



THE GEOCHEMICAL NEWS

Newsletter of the Geochemical Society

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Inquiries and announcements regarding *Geochemical News* should be sent to S.B. Shirey, Carnegie Institution of Washington, 5241 Broad Branch Rd., NW, Washington, D.C. 20015 USA.

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UPCOMING MEETINGS

March 24-28, 1991 - EUG VI. European Union of Geosciences, Strasbourg, France (c/o EUG VI, Palais de Congres, Place de Bordeaux-Wacken, F-67082 Strasbourg, France, Ph: 33 88-24 29 99; FAX: 33 88-25 61 96).

April 14-19, 1991 - American Chemical Society National Meeting, Atlanta, GA. (ACS Meetings Department, 1155 16th Street, NW, Washington, DC 20036. Ph:800-227-5558 or 202-872-6059). OGD members of the GS note the special symposium on Marine Organic Geochemistry at this meeting. Contact Phil Meyers, Geological Sciences, University of Michigan, Ann Arbor, MI, 48019-1063, Ph: 313-764-0597, FAX: 313-763-4690.

May 27-29, 1991 - Geological Association of Canada/Mineralogical Association of Canada/Society of Economic Geologists Annual Meetings, Toronto, Ontario. (J. Fawcett, Department of Geology, University of Toronto, Toronto, Ontario, Canada M5S 1A1. Ph: 416-978-3027).

May 28-June 1, 1991 - AGU Spring Meeting, Baltimore, MD, USA (AGU, 2000 Florida Ave., NW, Washington, DC 20009, Ph: 202-462-6900).

June 10-14, 1991 - AGU Chapman Conference on Studying the Earth's Climate Using Continental Isotope Indicators, Jackson Hole, WY. (Meetings, American Geophysical Union, 2000 Florida Ave., NW, Washington, DC 20009, Ph: 202-462-6900, FAX: 202-328-0566).

August 11-24, 1991 - XX General Assembly International Union of Geodesy and Geophysics (IUGG), Vienna, Austria, (IUGG '91 Organizing Committee, c/o ZAMG Hohe Warte 38, A-1190 Vienna, Austria, Ph: 43 222 36 44 53, ex. 2001, FAX: 43 222 369 1233).

September 16-19, 1991 - 2nd International Symposium on Environmental Geochemistry, Uppsala, Sweden. (Mats Olsson, Department of Forest Soils, Swedish University of Agricultural Sciences, Box 7001, S-75007, Uppsala, Sweden, Ph: 46 18 672212, FAX: 46 18 300831).

September 18-21, 1991 - Geotechnica, International Trade Fair and Congress for Geosciences and Technology, Cologne, Germany. (See following announcement in newsletter).

October 20-24, 1991 - GSA Annual Meeting, San Diego, California, (GSA Meetings Department, Geological Society of America, 3300 Penrose Place, P.O. Box 9140, Boulder, CO 80301, Ph: 303-447-2020, FAX: 303-447-1133). OGD members of the GS should note the special symposium entitled "Survival of Organic Matter at High Temperatures" to be given Sunday, October 20. See detailed preliminary program in newsletter which lists this and other symposiums.

June 14-21, 1992 - Society of Economic Paleontologists and Mineralogists (SEPM), Calgary, Alberta. OGD members of the GS note the symposium on "Molecular and Isotopic Stratigraphic Records of Paleoenvironmental Change" to be held at this meeting. Contact Lisa Pratt, Biogeochemical Labs, Geology Building, Indiana University, Bloomington, IN 47405, Ph: 812-855-5610, FAX: 812-855-7899.

June 28-July 1, 1992 - North American Paleontological Congress V, Chicago, IL. OGD members of the GS note the symposia on "Biomolecular and Isotopic Paleontology" and "Molecules in the Fossil Record" to be held at this meeting. Contact John Hayes, Biogeochemical Labs, Geology Building, Indiana University, Bloomington, IN 47405, Ph: 812-855-5610, FAX: 812-855-7899.

July 13-22, 1992 - 7th International Symposium on Water-Rock Interaction, Park City, Utah, USA. Organized by the WRI Working Group of the International Association of Geochemistry and Cosmochemistry (IAGC). See following announcement in newsletter.

THEME SESSIONS: AN OPPORTUNITY FOR GEOCHEMICAL SOCIETY MEMBERS

Geochemical Society members can have a strong influence on the technical content at our annual meeting held each fall with the Geological Society of America through the use of Theme Sessions. The idea behind Theme Sessions is to 1) make the technical sessions more responsive to the desires of individual members and 2) provide numerous important focal points for submitted abstracts without resorting to Symposia, which are usually controlled by one or a small number of individuals. It is too late to propose such sessions or topics for the 1991 GSA Meeting in San Diego, but the timing is right for the 1992 GSA meeting, October 26-29 in Cincinnati, Ohio. For further information, please contact the GS Program Committee Chairman: L. Peter Gromet, Department of Geological Sciences, Brown University, Providence, RI 02912 (Ph:

401-863-1920). It is important that suggestions for possible theme sessions be submitted to Peter Gromet before January, 1992.

GEOCHEMICAL SOCIETY SPRING COUNCIL MEETING

The Spring 1991 Geochemical Society Council Meeting will be held in Baltimore, MD on Tuesday, May 28, 1991 from 6:00 pm to 10:00 pm in a room of one of the local meeting hotels. AGU will not be able to finalize room arrangements until mid-April so those needing to attend the meeting will be contacted directly by the secretary.

GEOCHEMICAL SOCIETY LECTURE TOUR

Dr. Stephen Moorbath F.R.S., from the University of Oxford, will make a Geochemical Society sponsored lecture tour during the period June 3-14, 1991. Dr. Moorbath, International Councilor for the GS, is scheduled to speak at Brown University, Providence, R.I. then travel to the west coast of the U.S., speaking at the University of Washington at Seattle, the U.S. Geological Survey at Menlo Park, the University of California at Santa Cruz, and the University of California at Los Angeles and the University of New Mexico at Los Cruces. Dr. Moorbath's talk is entitled "*The Interaction of Crust and Mantle in Continental Magmatism*". Faculty and students of all levels are invited to attend. The exact dates are still being finalized; details will be available through the host institutions or contact GS International Secretary Julie Morris at (Ph: 202-686-4391).

CALL FOR PAPERS:GEOCHEMICAL KINETICS;FIELD VS LABORATORY RATES

A Geochemistry Society Special Session at the 1991 Meeting of the Geological Society of America, San Diego, CA, October 21-24, 1991

Recent advances in measurement of mineral reaction rates in the laboratory have allowed quantitative prediction of *in situ* reaction kinetics in the field. Unfortunately, many discrepancies between field estimates and laboratory measurements of rates of reaction have been observed (e.g. rates of feldspar weathering, isotope exchange in rock-water interaction, magma crystallization), suggesting that the errors in measurement or problems in model extrapolations need to be addressed. We solicit papers from all disciplines of geology and from laboratory or theoretical kineticists as well as field-oriented geoscientists to address the twin problems: 1) extracting mineral reaction rate data from field observations and 2) extrapolating kinetic data from the laboratory to the field.

Abstracts should be submitted in the normal fashion to GSA by July 3, and the category of the abstract should be marked "Geochemistry (Other)". A copy of the abstract should also be sent to Susan L. Brantley, Dept. of Geosciences, Pennsylvania State University,

University Park, PA 16802. A copy of the abstract form can be obtained by writing the Geological Society of America, 3300 Penrose Place, P.O. Box 9140, Boulder, CO 80301. All presentations will be oral. Questions about the session can be addressed to Sue Brantley (814-863-1739) or Art White (415-329-4519).

GEOTECHNICA - INTERNATIONAL TRADE FAIR AND CONGRESS

The preservation of the Earth as a challenge to science and technology will be the central theme of the Congress for Geosciences and Technology which will take place in Cologne, Germany, September 18-21, 1991. This international congress has been conceived for the first time as an interdisciplinary forum of information in the service of an intact planet. It will be oriented around this central theme and be organized to cover four fundamental allied topics: 1) The geobiosphere in the process of change, 2) Data registration and exploration of the earth's system, 3) Exploitation of the geobiosphere and 4) Adaptation of the results for environmental protection. GS members can obtain more information and registration forms from: C.C.M. Cologne Congress Management GmbH, Postfach 180180, D-5000, Koln 1, Germany, Ph: 02 21/23 64 13, FAX: 02 21/24 94 47.

7th INTERNATIONAL SYMPOSIUM ON WATER-ROCK INTERACTION (WRI-7)

This conference, planned for geochemists and hydrogeochemists and organized by the WRI Working Group of the International Association of Geochemistry and Cosmochemistry (IAGC) will place equal emphasis on all environments of water-rock interaction from low to high temperature and pressure as well as methods and applications. General topics include the following: unsaturated and soil zones, ground-water environment, sedimentary basins, metamorphic environments, magmatic environments, geothermal systems and methods (including isotopic approaches, experimental approaches, theoretical modelling and analytical techniques). Special theme sessions include the following: weathering processes, mineral-fluid interface geochemistry, saline lakes and evaporites, dissolved organics/bacteria-inorganic interactions, geochemical cycles, geochemical responses to global climate change, saline geothermal systems, fluids in high-pressure metamorphism, fluids in subduction zones, aqueous speciation and breakthroughs in isotopic and analytical technology. Abstracts due November 1, 1991. For more information contact: Yousif Kharaka, Secretary-General WRI-7, USGS, MS 427, 345 Middlefield Road, Menlo Park, CA 94025, USA, Ph: 415-329-4535, FAX: 415-329-5110.

ENVIRONMENTAL GEOCHEMISTRY REPORT RELEASED

The U.S. Geological Survey has released Circular 1033, "Proceedings of a U.S. Geological Survey workshop On Environmental Geochemistry", 1990, 194p. The circular contains 43 short papers

that give a sampling of environmental geochemistry research done at the U.S. Geological Survey through the mid-1980's. The papers cover a broad spectrum of the field with emphasis on the elements selenium, copper, molybdenum, and household radon; on diverse measurement techniques including airborne radioactivity, field geochemistry, and ground penetrating radar; on environments such as the San Joaquin Valley and San Francisco Bay, California, and Massachusetts harbors; and on materials such as stream sediments, plants, and reservoir rocks. A limited number of copies of this circular are available free upon request from Bruce R. Doe, U.S. Geological Survey, 923 National Center, Reston, VA 22092 (Ph: 703-648-6205).

THIRD GOLDSCHMIDT CONFERENCE

The Third Goldschmidt Conference will be held May 8-10, 1992, (Friday to Sunday noon) at the Hyatt Town Center in Reston, Virginia, and Bruce R. Doe has been appointed Chairman. The Hyatt Town Center was completed in the fall of 1990 and is in a new downtown area just being completed. It is about 12 km from Dulles Airport, 1.5 km from the U.S. Geological Survey, and roughly 40 km from downtown Washington, D.C. (with bus access). The hotel will pick up people from Dulles Airport at no charge. The hotel room charge will be \$86/night (including tax), and we will be paying \$1500 for meeting rooms. These are excellent rates, considerably better than the 1990 rates (for example Hunt Valley Inn charged \$96/night and \$3000 for meeting rooms). Tentative plans are to have the reception and banquet at the USGS the evening of Saturday May 9. The Goldschmidt Conference will close on the Sunday noon before the American Geophysical Union spring annual meeting in Montreal to permit those who wish to continue on to the AGU.

The five societies that cosponsored the 1990 Goldschmidt Conference have been invited to cosponsor the 1992 meeting as well. Cosponsors also are invited to hold a full-day or half-day symposium to be held at the conference. Two cosponsoring societies have proposed symposia so far (see list below). At present, the Geologic Division of the U.S. Geological Survey and the Geochemistry Section of the American Chemical Society (ACS/GS) have pledged some financial support. The Association of Exploration Geochemists (AEG) will take the matter up at their council meeting in late March.

The following are the tentative titles and principal organizers of the symposia accepted for the 1992 Goldschmidt Conference (as of 27 February 1991):

Milan Pavich:	<i>Geochemical and Isotopic Record of Global Change.</i>
Robert Zartman:	<i>Isotopic and Trace Element Modeling.</i>
Pat Shanks:	<i>Advances in Laser and Ion Probe Mass Spectrometry.</i>

Tony Lasaga:	<i>Ab-initio Methods.</i>
Lee Kump:	<i>Geochemical Cycles.</i>
H. Ohmoto:	<i>Symposium in Honor of H. Holland.</i>
E. Bruce Watson:	<i>Geochemistry of Trace Minerals.</i>
James J. Papike:	<i>Trace Element Crystal Chemistry of the Rock-Forming Silicates.</i>
Donald D. Runnells (AEG):	<i>Geochemical Exploration for Mineral Deposits.</i>
James Davis (ACS/GS):	<i>Surface Chemistry of Natural Materials.</i>
J. Donald Rimstidt:	<i>Measurement and Estimation of Kinetic and Thermodynamic Data for Low-temperature Geochemistry.</i>

There is still time to propose symposia, and it is hoped to add particularly symposia on marine geochemistry, planetary geochemistry, metamorphic petrology and mantle geochemistry. Please contact Bruce R. Doe, U.S. Geological Survey, 923 National Center, Reston, VA 22092 (Ph: 703-648-6205). Symposia will have both invited speakers and submitted papers. No general oral sessions are planned; however, poster sessions will be available for non-symposium contributions. Abstract forms will be distributed later. A short course is being considered and a few field trips will be organized.

For your long-range planning, the 1994 Goldschmidt Conference is planned to be held in Europe.

CALL FOR NOMINATIONS FOR GEOCHEMICAL SOCIETY AWARDS
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This is a reminder that nominations are being accepted for the three awards that the Geochemical Society confers: the V.M. Goldschmidt Award, the F.W. Clarke Award and the Alfred Treibs Award. The Goldschmidt Award, consisting of a gold medal and a certificate, shall be made yearly for major achievements in geochemistry or cosmochemistry (nomination deadline for the 1992 award: 12/1/91). The Clarke Award, consisting of a medal and a certificate, shall be made yearly to a young scientist for a single outstanding contribution to geochemistry or cosmochemistry, published as either a paper or a series of papers on a single topic. The award must be received no later than the year of the recipient's thirty-fifth birthday (nomination deadline for the 1992 award: 11/15/91). The Treibs Award, consisting of a gold-filled medal and a certificate, shall be awarded every odd-numbered year for major achievements, over a period of years, in organic chemistry. Nominations are still open for the 1991 medal. Those interested in making a nomination for any of these awards should consult the April issue of *Geochimica et Cosmochimica Acta* and contact directly the appropriate person on next page:

V.M. Goldschmidt Award:

Dr. E.A. Mathez
American Museum of Natural History
Department of Mineral Sciences
New York, New York 10024, USA
Ph: 212-769-5379 Fax: 212-769-5339

F.W. Clarke Award:

Dr. G.W. Lugmair
University of California, San Diego
Scripps Inst. of Oceanography
Code A-012-L
La Jolla, CA 92093, USA
Fax: 619-534-0784

Alfred Treibs Award:

Dr. Philip A. Meyers
Dept. of Atmospheric and Ocean Sciences
University of Michigan
Ann Arbor, MI 48109-2143, USA
Fax: 313-763-4690

A MEMORIAL FOR LOUIS H. AHRENS

Louis Ahrens was born in South Africa in 1918, a descendant of Lutheran missionaries. During his childhood, he traveled widely across South Africa with his father, who was a judge dealing with native affairs. Louis developed a lifelong love for the African landscape as a result of these early experiences, which included meeting in 1931, on the 50th anniversary of Isandhlwana and Rorkes Drift, Zulus who had taken part in these battles.

Following early work in South Africa where he was a Senior Analytical Chemist in the Government Metallurgical Laboratory in Johannesburg, he went to MIT in 1946. Among his earliest scientific works were important papers on the geochemistry of thallium and rubidium, a theme to which he frequently returned. In 1949, he published a landmark paper in the Bulletin of the Geological Society of America on the geochemical basis for Rb-Sr dating, a prescient paper which went far to establish that method as a viable technique for geochronology. The clarity and perception of this paper immediately established his international reputation. Meanwhile he made major progress in emission spectroscopy. In 1950 he published the definitive work on that difficult analytical art, casting a flood of light on the basic behaviour of silicate powders in d.c. arcs.



In 1954, he moved to Oxford as Reader in Mineralogy to assist L. R. Wager in building up a geochemical and geochronological team. Both at MIT and Oxford, he delved into the fundamentals of geochemistry seeking always to understand the scientific basis behind the observations. This led him to develop a new table of ionic radii, which was widely used. He emphasized the importance of ionization potentials as a guide to the complex behaviour of elements in mineral lattices, preferring to use a measurable scientific property rather than more empirically based notions such as electronegativity. Among his wide ranging interests were the systematics of isotopic abundances and the log-normal distribution of the chemical elements in rocks and minerals. He cared deeply about the quality of analytical data and was a leading proponent of the necessity for inter-laboratory calibration, a precept still not universally heeded. He was an early editor of *Geochimica et Cosmochimica Acta* and was very active in international affairs, being, among many other activities, President of the International Association of Geochemistry and Cosmochemistry.

In 1956, he was attracted to Chair in Chemistry at the University of Cape Town where he proceeded to develop geochemistry as a discipline. Beginning as a sub-department in Geology, it became one of the earliest fully fledged Departments of Geochemistry, when, in 1961, he took over as Professor of Geochemistry, continuing in that capacity until increasing ill-health caused him to retire in 1978. He continued for a further five years as a Special Senior Research Fellow. The present flourishing state of the department in Cape Town is a great tribute to his foresight. His scientific contributions were immense. It is fair to say that in the fifties, he was the leading geochemist of the period. He had great influence over his colleagues and students, due both to his obvious love of the subject, and to his extraordinarily generous nature and open personality. He was thoughtful, cared for his junior colleagues, was very helpful and always accessible. He had a delightful sense of humor so that it was always a pleasure to be in his company. Like many scientists, he was fond of classical music, particularly enjoying the symphonies of Haydn. He did not hesitate to question established wisdom and he influenced a generation of workers both to look clearly at, and to write clearly on scientific problems. In an era much devoted to descriptive work, as geochemists toiled to follow the goldschmidtian precepts to discover the "abundance and distribution of the elements in nature" he always sought to understand the basic science behind the flood of analytical data.

Throughout his life he was ably and loyally supported by his wife, Eve and by his family, Yolanda, Wendy and Ian. It was a great privilege to have been associated with this remarkable person, and it is both a personal and scientific tragedy that in later years, ill-health prevented the full flowering of his work. His passing marks the end of an era.

Ross Taylor
Research School of Physical Sciences
Australian National University

GEOCHEMICAL SOCIAL EVENTS, 1991 ANNUAL MEETING

The following is a preliminary schedule of events of interest to Geochemical Society Members at the 1991 Annual Meeting with the Geological Society of America, October 20-24, San Diego, California.

- SUN 1:00- 5:00 PM...SYMPOSIUM, ORGANIC GEOCHEMISTRY DIV.
"Survival of Organic Matter at High
Temperatures"
- MON 11:00-12:00 AM...PRESIDENTIAL ADDRESS, by James J. Papike
- 12:30- 2:00 PM...GEOCHEMICAL SOCIETY LUNCHEON AND AWARDS
- TUE 1:30- 5:30 PM...GEOCHEMICAL SOCIETY SYMPOSIUM
*"MASHing and Smashing: Geochemical
Evidence for Long-term Crust-mantle
Interaction Along A Cratonic Margin,
NW United States"*
- 5:30- 7:30 PM...MSA-GS RECEPTION

Organic Geochemistry Division Symposium

"Survival of Organic Matter at High Temperatures"

The general purpose of this symposium is to emphasize the wide array of perspectives on the survival of organic matter at high temperatures: how this may influence our views on the geologic record of organic matter, on the origin of life (how and where it started) and the kinds of materials that have been involved. Views resulting from field observations, laboratory experiments, and theoretical approaches will be expressed. It is our intention to explore the role of thermophilic bacteria in geologic processes while evaluating the possible limits of life in hydrothermal biogeochemistry. Issues to be raised include: temperature-pressure limits of fossil fuel deposits during deep burial, alteration of organic fossil materials and the synthesis and delivery of organic matter to the early Earth. We are encouraging speakers to incorporate introductory material in all talks to appeal to non-specialist educators as well as students. Our hope is that much of the information presented could be utilized in courses involving perspectives on Earth Sciences.

Convener: Stephen A. Macko
Department of Environmental Sciences
The University of Virginia
Charlottesville, VA 22903
(804)924-7761
(804)982-2137 (FAX)

Geochemical Society Symposium

"MASHing and Smashing: Geochemical Evidence for Long-term

Crust-mantle Interaction Along a Cratonic Margin, NW United States"

Secondary isotopic systematics such as Pb-Pb isochrons and Sm-Nd model ages of young rocks have been used extensively to improve our understanding of Precambrian continental growth and the geochemical evolution of the crust-mantle system in western North America. For mantle-derived rocks, secondary Pb isochrons have been used to identify the influence of Archean sub-continental lithosphere in the petrogenesis of Cenozoic basalts. For crustally derived rocks, Sm-Nd isotopic systematics of Mesozoic and Cenozoic granitoids indicate generally negative ϵ_{Nd} values, with proximity to the Archean Wyoming craton. This symposium will provide a forum for discussing the various lines of geochemical evidence that bear on the Archean through Cenozoic history of crust-mantle interaction and crustal growth in the region proximal to the western edge of the Wyoming craton. Contributions will focus on a variety of rocks ranging from mantle xenoliths to Cenozoic basalts and granitoids.

Conveners: Paul A. Mueller Joseph L. Wooden
 Department of Geology U.S. Geological Survey
 University of Florida Menlo Park, CA 94025
 Gainesville, FL 32611
 (904) 392-6595

Geochemical Society Special Session

The Geochemical Society will be sponsoring a Special Session on "Geochemical Kinetics: Field vs. Laboratory Rates", convened by Susan L. Brantley, Pennsylvania State University. Please see preceding announcement.

Other Items of Interest

The schedule of GSA-sponsored events for the San Diego meeting differs somewhat from the past. The GSA Presidential address is planned for Tuesday Evening, 6-7 pm, to be followed by the "Special Event" (usually dinner and some form of entertainment) later that evening. As of this writing, the MSA-GS Reception on Tuesday partially overlaps with the address. It is uncertain if some adjustment will be made in either of these events. In any case, further details will be provided in a Fall 1991 mailing.

GSA is planning a one-hour general session on "Global Perspectives" on Monday, from 5-6 pm. Alumni Night will run as usual on Monday, from 7-9:30 pm.

THE GEOCHEMICAL SOCIETY

Special Publication No. 2

**FLUID-MINERAL INTERACTIONS:
A TRIBUTE TO H. P. EUGSTER**

(Editors: R.J. Spencer and I-M. Chou)

This 1990 volume is in honor of

Hans P. Eugster

a testimony to his monumental efforts for the geosciences

The book is divided into five parts:

- **EXPERIMENTAL TECHNIQUES AND BUFFERS**
- **IGNEOUS AND METAMORPHIC SYSTEMS**
- **HYDROTHERMAL AND ORE SYSTEMS**
- **DIAGENETIC SYSTEMS**
- **SURFACE ENVIRONMENTS**

23 papers total, (432 pages, including a 12 page index),
typeset, 2-column format, hard bound

The price of this volume is \$45.00 for Geochemical Society members.
The non-member price is \$65.00.

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