



THE ASSOCIATION OF EXPLORATION GEOCHEMISTS

P.O. BOX 523, (METROPOLITAN TORONTO), REXDALE, ONTARIO, M9W 5L4 CANADA

NEWSLETTER

NO. 24

FEBRUARY 1978

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Councillors:

1977-78
R. W. Boyle
R. G. Garrett
L. D. James
K. A. Lovstrom
J. H. McCarthy
P. K. Theobald

1977-79
M. A. Chaffee
L. G. Closs
I. L. Elliott
G. J. S. Govett
A. W. Rose
G. R. Webber

Australian Regional Councillor
J. F. Gilfillan

This is the third Newsletter to be issued in the 1977-78 Association year. We trust that all Association members have enjoyed their Christmas holidays and we wish you all a prosperous New Year.

In this Newsletter you will find a number of items of interest such as:

- 1) EDITORIAL by R.F. Horsnail.
- 2) Future geochemical conferences and theme meetings.
- 3) Summary of the joint meeting of AEG-SGEG. Current Commodity Trends in Mineral Exploration and Evaluation on Dec.5-7,1977 Adelaide, Australia.
- 4) Colorado School of Mines - Geochemistry Award.
- 5) From the Secretary's Office.
 - a) Fees-are they too high? some readers report.
 - b) Councillor Election - ensure your ballots are returned in time for the Annual General Meeting.
 - c) AEG Annual Meeting.
 - d) New officers of the Association.
- 6) Bibliography.
- 7) Admissions Committee report, New Members
- 8) Employment Opportunities
- 9) Lost Members
- 10) Notice of Annual General Meeting
- 11) Notice of 1977 Supplement to the Bibliography of Exploration Geochemistry
- 12) Membership List

EDITORIAL OPINION

The AEG Newsletter is intended to keep Members informed of topical matters and forthcoming events that are of interest to those practicing exploration geochemistry. The Executive is pleased to have this opportunity to communicate with the Membership. Communication, however, is a two-way street and expressions of opinion from members are always welcomed. Please think of the Newsletter as a forum within which all topics pertaining to practical geochemistry, and mineral exploration in general, may be debated. In other words, letters from members are always welcome - particularly so those which may be published in the Newsletter.

I should, partly to stimulate debate as above mentioned, like to offer some comments pertaining to the present state of the mineral exploration industry. As many AEG members are only too well aware the mineral exploration industry is currently at a depressed ebb. Falling base metal prices have rendered many existing mines uneconomic and severely curtailed new mining development. Results for mineral exploration have been melancholy, though not surprising. Mining company exploration budgets have been reduced, in some cases drastically so.

Apart from global economic factors, such as widespread inflation with superimposed escalation in energy costs, government actions in many parts of the world have caused further restrictions in the commitment of risk capital for exploration ventures. Examples of economic nationalism in the so-called Third World, also unrealistic taxation and environmental policies in parts of the so-called Developed World, spring readily to mind.

One could continue to reiterate at length the various reasons whereby the outlook for our industry should be considered to be one of gloom and despondency. Admittedly, present conditions are difficult, but these are almost certain to prove transitory.

At the risk of enunciating a simplistic sequitur, I wish to suggest that no person ever looks at the world through pristine eyes and that views of the future are frequently severely biased by an excessive importance being attached to recent events of an ephemeral nature. A common reflex in times of difficulty is to sharply reduce those items of expenditure which bear the least apparent relation to present profitability; in the mining industry this, of course, frequently translates into a curtailment of exploration. Undoubtedly a reduction in exploration will lead to an amelioration of an adverse cash flow situation, but the "cure" may prove only temporary and in the long run could be fatal.

It somehow seems that the strongest mining companies are those which possess vigorous exploration groups. One might argue "chicken or egg" but this is futile. The relationship between a strong mining company and a dynamic exploration arm is truly symbiotic; without the one the other is doomed to ultimate extinction.

Periodic reappraisal of business strategy and technological tactics of mineral exploration is healthy; and cost-effectiveness must always be borne in mind. Panic retrenchments in the level of exploration activity are, however, to be deplored. In spite of temporary gluts in certain mineral commodities the portents for the future are unchanged from those which prevailed a few years ago when demand temporarily outstripped supply.

Our world is one of countless people, many of whom hunger for the affluence which is enjoyed by a few developed countries. Mining is one of the few industries which offers substantial hope for the creation of new wealth, and for a more equitable distribution of such wealth between rich and poor. Mining is vital for the future of our civilization, exploration is vital for the future of mining, and few branches of exploration technology are of comparable efficacy to applied geochemistry.

FUTURE AEG CONFERENCES AND THEME MEETINGS1978 INTERNATIONAL GEOCHEMICAL EXPLORATION SYMPOSIUM (April 16-20, 1978)

The third and last mailing for this meeting was distributed during January. This mailing included all advance registration forms and, hopefully, all other information that you will need to plan your attendance. It would be appreciated if recipients would complete the forms and return them, with payment, as soon as possible.

Anyone who has not received the mailing, or who desires further information, please contact;

Dr. M.A. Chaffee,
United States Geological Survey,
5946 McIntyre Street,
Golden, Colorado 80401, USA.
(303) 234-2361

All indications are that the Symposium will be successful; we hope to see as many of you as possible in Golden.

EIGHT INTERNATIONAL GEOCHEMICAL EXPLORATION SYMPOSIUM (April 10-15, 1980)

Planning for the Eight Symposium, to be held in Hannover, West Germany, is proceeding steadily. The date of the Symposium has now been set as April 10th through 15th, 1980. A number of interesting post-Symposium field excursions are being planned, including one to Czechoslovakia.

A preliminary information circular regarding the Eighth Symposium will be distributed at the Seventh Symposium in April.

1979 BASIN AND RANGE THEME MEETINGS

This will be a limited-attendance symposium, probably of two days duration, largely concerning geochemical exploration in the Basin and Range Province. The meeting will be held in Tucson, Arizona, in the spring of 1979.

1979 URANIUM THEME MEETING

This meeting will be a one day symposium on geochemical exploration for uranium and will probably be held in the fall of 1979 in conjunction with another North America geoscience society.

Further details of both these proposed meetings will be given in the next Newsletter.

OTHER MEETINGS, SYMPOSIA AND COURSESURANIUM GEOLOGY AND EXPLORATION (March 15-17 and May 24-26, 1978)

A 3-day short course being given by the Colorado School of Mines at Golden, Colorado, covers a) geology and geochemistry of uranium b) geological environments favourable for the formation of uranium deposits and c) exploration techniques and programs.

The course is being given by Dr. Richard H. DeVoto and fee is \$300.00. For further information contact:

Office of Continuing Education,
Colorado School of Mines,
Golden, Colorado, 80401, USA
(303) 279-0300, Ext. 321

SECOND CIRCUM-PACIFIC ENERGY AND MINERAL RESOURCES CONFERENCE

REMOTE SENSING WORKSHOP (July 24-28, 1978)

A workshop on the application of satellite remote-sensing techniques to mineral resource exploration will be presented from July 24-28, the week preceding the 1978 Circum-Pacific Energy and Mineral Resource Conference. The workshop is being given by geologists of the U.S.G.S. EROS program. The cost is \$100.00 and will be limited to 50 persons. For more information write:

1978 Circum-Pacific Conference,
c/o AAPG, Box 979,
Tulsa, Oklahoma, USA, 74101

GEOCHEMICAL EXPLORATION FOR URANIUM AND BASE METALS (May 29-June 2 or June 26-30, 1978)

An introductory course on the fundamentals of modern trace element geochemistry related to mineral exploration is being given at Berthoud Hall, Colorado School of Mines, Golden, Colorado. The course will be taught jointly by Prof. Harold Bloom of the Colorado School of Mines and Dr. A.A. Levinson of the University of Calgary. Lectures, field work and seminars by visiting speakers will be held. The fee is \$350.00. For more information write to:

Prof. Harold Bloom,
Geology Dept.,
Colorado School of Mines,
Golden, Colorado, 80401, USA

COMPUTER MAPPING SOFTWARE AND DATA BASES CONFERENCE (July 23-28, 1978)

The University of Harvard, Laboratory for Computer Graphics and Spatial Analysis will hold a five-day International User's Conference on Computer Mapping and Software and Data Bases: Application and Dissemination.

This conference will review the work of Harvard, other organizations and federal, state, and local governmental agencies using computer mapping programs. Particular emphasis will be placed on user application, software and data base availability, research results on the principles of thematic map design and more effective procedures for computer software and data base distribution, as well as case studies of user applications and user costs.

Participants may attend the complete five-day program or selected workshops. For further information, contact:

Peggy Kilburn,
Center for Management Reserach (conference coordinators)
850 Boylston Street,
Chestnut Hill, Mass. 02167, USA
(617) 738-5021

SYMPOSIUM ON CURRENT COMMODITY TRENDS IN MINERAL EXPLORATION AND EVALUATION Dec.5-7,1977

The symposium was jointly sponsored by the Specialist Group in Economic Geology of the Geological Society of Australia and the Australian membership of the Association of Exploration Geochemists. The three day meeting was held at the Australian Mineral Foundation in Adelaide, South Australia, and about 170 registrants attended.

The programme paid special attention to the commodities tin, vanadium, tungsten, chromium and uranium which are assuming new importance in the exploration world as lower prices lessen the demand for the traditional base metals.

An additional feature of the meeting was a half day workshop on Future Trends in Mineral Exploration. Brief addresses by senior representatives from industry, government and the academic institutions were followed by a lengthy and sometimes lively discussion period.

The general standard of papers and presentation was very good and, being directed to special interest situations, the response from the selective audience was enthusiastic. The programme aimed to balance papers on pure research topics with those presenting views on economic evaluation. This was designed to offer a forum where academics and industry could meet together. Several papers were 'firsts', particularly in the tungsten sessions.

The symposium was rated a success by the participants, many of whom felt that the longer lecture sessions allowed the speakers more time to present their ideas and develop their themes in detail.

The joint sponsorship of the Symposium was an experiment which resulted from discussions held at the Council meeting in Sydney during the 6th I.G.E.S. in August, 1976. Both organisers felt the meeting had been assisted by the joint nature of the programme and the wider appeal of the meeting amongst prospective speakers. It is hoped that further joint meetings of this sort can be arranged at convenient times.

The A.E.G. membership is indebted to Dr. R.A. Both and Dr. P.G. Moeskops, both of the Specialist Group in Economic Geology, who undertook all the local organisation for the Symposium in Adelaide.

J.F. Gilfillan

COLORADO SCHOOL OF MINES - EXPLORATION GEOCHEMISTRY AWARD

Two years ago a fund was established by Professor H. Bloom within the Geology Department of the Colorado School of Mines known as the Exploration Geochemistry Award Fund. The fund was initiated with part of the proceeds of the AEG-sponsored Workshop on geochemical exploration for uranium resources. The fund has grown from \$3500 at its inception to \$6000 at present.

Interest from the fund is used to recognize and encourage outstanding students who are performing research in exploration geochemistry.

Last year the first awards were made; these took the form of student memberships in the Association of Exploration Geochemists. Recipients were Bob Clark, Steve Johnson, Terry Klein and Dick Mead; presentations were made by Dr. G.J.S. Govett of the University of New Brunswick who was then President of the AEG.

This year, on January 19th, the second set of awards, also in the form of AEG student memberships, were made to Walter Hunt, Chris Herald, David Lopez and David Langston. Presentations were made by the present AEG President, Dr. R.F. Horsnail of AMAX Exploration.

FROM THE SECRETARY'S OFFICE

After the all-too-brief break at Christmas and New Year's, we present the third Newsletter of the Association year. I am pleased to report that we've had some reader response to articles in the Newsletter regarding the cost of the AEG membership and a summary of these will follow. Also, a meeting of the Council was held on January 5th in Denver, Colorado with 9 Councillors and 2 guests in attendance. Items discussed are included below:

AEG Theme Meetings

Two theme meetings are in advanced planning stages. The first, dealing with geochemical exploration in the Basin and Range environment will be a limited-attendance meeting and will be held in Tucson, Arizona in the spring of 1979. Ken Lovstrom is organizing the symposium with the help of his committee. A second meeting, dealing specifically with the exploration of Uranium will be held in the fall of 1979. This meeting is being organized by Bob Carpenter. The date and venue are, as yet, to be decided.

Nominations for Council

Nominations for Council were made to fill 6 vacancies which will arise at the next Annual General Meeting of the AEG in April 1978. Ballots have been prepared and distributed to the voting Membership. Results of this voting will be tabulated at the AGM after which the new Councillors will be announced. It is important that the Voting Members cast their ballots as soon as received. The ballots must be returned to the Secretary's office in Toronto from where they will be transferred to Golden, Colorado for the AGM.

Cost of the AEG Membership

Readers of the Newsletter have responded to R.F. Horsnail's discussion on the cost of the AEG Membership in the last Newsletter. Ishiung J. Wu, a geologist with Exxon, Tucson, writes in that the present cost of the AEG membership is a deterrent to membership renewal and growth. He suggests that the Journal, although of high scientific quality, unnecessarily deluxe and would be satisfactory with a lower paper quality and a lower price.

"Any exploration man who doesn't belong to the AEG has got to be mad", so writes R.A. Watters, UNDP, Jakarta, Indonesia. Now that's what we like to hear! He feels that the costs are not excessive considering the quality of the J.G.E. particularly when compared with other journals he receives which provide fewer articles of pertinence to his work.

J.T. Neelands of Geophysical Engineering, North Bay, Ontario suggests that the membership and subscription fees be separate. He states that there are many geochemical enthusiasts who would appreciate the Newsletter and other Association information and would qualify for a membership, but find the cost of the membership and journal subscription prohibitive.

As you can see we have received diverse opinions and recommendations for membership costs. Others who would also wish to express their opinions are requested to write to the Secretary.

ANNUAL MEETING - 1978

The next Annual Meeting of the Association will be held in conjunction with the 1978 International Geochemical Exploration Symposium in Golden, Colorado, April 16-20, 1978. The Agenda for the AGM is as follows:

1. Minutes of the 1977 Annual Meeting
2. Matters Arising
3. President's Report
4. Secretary's Report
5. Treasurer's Report
6. Appointment of the Auditors
7. Introduction of the 1978-79 Executive
8. Election of Ordinary Councillors
9. Any other Business
10. Adjournment

The President, Dr. R.F. Horsnail, will deliver his address immediately following adjournment of the meeting.

NEW OFFICERS OF THE ASSOCIATION

At the Council Meeting held on Jan.5,1978, members of the new Executive for the year 1978-79 were elected.

P.M.D. Bradshaw of Barringer Research, Toronto, Canada, will be the Association's ninth President. Peter Bradshaw is well known to many geochemists the world over and has been active in the Association in previous years.

R.H. Carpenter of the University of Alabama will continue to serve in the position of Vice-President. Bob Carpenter has served on Council and has been a constant supporter of the activities of the Association.

P.K. Theobald of the US Geological Survey, Denver, Colorado, has been elected to the position of Vice-President. Paul Theobald has also been a keen supporter of the Association since inception.

F.N. Ward of the US Geological Survey, Denver, Colorado will continue as Treasurer of the Association. Fred Ward has been responsible for keeping the Association's finances in order and will continue to do so.

R.C. Armstrong of Cominco Ltd., Toronto, Canada, will serve a second term as Secretary of the Association.

1978 MEMBERSHIP LIST

Attached to Newsletter 24 is the Journal mailing list. This list of members is supplied to the Association by Elsevier and is adapted for publication by Mrs. Ines Filicetti at our permanent office. Note that the format of the mailing list is not strictly an alphabetical listing but is divided into countries and areas. This format has been retained as an aid to those in foreign countries who experience problems finding sponsors for Association membership within their own areas.

This membership list is not to be used for commercial purposes.

MEMBERSHIP CERTIFICATES

To date, the number of members requesting AEG membership certificates is still under the economic of 40. When the limit has been attained, a decision will be made on the printing of the certificates.

1978 MEMBERSHIP DUES

The response to the 1978 dues notice enclosed in the last two Newsletters has been gratifying. However, some members have not yet remitted their 1978 dues. Delayed payments result in the cancellations of Journal and Newsletter mailings. Also, votes for Councillors of the Association, by Voting Members who have not paid their dues, are considered void if payment has not been received by April 1, 1978. The efficient operation of the Association is assured by early payment of dues.

NEWSLETTER ADVERTISING

Again, we mention that advertising space is available in the Newsletter. The rates are set at \$10.00 per issue of the Newsletter for a business card-size advertisement. This is considered a very reasonable price for those wishing to reach the geochemical market. Inquiries should be directed to the permanent office of the Association.

BIBLIOGRAPHYRECENT PAPERS ON EXPLORATION GEOCHEMISTRY

This list comprises titles that have appeared in major publications since the compilation presented in Newsletter No. 23. Journals routinely covered and abbreviations used are as follows: Economic Geology (EG); Geochimica et Cosmochimica Acta (GCA); The USGS Journal of Research (USGSJR), Professional Papers (USGS Prof Paper), Bulletins (USGS Bull), 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.

- Armbrust, G. A. et. al. 1977, Rubidium as a guide to ore in Chilean porphyry copper deposits. EG 72(6) 1086-1100.
- Baldock, J. W. 1977, Low-density geochemical reconnaissance in Peru to delineate individual mineral deposits. Trans IMM 86 B63-B72.
- Casaderall, T. and Ohmoto, H. 1977, Sunnyside Mine, Eureka Mining District, San Juan County, Colorado: Geochemistry of gold and base metal ore deposition in a volcanic environment. EG 72(7) 1285-1320.
- Chapman, R. P. 1977, Geochemical interpretation of multi-element stream sediment data from New Brunswick. CIM Bull. 70(788) 62-69.
- Ewers, G. R. and Keays, R. R. 1977, Volatile and precious metal zoning in the Broadlands geothermal field, New Zealand. EG 72(7) 1337-1354.
- Gong, H. et. al. 1977, The geochemistry of cadmium in some sedimentary rocks. GCA 41(12) 1687-1692.
- Gwosdz, W. and Krebs, W. 1977, Manganese halo surrounding Meggen ore deposit, Germany. Trans IMM 86 B73 - B - 77.
- Lesure, F. G. et. al. 1977, Exploration geochemical studies of some sandstone copper-uranium deposits, Bradford, Columbia, and Lycoming Counties, Pa. USGSJR 5(5) 609-622.
- Levinson, A. A. 1977, Hydrogen - a reducing agent in some uranium deposits. Can. J. Earth Sci. 14(11) 2679 -

- Marakushev, A. A. 1977, Geochemical properties of gold and conditions of its endogenic concentration. *Mineralium Deposita* 12(2) 123-142.
- Miller, W. R. and Drever, J. I. 1977, Chemical Weathering and related controls on surface water chemistry in the Absaroka Mountains, Wyoming. *GCA* 41(12) 1693-1702.
- Nelson, H. et. al. 1977, Mercury dispersal from lode sources in the Kuskokwim River drainage, Alaska. *Science* 198(4319) 820-823.
- Olade, M. A. 1977, Nature of volatile element anomalies at porphyry copper deposits, Highland Valley, B. C., Canada. *Chem. Geol.* 20(3) 235-252.
- Reyf, F. G. and Bazheyer, E. D. 1976, Chlorine anomalies observed in crystal-fluid inclusions as a prospecting clue. *Geochem. Internat.* 13(3) 99-100.
- Shanks, W. C., III and Bischoff, J. L. 1977, Ore transport and deposition in the Red Sea geothermal system: a geochemical model. *GCA* 41 (10) 1507-1520.
- Wolfe, W. J., 1977, Geochemical exploration of Early Precambrian sulphide mineralization in Ben Nevis Township, District of Cochrane. Ontario Geological Survey Study 19, 39 p.

ADMISSIONS COMMITTEE REPORT

NEW MEMBERS

The following individuals have been accepted for Membership in the Association by Council on January 5, 1978. The Association is pleased to welcome the new members.

VOTING MEMBERS

- | | |
|----------------|--|
| Bonfa, S. | Geochemist; Geological Survey of South Africa, Pretoria, South Africa. |
| Bruni, D.C. | Head Geochemist; CPRM - SUREG/SA, Salvador, Bahia, Brasil. |
| Dickie, G.J. | Senior Geologist; Brinex Ltd., Montreal, Que. Canada. |
| Grazia, C.A. | Geochemist; C.P.R.M., Porto Alegre, Brasil. |
| Kirchner, C.A. | Geochemist; C.P.R.M., Porto Alegre, Brasil. |
| Lewis, J.D. | Geologist-Geochemist; Rocky Mountain Energy, Denver, Colo. U.S.A. |
| Lowder, G.G. | Consulting Geologist and Geochemist; Gordon, N.S.W., Australia. |
| Pirc, S. | Geochemist; University of Ljubljana, Yugoslavia. |

New Members (con't)

- Price, V. Geologist, Dupont de Nemours and Co., Savannah River Laboratory, Aiken, S.C. U.S.A.
- Ribeiro, M.J. Geochemist; DNPM, Porto Alegre, Brasil.
- Rudmann, J.E. Geologist; Cities Service Mins. Corp., Tucson, Arizona, USA.

AFFILIATE MEMBER

- Hellinger, T.S. Geologist; Minerals Exploration Co., Casper, Wyoming, USA.

EMPLOYMENT OPPORTUNITIES

Resources Associates of Alaska, Inc. has the following three positions available:

GEOLOGIST (full time, permanent)

We seek only exceptionally bright, capable, dedicated geologist with proven exploration track record and keen interest in rigorous field work in the bush. Experience in wide variety of ore minerals, rock types, ages, and metamorphic terrains is desirable. Exceptional mapping ability and time-space conceptual ability are essential. Minimum experience 8 years. Equity-sharing program provides royalty share in discoveries. Work commitment could vary between 7 and 11 months per year if applicant desired. We are small, flexible, dynamic company.

GEOLOGIST (temporary)

Same as above, except minimum experience 5 years, and there is no equity sharing unless the job grows into a permanent situation which is possible if luck and skill prevail in finding ore.

GEOPHYSICIST (full time, permanent)

We seek only exceptionally bright, capable, dedicated geophysicist with strong geological background and proven track record of exploration field work. Must have keen interest in demanding field work in the bush. Mostly EM and mag, with working knowledge of gravity, IP, radiometrics helpful. Expected to keep interpretive maps and sections current with field work. Minimum direct experience 6 years. Equity sharing program provides royalty share in discoveries. Work commitment could vary between 6 and 11 months per year if applicant desired.

Please send resume to; Jeff Knaebel, President,
Resource Associates of Alaska, Inc.,
3230 Airprot Way, Fairbanks, Alaska 99701
U.S.A.

EMPLOYMENT OPPORTUNITIES (con't)

The University of Saudi Arabia, institute of Applied Geology is requesting application from well qualified candidates to fill the position of exploration geochemistry on our staff.

The duties of this person will be to organize a programme of exploration geochemistry for students at the institute, to help teach courses in this discipline to graduate students and to supervise graduate research. Preferably, the applicant should have practice experience in this discipline. Please send resume to;

Dr. A.M. Al-Shanti,
Dean of the Institute of Applied Geology,
The University of Saudi Arabia,
P.O.BOX 1744,
Jeddah, Saudi Arabia

LOST MEMBERS

Mail addressed to the following members in the cities indicated was returned to the Association office.

R.N. Carver	c/o Western Mining Corp. P.O.BOX 99, Doubleview, Australia 6018
J.A. Criswell	Golden, Colo. USA
D.A. Galanos	2A Kipselis Street, Kipseli, Athens, Greece
M.R. Khalie	Beirut, Lebanon.
W.C. Davies	c/o SAMCOSA, Apat.7-2070, San Jose, Costa Rica.
R.A. Martin	Box 443 Weipa, Queensland, 4874, Australia
R.J. McNeil	61-27, 224th Street, Bayside, New York 11364, USA
E.E. Okon	Dept. of Geology, University of Calgary, Alberta, Canada
A.S. Stanley	Queensland Institute of Technology, P.Q.BOX 246, North Quay, Qld. 4000 Australia
K.S. Tapaninen	1638 -B Edward Ave., Saskatoon, Sask. Canada.
H.J. Wiggett	1021 Lincoln Blvd., Apt. 218, Santa Monica, Ca. 90403, USA
J.H. Galbraith	Cities Service Minerals Corp. 405-1200 West Pender St., Vancouver B.C.
P.J. Hope	447 Cardinal Begin Est, Rouyn, Quebec J9X 3H6, Canada.

CHANGE OF ADDRESS INFORMATION FOR THE ABOVE MEMBERS WOULD BE GREATLY APPRECIATED

A N N U A L M E E T I N G

The AEG Annual Meeting will be held immediately following
the last technical paper
at the
GREEN CENTER
Golden, Colorado, U.S.A.
on
Tuesday, April 18, 1978

1977 Supplement to the Bibliography

of Exploration Geochemistry by H.E. Hawkes

The 1977 supplement is an up-date of the 1972-75 Bibliography of Exploration Geochemistry that appeared as Special Volume 5 of the Association of Exploration Geochemists. It contains all relevant material that had come to the attention of members of the Bibliography Committee as of June 1, 1977. The coverage is essentially the same as that of Special Volume 5 except that Russian literature is covered only where English translations are available.

The 1977 supplement is currently being published and will be available from the AEG Rexdale office. Copies will also be available at the 8th I.G.E.S. at Golden, in April 1978.

Price (\$US) \$4.00 non-members and \$2.00 to members and students

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS



ELECTION OF ORDINARY COUNCILLORS

Ten Voting Members of the Association have been nominated for Ordinary Councillors for the 1978-1980 period. Five incumbent Ordinary Councillors will retire at the upcoming Annual Meeting in April 1978 and a vacancy will be created among those Ordinary Councillors elected for the 1977-1979 period by the resignation of G.J.S. Govett from Council as a result of his relocation to Australia. Consequently, members are asked to cast six votes by erasing four names of candidates you do not wish to vote for from the Balloting List. The persons whose names are not erased from the Balloting List will receive one vote in the balloting and, in the final tally, the person receiving the least number of votes among those elected will serve to fill the remaining year in Dr. G.J.S. Govett's term.

Any Balloting List will be deemed invalid if the number of names not erased therefrom shall be more than six.

Limited information on each candidate is included on the reverse page.

Voting Members should not sign or otherwise identify themselves on the Balloting List. Place the completed form in the small grey envelope marked "AEG Ordinary Councillor Ballot" and seal. Place this grey envelope in the larger white envelope bearing the AEG Permanent office address, seal, stamp and mail to arrive in Toronto not later than April 1st, 1978.

CANDIDATES FOR ORDINARY COUNCILLORS

The following information is provided for reference to Voting Members when completing the Balloting Form.

- × R.J. Allan - AEG Member since 1970. Geochemist with Freshwater Institute, 501 University Crescent, Winnipeg, Canada.
- ✓ W.B. Coker - AEG Member since 1971. Geochemist with the Geological Survey of Canada, 601 Booth Street, Room 495, Ottawa K1A 0E8, Canada.
- ✓ R.G. Garrett - AEG Member since 1970. Research Geologist with the Geological Survey of Canada, 601 Booth St., K1A 0E8, Canada.
- ✓ L.D. James - AEG Member since 1970. Head, Geochemical Section, ASARCO, 3422 South 700 West, Salt Lake City, Utah, 84119, U.S.A.
- ✓ S.E. Kesler - AEG Member since 1970. Professor, Dept. of Geology and Mineralogy, University of Michigan, Ann Arbor, Mich. 48109 USA.
- ✓ K.A. Lovstrom - AEG Member since 1973. Geochemist with Amax Exploration Inc., 5250 N. Roller Coaster Place, Tucson, Arizona 85704, USA.
- × J.H. McCarthy - AEG Member since 1970. Research Geochemist with the Branch of Exploration Res. U.S. Geological Survey, Federal Center, M.S. 915, Denver, Colorado, 80225, USA.
- × W.T. Meyer - AEG Member since 1970. Geochemist, Citco International Minerals Co., P.O.Box 300, Tulsa, Oklahoma 74102 USA.
- ✓ I. Thompson - AEG Member since 1973. Geologist/Geochemist with Barringer Research Ltd., 304 Carlingview Drive, Rexdale, Ontario M9W 5G2 Canada.
- × J.R. Watterson - AEG Member since 1973. Geochemist, USGS M.S. 955, Box 25046, Denver Federal Center, Denver, Colorado 80225, USA.