

International Association of Geochemistry and Cosmochemistry

President

Valery L. Barsukov
Director
Vernadsky Institute of Geochemistry
and Analytical Chemistry
Academy of Sciences of the U.S.S.R.
Moscou 117334. U.S.S.R.

Vice-Presidents

Mark H. Grünenfelder Swiss Federal Institute of Technology Sonneggstrasse CH-8092 Zurich. SWITZERLAND

Brian Hitchon Alberta Research Council 11315-87 Avenue Edmonton, Alberta T6G 2C2 CANADA

NEWSLETTER

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Edited by S. DEUTSCH

Secretary

Sarah Deutsch Universite Libre de Bruxelles Laboratoires de Mineralogie et de Petrologie Avenuc F.-D. Roosevelt, 50 1050 Bruxelles, BELGIUM

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University of Kansas
Lawrence, Kansas 66045, U.S.A.

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Department of Terrestrial Magnetism
Carnegic Instituttion of Washington
5241 Broad Branch Road, N.W.
Washington, D.C. 20015, U.S.A.

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I. REYKJAVIK COUNCIL MEETING

The session of the IAGC Council Meeting will be held on Saturday 14th and Sunday 15th August 1982 in Reykjavik before the opening of the IAVCEI/IAGC Symposium on "Generation of major basalt types", 15-22/8/82. One additional session is planned with IAVCEI representatives on Monday 16th August.

Proposed agenda:

1. The adoption of the nominating committee staff;

2. Discussion of the work of the "Geochemistry and Cosmochemistry" section at the International Geological Congress in Moscow, 1984;

3. Organization of the new working groups "International standards" and "International Geochemical Teaching";

4. Financial policy for the period of 1983;

- 5. Discussion of the work of the WG "Geochemistry of Health and Desease" and "Extraterrestrial Geochemistry";
- 6. General Secretary's report.

II. INFORMATION ABOUT THE SYMPOSIUM IN ROSTOV-on-DON

The IInd International Symposium on Geochemistry of Natural Waters took place in Rostov-on-Don (USSR) from May 17th till May 22nd, 1982. More than 100 representatives from 10 countries took part in the work of the symposium.

Topics of the symposium were :

- 1. General regularities of formation of natural water chemical composition;
- Geochemistry of waters of sedimentary layer;
 Geochemical bases for natural water protection.

After the end of the symposium, the excursion to Essentuky, Pyatigorsk, Kislovodsk and Terskol was organized with the aim of studying the regional mineral waters' composition.

III. 27th INTERNATIONAL GEOLOGICAL CONGRESS, MOSCOW 1984

The first circular is available. All correspondence should be addressed to Organizing Committee of the 27th I.G.C. - Institute of the Lithosphere 22, Staromonetny, Moscow, 109 180, USSR

Among the different sections, the one relative to Geochemistry and Cosmochemistry will be as follows.

C.11. Geochemistry and cosmochemistry

Conveners : V.L. Barsukov (USSR), M.H. Grünenfelder (Switzerland), B. Hitchon (Canada) C.11.1 Themes

C.11.1.1. Geochemical cycles and natural laws controlling chemical element distribution in the Earth's crust

Regularities of geochemical cycles of elements and problems of the Earth's crust, ocean and atmosphere evolution. Models of chemical structure of the Earth's crust, laws controlling element distribution. Geochemistry of sedimentary and metamorphic processes (physico-chemical analysis and observations).

Chairmen : A.B. Ronov (USSR), K.H. Wedepohl (FRG), A.A. Yaroshevsky (USSR).

C.11.1.2. Geochemistry of ore-forming processes

Conditions of magmatic ore formation (eutectic saturation of melt by ore component, liquid immiscibility, layering, etc..). Forms of transportation and conditions of ore element deposition from hydrothermal solutions, factors controlling ore deposition and the role of "geochemical barriers".

Chairmen: I. Barnes (USA), V.L. Barsukov (USSR), Sh.E. Esenov (USSR), N.P. Laverov (USSR).

C.11.1.3. Geochemsitry of magmatic processes

Geochemistry of elements in major types of magmatic formations. Fractionation of rare elements in magmatic processes. Mantle and crustal sources of magmas according to the data of trace element geochemistry. Structure of magmatic melts and glasses.

Chairmen: N.I. Khitarov (USSR), L.N. Kogarko (USSR), H.S. Yoder (USA)

C.11.1.4. Applied geochemistry, geochemical methods of ore prospecting and earthquake prediction

Geochemical prospecting for hidden mineralization. Geochemistry and ecology. Geochemical methods of earthquake prediction.

Chairmen: J. Goni (France), S.V. Grigoryan (USSR), A. Panaetov (Bulgaria), V.L. Tauson (USSR).

C.11.1.5. Geochemistry of stable isotopes

Theoretical and experimental investigation of isotope fractionation in natural processes. Isotope organic geochemistry. Study of the Earth's crust - mantle system based on isotopic geochemical data. Isotope geochemistry in ore processes.

Chairmen: E.V. Bibikova (USSR), E.M. Galimov (USSR), G.J. Wasserburg (USA)

C.11.1.6. Origin and evolution of the Solar system

Nucleosynthesis. Nuclear, physical and chemical processes in supernova's expanding shell and in the interstellar dust. Processes in the protoplanet nebula.

Chairmen: M. Honda (Japan), A.K. Lavruchina (USSR), H. Wanke (FRG).

C.11.1.7. Geochemistry of extraterrestrial matter

Petrochemistry, mineralogy and geochemistry of lunar rocks. Geochemistry of the lithosphere of Venus and Mars.

Chairmen: V.L. Barsukov (USSR), R. Taylor (Australia)

C.11.1.8. Geochemistry and mineralogy of meteorites

Ages of meteorites measured by radiogenic and cosmogenic isotopes. Chemical fractionation during various stages of meteoritic matter evolution. Types of meteoritic matter, fractions, minerals and distribution of chemical elements in them; structural features of meteorites.

Chairmen: D. Lal (India), E. Sabo (Hungary), A.A. Yavnel (USSR).

S.11.2. Intersectional Symposia

S.11.2.1. Geochemistry, composition and structure of the Earth's upper mantle

1. Mineralogy and chemical composition of upper mantle rocks; geochemical and geophysical features of its heterogenity

2. Fluid regime and redox state of upper mantle

3. Geodynamical processes in upper mantle and their connection with phase transformation and chemical differentiation

Chairmen: A.A. Kadik (USSR), A.E. Ringwood (Australia), V.S. Sobolev (USSR) In collaboration with sections: Petrology, Geophysics, Tectonics.

S.11.2.2. Geochemistry of oil-forming processes

1. Peculiarities of oil and gas formation in sedimentary basins of the ocean

2. Comparative character of oil and gas formation in different lithological types of sedimentary rocks

3. Quantitative methods of geochemical parametres evaluation of oil and gas formation

Chairmen: A.A. Geodekyan (USSR), B. Tissot (France) V.Ya. Trotsyuk (USSR) In collaboration with section: Oil and gas deposits.

S.11.2.3. Rare gases in the investigation of origin and history of the Earth and other planets

1. Meteoritic and solar rare gases

2. Rare gases in the atmosphere of planets and their origin

3. Rare gases of the Earth: isotopic composition variations and their application for geochemical and planetary models.

Chairmen: Yu. A. Shukolyukov (USSR), G. Wetherill (USA)

Special Symposium of the International Association of Geochemistry and Cosmochemistry Three meetings of IAGC will be held including General Assembly.

IV. LIST OF BOOKS ON GEOCHEMISTRY PUBLISHED IN 1978-1981

The following titles were communicated by the chairmen of the IAGC working groups.

1. WORKING GROUP ON GEOCHEMICAL PROSPECTING

Chairman: Dr L.V. TAUSON
Director, Vinogradov, Institute of Geochemistry,
P.O.B. 701 - 664033 IRKUTSK - USSR

Barsukov V.L., Grigoryan S.V. & Ovchinnikov L.N. (1981). Geochemical methods of searching for ore deposits. Moscow, Nauka.

Verchovskaya L.A. & Sorokina E.P. (1981). Mathematical modelling of the geochemical field for prospecting purposes. Moscow, Nedra.

Grigoryan S.V. (Editor) (1981). Geochemical methods of the assessment of a hidden mineralization. Moscow, Nauka.

Polikarpochkin V.V. (Editor) (1981). Geochemical methods of searching for ore deposits. Part 1. Moscow, Nauka.

Lasko E.M., Lyakhov Y.V. & Piznur A.V. (1981). Physico-chemical bases of prediction of postmagmatic mineralization upon thermobarogeochemical data. Moscow, Nedra.

Ovchinnikov L.N. (Editor) (1981). Enhancing the effectiveness of geochemical methods of search in the zone of BAM (Baikal-Amur Railway). Novosibirsk, Nauka.

Shilo N.A. (1981). Fundamentals of the teaching on placers. Moscow, Nauka.

2. INTEREST GROUP ON WATER-ROCK INTERACTION

Chairman: Dr B. HITCHON
Alberta Research Council, 11315-87th Avenue Edmonton, Alberta, Canada, T6G 2C2

Berner R. (1980). Early Diagenesis - a theoretical approach. Princeton University Press.

- Covers all aspects of diagenesis, especially chemical models.

Jenne E.A. (1979). Chemical modelling in aqueous systems. Amer. Chem. Soc. Symposium Series n° 93.

- an excellent series of papers.

Rickard D. & Wickman F.E. (Editors) (1981). Chemistry and geochemistry of solutions at high temperatures and pressures. Pergamon Press.

- Proceedings of a Nobel Symposium organized by the Royal Swedish Academy of Sciences,

 Proceedings of a Nobel Symposium organized by the Royal Swedish Academy of Sciences, September 1979. Published as volumes 13 and 14 of the journal Physics and Chemistry of the Earth.

Stumm W. & Morgan J.J. (1981). Aquatic chemistry (2nd edition). - This is now right up to date and expanded in parts relevant to WRI.

Tardy Y. (1980). Géochimie des Interactions entre les eaux, les minéraux et les roches. S.A.R.L. Eléments, 7 Place Parmentier, 65000 Tarbes, France.

- Seven papers by ten geochemists, edited by that eminent geochemist Yves Tardy, Secretary-General for WRI-2 in 1977.

25th International Geological Congress (1980). Geochemistry in Groundwater.
- Special issue of the Journal of Hydrology, Vol. 54, for papers presented at the IGC, and containing several papers of interest to WRI.

Proceedings, 3rd International Symposium on Water-Rock Interaction (1980).

- 75 papers on all aspects of water-rock interaction. Available at \$ 20.00 Canadian (prepaid) from Dr. B. Hitchon, Alberta Research Council, 11315 -87th Avenue, Edmonton, Alberta, Canada T6G 2C2.

3. WORKING GROUP ON EXTRATERRESTRIAL GEOCHEMISTRY

Chairman : Dr N. GREVESSE

Institut d'Astrophysique - Université de Liège 4200 Cointe-Liège - Belgium.

C. Ponnamperuma (Editor) (1981). Comets and the origin of life. D. Reidel Publ.Cy.

Dermott S.F. (Editor) (1978). The origin of the solar system. Wiley Interscience.

The elements and their isotopes in the universe (1979). Institut d'Astrophysique, Université de Liège, Belgique.

Oro J. (Editor) (1979). Experimental approaches to comets. Lunar and Planetary Institute, Houston, Texas.

Barnes C.A.(Editor) CLAYTON D.D., SCHRAMM D.N., (1981). Essays in nuclear astrophysics. Cambridge University Press.

Mason B., (1979). Cosmochemistry, Part 1: Meteorites, chapter B in Data of Geochemistry. Sixth Edition. Fleischer (Editor). Geological Survey Professional Paper 440-B-1, U.S. Government Printing Office, Washington.

4. WORKING GROUP ON LATERITES AND LATERIZATION

Chairman : Dr J. GONI Bureau de Recherches Géologiques et Minières - B.P. 6009 45018 Orléans, Cedex - France.

Yariv S. (1979). Geochemistry of colloidal systems. Berlin Springer.

- The author reviews the properties of colloids and the evolution of geological systems, the contribution of colloidal science to geochemistry and the outlook for the future.

Cembranos Perez M. (1978). Influence of the mother-rock on the chemical and mineralogical constitution of the different kinds of soils from Central West Spain. PHD issued by ENADIMSA (Serrano 116, Madrid 6).

- The author studies the interaction of different parameters in geology, climate, alteration, mineralogical nature...

Pillai Nair U (1978). Aluminium species in soil solutions. PHD issued by the B.G.R. (Hanover).

- The following problems are studied: intersticial water in soils, pH, beheaviour of Al in different systems.

Bach A. (1980) Evolution in outcropping conditions of uraniferous shales bearing organic matter. Thesis 3d cycle, Nancy.

- The uraniferous shales from the permian basin of Aumance have been studied in this thesis to precise the kind of transformation of organic matter and to study the beheaviour of uranium during this phenomenon. The samples were collected at

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the outcrop and in drillings. After a brief presentation of the geological outline of the basin and of the samples which were studied, the binding between uranium and organic matter is clearly shown and the degree of this binding is estimated. A detailed study of the structure of the organic matter is essential before typing, by simple experimentation, to identify the molecular structures accountable for this binding. By the study of a homogeneous sampling in a profile and that of the transformation of an altered sediment into a non altered one, the evolution of organic matter and of uranium and their relations in outcropping conditions are outlined. The metallogenic consequences of this phenomemon is finally approached.

Harmsen K. Behaviour of heavy metals in soils. Thesis of Agricultural University, Department of soil fertilizers, Wageningen, NLD.

- Study of transport and accumulation of heavy metals in soils from soils existing in the vicinity of a polluting source. Experience of cationic exchange. The solubility of heavy metals is largely responsable for their mobility. It depends of the pH, Redox potential, mineralogical composition and texture of the soil.

Leprun J.C. (1979). The ferruginous cuirasses from the crystalline countries of dry occidental Africa. Genesis. Transformation. Thesis Sci. Strasbourg. Sci. Geol. Mém. 58.

Pion J.C. (1979). Alteration of basic cristallyne massifs in tropical dry zone. Study of some topo-sequences in Haute Volta. Thesis Sci. Strasbourg, Mém. 57.

Mosser Ch. (1980). Geochemical study of some trace elements in the clays from alterations and sediments. Thesis Sci. Strasbourg, Sci. Géol., Mém. 63.

Noli de Campos E. (1980). Study of alteration in humid tropical country of a precambrian formation with itabirites and volcanic rocks. Serra dos Carajas. Thesis Sci. Strasbourg.

Noach Y. (1979). Under-water alteration of basic volcanic glasses. Testing of palagonitisation. Thesis 3rd cycle, Strasbourg.