



# The Geochemical News

Number 15

April 1959

## COMMITTEES

President J. Frank Schairer has announced the following committee appointments:

### Auditing

Joseph J. Tregoning, Chm.  
W. L. Hill  
C. R. Naeser

### Constitution and By-laws

Michael Fleischer, Chm.  
J. R. Goldsmith  
D. M. Shaw

### Education

H. D. Holland, Chm.  
J. A. S. Adams  
Hans P. Eugster  
D. M. Henderson  
Kurt E. Lowe  
G. D. Nicholls

### Membership

R. M. Garrels, Chm.  
Irving Breger  
Harvey C. Diehl  
Chester B. Slawson  
James E. Slosson  
(more to be added by Chairman)

### Nominating

Wm. T. Pecora, Chm.  
T. G. Sahara  
C. E. Tilley  
G. Tunell

### Program

H. T. Evans, Chm.  
Brian Mason  
G. J. F. MacDonald

### Publications

E. W. Heinrich, Chm. and  
Editor Geochemical News  
J. R. Goldsmith  
Earl Ingerson  
J. C. Maxwell  
N. W. Rakestraw  
S. C. Robinson  
L. R. Wager

### Regional Vice Presidents

Louis H. Ahrens  
C. W. Correns  
Rui Rubiero Franco  
William S. Fyfe  
Ing. Georges Ordonez  
Ken Sugawara

### Research

C. G. Dodd, Chm.  
W. F. Bradley  
R. A. Rowland  
T. G. Thompson  
(more to be added by Chairman)

### Russian Translations

Earl Ingerson, Chm.  
(more to be added by Chairman)

### Standards

Alvin Van Valkenberg, Chm.  
Felix Chayes  
Michael Fleischer  
Loren Stieff  
George Switzer  
George Tilton  
(more to be added by Chairman)

### Tellers

Charles Meyer, Chm.  
Henry R. Cornwall  
Colin O. Hutton

President Schairer also announces that Dr. W. W. Rubey has accepted appointment as representative of our Society to the American Association for the Advancement of Science for the two year period December 31, 1958, to December 31, 1960, and that Dr. George Phair will continue to represent our Society to the NAS-NRC for the next two years.

RESEARCH COMMITTEE  
THE GEOCHEMICAL SOCIETY

REPORT OF ACTIVITIES TO COUNCIL, NOVEMBER 6, 1958

During the past year the Research Committee has continued the lines of work initiated by the committee during the previous year when Dr. R. A. Rowland was chairman. This work has consisted of a survey of geochemical research now in progress throughout the world as reported by the international vice-presidents of the Society, who are also members of our committee.

Information is available from several of these vice-presidents at this time and has been attached to this report (to be published in forthcoming issues of the Geochemical News). It is hoped that by making information of this type available on an international basis the interest of geochemists throughout the world will be focused on problems of mutual interest and various research workers in isolated areas may know of others who are interested in the problems on which they are working. Many other obvious advantages accrued from compilations of this type, which should stimulate international geochemical co-operation and research.

During the past year the committee membership and responsibilities have been:

Charles G. Dodd, Chairman	U. S. Oil Company Research Laboratories
Richards A. Rowland	U. S. Universities
T. G. Thompson	Oceanographic Institutes
George T. Wetherill	Government and Related Agencies
Carl W. Correns	Europe
Ken Sugawara	Asia
W. S. Fyfe	Australia and Oceania
Louis H. Ahrens	Africa
Georges Ordonez	Central America
W. F. Bradley	U. S. State Geological Surveys
Rui R. Franco	South America

Reports of the efforts of the committees of the past two years are now beginning to come in and we have several specific reports prepared. The report on geochemical research activities in the United States Petroleum Industry Research Laboratories is now complete on the basis of replies to letters sent out to laboratories of the major U. S. oil companies. A second survey due during this past year is one that has been made on the status of geochemical research in the various United States State Geological Surveys. This work is reported by Dr. W. F. Bradley of the Illinois Geological Survey.

Charles G. Dodd, Chairman  
Research Committee

REPORT OF THE STANDARDS COMMITTEE

The first meeting of the Standards Committee was held on January 26 at the National Bureau of Standards with the following members present: George Switzer, Michael Fleischer, Felix Chayes, George Tilton, Lorin Stieff and A. Van Valkenburg. President J. F. Schairer sat in on the discussions. As this is the first active Standards Committee it was thought wise to pick a local group that could meet often and get things going quickly.

Two broad objectives have been adopted as a framework for the Committee. (1) Compile a list of reference standards that may be of use to our membership. This would include material available in this country as well as foreign. (2) Propose new reference standards or revise existing reference

standards to meet present requirements. As compiled material is made available we would like to have it published in the *Geochemical News* from time to time. For example, the chairman has a list of materials that the National Bureau of Standards makes available for a small fee. There are some 500 different standard samples of metals, ores, ceramics, chemicals and hydrocarbons. About 225 of these are certified for chemical composition. Some 90 of the composition standards have been prepared for use in spectroscopic analyses.

In order to formulate plans for possible new reference standards, the Committee would like to know what the membership considers important as reference standards in their particular field. We would appreciate hearing from anyone who has some good ideas on the subject.

A. Van Valkenburg, Chairman

#### OFFICIAL SEAL OF THE GEOCHEMICAL SOCIETY

You will note that the cover of this issue is graced with the newly adopted official seal of the Geochemical Society, selection of which has been in progress since early in the organization of the Society. The committee, which has been under the direction of its chairman, A. Van Valkenburg, had as its other members Margaret D. Foster, Jewell Glass, and Edwin Roedder. The *Geochemical News* No. 9, Feb. 1958, contained suggested designs on which the membership was asked to record its preference. The design selected is the one reproduced in this issue and adopted by the Council of the Geochemical Society last November at the St. Louis meeting.

The Chairman of the Seal Committee wishes to point out that the basic design for the seal was taken from a drawing submitted by Professor A. Schüller of Berlin-Adlershof, Germany. His drawing, in the opinion of the committee, incorporated some of the fundamental elements that were thought desirable.

The Seal Committee also wishes to thank all those members who submitted drawings and made valuable suggestions and criticisms of this and other seal designs.

A. Van Valkenburg

#### MEMORIAL OF TAISSIA MAXIMOVNA STADNICHENKO Anna Jespersen

Taisia Maximovna Stadnichenko, outstanding authority on the geochemistry of coals, died November 26, 1958, in Washington, D. C. Russian born and educated, Miss Stadnichenko was graduated from the Vladivostok Gymnasium in 1912 and from the University of Petrograd in 1917. Her first scientific assignment was as a chemist with the Russian Geological Survey expedition in 1917 to the Island of Sakhalin.

She came to the United States after World War I as an interpreter for the Russian Peace Mission and as a representative to the Washington Disarmament Conference. From 1922 to 1925 she was an instructor in chemistry at Vassar College, and from 1925 to 1931 a research assistant with the National Research Council and American Petroleum Institute.

Miss Stadnichenko became a naturalized citizen in 1931, at which time she joined the staff of the U. S. Geological Survey to carry on research on the origin and constitution of coal and carbonaceous shales in association with the late Dr. David White. Miss Stadnichenko's later work was directed toward the recovery of germanium from coal ash, a minor element that was of great impor-

tance in the manufacture of transistors. The results of this investigation were published in U. S. Geological Survey Circular 272. At the time of her death she was in charge of an investigation of the distribution of minor elements in American coals. Her manuscripts on beryllium and molybdenum content of American coals and on the geochemistry of minor elements of the coals of the Northern Great Plains, written in collaboration with Peter Zubovic and Nola B. Sheffey, are awaiting publication.

Taisia never lost her enthusiasm for helping others, and especially young people, on their way to scientific accomplishment, and her resulting friendships are world-wide.

#### MEMORIAL OF THOROLF VOGT Ivar Oftedal

Thorolf Vogt, who died on December 8, 1958, was one of the most prominent Norwegian geologists. He was born on June 7, 1888, in Hedmark, Norway, son of the famous J. H. L. Vogt. After leaving school in 1906 he soon started scientific work, and his first publications appeared about 1910. Many papers followed, and in 1928 he obtained the degree of Doctor of Philosophy at the University of Oslo, his doctor's thesis being a comprehensive study of the geology and petrology of the Sulitjelma region in Northern Norway. He made study tours to Vienna in 1910-11 and to Göttingen in 1913, and repeatedly to Sweden, Denmark, Great Britain, U.S.A., and other countries. He was the scientific leader of expeditions to Spitzbergen in 1925 and 1928, and to Southeastern Greenland in 1931. On the Geological Survey of Norway (Norges geologiske undersøkelse) he worked as assistant geologist 1909-14, as state geologist 1914-29.

In 1929 he was appointed professor of mineralogy and geology at the technical university in Trondheim (Norges tekniske høgskole), and was just retiring from this position upon reaching the age of 70 when he suddenly died. Since 1950 he had been president of the Academy of Science in Trondheim (Det Kgl. Norske Videnskabers Selskab).

Vogt published more than 100 scientific papers. As a researcher he was versatile, contributing to a great variety of subjects within the geological sciences. His earliest publications were excellent contributions in mineralogy. Later he left this particular field but his keen interest in mineralogy never faded. As a state geologist he worked in various parts of Norway, and his contributions to the regional geology of Norway are highly valued. He made important studies in the Sparagmit formation (Eocambrian) in southern Norway, but for many years his work was concentrated mainly on Caledonian structures, rocks and ores, especially in northern Norway, but also in the Trondheim region. His most important publication in this field was the above-mentioned doctor's thesis, the petrological part of which is much cited by petrologists because of its significant contributions to the development of the mineral facies concept. A very detailed study of part of the Trondheim region led to important results on the stratigraphy in this section of the Norwegian Caledonides. The large-scale features of the Caledonides were discussed by Vogt in several papers. Some of his latest publications were concerned with these problems; here he did not restrict himself to Norway, but also considered the connection across the North Sea to Scotland. Fields dealt with by Vogt included isostasy, glacial geology, and meteorites.

Vogt was a Commander of the Royal Order of St. Olav.

#### BOOK REVIEWS

THE EARTH WE LIVE ON; The Story of Geological Discovery. By Ruth Moore. 416 + x pp, 46 photo-

graphs, 34 line drawings. Alfred A. Knopf, New York, 1956. \$6.00.

This is a well written and very interesting account of some of the major personalities that have been involved in the development of geology as a science. Both laymen and professional earth scientists will benefit pleaurably by reading it. The book is divided into four parts: I. Myth and Reason; II. An Unsuspected Past; III. Hidden Change; IV. Into Invisible Forces.

In Part I the mythological and religious backgrounds of geology are described. Part II discusses the early geologists, particularly Guettard, Desmarest, Werner, Hutton, Cuvier, Agassiz, and Lyell. In Part III the work of the fathers of modern geology are described, namely that of Logan, Hall, Powell, Dutton, and Chamberlin. In Part IV the author has selected a number of living earth scientists and described their contributions. Among these are Urey, Jeffreys, Bullard, Runcorn, J. Tuzo Wilson, Ahren C. Waters, V. M. Goldschmidt, Brian Mason, and J. Laurence Kulp. Doubtless there will be a number of readers who will question the selections and the attempt on the part of the author to record history in advance.

The book is very readable and well organized, and in addition contains illustrations which are both excellent in quality and pertinent in application.

E. W. H.

#### PUBLICATIONS RECEIVED

Research for Industry. News Bulletin, Stanford Research Institute, Menlo Park, California. Vol. 11, No. 1, Jan. 1959. Contains an article on filters for submicron particles.

Summary of Developments in the Canadian Mineral Industry, 1957. By B. F. Burke. Preliminary Review 1, Canada Department of Mines and Technical Surveys, Mineral Resources Division, Ottawa, Canada.

Bay of Islands Igneous Complex, Western Newfoundland. By Charles H. Smith. Memoir 290, Geological Survey of Canada, 1958. \$1.25. An account of the geology and petrology of the ultramafic complex of the Bay of Islands with a complete discussion of ultramafic plutons in general.

Pegmatite Veins and the Surrounding Rocks. I. Petrography and structure. By Paul Reitan. Norsk Geol. Tidssk. 36(3), 213-239, 1956.

Pegmatite Veins and the Surrounding Rocks. II. Changes in the olivine gabbro surrounding three pegmatite veins, Risør, Norway. Norsk Geol. Tidssk. 38 (3-4), 279-311, 1958.

Technical News Bulletin, Vol. 43(1), Jan. 1959, National Bureau of Standards. Contains report on the 1958 meeting of the International Committee on Weights and Measures, describing efforts to achieve an atomic definition for the meter and announcing international agreement on values assigned to the yard and pound.

Industrial Laboratories, The Magazine of Research and Development, Jan. 1959. Articles of potential interest to geochemists include: 1) "Low-cost infrared instrument: its impact on research." 2) "X-ray fluorescence equipment - selection criteria." 3) A description of the new laboratory facilities of Nuclear Metals, Inc., Concord, Mass., constructed to study rare metals: bismuth, yttrium, tantalum, vanadium, tungsten, molybdenum, niobium, beryllium.

Feb. 1959. Contains an article by Dr. W. A. Nash of the University of Florida, entitled "Soviet research and education... a commentary."

Advanced Materials Technology, Vol. 1(5), Dec. 1958, The Carborundum Co. Contains an article entitled "Crystals that bend", dealing with the ductile properties of magnesium oxide (synthetic periclase). Another short article describes the properties of various zirconium alloys.

Mineral Information Service, Vol. 12(1), Jan. 1959. California Division of Mines. This is the highly informative annual review of California mining, this one for 1958.

Plants as a Guide to Mineralization. By Donald Carlisle and Geo. B. Cleveland. Calif. Division of Mines, Special Rpt. 50, 1958, 50 cents. A summary account of methods of biogeochemical prospecting, describing procedures, sampler plants, the absorption of metals by plants, chemical and physical properties of soils, and the results of biogeochemical studies for molybdenum.

Geochemistry of Uranium in Apatite and Phosphorite. By Z. S. Altschuler, R. S. Clarke, Jr., and E. J. Young. U. S. Geological Survey Prof. Paper 314-D, 1958.

#### CALENDAR

##### April

- 1-5 GSA: Cordilleran Sec. Tucson, Arizona.  
 2-3 Conf. on Silicon Carbide, spons. by Am. Physical Soc. and Air Force Cambridge Res. Center. Boston, Mass.  
 2-3 AIME: Soc. Petr. Eng., 5th Ann. Joint Mtg. of Rocky Mtn. Petroleum Secs. Casper, Wyo.  
 2-3 Conf. on Physical Metallurgy of Stress-Corrosion Fracture, spons. by ASTM, AIME, Electro-Chemical Soc., and Nat'l. Assn. of Corrosion Engineers. Pittsburgh, Pa.  
 5-10 Amer. Chemical Soc. 135th Ann. Mtg. Boston, Mass.  
 5-10 EJC 1959 Nuclear Congress. Public Auditorium, Cleveland, Ohio.  
 6-7 Nat'l. Symposium on Chemical and Petroleum Instrumentation, Instrument Soc. of Am. St. Louis, Mo.  
 13-14 Lake Superior Institute on Geology. Univ. of Minnesota, Minneapolis, Minn.  
 13-15 Canadian Institute of Mining and Metallurgy Ann. Mtg. Queen Elizabeth Hotel, Montreal.  
 13-15 Assoc. of American State Geologists. Lawrence, Kansas.  
 14-15 Conf. on Industrial Instrumentation and Control, spons. by Armour Res. Foundation and IRE. Chicago, Ill.  
 16 Ohio Acad. of Science. Capital University, Columbus, Ohio.  
 16-18 GSA, Southeastern Sec. Chapel Hill, N. C.  
 16-18 AIME Pacific Northwest Regional Conf. Olympic Hotel, Seattle, Wash.  
 18 AIME Colorado MBC Subsection. Broadmoor Hotel, Colorado Springs, Colo.  
 20-21 New Techniques in Electronic Industrial Instrumentation. Philadelphia, Pa.  
 20-22 Third Symposium on Rock Mechanics. Colorado School of Mines, Golden, Colo.  
 27-30 International Symposium on Physical Chemistry of Extractive Metallurgy. Penn-Sheraton Hotel, Pittsburgh, Pa.

##### May

- 3-7 7th Ann. Spring Semiconductor Symposium of the Electrochemical Society. Philadelphia, Pa. Contact F. Hubbard Horn, General Electric Laboratory, P.O. Box 1088, Schenectady, N. Y.  
 4-7 Am. Geophysical Union, Ann. Mtg. Washington, D. C.  
 7-8 AIME, Soc. Petr. Eng., Permian Basin Sec. Oil Recovery Conf. Midland, Texas.  
 8-10 AIME Uranium Sec. Moab, Utah.  
 11-14 American Mining Congress, Coal Show. Cleveland, Ohio.

- 14-16 GSA, Rocky Mountain Sec. Montana State Univ. Campus, Missoula, Montana.  
 14-23 International Petroleum Exposition. Tulsa, Okla. For reservations write: IPE Housing  
 Bur., Oil Capital Bldg., Tulsa, Okla.  
 17 Mass Spectrometry Mtg., ASTM. Los Angeles, Calif.  
 18-20 Nat'l. Symposium on Instrumental Methods of Analysis, spons. by Instrument Soc. of Am.  
 Houston, Tex.  
 30-  
 June 5 5th World Petroleum Congress, Permanent Council, N. Y. Write C. E. Davis, Gen.  
 Sec'y., 527 Madison Ave., New York 22.  
 Sept.  
 14-17 American Mining Congress, 1959 Convention. Denver, Colo.

#### ION EXCHANGE COLUMN

K. S. Spiegler, Chairman of the Ion Exchange Conference, announces that "In the absence of a Gordon Conference on Ion Exchange, the chairman and vice-chairman of the Conference elected at the last meeting have decided to hold an independent conference in Gatlinburg, Tennessee, September 7-11, 1959, near Oak Ridge, in the Smoky Mountains. The Conference is limited to 100 participants from the United States and overseas. Preregistration has been sufficient to make the Conference possible.

"The remaining vacancies will be allocated according to the principle of widest possible representation with respect to background and geography. Further information may be obtained from Professor William Rieman, III, Vice-Chairman, Ion Exchange Conference, Ralph G. Wright Laboratory, Rutgers University, New Brunswick, New Jersey."

Mr. Spiegler's address is Gulf Research and Development Co., P.O. Drawer 2038, Pittsburgh 30, Pa.

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Vol. 64, No. 1 of the Journal of Geophysical Research, Jan. 1959, has appeared. This now becomes the replacement for the Transactions of the American Geophysical Union.

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The American Geological Institute announces the publication of a new GeoScience Abstracts, which is to be published monthly in a new format with expanded coverage and organized by subject. It will cover North American literature and include available translations of Russian abstracts. It will also feature geological map coverage. The GeoScience Abstracts replaces Geological Abstracts, publication of which was discontinued by the Geological Society of America in December 1958.

Subject sections of the new GeoScience Abstracts are the following: 1) Geologic maps, areal and regional geology (incl. guidebooks), 2) Geomorphology, 3) Structural geology, 4) Stratigraphy and historical geology, 5) Paleontology, 6) Geophysics, 7) Geochemistry, 8) Mineralogy and crystallography, 9) Igneous and metamorphic petrology, 10) Sedimentary petrology, 11) Geohydrology, 12) Mineral deposits (incl. geochem. prospecting), 13) Fuels, 14) Engineering geology, 15) Miscellaneous.

Members of the AGI member societies on GeoTimes mailing list (members of the Geochemical Society are members of an AGI member society) may subscribe to GeoScience Abstracts for \$15.00 a year. A special introductory price of a 3-year subscription for the cost of only 2 is also available. For non-member individuals, colleges and universities the subscription rate is \$35.00 a year, and private organizations and government agencies will be asked to pay \$65.00 a year. An additional charge for foreign postage involves 50 cents per year to Pan American Union countries and \$1.00 per year to all other foreign countries. No additional postage charge is made for Canada

and Mexico. Subscriptions may be ordered from: American Geological Institute, 2101 Constitution Ave., N. W., Washington 25, D. C.

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Another new publication has been announced by Academic Press, Inc., of 111 Fifth Ave., New York 3, N. Y. This is entitled "Advances in Space Science" and their press release states that it "will be devoted to critical reviews in the whole field of astronautics, with particular emphasis on the disciplines of mathematics, astronomy, geophysics, geology, geography, and biology." It is anticipated that volume 1 will be released during the second half of 1959.

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Much speculation has recently appeared regarding the application of nuclear explosions to the petroleum industry. The U. S. Bureau of Mines has recently published a pamphlet entitled "Application of Nuclear Explosions to Oil-shale Utilization." This is available from their Laramie Petroleum Research Center, and gives some estimates of the costs of such experiments and potential results.

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The February, 1959, issue of FORTUNE magazine carries an article entitled "Geochemistry: The Prospector's New Tool", by Herbert Solow. It is an excellent general article with some fine illustrations in color, and features amongst other things the work of Herbert E. Hawkes, Jr., and Helen Cannon. The article also includes a reproduction from a recent article in the Russian journal Geokhimiya, on prospecting for molybdenum. This article has been translated and is available in the English translation of Geokhimiya, Geochemistry, published by the Geochemical Society. The article is entitled "Migration of elements in underground and surface waters of the Upper-Kairakty district, central Kazakhstan", by E. E. Belyakova, and appears in Geochemistry No. 2, 1958, pp. 176-188.

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Incidentally, work on translations of other issues of Geokhimiya is progressing well. To subscribers, this note: You should have by now received No. 3. No. 4 has been edited and is at the printers. Translated manuscript for No. 5 is beginning to arrive in the editor's office.

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Additional contribution to Sand-in-the-Gears-of-Learning Department:

"Most of the streams of Puerto Rico flow in three directions."

"The samples were given random numbers to insure complete lack of objectivity by the analyst."

"The determination was made by measuring the turbidity of a beam of light passed through the solution."

"The principal mineral resources of the county are iron and manganese, which do not occur there."

(Of a new class of organic chemicals) "Search for uses of these compounds is a virgin field, but it is pregnant with possibilities."

(Name withheld upon request)

Mineralogical Laboratory  
The University of Michigan  
Ann Arbor, Michigan

E. Wm. Heinrich  
Editor