

The Geochemical News

Number 14

February 1959

MINUTES OF THE ANNUAL BUSINESS MEETING OF THE GEOCHEMICAL SOCIETY November 7, 1958

The meeting was called to order at 5:00 P. M. by President Daniels, with 35 members present. Minutes of the Annual Meeting of November 6, 1957 were approved.

Reports of Officers

Treasurer:

Report for the fiscal period beginning August 1, 1957 and terminating August 1, 1958.

Balance, August 1, 1957	\$2,594.87
Dues	2,787.20
Total Receipts	<u>5,382.07</u>
Disbursements	<u>2,656.90</u>
Balance, August 1, 1958	\$2,725.17

A full report of the treasurer will appear in a future issue of the Geochemical News.

Secretary:

Total membership as of November 1, 1958 was 1549. Of this number, 411 members are citizens of 48 countries other than the U.S.

Notice has been received of the deaths of three members: Marcellus Stow, Ray V. Hennen, O. Bayramgil.

The Teller's Committee (C. Meyer, O. C. Hutton, H. R. Cornwall) reported the following results of the recent election:

President: J. F. Schairer
Vice-President: T. F. W. Barth
Treasurer: G. T. Faust
Secretary: K. B. Krauskopf
Councilors: To serve until close of Annual Meeting 1961:
F. G. Houtermans, A. E. J. Engel

Proposed amendment to Section IV of the By-Laws:
substitute 4 months for 3 months and 65 days for 45 days.
Yes - 729 votes
No - 16 votes

President:

President Daniels summarized the work of the Council earlier in the day, noting particularly the speeding up of the procedure for acting on membership applications, the adoption of a design for the seal, the acceptance of Abelson's gift for a publication fund, and an inconclusive discussion regarding a possible change in the name of the Society to the International Geochemical Society.

New Business:

In response to the president's remarks, Maurice Deul moved that the Society express its great appreciation to Abelson for his generous gift. The motion was passed unanimously. Several members discussed the proposal for a change in the Society's name, the general opinion being that the change is not desirable.

Ingerson summarized his talks with Pergamon Press about delays in the publishing of *Geochimica et Cosmochimica Acta*. He also gave a brief report on the status of the translations of Russian journals and books, noting that the National Science Foundation has granted the Society \$15,000 to cover most of the cost of the translations, that the translation of the first number of *Geokhimiya* has been published, and that translation of other numbers and of Russian geochemical books is progressing rapidly. Ingerson appealed for volunteers to assist in the editing of translation of Russian books.

Meeting adjourned at 5:30 P. M.

K. B. Krauskopf
Secretary

CHEMICAL ABSTRACTS, SEC. 8, IN 1958

The following is a summary of the work of Section 8, Mineralogical and Geological Chemistry, of Chemical Abstracts for Vol. 52 (1958). Abstracts of 3069 papers were published, a new record for the seventh consecutive year, although the rate of increase slowed down somewhat. This compares with 2904 for 1957, 2280 for 1956, 2149 for 1955, and 2076 for 1954.

The speed of abstracting decreased slightly; 78.6% of the abstracts were of papers published in 1958 or 1957. The comparable figures for 1957 and 1956 were 80.6 and 79.6%.

The abstracts were prepared by 238 abstractors, but 23 prepared more than half of all the abstracts. A special effort had to be made to cover the huge increase in Russian abstracts (see below). Coverage of Japanese literature continued to be good, and the addition of new abstractors in those countries improved our coverage of Poland and Yugoslavia.

The feature of the year was a spurt in Russian publication. The figures for any one year should not be taken too seriously (for example, we cleared backlogs of United States and Japan in 1957), but those for 1958 for the USSR are only partly due to clearing backlog.

Abstracts from leading countries (by country of publication)

	1958		1957		1956	
	No.	%	No.	%	No.	%
U.S.	482	15.7	579	19.9	420	20.3
U.S.S.R.	816	26.6	542	18.6	257	12.4
Japan	225	7.3	267	9.2	134	6.5
Gt. Britain	168	5.5	217	7.5	132	6.4
Germany (W. + E.)	178	5.8	172	5.9	151	7.3
France	106	3.5	118	4.1	90	4.4
Total, all countries	3069		2908		2065	

The size of the job attempted is evident. The Section depends on the voluntary services of geochemists and always needs volunteers. Anyone interested please write to the writer or to Dr. C. L. Bernier, Chemical Abstracts, Ohio State Univ., Columbus 10, Ohio. A special need right now is for someone who can read Chinese.

You can also help by frank and specific comments on our shortcomings, but in 1958 the writer

received exactly one letter pointing out an error in an abstract.

Michael Fleischer

REPORT ON GEOCHEMISTRY IN BRAZIL
Rui Ribeiro Franco

The bulletin of the SOCIEDADE BRASILEIRA DE GEOLOGIA, Vol. 7 (2), September 1958, published two significant geochemical papers: "Geochemistry of trace element concentrations in the Poços de Caldas Plateau, Brazil" and "Preliminary spectrochemical and age determination results on some granitic rocks of the Quadrilátero Ferrífero, Minas Gerais, Brazil." The first was written by Gene E. Tolbert, and the second by Norman Herz and C. V. Dutra.

Abstract of Tolbert's paper:

A geochemically coherent assemblage of trace elements occurs in the feldspathoidal rocks of the Poços de Caldas Plateau. Zirconium, hafnium, and uranium are found in veins and lenses of caldasite (baddeleyite plus zircon) whereas thorium and the cerium group of rare earths are associated with thorogummite, bastnaesite, and allanite in a separate occurrence. Results from preliminary mineralogical work are described. Zirconium and uranium are also concentrated in eudialyte syenite, a prominent rock type in the north rim of the plateau. These associations are consistent with the size, charge, and the electronegativities of the above elements. In the course of magmatic history these elements may enter rock-forming silicates and crystallize early or remain in the residual solutions to crystallize in the late stages. Which path is followed is a function of the composition and degree of silica polymerization of the magma. The trace element occurrence of the Poços de Caldas region resembles, in part, the mineral assemblages of the Kola Peninsula, Russia, and the Julianehaab area, Greenland.

Abstract of Herz and Dutra's paper:

The paper deals with spectrochemical analyses and absolute age determination of granitic rocks of the "Quadrilátero Ferrífero" (area where most of the iron ore formations of the State of Minas Gerais are found). It shows the preliminary results of 25 granitic rocks of this area and one from Gouveia, and the age determination of 9 of them. The technique used in the spectrochemical analyses is described in detail. In the chapter "Resultados preliminares" (Preliminary results) there is a petrographical description, and a study of the trace elements of each sample. From this study it was possible for the authors to establish certain groups of rocks.

Group I has Co, Cu, Ni, and Sc above the average; Ba, Nb, V, Y, and Zr remain above or equal to the average. Cr, with a single exception, is above the average. La, Sn, and Sr vary from low to high values. The age was found to be 1,260 m. y.

Group II has Co, Cr, Cu, Ni, Pb, and Sc below the average; Nb, V, Zr are below or equal to the average. Ba, La, Sn, Sr, and Y vary from low and high contents. The age was found to be 475-560 m. y.

Group III seems to be comagmatic with group II. It shows a general correlation with the trace elements of group II. The age was found to be 475-555 m. y.

Group IV is found in the area Itabirito-Baço-Cachoeira do Campo and has La, Nb, Sn, V, Y, and Zr below the average; Co and Ni equal or below the average; Cr and Sc equal to the average; Ba, Pb, and Sr equal or above the average; Cu varies from low to high contents. The age determinations of this group vary from 2,520-720 m. y. The group may thus represent an older granite (2,520-2,440) which was remobilized, and was intruded, at least, in two recent times (1,330 and 720-760 m. y.) with no essential change in its chemical composition.

Group V represents a set of distinct petrographic types found in the east part of Moeda. All have V and Y above the average; Nb, Pb, and Zr equal or above the average; Co, Cu, La, Ni, Sc,

and Sn equal to the average; Ba and Sr equal or below the average; Cr varies from low to high contents. Age determinations were not yet made.

A sample taken at the Morro das Pedras, Belo Horizonte, does not show evident correlation of its trace elements and the trace elements of the other groups. It may represent a relatively recent intrusion.

The sample from Gouveia cannot be correlated with the rocks of the Quadrilátero Ferrífero.

BOOK REVIEWS

THE OCEANS. By H. U. Sverdrup, Martin W. Johnson, and Richard H. Fleming. Prentice Hall, Inc., 70 Fifth Ave., New York 11, N. Y. 7th printing, 1957. 1087 pp. \$12.50.

Despite the fact that this book was first published in 1942 and has apparently not been substantially revised, it still remains the major authoritative work on the oceans. Its popularity and definitive character are attested to by the large number of printings. The book is monographic in scope, dealing with the geography of the oceans and their relationships to the other planetary features, the properties of sea water and its variations in temperature, salinity and density, the composition of sea water, life in the oceans, oceanographic techniques, ocean currents and their dynamics, waves and tides, interrelationships between life and variations in the composition of waters, and finally marine sedimentation. In fact, the complete title of the book is "The Oceans, Their Physics, Chemistry, and General Geology." The work is an invaluable reference tool for all geochemists and clearly deserves a place on their own library shelves. It is to be hoped that a revision will shortly appear, incorporating the tremendous number of data on the oceans that have appeared since the close of World War II.

E. W. H.

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ADVANCES IN GEOPHYSICS, vol. 4, ed. by H. E. Landsberg and J. von Mieghe. Academic Press Inc., New York, 1958. 456 +x, \$12.00.

This is the fourth volume in a distinguished series of collections of review articles. The editors and their editorial committee interpret the term "geophysics" in its broadest sense as indicated by the five articles in this volume: Atmospheric Chemistry by Christian E. Junge of the Geophysics Research Directorate, Air Force Cambridge Research Center; Theories of the Aurora by Joseph W. Chamberlain of Yerkes Observatory; The Effects of Meteorites upon the Earth by Lincoln LaPaz of the Institute of Meteoritics, University of New Mexico; Smoothing and Filtering of Time Lines and Space Fields by J. Leith Holloway, Jr., of the U. S. Weather Bureau; and Earth Tides by Paul J. Melchior of the Observatoire Royal de Belgique.

All the articles seem to be excellent; however, only a reader with extremely broad interests will appreciate fully the wide range of subjects. The articles on earth tides and meteorites were particularly appreciated by this reviewer for their completeness and timeliness. Readers in other fields will, I am sure, be equally appreciative of the other summaries.

J. T. Wilson

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THE EARTH AND ITS ATMOSPHERE. Edited by D. R. Bates. Basic Books, Inc., 59 Fourth Ave., New York 3, N. Y. 324 pp. 1958. \$6.00.

This is a single volume which attempts to present, and does so successfully with a combination of scientific completeness and readability, the background required for a thorough understanding

of the International Geophysical Year program. Fifteen outstanding scientists of the world have joined in presenting an integrated picture of the physics and chemistry of our planet. The chapter headings and their authors are as follows:

- 1 The International Geophysical Year. S. Chapman.
- 2 Origin, Age, and Possible Ultimate Fate of the Earth. Gerard P. Kuiper.
- 3 The Deep Interior. K. E. Bullen.
- 4 The Crust. J. Tuzo Wilson.
- 5 The Oceans. G. E. R. Deacon.
- 6 Geomagnetic Field. E. H. Vestine.
- 7 Composition and Structure of the Atmosphere. D. R. Bates.
- 8 Climate. E. T. Eady.
- 9 The General Circulation of the Atmosphere and Oceans. E. T. Eady.
- 10 Ice Ages. E. J. Opik.
- 11 Meteorology. B. J. Mason.
- 12 The Ionosphere. J. A. Ratcliffe.
- 13 The Airglow. D. R. Bates.
- 14 Aurorae and Magnetic Storms. V. C. A. Ferraro.
- 15 Meteors. A. C. B. Lovell.
- 16 Cosmic Radiation. J. G. Wilson.
- 17 Genesis of Life. J. B. S. Haldane.

The book contains, in addition, a selected bibliography and six appendices: I. Gravitation and the mass of the Earth; II. Moment of inertia; III. Precession of the equinoxes; IV. P and S waves; V. Temperature scales; VI. Atomic and molecular spectra.

The main purpose of the book is to "...provide the educated public with a background of knowledge which will aid them in appreciating the significance of some of the work being done (i. e. during the Geophysical Year). In addition, it is hoped that specialists will find that the book forms a light but useful introduction to branches of geophysics which they themselves have not studied." Without doubt the volume fulfills both of these purposes, and geochemists will benefit both generally and specifically by reading it.

E. W. H.

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PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR, Geochemistry Section (Doklady Akademii Nauk SSSR), in English translation. Vols. 118 and 119 combined, Nos. 1-6, Jan.-Apr. 1958. Consultants Bureau, Inc., 227 W. 17 St., New York 11, N. Y. Annual subs., \$15.00.

Consultants Bureau, which has an advanced and outstanding program of translation of scientific Russian articles into English, has issued the first complete translation of a volume of the Geochemistry Section of the Proceedings of the Academy of Sciences, USSR. The translation is reproduced by photo-offset process and is stapled and paper-bound in 8 1/2 by 11 size. The typography is clear but rather small. Articles in this number are on a variety of topics:

Volume 118:

- On the geochemistry of the Maikopian rocks of the Central Fore-Caucasus. Iu. A. Priakhina.
- On the question of the retention of radiogenic argon in glauconite. Kh. I. Amirkhanov, S. B. Brandt, E. N. Bartnitskii, V. S. Gurchich, and S. A. Gasanov.
- Content of rubidium in beryls from the Kola Peninsula pegmatites. T. F. Borovik-Romanova and A. F. Sosedko.
- Salinity of interstitial water in the Bering Sea sediments. S. V. Bruevich.
- Helium in the natural gas jets of the Urup chalcopyrite deposit. M. G. Gurevich and I. M. Ovchinnikov.
- Certain characteristics of albitization in vein aureoles. V. I. Rekharskii.

Organic phosphorus in petroleum. A. A. Kartsev and A. I. Sladkov.

Volume 119

The salt composition of Black Sea water. B. A. Skopintsev, F. A. Gubin, R. V. Vorob'eva, and O. A. Vershinina.

The influence of the carbonate system in natural water on the organic matter content. O. A. Alekin and N. P. Moricheva.

The use of the fusion method for determining the approximate chemical composition of Kainozoic volcanic rocks of South Sakhalin. V. N. Shilov, N. N. Belikova, and Z. P. Ershova.

The amount of juvenile water participating in volcanic explosions. E. K. Markhinin.

Some laws governing the variation of the pH of rocks of the Meso-Kainozoic Series of the Eastern Trans-Urals. I. A. Iurkevich and V. A. Feirabent.

Vanadium in oil-bearing carbonate rocks of the Paleogene of North Fergana. B. K. Proshliakov.

The problem of the genesis of phosphorites. A. I. Smirnov.

For those interested in the complete list of translations available from Consultants Bureau, the organization provides a small trade journal called "Soviet Science and Technology, A Monthly Guide to Soviet Research", which lists their translations in entirety.

E. W. H.

PUBLICATIONS RECEIVED

Origin of the lithographic limestones. Assar Hadding. Kungl. Fysiogr. Sällsk. Lund Förh. 28 (4), 21-32, 1958.

The soft iron ores of Vermlands Taberg. Pontus Ljunggren. Geol. Fören. Förh. 80 (1), 59-70, 1958.

Basic metamorphic rocks from the region of Höljes in northern Vermland. Pontus Ljunggren. Geol. Fören. Förh. 80 (1), 20-54, 1958.

Boletim da Sociedade Brasileira de Geologia 7 (2), Sept. 1958. Sao Paulo, Brazil. This number of the bulletin contains 8 papers involving 95 pages. The articles deal with a variety of topics including phosphate pegmatite minerals from the Sapucaia mine, notes on the occurrence of palladium and platinum in Brazil, the Corrego Areado meteorite, age of Morro Velho gold mineralization, geology of the Serra do Macaia, stratigraphy of the Minas Series, geochemistry of the Poços de Caldas, age of granites of the "Iron Quadrangle." (See pp. 3-4 of this issue of Geochemical News.) Articles are in English and in Portuguese.

Research and Use of Clays. A brief summary of reports presented at the Conference in Lvov, May 27-June 7, 1957. These are abstracts in English of papers given in Russian and published by the Ivan Franko State University of Lvov in 1958. The pamphlet consists of 35 pages involving 80 abstracts dealing with the composition, structures, mineralogy, geology, stratigraphy, etc., of clays. This summary is of the utmost importance to all serious students of clay minerals.

Tin and its Uses. Quarterly journal of the Tin Research Institute No. 44, Autumn 1958. 16 pp. The Tin Research Institute, Fraser Road, Greenford, Middlesex, England.

Sedimentary geochemistry, a possible future method for correlation of strata. G. D. Nicholls. Petroleum, Sept. 1958, 6 pp.

CALENDAR

Feb.

15-19 AIME: Ann. Mtg., joint with SEcG. Hotels St. Francis, Sheraton-Palace, Sir Francis Drake, San Francisco, California.

23-Mar. 3 Symposium, "The Application of the FluoSolids Reactor to the Mineral Industry." Univ. of Arizona, Tucson, Ariz.

24-25 University of Oklahoma, 6th Biennial Geology Symposium. Norman, Okla.

Mar.

1-4 Prospectors & Developers Association, 27th Ann. Mtg. and Convention, joint with Geol. Assoc. of Canada and Mineralogical Assoc. of Canada. Royal York Hotel, Toronto, Ontario.

2-6 Conf. on Analytical Chemistry and Applied Spectroscopy and Exposition of Modern Laboratory Equipment. Pittsburgh, Pennsylvania.

6-7 Am. Physical Soc., Southwestern Mtg. Austin, Texas.

16-19 AAPG-SEPM: 44th Ann. Mtg. Memorial Auditorium, Dallas, Texas.

Apr.

1-5 GSA: Cordilleran Sec. Tucson, Arizona.

2-3 AIME: Soc. Petr. Eng., Fifth Ann. Joint Mtg. of Rocky Mountain Petroleum Secs. Casper, Wyoming.

2-4 SEPM: Permian Basin Sec. Ann. Mtg. Roswell, New Mexico. Field trip to Sacramento Mountains area April 3 & 4.

5-10 Amer. Chem. Soc. 135th Ann. Mtg. Boston, Massachusetts.

13-14 Lake Superior Institute on Geology. University of Minnesota, Minneapolis, Minn.

13-15 Canadian Institute of Mining and Metallurgy, Ann. Mtg. Queen Elizabeth Hotel, Montreal, Quebec.

13-15 Association of American State Geologists. Lawrence, Kansas.

16 Ohio Acad. of Science. Capital University, Columbus, Ohio.

27-30 International Symposium on Physical Chemistry of Extractive Metallurgy. Penn-Sheraton Hotel, Pittsburgh, Pennsylvania.

ION EXCHANGE COLUMN

Dr. Ian Campbell, Professor of Geology and Executive Officer of the Division of the Geological Sciences of the California Institute of Technology, has been appointed State Mineralogist and Chief of the California State Division of Mines, effective January 12, 1959. The California Institute is placing Dr. Campbell on a leave of absence status.

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The American Geophysical Union announces the expansion of the Journal of Geophysical Research beginning with the January 1959 issue, Volume 64, No. 1. The revised journal will include the scientific material formerly published in the Transactions of the American Geophysical Union. According to the A.G.U. announcement, this revamping results from a considerable expansion in basic geophysical research in the United States, thus increasing the urgency for providing an adequate outlet for scientific papers in the general field of geophysics. It is anticipated that a better balance of papers in all fields of geophysics may be expected by combining those formerly published in the A.G.U. Transactions with those traditionally published in the Journal of Geophysical Research. Dr. M. A. Tuve, who has conducted the Journal of Geophysical Research for the last ten years, will continue to serve as an associate editor of the expanded Journal. The Journal welcomes original

scientific contributions on the physics of the earth and its environment. Manuscripts should be submitted to Dr. J. A. Peoples, Jr., Geology Department, University of Kansas, Lawrence, Kansas.

Well worth the time of reading is the clever article by Nicholas Vanserg on "Mathmanship" published in American Scientist, Vol. 46 (2), 1958, pp. 94a-96a.

More selected daffynitions from the Muddle-English Fictionary (Mineralogy Section):

Pigeonite -- Chief mineralogical constituent of guano.
Chrysocolla -- Popular soft drink.
Chrysoberyl -- Popular soft drink in the bulk.
Brunswigite -- Well-known German sausage.
Arfvedsonite and Barkevikite -- Two Scandinavian lapphounds.
Betafite -- Not the major conflict.

E. Wm. Heinrich
Editor

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