982. Geochemical analysis of rocks and stream-sediment samples from the Wild Rogue Wilderness Area, Coos, Curry, and Douglas Counties, Oregon. USGS OFR 82-0186. 24 p.
- Greenland, D.J. and Hayes, M.H.B. (Eds.). 1978. The Chemistry of Soil Constituents. Wiley.
- Greenland, D.J. and Hayes, M.H.B. (Eds.). 1981. The Chemistry of Soil Processes. Wiley.
- Grosz, A.E. and Siems, D.F. 1982. Geochemical Survey, Beaver Creek Wilderness, McCreary County, Kentucky. USGS MF-1348B.
- Gustavson, J.B. and Neathery, T.L. 1976. Geochemical Prospecting for gold in Alabama. *AIME Trans.* 260: 177-184.
- Hammarstrom, J.M. 1982. Chemical and mineralogical variation in the Pioneer batholith, southwest Montana. USGS OFR 82-0148. 181 p.
- Hennessy, J. 1981. A classification of British Caledonian granites based on uranium and thorium contents. *Min. Mag.* 44(336): 449-454.
- Hessin, T.D., Everman, W.K. and Crenshaw, G.L. 1982. Geochemical maps showing the distribution and abundance of Cu, Zn, Mo, As, U, Sulfate, fluoride, Cr, Co, Ba, Ni, Au, Sn, and W in filtered water, stream sediments and/or heavy mineral concentrates. West Chichagof-Yakobi Wilderness Study Area, Sitka quad. SE Alaska. USGS OFR 81-0027N to U.
- Hood, P.J. 1982. Mineral exploration trends and developments in 1981. *Can. Min. J.* 103(1): 22-61.
- Howarth, R.J., et al. 1981. Identification of uraniferous granitoids in the USA using stream sediment geochemical data. *Min. Mag.* 44(336): 455-570.

- Ivanov, V.V. and Spomior, Yu. N. 1980. Petrographic-geochemical criteria for estimating the scales of tin-ore mineralization during preliminary metallogenic investigations. *Geochem. Intern.* 17(2): 148-158.
- Johnson, W.M. and Maxwell, J.A. 1981. *Rock and Mineral Analyses*. 2nd Ed. Wiley. 489 p.
- Koplus, A.V. and Zulov, M.A. 1980. Identification, study, and practical use of negative primary aureoles of latent fluorite mineralization. *Geochem. Intern.* 17(6): 153-161.
- Leach, D.L., Goldfarb, R.J. and Domenico, J.A. 1982. Basic data report and geochemical summary for stream sediments, heavy-mineral concentrates, rocks, and water from the Golden Trout Wilderness, California. USGS OFR 81-0752. 123 p.
- Leach, D.L., Goldfarb, R.J. and Domenico, J.A. 1982. Maps showing the distribution of Ag, Au, As, Cu, Pb, Zn, Sn, in heavy mineral concentrates and/or stream sediments, Golden Trout Wilderness, California (1:62,500), USGS OFR 81-0753 to 0757.
- Leach, D.L., Goldfarb, R.J. and Domenico, J.A. 1982. Map showing distribution of Mo in stream sediments and W in Nonmagnetic, heavy mineral concentrates from the Golden Trout Wilderness, California (1:62,500), USGS OFR 81-0990.
- Lehmann, B. 1982. Metallogeny of tin: Magmatic differentiation versus geochemical heritage. *EG* 77(1): 50-59.
- Leinz, R.W. and Grimes, D.J. 1982. Geochemical and generalized maps showing the distribution and abundance of zinc in the Chotean 2^o Sheet, Montana, USGS ME-0858E.
- Lesure, F.G. 1982. Geochemical survey of the Dolly Ann Roadless Area, Alleghany County, Virginia. USGS MP 1358B.
- Liteanu, C. and Rica, I. 1980. *Statistical Theory and Methodology of Trace Analysis*. Wiley. 446 p.
- Lovstrom, K.A. 1981. Exploration Geochemistry in brief: Past, present, future. *Episodes* 1981(4): 15-16.
- Luecke, W. (1981). Lithium pegmatites in the Leinster Granite (Southeast Ireland), *Chem. Geol.* 34(3/4): 195-233.
- McCallum, M.E. and Menzer, F.J. 1982. Metal distribution in Battle Lake area, Grand Encampment mining district, Carbon County, Wyoming, with comparisons to deposits in the New Rambler mine district, Albany and Carbon Counties, Wyoming, USGS OFR 82-0179. 21 p.
- McClernan, H.G. and Lawson, D.C. 1981. Geochemical exploration of the Nowlan Creek area, Meagher County, Montana. *Geol. Map 24*. Mont. Bur. Mines and Geology.
- Miller, W.R. and McHugh, J.B. 1982. Application of mineral-solution equilibria to the search for sandstone-type uranium deposits in the Beaver Basin, Utah. USGS OFR 81-1289. 16 p.

- Miller, V.J. and Hoe, H.L. 1982. Mineralization modeling and ore reserve estimation. Eng. Min. J. 183(6): 66-74.
- Mosier, E.L., Erickson, M.S. and McDonal, S.K. 1982. Spectrographic analysis of subsurface Cambrian whole-rock samples from southern Missouri. USGS OFR 82-0142. 94 p.
- Mpande, M.M. 1982. Geostatistical system of classifying sulfide deposits. IMM 91(1): B45-46.
- Nicolini, P. 1980. Methodes de Gitologie. Edition. Henri Deschamps Port-au-Prince, Haiti. 218 p.
- Pearce, J.A. and Cann, J.R. 1973. Tectonic setting of basic volcanic rocks using trace element analyses. Earth and Planetary Science Letters 19: 290-300.
- Perel'man, A.I. 1980. Paleogeochemical landscape maps. Geochem. Intern. 17(1): 39-50.
- Philip, R.P. 1981. Diagenetic organic matter in recent sediments and environments of deposition. BMR. J. Australia Geol. and Geophy. 6: 301-306.
- Pirhle, F.L., Beckman, R.J. and Fleischhauer, H.L., Jr., 1982. A multivariate uranium favorability index using aerial radiometric data. J. Geol. 90(1): 1-
- Potts, P.J., Thorpe, O.W. and Watson, J.S. 1981. Determination of the rare-earth element abundances in 29 international rock standards by instrumental neutron activation analysis: A critical appraisal of calibration errors. Chem. Geol. 34(3/4): 331-352.
- Raza, M. 1981. Geochemical clues to elucidate the tectonic environment of the Chamoli Volcanics, Lesser Himalayas, Uttar Pradesh, India. Litlos 14(4): 295-303.
- Rozen, O.M. 1982. Quantitative mineralogical calculations of the petrochemistry of sedimentogenic rocks. Intern. Geol. Rev. 24(6): 701-708.
- Ryall, W.R. 1981. The forms of mercury in some Australian stratiform Pb-Zn-Ag deposits of different regional metamorphic grades. Mineralium Deposita 16(3)
- Saager, R., Meyer, M. and Muff, R. 1982. Gold distribution in supracrustal rocks from Archean greenstone belts of Southern Africa and from Paleozoic ultramafic complexes of the European Alps: Metallogenic and Geochemical Implications. EG 77(1): 1-24.
- Sastri, G.G.K. and Sastry, C.S. 1982. Physics and chemistry of the hydrothermal system at the Panguna porphyry copper deposit, Bougainville, Papua New Guinea. EG 77(1): 127-153.
- Saxby, J.D. 1981. Organic matter in ancient ores and sediments. BMR J. Australian Geol. and Geophys. 6: 287-291.
- Shukolyukov, Y.A. 1980. Isotope methods in research on hydrothermal mineralization. Geochem. Intern. 17(6): 85-99.

- Staatz, M.H. and Armbrustmacner, T.J. 1982. Preliminary map of rare-earth provinces in the Conterminus United States. (1:5,000,000). USGS OFR 79-0576.
- Stow, S.H. and Tull, J.F. 1982. Geology and geochemistry of the stratabound sulfide deposits of the Pyriton District, Alabama. EG 77(2): 322-334.
- Susak, N.J. and Crerar, D.A. 1982. Factors controlling mineral zoning in hydrothermal ore deposits. EG 77(2): 476-482.
- Taylor, R.P. and Fryer, B.J. 1982. Rare earth element geochemistry as an aid to interpreting hydrothermal ore deposits. in Evans, A.M. (Ed.). Metallization Associated with Acid Magmatism. Wiley. 357-365.
- Thomson, I. 1982. Accomplishments in exploration geochemistry: A Canadian perspective. Can. Min. J. 103(4): 78-81.
- Titley, S.R. (Ed.). 1982. Advances in Geology of the Porphyry Copper Deposits: Southwestern North America. University of Arizona Press. 560 p.
- Trudinger, P.A. 1981. Origins of sulphide in sediments. BMR J. Australian Geol. and Geophys. 6: 279-285.
- Trudinger, P.A., Walter, M.R. and Ralph, B.J. (Eds.). 1980. Biogeochemistry of Ancient and Modern Environments. Springer-Verlag. 740 p.
- Trueman, D.L. and Cerny, P. 1982. Exploration for rare-element granitic pegmatites. in Cerny, P. (Ed.). Short Course in Granitic Pegmatities in Science and Industry. 8. Min. Assoc. Can.: 463-493.
- Turner, R.L. et al. 1982. Geochemical data of El Correo area, northern Sonora, Mexico. USGS OFR 82-0276. 106 p.
- Valliant, R. I. and Barnett, R.L. 1982. Manganiferous garnet underlying the Bousquet gold orebody, Quebec: metamorphosed manganese sediment as a guide to gold ore. Can. J. Earth Sci. 19(5): 993-1010.
- Von Knorring, O. and Fadipe, A. 1981. On the mineralogy and geochemistry of niobium and tantalum in some granite pegmatites and alkali granites of Africa. Bull de Mineralogie 104(4): 496-507.
- Walker, G.W. 1982. Uranium, thorium, and other metal associations in silicic volcanic complexes of the Northern Basin and Range, a preliminary report. USGS OFR 81-1290. 47 p.
- Yudovich, Ya. E. 1980. Geochemistry of carbonate rocks. Geochem. Intern. 17(3): 167-173.
- Yudovich, Ya. E. and Puchkov, V.N. 1980. Geochemical diagnostics of deep-water sediments. Geochem. Intern. 17(2): 55-72.
- Zaguzin, V.P. et al. 1980. Biogeochemical prospecting for tungsten and molybdenum ores. Intern. Geol. Rev. 23(12): 1397-1400.



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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

President:

K. A. Lovstrom
AMAX Exploration Inc.
P. O. Box C, Belmar Station
Denver, Colorado 80226
U.S.A.

Minutes of the Annual General Meeting of the
Association of Exploration Geochemists held in the
Centennial Auditorium, Saskatoon, Saskatchewan
on May 13, 1982

Vice Presidents:

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

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

The meeting was called to order at 4:53 p.m. by the President, K.A. Lovstrom. Fifty-three members were present and the meeting was declared quorate. The President stated that the Agenda had been published in the January 1982, No. 38, and April 1982, No. 39, issues of the Newsletter.

1. Minutes of the 1981 Annual General Meeting

The secretary noted that the minutes of the 1981 AGM and annual reports had been published in the July 1981, No. 36, Newsletter. He then summarized the minutes for the members present. There was no discussion of the minutes, or matters arising, it was moved (M.A. Chaffee) and seconded (J.A. Coope) that the minutes be accepted. Passed unanimously.

Secretary:

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

2. Appointment of Scrutineers

The President reported that since the balloting papers had been drawn up and distributed in the January Newsletter he had received the resignation of F.M. Smith from Council. Therefore, from the ballot containing 11 names five Ordinary Councillors were required to serve for the 1982-84 term and two for the 1982-83 term. The President then asked for the nomination of two scrutineers by the membership for the balloting of Ordinary Councillors for the 1982-84 and 1982-83 terms. E.F. Weiland and G.R. Webber were nominated (L.G. Closs and L.A. Clark respectively) and seconded (R.E. Lett and I. Thomson respectively). In the absence of further nominations from the floor the President declared the nominations closed. There was no discussion of the motion of nomination and it was passed unanimously. The 237 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

Councillors:

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

1981-83
R.C. Armstrong
E.H.W. Hornbrook
R.E. Lett
A.W. Rose
D.D. Runnells
F.M. Smith

3. President's Report

The President, K.A. Lovstrom, delivered his report. A copy is attached.

Australian Regional Councillor:
R.H. Mazzucchelli

European Regional Councillor:
G.H.W. Friedrich

4. Secretary's Report

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

Southern Africa Regional Councillor:
G.L. Coetzee

Braslian Regional Councillor:
R.J.P. Brim

5. Treasurer's Report

The Treasurer, I. Thomson, delivered his report. A copy is attached. It was moved (I. Thomson) and seconded (M.A. Chaffee) that H. Rada of Scarborough, Ontario, be re-appointed as the Association's Auditor for the 1982-1983 term. Passed unanimously.

6. Report of the Admissions Committee

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

7. Introduction of 1982-83 Executive

The President introduced the new Executive to the Members present:

President	J.H. McCarthy Jr.
V. President	L.G. Closs
V. President	R.G. Garrett
Secretary	R.E. Lett
Treasurer	I. Thomson

8. Presentation to H.E. Hawkes

The President briefly reviewed the work of the Bibliography Committee under the leadership of H.E. Hawkes. This work had culminated in the preparation and printing of the new consolidated Bibliography covering the history of Exploration Geochemistry up to January 1981. The President asked H.E. Hawkes to come forward, and it was with great pleasure that he presented to Dr. Hawkes a copy of the new Bibliography in recognition of his leadership and contribution in its publication.

9. Transfer of Meeting

President K.A. Lovstrom transferred the meeting to President-elect J.H. McCarthy.

10. Address of the outgoing President

President McCarthy called upon the Outgoing President, K.A. Lovstrom, to deliver his address to the membership. The address, entitled 'The Role of Communication in Exploration Geochemistry' is to be published in a forthcoming issue of the Journal of Geochemical Exploration. At the close of the address the President thanked K.A. Lovstrom on behalf of the Association.

11. Any other business

R.A. Watters asked if the 1983 Australian Regional Meeting in Perth had been finalized. The Secretary reported that the First Circular notice for the May 23-26 meeting had been incorporated into the April 1982 Newsletter that had been distributed by mail.

C.F. Gleeson asked why only 20 papers had been included in the Proceedings Volume of the Precious Metals in the North Cordillera Symposium. S.J. Hoffman, Chairman of the Symposium Organizing Committee, replied that several factors were involved. Some authors declined to submit a written paper; others could not, or would not, make changes recommended by reviewers. If the Volume had been delayed by a year, 6 more papers may have been forthcoming. The Organizing Committee believed that speed was of the essence to keep the Volume relevant and that it should be published as it was. Hoffman added that a list of all authors was printed in the Symposium Volume and that the Committee had encouraged unpublished authors to submit their papers to the Journal of Geochemical Exploration.

H.E. Hawkes asked what progress was being made in obtaining Tax-Exempt status for the Association in the U.S.A. L.G. Closs reported that he was still working with E.V. Post on preparing the necessary documentation for the I.R.S. The Treasurer, I. Thomson, added that the matter was being studied very carefully.

M.A. Chaffee asked how the Association funds were split between U.S. and Canadian dollars. I. Thomson replied that the split was 80%-20%, with the bulk in U.S. funds, and the Association trying to make as few inter-currency transfers as possible.

L.C.B. Pereira, representing the Comissao Tecnico-Cientifica de Geoquimica (CTCGQ) of Brasil, made Members aware that CTCGQ, which has 65 active members and is a Commission of the Geological Society of Brasil, would like to host the 12th IGES in 1987. The CTCGQ, working in conjunction with the Brazilian Regional Councillor was preparing a proposal for a Rio de Janeiro venue.

G.L. Coetzee, the Regional Councillor for Southern Africa, also noted that South African members were discussing possibilities for the 1987 12th IGES being held in conjunction with the Geological Society of South Africa meeting planned for Johannesburg that year.

11. Recess and Reconvention

As the scrutineers were still counting the ballots the President called for a recess at 6:08 p.m. The scrutineers completed their task and the meeting was re-convened at 7:19 p.m.

12. Announcement of 1982-84 Ordinary Councillors

The scrutineers reported to the meeting that they had counted the ballots, of the 237 ballots 8 were found to be spoiled. On the basis of the 229 valid ballots the following Members were elected as Ordinary Councillors,

1982-84 term:	G.H. Allcott
	W.K. Fletcher
	S.J. Hoffman
	S.E. Kesler
	N.G. Lavery

the Outgoing President, K.A. Lovstrom, also serves as an Ordinary Councillor for the 1981-83 term.

1982-83 term: L.A. Clark
 R.G. Jackson

It was moved (J.A. Coope) and seconded (R.E. Lett) that the scrutineers be instructed to destroy the ballots. Passed unanimously.

13. Adjournment

The motion of adjournment for the 1982 Annual General Meeting was made by L.G. Closs, and seconded by A.W. Rose, at 7:21 p.m. Passed unanimously. The President declared the meeting closed and thanked those Members present for attending.

Secretary: _____
 R.G. Garrett

President: _____
 J.H. McCarthy Jr.

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:

K. A. Lovstrom
AMAX Exploration Inc.
P. O. Box C, Belmar Station
Denver, Colorado 80226
U.S.A.

Vice Presidents:

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

L.G. Closs

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

Secretary:

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

Treasurer:

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

Councillors:

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

1981-83

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

Australian Regional Councillor:

R.H. Mazzucchelli

European Regional Councillor:

G.H.W. Friedrich

Southern Africa Regional Councillor:

G.L. Coetsee

Brasilian Regional Councillor:

R.J.P. Brim

Annual Report by the President, 1981-82

The twelfth year of the Association, 1981-82, has been a progressive year and should serve well for continued growth.

During 1981-82, we experienced an above average growth in membership. The Association presently has a membership of over 700, drawn from 60 countries. I anticipate this growth to aggressively continue into the Association's thirteenth year.

The Journal has once again completed a highly successful year in providing top quality papers to some 1500 subscribers. I would like to thank Eion Cameron, Editor-in-Chief, for his dedicated efforts in maintaining the high scientific standard of the Journal. The Association is also most grateful to John Hansuld, Business Editor, for his continued efforts with the Elsevier contract. A highlight of the past Journal year has been Special Issue Volume 15, Geochemical Exploration 1980. This volume, edited by Art Rose and Heinz Gundlach, presents selected papers from the 8th IGES held in Hannover.

A major activity of the Association is the organization of symposia and publication of proceedings. The Vancouver Symposium, Gold 81, was a roaring success and the published proceedings are currently selling well. The AEG symposia committee, Graham Closs, Chairman, are compiling a symposium organization manual to serve as a guide for AEG symposium organizing committees. Future symposia plans include a regional symposium in Atlanta, Georgia, 1983, a regional meeting in Perth, Australia, 1983, and the 10th IGES in Helsinki, Finland. Recent updates from Alf Bjorklund and his symposium committee indicate that Helsinki in 1983 promises to be a first class international symposium. The 11th IGES is scheduled for North America in 1985 with Vancouver and Denver as possible sites.

The first Bibliography of Exploration Geochemistry, covering the period 1965 to 1971, was published by the Association in 1972 as Special Volume No. 1. In 1976, Special Volume No. 5 was published to cover the period 1972-1975 with bibliographic supplements in 1977 and 1978. At the present time Special Volume No. 11, Exploration Geochemistry Bibliography to January, 1981 is ready for distribution. This hardbound volume is a comprehensive compilation of the available literature on exploration geochemistry to 1981 and will be given free to members of record for 1982. The cost to non-members will be \$20. The Association would like to express its sincere thanks to Herb Hawkes and his bibliography committee for their dedicated efforts in compiling this monumental volume.

In 1981, the Association applied for affiliation to the International Union of Geological Sciences. I am pleased to announce the decision of the IUGS executive committee, at its XXIVth Session in Bonn to approve our affiliation to IUGS. Affiliation should strengthen our stature as an international association and provide additional services to our growing international membership.

In June, 1981, I introduced a number of committees to pursue several proposals. The new Membership Committee, chaired by Howie McCarthy, researched and proposed to Council a student membership class, to include the Journal, at a reduced rate. Council has approved this proposal and effective January 1, 1983 student membership dues will be \$15. We anticipate this action will be effective in ultimately increasing regular membership to the Association. Steve Kesler, Chairman of the Student Prize Committee, has proposed to Council a student award, presented annually, to recognize outstanding contributions to exploration geochemistry. Council is reviewing this proposal and will distribute information in the near future.

Before concluding, I would like to express appreciation on behalf of the Association and meeting registrants to Vlad Sopuck and the entire organizing committee on the excellent performance in organizing this 10th IGES. I am well aware of the time and effort involved.

In conclusion, I would like to emphasize my own gratitude to councillors and committee members for their dedicated efforts during 1981-82. A special thanks goes to the Executive, Howie McCarthy, Graham Closs, Bob Garrett, Ian Thomson and Ray Lett for their enormous contributions to the routine affairs of the Association. I have enjoyed serving as your president for the past year and look forward to continued Association service in the years to come.



K.A. Lovstrom
President

KAL/jd



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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

President:

K. A. Lovstrom
AMAX Exploration Inc.
P. O. Box C, Balmar Station
Denver, Colorado 80226
U.S.A.

Annual Report by the Secretary, 1981-82

Vice Presidents:

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

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

Secretary:

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

Treasurer:

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

Councillors:

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

1981-83
R.C. Armstrong
E.H.W. Hornbrook
R.E. Lett
A.W. Rose
D.D. Runnells
F.M. Smith

Australian Regional Councillor:
R.H. Mazucchelli

European Regional Councillor:
G.H.W. Friedrich

Southern Africa Regional Councillor:
G.L. Coetzee

Brasilian Regional Councillor:
R.J.P. Brim

I am pleased to report that the Association has had another successful year, one which surpasses last years excellent growth. In 1981 our membership grew 8.8%, the largest growth since 1972/73, to a total of 720 members drawn from 60 countries, see tables 1 and 2. The membership was comprised of 4 Honorary, 500 Voting, 126 Affiliate, 61 Student, 24 Corporate Members and 5 new applicants who had pre-paid their dues in order to obtain the Journal and other Association benefits. We continue to have our largest membership in North America, 416, followed by Australia and New Zealand, 90, Europe, 89, Central and South America, 56, and Africa, 45. It is interesting to note that our increases have largely been in North America, Australia and Africa. This continued growth is due to a variety of factors, including advertising activity at meetings and the efforts of Members in persuading colleagues to join the Association. Also, there has been a drop in the number of Members who failed to renew their membership and pay their dues.

During the year the office was involved with making available to Members copies of Volume 1 of the Handbook of Exploration Geochemistry. Volume 1, written by W.K. Fletcher, on Analytical Methods is the first of the series edited by G.J.S. Govett and published by Elsevier Scientific. As publishers of the Journal of Exploration Geochemistry our link with Elsevier is well established, and it is due to this that the series will be made available to Association Members at a discount, Volumes 2 and 3 will be available later this year. Continuing in the matter of publications, this year saw the publication of the Association's Special Volume 10, the Proceedings of the Vancouver Precious Metals Symposium of a year ago. Due to the financial success of the meeting we have been able to distribute this Volume free to all 1982 members in good standing. The Association owes a debt of gratitude to S.J. Hoffman and his Organizing Committee for the success of the meeting and to A.A. Levinson for his editorial work. Special Volume 4, on the use of Probability Plots by A.J. Sinclair, became out of print in 1981, it has been reprinted and is now available again. Lastly, 1982 saw the preparation of a new membership list which has been distributed to all Members with the April issue of the Newsletter. The computer based membership file maintained in Ottawa proved invaluable in all these tasks, but unfortunately

was not infallible as errors were detected. The office relies on notification of any errors by Members in order to make the corrections, therefore please inform the office of any mistakes.

At the close of the year Council received the resignation of Dr. Gunter Friedrich, our European Councillor. Dr. Friedrich has served the Association as Regional Councillor since 1978 and presented the European view on many aspects of Association business. Council was most pleased when Dr. Bjorn Bolviken of the Norwegian Geological Survey accepted nomination as European Regional Councillor for the period 1982-84. Dr. Bolviken's appointment is particular apposite in view of the Scandinavian Geological Surveys hosting of the 10th International Geochemical Exploration Symposium in Helsinki in August 1983. In other regional matters the Association continues to speak for exploration geochemistry through its local Members on national bodies in Australia, Brazil, Canada and the U.S.A. At an international level the Association's affiliation with the International Union of Geological Sciences will lead to our greater involvement in international programmes involving exploration and applied geochemistry.

With the increasing cost of airtravel, and the fact that Councillors employers usually fund their travel to Council meetings, the use of a conference telephone call was used for the first time to link Councillors in Denver, Ottawa and Vancouver. The experiment was successful and will no doubt be used again as it minimized travel costs.

In last years Report, I asked for members views on the problems of retaining our Members, the Newsletter received no comments. I would ask you to write on matters that concern you and our profession to the Newsletter and Secretary, you have a voice, I encourage you to use it and offer you a place to be heard from. Next year sees a new Secretary take over the office, I hope that all Members will support Dr. Lett in this task. In closing, I wish to thank the secretaries of the Resource Geochemistry Subdivision of the Geological Survey of Canada for their assistance, and especially Ines Filicetti in the Association's Toronto office for carrying out most of the routine functions that permit the Association to function smoothly. Without the willing help of these people the Secretary's office could not function.



Robert G. Garrett
Secretary

RGG/mab

Table 1

Association of Exploration Geochemists 1981 Membership By Country

Country	No. of Members	Country	No. of Members
Argentina	1	Malaysia	4
Australia	86	Mexico	6
Austria	5	Morocco	1
Belgium	3	Netherlands	6
Bolivia	1	New Zealand	1
Brazil	36	Nigeria	8
Cameroon	1	Norway	2
Canada	183	Panama	2
Chile	3	Papua - New Guinea	3
Colombia	1	Phillipines	2
Costa Rica	1	Poland	1
Cyprus	1	Portugal	2
Czechoslovakia	1	Rep. of Mozambique	1
Denmark	4	Rep. of South Africa	18
Dominican Republic	1	Saudi Arabia	2
Ecuador	1	South Korea	1
Egypt	1	Spain	2
Fed. Rep. of Germany	17	Sweden	5
Finland	3	Switzerland	2
France	9	Taiwan	1
Greece	4	Tanzania	3
Guyana	1	Thailand	1
India	4	Turkey	1
Indonesia	1	United Kingdom	18
Iraq	1	United States	233
Ireland	3	Venezuela	2
Italy	2	Yugoslavia	1
Japan	3	Zaire	1
Kenya	3	Zambia	3
Lebanon	1	Zimbabwe	5

Table 2

Association of Exploration Geochemists
Five Year Membership Revue, 1977-81

	Gain*	Loss	% Wastage	Net Gain	Total	% Growth
1977	77	39	51	38	557	7.3
1978	78	53	68	25	582	4.3
1979	62	37	60	25	607	4.1
1980	101	51	50	50	657	7.6
1981	100	37	37	63	720	8.8

*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.



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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

President:

K. A. Lovstrom
AMAX Exploration Inc.
P. O. Box C, Belmar Station
Denver, Colorado 80226
U.S.A.

Annual Report by the Treasurer, 1981-82

Vice Presidents:

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

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

Secretary:

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

Treasurer:

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

Councillors:

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

1981-83
R.C. Armstrong
E.H.W. Hornbrook
R.E. Lett
A.W. Rose
D.D. Runnells
F.M. Smith

Australian Regional Councillor:
R.H. Mazzucchelli

European Regional Councillor:
G.H.W. Friedrich

Southern Africa Regional Councillor:
G.L. Coetzee

Braslian Regional Councillor:
R.J.P. Brim

Without doubt the outstanding success of the Gold '81 symposium held in Vancouver has enhanced the well-being of the Association in many ways. The unexpectedly large donation from the Organizing Committee significantly altered the financial status of the Association. During 1981 the donations received from Gold '81 and the organizers of the Hannover Symposium, held in 1980, propelled the Association into a position of comparative financial security quite unforeseen, but never-the-less most welcome.

With this positive base it can be stated confidently that 1981 was a year of consolidation in which a number of ventures were successfully accomplished. From this it might be assumed that we are in possession of a great surplus of funds. However, in viewing the accompanying statements the following information must be considered.

a) Receipts from membership dues are significantly higher than might be expected. At year end our paid-up membership was close to 700. Never-the-less during 1981 more than one thousand dues payments were received, which included a number of persons who were late in paying their 1980 dues. These funds will be expended in 1982 in publishing the Journal of Geochemical Exploration and running the affairs of the Association.

b) Sales of the Denver Symposium in Volume continued at a steady rate throughout the year. We have now recovered all costs involved in this publishing venture and receipts from sales are assigned to our reserve fund.

c) Donations from the Gold '81 and Hannover Symposium committees were, as stated above, major extraordinary sources of income to the Association.

d) Consolidation of the donations with the existing reserve fund and monies transferred from Denver formed a unit on which significant interest was obtained at the high bank rates that prevailed through much of 1981.

e) As a service to our members we have worked with Elsevier to provide copies of "Analytical Methods in Geochemical Prospecting" by W.K. Fletcher at a much reduced rate. Remittances from the membership were forwarded to Elsevier early in 1982 and by now you should have received the copies you ordered.

f) The Association closed its account in Denver and transferred the funds to Toronto where they were consolidated on deposit with our main account at the Canadian Imperial Bank of Commerce.

g) Payments to Elsevier for publication of the Journal of Geochemical Exploration were lower than expected due in part to a change in the billing procedure employed by Elsevier and partly because of difficulties encountered in effecting international transfers during the second half of 1981. Both were transient problems and by the end of 1981 the smooth working relationship between the Association and Elsevier was fully reestablished. Not shown in the accompanying summary is the royalty received from Elsevier which was applied directly against the ongoing costs of publication.

h) A reprinting of Special Volume 4 was completed in 1981 as a joint venture between the author, A.J. Sinclair, and the Association. This is a very popular and useful handbook for which there is a continuing demand.

i) The Association supports the efforts of local committees formed to organize individual meetings or symposia. This includes financial aid or 'seed money' for necessary expenditures early in these ventures.

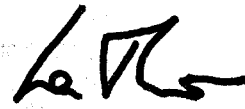
j) After publication of the Journal, the major continuing expenses are related to the operation of the Association and comprise a salary for our permanent secretary, Ms. Filicetti, printing and distribution of the Newsletter and communications (postage, shipping, etc.). Nearly half your annual dues are allocated to this area where we continue to experience considerable inflationary pressure. The principal influence comes from postal charges which have risen steeply, and will soon rise again, in Canada. Every effort is now being made to control this and investigation is in progress to find ways to limiting some of these costs without prejudicing service to our members.

Before concluding this short report I would like to explain further how our Association is currently applying its financial resources. Your annual dues of \$42.50 are utilized as follows:

i) Running the Association (Office, Newsletter, etc.)	\$20.15
ii) Publication of the Journal of Geochemical Exploration (including Royalty benefit from Elsevier)	\$19.06
iii) Surplus for extraordinary expenditures	\$ 3.29

The last figure is supplemented by interest obtained from our reserve funds which are placed with the Canadian Imperial Bank of Commerce where a significant amount is gained at the current high interest rates. These monies are applied to various ventures principally aimed at improving service to the membership. These include publication of a new complete Bibliography which will be distributed free to all members of good standing, printing the new membership list and a subsidized student membership rate. Other projects paid for from our operating surplus include funding the start-up of future meetings similar to this one in Saskatoon.

We are, therefore, in a strong financial position to weather the current economic recession and intend to offer the best service to our membership. I must state, however, that the Association is very much the sum of its members and requires your continuing support to exist. This means that we would like to hear from you, your comments and suggestions are most welcome, and please send in your dues on time. Prompt payment will ensure that you receive your copies on the Journal and Newsletter in sequence and will guarantee the health and sustained growth of your Association.



Ian Thomson
Treasurer
May 5, 1982

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Cash Receipts and Disbursements for the period
January 1, 1981 to December 31, 1981. U.S. Dollars

On Deposit December 31st, 1980		\$35,511.68
Receipts		
Dues	\$33,141.70	
AEG Publications	1,361.20	
Symposium Volume	3,241.70	
Back Issues of JGE	573.32	
Donations ¹	9,300.00	
Interest	4,145.72	
Advertising	30.00	
W.K. Fletcher Volume	2,730.00	
Transfer from Denver	13,613.04	
Total Receipts		\$68,135.68
Disbursements		
Journal Publication	5,994.23	
Transfer to CDN Account	5,000.00	
Postage and Shipping	121.16	
Refunds	64.00	
Bank Charges	1.25	
Miscellaneous	669.72	
Total Disbursements		\$11,850.36
On Deposit December 31st, 1981		\$91,798.00

¹ Hannover Symposium Committee

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Cash Receipts and Disbursements for the period
January 1, 1981 to December 31, 1981. Canadian Dollars.

On Deposit December 31st, 1980		\$ 3,417.55
Receipts		
Dues	\$ 7,608.73	
AEG Publications	47.41	
Symposium Volume	270.00	
Back Issues of JGE	387.36	
Transfer from U.S. Account	6,012.50	
Donations ¹	20,500.00	
Interest	200.64	
Advertising	110.00	
W.K. Fletcher Volume	385.53	
Other ²	1,169.36	
Total Receipts		\$36,691.53
Disbursements		
Salary	\$ 5,008.65	
Office Supplies	186.92	
Printing Newsletter	1,801.85	
Printing AEG Pubs. ³	2,866.00	
Printing Misc.	670.04	
Postage and Shipping	3,039.45	
Corporate Fees	147.00	
Bank Charges	9.21	
See Money ⁴	5,000.00	
Miscellaneous	18.00	
Total Disbursements		\$18,747.12
On Deposit December 31st, 1981		\$21,361.96

1 Gold '81 Committee

2 A.J. Sinclair

3 Special Volume 4

4 To Gold '81 and Saskatoon Committees

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

Statement of Financial Assets and Liabilities as of
December 31, 1981. U.S. and Canadian Dollars.

	U.S. \$	CDN \$
Assets		
Bank Deposits	91,798.00	21,361.96
Liabilities		
Salary		360.92
Journal Publication	8,647.20	
W.K. Fletcher Volume	2,730.00	385.53



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

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

President:

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

Annual Report of the Admissions Committee, 1981-82

Vice Presidents:

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

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

Sixty-three applications were processed by the committee during the past year. This included six applications for changes in membership class. Twenty-nine applications were for full Voting status, twenty-five for Affiliate and nine for Student membership.

The number of applications last year fell from the outstanding number of ninety-six the previous year. However, the long-term picture is one of continuing growth which augers well for the Associations continuing health.

Secretary:

R.E. Lett
Association of Exploration Geochemists
P.O. Box 523
Rexdale, Ontario M9W 5L4
Canada

Treasurer:

I. Thomson
Placer Development Ltd.,
P.O. Box 49330
Bentall Postal Station
Vancouver, British Columbia V7X 1P1
Canada

L.D. James.

Lloyd D. James, Chairman
Admissions Committee

Councillors:

1982-83

R.C. Armstrong
L.A. Clark
E.H.W. Hornbrook
R. Jackson
A.W. Rose
D.D. Runnells

1982-84

G.H. Allcott
W.K. Fletcher
S.J. Hoffman
S.E. Kesler
N.G. Lavery
K.A. Lovstrom
P.K. Theobald

Australian Regional Councillor:
R.H. Mazzucchelli

European Regional Councillor:
B. Bölviken

Southern Africa Regional Councillor:
G.L. Coetzee

Brasilian Regional Councillor:
R.J.P. Brim

Special Volume Publications of the Association of Exploration Geochemists

- 1 See 11
- 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.
- 5 See 11
- 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.
- 8 *Conceptual Models in Exploration Geochemistry. Australia: Editors and Compilers C.R.M. Butt and R.E. Smith (1980). Reprinted from the Journal of Geochemical Exploration V12, N2/3, 365 p., \$63.50.
- 9 *Geochemical Exploration 1980: Proceedings of the 8th I.G.E.S., Hannover, West Germany. Editors A.W. Rose and H. Gundlach. Reprinted from the Journal of Geochemical Exploration V15, N1/3, 698 p., \$153.25.
- 10 Precious Metals in the Northern Cordillera: Proceedings of a joint Symposium sponsored by the Association of Exploration Geochemists and the Geological Association of Canada, Vancouver, B.C., April 1981. Editor A.A. Levinson, 210 p., Can \$18 for AEG Members, Can \$22 for non-members.
- 11 Exploration Geochemistry Bibliography. H.E. Hawkes (1982), 388 p. Note: this Special Volume replaces Numbers 1 and 5 with its supplements and covers literature up to January 1981. \$7.50 for AEG Members, \$20 for non-members.

Note:- Those items 2, 3, 6, 8 and 9 marked by an asterisk are obtainable from:

Elsevier Scientific Publishing Co.	<u>or</u>	Nearest Regional Office, i.e.:
P.O. Box 211,		U.S.A.
1000 AE, Amsterdam		Australia
The Netherlands		India

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

All prices, except item 10, are quoted in US dollars