

THE ASSOCIATION OF EXPLORATION GEOCHEMISTS



June 1st, 1972

President:

R. L. Erickson
United States Geological Survey,
Federal Center
Denver, Colorado 80225

NEWSLETTER #6

Vice Presidents:

E. M. Cameron
Geological Survey of Canada
601 Booth St.
Ottawa 4, Ontario

H. E. Hawkes
RFD 2, Box 162-5
Orleans, Vermont 05860

Secretary:

H. Bloom
Geology Department
Colorado School of Mines
Golden, Colorado 80401

Treasurer:

R. F. Horsnail
AMAX Exploration, Inc.
601-535 Thurlow St.
Vancouver 5, B.C.

Councillors:

R. W. Boyle
P. M. D. Bradshaw
J. A. Coope (ex-officio)
F. C. Canney
I. L. Elliott
C. F. Gleeson
J. A. Hansuld (ex-officio)
C. J. Lepeltier
M. B. Mehrtens
I. Nichol
A. W. Rose
F. N. Ward

Our Association celebrated the second anniversary of its founding at the 4th International Geochemical Exploration Symposium in London, England, April 17-20. The Symposium was organized for AEG by the Institution of Mining and Metallurgy and the Organizing Committee was chaired by Professor J.S. Webb. The facilities, technical program, and social events were an outstanding success and provide a high standard of excellence for future organizing committees to shoot for. Over 400 registrants representing 34 countries attended the Symposium. Our past president, Dr. John A. Hansuld, addressed the opening session of the Symposium; reviewed the growth of the symposia and their relationship to AEG. A copy of President Hansuld's remarks is attached.

The Annual General Meeting of the Association was held at the Waldorf Hotel on Tuesday evening, April 18, 1972. The highlight of the meeting was Dr. John Hansuld's Presidential Report in which he reviewed the progress of our Association, the state of the art of exploration geochemistry, and a forecast of problems to be faced in the future. Dr. Hansuld's address will be published in the second issue of The Journal of Geochemical Exploration.

The following new officers for the 1972-1973 year were introduced:

President	- R.L. Erickson
Vice President	- H.E. Hawkes
Vice President	- E.M. Cameron
Secretary	- H. Bloom
Treasurer	- R.F. Horsnail

The result of the council election are as follows:

<u>2-year term</u>	<u>1-year term</u>
R.W. Boyle	P.M.D. Bradshaw
F.C. Canney	I.L. Elliott
C. Lepeltier	C.F. Gleeson
I. Nichol	M.B. Mehrtens
F.N. Ward	A.W. Rose

J.A. Hansuld joins J.A. Coope as an ex-officio member of council.

Also at the AGM all proposed amendments to the constitution as set forth on the ballot submitted to the voting membership in January were carried. The principal changes are in the membership structure to allow a broader participation of persons and groups interested in exploration geochemistry. The category of Associate Membership is abolished, eligibility requirements for full membership have been eased and are now the same as the previous requirements for Associate Membership, and all members currently registered as Associate Members are now Members. A new membership category, Corporate Membership has been added to accommodate corporate bodies or private companies engaged in exploration and interested in maintaining a high standard of excellence in the use of exploration geochemistry.

At the council meeting held in London immediately after the Annual General Meeting the following items of business, of interest to the membership were acted upon:

Activation of committees and appointment of chairmen to serve for 1972-1973.

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|---|-----------------|
| a) Admissions | -M.B. Mehrtens |
| b) Geochemical Analyses | -H.W. Lakin |
| c) Constitution | -J.A. Coope |
| d) Bibliography | -H.E. Hawkes |
| e) Computer Application | -R.G. Garrett |
| f) Research and Education | -R.H. Carpenter |
| g) Regional Geochemical
Data Compilation | -W.R. Fletcher |

These committee chairmen will be calling upon the membership to serve on their committees.

The Publications and Case History Committees will not be reactivated. Their work will be taken over by Dr. E.M. Cameron, Editor-in-Chief of our new publication -- Journal of Geochemical Exploration -- and his editorial board.

Journal of Geochemical Exploration:

Regarding the Journal, President Hansuld announced at the Annual General Meeting that the first two issues would be distributed free to the membership. Although our ability to meet Elsevier's invoices for 1972 will be rather touch and go at this stage in our growth, Council feels that these free issues are the best way of saying "thank you" to the entire membership who so enthusiastically joined and actively supported our new scientific society through its birth and infancy. I believe this gift to the membership may also be looked upon as an expression of confidence in the continuing meaningful productivity and growth of the Association of Exploration Geochemists. So--watch for your free copy of the first issue of the Journal of Geochemical Exploration this summer.

A second Journal matter concerns the manner of payment of the 1973 and future annual Journal Subscriptions. I feel very strongly that the subscription price should be a part of the annual dues to the Association. However, the Constitution, Article V, Section 31, states the entrance fees and annual subscription "...shall be fixed by the Council from time to time and confirmed by Voting Members at the Annual Meeting of the Association or at a Special General Meeting held under the provisions of Bylaw 60."

Because the necessary confirmation cannot be obtained before the next AGM in the spring of 1973, Council has determined that your Journal subscription cost for 1973 (approximately \$18.50) will be included with, but itemized separately, from your 1973 annual dues billing (\$10). This manner of billing will permit us to take advantage of the 35 percent discount offered to the members of AEG. Four hundred and one member subscribers are necessary to obtain the discount. As our membership increases, the discount rises to 40 percent at a membership of 501, 45 percent at 601 and 50 percent at 701. Members are reminded to disregard the instructions on the bottom of the Elsevier handout regarding subscriptions to the Journal. Your two free issues will be mailed directly to you from Elsevier.

International policy and problems:

Council has had many discussions concerning the international representation of our Association. At present we have about 380 members in 26 different countries. Our constitution makes no restriction on the geographical residence of Ordinary Councillors--all voting members are eligible. Further, our constitution provides for election of up to 10 Regional Councillors. However, we all recognize that it is difficult to effectively carry on the operation of any organization if its executive group is widely scattered around the earth. In fact most of us would agree that the rapid growth and success of our Association is due in large part to the geographical centralization of the working executive group.

In 2 short years since the founding of AEG and under the enthusiastic leadership of Dr. Coope and Dr. Hansuld, your Association published a much-needed bibliography of geochemical exploration literature (distributed free to the Membership), assumed responsibility for sponsorship of the highly successful biennial International Geochemical Exploration Symposia, launched the Journal of Geochemical Exploration, the first specialized periodical in this branch of science, and prepared much-needed bulk standards for geochemical analyses which have been distributed to 140 cooperating laboratories throughout the world.

But enough talk of past accomplishments. The time has come to not only broaden representation in Council but to consider organization of local groups as sections or chapters of AEG--perhaps patterned after something like the local sections of the Geological Society of America. These groups could conceivably have their own executive to deal with local problems unique to their area. Examples would include wrestling with local professionalism or licensing problems, contributions to local environmental or pollution problems, local symposia. The work of local groups could contribute significantly to the international stature of our entire Association.

On the other hand, we do not want to dilute the strength of our growing organization by premature fragmenting into satellite groups without common purpose. I write of this only to encourage the membership to look to the future of our Association. What do we want it to do for us? What contributions can the Association make not only to mineral exploration but the world community of peoples? How can we best accomplish our goals? Our new Journal of Geochemical Exploration should provide one medium for expression of views of the membership through Letters to the Editor.

1974 Symposium:

Council has limited consideration for staging the 5th International Geochemical Exploration Symposium in 1974 to Golden, Colorado, and Vancouver, B.C. Site selection will be made in early June and announced either through Newsletter or an issue of the Journal of Geochemical Exploration.

Proposals for the site of the 1976 Symposium are now being accepted for consideration by Council. These proposals outlining the site, facilities, and support for the 6th International Geochemical Exploration Symposium should reach Professor H. Bloom, Colorado School of Mines, Golden, Colorado 80401, before the 1974 Annual General Meeting of AEG. At this writing we anticipate formal proposals from Cyprus, Mexico, South Africa, and U.S.S.R.

Applications for Membership:

Applications from the following persons have been approved by the Admissions Committee and ratified by council:

Members:

W.D. Collins, 910 Security Life Building, Denver, Colorado 80401, U.S.A.

Y.G. Dekate, Head, Dept. of Geology, Magpur Univ. Law College Campus,
Amravati Road, Magpur, India

I. Devereux, Rocklabs, 215 Parnell Road, Auckland, New Zealand

J.C. Mitchell, P.O. Box 1207, Moab, Utah 84532, U.S.A.

Regional Councillor:

W.J. Atkinson has been elected to the council as our first Regional Councillor. He will represent the Australasia group of AEG members.

Bibliography:

Mike Mehrtens has been designated our agent to handle the sale of the bibliography prepared by Herb Hawkes and his committee. Inquiries concerning the bibliography should be addressed to:

M.B. Mehrtens
Rio Tinto Exploration, Ltd.
120 Adelaide Street West
Suite 2400
Toronto 1, Ontario
CANADA

Those of you who may have copies on hand intended for sale should transmit them to Mike.

Analysis Committee:

A computer summary of the results of the questionnaire circulated by the Committee on Geochemical Analysis has been prepared and is available upon request addressed to H.W. Lakin, U.S. Geological Survey, Building 25, Denver Federal Center, Denver, Colorado 80225. Following are some items of interest from that report:

Sampling median preferred by the industry is in descending order of preference soils-rocks-stream sediments.

Government exploration in under-developed countries overwhelmingly prefer stream sediments.

In 26 countries from which we received questions only a total of 18 universities and technical institutes replied to our questionnaire.

Total reference sample cooperating laboratories 4/6/72--140.

Of particular interest is the tabulation relating personnel involved with the cooperating laboratories to membership in AEG.

<u>Professionals</u>	<u>Number of persons</u>	<u>Membership in AEG</u>
Geologists	690	Members----- 110
Geochemists	199	Affil. Members- 7
Mining Engineers	129	Student Members- <u>11</u>
Analysts (chemists)	346	
Lab technicians	<u>6,082</u>	
Total	7,446	128

In this group there are over 6,000 people who most probably would qualify for some class of membership in AEG. Only 128 people (less than 2 percent) out of a potential group of 7,446 are affiliated with AEG. I realize that some are just not interested and some are probably not qualified for any class of membership. However, certainly more than 2 percent are qualified and probably would be interested if they were exposed to the objectives of our Association. I ask the Membership to please remind, and more particularly encourage and support, qualified analysts and technicians to seek membership in AEG. I believe that through membership in AEG these people may experience a closer feeling of kinship with the fraternity of exploration geochemists and develop a stronger interest in the total field of exploration geochemistry. This sense of belonging to a team ultimately results in better workmanship and greater productivity throughout the entire profession.

Six reference samples have been prepared by the U.S. Geological Survey to promote a cooperative study of analytical methods currently used in geochemical exploration. They have been sent to 144 laboratories in 26 countries. A more complete coverage of exploration laboratories is desirable. These samples are available upon request of the head of any laboratory interested in participating in this program. A brief description of the samples is given below:

DESCRIPTION OF SAMPLES

Geochemical Exploration Sample #1
Jasperoid, Drum Mountains, Juab Co., Utah

The sample is a composite collected at two sites of outcrops of jasperoid "reefs" in Cambrian limestone. The "reefs" range from coarsely crystalline to crypto-crystalline and in color from gray to reddish brown. Gold, copper, and manganese deposits have been mined in the area. The Drum Mountains are a typical faulted range of the Basin and Range province of southwestern United States.

Geochemical Exploration Sample #2
Soil--depth of collection 0-7" (0-18 cm)
Park City, Summit Co., Utah

The sample is a composite of gray-brown loams (Munsell Color Chart 5/2 of hue 10 YR) collected at four sites along a line approximately 0.8 km long. The shallow soil varies from 18 to 30 cm in depth and overlies a thick bedded quartzite (Weber) of Pennsylvanian age.

The Park City mining district is on the eastern slope of the Wasatch range. The steep hillsides are heavily covered with deciduous brush and patches of conifers. Annual precipitation is 50 to 65 cm and the climate is cool; the January average temperature is -5°C , and for July 19°C ; the elevation of the sample sites is 2,300 meters.

Silver, lead, zinc and copper are mined in the district.

Geochemical Exploration Sample #3
Fe-Mn-W-rich spring deposit
Humboldt Co., Nevada

The sample is a composite of red-brown to black, earthy, Fe-Mn-rich material formed as a hot spring deposit cementing and replacing coarse alluvium on a bed-rock surface of intensely deformed phyllitic shale of the Preble Formation of Cambrian age. Calcareous tufa commonly caps the mineralized material. Tungsten was produced from these spring deposits during World War II.

Geochemical Exploration Sample #4
Porphyry copper mill heads, Utah

This sample was furnished by a mining company. It is an unoxidized porphyry copper ore with the sulfides, principally chalcopyrite and pyrite dispersed throughout the rock.

Geochemical Exploration Sample #5
Soil--depth of collection 7.5 to 25 cm; B horizon
Somerset Co., Maine

Geochemical soil sample #5 was composited from three separate samples collected in Somerset County, Maine, an area subjected to continental glaciation during the Pleistocene. At the three sample sites, moderately well developed podzolic soils have formed on thin (≤ 1 m) basal glacial till under a northern hardwoods-spruce-fir forest. The B-zone material was collected, which was generally found at 7.5-25 centimeter depth. Winters in this area are long, cold, with heavy snowfall; summers are short and normally quite cool. Annual precipitation is about 100 cm.

Locality #1 is on the southwest slope of Catheart Mountain in the southwest corner of Long Pond quadrangle at an altitude of about 490 meters. The bedrock underlying the general area of the collection site is highly silicified and sericitized quartz monzonite containing abundant disseminated chalcopyrite, molybdenite, and pyrite.

Locality #2 is on the west end of Burnt Nubble in the east central part of The Forks quadrangle at an altitude of 430 meters. Bedrock under the area sampled is mineralized norite containing abundant pyrrhotite and minor chalcopyrite and pentlandite.

Locality #3 is at Black Narrows on the west shore of Lake Moxie in The Forks quadrangle at an altitude of about 310 meters. Bedrock at this site is peridotite and altered norite containing abundant pyrrhotite, chalcopyrite, and pentlandite.

Geochemical Exploration Sample #6
Soil--depth of collection 15 to 45 cm; B horizon
Davidson Co., North Carolina

This yellowish red (Munsell Color Chart, 5/8 of hue 5 YR) residual soil is in a composite from three separate samples collected in central North Carolina, once active in gold and base metal mining. This part of the Piedmont province once covered by heavy timber now consists of "lean" fields, scraggy timber, and suburbia. The climate is warm and humid for most of the year with an average precipitation of about 125 cm. Two samples are from within the Silver Hill-Gold Hill fault shear zone where the collected B-horizon soils are from sericitized mudstone and phyllite, and that are slightly anomalous in lead, zinc, silver, copper, barium, and molybdenum. The third soil sample is from a cross shear underlain in part by rhyolitic rock and in part by andesitic basalt which here are slightly anomalous in arsenic and gold.

Sincerely,


 Ralph L. Erickson

April 17, 1972

INTRODUCTORY REMARKS

JOHN A. HANSULD
Presidnet
Association of Exploration Geochemists

OPENING SESSION
LONDON SYMPOSIUM

Mr. Chariman, ladies and gentlemen; on behalf of the Association of Exploration Geochemists, I wish to extend a warm welcome to this, the 4th International Geochemical Exploration Symposium.

Although this is known as the 4th Symposium, it is, in many ways, also the first. Compared to the previous three Symposia, it is the first to schedule social events, the first to include a ladies program, the first to plan field trips. However, in my view, the two most significant "firsts" are that it is the first Symposium to be held under the auspices of the Association of Exploration Geochemists and it is the First to be held outside North America. The second of these is a function and out-growth of the first because the holding of these Symposia and founding of the Association are very closely related. Since I have been directly or indirectly involved with all four Symposia, it is this relationship and the evolution of the Symposium and Association that I wish to address my remarks.

The first three Symposia, were organized, in a rather informal way, by small groups of dedicated exploration geochemists in Canada and the United States. The first was held in Ottawa in 1966, under the sponsorship of the Canadian National Advisory Committee on Research in the Geological Sciences. With little publicity, what started out to be a small gathering to examine the status of geochemical prospecting in Canada, grew into a Symposium attended by over 250 participants from six countries. It marked a real milestone in bring together for the first time under the name of exploration geochemistry, members of industry, government and university from widely separated areas. The eagerness and enthusiasm with which the meeting was received and attended, clearly demonstrated the growing interest and need of holding such a meeting. The three days of technical sessions and informal get togethers provided many opportunities for discussions which established the background and set the pattern for planning future Symposia.

The second Symposium was held in Colorado in 1968, under the co-sponsorship of the Colorado School of Mines and Unites States Geological Survey. It was declared international in scope and attracted nearly 500 participants representing 16 countries. In view of the rapidly expanding interest in geochemical exploration, the Symposium presented a timely opportunity to obtain an expression of interest on matters of concern to the profession. A questionnaire was circulated during the meeting to canvass the registrants views on two matters - a) the scheduling of future Symposia and b) the formation of a professional organization. The registrants unanimously approved the scheduling of meetings at two-year intervals and many indicated that some sort of professional organization devoted to the field of

exploration geochemistry was needed. Accordingly, two important steps were taken - the scheduling of the next Symposium was agreed upon, and at the suggestion of Allan Coope, a group of geochemists met to discuss the establishment of a professional organization. As a result of this meeting a volunteer steering committee, headed by Dr. Coope, was formed to draft a constitution.

The Third Symposium held in Toronto in 1970 was sponsored by the Canadian Institute of Mining and Metallurgy and the Society of Economic Geologists. It attracted over 700 delegates from 26 countries. In the opening session, Dr. Coope reviewed the need for founding an organization to advance the recognition of exploration geochemistry as a profession and provide a medium for future communication among interested parties. To quote - The overwhelming response to the 1970 International Geochemical Exploration Symposium is an acknowledgment of the importance of geochemistry in mineral exploration today and also an expression of the confidence in the future usefulness of geochemical techniques in the search for ore. Unquote.

During the Symposium, a special meeting was held and the Association of Exploration Geochemists was officially founded with the adoption of a constitution and the election of officers and a council.

Many of the founding members were also those who had organized the three previous Symposia and it was agreed that the Association would assume the responsibility of scheduling future meetings. Also, with the founding of the Association, the administrative vehicle was established to consider sponsoring Symposia outside of North America. One of the first orders of business of the newly formed Association, was to choose a time and location for the next Symposium. It was only fitting that the Council selected the proposal of Professor Webb and IMM to host the 1972 Symposium. Imperial College, through the work of Professor Webb, his colleagues and students, has been recognized throughout the world as a centre of applied geochemical research and education for nearly a quarter of a century. The Association is very fortunate and honoured to be able to pay tribute to Professor Webb's accomplishments by holding its first official Symposium in London.

The Association, immediately upon its founding, embarked on an ambitious program. Much has been achieved in two years, mainly through the work of such committees as: Analyses, Bibliography, Case History, Computer Applications, Constitution, Publication, Research and Education, and Admissions. These committees, comprising members from many parts of the world, already have made a number of solid accomplishments, many of which are first in the field of exploration geochemistry. In addition to sponsoring this Symposium, the Association has published its first special volume in the form of an up-dated bibliography. An agreement has been signed with Elsevier Publishing Company for the printing of the Association's official publication, The Journal of Geochemical Exploration; the first scientific publication in the western world devoted exclusively to the field of exploration geochemistry. The journal will be a quarterly volume, the first issue of which is scheduled for distribution in June of this year, marking a historical milestone for the Association and the profession. Another major achievement has been the preparation of much needed geochemical bulk standards. These standards will provide the basis for tying in and comparing analytical methods and data on a worldwide basis; the importance and implication of which with respect to establishing background values and its application to ecology and pollution are limitless. Surveys have been conducted on computer applications and research and education in an effort to improve techniques and

services to the industry. During the past year quarterly newsletters were instituted to keep the membership informed of the various committees' progress and other Association activities.

Lastly, I would like to make a few remarks about the administration of the Association. The Association was founded in North America and because the bulk of the membership resides in Canada and the United States, the officers and councillors have been North American residents. As a new organization this localization of the administration has been, in my view, a real asset in contributing to the functioning and progress of the Association. However, as the membership is expanding, especially outside North America, and the Association becoming more firmly established, the geographical coverage of the administration is and should be broadened. About a quarter of our nearly 400 members reside outside North America. Regional Correspondents already have been appointed to represent groups of members in the UK and Republic of Ireland, Europe and Australia; and the first Regional Councillor was recently elected by our Australian members. It is important to the growth of the Association that as many members as possible, representing all regions and interests contribute to and participate in the activities and administration of the Association.

In closing, I wish to take this opportunity to thank Professor Webb, his organizing committee, The Institution of Mining and Metallurgy, and the Department of Trade and Industry of Her Majesty's Government for hosting this Symposium. The meeting provides an opportunity for exploration geochemists from many parts of the world to get together, compare notes on matters of mutual interest and contribute to the affairs of the Association. Finally I wish to express my appreciation to all delegates, especially those who have travelled from afar, for their interest and support. As another first in the international development of exploration geochemistry I am sure we can all look forward to a most enjoyable, informative and rewarding Symposium. Thank you.