

Newsletter

of the

**International Association of Geochemistry and
Cosmochemistry**

Number 35, March 2001

Gunter Faure, Newsletter Editor

The International Association of Geochemistry and
Cosmochemistry is a Nonprofit Organization



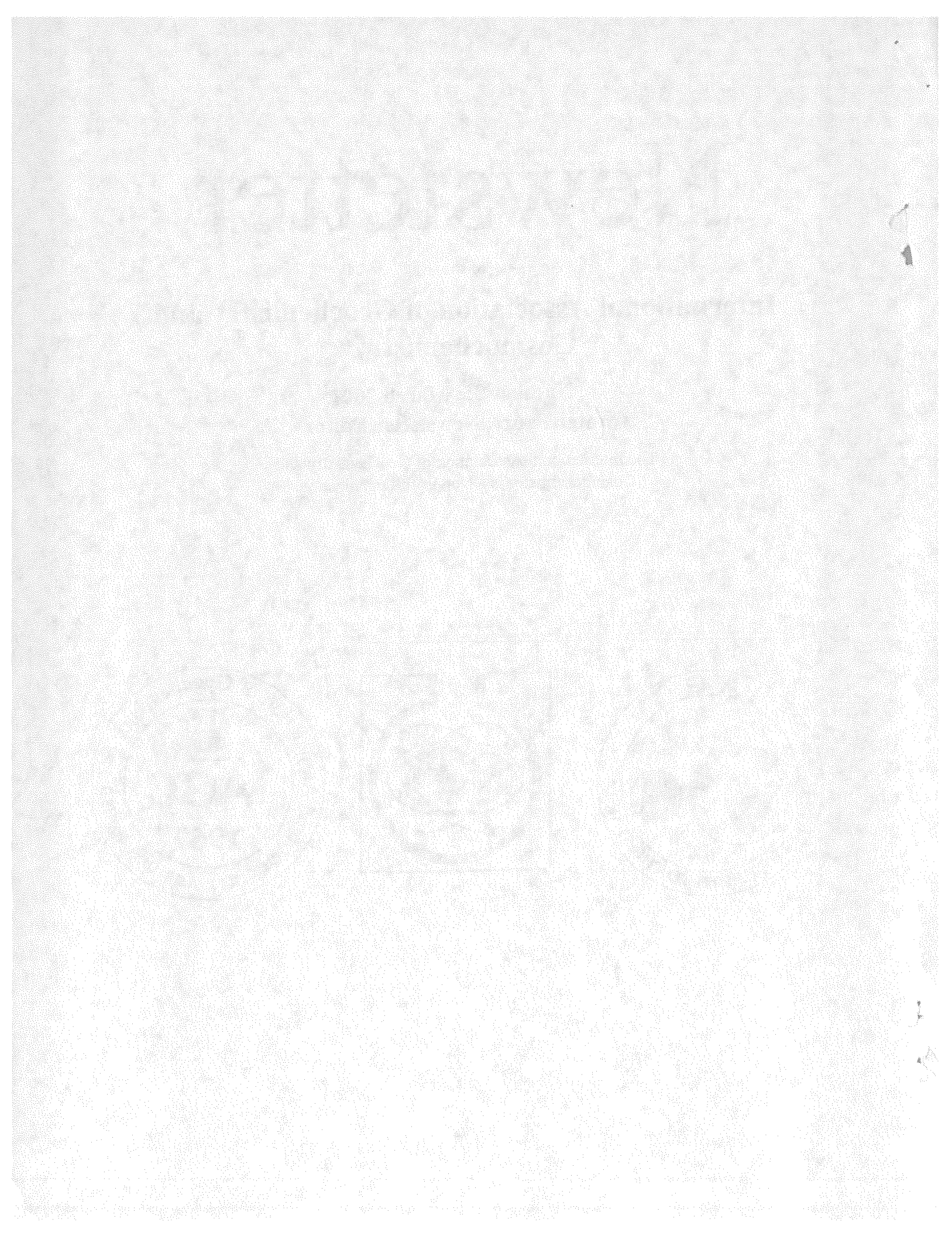
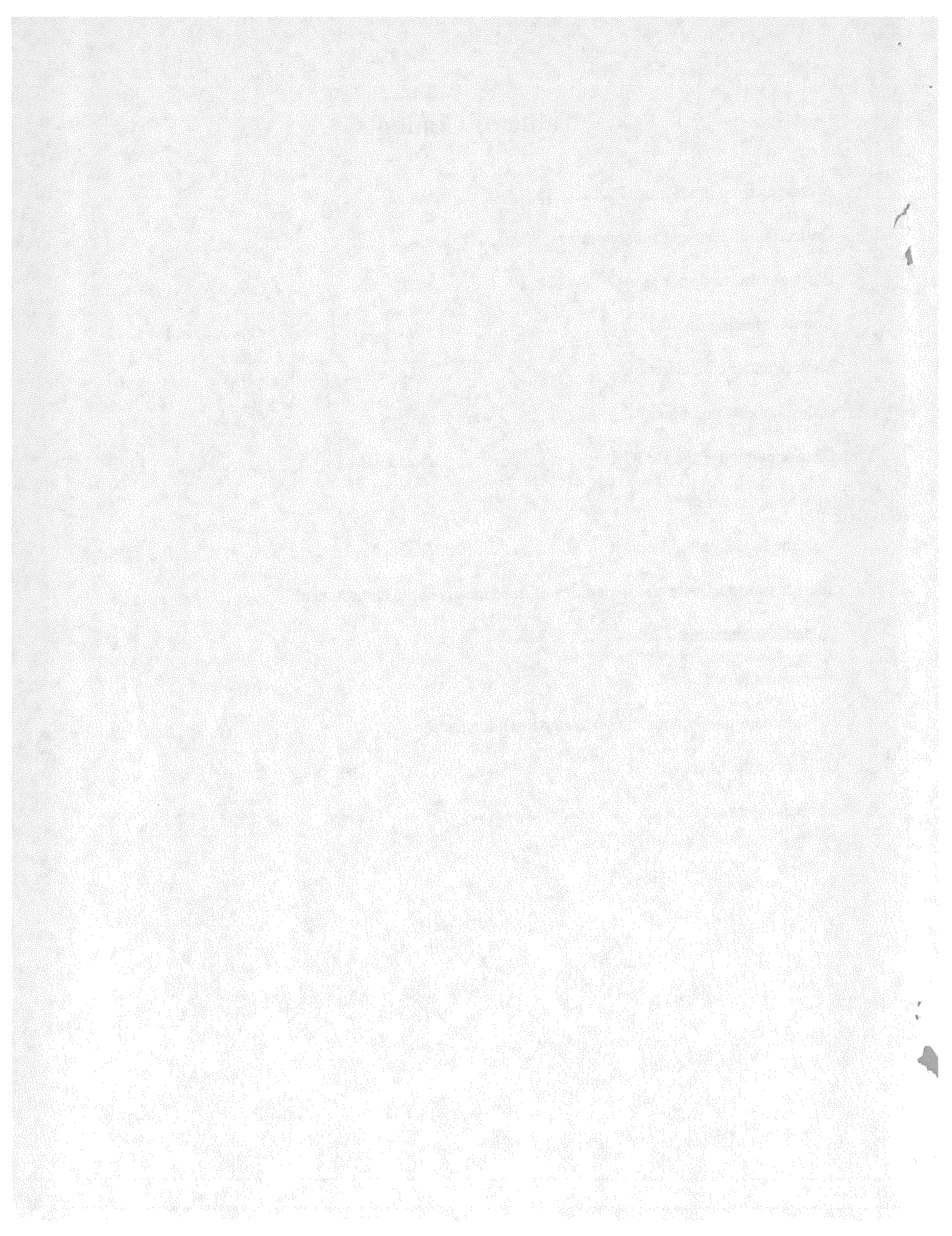


Table of Contents

Messages from the Editor	1
Collection of dues and subscriptions	2
Electronic subscription to AG	2
Council meeting	2
Matters under consideration	3
Goldschmidt Conference	3
Choose a logo for the IAGC	4
New books in print	4
Visit the IAGC on the Internet	4, 5
Sources transport, fate and toxicology of trace metals in the environment	5
Calendar of meetings	6
Everyone's Moon	
10 th International Symposium on Water-Rock Interaction	9
Officers of the IAGC	9
Advertisement	10



News from the Association

Messages from the Editor

Gunter Faure

The renewal of memberships in the IAGC and of subscriptions to APPLIED GEOCHEMISTRY is presently in progress based on invoices mailed by Elsevier Science. I hope that each of you has received such an invoice because I provided a complete set of address labels to Elsevier's Fulfilment Department. If you have not received an invoice, please contact Mel Gascoyne immediately (with a copy to me). We do not want to lose members who do not pay dues because they did not receive an invoice. Our addresses are:

Mel Gascoyne
6 Tupper Place
Box 141
Pinawa, Manitoba
ROE 1LO, Canada
e-mail: < gascoyne@granite.mb.ca >
fax: 204-753-2292

Gunter Faure
125 South Oval Mall, Room 275
Columbus, Ohio, 43210 USA
e-mail: < faure.1@osu.edu >
fax: 614-292-7688

Please note also that we will collect dues and subscriptions from our members starting in October of this year (see story in this issue). The plan is to accept payments only by means of a Visa credit card. This modus operandi has several advantages over conventional methods of payment:

1. Members can pay in the currency of their own country based on the exchange rate we will provide in the October issue of the Newsletter.

2. The number of the credit card and the amount to be charged can be e-mailed or faxed to the address we will specify.
3. Reminders will be sent by e-mail or fax to members for whom we have the necessary contact information.
4. We expect to conclude the renewal campaign by the end of January 2002, before a significant number of issues of AG have been published.
5. This procedure will improve the communication between the officers of the IAGC and the members of the Association.

The present mailing contains a Membership Directory arranged alphabetically by country. Please verify that your address is correct and that it contains your e-mail address. Please send corrections to Gunter Faure (see above), preferably by e-mail or fax.

The cover page of Newsletter 35 contains three alternative designs of the logo of the IAGC. We invite you to indicate your preference by sending an e-mail message or fax to Gunter Faure (see above).

Last, but not least, I invite you to send any comments you may have about APPLIED GEOCHEMISTRY to Russell Harmon, Chair of the Publications Department at < harmon@aro-emh1.army.mil > with a copy to Gunter Faure.

Collection of Dues and Subscriptions

The present method of collecting membership dues and subscriptions to APPLIED GEOCHEMISTRY has been discussed by the IAGC Council on several occasions in the recent past. Although the Association is grateful to Elsevier for handling this important chore, members of Council have expressed their desire to assume responsibility for collecting dues from our members. In that case, the Association should probably also collect the subscriptions to AG because only members of the IAGC receive the journal at a discounted price which is currently 50 US dollars per years.

During the Annual Meeting of the Geological Society of America Meeting in Reno, Nevada, (November 9 to 18, 2000), a tentative decision was made by an informal gathering of Councillors to proceed with plans to handle renewals starting in the autumn of 2001. Although this decision has not yet been ratified by the full Council, an outline of the procedure is presented here in order to prepare our members for the impending change:

1. Renewal forms will be mailed to all members in October with Newsletter #36.
2. Members will be asked to pay dues and subscriptions (if desired) in US dollars by means of a Visa credit card.
3. Payment can be made by returning the renewal form by mail or fax or by sending an e-mail message with the credit card number and expiration date.
4. The return address will be provided on the renewal form.
5. The IAGC will work with a bank which will convert all payments to US currency and the IAGC will pay all bank fees.

6. The renewal form will contain a list of exchange rates or the amounts in various currencies that are equivalent to the dues and subscriptions in US dollars.
7. The renewal process for 2002 will start in October 2001 and will terminate at the end of January 2002.
8. The IAGC will transfer the accumulated subscription payments to Elsevier by the end of February of 2002.

Please consult the enclosed copy of the Membership Directory of the IAGC to make sure that your address is correct and notify the Secretary Mel Gascoyne of any changes that may occur this summer. We want to be sure that all of our members receive a renewal form with their copy of the Newsletter in the fall.

Electronic Subscription to APPLIED GEOCHEMISTRY

Elsevier Science has invited the IAGC to negotiate a deal that would allow our members electronic access to AG either in addition to receiving a paper version of the journal or in place of a paper copy. At this early stage, indications are that Elsevier would require a surcharge for electronic access in addition to a paper copy, but that electronic access without a paper copy would cost less. Stay tuned, we will have more information in the next Newsletter this fall.

Council Meeting

The next meeting of the Council of the IAGC will take place during the Annual Meeting of the Geological Society of America, November 1 to 10, 2001 in Boston, Massachusetts.

Matters Under Consideration

The IAGC is considering several proposals that would benefit our members if they are approved by Council and if our financial resources permit these initiatives:

International Congress of Geochemistry and Cosmochemistry

The proposed congress would occur in four-year intervals and would be organized by the President of the IAGC with financial support by the International Union of Geological Sciences. The scope of the congress will encompass both terrestrial as well as extra-terrestrial geochemistry and should attract a large number of participants from many different countries.

Vernadsky Medal

The IAGC is planning to award the Vernadsky Medal to outstanding scientists in the field of geochemistry and cosmochemistry. The medal has been designed and the Council of the IAGC has agreed to purchase up to ten of these medals after minor modification and depending on the cost. The process by which the IAGC will select the recipients of the Vernadsky Medal and the frequency with which it will be awarded has not yet been decided.

Cosmochemistry Letters

The Council received a suggestion from one of its members to consider the feasibility of starting a journal of letters in geochemistry and cosmochemistry similar to the very successful journal *GEOLOGY* published by the Geological Society of America. The journal would consist of short papers (four printed pages or less) and would publish them in three months or less. Informal inquiries are in progress to find a commercial publisher for such a journal which would be sponsored by the IAGC.

Financial Contributions

The ability of the IAGC to support the scientific conferences of its Working Groups and of other organizations depends critically on the availability of funding. The income the IAGC presently receives from the payment of dues by its members and in the form of royalties from Elsevier Science for sponsoring *APPLIED GEOCHEMISTRY* limits the scope of the support that is available. Perhaps the time has come to solicit tax-free donations from individuals and from industries that benefit from the research and teaching of our members. The Council of IAGC will be asked to approve such a plan and to appoint a person to take charge of this activity.

Goldschmidt Conference of the Geochemical Society

The next Goldschmidt Conference will take place at Hot Springs, Virginia, from May 20 to 24, 2001. The meetings will be at The Homestead hotel. The registration fee is \$390 and includes breakfast, dinners, and the Banquet. Lodging at The Homestead for five nights, double occupancy is \$490. Additional information is available on the web at <<http://www.lpi.usra.edu/meetings/gold2001>>. The e-mail address of the Conference secretary is: <gold2001@vt.edu>. The Homestead is a famous hotel located on a large estate and offers a wide range of entertainment. For details go to <www.thehomestead.com>.

The co-conveners Mike Hochella and Bob Bodnar have scheduled 41 topical sessions in six subject areas consisting of aqueous geochemistry, metamorphic and igneous processes, mineralogy and crystallography, ore deposits, organic geochemistry, and planetary geochemistry.

Choose a Logo for the IAGC

The cover of the present newsletter contains not only the traditional logo of the IAGC but also two new designs. The traditional logo in the center is a view of the Earth seen through the glass of a volumetric flask. The four electrons in their orbits remind us that we live in the nuclear age and that we use nuclear phenomena in the study of the Earth.

The logo on the right places the Earth inside an Erlenmeyer flask and identifies the year when the Association was founded. In addition it prominently identifies the International Association of Geochemistry and Cosmochemistry and thereby improves on the original logo which does not give our name.

The logo on the left depicts the Earth and a waxing Moon against a background of stars. It therefore takes note of the fact that we have moved into the space age and that the Association incorporates the chemistry of the Earth and of the other objects in the solar system. This point is emphasized by the words: IAGC - From the Earth to the Stars.

Please compare the three designs and express your preference in a short e-mail addressed to <faure.1@osu.edu>. By doing so you will also provide us with your e-mail address for inclusion in the next Membership Directory and will have the satisfaction of exercising your rights and responsibilities in a participatory democracy.

Join the IAGC

If your membership has lapsed or you would like to join the IAGC, send an e-mail to our Secretary at <gascoyne@granite.mb.ca>. He will be pleased to sign you up.

New Books in Print

- Behrendt, J.C.**, 1998. *Innocents on the Ice. A memoir of Antarctic exploration, 1957.* University of Colorado Press, P.O. Box 849, Niwot, CO, USA 80544.
- Faure, G.**, 2000. *Origin of Igneous Rocks; the isotopic evidence.* Springer Verlag, Heidelberg, 496 p., \$75.00.
- Holland, H.D. and U. Petersen**, 1995. *Living dangerously,* Princeton Un. Press, 600 p., \$60.00.
- Jacob, D.J.**, 2000. *Introduction to Atmospheric Chemistry.* Princeton Un. Press, 264 p., \$39.50.
- Kluger, J.**, 1999. *Journey beyond Selene.* Simon and Schuster, New York, \$26.00, hardcover.
- Philander, S.G.**, 1998. *Is the Temperature Rising? The uncertain science of global warming.* Princeton Un. Press, 240 p., \$31.95.
- Poag, C.W.**, 1999. *Chesapeake Invader: discovering America's giant meteorite crater.* Princeton Un. Press, 168 p., \$24.95.
- Willis, C.**, 1999. *Ice: stories of survival from polar exploration.* Thunder Mouth Press, 374 p. \$16.95, paperback.

Visit the IAGC on the Internet

The IAGC has a webpage located at <<http://www.cevl.msu.edu/~long/IAGC>>. It was designed and is being maintained by David Long, Treasurer and Webmaster of the IAGC. Please have a look and contact Dave at <long@msu.edu> if you have comments or suggestions. The webpage contains information on the history of the IAGC, the publication of APPLIED GEOCHEMISTRY, application for membership, the Council of the IAGC, and its eight Working Groups.



International Association of Geochemistry & Cosmochemistry



Welcome to the The International Association of Geochemistry and Cosmochemistry (IAGC). The IAGC was established on May 8, 1967 as a nonprofit scientific society affiliated with the International Union of Geological Sciences. It has been one of the pre-eminent international geochemical and cosmochemical organizations for over twenty-five years. The principal objective of the association is to foster cooperation in, and advancement of, geochemistry and cosmochemistry in their broadest sense:

- ☼ by working with any interested group in planning symposia and other type of meetings related to geochemistry;**
- ☼ by sponsoring publications in the geochemistry of a type not normally covered by existing organizations; and**
- ☼ by appointment of Working Groups to study problems that require, or would profit from, international cooperation.**

Sources, Transport, Fate and Toxicology of Trace Metals in the Environment.

The IAGC sponsored a half-day session on trace metals in the environment at the Annual Meeting of the Geological Society in Reno in Nevada on November 14, 2000. The session was chaired by David Long and Gunter Faure. Dr. Ron Fuge, the Executive Editor of the APPLIED GEOCHEMISTRY and a well-known environmental geochemist, was the guest of honor. Similar sessions in previous years honored Ernest Angino (1997, Salt Lake City, Utah); Helen Canon (1998, Toronto, Ontario); and Jerome Nriagu (1999) Denver, Colorado.

The session in Reno was very well attended from the first presentation at 8:00 a.m. to the last which ended at noon. Evidently, environmental geochemistry is being recognized as an important subject with applications to public health and to the proper maintenance of the surface of the Earth.

The names of the speakers and the titles of their presentations are reproduced below in the order in which they appeared on the program:

Lee*, G., G. Faure, and J.M. Bigham. Removal of trace metals by coprecipitation with Fe, Al, and Mn from natural waters contaminated with acid mine drainage in the Ducktown mining district, Tennessee.

Baker, L., J. Gustavson*, S. Wood, and D. Geist. Selenium chemistry in the Red Dog mine ore, mill, and tailings pond.

Stillings*, L.L., M.C. Amacher, and J.R. Herring. Selenium transport through a wetland, Caribou National Forest, southeast Idaho.

Whitmer*, J.M. and D.S. Whittemore. Se and U geochemistry in the Arkansas River valley of southwestern Kansas.

Breit*, G.N., A.L. Foster, R.F. Sanzolone, J.C. Yount, J. Welch, A.H. Welch, K. Islam, and N. Islam. Arsenic cycling in eastern Bangladesh: the role of phyllosilicates.

Leybourne*, M.I. and D.R. Boyle. The great mercury debate: stream water and sediment evidence for geogenic sources and anthropogenic transport in eastern Canada.

Ball*, Y.W., R. L. Runkel, and D. K. Nordstrom. A high-flow reactive-transport model of acid mine drainage from Summitville, CO, based on a June 1999 tracer injection experiment.

Munk*, L.A., G. Faure, and D.E. Pride. Sorption and transport of trace metals; Snake River and Deer Creek confluence, Summit County, Colorado.

Fuge*, R.. Transport and fate of cadmium derived from disused metal-mine sites in mid Wales, UK.

White*, R.A., N.J.G. Pearce, and R.Fuge. Transport, mobility and behaviour of rare earth elements (REE) in ocherous mine drainage.

Quinn*, M.R. and C.P. Chamberlain. Seasonal variations and the relationship between the concentrations of metals and food chain structure within an aquatic ecosystem in the New World mining district in Montana.

Simpson*, S.J., J.D. Fett, D.T. Long, and L.C. Patino. Using a multi-element approach to understand and differentiate processes influencing trace metal loadings to the environment.

Bégin*, C., M.M. Savard, and M. Parent. Using isotopic and elemental dendrogeochemistry for monitoring the effects of smelter atmospheric emissions in the environment.: the example of the Horne smelter, Rouyn-Noranda, Canada.

Mahler, B.J., P.C. Van Metre, and E. Callender. Transport of suspended-sediment associated trace metals in urban runoff.

Rimstidt*, J.D. and J.R. Craig, Corrosion of lead shot and bullets on shooting ranges.

Kaste*, J.M., A.J. Friedland, and E.K. Miller. Analysis of metal fractions in spodosols using a sequential extraction procedure.

Speakers are identified by an asterisk. Please contact G. Faure at < faure.1@osu.edu > if you wish to communicate with any of the speakers in this IAGC-sponsored session.

Calendar of Meetings

Third IAEA Symposium on Isotope Techniques in the Study of Environmental Change, April 19-23, 2001, in Vienna, Austria. Contact: <p.aggarwal@iaea.org>.

Goldschmidt 2001, May 20-24, 2001, Hot Springs, Virginia, USA. <http://www/lpi.usra.edu/meetings/gold2001/>

4th International Symposium on Eastern Mediterranean Geology

May 21 to 25, 2001

Isparta, Turkey

Tel: 90-246-237-08-55

Fax: 90-246-237-08-59

E-mail: engeol@mmf.sdu.edu.tr

10th Water-Rock Interaction Symposium, June 10-15, 2001 at Tanka Village Congress Center, Villasimius, Sardinia, Italy. Contact: <wri10@unica.it> or <<http://www/unica.it/wri10/>>.

Applied Isotope Geochemistry (AIG4)

June 25 to 29, 2001

Hsilomar Conference Center

Pacific Grove, CA

Contact: T.D. Bullen

<tdbullen@usgs.gov>

Fax: 650-329-4538

**European Mineralogical Union
Third EMU School & Symposium**
June 2001, Lübeck, Germany
"Solid Solutions in Silicate and Oxide Systems of
Geological Importance"
Contact: C.A. Geiger, Kiel Universität,
Institut für Geowissenschaften, Olshausen
st. 40, D-24098 Kiel, Germany.
E-mail: chg@min.uni-kiel.de
Fax: 49-431-880-4457

**Sixth International Conference on the
Biogeochemistry of Trace Elements**
July 29 to August 2, 2001
University of Guelph, Ontario, Canada
Tel: 519-824-4120, ext. 2531
Fax: 519-823-1587
E-mail: icobte@lrs.uoguelph.ca
Website: <http://icobte.crle.uoguelph.ca>

**Geophysical Detection of Subsurface Water on
Mars**
August 6 to 10, 2001
Lunar and Planetary Institute
Houston, Texas
E-mail: tanner@lpi.usra.edu
Tel: 281-486-2142
Fax: 281-486-2125
Abstract submission by April 20, 2001 (hardcopy)
April 27, 2001 (electronic)

64th Annual Meeting of the Meteoritical Society:
Sept. 10-14, 2001, Vatican City.
<http://www.lpi.usra.edu/meetings/metsoc2001>.
Abstracts to at LPI on June 1.

Environmental Health Risk 2001
10 to 12 September, 2001
Cardiff, Wales, UK
Wessex Institute of Technology
Ashurst Lodge, Ashurst
Southampton, S040 7AA, UK
Tel.: 44(0-238-029-3233
Contact: Susan Hanley
E-mail: shanley@wessex.ac.uk
Website: <http://www.wessex.ac.uk/conferences/2001>
envh01/

**Mercury: Space Environment, Surface and
Interior.** October 4 to 5, 2001 at The Field Museum,
Chicago, Illinois Abstracts due on June 22 at LPI
3600 Bay Area Blvd., Houston, TX, 77058-1113, fax:
281-486-2125, e-mail: tanner@lpi.usra.edu. Web
address: www.lpi.usra/meetings/mercury01

Geological Society of America, Annual Meeting
John B. Hynes Veterans Memorial Convention
Center, Boston, Massachusetts, November 1 to 10,
2001. Abstract Coordinator: Nancy Carlson, Tel.
303-447-2020, Ext. 161, <ncarlson@geosociety.org>

**IMA 2002, 18th General Meeting of the
International Mineralogical Association**
1 to 6 September, 2002
"Mineralogy for the New Millenium"
E-mail: ima2002@ed.ac.uk or: adrian@minersoc.demon.co.uk
Website: www.minesoc.org/IMA2002

**6th International Symposium on Environmental
Geochemistry, Edinburgh, Scotland, September 7 to
11, 2003**
Contact: Dr. John G. Farmer, e-mail: <J.G.Farmer@ed.ac.uk>

Goldschmidt Conference 2003
Kurashiki, Japan, Sept. 7-12, 2003
Contact: Dr. Yukihiko Matsuhisa, <mats@gsj.go.jp>

Join the IAGC

If you are not yet a Member or if your Membership
has lapsed, contact our Secretary Mel Gascoyne at
<gascoyne@granite.mb.ca>. Annual dues are only
\$15.00 US. For that you get two Newsletters per
year and a low-cost subscription to APPLIED
Geochemistry at \$50.00 for 2001.

Everyone's Moon

by Nancy E. Small

Sally smiled as she thought about her vacation, which was rapidly coming to a close. Her brother Neil, a research scientist at Lunar Base IV, had done his best to see that she had a great time while visiting him on the Moon. His carefully planned itinerary had included several scenic rides in a Moon rover, a trip to Mare Tranquillitatis (the historical site of the first Moon landing), two rounds of lunar golf, a shopping spree at the duty-free general store, and a tour of the international research institute where her brother worked.

As she waited in the space terminal lobby for her flight back to Earth to be called, Sally had time to think about the friendly, culturally diverse people she had met in some of the frontier settlements beginning to dot the lunar landscape. With the construction of environmental domes, more and more settlers were moving to the Moon to carry out scientific investigations on a wide variety of subjects, including geology, astronomy, and space medicine. These scientists (representing more than thirty Earth nations) were true pioneers. They were learning not only how to live on the Moon but also how to work together under the guidelines established in the Lunar Pact, a recently ratified international treaty.

Sally was aware that this pact prevents any country from owning the Moon or making territorial claims for lunar land. The agreement allows Earth's only natural satellite to be used purely for peaceful purposes, such as exploration and scientific research. Scientists must share any knowledge that results from their studies. The treaty prohibits military forces from visiting the Moon, except those aiding scientific expeditions. It also outlines an environmental plan designed to ensure wise use of the Moon's resources and to prevent contamination.

From her history classes, Sally remembered that the embryonic seeds for the Lunar Pact were planted during the last century. In 1961, twelve of the world's

nations agreed to the Antarctic Treaty. This agreement was an "unprecedented landmark in political diplomacy; an entire continent was reserved for free and nonpolitical scientific investigation." (Encyclopedia Britannica, Vol. 13, 1998, p. 803) Eventually, more than twenty-six countries had scientists working in Antarctica under this treaty <http://www.britannica.com>, retrieved March 30, 2001) Later, additional experience in international cooperation came with the establishment of several orbiting space stations, constructed and operated by a consortium of nations. The Lunar Pact was the next logical step for Earth's citizens to take, as their explorations continued to expand beyond the confines of the planet.

Sally checked the status of her flight on the overhead monitor. Then her mind returned to thoughts about people from many nations living and working together on the Moon. She decided that beyond the new discoveries being made in space medicine, geology, and astronomy, perhaps the greatest benefit of a Moon without ownership was the chance it gave humans to practice and perfect the business of international cooperation. Maybe nations would be able to use lessons learned on the Moon to solve economic, political, and environmental problems on planet Earth. Just as this sanguine idea crossed Sally's mind, she heard the announcement, "Flight 205 to Earth is now ready for boarding at Gate 2."

Advertisements

The present issue of the Newsletter contains a paid advertisement accepted by Gunter Faure on a trial basis. If such ads are approved by the Council, the revenue they generate could off-set part of the cost of producing and distributing the Newsletter.

10th International Symposium on Water-Rock Interaction, Villasimius, Sardinia, Italy, June 10 to 15, 2001

Details are available on the web at <<http://www.unica.it/wri10>>

Provisional listing of themes:

1. Geochemical cycles
2. Modelling of water-rock interactions
3. Groundwater quality
4. Geochemical aspects of global change
5. Mineral surfaces and weathering
6. Trace metal mobility in stressed environments
7. Biogeochemical processes
8. Volcanic and geochemical processes
9. Waste storage and disposal
10. Degradation of monuments
11. Geochemistry of Earth surface systems
12. Geochemical processes in pollution issues
13. Magmatic and metamorphic processes
14. Marine and sedimentary geochemistry
15. Organic matter and complexation
16. Ore deposits and minerogenetic processes
17. Experimental geochemistry
18. Thermodynamics and kinetics
19. Stable and radiogenic isotopes
20. Natural hazards

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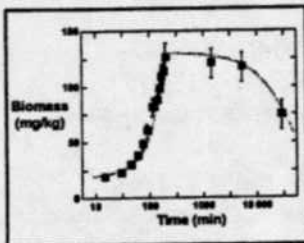
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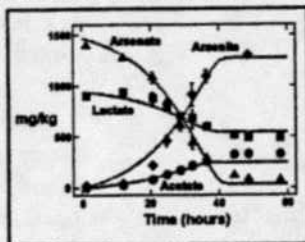
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Growth and decay of microbial biomass in a laboratory experiment

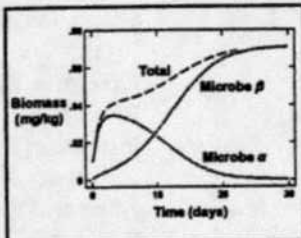


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If you are not yet a Member or if your Membership has lapsed, contact our Secretary Mel Gascoyne at < gascoyne@granite.mb.ca >. Annual dues are only \$15.00 US. For that you get two Newsletters per year and a low-cost subscription to APPLIED GEOCHEMISTRY at \$50.00 for 2001.