

International Association of
Geochemistry and Cosmochemistry

Newsletter

number 21 December 1987

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Council meeting, Pocos de Caldas, Brazil

The next Council Meeting will be held at Pocos de Caldas, Brazil, July 9 and 10, 1988, immediately prior to the symposium Geochemical Evolution of the Continental Crust. Individual Members and representatives of National Members are invited to attend the Council meeting as observers. Please contact the President if you wish to attend. If members have items they wish discussed by Council would they please contact the Secretary before May 15, 1988 so that these items can be placed on the agenda. Highlights of the Brazilian Council meeting will be given in Newsletter 22. Note that this Council meeting is the last before the General Assembly in 1989 and, therefore, the last time Council as a whole has an opportunity to discuss your concerns at length.

Zurich council meeting highlights

Council convened its 1987 annual meeting in the National Sciences Building of the Swiss Federal Institute of Technology (ETH-Z), Zurich, Switzerland at 14:25 on October 25, 1987. President Grunenfelder welcomed those present to his institute. Council members expressed their condolences at the death earlier in the year of Dr. W.W. Hutchinson, President of IUGS (noted in the last Newsletter) and were shocked to learn of the recent

death of Council Member Dr. Marcello Carapezza, of cancer.

The minutes of the Cambridge council meeting (highlights of which appeared in Newsletter 19) were approved as compiled by the Secretary. Included in the business arising was the fact that Brazil had now become a National Member, but replies had not yet been received from four European countries. There was still no reaction to IAGC's moral support of the geochemistry program at the UN University, Japan.

The Secretary (Dr. Hitchon) reported that current Individual Membership stood at 649, with 23 National Members. Council agreed to the printing of a Membership List, effective 1988-01-01 for paid up members only. The Secretary was to make one final try to encourage "delinquent" members to rejoin. It was also agreed that the Newsletter should be more widely circulated as a promotional item, especially to selected organizations and societies.

The Treasurer (Dr. E.E. Angino) provided a financial statement at 1987-09-30, noting that the Ingerson Fund capital was now \$10,000 due to an additional bequest from Professor Ingerson. Council warmly thanked Professor Ingerson for his continued support of this fund. A current financial statement at 1987-12-31 follows.



International Association of
Geochemistry and Cosmochemistry

Financial statement

IAGC Statement of income and expenses (US\$)

1987-01-01 to 1987-12-31

Income:

National Member dues	\$ 4,534.00
Individual Member dues	6,461.87
Interest on investments.....	1,065.92
Interest, Ingerson fund	2,193.16
UNESCO payment	1,300.00
IUGS 1987 payment.....	1,000.00
National Academy of Science (Angino, Zurich) .	1,000.00
Ingerson Bequest, lecture fund	<u>2,000.00</u>
	\$19,554.95

Expenses:

Postage and duplication.....	\$ 86.16
Secretarial and accounting	172.00
Telex and cable charges	111.17
Tax preparation	75.00
Bank charges.....	101.66
Imperial College - Symp. Geochem. Health	2,000.00
Brazil meeting.....	5,000.00
Zurich meeting.....	<u>2,015.09</u>
Total expenses.....	\$ 9,561.08
Excess income over expenses	\$ 9,993.87
Cash balance as of 1986-12-31	\$28,522.68
Excess income over expenses 1987-12-31	<u>9,993.87</u>
Cash balance as of 1987-12-31	\$38,516.55
Chequing account 1987-12-31	\$22,054.64
Money market fund	3,768.75
Cert. of Deposit Ingerson lecture fund	9,569.87
Capitol Federal Sav. Ingerson fund	<u>3,123.29</u>
CASH BALANCE 1987-12-31	<u>\$38,516.55</u>

NOTE: Per Council action a journal sinking fund equal to 30% of income from 1987 Individual Memberships (\$1668.00) has been established. This will show on the 1988 financial summary.

There was considerable discussion concerning payment of membership fees for National Members in countries with currency restrictions. On a suggestion from Dr. Angino, Council agreed to a token fee of \$10, limited to three years, with non-voting status, pending discussion and resolution at the next General Assembly. At this time Mexico, Turkey and Zimbabwe are eligible for this special status. Council felt that this was the only way, at this time, to bring in national membership from countries with currency restrictions, countries which would benefit from wider exposure to the world community of geochemists. Proposed modifications to the IAGC Statutes are to be prepared by the Secretary for consideration by Council.

A five-year review and projection of IAGC financing was presented to Council by the Treasurer. Projections were conservative in view of expanding individual membership, and from 1986 onward the total dues from Individual Members exceeded those from National

Members (which were last increased in 1980). Council will consider this matter at their next meeting.

Highlights from the reports of the Working Groups are compiled below.

Geochemical Prospecting: Major effort was devoted to coorganizing, with the Association of Exploration Geochemists (AEG) the 12th International Geochemical Exploration Symposium at Orleans, France, 1987-04-23/26. More than 250 geochemists from 46 countries participated in the symposium. Discussions were held respecting an International Geochemical Mapping Project, which was supported by the participants and subsequently supported in principle by Council. The next joint meeting of this Working Group with AEG is planned for September 1990 in Prague, Czechoslovakia.

Water-Rock Interaction: Plans are now in an advanced state for the forthcoming Sixth International Symposium on Water-Rock Interaction (WRI-6) but the date and venue have had to be changed at the last minute due to structural problems at the proposed meeting rooms. Full details of the changed time and venue can be found elsewhere in this Newsletter.

Natural Waters, Protection from Pollution: This Working Group now has 160 members from 19 countries, and plans are being made for the forthcoming workshop on Ecological Modelling and the Study of Freshwater Ecosystems to be held in Rostov-on-Don, USSR, September 1988, (see elsewhere in this Newsletter for full details).

Extraterrestrial Geochemistry: Following cancellation of the Paris meeting scheduled for the summer, 1987, members have concentrated on contributing papers to meetings such as the EUG Congress in Strasbourg and the IUGG congress in Vancouver. A more formal role of the group in the Mars Exploration Program carried out by NASA and the USSR is being investigated, and several members are already active in the program. Plans for several symposia at the 28th IGC are well underway.

Weathering, Sedimentary and Diagenetic Processes: Proceedings of the symposium Geochemistry of the Earth Surface and Processes of Mineral Formation, held in Granada, Spain, March 1986 are close to publication. The 2nd International Symposium on Geochemistry of Weathering, Sedimentary and Diagenetic Processes is being planned for the first half of June 1990 (see details elsewhere in this Newsletter).

Thermodynamics of Natural Processes: The First International Symposium on Thermodynamics of Natural Processes, Strasbourg, France, July 1988 is in its final stages of preparation and nearly 1000 researchers world wide received the first circular. More details can be found elsewhere in this Newsletter. The document Guidelines for the Preparation of International Tables for Geothermodynamics, and a prototype set of tables, will be published early in 1988 and result from cooperative discussions between the Working Group and the CODATA Task Group on Geothermodynamic Data

(please contact Professor Igor L. Khodakovsky, Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences of the USSR, Kosygin Street 19, Moscow 117 334, USSR, for more details). The Working Group is also planning a Business Meeting at the 28th IGC; again, please contact Professor Khodakovsky for details.

Cooperation in Applied Geochemistry: This Working Group reports no activities in 1987.

Geochemistry of Health and Disease: Membership increased to 29, representing 20 countries, and the group took part in the 2nd International Symposium on Geochemistry and Health, London, England, April 1987; the proceedings are to be published by Science Reviews Ltd., about April 1988. The group hopes to meet during the 28th IGC (contact Dr. I. Thornton, Applied Geochemistry Research Group, Department of Geology, Imperial College, London SW7 2A3, England, telephone: 01-589 5111; telex: 261503 for more details).

Applied Isotope Geochemistry: Council was unanimous in approving the appointment of Dr. Arne Raheim as the new Chairman of the renamed Applied Isotope Geochemistry Working Group. If you are interested in contributing to the activities of this Working Group, please contact Dr. Raheim (Chief Geologist, Institute of Energy Technology, Box 40, N-2007 Kjeller, Norway). Once the new Chairman has had time to organize the group it is anticipated that our former close liaison with IAVCEI will be continued.

Dr. A.A. Levinson (Chairman, Publications Committee) reported that Applied Geochemistry (the official journal of IAGC) is taken by about 82% of our Individual Members. Owing to the decline in the value of the US dollar the institutional annual subscription price for Applied Geochemistry will be raised modestly to \$105 US in 1988 (from \$95 US in 1986 and 1987). The price to Individual Members of IAGC remains at \$15 US, and will do so through volume 4 (1989) based on our original agreement with Pergamon Journals Ltd. The Publications Committee also decided to revise the list of Associate Editors to cover both additional fields and obtain wider international representation; changes will be reflected starting with volume 3 (1988).

The agreement between IAGC and Pergamon Journals Ltd. calls for the opportunity for IAGC to purchase a 50% interest in Applied Geochemistry at December 31, 1995. In order to accumulate capital for a possible purchase the Publications Committee suggested the creation of a Sinking Fund. After some discussion Council agreed to create such a Sinking Fund, starting 1987, using 30% of Individual Member dues. This fund will generate \$3 US per member at current rates and although the concept is for use as a purchase fund for Applied Geochemistry the Council stipulated there be no decision on its use or obligation whatsoever at this time.

Brazil was accepted as a new National Member under category B dues (\$120 US). Because there is no geochemical society in Denmark the Danish Academy of Sciences has declined to join IAGC.

For many years the only Associate Member of IAGC was the Geochemical Society. The recent application of the Association of Petroleum Geochemical Explorationists for Associate Member status was approved by Council. Those interested in contacting our new Associate Member should write to Dr. Gary Rice, President APGE, c/o Geophysical Services Inc., P.O. Box 655621, MS 3954, Dallas, Texas 75265, USA; telephone (214) 995-7625.

IAGC is to start a drive for new Individual Members, primarily through a new informative brochure to be prepared by the Secretary. If you have ideas or examples of what you think we should produce as a promotional document please let the Secretary know as soon as possible.

IAGC medal/award

Council entered into very animated debate on the merits of instituting an "award" or a "medal", and the concept was approved in principle with detailed debate being left to the next Council Meeting. The possible terms of reference were to be compiled by the Treasurer (for finances) and the President and Secretary (for concepts). This is an excellent opportunity for input from all members so if you have any good ideas on this topic please contact the Secretary who will compile all information for discussion by Council.

Geochemical Evolution of the Continental Crust

Plans are advancing very well for this conference, with more than 200 respondents (mostly from outside South America) and 117 papers, as of July 1987. The meeting is at Pocos de Caldas, a spa located 150 km from Sao Paulo; there will be four symposia and timing was chosen because of an immediately prior meeting on structural geology. More details can be found elsewhere in this Newsletter. Note that Individual Members of IAGC will be charged a nominal reduced registration fee of \$130.

28th International Geological Congress

The science program committee has approved six of the themes suggested by IAGC, with a decision on another pending. The convenors will be selected by IGC and six invited papers will be included in each symposium.

The Council approved the principle of an exhibition booth at the IGC meeting. This will include information on IAGC, its Working Groups, and Applied Geochemistry. Again, if any members have ideas would they please contact the Secretary, who has the responsibility of providing costs and a mock-up for the next Council meeting.

Nominating Committee

Council selected several prominent geochemists to be approached to act as Chairman or members of the Nominating Committee responsible for nominating members for the 1989-1992 Council. Dr. V.L. Barsukov (Past-President) is automatically a member of the Nominating Committee. The Nominating Committee will report to the next Council meeting after which all National and Individual Members will be informed of the results so that additional nominations can be obtained.

The following grants were made to IAGC-sponsored meetings:

First International Symposium on Thermodynamics of Natural Processes, Strasbourg, France, July 1988 - \$2000.

Sixth International Symposium on Water-Rock Interaction, Malvern, England, August 1989 - \$2000 (tentative).

Council also agreed to joint sponsorship with IMA of an international meeting in Beijing, June 28 to July 3, 1990. The title of the IAGC symposium is "Geochemistry, Mineralogy and Origin of Ore Deposits in Relation to Future Materials".

The Council meeting adjourned at 14:35, October 26, 1987.

Current individual membership status

Individual membership in IAGC continues to grow at a very satisfactory and steady rate. The status as of 1987-12-31 is as follows:

Australia.....	19
Austria.....	6
Belgium.....	4
Brazil.....	8
Canada.....	71
Denmark.....	5
Egypt.....	2
Finland.....	2
France.....	34
Federal Republic of Germany.....	11
Iceland.....	3
India.....	12
Indonesia.....	2
Israel.....	6
Italy.....	14
Japan.....	30
Kenya.....	3
Korea (S).....	5
Liberia.....	2
Mexico.....	3
Netherlands.....	7
New Zealand.....	7
Nigeria.....	3
Norway.....	8
Pakistan.....	2
People's Republic of China.....	8
Portugal.....	2

Senegal.....	2
South Africa.....	3
Spain.....	9
Sweden.....	10
Switzerland.....	9
United Kingdom.....	26
U.S.A.....	300
U.S.S.R.....	9

The following countries each have one member: Algeria, Colombia, Czechoslovakia, Ecuador, Ethiopia, Hungary, Iraq, Philippines, Poland, Sri Lanka, Syria, Tanzania, Thailand, United Arab Emirates, Uruguay, Yugoslavia and Zambia. Membership as of 1987-12-31 stands at 664.

IAGC's report to IUGS

IAGC, as an Affiliated Organization of the International Union of Geological Sciences (IUGS), reports annually to its parent-body. President Grunenfelder, in his report for 1987, focused on three items, namely: (1) the publication of Applied Geochemistry and the Newsletter, (2) cosponsorship of conferences with national and international organizations, and (3) the establishment of the Working Group on Applied Isotope Geochemistry. Each of these reflect activities as expressed in the objectives of IAGC. Looking forward to 1988, IAGC will be taking part in five conferences; two are planned for 1989 and three for 1990. Most of the items addressed in Dr. Grunenfelder's report are reported elsewhere in this Newsletter.

Applied Geochemistry

Our official journal will soon be in its third year of publication, and while there have been some production delays the Executive Editor informs us that by mid-1988 everything will be on schedule. The last issue of volume 2 contains selected papers on formation waters in deep sedimentary basins that relate to petroleum exploration, geothermal resources and mineral deposits; most were presented at a Penrose Conference held in March 1987.

The first issue of volume 3 is another special issue, this time the full proceedings of CHEMRAWN IV. For those not familiar with this acronym it stands for CHEMical Research Applied to World Needs and these conferences are organized by IUPAC to address important world chemical problems, in this case Modern Chemistry and Chemical Technology Applied To the Ocean and its Resources. Edward D. Goldberg is guest Editor for this special issue which reports the discussions of five panels which addressed the research needs in Oceanic reactive chemical transients, The nature of reactions on marine particle surfaces, Chemical models of sea water systems, Chemistry at the air-sea interface and Chemical processes at the ocean bottom. The conference was held in October 1987 and its rapid publication exemplifies the policy of Applied Geochemistry of pub-

lishing the proceedings of selected conferences, of appropriate length, that are of interest to our readers. Please let the Executive Editor know of any conferences or workshops that you feel would be of interest to Applied Geochemistry.

Some papers to appear in later issues of volume 3 are listed below.

YOUSIF K. KHARAKA and DANIEL J. SPECHT: The solubility of noble gases in crude oil at 25° to 100°C

PEKKA A. NURMI, ILMO T. KUKKONEN and PERTTI W. LAHERMO: Geochemistry and origin of saline groundwaters in the Baltic Shield

FUMITAKA YANAGISAWA and HITOSHI SAKAI: Leaching behaviour of a simulated nuclear waste glass in groundwater of 50 to 240°C

A. NISHRI, H.-J. HERBERT, N. JOCKWER and W. STICKLER: The geochemistry of brines and minerals from the Asse Salt Mine, northern Germany

K. NOTSU, H. WAKITA and Y. NAKAMURA: Strontium isotopic composition of oil-field and gas-field waters, Japan

R.M. LOWRY, G. FAURE, D.I. MULLET and L.M. JONES: Interpretation of chemical and isotopic compositions of brines based on mixing and dilution, "Clinton" sandstones, eastern Ohio, U.S.A.

S. KARLSSON, B. ALLARD and K. HAKANSSON: Characterization of suspended solids in a stream receiving acid mine effluents, Bersbo, Sweden

MICHAEL A. ANDERSON, PAUL M. BERTSCH and WILLIAM P. MILLER: The distribution of lithium in selected soils and surface waters of the southeastern U.S.A.

C.J. BARINAGA and S.O. FARWELL: Soil-sorbed, sulfur-containing gases: analytical methodology and preliminary application to geochemical petroleum prospecting

JAMES L. BISCHOFF, ROBERT J. ROSENBAUER, ANDRE TAVOSO and HENRY de LUMLEY: A test of uranium-series dating of fossil tooth enamel: results from Tournal Cave, France

Subscribers experiencing problems with receipt of Applied Geochemistry should contact the Executive Editor who will endeavour to sort out the problems.

IAGC-sponsored meetings

Celebration of 125th Anniversary of birth of V.I. Vernadsky

1988-03-4/12

Leningrad (03-4/5), Kiev (03-7/8), Moscow (03-10/12), U.S.S.R.

Sponsor: Soviet Academy of Sciences

Comment: The Vernadsky Institute is organizing this special scientific session, with the theme in Leningrad being "V.I. Vernadsky and contemporary science", in Kiev, "V.I. Vernadsky's studies of the biosphere and en-

vironmental protection", and in Moscow "Development of V.I. Vernadsky's ideas on contemporary geochemistry" (organized by Dr. V.L. Barsukov). Please contact Dr. Barsukov for more details.

V.M. Goldschmidt Conference

1988-05-11/13

Baltimore, Maryland, U.S.A.

Contact: Mr. William Curley, Coordinator, 410 Keller Building, The Pennsylvania State University, University Park, Pennsylvania 16802, U.S.A., (telephone: (814) 865-9173)

Sponsors: The Geochemical Society, European Association of Geochemistry, IAGC, AEG, MSA and SEGH

Comments: The conference marks the centennial year of the birth of V.M. Goldschmidt and focuses on the chemical aspects of the earth and planetary sciences. Among the topics for special symposia are: Eleventh Symposium on Geochemical Cycles; Ore-forming Processes; Environmental Geochemistry; Organic Geochemistry in Hydrocarbon Exploration; Origin and Diagenesis of Humic Substances, Coal and Kerogen; and Geochemistry of Platinum Group Metals. First circular response cards were due 1987-08-01 and symposium abstracts were due 1987-11-20. The preregistration deadline is 1988-02-15.

Geochemical Evolution of the Continental Crust

1988-07-11/16

Pocos de Caldas, Brazil

Contact: Dr. C. De Barros Gomes, Instituto de Geociencias, Universidad de Sao Paulo, Caixa Postal 20899, Sao Paulo 01498, Brazil

Sponsor: IAGC, Sociedade Brasileira de Geoquímica - SBGq and Instituto de Geociencias da Universidade de Sao Paulo

Comments: Among the proposed topics for discussion are radiogenic isotopes in geology, alteration processes, Precambrian metallogenesis, organic geochemistry, greenstone belts, and continental flood basalts. Field trips are being planned to the Precambrian iron deposits at Serra dos Carajas and the alkaline magmatic massifs at Lages and Jacupiranga.

First International Symposium on Thermodynamics of Natural Processes

1988-07-25/28

Strasbourg, France

Contact: Dr. Bertrand Fritz, Secretary-General TNP-1, Institut de Geologie, 1 rue Blessig, F-67084, Strasbourg Cedex, France (telephone: (33) 88.35.85.73; telex: ULP 870260F or CNRSCRO 890032 F)

Sponsors: IAGC Working Group on Thermodynamics of Natural Processes, International Geological Correlation Program, International Mineralogical Association, CODATA

Comments: This is the first international symposium organized by this Working Group, and will give all scien-

tists studying the thermodynamics of natural processes in geology an opportunity to present and discuss current results respecting the acquisition and verification of thermodynamic data for minerals, liquids and gases, the use of thermodynamic data in geochemical models for mass transfer calculations, steady-state equilibrium and kinetic controls, and the validation and application of geochemical models. Abstract deadline was 1987-12-01; final date for registration and payment is 1988-02-01.

Ecological Modelling and Study of Freshwater Ecosystems

1988-09

Rostov-on-Don, U.S.S.R.

Contact: Professor A.M. Nikanarov, Hydrochemical Institute, Stachky Prospect, 198, Rostov-on-Don 344090, U.S.S.R.

Sponsor: IAGC Working Group on Geochemistry of Natural Waters, Protection from Pollution, UNESCO

Comment: To be held within the framework of the Soviet-American-Hungarian collaborative agreement

Twenty-Eighth International Geological Congress

1989-07-09/19

Washington, D.C., U.S.A.

Contact: Dr. Bruce B. Hanshaw, Secretary-General, 28th International Geological Congress, P.O. Box 1001, Herndon, Virginia 22070-1001, U.S.A. (telephone: (703) 648-6053; telex: 248418)

Sponsor: IUGS

Comment: IAGC to organize six geochemical symposia

Sixth International Symposium on Water-Rock Interaction (WRI-6)

1989-08-03 to 08-12

Malvern, England

Contact: Dr. W.M. Edmunds, Secretary-General WRI-6, British Geological Survey, Maclean Building, Crowmarsh Gifford, Wallingford, Oxfordshire, OX10 8BB, England (telephone: 0491 38800, ext. 2293; telex: 849365 HYDROL G)

Sponsor: IAGC Working Group on Water-Rock Interaction

Comment: Six themes have been selected: Mass transfer modelling and reaction kinetics, Metamorphic and hydrothermal fluid reactions, Geochemistry of the solution-solid interface, Water-rock interaction - a sink and source for trace constituents?, Geochemical cycles, and Geochemistry in energy and natural resources. The four-day post-session field trip to southwest England, 08-09/12, is titled "290 million years of WRI in southwest England" and includes classic hydrothermal areas of Cornwall, a visit to an active tin mine and to the sites of the British Hot Dry Rock Experiment, and other areas of interest to sedimentary, marine and environmental geochemists.

Second International Symposium on Geochemistry of Weathering, Diagenesis and Sedimentary Processes

1990-06 (first half)

Aix-en-Provence, France

Contact: Prof. Daniel Nahon, Secretary-General GWDS-2, University of Marseille, 13397 Marseille Cedex 13, France

Sponsor: IAGC Working Group on Weathering, Sedimentary and Diagenetic Processes

15th General Meeting of the International Mineralogical Association

1990-06-28 to 07-03

Beijing, People's Republic of China

Sponsors: IMA, IAGC

Comments: IAGC-IMA Symposium on "Geochemistry, Mineralogy and Origin of Ore Deposits in Relation to Future Materials".

13th International Geochemical Exploration Symposium

1990-09

Prague, Czechoslovakia

Sponsors: AEG and IAGC Working Group on Geochemical Prospecting

Other meetings of interest

2nd International Conference on Prospecting in Arid Terrain

1988-04-26/29

Perth, Australia

Contact: Arid Terrain Conference Secretariat, The Australasian Institute of Mining and Metallurgy, P.O. Box 122, Parkville, Victoria 3052, Australia (telephone +613 347 3166, Facsimile +613 347 8525, telex AUSIM AA 33552).

Sponsors: The Australasian Institute of Mining and Metallurgy, the Institute of Mining and Metallurgy, London, and the Association of Exploration Geochemists.

Comments: Topics include the regolith, alteration haloes, remote sensing techniques, geochemical exploration methodology, hydrocarbon exploration and exploration case histories.

10th International Symposium Chemistry of the Mediterranean: Physico Chemical Characteristics of the Aquatic System

1988-05-04/12

Primosten, Yugoslavia

Contact: Dr. Marko Branica, Chemistry of the Mediterranean Symposium, Centre for Marine Research Zagreb, "Rudjer Boskovic" Institute, P.O. Box 1016, 41001 Zagreb, Yugoslavia (telephone (041) 435-111 ext. 298, telex 21383 yu irb zg)

Sponsor: Centre for Marine Research, Zagreb

Comments: Topics include theoretical assessment of the most probable distribution of species in electrolyte solutions and natural waters, determination of physico-chemical characteristics of estuarine, coastal and open ocean waters, the characterization of the particulate fraction in aquatic systems, and anthropogenic influences in the aquatic environment.

Fourth Canadian/American Conference on Hydrogeology (Fluid Flow, Heat Transfer and Mass Transport in Fractured Rocks)

1988-06-21/24

Banff, Alberta, Canada

Contact: Dr. Stefan Bachu, Alberta Geological Survey, Alberta Research Council, P.O. Box 8330, Station F, 250 Karl Clark Road, Edmonton, Alberta T6H 5X2, Canada (telephone: (403) 438-7601; telex: 037-2147)

Sponsors: Alberta Research Council and National Water Well Association

Comments: In keeping with the format established at previous conferences, ten invited speakers who are widely recognized as leaders in their field will present substantial lectures that relate to specific aspects of fluid flow, heat transfer and mass transport in fractured rocks. Among the topics to be covered by other presentations are: fracture characterization, flow and transport in isolated/discontinuous fractures, flow and solute transport in fractured saturated and unsaturated zones, geochemical/isotopic characterization of waters and flow in fractured rocks, heat extraction from fractured hot-dry-rock masses, and heat recovery from fractured geothermal reservoirs. The conference will be preceded by a two-day workshop on Fractured Reservoirs: A Review, given by Dr. M.K. Horn (formerly Director of Research, Cities Service Ltd.).

International Workshop - Deposition of Solids in Geothermal Systems

1988-08-16/19

Reykjavik, Iceland

Contact: Dr. J.S. Gudmundsson, Geothermal Division, National Energy Authority, Grensasvegur 9, 108 Reykjavik, Iceland (telex: 2339 ORKUST IS; telephone: +354-1-83600/82857; or Dr. D.M. Thomas, Institute of Geophysics, University of Hawaii, 2525 Correa Road, Hawaii 96822, U.S.A. (cable: UNIHAW; telephone: +1-808-946-6482)

Sponsors: Orkustofnun, (National Energy Authority of Iceland) and Hawaii Institute of Geophysics, U.S.A.

Comments: The workshop will address the scientific and technical aspects of solids deposition in geothermal systems, including the reservoir, wellbore, pipelines, equipment, direct use and electric power plants. Engineers and scientists are invited to submit research results, as they relate to geothermal systems, on

theoretical and experimental studies of the chemistry of silica, calcite, sulfides and other geothermal deposits, the surface and colloidal chemistry of these materials, field and design studies of solid-liquid separation, reaction rates and crystallization, solution-mineral equilibria, scaling and heat exchanger fouling, steam quality and turbine deposits, process chemistry and injection of spent fluids. In addition, geothermal engineers and scientists are encouraged to submit papers that review the state-of-knowledge in solids deposition sciences and the state-of-the-art application of this knowledge to design technology and field practices. Discussion sessions will be organized to consider future design and field strategies, and to identify research needs. There will be field trips to local geothermal fields and power plants. Abstract deadline: 1988-02-01; camera-ready papers by 1988-06-01; registration by 1988-06-01.

9th International Congress on Thermal Analysis

1988-08-21/25

Jerusalem, Israel

Contact: The Secretariat-ICTA 9, P.O. Box 394, 61 003 Tel Aviv, Israel

Sponsors: IUPAC, Israel Academy of Sciences and Humanities

Comments: Among the topics to be discussed are pyrolysis, geochemistry/mineralogy/clay science, zeolites, oil and petroleum, and coal.

10th IUPAC Conference on Chemical Thermodynamics

1988-08-29 to 09/02

Prague, Czechoslovakia

Contact: IUPAC Conference, P.O. Box 119, CS-160 00 Praha 6, Czechoslovakia (telex 122 744 vsch c [attn, THERMO-HOLUB]).

Sponsors: IUPAC and Czechoslovakian Academy of Sciences

Comments: Topics include phase equilibria, aqueous systems and data treatment.

10th Geothermal Workshop

1988-11-02/04

Auckland, New Zealand

Contact: Dr. Keith Nicholson, Geothermal Institute, University of Auckland, Private Bag, Auckland, New Zealand (telephone (NZ code) 9 737 999; telex NZ 21480 UniLib; Fax 0064 9 371183)

Sponsor: The Geothermal Institute, University of Auckland

Comments: Three days of technical sessions, presentations and discussions will cover all aspects of geothermal systems. Topics include specific case studies, hydrothermal alteration, geochemistry of hydrothermal fluids and their deposits, geophysics of geothermal systems, and exploration and development of geothermal resources. The meeting will be run on an informal basis

and will provide a relaxed forum for the exchange of ideas and information on geothermal systems worldwide. All accepted papers are to be published in the Proceedings which will be presented to all participants.

International Conference on Analytical Chemistry

1989-07-30 to 08-05

Cambridge, England

Contact: The Secretary, Analytical Division, Royal Society of Chemistry, Burlington House, London W1V 0BN, England

Sponsor: Analytical Division, Royal Society of Chemistry

Comments: Includes symposia on chromatography, atomic spectroscopy and general chemical analysis.

32nd IUPAC Congress

1989-08-2/7

Stockholm, Sweden

Contact: IUPAC, c/o Stockholm Convention Bureau, Box 6911, S-102 39 Stockholm, Sweden

Sponsor: International Union of Pure and Applied Chemistry (IUPAC), of which IAGC is an affiliated organization

Comments: Of the seven sections, the second is titled "Atmospheric and Marine Chemistry" and the topics to be discussed are atmospheric chemistry, air-sea interface chemistry, marine chemistry, marine biochemistry, and analytical air and sea chemistry.

Ninth International Clay Conference

1989-08-28 to 09-02

Strasbourg, France

Contact: Dr. Helene Paquet, Secretary-General, 9th International Clay Conference, Institut de Geologie, 1 rue Blessig, F-67084 Strasbourg Cedex, France (telephone: (88) 35.66.03)

Sponsor: Association Internationale pour l'Etude des Argilles (AIPEA)

Comments: Chairman of the Organizing Committee is Professor Yves Tardy (Chairman, IAGC Working Group on Weathering, Sedimentary and Diagenetic Processes).

Among the proposed topics are geochemistry of clay minerals and thermodynamic approaches to clay-water interactions, clay minerals in soils and weathering, organic matter-clay associations, sediment diagenesis and hydrothermal alterations, and industrial and environmental applications such as waste disposal. The associated field trip is subtitled "clays, castles and wines", and if it is anything like the WRI-2 field trip in 1977, it will be an outstanding success!

SCOPE reports

The International Council of Scientific Unions, of which IUGS is a member, publish a regular newsletter called SCOPE (Scientific Committee on Problems of the Environment). Enquiries should be made to SCOPE Secretariat, 51 Boulevard de Montmorency, 75016 Paris, France (telephone: 33 (1) 45 25 04 98; telex: 630 553F). They also publish a series of SCOPE Reports, some titles of which may be of interest to members of IAGC, for example, SCOPE 33: The Nitrogen Cycle in Marine and Coastal Ecosystems (1987; in press); SCOPE 31: Lead, Mercury, Cadmium and Arsenic in the Environment (1986, 360 pp.); SCOPE 29: The Greenhouse Effects, Climatic Change and Ecosystems (1986, 541 pp.). Please write for full list and prices to John Wiley and Sons Ltd., Baffins Lane, Chichester, Sussex, PO19 1UD, England.

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