The Geochemical News

GSA CONVENTION CALENDAR

Monday  Geochemical Society Council  8:30 a.m.  Castilian Rm. A
Monday  Geochemical Society Business Meeting  4:00 p.m.  Bluebonnet Rm.
Monday  Section on Organic Geochemistry, Business Meeting  1:00 p.m.  Bluebonnet Rm.

Sessions

Monday  Inorganic Geochemistry I  8:30 a.m.  Azalea Rm.
Monday  Organic Geochemistry I  8:30 a.m.  Bluebonnet Rm.
Monday  Organic Geochemistry II  1:30 p.m.  Bluebonnet Rm.
Wednesday  Inorganic Geochemistry II  8:30 a.m.  Bluebonnet Rm.

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GEOCHEMISTRY

The Geochemical Society has published a Promotion Edition of GEOCHEMISTRY listing the contents of the 1956-1960 volumes and partial contents of the 1961 volume, which will contain twelve issues and is now in production. Through a special series subscription offer, those who subscribe to the three volumes for 1959, 1960, and 1961 at this time may complete their set of GEOCHEMISTRY volumes paying only $5.00 for each of the 1956, 1957, and 1958 volumes (same price to all purchasers) if these are ordered at the same time as the 1959, 1960, 1961 volumes (the latter at regular prices). Order forms have been included in the Promotion Edition and are addressed to The Geochemical Society, c/o Scripta Technica, Inc., 1000 Vermont Ave., N.W., Washington 5, D.C.

It is also pleasing to announce that an NSF grant will make possible the translation and production of the 1962 volume of GEOCHEMISTRY.

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GEOSCIENCE ABSTRACTS

GeoScience Abstracts announces the appointment, as of September 1, 1962, of Mrs. Lois Dane Soule as Associate Editor. Mrs. Soule, a staff member since June 1959, succeeds Miss Anne C. Sangree, who has resigned. Miss Sangree was Associate Editor, then Editor, of GeoScience Abstracts for four years starting with its prepublication organization during the fall of 1958.

GeoScience Abstracts is currently seeking to provide regular comprehensive coverage of the following journals through volunteer abstracters, or through improved cooperation of societies, publishers, or agencies.

- Canadian Geographical Journal
- Economic Geology (Unabstracted notes and discussions)
- Engineering and Mining Geology
- Gems and Gemology
- National Academy of Sciences, (U.S.) Proceedings
- Virginia Polytechnic Institute, Bulletin of Engineering Experiment Station

If you are willing and able to provide for systematic coverage of any of these journals in the field of geology, solid-earth geophysics, and related sciences, we would like to hear from you. We need complete coverage of journals published in North America, and coverage of papers dealing with North American geology from journals published elsewhere. Volunteers who already subscribe, or have ready access, to these listed journals are particularly sought. If you can help, or have suggestions which might lead to improved coverage, please write: Martin Russell, Managing Editor, GeoScience Abstracts, c/o American Geological Institute, 2101 Constitution Avenue, N.W., Washington 25, D.C.

GeoScience Abstracts requires the services of a geologist with a thorough command of precise technical English to assist in editing. If you know of someone who might be interested in establishing a professional career in geologic documentation on our staff in Washington, D.C., we would appreciate your writing Martin Russell at the above address. The applicant must be able to type, have at least a Bachelor's degree, and preferably have some library training.

OTTAWA GEOCHEMISTRY GROUP

The Ottawa Geochemistry Discussion Group held its first meeting in 1962 on Thursday, October 11th, in the Science Faculty Lounge (Room 393), Science Building, of Carleton University. The speaker was Dr. Allan C. Turnock of the Physical Chemistry Section, Mineral Sciences Division, Mines Branch, who spoke on "Iron-Aluminium Oxides: Phase Relationships below 1000°C."

Abstract

The subsolidus phase relationships of magnetite, hercynite, hematite, corundum, wüstitite, and iron are described. Tie-lines were located by determining compositions of these phases in univariant assemblages. The phases were synthesized from chemical mixtures. Reactions and solid solution between them were induced under controlled conditions of composition, temperature, total vapor pressure, and partial pressure of oxygen. Reaction rates are slow, so that the experiments lasted from 1 to 40 days, and quenching is completely successful.

The diagrams provide a basis for the discussion of the paragenesis of the oxide minerals. For example, the progressive metamorphism of laterite deposits can be represented by (1) laterites and bauxites: hematite and hydrated aluminum oxides; (2) diasporites: hematite and diaspsore and corundum, with magnetite as a rare accessory; (3) emery: corundum and magnetite, with hematite as an accessory.
NEW MEMBERS OF THE GEOCHEMICAL SOCIETY

William Alexander Anikouchine  
Dept. of Oceanography  
University of Washington  
Seattle 5, Wash.

Gustaf O. S. Arrhenius  
University of California  
La Jolla, Calif.

John C. Balla  
2150 E. Hawthorne  
Tucson, Ariz.

Harold A. Beisheim  
Dept. of Chemistry  
Iowa State University  
Ames, Iowa

Neil A. Benfer  
1815 Meadowbrook Rd.  
Charlottesville, Va.

William Richard Bergey  
Suite 65  
Chase Bank Bldg.  
Rio Piedras, Puerto Rico

Ernst Bolte  
Dept. of Geology  
Yale University  
New Haven, Conn.

Roslyn B. Book  
3743 Reading Rd.  
Cincinnati 29, Ohio

David Colin Burrell  
Dept. of Geology  
The University  
Nottingham, England

Patrick Butler, Jr.  
Box 1355  
Socorro, N.M.

Thomas M. Camp  
2641 E. 126th St.  
Cleveland 20, Ohio

Robert B. Cate, Jr.  
64 High St. (Kingston)  
Georgetown, British Guiana

George T. Cardwell  
265 Magnolia Wood Ave.  
Baton Rouge 8, La.

James Dudley Carl  
Science Div.  
Central Missouri State College  
Warrensburg, Mo.

Norman S. Davis  
35 Harrington St.  
Watertown 72, Mass.

E. T. Degens  
California Institute of Technology  
Pasadena, Calif.

C. D. Di Giambattista  
P.O. Box 789  
Midland, Tex.

Richard Allen Dirks  
Meservey, Iowa

Robert A. Duce  
Rm. 103A Graduate House  
Massachusetts Institute of Technology  
Cambridge 39, Mass.

Benjamin G. Duna  
PO/P 492-21-130-1-10147  
Agency for International Development  
Washington 25, D.C.

Myron L. Dunton  
4629 S. Toledo  
Tulsa 35, Okla.

Albert Leroy Ehrreich  
Dept. of Geology  
Long Beach State College  
Long Beach 4, Calif.

Reinholt Ellert  
Al. Glete  
463 C. Postal 8105  
S. Paulo, Brasil

Gilbert W. Franz  
706 S. Allen St.  
Newton, Kan.

Edward L. Gafford, Jr.  
135 S. Illinois  
Wichita 13, Kan.

John W. Harbaugh  
Dept. of Geology  
Stanford University  
Stanford, Calif.

William Howard Harris  
U.S. Geological Survey  
Box 281  
Elizabeth City, N.C.

W. M. Hawkins  
Geology Dept.  
Lawrence College  
Appleton, Wis.
Harold C. Helgeson  
Chemistry Dept.  
P.O. Box 481  
Houston 1, Tex.

Paul C. Henshaw  
100 Bush St.  
San Francisco 4, Calif.

Gordon Herreid  
Star Route Mile 17  
Juneau, Alaska

John B. Ivey  
240 Washington St.  
Denver 3, Colo.

Kazuo Kobayashi  
Dept. of Geology  
University of Pittsburgh  
Pittsburgh 13, Pa.

Andrew J. Lang, Jr.  
3225 W. Union Ave.  
Littleton, Colo.

Bernard Elkey Leake  
Geology Dept.  
University Walk  
Bristol 8, England

Jose Luis Lee  
Exploración Z. Norte  
C.R.N.N.R.  
Dr. Navarro y Niños Héroes  
Mexico 7, D.F. Mexico

Claude Lepeltier  
UN Special Fund Mineral Survey  
Casilla 10465  
Santiago de Chile, Chile

René Létolle  
59 Rue A. Pajeaud  
Antony Seine, France

Roy A. MacDiarmid  
Geology Dept.  
Tulane University  
New Orleans 18, La.

Rudolf Martin  
3807 Tenth St., S.W.  
Calgary, Alberta  
Canada

Joy J. Merz  
Northern Peru Mining Corp.  
Casilla 162  
Trujillo, Peru

A. Paul Mogensen  
935 32nd St.  
Ogden, Utah

William Joseph Moore  
986 Fimmel Ct.  
Ames, Iowa

Roger David Morton  
Dept. of Geology  
University of Nottingham  
Nottingham, England

R. Lynn Moxham  
Dept. of Geophysical Sciences  
University of Chicago  
Chicago 37, Ill.

Charles H. Munch  
2445 Rankin Ave.  
Norfolk 18, Va.

Fernando Munizaga  
Casilla 10465  
Santiago, Chile

James T. Neal  
6 Prospect St.  
Watertown, Mass.

James E. Noble  
707 Liberty Bank Bldg.  
Union Texas Petroleum  
Oklahoma City, Okla.

David George Nussmann  
Geology Dept.  
2051 Natural Science Bldg.  
The University of Michigan  
Ann Arbor, Mich.

Dale J. Nyman  
U.S. Geological Survey  
Memphis General Depot  
Memphis 15, Tenn.

Norio Ogura  
Dept. of Chemistry  
Tokyo Metropolitan University  
Fukazawa Setagaya-Ku  
Tokyo, Japan

Kenneth Albert Pahn  
305 Memorial Dr.  
Cambridge 39, Mass.

James J. Papike  
Geology Dept.  
University of Minnesota  
Minneapolis, Minn.

Brian F. Pasby  
Oceanography Dept., Texas A and M  
College Station, Tex.

William Dwight Pierce  
4025 Halldale Ave.  
Los Angeles, Calif.
Herbert A. Potratz  
Chemistry Dept.  
Washington University  
St. Louis 30, Mo.

Harry N. A. Priem  
Laboratory for Isotope Geology  
Geological Inst. of the University  
Nieuwe Prinsengracht 130  
Amsterdam-C  
The Netherlands

John A. Randall  
San Luis Mining Company  
Tayoltita, D90  
Via Mazatlan  
Sin. Mexico

Douglas W. Rankin  
U.S. Department of Interior  
Geological Survey  
Washington 25, D.C.

Anthony Reay  
c/o Geology Dept.  
The University  
Leeds 2, England

William Scott Reeburgh  
Dept. of Oceanography  
Johns Hopkins University  
Baltimore 18, Md.

Sam Rosenblum  
11,115 Jolly Way  
Kensington, Md.

Carlo Sarchi  
S. Donato Milanese  
Via Bellincioni 4, Italy

Robert N. Schock  
Dept. of Geology  
Rensselaer Polytechnic Institute  
Troy, N.Y.

Ronald G. Senechal  
Dept. of Geology  
Rensselaer Polytechnic Institute  
Troy, N.Y.

James Short  
Dept. of Geochemistry  
California Institute of Technology  
Pasadena, Calif.

Sheldon E. Sommer  
14-10 Stouffer Place  
Lawrence, Kan.

Arne Gustav Birger Strömberg  
Geological Dept.  
University of Uppsala  
Uppsala, Sweden

Alan Michael Stueber  
Dept. of Earth Sciences  
University of California at San Diego  
La Jolla, Calif.

Harry J. Svec  
905 Douglas  
Ames, Iowa

Henri Termier  
131 Av. de Versailles  
Paris 16, France

Bruno Vinikas  
18 rue Sainte Anne  
Brussels, Belgium

Th. L. J. Vreugde  
3301 Robinhood  
Houston 5, Tex.

Kenneth N. Watkins  
1133 N. Lewis  
Tulsa 10, Okla.

John F. Weinzierl  
Lauratale, Riverside  
Walker County, Tex.

E. H. Timothy Whitten  
Dept. of Geology  
Northwestern University  
Evanston, Ill.

Maurice D. Winner, Jr.  
c/o U.S. Geological Survey  
P.O. Box 8516 University Station  
Baton Rouge 3, La.

Coyd Yost, Jr.  
928 Washington Ave.  
Keyser, W.Va.

William Allen Young  
1640 S. Gary Ave.  
Tulsa 4, Okla.
BOOK REVIEW


This pocket-sized hard-cover proves that good things still come in small packages. Rutten presented a similar, shorter paper entitled "Origin of life on earth, its evolution and actualism" in 1957 (Evolution, v. 11, p. 56-59). That paper seems to have escaped the attention it deserved from American geochemists, biochemists, biologists, and geologists. Now he modifies, elaborates, and updates both the date and conclusions.

Although in accord with the principle of uniformitarianism, Rutten distinguishes carefully between "pre-actualistic" (anoxygenic) and "actualistic" (oxygenic) periods in the histories of both life on earth and exogenic (surface) geologic processes of weathering, erosion, transportation, and sedimentation. His excellent summaries of the nature of geologic time, methods and limitations of relative and absolute geologic dating, and biochemical hypotheses for the mode of origin of life set the stage for the geological considerations that follow. He then delimits the results to be expected from biochemical and exogenic geologic processes operating in anoxygenic as opposed to oxygenic surface environments. Summaries and evaluations of the most recent data on Precambrian life, their nature and age, and evidence from Precambrian rocks for the existence and age of both anoxygenic and oxygenic surface conditions are included.

Rutten's conclusions may be summarized briefly as follows:

1) The initial atmosphere of the earth was anoxygenic. Pre-actualistic surface conditions with an especially high incidence of short ultraviolet light then prevailed. That early environment would have allowed the first steps in the chemical evolution of life to have occurred in accord with recent hypotheses of biochemists.

2) Early Precambrian, calcareous, biogenic deposits no less than 2.7 billion years old, laid down under anoxygenic but aerobic conditions, provide the most ancient, known geologic evidence for the existence of life.

3) Sediments accumulated under anoxygenic (pre-actualistic) conditions at least until about 2 billion years ago.

4) Fungi and bacteria, probably anoxygenic but also probably aerobic in the atmosphere of the time, had originated by about 1.6 billion years ago.

5) An oxygenic atmosphere, supporting normal, actualistic exogenic geologic processes had developed no less than about 1 billion years ago.

6) Thus the transition from anoxygenic--pre-actualistic to oxygenic--actualistic surface environments took place, probably gradually, during a period sometime between 2 billion and 1 billion years ago.

7) The process of plant photosynthesis, which releases free oxygen into the atmosphere, originated during that period and was responsible for the transition.

8) Additional geologic data should be sought to delimit more closely the time of that transition.

John A. Dorr, Jr.
Dept. of Geology and Mineralogy
The University of Michigan
PUBLICATIONS RECEIVED


De FRANCESCO, FRANCO. Acque minerali ed oligominerali dell' altipiano di pine. Economia Trentina, No. 1, 3-6, 1959.


and G. L. MORELLI. Sulla presenza di un'illite "espanibile" nelle argille scaglieose provenienti da una perforazione petrolifera dell'Appennino emiliano. Soc. mineralog. italiana Rend.


GAZZI, PAOLO. Determinazioni petrografiche e mineralogiche su alcune areeace dell'Appennino bolognese. Soc. mineralog. italiana Rend. 16, 331-334, 1960.


IMAI, HIDEKI and SHOICHIRO HAYASHI. Characteristic geologic structure observed in the several tin-tungsten bearing veins, with special reference to the vein system of the Takatori mine. Jour. Min. and Metal. Inst. of Japan, 75, (849), 145-150, 1959.

and NOBUFUSA SAITO, SHOICHIRO HAYASHI, KAZUO SATO, and YOSUKE KAWACHI. The absolute age of the granitic rocks in the Miyako-Taro Dist., Iwate Prefecture, 1959.


Relationship between the lattice constant $a'_{ph}$ and an infrared active vibration of anhydrous carbonates in the spectral region 710-750 cm$^{-1}$. Infrared Physics, 2, 111-115, 1962.


CALENDAR

Nov.
15 Frontiers of Geology Symposium. 50th Anniv. Rice University, Hamon Hall, Houston, Texas.

Dec.

ION EXCHANGE COLUMN


The Central Treaty Organization (CENTO) has published SYMPOSIUM ON CHROME ORE (held in Ankara, Turkey, September 1960), a paper-bound volume of 272 pages containing 25 articles and 3 appendices. Twelve of the papers deal with the geology of chromite deposits (Turkey, Iran, Pakistan); the other papers are concerned with the mining and beneficiation of chrome ores and their economics.

The September 1962 number (Vol. 4, No. 9) of the Battelle Technical Review contains an article entitled "A New Form of Silica," an account of the synthesis of stishovite at the Battelle Memorial Institute.
By the time this number reaches most of the membership, the annual meetings of The Geochemical Society either will be in progress or will be concluded. Sessions on geochemistry form one of the most important parts of the program of the combined societies at Houston. Important decisions await action by the Council of The Geochemical Society -- decisions that will influence both the structure and scope of the Society's activities for many years to come. It is the earnest hope of the officers that many members will actively participate in the business meeting.

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Sand-in-the-Gears-of-Learning Department

The three great geological processes are: 1) vulcanism, 2) gradation, 3) diabolism.

We believe that the reptiles came from the amphibians by spontaneous generation and the study of rocks.

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Selected Daffynitions from our Unabashed Fictionary

Porphyritic texture - the partly cooled magma is extruded...forming small crystals in the presents of the already larger ones.

Caliche - the calcite in Nevada is left after the holding it evaporates leaving it bear on the ground.

Karst topography - ...there are many sinks and wholes through the region.

A rock is an aggravate of minerals.

Dripstone is found in underground caves where water has flown.

E. Wm. Heinrich
Editor

William C. Kelly
Co-editor

Department of Geology and Mineralogy
The University of Michigan
Ann Arbor, Michigan
CONTENTS OF FORTHCOMING ISSUE

No. 12, 1961

Zhirova, V. S., S. I. Zykov and A. I. Tugarinov. Age of zircons from the oldest formations of the Kola Peninsula. 1161

Leonova, L. L., R. D. Gavrilin and V. V. Bagreyev. Behavior of uranium and thorium in a highly alkaline intrusive complex (The Kzyly-Ompe massif, Northern Tien-Shan) 1173

Baranov, V. I. and Du Lieh-t’ien. Geochemistry of uranium and thorium in the granites of the Kzylytau massif (Central Kazakhstan). 1180

Kogarko, L. N. and I. D. Ryabchikov. Dependence of the content of halogen compounds in the gaseous phase on the chemistry of the magma 1192

Vainshtein, E. E., A. S. Pavlenko, N. V. Turanskaya and T. G. Yulova. Dependence of distribution of rare earths in rocks on petrochemical factors and its significance in the solution of petrogenetic problems 1202

Balashov, Yu. A. and N. V. Turanskaya. Rare earths in the endosialyte complex of the Lovozero alkaline massif 1213

Volkov, V. P. and E. N. Savinova. Variation in the potassium-rubidium ratio during the evolution of calc-alkaline and alkaline magmas 1227

Stavrov, O. D. and E. B. Znamenskii. Distribution of rare alkalis and mineralizer elements (B, F) in the granitoids of the Kalba massif (Eastern Kazakhstan) 1237

Borisenko, L. F. Trace elements and the problem of the genesis of ultrabasic rocks of the Nizhnetagil’sk massif 1244

BRIEF COMMUNICATIONS

Chow, T. J. and C. C. Patterson. Primary lead in the Devil’s Canyon Meteorite 1255

Popova, T. P. Coprecipitation of some microconstituents from natural waters with calcium carbonate 1256

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SOME OF THE PAPERS SOON TO BE PUBLISHED IN
GEOCHEMICAL AND COSMOCHEMICAL ACTA
JOURNAL OF THE GEOCHEMICAL SOCIETY

September 1962

H. O. Finley, A. R. Eberle and C. J. Rodden: Isotopic boron composition of certain boron minerals
S. R. Taylor: Consequences of tektite composition of an origin by meteoritic splash
Norman O. Smith, Steve Keleman and Bartholomew Nagy: Nitrogen in aqueous NaCl, CaCl₂, Na₂SO₄ and MgSO₄ at room temperatures and at pressures below 1000 psia
Paul W. Gast: The isotopic composition of strontium and the age of stone meteorites—I
J. R. Butler and A. Z. Smith: Zirconium, niobium and certain other trace elements in some alkali igneous rocks
W. Sackett and G. Arrhenius: Distribution of aluminum species in the hydrosphere—I. Aluminum in the ocean

Geochemical Notes:
L. Bergman and W. Grant: A tin still for dialysis against a stream of high purity water
C. S. Smith: Note on the history of the Widmannstätten structure

October 1962

R. R. Marshall: Cosmic radiation and the K⁴⁰-Ar⁴⁰ "ages" of iron meteorites
R. E. Cech: Metallography of the Washington County Meteorite
A. E. Ringwood and L. Kaufman: The influence of high pressure on transformation equilibria in iron meteorites
A. Amiruddin and W. D. Ehammer: Tungsten abundances in meteoritic and terrestrial materials
B. P. Fabricand, R. R. Sawyer, S. G. Ungar and S. Adler: Trace metal concentrations in the ocean by atomic absorption spectroscopy
G. W. Morey, R. O. Fournier and J. J. Rowe: The solubility of quartz in water in the temperature interval from 25° to 300° C
K. Przibram: Uber die Fluoreszenz organischer Spuren in anorganischen Stoffen und Verbreitung in der natur
E–An Zen: Problem of the thermodynamic status of the mixed-layer minerals
K. Przewlocki, W. Magda, H. H. Thomas and H. Paul: Age of some granitic rocks in Poland

Geochemical Note:
L. H. Ahrens: Possible Zr-Hf fraction between earth and meteorites

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