www.iagc.ca

The International Association of GeoChemistry

The IAGC supports geochemists working in areas of *applied* geochemistry—hence the name of our journal, *Applied Geochemistry*. AG is a smaller-sister journal to *Geochimica et Cosmochimica Acta*, and both are published monthly by Elsevier. Some examples of upcoming papers in AG are given on the next page in the "Editor's Report."

The IAGC is not a large organization (~400 members), but it tries to appeal to applied geochemists around the world in three ways: (1) through its working groups in specific aspects of geochemistry, (2) by subsidizing students so they can attend international meetings, and (3) by giving IAGC membership and free subscriptions to geochemists in developing countries.

Members of the IAGC (US$20/year) can subscribe to AG for the special rate of US$58 ($43.50 student rate) in 2006. To obtain AG directly from the publisher will cost you close to $1000, so being a member of the IAGC is a good deal! Visit our website (www.iagc.ca) or write to us at iagc@granite.mb.ca for more information.

Mel Gascoyne
Newsletter Editor and Business Manager

GES-7

The 7th Symposium on the Geochemistry of the Earth's Surface (GES-7) was held in Aix-en-Provence, France, August 23–27, 2005. The symposium was organized by Jean Dominique Meunier (CEREGE). The GES is organized by a working group of the International Association of GeoChemistry (IAGC). The principal focus of GES meetings is on processes operating at the surface of the Earth rather than in deep crustal environments. GES-7 continued this theme with greater emphasis on the multiscale environmental biogeochemistry of the Earth's surface. GES-7 encompassed the following themes:

1. Environmental impact of waste management
2. Water cycle and resources: Geochemical tracers and contaminants
3. Biogeochemical processes in soils and ecosystems: From molecular to landscape scale
4. Weathering: Processes, rates and age
5. Coastal biogeochemistry: From land to continental slope
6. Global element cycles and climate change through Earth history (in honour of Prof. Fred Mackenzie)

Prof. Jacques Bourdon (University of Paul-Cézanne, Aix-Marseille III) and Prof. Robert A. Berner (Yale University) during the opening ceremony.

The symposium was attended by approximately 130 participants from 27 countries. The 104 reviewed and accepted extended abstracts will be published in a special issue of *Journal of Geochemical Exploration*. A more detailed report will be given in the fall issue of the IAGC Newsletter (Number 43).

Past GES meetings have been held at Granada, Spain (1986), Aix-en Provence, France (1990), University Park, Pennsylvania, USA (1993), Ilkey, England (1996), Reykjavik, Iceland (1999), and Honolulu, Hawaii, USA (2002). GES-8 (2008) will be held in Reading, UK, and will be organized by Mark Hodson.

Jean Dominique Meunier,
Secretary-General, GES-7

MEETINGS AND SPECIAL SESSIONS

AIG-6

The 6th International Symposium on Applied Isotope Geochemistry (AIG-6) was held in Prague, Czech Republic on September 11–16, 2005. The symposium was organized by the IAGC, in collaboration with the Czech Geological Survey. Over 180 delegates from 28 countries took part, with most delegates coming from Australia, Canada, US, UK, Germany, France, Portugal, Japan, Russia, and Switzerland. More than 90 oral presentations were given in two concurrent sessions, and over 80 posters were presented covering all aspects of modern isotope geoscience. Highlights included sessions on the isotope biogeochemistry of Cr, Cd, Fe, Ca, and O; high-temperature petrochemistry-oriented papers (isotopes of Li, Mo, and Fe); and environmental studies involving sulfur isotopes. The symposium took place in the oldest monastery in the country, the Brevnov Abbey, founded 1012 years ago. The buildings in Prague are magnificent and formed an excellent backdrop for AIG-6.

The Brevnov Abbey, location of AIG-6

Field excursions took the participants to the famed fourteenth century Carsbad spa, the North Bohemian coal mining area plagued by spruce die-back, and the Krkonose Mountains National Park where Czech researchers study global change and historical Pb pollution using isotope systematics in ombrotrophic peatlands.

Charles Bridge, St. Franciscus Church, and the Old Town Bridge Tower, Prague

The next AIG symposium will be held in South Africa in 2007.

Martin Novak, Chairman, IAGC Working Group on Applied Isotope Geochemistry

FEATURE: WORKING GROUP ON GLOBAL GEOCHEMICAL BASELINES

A full report on this working group, chaired by David B. Smith, will be published in the IAGC fall newsletter (number 43).

There is worldwide concern about the potentially damaging effects of chemicals in the environment on the health of humans, animals, agriculture, and ecosystems. Economic and population growth are increasing rapidly, exacerbating such problems as land degradation and pollution resulting from human activities, such as uncontrolled urbanization and industrialization, intensive agriculture, and waste disposal. These and other problems affect the chemistry of the Earth's surface and the sustainability of its life-support systems from the local to global scale.

Systematic geochemical baseline mapping is the best method available for monitoring changes in the levels of chemical elements at the Earth's surface. Although geochemical mapping originated in the effort to identify undiscovered mineral resources, such maps have proven very useful in addressing a range of environmental problems. The Global Geochemical Baselines Working Group has the long-term goal of establishing a global land-surface geochemical reference network, providing multi-media, multi-element baseline data for a wide range of environmental and resource applications.

Project Organization

The project is led by a steering committee, which coordinates the activities of five technical committees and contributions made by individual country representatives. The composition of the steering committee is as follows:

Honorary President **Arthur Darnley**
Geological Survey of Canada

Co-Leaders **Jane Plant**
British Geological Survey

David Smith
US Geological Survey

Scientific Secretary **Shaun Reeder**
British Geological Survey

Treasurer **Alecos Demetriades**
IGME, Greece

Project History and Objectives

The project has been active since 1988 and is currently in its third phase. Initially the project was part of the International Geoscience Programme (IGCP) Project 259: International Geochemical Mapping, under the leadership of Arthur Darnley of the Geological Survey of Canada. This first phase concluded with the publication of UNESCO Report 19 (Darnley et al. 1995) detailing the recommendations for a Global Reference Network (GRN) and the basic principles needed to achieve a global geochemical database of lasting value.

From 1993 to 1997, the project continued under the IGCP as Project 360: Global Geochemical Baselines. The design of the GRN was developed and sampling sites selected in a statistically random manner based on a grid system covering the Earth's land surface with 160 × 160 km grid cells. Standardized methods for geochemical sampling, analysis, and data management, agreed upon by the representatives of more than 100 countries, were also prepared during this phase of the project. Following completion of the first two phases of the IGCP projects, the International Union of Geological Sciences, in collaboration with the IAGC, established the current Working Group on Global Geochemical Baselines. The working group's main objective for this phase has been to encourage and facilitate the population of the GRN worldwide through application of the sampling, analytical, and data management protocols established in the earlier phases of the project.

Current Status and Achievements

GRN sampling and analysis have been undertaken in several countries. The GRN of geochemical samples has been completed for China and parts of Russia. Australia is carrying out an airborne gamma-ray survey of the whole country as a component of the project. A major new campaign was initiated in India in 2003. The eleven member countries of the Coordinating Committee for Geoscience Programmes in East and Southeast Asia have approved the establishment of a geochemical mapping program to implement the protocols established by the IUGS/IAGC working group. In 2004, Reijo Salminen represented the working group in leading a workshop and field training course in Tanzania for representatives of Tanzania, Kenya, and Nigeria in preparation for sampling in those countries. A considerable amount of progress has also been made in South Africa, Colombia, Brazil, Korea, the USA, and many other countries. In more general terms, geological survey organizations worldwide are increasingly using the standardized protocols established by the working group, included as part of their international aid programs.

Some of the most significant progress has been achieved within Europe. As a contribution to the global project, the Forum of European Geological Surveys (FOREGS) established a Geochemical Baselines Mapping Programme. Samples of stream water, stream sediment, A-horizon soil, C-horizon soil, floodplain sediment, and humus have been collected by each participating country at approximately 700 sites throughout most of Europe on the basis of the GRN. The background information, methodology, and geochemical maps from this European project were recently published as Part 1 of the Geochemical Atlas of Europe (Salminen 2005). Interpretive papers will be published in the near future as Part 2 of the atlas.

The ceremony to light the lamp of knowledge officially launches India's Baseline Geochemical Mapping Programme.

Recently, the working group convened a workshop entitled "Global Geochemical Baselines" at the 32nd International Geological Congress in Florence, Italy, in August 2004. The workshop was attended by about 40 participants representing approximately 20 countries. Twelve oral presentations and 10 posters covered geochemical baseline studies in Europe, Africa, Asia, and North America.

Contacts

Further information about the working group's activities may be obtained through the website maintained by the British Geological Survey at www.bgs.ac.uk/IUGS, or through the group's scientific secretary, Shaun Reeder (e-mail: sre@bgs.ac.uk).

References

Darnley AG et al. (1995) A Global Geochemical Database for Environmental and Resource Management: Recommendations for International Geochemical Mapping. Final Report of IGCP Project 259. Earth Sciences 19, UNESCO, Paris.

Salminen R, editor (2005) Geochemical Atlas of Europe, Part 1: Background Information, Methodology, and Maps. Geological Survey of Finland.

David B. Smith
US Geological Survey, Denver

APPLIED GEOCHEMISTRY: EDITOR'S REPORT

***Applied Geochemistry* continues to receive a large number of manuscripts for publication. Here is a taste of what is to come in the next few months:**

Hydrothermal bitumen generated from sedimentary organic matter of rift lakes – Lake Chapala, Citalia Rift, western Mexico. *P. F. Zárate, B. R. T. Simoneit*

Hydrochemical baseline condition of groundwater at the Mizunami underground research laboratory (MIU). *T. Iwatsuki, R. Furue, H. Mie, S. Ioka, T. Mizuno*

Phosphatase and microbial activity with biochemical indicators in permafrost active sediments over the past 10,000 years. *Y. Takano, H. Mori, T. kaneko, Y. Ishikawa, K. Marumo, K. Kobayashi*

The role of "excess" CO_2 in the formation of trona deposits. *S. Earman, F. M. Phillips, B. J. O. L. McPherson*

Sources of Sr and implications for weathering of limestone under tallgrass prairie, northwestern Kansas. *H. K. Wood, G. L. Macpherson*

Ron Fuge