



# The Geochemical News

NUMBER 23

August 1960

## GEOCHEMICAL TRANSLATIONS AVAILABLE

Single unedited copies of the following translations are available on loan from the library, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario, Canada. The "C.A." refers to an abstract of the article in Chemical Abstracts, which may be consulted in deciding whether or not you desire to obtain and read the entire translation. The index number refers to the Geological Survey of Canada Library number and should be quoted in requesting the translations. Do not send requests for loans to the Geochemical News.

Earl Ingerson

Canada Department of Mines and Technical Surveys  
Geological Survey

List of Translations of Papers on Geochemistry

- ✓ Beus, A. A., and Fedor<sup>c</sup>shuk, S. N. The geochemical distribution coefficient of beryllium in granitic pegmatites.  
Doklady Akad. Nauk S.S.S.R. 104, 108-111 (1955).  
C.A. 50: 6270c. MCM. B56
- ✓ Beus, A. A., and Sazhina, L. I. The geochemistry of beryllium in granitic pegmatites.  
Doklady Akad. Nauk S.S.S.R. 109, 807-10 (1956).  
C.A. 51:4896c. L. 8A163 1957/8
- X ✓ Borisenko, L. F. The geochemistry of scandium.  
Trudy, Inst. Mineral., Geokhim. i Kristallokhim. Redkikh Elementov Vorposy Mineral. Geokhim. i Genezisa Mestorozhdeniy Redkikh Elementov 1957, 14-22.  
C.A. 52:15373a. MC54. 8A163
- Borodin, L. S. The geochemistry of the Khibin alkaline massif.  
Trudy, Inst. Mineral., Geokhim. i Kristallokhim. Redkikh Elementov Vorposy Mineral. Geokhim. i Genezisa Mestorozhdeniy Redkikh Elementov 1957, 23-24.  
C.A. 52: 15363b. MCM. B73
- ✓ Borodin, L. S. Some characteristics of the concentration of Niobium in nepheline syenites.  
Doklady Akad. Nauk S.S.S.R. 103, 1061-3 (1955).  
C.A. 50: 6269i L. 8S14c 103
- Bulyalov, N. I., and Shvirayeva, A. M. Geobotanical methods for prospecting for salts of Boron. Trans. Al-union Aero-geological Trust, Ministry of geology and natural resources, part I, 1955, pp. 135-146.  
(no abstract). MCM. B94

Dono, T., Yoshida, T., Aoki, M., Nakagawa, G., and Iga, M. Geochemical investigation of lignite. II. Spectrochemical analysis of lignite. Bull. Nagoya Inst. Tech. 3, 199 - 209 (1951). C.A. 48:2532c. MCM.D68

Efremova, S.V. Phenomena of recrystallization and metasomatism in acid-extrusive rocks at the contact with the East-Kounrad intrusion (Central Kazhakstan). Trans. Inst. Geol., Ore dep., Petrog., Mineral., and Geochem., Acad. Sci. U.S.S.R. no. 21, 170 - 86 (1958). (no abstract). MC54.8A163

Germanov, A.I. Oxygen in ground water and its geochemical significance. Invest. Akad. Nauk S.S.S.R., Ser. Geol., 1955, 70 - 82. C.A. 50: 11569i. MCM.G37

Kaljuzhnyi, V.A. Liquid inclusions in minerals as a geological barometer. Mineralogicheskyy Sbornik Lvovskogo Geologicheskogo Obschestva 1955 (9) 64 - 84. (no abstract) MCM. K14 see also MF. 8L88 9

Kartsev, A.A. et al. Geochemical methods of exploration and prospecting for petroleum and natural gas. Moscow: Gostoptekhizdat. 1954. Translation edited by P.A. Witherspoon and W.D. Ramsay, U. of Cal. Press, Berkeley, 1959. C.A. 49: 12824a. MCM. K18 see also L.8A842 RJ-558, 559, and 372

Kimura, K., and Fujiwara, S. Geochemical methods of prospecting for metallic ore deposits. Japan J. Geography 60, 1 (679), 9 - 19 (1951). C.A. 46: 6046b. G. 7J862 60

Kimura, K., et al. Geochemical studies of germanium. I. General considerations on the occurrence. J. Chem. Soc. Japan, 73, 589 - 91 (1952). (no abstract). MCM.K49

Kovda, V.A., Slavin, P.S., et al. Soils and geochemical indicators of petroleum deposits. Moscow: Izdatel'stvo Akad. Nauk S.S.S.R., 1951. C.A. 48:3871b. MCM.K38

Kraynov, S.R. Experience of the application of the hydrochemical method for the search of poly-metallic deposits. Inst. Hydrology and Engineering Geology, p. 49 - 55. (no abstract). MCM.K91

Kraynov, S.P. Use of surficial flows fed by springs in the hydrochemical search for ore deposits. Prospecting and Preservation of Natural Resources, No. 4 (1958). (no abstract). MCM.K90

Kunasheva, K.G. Distribution of Radium and Uranium in plants grown in media varying in concentration of these elements. Trudy, Biogeokhim. Lab., Akad. Nauk S.S.S.R. V, 197 - 200 (1939). C.A. 47: 7603e. MCM.K96

Lyakovich, V.V. The distribution of trace elements in the Siberian traps. Trans. Inst. Mineral., Geochem. and Crystallochem., Acad. Sci. U.S.S.R., part 1, 93 - 122 (1957). (no abstract). Mc54.8A163

Meulen, M.H. On the accumulation of molybdenum in certain aquatic plants. Rec. Trav. Chim. Pays-Bas 51, 549 - 50 (1932). C.A. 26:4628. MCM.M59

Morkovkina, V.F. Granodiorite intrusion of gabbro-peridotite formation and connected with its rare metal mineralization (Arctic Ural). Trans. Inst. Geol., Ore dep., Petrog., Mineral. and Geochem., Acad. Sci. U.S.S.R. No. 21 (1958). (no abstract). Mc54.8A163

Ovchinnikov, L.N. Geochemical mobility of elements from experimental data. Doklady Akad. Nauk S.S.S.R. 109, 141 - 3 (1956). C.A. 51:10326a. MCM.096 see also MCM.8A161 109

Saukov, A.A. The Geochemistry of Mercury. Acad. Sci. U.S.S.R. Trans. issue 78, Series Min. and Geochem. No. 17, 1946, 128 p.

Shcherbina, V.V. and Ignatova, L.I. New data on the geochemistry of Cu in the supergene mineralization zone. Zapiski Vsesoyuz. Mineral. Obshchestva 84, 353 - 4 (1955). C.A. 50:6262i. MF.8S14 84

Shcherbina, V.V. Geochemical characteristics of the elements of the diagonal series Ti - Nb - W in the periodic system. Doklady Akad. Nauk S.S.S.R. 85, 839 - 41 (1952). C.A. 47: 11824g. L. 8S14c 85

Shcherbina, V. V. Geochemistry of the oxidation zone of ore deposits. Soviet. Geol., Sbornik 43, 137 - 47 (1955). C.A. 51: 12763g. MCM. S79

Shcherbina, V. V. The complex compounds and the migration of the chemical elements in the zone of hypergenesis. Geokhimiya 1956, 54 - 60. C.A. 51: 12763g. MCM. S53b.

Shcherbina, V. V. Problems of Geochemistry and Mineralogy. Special Issue. Types of migration of chemical elements in the processes of mineral formation and conditions leading to their concentration. Voprosy Geokhim. i Mineral., Akad. Nauk S.S.S.R., Otdel. Geol.-Geograf. Nauk 1956, 72 - 82. C.A. 51:12763e. MCM.S53

Shcherbina, V.V. The geochemical significance of the quantitative ratio Ag/Au. Geokhimiya 1956, 65 - 73. C.A. 51: 9427e. MCM. S53b

Shvarts, S.S. The influence of trace elements on animals in natural conditions of an ore field. Trudy, Biogeokhim. Lab., Akad. Nauk S.S.S.R. 10, 76 - 81 (1954). C.A. 49: 11127g. MCM. S56

Sigov, A.P. Prospecting by heavy mineral studies. Trans. Ural Sci. Res. Inst. of Geol. Prosp. Econ. Mineral. and Sverdlovsk Mining Inst., No. 4, p. 64 (1939). (no abstract) MCM. S57

- ✓ Sindeeva, N.D. One of the geochemical prospecting criteria of the deposits of pyrite. Reports, Acad. Sci. U.S.S.R. 104, 114 (1955) (no abstract). MCM. S56
- ✓ Sindeeva N.D., and Kurbanova, N.Z. The Clarke of selenium in some rocks of the U.S.S.R. Proc. Acad. Sci. U.S.S.R., Geochem. sect. vol. 120 - 121, nos. 1 - 6, p. 61 - 64, (1958). (no abstract). MCM. 8A161 120 - 121
- ✓ Sindeeva, N.D. Data on the geochemistry of selenium. Trudy, Inst. Mineral., Geokhim. i Kristallokhim., Redkikh Elementov 1957, 7 - 13. C.A. 52:15373b. Mc54. 8A163 1957/1
- Sokoloff, V.P. and Hawkes, H.E. Translations of selected Russian papers on geochemical prospecting for ores. U.S. Geological Survey, 1950. (no abstract). MCM.S68
- Sotronov, N.I. Feasibility of using dispersion haloes in prospecting. (no reference) (no abstract). MCM.S71
- Tikhemirov, N.I. and Miller, B.D. A physico-chemical method of prospecting for molybdenum in the semi-desert climate of northern Pribalkhash. Razbedka Nedr. 2, 34 - 9 (1946). (no abstract). MCM.T56
- Vertushkov, G.N. and Sokolov, Y.A. Plumbolimonite and pyromorphite from Verkhniy Uflaey, Ural Mountains. Zapiski Vsesoyuz Mineral. Obshchestva 87, 96 - 100 (1958). C.A. 52:10812b. MF. 8S14
- Vinogradov, A.P. and Dontsova, E.I. Isotopic composition of oxygen in alumino-silicates of mineral deposits. Doklady Akad. Nauk S.S.S.R. 58, 83 - 4 (1947). C.A. 46:4442a. L. 8S14c 58
- Vinogradov, A.P. and Dontsova, E.I. Isotopic composition of oxygen of some minerals. Doklady Akad. Nauk S.S.S.R. 56, 391 - 2 (1947). (no abstract). L. 8S14c 56
- Vinogradov, A.P. Geochemistry of isotopes. Vestnik Akad. Nauk S.S.S.R. 24, 26 - 4 (1954). C.A. 48:13571b. MCM. V78d
- Vinogradov, A.P. Sources of the high titanium content of bauxites in relation to the problem of the genesis of bauxites. Izvest. Akad. Nauk S.S.S.R., Ser. Geol., 1957, 98 - 103. C.A. 52: 164f. L. 8A163 1957/4
- Vinogradov, A.P., Dontsova, E.I., and Chupakin, M.S. The isotopic composition of oxygen in igneous rocks and meteorites. Geokhimiya 1958, 187 - 90. C.A. 52: 16997g. MCM. 8G34 1958/3

- Vinogradov, A.P. and Dontsova, E.I. Isotopic composition of oxygen in minerals of skarn origin. Doklady Akad. Nauk S.S.S.R. 85, 1341 - 3 (1952). C.A. 47: 1014b. L. 8S14c 85
- ✓ Vinogradov, A.P., Chupakin, M.S., and Grinenko, V.A. Some data on the isotopic composition of the sulfur of sulfides. Geokhimiya, 1957, 183 - 6. C.A. 52:3612d. MCM. 8A162 1
- Vinogradov, A.P. and Zykov, S.I. New data on the isotopic composition of lead samples. Doklady Akad. Nauk S.S.S.R. 105, 126 - 8 (1955). C.A. 50:9253d. AERE lib/trans 757
- Vinogradov, A.P. The regularity of distribution of chemical elements in the earth's crust. Geokhimiya 1956, 6 - 52. C.A. 50: 15363i. MCM. 8A162. 1956/1
- Vinogradov, V.I. Water haloes of dispersion of molybdenum (exemplified by deposits of central Asia and Caucasus) and some problems of hydrogeochemistry of molybdenum. Resume of dissertation, Akad. Nauk S.S.S.R., Moscow, 1958. (no abstract). MCM. V781
- Vinogradov, V.I. Solutions of secondary molybdenum minerals in dilute solutions of H<sub>2</sub>SO<sub>4</sub> and Na<sub>2</sub>CO<sub>3</sub>. Geokhimiya 1957, 233 - 9. C.A. 52: 12695g. MCM. 8A162 1957/3.
- Vinogradov, V.I. On the migration of molybdenum in the zone of hypergenesis. Geokhimiya 1957, 120 - 6. (no abstract). MCM. 8A162 2/1957
- Vogt, T. and Bogge, J. Geochemical and geobotanical prospecting. VIII. Copper content of plants from the Røros area by quantitative Roentgen analysis. Det. Kongelige Norske Videnskabers Selskab. Forh. Bd. 16, no. 14, 51 - 4 (1943). (no abstract). MCM. V88
- Vostokova, E.A., et al. Geobotanical indicators in prospecting for oil. All-union Aero-geological Trust, Ministry of Geology and Natural Resources, pt. 1, 1955. (no abstract). MCM. V97
- Yakhontova, L.K. et al. Solubility of some arsenides of cobalt and nickel in a sulfuric-acid containing medium. Zapiski Vsesoyuz Mineral. Obshchestva 87, 23 - 30 (1958). C.A. 52:10811c. MF. 8S14

Prepared by  
R.A. Washington

#### NEW MEMBERS OF THE GEOCHEMICAL SOCIETY

Naoyuki Ando  
Chemistry Section  
Geological Survey of Japan  
135 Hisamoto-cho  
Kawasaki-shi, Japan

Daniel E. Appleman  
U. S. Geological Survey  
Washington 25, D. C.

Frederick Betz, Jr.  
Office of the Secretary  
Geological Society of America  
419 West 117th Street  
New York 27, New York

Dr. Roland Brippkamm  
Geologisch-Palaontologisches  
Institut der Universität Bonn  
Bonn, Nusallee 2, Germany

Gilbert H. Cady  
504 West Oregon Street  
Urbana, Illinois

Carl J. Carlson  
601 Fiorito Street  
Taft, California

Jerry B. F. Champlin  
Bartlesville Petroleum Research Center  
Bureau of Mines  
P.O. Box 1321  
Bartlesville, Oklahoma

Charles V. Clemency  
305 West Park Street  
Urbana, Illinois

Bruce F. Curtis  
Department of Geology  
University of Colorado  
Boulder, Colorado

William M. Erwin  
Casilla de Correo 85  
Sarmiento, Chubut  
Argentina

Irving Fatt  
Dept. of Mineral Technology  
University of California  
Berkeley 4, California

George T. Felbeck, Jr.  
Department of Agronomy  
University of Delaware  
Newark, Delaware

Dr. James Paul Fugassi  
4910 Forbes Street  
Pittsburgh 13, Penn.

B.M. Gottlieb  
Sun Oil Company  
Production Research Laboratory  
Dallas, Texas

Tadao Hamachi  
Koadachi 106, Komae-machi  
Kitatamagun, Tokyo  
Japan

Donald O. Hitzman  
1717 Church Court  
Bartlesville, Oklahoma

Thomas C. Hoering  
Geophysical Laboratory  
Carnegie Institution of Washington  
2801 Upton Street, NW  
Washington 8, D.C.

Shiro Ito  
135 Hisamotocho  
Kawasaki-City  
Kanagawa Prefecture  
Japan

John Frederick Jansen  
401 Park Place  
College Station  
Texas

Gunnar Jansson  
Astrupvej 79  
Copenhagen, Brh.  
Denmark

R. E. Kallio  
Department of Bacteriology  
State University of Iowa  
Iowa City, Iowa

William Karis  
570 Prince Street  
Truro, Nova Scotia  
Canada

Haruo Kishi  
Siejo-Machi 63  
Setagaya-ku, Tokyo  
Japan

Richard W. Lewis, Jr.  
USGS/USOM - American Embassy  
APO 676, New York  
New York

Harold Masursky  
Building 25 Federal Center  
Denver, Colorado

Arthur Lee Meyerson  
Department of Geology  
Lehigh University  
Bethlehem, Penn.

D.S. Montgomery  
101 Broadway Avenue  
Ottawa, Ontario, Canada

Tamotsu Nozawa  
Geological Survey of Japan  
135 Hisamotocho  
Kawasaki City  
Japan

Takeo Okano  
Geological Survey of Japan  
8 Kawada-cho, Shinjuku-ku  
Tokyo, Japan

Edward J. Olsen  
105 E. 233rd Street  
Apartment 141  
Euclid 23, Ohio

John W. Parsons  
Department of Agronomy  
University of Delaware  
Newark, Delaware

Richard Piler  
Humble Oil and Refining Co.  
P. O. Box 2180  
Houston 1, Texas

Mary Alys Plunkett  
Vassar College  
Poughkeepsie, New York

Frank Peter Puskas  
809 Wyandotte Street  
Bethlehem, Pennsylvania

Gudimetla Venkateswara Rao  
Geological Survey of India  
27 Chowringhee Road  
Calcutta 13, India

Humbert S. Revel  
Dept. of Geology and Geography  
University of Rochester  
Rochester 20, New York

David B. Roberts  
1165 South Glencoe  
Denver 22, Colorado

William H. Roberts, III  
P.O. Drawer 2038  
Pittsburgh 30, Penn.

Frederick D. Rossini  
University of Notre Dame  
Notre Dame, Indiana

George Washington Saunders, Jr.  
Department of Zoology  
University of Michigan  
Ann Arbor, Michigan

Mitsuo Shimazu  
Geological Survey of Japan  
8 Kawada-cho, Shinjuku-ku  
Tokyo, Japan

John McNeill Sieburth  
Narragansett Marine Laboratory  
University of Rhode Island  
Kingston, Rhode Island

George C. Simmons  
USOM - BH APO 676  
New York, New York

C. Sourisse  
Societe Nationale des Petroles  
d'Aquitaine  
Allees de Morlaas  
Pau, France

Ryuichi Sugisaki  
Institute of Earth Sciences  
Nagoya University  
Nagoya, Japan

Tetsuro Suzuoki  
Institute of Earth Sciences  
Nagoya University  
Nagoya, Japan

Frank Paul Tennick  
Smuts Hall  
University of Capetown  
Rondebosch, Capetown, South Africa

David Lawrence Thurber  
Lamong Geological Observatory  
Palisades, New York

J. W. Thurman  
6th Floor Enterprise Building  
Tulsa, Oklahoma

Matthew S. Tudor  
1102 Avenue C  
Bismarck, North Dakota

Mr. Salvatore Valastro, Jr.  
Humble Oil and Refining Co.  
Prod. Research Division  
Box 2180, Houston, Texas

Dr. Alexis von Volborth  
Box 9276  
University Station  
Reno, Nevada

David Robert Waldbaum  
120 Hancock Street  
Cambridge 39, Massachusetts

Lester G. Zeiben  
834 West Silver Street  
Butte, Montana

#### MEMORIAL OF PROF. CIRO ANDREATTA

by Francesco Emiliani

On February 6th, 1960, Prof. Ciro Andreatta died in Bologna. Born at Pergine, by Trento, on January 23, 1906, he took his degree in 1928 at the University of Padova, where he began his scientific career under the guidance of Prof. Angelo Bianchi. In 1936 he was appointed Professor of Mineralogy at the University of Messina, and in 1938 he was called to the same chair at the University of Bologna, where lately he had been unanimously elected President of the Faculty of Sciences. From 1938 until his death he directed the Institute of Mineralogy and Petrography of the University of Bologna. He was a Charter Member of the Geochemical Society, a Fellow of the American Mineralogical Society, a Correspondent of the Geological Society of America, a "correspondent member" of the "Accademia Nazionale dei Lincei", Member and an Associate of numerous other Italian and foreign Academies and Societies. In 1951 he was awarded the prize of the Accademia dei Lincei, Rome.

Prof. Andreatta's scientific activity is collected in over a hundred papers. In the field of petro fabrics he established the rule of orientation of several minerals in metamorphic rocks, offering ideas for the application of petro fabric concepts in resolving some geological problems. The geological survey of the Ortles massif (about 1,800 sq km of rugged mountains, rich in glaciers and rising to almost 11,500 ft in parts), which he carried on for almost thirty years, is documented by numerous monographs and geological maps, to say nothing of the data and notes on the study (unfortunately incomplete) of the abundant material collected. Besides proposing a classification and diagrammatic representation of the igneous rocks on the basis of mineralogical composition, he advanced original theories on the problem of the mechanism of weathering in rock minerals and discovered a mineral intermediate between illites and hydromicas, which afterwards was named "andreattite". Lately he had again, with the enthusiasm that always characterized his geological and research activities, taken up the study of the great "Piattaforma profirica atesina" (Etschland Porphyryplatte).

Prof. Andreatta's death is indeed a great loss for the geo-mineralogical sciences; we, his pupils, particularly mourn the openhearted, loyal man who, without expecting them, and perhaps because of that, succeeded in gaining the sympathy, esteem and affection of all those who knew him.

#### BOOK REVIEWS

OUR MINERAL RESOURCES by Charles M. Riley. John Wiley and Sons, Inc., 440 Fourth Ave., New York 16. 1959. 338 pages. \$6.95.

This is designed as an elementary textbook in economic geology. Actually it combines the principles of elementary economic geology with the geography of important mineral deposits. The author is presently a research geologist for Humble Oil and Refining Company, but the book was written at the University of Nebraska while he was assistant professor of geology there. The book is designed to follow freshman-level courses in physical and historical geology.

The book is divided into two sections, one on metallic minerals and the other on non-metallic minerals. Chapters in Section I include a discussion of the principles of ore deposition, which touches upon concentrations of elements, the meaning of the term ore, the origin of ore deposits and their classification, the relationships of ore formation to magma, and discussions of the formation and characteristics of the following categories of ore deposits: magmatic, pegmatitic, contact metamorphic, hydrothermal, sedimentary, and those resulting from secondary enrichment.

This chapter is followed by ones on the following elements: iron, aluminum, copper, lead and zinc, tin and tungsten, gold and silver, nickel, chromium, and platinum, uranium and vanadium, and miscellaneous metals. For each the author presents a description under uses, production, and geology, in which selected deposits are described. For example, under Aluminum he uses as examples the Arkansas, British and Dutch Guiana, Jamaican, and southern European bauxite deposits.

In Section II the initial chapter on ground water is followed by ones on coal, petroleum, building materials, chemical minerals, gemstones, and miscellaneous nonmetallics. There are six appendices, a glossary, a list of chemical elements, a geologic time scale, a list of the ore minerals of various metals, a list of valuable nonmetallic minerals, and general references.

ewh

MICROSCOPIC SEDIMENTARY PETROGRAPHY by Albert V. Carozzi. John Wiley & Sons, New York, 1960. 485pp., 88 figs. \$11.50.

Although MICROSCOPIC SEDIMENTARY PETROGRAPHY resembles closely carozzi's previous textbook PETROGRAPHIE DES ROCHES SEDIMENTAIRES for which he gained considerable fame in Europe, the recent book is a completely new contribution. The topics and approach to the subject material are similar, but many of the discussions of the petrographic characters of sedimentary rock properties have been modified by reference to the recent literature. The chapters define the coverage well: 1. Arenaceous rocks (73 p.), 2. Rudaceous rocks (14 p.), 3. Pyroclastic rocks (30 p.), 4. Argillaceous rocks (69 p.), 5. Carbonate rocks (98 p.), 6. Siliceous rocks (53 p.), 7. Ironbearing rocks (29 p.), 8. Phosphoric rocks (34 p.), 9. Evaporitic rocks (60 p.). At the end are indices arranged by author and subject.

The essential aim and accomplishment of the text is to illustrate the petrographic characteristics of sedimentary rocks largely through description of idealized comprehensive specimens. These "ideal" specimens encompass most of the significant features of many rocks of the particular type being considered that would not be incongruous within a single rock. Brief explanations of the character and the genesis of the rocks also are given.

The scope of the book is entirely adequate for the student and the research sedimentary petrographer. One might object that the space given to discussion of sandstones does not appropriately reflect their relative importance in sedimentary petrology, and this cannot be denied. The space given to the different rock types seems to reflect more the relative complexity of the various types. A comparison of sandstones and evaporites illustrates this well - after all, there is little more one can say about a thin section of quartz sandstone after the grain parameters and cement are noted.

The book should be a valuable reference for all petrographers studying sedimentary rocks. It is not without additional compensation to others, too. The section on pyroclastic rocks treats equally well igneous and sedimentary processes involved in the production of pyroclastic rocks; whereas,

under the heading of argillaceous rocks, Carozzi discusses in detail features of the petrography and petrogenesis of alteration of igneous rocks by hydrothermal solutions.

Louis Briggs  
University of Michigan

INDUSTRIAL MINERALS AND ROCKS, edited by Joseph L. Gillson. Third Edition, completely revised. 934 pages. The American Institute of Mining, Metallurgical, and Petroleum Engineers, New York, 1960. \$12.00.

This is a monumental and definitive work, the quality of which clearly reflects that of the untiring efforts of the Editor-in-Chief and the Editorial Board, as well as the efforts of individual contributors. No geological library will be complete without it. The book has been enlarged over the second edition and has a new format which consists of 2-column pages. The typography is excellent throughout, although in some sections illustrations are perhaps not so sharply defined as in previous editions. The list of minerals and substances discussed is as follows:

Abrasives. By Raymond B. Ladoo  
Asbestos. By G. F. Jenkins  
Barium Minerals. By Donald A. Brobst  
Bauxite. By E. C. Harder and E. W. Greig  
Bentonite. By Joseph L. Gillson  
Bleaching Clay. By A. D. Rich  
Borax and Borates. By Ward C. Smith  
Borax Processing at Searles Lake. By Donald E. Garrett  
The Carbonate Rocks. By Joseph L. Gillson and Others  
Cement Materials. By C. F. Clausen  
Chalk and Whiting. By Wallace W. Key  
Chromite. By Harold A. Heiligman and Harry M. Mikami  
Clay. By Haydn H. Murray  
Crushing Stone. By Nelson Severinghaus  
Diatomite. By Arthur B. Cummins  
Dimension Stone. By Oliver Bowles  
Feldspar, Nepheline, Syenite, and Aplitite. By J. E. Castle and J. L. Gillson  
Fluorspar and Cryolite. By Robert M. Grogan  
Gem Stones and Allied Materials. By R. H. Jahns  
Granules. By John A. Brown  
Graphite. By Eugene N. Cameron  
Gypsum. By J. F. Havard  
Lightweight Aggregates. By T. A. Klinefelter  
Lime. By Robert S. Boynton and Kenneth A. Gutschick  
Lithium Raw Materials. By Thomas L. Kesler  
Magnesite and Related Minerals. By Oscar M. Wicken  
Manganese Ore. By Sanford S. Cole  
Mica. By S. A. Montague  
Mineral Fillers. By Arthur B. Cummins  
Mineral Pigments. By Alfred Siegel  
Mineral Wool--Rock, Slag, and Glass Wool. By Kenneth M. Ritchie  
Minor Industrial Minerals. By H. D. Keiser  
Monazite and Related Minerals. By John B. Mertie, Jr.  
Native Bitumens, Pyrobitumens, and Asphaltic Type Petroleum Bitumens. By Konrad Stern  
Nitrogen Compounds. By Herbert W. Huse  
Phosphate Rock. By James A. Barr  
Potash. By E. Robert Ruhlman

Pyrophyllite. By Fred Chappell  
Quartz Crystal and Optical Calcite. By Hugh H. Waesche  
Refractories. By C. Burton Clark and J. Spotts McDowell  
Salt. By R. T. MacMillan  
Sand and Gravel. By Walter B. Lenhart  
Secondary Fertilizer Minerals. By R. P. Thomas  
Silica Sand and Pebble. By T. D. Murphy  
The Sillimanite Group -- Kyanite, Andalusite, Sillimanite, Dumortierite, Topaz. By Wilfred R. Foster  
Slate. By Oliver Bowles  
Sodium Carbonate from Natural Sources in the United States. By Donald E. Garrett and Julien F. Phillips  
Sodium Sulfate from Natural Sources. By M. F. Goudge and R. V. Tomkins  
Strontium Minerals. By Ernest G. Enck  
Sulfur and Pyrites. By C. F. Fogarty and R. D. Mollison  
Talc and Soapstone. By A. E. J. Engel and Lauren A. Wright  
Titanium. By Langtry E. Lynd  
Tripoli. By Henry P. Chandler  
Vermiculite. By John B. Myers  
Wollastonite. By Raymond B. Ladoo  
Zirconium and Hafnium Minerals. By H. Conrad Meyer

Undoubtedly this third, badly needed revised edition will meet the same conspicuous success that greeted its predecessors.

ewh

INTRODUCTION TO GEOPHYSICAL PROSPECTING by Milton B. Dobrin. McGraw-Hill Book Co., Inc., N. Y., 2nd edition 1960, ix + 446 pages. \$9.00

This is a revised and modernized second edition of a very successful textbook that first appeared in 1952. Dr. Dobrin is eminently qualified to write such a book, having taught a course of the type for which the book is designed and having worked many years in the field of geophysical prospecting.

The new edition features a considerably expanded section on seismic prospecting. This section has also been moved to the front of the book in keeping with its position as the most used method. There is a new chapter on the interpretation and geologic coordination of reflection data. Dr. Dobrin pleads for coordination of the geophysical and geological data early in the interpretation process. The need for this seems obvious to this reviewer, but apparently it is not so obvious to many geologists.

Chapters on geophysical well-logging methods, radioposition location for geophysical surveys, and current research in geophysical exploration that appeared in the first edition have been deleted from this edition in order to make room for an adequate discussion of new developments. These were, perhaps, the least useful chapters in the first edition, and it seems to this reviewer that Dr. Dobrin has made a wise choice in removing them in favor of more material on basic prospecting techniques.

The new edition features the same "non-mathematical" treatment followed in the first. The overall treatment, however, is not so weak but that the individual teacher can use as much mathematics as he may desire (and as the students may be able to follow) in presenting the material covered by this text. Many of us who have used the first edition have found it extremely satisfactory for the presentation of geophysical prospecting methods to senior and first-year-graduate geology students. I am sure we will find the second edition equally useful.

This new edition is well illustrated, as was the first. One of the few criticisms that may be made of the book is the rather poor reproduction of many of the halftone cuts. However, it should be kept in mind that the very detailed nature of reflection seismograms and some of the presentations derived from them, such as variable-density sections, are very difficult to reproduce. On the whole, this is an excellent and very usable text, and a worthy successor to the first edition.

James T. Wilson  
University of Michigan

## PUBLICATIONS RECEIVED

- ARAMAKI, S. and ROY, R. Revised equilibrium diagram for the system  $Al_2O_3-SiO_2$ . *Nature*, Vol. 184, 631-632, 1959.
- BLIX, R. and WICKMAN, F. A contribution to the knowledge of the mineral berzeliite. *Ark. Mineral. Geol.* Vol. 2 (33), 417-424, 1959.
- BOWIE, S. H. U. Note on uranium and thorium occurrences in the Federation of Rhodesia and Nyasaland. *Chronique Mines d'Outre-Mer et de la Recherche Minière*. No. 279, 1-5, 1959.
- DAVIDSON, C. F. Some aspects of radiogeology. *Liverpool, Manchester Geol. Jour.* Vol. 2 (3), 311-340, 1960.
- DeROEVER, W. P. Schwach alkalischer frühgeosynklinaler Vulkanismus im Perm der Insel Timor. *Geol. Rundschau* 48, 179-183, 1959.
- GEIJER, PER. The distribution of halogens in skarn amphiboles in central Sweden. *Arkiv Mineral. Geol.* Vol. 2 (36), 481-504, 1960.
- KAUTZSCH, EBERHARD. Regionalgeologische Probleme bei der Suche nach magmatischen Lagerstätten in mitteldeutschen Raum. *Geologie*, 7 (3-6), 641-650, 1958.
- KELLER, W. D. Glauconitic mica in the Morrison formation in Colorado. *Proc. Fifth Natl. Conf. Clays Clay Minerals. Natl. Acad. Sci.--Natl. Res. Council. Publ.* 566, 120-128, 1958.
- KUHN, ROBERT and SCHWERDTNER, WALFRIED. Nachweis deszendenter Vorgänge während der Entstehung der Lein-Serie des deutschen Zechsteinsalses. *Kali und Steinsalz*, 11, 380-383, 1959.
- KUPSCH, W. O. Annotated bibliography of Saskatchewan geology (1823-1958 incl.) Rept. 9 (Rev. Ed.), Sask. Dept. Mineral Res., Petroleum and Natural Gas Branch, 197 pp., 1959.
- LOWRY, W. D. Expansion domes and shear cones in Mount Airy granite. *Min. Ind. Jour.*, V. Polytech. Inst. Vol. 6 (4), 1-6, 1959.
- MEINKE, W. W. Nucleonics. *Anal. Chem.*, 32, Page 104R.-136R, 1960.
- MIYASHIRO, AKIHO. Notes on rock-forming minerals (7) Garnet of Borolanite with an Appendix. *Jour. Geol. Soc. Japan*, Vol. 65, 392-393, 1959.
- MIYASHIRO, AKIHO. Notes of rock-forming minerals (5) Pyralspite and staurolite in a schist from Vermont. *Jour. Geol. Soc. Japan*, Vol. 64, 649-650, 1958.
- NORGES GEOLOGISKE UNDERSÖKELSE. *Årbok* 1958. 270 pp. Oslo, 1959.
- OFTEDAL, IVAR. Distribution of Ba and Sr in microcline in sections across a granite pegmatite band in gneiss. *Norsk Geol. Tidssk.* 39 (4), 343-349, 1959.
- OFTEDAL, IVAR. On the occurrence of tellurium in Norwegian galenas *Norsk Geol. Tidssk.* Vol. 39 (1), 75-79, 1959.
- REPUBLIC OF THE PHILIPPINES. *Ann. Rep. Bureau Mines Fiscal Year 1958-1959.* 61 pp. Manila 1959.
- RINGWOOD, A. E. Genesis of the basalt-trachyte association. *Beiträge Mineral. Petrogr.* 6, 346-351, 1959.
- RODEWALD, HANS J. Genesis des Diamanten. Verlag Meier and Cie., Schaffhausen Switzerland. 69 pp. 1950.
- SAEBØ, P. C. and REITAN, P. An occurrence of zeolites at Kragerø, southern Norway. *Norges Geol. Undersøk.* Nr. 205, *Årbok*, 1958, 174-180, 1959.
- SAEBØ, P. C. and REITAN, P., and GEUL, J. Stilbite, Stellerite and Laumontite at Honningsvåg Magerø, northern Norway. *Norges Geol. Undersøk.* Nr. 205, *Årbok*, 1958, 171-173, 1959.
- SHAFFER, M. W. and ROY, R. Phase equilibria in the system  $Na_2O - Nb_2O_5$ . *Jour. Amer. Ceram. Soc.* 42 (10), 482-486, 1959.
- SHAFFER, M. W. and ROY, R. Rare-earth polymorphism and phase equilibria in rare-earth oxide-water systems. *Jour. Amer. Ceram. Soc.*, 42 (11), 563-570, November 1959
- SHIDO, F. Notes on rock-forming minerals (8) Chemical, optical and X-ray data on a tremolite and three actinolites, *Jour. Geol. Soc. Japan*, Vol. 65, 563-565, 1959.
- SHIDO, F. Notes on rock-forming minerals (9) Hornblende-bearing eclogite from Gongen-yama of Higasi-Akai in the Bessi District, Sikoku. *Jour. Geol. Soc. Japan*, Vol. 65 (770), 701-703, 1959.
- SHIDO, F. and YOTARO, S. Notes on rock-forming minerals (11) Jadeite and hornblende from the Kamuikotan metamorphic belt. *Jour. Geol. Soc. Japan*, Vol. 65 (770), 673-677, 1959.

- SLAUGHTER, M. and KELLER, W. D. High-temperature phases from impure kaolin clays. *Amer. Ceram. Soc. Bull.* Vol. 38 (12), 703-707, 1959.
- VAN DER MAREL, H. W. Potassium fixation, a beneficial soil characteristic for crop production. *Zeits. für Pflanzenernährung, Düngung, Bodenkunde*, 84 (129), Heft 1-3, 51-63, 1959.
- VAN DER MAREL, H. W. Quantitative analysis of kaolinite. *Rev. Silicates Industriels.* 1 and 2, 1-19, 1960.
- VAN DER PLAS, L. Petrology of the Northern Adula Region, Switzerland (with particular reference to glaucophane-bearing rocks). *Leidse Geol. Mededel.* 24, 415-602, 1959.
- WATANABE, T. The minerals of the Noda-Tamagawa mine. Iwate Prefecture, Japan. I. Notes on Geology and Parageneses of Minerals. *Mineral. Jour.* Vol. 2 (6), 408-421, 1959.
- WATANABE, T. and KATO, A. A new occurrence of pyrosmalite in the Kyurazawa mine, Tochigi Prefecture, Japan. *Mineral. Jour.*, Vol. 2 (3), 180-186, 1957.
- WERY, A. Relation de hilt et tectogenese. *Bull. Tech. Union Ingén. Ecoles Spec. Univ. de Louvain*, No. 4, 3-16, 1958.
- WERY, A. and TRICOT, J. Relation de Hilt dans le bassin du Centre. *Bull. Tech. Union Ingén. Ecoles Spéc. Univ. Catholique de Louvain.* Tom 87, (4), 1-15, 1959.

## CALENDAR

## Sept.

- 6-8 Nuclear and Radiochemistry Symposium--Chalk River, Ontario.
- 11-16 American Chemical Society, Nat'l Mtg.--New York City.
- 12-15 Conf. on Atomic Masses, sponsored by International Union of Pure and Applied Physics--Hamilton, Ontario, Canada.
- 12-18 International Mining Congress, Hungarian Mining and Metallurgical Society, Budapest.
- 27- Oct. 1 Symposium on "Physics of Electrostatic Forces and Their Applications," Laboratoire d'Electrostatique et de Physique du Metal, Institut Fourier, Place du Doyen-Gosse, Grenoble, France.

## Oct.

- 3-14 Fourth International Symposium on Chemistry of Cement--Washington, D.C.
- 5-7 Rocky Mountain Minerals Conference, Salt Lake City, Utah
- 6-8 Ninth National Clay Conference, Purdue University, Lafayette, Indiana.
- 10-12 Assn. of Agricultural Chemists--Washington, D. C.
- 10-13 American Mining Congress, annual meeting, Las Vegas, Nevada
- 12-14 Federation of Geological Societies--Abilene, Texas.
- 17-19 American Oil Chemists Society--New York City.
- 19-21 Gulf Coast Association of Geological Societies, 10th annual convention, Buena Vista Hotel, Biloxi, Miss. Host: Miss. Geol. Soc. Theme: "The Future of Gulf Coast Oil." Technical sessions, entertainment and post meeting field trip. Write: A. E. Blanton, Gen. Chairman, P. O. Box 422, Jackson, Miss.
- 20-21 AIME: Los Angeles Basin Section, Fall Meeting, Huntington Sheraton Hotel, Pasadena, California.
- 23-26 Rare Earth Research Seminar, sponsored by the University of California, Dept. of Defense, Nuclear Corp. of America--Lake Arrowhead, California.
- 30 Assn. of Consulting Chemists and Chemical Engineers, Annual Meeting--New York City.
- 31-Nov. 3 GSA: Annual Meeting, in conjunction with PS, MSA, GS, SVP and SEcG, Denver Hilton Hotel, Denver, Colorado. Field trips before and after the meetings, also local excursions. Write: E. D. McKee, U.S. Geol. Survey, Federal Center, Denver, Colorado.

## Nov.

- 3-4 AAPG: Pacific Section, Annual Meeting, Ambassador Hotel, Los Angeles.
- 7-10 Society of Exploration Geophysicists, annual international meeting, Galveston, Texas.

## ION EXCHANGE COLUMN

Russian Translations

The American Geological Institute has announced that the index to Volume I of GeoScience Abstracts has been completed and distributed. This index appears as a separate publication of 95 pages. Of these, 71 make up the subject index and 24 the author index. The subject headings are essentially the same as those used in the indices of other standard geological bibliographies. The Institute also announces that the index to Volume II will appear with, or as part of, the December 1960 issue of GeoScience Abstracts.

-----

Publication of the Geochemical Society's translation of the Russian journal Geokhimiya is progressing rapidly. After the completion of the eight numbers for 1958, work was begun on the 1956 volumes, and to date Nos. 1, 2, 3, and 4 have been translated, edited and published. Numbers 5-8 (1956) are presently in press. Editing is continuing on the 1957 numbers, all of which have been translated, and work has already been begun on the 1959 volume.

-----

Additional volumes of the English translation of the Doklady of the Academy of Sciences of the U.S.S.R., Earth Sciences Sections, continue to appear at regular intervals. Recently received were Volume 124, Numbers 1-6, representing January-February 1959 (translation issued April 1960) and Volume 125, Numbers 1-6, representing March-April 1959 (translation issued June 1960). These English translations are prepared by Consultants Bureau Enterprises, Inc. and are published by the American Geological Institute to whom subscriptions should be addressed. A special subscription rate of \$27.00 per year is available to members of the AGI member societies who are on the Geotimes mailing list.

-----

Noteworthy Publications

The Bureau of Business Research of The Ohio State University, Columbus, Ohio, has recently issued two research monographs by Richard A. Tybout, Numbers 94 and 97 entitled respectively Atomic Power and Energy Resource Planning and The Reactor Supply Industry.

-----

The trade journal Research/Development continues to provide articles of fundamental interest to geochemists. In the June 1960 number (Volume 11, Number 6), Hugh J. McDonald discusses "Developments in Chromatography". Another article "Preparative Gas Chromatography New Laboratory Technique" by W. H. Butz and Theron Johns appears in the same journal in the July number.

-----

Another constantly improving and interesting journal which has been reaching the editor's desk for several years is Engenharia, Mineracao e Metalurgia which is published in Rio de Janeiro and often contains articles in English as well as in Portuguese. In the September 1959 number (Volume XXX, Number 177), is an article by Donald Towse and Pierre E. Vinson entitled "Lateritas aluminosas do Baixo Amazonas". In the November 1959 number (Volume XXX, Number 179), there appears an article entitled "As Jazidas de Criptomelano e Jaspiloto de Corumbá, Mato Grosso, Brasil" by Hannfrit Putzer.

-----

One of the most significant contributions to the general knowledge of continental evaporite deposits is embodied in the two-volume summary recently prepared by Professor Paul F. Kerr and a number of his assistants in the Department of Geology, Columbia University. This study, which is entitled Saline Deposition in the Great Basin (Item 1) and Saline Basins of North and South America (Item 2), was made possible by a gift from the Shell Development Company to Columbia University.

Sand-in-the-gears-of-learning Department, (Final Examination Division)

"Faults are characterized by schlickenstein surfaces."

"One type of fossil is incest skeliton."

"Rubble is waste material from gravel."

"The Dakota formation is noted for badlands."

"One kind of wind activity is sand duens."

"Cement rock is an argillaceous clay."

"Three types of storms: Tornado, cyclone, hairchain."

Daffynition from our Unabashed Fictionary

Diamond cutter - one who mows the grass at Yankee Stadium.

-----

This number is being prepared just prior to the international meetings in Copenhagen and we hope that those of you who will attend will have it to welcome you upon your desks when you return. In the interval the editor hopes to meet many of his correspondents personally.

E. Wm. Heinrich  
Editor

Department of Mineralogy  
The University of Michigan  
Ann Arbor, Michigan