



MEDICAL GEOLOGY NEWSLETTER

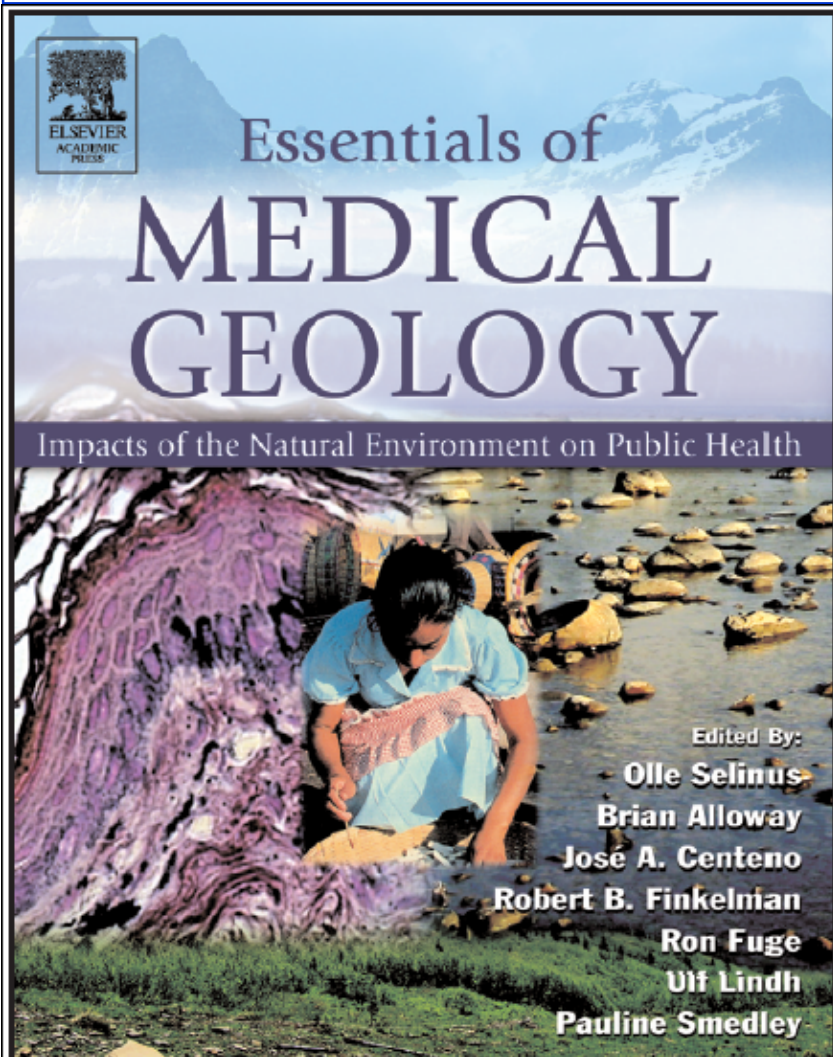
IUGS Special Initiative on Medical Geology/International Medical Geology Association

SPECIAL NEWSLETTER :INTERNATIONAL MEDICAL GEOLOGY ASSOCIATION

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Armed Forces Institute of Pathology



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MESSAGE FROM THE CHAIRMAN, Oile Selinus

Welcome to this newsletter. Last year, 2004, was a hectic and exciting year with many activities, which will be presented elsewhere in this newsletter. Medical geology is developing rapidly all over the world. This newsletter is focused on the future and the new International Medical Geology Association, IMGA.

In 2005 we delivered short courses around the world and participated in several medical and medical geological congresses. In February the Geological Survey of India organised a large workshop on medical geology in Nagpur, India with an important outcome, an extensive publication.

The new book, Essentials of Medical Geology, on which we have been working for five years has finally been published.

Three important international initiatives were initiated in 2005:

1. A meeting at International Council of Science, ICSU, in Paris in February starting a new initiative on Health and Well-Being.
2. Planning for the big event, Year of Planet Earth, to be decided on by United Nations, in which medical geology will play a key role.
3. The GeoUnion initiative, bringing together the five largest geo-scientific unions for which medical geology plays a key role.

Follow us into the future! We rely on all of you being active and giving input and ideas.

BOOK ON ESSENTIALS OF MEDICAL GEOLOGY PUBLISHED!

"Essentials of Medical Geology" is published by Elsevier (Academic Press). Chief Editor, O. Selinus, Associate Editors: Ulf Lindh, Ron Fuge, Brian Alloway, Pauline Smedley, Jose Centeno and Bob Finkelman. There are sixty distinguished authors from around the world. About 50% are geoscientists and about 50% are medics, veterinarians, and other scientists. The volume is 820 pages in full colour.

The *audience* of the book is junior to senior undergraduates and educated decision-makers. The *main objective* is to emphasise the importance of geology in health and disease in humans and animals. Essential features:

- Addresses key topics at the intersection of environmental science and public health.
- Developed by 60 experts from 20 countries and edited by professionals from the International Working Group on Medical Geology.
- Includes 200+ color photographs and illustrations, chapter introductions, and references for further reading, and an extensive glossary
- Written for a broad audience, ranging from students, researchers, and medical professionals to policy makers and the general public.

The price is below 100 USD. Order forms and other information can be downloaded from the website www.medicalgeology.org or from Elsevier: <http://books.elsevier.com/bookscat/links/details.asp?isbn=0126363412>

Reviews of the book will be published on the medical geology website.

THE NEW INTERNATIONAL MEDICAL GEOLOGY ASSOCIATION, IMGA

Interest in Medical Geology continues to expand worldwide, at an increasing rate, creating many opportunities. Our organization has reached the stage of development at which a formal structure is necessary for it to function efficiently. This structure should enable us to better respond to the opportunities, to rapidly pass information to those interested in Medical Geology issues, and to make critical decisions that will benefit the discipline.

At the International Geological Congress in Italy in August a formal discussion by about 80 participants resulted in a decision to launch a new association this autumn. We have selected the name "International Medical Geology Association" (IMGA) for our organization.

Olle Selinus (Geochemist, Sweden), continues in his capacity as Director of this activity. Jose Centeno (Pathologist, USA) and Bob Finkelman (Geologist USA), are Co-Directors. We have appointed six Councilors to represent the broad geographic distribution of Medical Geology and the wide range of disciplines that are embraced by this topic. The Councilors are: Bernardino Ribeiro de Figueiredo (Geologist, Brazil), Fiona Fordyce (geochemist, UK), Zheng Baoshan (geochemist China), Calin Tatu (Medical researcher, Romania), Nomathemba Ndiweni (Veterinary Biochemistry, Zimbabwe) and Philip Weinstein (Epidemiologist, Australia). Dave Elliott (Geologist, Canada) will continue as editor of the Newsletter.

We are very pleased that such experienced and competent people are willing to devote their time and efforts to the Association. Most of the councilors pre-

sent themselves in this newsletter. Three members of this initial group of councilors will serve terms of 1½, and three will serve terms of 2½ years. Subsequently, the councilors will serve terms of 2 years, with three new councilors starting each year. The Councilors will be asked to help to make decisions on all aspects of the Association.

In order to get suggestions on the organisation, activities, and other matters, several committees have been formed, which will report during the summer of 2005, and the input will provide the foundation of the association. In this way, more than 100 people are actively working in the formation of the association. The following committees and working groups (WG) are running:

- Society formation. Constitution, bylaws etc.
- Journals
- Promotion of Medical Geology
- Fund raising
- Regional groups, guidelines and support
- Conferences
- Education
- Nominating Committee
- Veterinary Geology (WG)
- Health Impacts of Geologic Disasters (WG)

Other possible working groups, following the formation of the association are:

- Medical Geology Indicators
- Traditional Medicines
- Occupational Health
- Urban Medical Geology
- Integrated methodologies

2004 ACTIVITIES

2004 was a busy year.

Several courses were held, as described elsewhere in the newsletter. Activities on ICSU, Year of Planet Earth, and the GeoUnion initiative were on the agenda, and in February 2004, participation in the ICSU initiative "Science for Health and Well Being" in Paris at the French Academy of Medicine. The U.S. National Academy of Sciences and its National Research Council established a committee to identify Research Priorities on Earth Sciences and Public Health, and a report is expected to be published by late 2005.

Special sessions on medical geology were held at the following national and international conferences:

- **3rd International Conference on Trace Element Speciation in Biomedical, Nutritional and Environmental Sciences.** 10-13 May 2004, GSF - National Research Center for Environment and Health, Neuherberg, Germany
- **2nd International Symposium on Trace Elements and Minerals in Medicine and Biology,** 13-15 May 2004, GSF - National Research Center for Environment and Health, Neuherberg, Germany
- **8th International Symposium on Metal Ions in Biology and Medicine.** 18-23 May 2004, Budapest, Hungary
- **2nd International Congress of Pathology,** June 9-12, Iugassu Falls, Brazil
- **XXV International Congress of the International Academy of Pathology.** October 11-15, 2004, Brisbane, Australia, Special Symposium on Medical Geology, Environmental Pathology and Complementary Alternative Medicine, as part of the main Scientific Program.
- **22nd European Conference of Society for Environmental Geochemistry and Health (SEGH 2004).** University of Sussex, April 5th - 7th 2004. Geochemistry & Health and Medical Geology: Into the 21st Century.
- **International Geological Congress in Firenze.** August 2004, one symposium and several lectures on Medical Geology and business meetings. The main business meeting, attended by 80 people, was the last one for IGCP 454 and the first one for IMGGA.
- **Regional Workshop on Medical Geology.** February 2004, Nagpur, India, under the auspices of the Geological Survey of India.
- **XXIX InterAmerican Congress Environmental and Sanitary Engineering,** August 2004, San Juan, Puerto Rico. Invited Plenary Lecture presentation by Jose A. Centeno: Medical Geology - Impacts of the Natural Environmental on Public Health.
- **7th Annual Force Health Protection Conference.** August 8-12, 2004. Albuquerque, New Mexico. Presentation by Jose A. Centeno: Medical Geology: An Emerging Discipline in Support of Environmental and Military Medicine
- **35th Int. Congress on Military Medicine** September 12-17, 2004 in Washington, DC. Presentation by Jose Centeno: Medical Geology: An Emerging Discipline In Support Of Environmental And Military Medicine.
- **1st International Symposium on Recent Advances in Environmental Health Research.** September 19-23, 2004. Center for Environmental Health. College of Science, Engineering and Technology, Jackson State University. Jackson, Mississippi. Special session on Medical Geology presented by Jose A. Centeno and Robert B. Finkelman.
- Bob Finkelman was awarded a U.S. Embassy Science Fellowship to spend three months in South Africa to promote Medical Geology. While there he presented lectures in Johannesburg, Pretoria, Cape Town, Bloemfontein, and other locations in South Africa and in Botswana,

CONTINUED ON PAGE 8

ICSU Unions Interdisciplinary Health Science Initiative

The ICSU Unions Interdisciplinary Health Science Initiative, Health and Well being was discussed in Paris, in February 2004. It has evolved through two subsequent meetings into a collaborative effort to promote the elaboration and use of scientific information appropriate to understanding human and environmental health and well-being in its many dimensions by: demonstrating the extent to which a range of sciences and technologies can enhance health and well-being; developing an inventory of unmet needs and ongoing programs relevant to science and technology applicable to health and well-being; providing a framework for productive and vigorous partnerships in science and technology for health and well-being; and educating professionals across multiple levels; the public, and policy makers about the importance of these sciences and technologies using modern means of communication. Medical geology will be an integrated part in this work which is now being planned.

International Year of Planet Earth

The idea of an International Year of Planet Earth was launched in 2000 at an IUGS Council meeting, where it was seen as a potentially powerful means of demonstrating how society could profit from the accumulated knowledge of the solid Earth as part of System Earth. This idea was discussed further at the 48th Executive Committee (EC) meeting in February 2001, and a feasibility study was sanctioned. Immediate support was provided by UNESCO's Earth Science Division, making it a joint initiative by IUGS and UNESCO. A report on the feasibility study was accepted by IUGS in February 2002, bringing this initiative into its 2nd (Preparatory) Phase. After broad consultation, it was decided to seek proclamation of the International Year of Planet Earth by the General Assembly of the UN. Such a proclamation would provide the best possible exposure to national governments, from which the geosciences need strong political support following decades of low levels of recognition. This is consistent with the International

Year's aim to improve the position of the geosciences within political agendas, as well as running substantial science and outreach programmes. In March 2005, both Initiators (IUGS and UNESCO) reiterated their full support. Proclamation of the International Year of Planet Earth by the UN is planned for the earliest possible date, probably in 2007. Realisation of its ambitious science and outreach programmes demands a period of at least three years.

- The achievement of this aim will be supported by two major programmes:
- Outreach Programme, including educational ventures at all levels

Science Programme concentrating on 'big issues' of complex interaction within the Earth system, and its long-term sustainability.

At a high-level information meeting held at UNESCO headquarters in Paris on the 11 February 2004, six nations (China, Russia, Brazil, Argentina, Italy and Jordan) promised to support proclamation of the International Year of Planet Earth once proposed in the General Assembly of the UN. By the time of writing, this level of political support had grown to 17 UN nations (Argentina, Brazil, China, Germany, India, Israel, Italy, Jordan, Kazakhstan, Lithuania, Mauritius, Mexico, Namibia, Pakistan, Romania, Russian Federation and South Africa) together representing over half the world's population. The process of collecting political support by means of a nation's UN-diplomatic staff normally consists of three steps:

1. Collection of support by the national geoscience community;
2. Collection of support at the political level by an appropriate Government Ministry;
3. Support by UN-diplomats under instruction from their Ministries of Foreign Affairs.

INTERNATIONAL SYMPOSIUM ON MEDICAL GEOLOGY

The Royal Swedish Academy of Sciences (the Academy that presents the Nobel Prizes) will arrange an official two day international symposium on Medical Geology in May 2006. It will be held in Stockholm in the big lecture hall of the Academy, and there will be about fifteen distinguished invited guest speakers from around the world. Further information will be posted on the website.

INITIATIVES FOR THE FUTURE (Cont.)

The main topics of the year will be:

- Groundwater - reservoir for a thirsty planet
- Hazards - minimising risk, maximising awareness
- Earth & Health - building a safer environment (=Medical Geology)
- Climate - the 'stone tape'
- Resources - sustainable power for sustainable development
- Megacities - going deeper, building safer
- Deep Earth - from crust to core
- Ocean - Abyss of time
- Soils

By March 2005, brochures had been published on five of the eight science themes (climate, health, resources, deep earth, and hazards), and have since been distributed. Further information can be seen on the website www.esfs.org

The core group responsible for the medical geology activities are Olle Selinus, Edward Derbyshire, Bob Finkelman, Jose Centeno and Phil Weinstein. The group has published one brochure on medical geology. It can be downloaded from the website <http://www.esfs.org/downloads.htm>

GeoUnion Initiative

The GU-Management Team (GU-MT), comprising the Presidents and Secretaries General of IGU, IUGG, IUGS and IUSS (the four big geo unions on geoscience, geography, geophysics and soil), decided, at a meeting held in Paris on February 7 2004, to launch a joint scientific program. The initiative is expected to become an example for other ICSU Unions to emulate. ISPRS (Photogrammetry and Remote Sensing) has also expressed interest in joining the GU program.

Five topics have been selected for the GU joint science program:

- Desertification
- Groundwater
- Hazards (natural and man-made)
- Health (=Medical Geology)
- Mega-Cities (and cities in general).

The joint science program will be innovative, challenging, and relevant to society. The Teams will base their programs, to the extent relevant and feasible, on existing activities within the Geounions and on links with other ongoing or potential science programs.

There are also potential synergies between the various topics of the program, which should be explored and promoted. In addition, coordination will be sought with the Science Program of the International Year of Planet Earth (IYPE). Wherever possible the IYPE and GU science programs should be coordinated/matched.

Each topic is to be led by one of the Unions; a Team is set up with a Leader from this Union, and the other Unions assign their representatives to the Team. The team for Health or Medical Geology is Olle Selinus (Chairman), Mark Rosenberg, Claire Horwell, Eiliv Steinnes and Amy Budge. A first meeting will be held in Sweden in September 2005 where the representatives of the five unions will discuss the medical geology theme, set up strategies and identify financial sources for large research programs.

In summary, these three major initiatives on medical geology as an integrated discipline, could result in a big impact of medical geology on society, and on research and will set a landmark for future activities in medical geology.

THE WEBSITE—AN IMPORTANT WAY OF COMMUNICATING

One of the most important ways of communicating is the website, <http://www.medicalgeology.org>. This growing website is normally updated every week or every two weeks. However, we depend on input from all of you. In the recent year we have expanded the section on short papers, where we are publishing papers on medical geology. We also have a section on papers translated into Spanish. All courses are announced on the website with programs, how to register, etc. We also give the opportunity to local working groups in medical geology to have their own pages, so if you want to publish local news or other matters we would be happy to include this. The membership list is also continuously growing. We have published names, addresses, affiliations, interests etc., so you can contact each other in this growing network.

Some time ago we also started a discussion group and a guest book. These will be updated and modernised in the near future when we change the server of the website. We would like all people to use the discussion group, making it active and a natural place for discussions on medical geology. Later on this year, when we have changed the server, these will be much more interactive and we expect them to become even more interesting for everyone.

A website is never static. It develops continuously. If you have any suggestions for the website please contact olle.selinus@home.se. When we have developed into IMGGA we will have a separate webmaster responsible for the site, but until then I will be handling and updating it, and I would be glad to hear your comments on it and suggestions for future development.

COMPETITION!! NEW LOGOTYPE

Since the beginning of 1998, the International Working Group on Medical Geology and the Special initiative of IUGS has had the yellow logotype you all recognize (below). The background of this is from a medical geology meeting in 1998 in Sweden, attended by professor Valentin K. Lukashev, Minsk, Belarus, our good colleague and friend. He died among us from a heart attack on June 8, 1998, shortly after having given a presentation on Medical Geology in Belarus and the former Soviet Union, and after giving suggestions on the contents of the recently published book on medical geology at the first planning discussions. The logotype of medical geology is a remembrance of him since he suggested it just before he passed away.

We are however now in the next transition phase of medical geology, evolving into the new association, IMGGA. Therefore we believe that this phase should be marked a beginning of the future of medical geology, with a new logotype. You are all welcome to propose a new logotype for the International

Medical Geology Association, IMGGA.

The logotype should be distinct and striking and easy to understand, showing both the geological and medical aspects of medical geology. It should be possible to use in different scales and also in black and white. All suggested logotypes will be studied by the directors, councilors, and editor of IMGGA for a final decision. We reserve the right to leave the winning logotype to a professional artist for the final touches.

We will give the best suggestion an excellent prize: a copy of the new book *Essentials of Medical Geology*.

Please mail your suggested logotype (preferably as a .jpg file) to olle.selinus@home.se

The deadline is July 31 2005.

THE OLD LOGO
See front cover
for colour



MEDICAL GEOLOGY SHORT COURSES -Spreading the Message

With the support of the IUGS, COGEOENVIRONMENT, the USGS, AFIP, SGU, ICSU and the host countries, we give short courses on medical geology all over the world. These have been attended by over one thousand students and professionals with backgrounds in geoscience, biomedical/public health science, environmental science, geography, engineering, chemistry, etc. The leaders of the courses are Jose Centeno, Bob Finkelman and Olle Selinus, and local scientists are invited to describe medical geology work going on in their regions.

The aim is to share the latest information on the relationship between toxic metal ions, trace elements, minerals, etc., and their impact on the environmental and public health issues. The scientific topics include environmental toxicology, environmental pathology, geochemistry, geoenvironmental epidemiology, extent, patterns and consequences of exposures to toxic metal ions, and analysis.

The courses, generally 2 to 3 days, in some cases up to one week, are intended for anyone interested in the effects of natural materials on animal and human

health. An important aim is to provide the opportunity for forming contacts and networks between professionals working in different countries and on different aspects of environmental health issues. We have produced a 300 page syllabus and a CD containing all the PowerPoint images used in the short course plus as supplementary material such as reprints of relevant articles. It is anticipated that participants will use this material to conduct their own courses in medical geology.

In 2004 we held courses in Budapest, Hungary, Johannesburg, South Africa, Ottawa, Canada, Perth, Australia and Lucknow, India. In 2005 the courses will be in Romania, Brazil, Uruguay, Argentina, Ireland, Turkey, Puerto Rico and USA. We are also discussing courses in Cyprus and Egypt. Requests for courses have been received from Jamaica, Kenya, Norway, Taiwan, Portugal, Nigeria, Ghana, Pakistan, India, Portugal, Spain, Russia, China, Bangladesh, Poland, Thailand, and Indonesia.

For updated information see the website.

2004 ACTIVITIES (Continued from page 4)

Namibia, and a one day Medical geology Short Course in Mozambique. Bob also presented an accredited course on Medical Geology at the University of the Witwatersrand in Johannesburg, South Africa. About 25 students attended the course.

- Bob Finkelman organized a technical session on the health impacts of minerals for the First International Mineralogy Days of Monaco sponsored by the Organization Mondiale de Mineralogy and the patronage of the recently deceased H.S.H. Prince Rainier III. There were excellent talks by Ed Derbyshire, Chris Kellogg, Claire Horwell, and Geoff Plumlee who received a medal for contributions to Medical Geology.

- Bob Finkelman was invited to present one of the Keynote talks at the annual meeting of the American Clinical and Climatological Association, the second oldest medical society in the U.S.

Bob Finkelman, Jose Centeno and Jou Bunnell present a one-credit course on Public Health and the Geosciences at George Washington University. A two credit version of the course is scheduled for the summer of 2005.

Many publications have appeared in journals, books, and newspapers. These will all be listed on the website in the near future.

REGIONS

BRAZILIAN MEDICAL GEOLOGY GROUP Bernardino R.Figueiredo berna@ige.unicamp.br

Beginning in 2002, two important tools for dissemination of medical geology data have been made available in Brazil. During the 41st Brazilian Geological Congress held in the city of João Pessoa, the participants of the Symposium on Environmental Geochemistry decided to join a discussion list named “Regagem – the Environmental Geochemistry and Medical Geology Network”. The network is hosted at the University of Campinas and open to geochemists, academics, students and other professionals from all regions in Brazil. Additionally, a website was created at the Geological Survey of Brazil (SGB) <http://www.cprm.gov.br/pgagem/index.html> which hosts publications, theses, presentations and other information on medical geology for public consultation. The number of participants of “Regagem” evolved from 157 in the beginning to its present 320 members. An active subgroup of professionals has been involved in sponsoring and delivering scientific

meetings, lectures and short courses to disseminate the concepts of medical geology around the country. In October 2003 more than one hundred people attended the International Workshop on Medical Geology (Metals, Health and the Environment) held at the University of Campinas. An updated version of this workshop will be delivered in June at SGB’s Headquarter in Rio de Janeiro - again more than one hundred attendees are expected. At this meeting, participants will determine how to strengthen formal links between “Regagem” and the International Medical Geology Association – IMGA.

Perhaps the “Regagem” experience in Brazil could serve as a model for other countries wishing to enhance communication within regional groups and with the public and, hence, to strengthen medical geology worldwide.

THE CHINA CENTER Bob Finkelman rbf@usgs.gov

The United States Geological Survey, the Armed Forces Institute of Pathology, Western Kentucky University and several organizations in China have proposed the creation of a research center in China that will seek practical solutions to a range of medical geology issues. It is anticipated that the U.S. Agency for International Development will begin funding of the Center later this year.

The Center will focus on health and environmental issues related to water quality and coal use by funding collaborative research projects and providing training in China and in the US. By focusing on training and research, the Center will not only try to solve medical geology problems, but will work to create a

system to enable scientists in China to better deal with such issues in the future. A unique aspect of the Center will be the creation of a state-of-the-art telemedicine link between China and the U.S.

Among the medical geology issues being considered are the widespread, severe, water quality and quantity problems that occur in limestone karst regions. These problems limit development as well as cause serious health problems. Coal-related issues include assessing the impacts of trace element emissions from power plants, domestic coal use, and uncontrolled coal fires.

A new medical geology group has been established in Cuba under leadership of Luis Cruz Rodríguez, BSc, Geology and Paleontology Institute, IGP in Ciudad Habana, Cuba. There are three divisions within the group: **Geology** (Ing. Rolando Batista Gonzalez), **University** (Prof. Dr. Miguel Ramos Leal) and **Medicine** (Prof. Dr. Alejandro de Jesus Bazan Camacho).

EAST AND SOUTHERN AFRICA ASSOCIATION OF MEDICAL GEOLOGY (ESAAMEG), T.C. Davies davies.theo@hotmail.com

Research

1. Plans for attracting additional support for promoting the ongoing major project of the Association, "An East Africa Geochemical Database for Environmental Applications" are now at an advanced stage. Working in collaboration with Kenyatta University, the German Institute of Geosciences and Natural Resources and the Volkswagen Foundation, ESAAMEG received positive signals earlier this year during consultations in Berlin with project leaders, for an intensification of collaborative links in order to accelerate the pace of work.

2. A number of smaller Medical Geology projects are ongoing or were initiated during the year 2004, e.g. "A study of 'geochemical diseases' in and around the East African Rift Valley"; "The use of plants in detecting natural soil trace element perturbations of significance in animal health and nutrition in Africa"; "Soil nutrient deficiencies and endemic osteoarthritis and dwarfism in South Africa"; "Fluoride in groundwaters of Kenya, Tanzania and Zimbabwe"; "Health effects of toxic metals released to the aquatic environment by geogenic processes and also during mining and ore processing in Ghana, Kenya, Nigeria, Tanzania, South Africa and Zimbabwe" and "Development of a Medical Geology Registry for East Africa". Preliminary results from some of these studies are being submitted in the form of manuscripts to be considered for publication in the upcoming special issue of the journal "Environmental Geochemistry and Health" on 'Medical Geology in Developing Countries'.

Meetings

1. In connection with reconnaissance work on

the East Africa Geochemical Mapping Project, a Geochemical Workshop and Field Training Course was convened and conducted by the Geological Survey of Tanzania (GST) under the leadership of Prof. Reijo Salminen of Finland. The Workshop and Training Course was held at GST Dodoma headquarters and environs from 27 – 29 July, 2004. About 15 participants from ESAAMEG attended.

2. Preparations are underway for the Third ESAAMEG Workshop to be held either in Tanzania or Kenya in 2006. The first preparatory meeting for this Workshop was held in at the Muhimbili College of Health Sciences in Dar-es-Salaam in June, 2004. The first announcement and call for papers is expected on the Africa section of the IMGGA website shortly. The establishment of an independent website for ESAAMEG is among the future plans of the association.

Curriculum Development

As a result of a vigorous campaign recently launched by IMGGA on the promotion of Medical Geology (vide: Fordyce et al., 2004) but also due to the appearance of the book "Essentials of Medical Geology", ESAAMEG believes that a number of geoscience and medical faculties in Africa are now considering incorporating Medical Geology into their postgraduate curricula.

REFERENCE

Fordyce, F., Tatu, C., Davies, T.C., et al., 2004. Report on promoting Medical Geology. International Medical Geology Association, Edinburgh, Great Britain, 17 p.

In implementation of the decisions of the XXXII session of the International Geological Congress by the Ministry of Natural Resources of Russia (deputy director of the Department of Natural Resources and State Policy and Regulation, Nikolai V. Miletenko), the Russian Geological Society (RGS, President Victor P. Orlov, Vice-President Evgeny G. Farrahov), Federal State Unitary Enterprise All-Russian Scientific Research Institute for Mineral Resources, named after Nikolai M. Fedorovski (FSUE VIMS, Deputy Director Dr. Igor G. Pechenkin, administrative associate Dr. Iosif F. Volfson, Dr. Georgy V. Ostroumov, Dr. Galina A. Sidorenko) and subdivisions of the Russian Academy of the Medical Sciences (RAMS) and the Russian Medical Society (RMS, President of RAMS and RMS Academician, Valentin I. Pokrovski), Russian State Medical University (RGMU, Rector Academician Vladimir N. Yarygin, Dr. Yelena V. Kremkova), Scientific-Research Institute of Human Ecology and Environmental Hygiene named after Alexander N. Sysin (Director, Academician Youri A. Rakhmanin, Deputy Director, Member Correspondent of RAMS Nikolai V. Rusakov), the creation of the RUSSIAN INTERDISCIPLINARY MEDICAL GEOLOGY SECTION on the base of RGS and RMS was initiated.

The INTERDISCIPLINARY MEDICAL GEOLOGY SECTION (IMGS) was created on March 1, 2005 at a meeting between the representatives of geological and medical communities, which took place in the Federal State Unitary Enterprise All-Russian Scientific Research Institute for Mineral Resources named after Nikolai M. Fedorovski (FSUE VIMS, Moscow), and which coincided with memories of professor Nathan I. Ginzburgh, a famous Russian mineralogist. IMGS was established on the basis of an initial agreement between Russian Geological Society (RGS) and Russian Medical Society (RMS). The agreement is accompanied with six sections related to:

- a. Scopes and ranges of the IMGS.
- b. Organizational structure
- c. List of presidium and section members
- d. Procedure by which members of the presidium and/or of the section are elected.
- e. Basic organizations.
- f. Foreign scientists, practitioners, and membership of citizens in IMGS.

IMGS is a single organization, legally accredited to represent the Russian Federation in International Medical-Geology Association (IMGA), a coordinating organ which was founded on decision XXXII Session of the International Geological Congress at August 2004 in Florence (Italy).

IMGS is a voluntary association of the scientists - geologists, geochemists, mineralogists, geophysicists, physicians, chemists, biologists, microbiologists and others who study the affects of geological processes, objects, phenomena, materials (minerals, ores, volcano emissions and elements, falling into their composition, atmospheric dust, water and etc) and other natural as well as anthropogenic sources on people's and animals' health and condition of the plants, as well as terms under which such affect becomes possible.

The purpose of IMGS is not to compete with other associations of scientists. Instead, it strives to bring together specialists, scientists and practitioners working in different areas of knowledge, unite their efforts, and fill the new content given the rapidly developing direction of the science.

The main purpose of IMGS RGS - RMS activities is to comprehensively support the studies in the field of medical geology on territory of the Russian Federation. The primary tasks of IMGS are:

- Organization and assistance of, and participation with, Russian scientists and practitioners in actions, planned and realized by International Medical Geology Association (IMGA);
- Development and realization of the measures on financial support of the research programs in the field of medicine and geology in Russia;
- Realization of the regional and international cooperation in the field of medicine, geology and health;
- Fundamental basis development and preparation for teaching in both higher medical and geological schools of the subject "Medical geology";

RUSSIA (Cont.)

- Realization of the measures on financial support for students and young scientists, occupied by studies in the field of medicine and geology;
- Training programs, manual development and undertaking of workshops and courses on Medical Geology in the system of postgraduate education for persons responsible for decision making in the field of environmental protection and health of the people;
- Making the terms for expanding the achievements of Russian and foreign scientist, working in geological and adjacent fields, through publications in Ministry of Natural Resources of Russia, Ministry of Health Protection of Russia, Russian Academy of Medical Sciences editions and issues with the following preparing its own periodic magazine;
- Preparation and publishing of a collective monograph on medical geology.

INDIA Dr. M.K. Mukhopadhyay gsi.ero@vsnl.com

The Geological Survey of India was identified by the International Union of Geological Sciences (IUGS) as the nodal agency for research and study on Medical Geology in India and the IGCP-454 project on Medical Geology was taken up by the Geological Survey of India (GSI), Eastern Region, Kolkata during 2000-2004. A considerable part of the work was carried out in the last two years under the Chairmanship of Dr. M.K. Mukhopadhyay, Dy. Director General, GSI, ER. Shri B. Sengupta, Dy. Director General, CGL was the convenor of the project. The activities of the IGCP-454, Medical Geology in India include various meetings arranged for interaction amongst National Working Group (NWG) member scientists from the Geological Survey of India, University Professors, and Medical Practitioners. An attempt was made to evolve an Action Plan for generating base line data which may be followed in future studies. As GSI has been working on Environmental investigations related to Medical Geology since 1980, it was felt necessary to compile all the available data and reports of GSI on geogenic health hazards caused by Arsenic, Fluorine, Iodine, Mercury, etc., which may be a valuable document on Medical Geology related work carried out in India. In the process, compilations on Arsenic contamination of groundwater from West Bengal, Bihar, Madhya Pradesh, Fluoride contamination from parts of Rajasthan, WB, Bihar, Orissa, U.P, Maharashtra, Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Karnataka, Gujarat etc., covering a considerable part of

India, Iodine deficiency disorders in the foothills of Himalayan tracts of India (see Figure on page 12), NO₃ pollution of groundwater in Maharashtra, Hg pollution in Karnataka and Goa were completed. The activities on Medical Geology were also regular Field Season items in all the data generating Regions of GSI. During the last phase of the tenure of IGCP-454 in India, it was felt necessary to sum up the data generated so far by holding a National Workshop on Medical Geology.

A workshop on Medical Geology was organized at Nagpur, India on 3rd and 4th February, 2004 which involved participation from scientists of the Geological Survey of India, WHO, and many other reputable Institutes of India including National Environmental Engineering Research Institute (NEERI), Atomic Minerals Division (AMD), National Bureau of Soil Survey and Land Use Planning (NBBSLUP), Sanjay Gandhi Post Graduate Institute of Medical (SGPGI), Apollo Hospitals, Central Ground Water Board (CGWB), National Institute of Nutrition (NIN), Jawaharlal Nehru University (JNU) etc. An Abstract volume containing 83 abstracts was released encompassing themes on (a) Diseases related to fluorine and iodine and their geological linkages (b) Arsenic and Mercury pollution in water – a growing menace (c) Health hazards due to effluent release from industries and mines (d) Fertilizers and pesticide related pollution (e) Radioactive minerals and health hazards and (f) Case studies.

INDIA (Cont.)

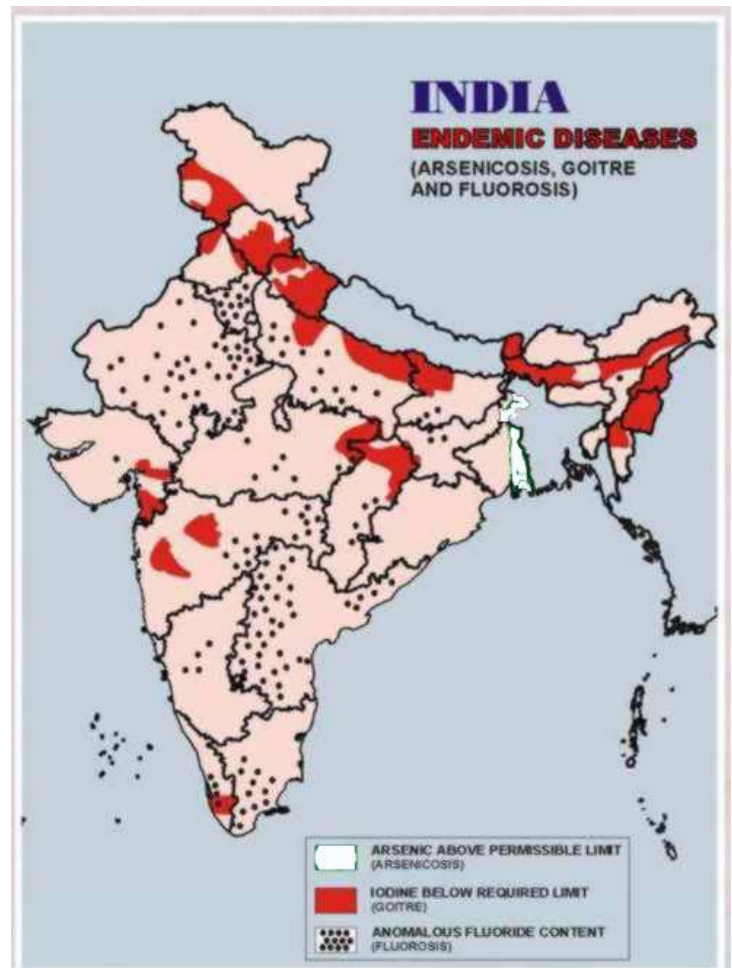
The volume of the workshop proceedings, containing 60 full papers on the above themes was also published and released on 6th December, 2004 by the Director General, GSI at Lucknow in the presence of Dr. Jose A Centeno, Sr. Scientist, AFIP, USA and Dr. R.B. Finkelman, Sr. Scientist, USGS.

As proposed by the NWG members of IGCP-454 a nine days' training programme on Medical Geology was organized successfully by GSI Training Institute at Lucknow in September 2004. The Course material included introduction on various aspects of Medical Geology, Geochemical attributes of various rock types with regard to release of toxic elements, major geogenic diseases in India, interaction, speciation and bioavailability of elements as well as biogeochemical analytical monitoring in the field of Medical Geology, application of different analytical techniques for medical geological studies, role of trace elements in health related problems, arsenic problem in West Bengal, kidney stone problem and its propensity in Northern India, Podoconiosis, fluoride endemicity problems, cadmium and manganese pollution, environmental impact assessment related to health hazards etc. The training course was attended by scientists from the Geological Survey of India. The National Working Group members of IGCP-454 as well as experts in the field of Medical Geology in India delivered the lectures.

To get an idea about the global scenario on Medical Geology and to interact with International Counterparts, a short Training course on Medical Geology (Metals, health and the environment) conducted by Dr. Jose A Centeno & Dr. R.B. Finkelman was also organized by GSI under the aegis of IGCP-454 at Lucknow during 6-8 December, 2004. The training course included four broad themes on Medical Geology, namely (1) Environmental health: Sources of exposures and effects of toxic metal ion (2) Environmental Pathology, Geochemical studies and health effect (3) Trace element speciation, detection and methods and 4 special topics on Environmental toxicology, Medical Geology and Human health research. The informative lecture sessions dealing with

15 odd presentations generated a lot of interest amongst the participants. All the participants were given a Certificate of Attendance.

In the interactive open session, organized after completion of the Training course, distinguished delegates from GSI and outside GSI organizations recommended that by virtue of GSI's association related to Medical Geology, GSI should act as a lead/ Nodal agency in India to pursue research and studies in Medical Geology and act as a repository of all data. It was also recommended to form a Regional council on Medical Geology in India and to maintain close liaison with the International Medical Geology Association (IMGA).



The Medical Geology Malaysia/Southeast Asia Group was initiated after the Workshop on Medical Geology: Metals, Health and the Environment, held at the Institute for Medical Research Malaysia (IMR) in Kuala Lumpur on 8th and 9th December 2003 led by the three Directors of the International Medical Geology Association (IMGA), Dr. Olle Selinus, Dr. Robert B. Finkelman and Dr. Jose A. Centeno. The Workshop was convened by the Institute for Environment and Development (LESTARI) of Universiti Kebangsaan Malaysia, the Environmental Health Research Centre (EHRC), the Minerals and Geoscience Department Malaysia (JMG), and the former IUGS Commission on Geological Sciences for Environmental Planning (COGEOENVIRONMENT), with the support of several international organizations.

The aim of the Medical Geology Malaysia/Southeast Asia Group is to link medical geology to health and the environment, to strengthen environmental health in Malaysia and Southeast Asia. The initiative is led by LESTARI, in close collaboration with IMR and JMG. The Group welcomes collaboration with interested parties to take the lead in other parts of Southeast Asia.

In 2004, members of the Group contributed two articles to the journal *Environmental Health Focus*, published by the EHRC and IMR, with support from WHO. A coordination meeting was also held to discuss future plans. The year 2005 will see more re-

gional activities. The first activity was held on January 11, 2005 in Bangi, Malaysia. A workshop was organised on Environmental Hazards as part of the LESTARI-Universiti Gadjah Mada Bilateral Programme, to introduce Medical Geology to a group of Indonesian scientists. Discussions are ongoing with Universiti Gadjah Mada regarding a regional workshop in Jogjakarta, Indonesia and development of a research project to generate local case studies on medical geology.

For further information on medical geology in the Southeast Asian region, please contact:

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COMMITTEE ON RESEARCH PRIORITIES FOR EARTH SCIENCE AND PUBLIC HEALTH, USA NATIONAL HEALTH RESEARCH COUNCIL Bob Finkelman rbf@usgs.gov

This study was requested and supported by the National Science Foundation, US Geological Survey, and the National Aeronautics and Space Administration. It commenced in late 2003, and the committee recently completed the last of its four formal meetings (that included descriptions of existing agency programs and a well attended workshop for broad community involvement). The committee is now deliberating to finalize recommendations, which will be presented in the form of a study report that is

due for publication in late summer 2005. The committee composition and task are:

H. Catherine W. Skinner (Chair), Department of Geology and Geophysics and Department of Orthopedics and Rehabilitation, Yale University and Yale Medical School.

Herbert E. Allen, Department of Civil and Environmental Engineering, University of Delaware.

Jean M. Bahr, Department of Geology and Geophysics, University of Wisconsin, Madison.

Philip C. Bennett, Department of Geological Sciences, University of Texas, Austin.

Kenneth P. Cantor, Division of Cancer Epidemiology and Genetics, National Cancer Institute.

José A. Centeno, Department of Environmental and Toxicological Pathology, Armed Forces Institute of Pathology.

Lois K. Cohen, National Institute of Dental and Craniofacial Research.

Paul R. Epstein, Center for Health and the Global Environment, Harvard Medical School.

W. Gary Ernst, Department of Geological and Environmental Sciences, Stanford University

Shelly A. Hearne, Trust for America's Health.

Jonathan D. Mayer, Department of Geography, University of Washington.

Jonathan A. Patz, Nelson Institute for Environmental Studies and Department of Population Health Sciences, University of Wisconsin, Madison.

Ian L. Pepper, Department of Soil, Water, and Environmental Sciences, University of Arizona.

Liaison from Board on Health Sciences Policy:
Bernard D. Goldstein, University of Pittsburgh.

A National Research Council ad hoc committee will assess the present status of research at the interface between medicine and earth science, and will advise on the high priority research activities that should be undertaken for optimum societal

benefit. The committee will report on the most profitable areas for communication and collaboration between the earth science and medical communities, recognizing both the infectious disease and environmental components. The committee is specifically tasked to:

- Describe the present state of knowledge in the emerging medical geology field.
- Describe the connections between earth science and public health, addressing both positive and negative societal impacts over the full range from large-scale interactions to micro-scale biogeochemical processes.
- Evaluate the need for specific support for medical geology research, and identify any basic research needs in bioscience and geoscience required to support medical geology research.
- Identify mechanisms for enhanced collaboration between the earth science and medical/public health communities.
- Suggest how future efforts should be directed to anticipate and respond to public health needs and threats, particularly as a consequence of environmental change.

National Research Council contact: David A. Feary,
Board on Earth Sciences and Resources
(dfeary@nas.edu)

NATURAL SCIENCE FOR PUBLIC HEALTH: A CONTRIBUTION OF THE US GEOLOGICAL SURVEY (USGS) Bob Finkelman rbf@usgs.gov

Public health conditions caused by environmental contamination and emerging infectious and zoonotic diseases are growing concerns worldwide. These public health concerns are affected by the inherent relationship between people and the physical, chemical, and biological nature of their natural environment. Increasingly, we are recognizing the connections among environmental, animal, and human health.

As the United States' natural resource science agency, the USGS provides scientific information about the earth, its natural resources, natural hazards, and natural ecosystems and how these are affected by human activities on the landscape. This information has significant implications for environmental and human health. Geographic, geologic, hydrologic, and biologic conditions (including landform, hydrology, climate, mineralogy, soils, and ecology) have significant influences over human exposure to contaminants and pathogens, and over the abundance, global spread, and exposure to vector-borne infectious and zoonotic diseases. USGS activities that relate to major classes of human-health threats, include:

- (1) Toxic Contaminants in Air and Dusts
- (2) Chemical and Pathogenic Contaminant Exposure by Drinking Water

- (3) Human Consumption of Bioaccumulative Contaminants
- (4) Pathogen Exposure through Recreational Waters,
- (5) Zoonotic and Vector Borne Diseases, and
- (6) Animals as Sentinels of Human Health.

USGS human health related activities also focus on places, such as studies of environmental health along the US-Mexico border, and studies of arsenic contamination in water resources in India and Bangladesh.

As an independent fact-finding agency, the National or global perspective, multi-disciplinary skills, and interdisciplinary approaches employed by USGS, make it uniquely qualified to provide natural science information needed by health researchers, policy makers, and decision-makers. To better understand the inter-relations among all living things and the environments in which we live and the associated implications for human health, the USGS is committed to developing collaborative relationships with public health scientists and agencies. Information is available on the Internet at: <http://health.usgs.gov>

THE GEOLOGICAL SOCIETY OF AMERICA: A NEW DIVISION Bob Finkelman rbf@usgs.gov

A new division of the Geological Society of America (GSA) has recently been proposed. The division will focus on impacts of geologic materials on human and animal health, both in a modern setting and as reflected in the paleontologic record. More than 100 people signed a petition requesting that GSA sanction the division, and an organizational meeting was held at GSA's 2004 annual meeting in Denver

this past November. It is anticipated that the GSA Council will formally consider the request at an upcoming meeting. For more information go to the GSA Divisions web page at <http://www.geosociety.org/sectdiv> and click on "learn more" under "Your Support Needed" in the lower righthand corner.

IMGA OFFICERS: BIOGRAPHIES AND CONTACT INFORMATION

DIRECTOR: Dr. OLLE SELINUS (Chairman, IUGS Special Initiative on Medical Geology)

A geologist working with the Geological Survey of Sweden (SGU). During the 1960s and 1970s he worked in mineral exploration with a mining company and at the SGU. Since the beginning of the 1980s Dr. Selinus' research work has been focused on environmental geochemistry and geostatistical methods, including medical geology. He has served as the organizer of several international conferences in this field and has published over 60 manuscripts. Dr. Selinus is currently the Deputy Head of the Geochemical Division at SGU, and also in charge of external research and development at the geological survey. Member of the Board of the Metal Biology Foundation and also other boards. He served as Editor-in-Chief for the book on "Essentials of Medical Geology", as chairman of IUGS Special Initiative on Medical Geology, Co-Chairman of the International Medical Geology Association, Co-Chairman of the IGCP Project 454 Medical Geology, Chairman of "Earth and Health" of the IUGS-UN-UNESCO initiative of Planet Earth and Chairman of the health sector of the four GeoUnions Initiative and Chairman of the International Medical Geology Association (IMGA). He is Associate Editor of Applied Geochemistry.

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CO-DIRECTOR: Dr. JOSÉ A. CENTENO (Vice-Chairman, IUGS Special Initiative on Medical Geology)

Senior Research Scientist and Chief of the Division of Biophysical Toxicology and the Education and Research Branch at the Department of Environmental and Toxicologic Pathology, U.S. Armed Forces Institute of Pathology (AFIP) in Washington. D.C. Dr. Centeno received his BS and MS in chemistry from the University of Puerto Rico at Mayagüez in 1979 and 1981, respectively; and a Ph.D. in Physical Chemistry from Michigan State University in 1987. He has presented over 170 invited seminars and lectures, and published over 65 manuscripts on various topics of environmental toxicology, biomedical research and environmental health issues. He has served on the organizing and scientific committees of several international conferences, including as General Chairman of the 6th *International Symposium in Metal Ions in Biology and Medicine* (ISMIBM) (May 7-10, 2000), and co-chairman of the 7th and 8th ISMIBM (2002 & 2004). He has served on several international environmental and human health committees including the International Agency for Research on Cancer, the U.S. TOSCA-Interagency Testing Committee and the International Working Group on Medical Geology, and is currently serving as a committee member for the National Research Council Committee on Research Priorities for Earth Science and Public Health. He serves on the Editorial Board of three scientific journals, as associate editor of the book on "Essentials in Medical Geology".

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CO-DIRECTOR: Dr. ROBERT B. FINKELMAN (Vice-Chairman, IUGS Special Initiative on Medical Geology)

Emeritus scientist with the U.S. Geological Survey (USGS) in Reston, VA, widely known for his work on coal chemistry and as a leader of the emerging field of Medical Geology. He has degrees in geology (The City College of New York, 1965), geochemistry (The George Washington University, 1970), and chemistry (The University of Maryland, 1980). Dr. Finkelman has a diverse professional background having worked for the USGS for 32 years, 7 years for Exxon, and has experience as a consultant and as a college instructor. Most of Dr. Finkelman's professional career has been devoted to understanding the properties of coal and how these properties affect coal's technological performance, economic byproduct potential, and environmental and health impacts. Dr. Finkelman was President of the Geological Society of America's Coal Geology Division, Chairman of The Society for Organic Petrology, Chair of the IAGC working group on Geochemistry and health, and co-chair of the International Medical Geology Association. For the past 10 years he has devoted his efforts to developing the field of Medical Geology. Dr. Finkelman is the author of 500 publications and has been invited to speak in more than 30 countries.

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SOUTH AMERICA: DR. BERNARDINO RIBEIRO FIGUEIREDO

Geologist, Full Professor at the Institute of Geosciences, University of Campinas (UNICAMP), Brazil. BSc and DSc degrees from Uppsala University. Current research interests on Environmental Geochemistry, Medical Geology and Ore Deposit Modeling. Teaching experience in Geochemistry, Environmental Geosciences and Ore Petrology. Supervisor or co-supervisor of 12 Master dissertations and 5 Doctoral theses. Author of several papers and of the book "Ores and the Environment" (2000, in Portuguese). On going project (2002-2005) on Geochemical and Environmental Landscapes of the Ribeira Valley, Southeastern Brazil: assessment and prevention of risks for the environment and human health related to arsenic and heavy metal exposure. Former Director of the UNICAMP's Institute of Geosciences and President Director of The Foundation for UNICAMP's Development (FUNCAMP). Officer of IUGS Commission Geosciences for Environmental Management (GEM) and Councilor of IMGA.

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EUROPEAN UNION: Dr. FIONA FORDYCE,

Environmental geochemist, main areas of research include geochemical baselines and geochemistry and health specialising in chemical toxicities and deficiencies of elements such as As, Pb, Se, I, Zn, Cu, Cd and fluoride; land, crop and water quality investigations related to human and animal health including work in China, Thailand, Sri Lanka, Zimbabwe, Central Europe and the UK; managing national geochemical survey field and urban land quality programmes in the UK and former secretariat of the International Geological Correlation Programme (IGCP) Project 360 Global Geochemical Baselines and Forum of European Geological Survey (FOREGS) Geochemistry Task Groups 1993 – 1996.

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BIOGRAPHIES (Cont.)

EASTERN EUROPE: Dr. CALIN TATU

Medical researcher specialising in flow cytometry, molecular biology, cell culture, organic geochemistry immunology; clinical laboratory, human medicine and is currently working on the aetiology of Balkan endemic nephropathy; medical geology and organic geochemistry.

Forslys Group, Str.Vasile Goldis, 1-3 Sc.2, Et. 3, Ap 10, RO2900,Arad, Romania. E-mail: dns@mail.dutt.ro

AUSTRALASIA: Professor PHILIP WEINSTEIN

A graduate in both medicine and zoology with specialist postgraduate qualifications in Public Health (FAFPHM) and ecology (PhD). With this dual training he has become involved in research on the relationship between human health and ecosystem health, and has published extensively on the environmental determinants of disease. He is Head of the School of Population Health at the University of Western Australia, Director of Ecology and Health (which offers postgraduate training in Medical Geology), and Director of Environmental Programmes in the Australian Collaborative Research Centre for Asthma and Airways Disease. Phil enjoys tennis and classical music (both strictly in a passive capacity) and has a lifelong interest in natural history. He hopes to both learn from and contribute to the IMGA, particularly in collaboration with colleagues from other countries.

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SECRETARY: HEATHER GINGERICH

When not training my “Junior Research Assistant” (a.k.a. toddler son, Judah) I chip away at my graduate project (The Medical Geology of Fluoride in the Well Waters of Southwestern Ontario, Canada) at the Earth Science department at the University of Waterloo. I started my university education headed for Medical School but was happily “de-railed” by a selenium problem in Zambia during my 4th year as an undergraduate and have been merrily chasing trace elements across the planet ever since! Future plans include a Post Doc at the AFIP Medical Geology Registry, work with the Pearson Peacekeeping Centre (as a way of bringing Medical Geology to the United Nations) and getting Medical Geology into all levels of our educational system gin-gerich@yahoo.com

NEWSLETTER EDITOR: Dr. DAVID ELLIOTT, FGS, P.Geol.

Currently Senior Petroleum Evaluation Geologist at the Alberta Securities Commission, Calgary, Canada. His forty year career has been spent in technical and management positions in the petroleum industry, but he has been involved part time in environmental science for about 15 years, including about 10 years with COGEO and IUGS Special Initiative on Medical Geology. He taught environmental geochemistry and the statistical aspects of environmental sampling at the University of Calgary for several years and was a member of the COGEO Working Group on Geoenvironmental Indicators and the Working Group on Medical Geology. Consistent with his work in estimating oil and gas reserves, he has a general interest in statistical applications in geology. He has a B.Sc. in geology, a Ph.D. in geology (geochemistry) from the University of Birmingham, UK, and a B.Mathematics from the Waterloo University, Canada. In his limited spare time, he is a keen amateur artist, and enjoys working out in the gym and swimming.

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COHAB 2005: First International Conference on Health and Biodiversity

This important global event will provide an international forum for scientists, professionals, policy makers and stakeholders to address the issues linking environmental health, human health, biological diversity and international development. Themes include:

- Functional biodiversity and ecosystem services
- Nutrition, agricultural biodiversity and food security
- Pathogen pollution and the ecology of infectious disease
- The use of wild species as sentinels of environmental health
- Biodiversity, genetic resources and drug discovery
- Ethnomedicine and traditional knowledge.

A special session will discuss policy options for addressing the health and development problems posed by biodiversity loss, with relevance to public health and development planning policies worldwide.

COHAB 2005 is being organised in association with the Centre for Health and the Global Environment at Harvard Medical School, the Consortium for Conservation Medicine, the Secretariat to the Convention on Biological Diversity, the United Nations Environment Programme, the World Conservation Union, the EcoHealth Journal and Network and other international organisations.

The conference brochure can be downloaded at http://www.cohab2005.com/summary_files/Brochure.pdf.

Full details of the conference can be found at <http://www.cohab2005.com>;

Enquiries should be directed to Conor Kretsch, COHAB Director, email: info@cohab2005.com.

EDITOR'S COMMENTS AND GUIDELINES FOR AUTHORS

The Newsletter of the Cogeoenvironment Working Group on Medical Geology will become the Newsletter of the new International Medical Geology Association, IMGA. Articles, book reviews, accounts of conferences & workshops, notices of upcoming meetings, and short pieces of news and information are invited. Note that at this time, it is a Newsletter, not a refereed journal, and also that we are limited to 16—20 pages. Articles should be sent to the Editor or to Olle Selinus (olle.selinus@home.se). They should :

- Typically be a maximum of two pages of Times Roman 12 point text and/or figures and tables.
- May be edited to fit them into the space available in the Newsletter or for clarity.
- Should not have been published previously, although summaries of previously published articles may be acceptable — please let me know if this is the case.
- Lists of references should be kept short, with longer lists obtainable from the author.
- Preferably in Word 2000 format, although I can I can handle a number of other formats.
- I can handle a number of graphics formats, although I do have problems with some of them. Word graphics format seems to give the least problem. Figures may be in colour, but all figures should also be intelligible if converted to black and white.

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