The Geochemical News

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ANNUAL MEETINGS

The Annual Meetings of the Geochemical Society were held in St. Louis November 5-8. Owing to last minute conflicts, the Council meeting was held Thursday morning, November 6, instead of Wednesday afternoon, November 5, as was indicated in the program and in No. 12 of the Geochemical News. Reports of the Council Meeting will be presented in the February issue of the Geochemical News.

The scientific sessions dealing with Geochemistry were held Thursday afternoon, Friday morning, and Saturday morning and afternoon. All were well attended. For those members of the Society who do not receive the program of the Geological Society of America, we are listing here the titles and speakers of the four geochemistry sessions.

Minor and Trace Elements. Thursday Afternoon, Nov. 6.

J. M. Whitfield, J. J. W. Rogers, and J. A. S. Adams: Thorium and uranium contents of selected granitic rocks
W. F. Slawson and M. P. Nackowski: Lead in potassium feldspars from basin and range quartz monzonites
E. W. Heinrich, R. A. Borup, and A. A. Levinson: Rare earth and thorium distribution in some pegmatitic monazites
C. Frondel: Geochemical enrichment of strontium in minerals of the alunite structure type
D. M. Shaw: Scapolite geochemistry
K. Turekian and K. M. Waage: Geochemistry of the Fox Hills formation, South Dakota
F. R. Siegel: Effect of strontium on the aragonite-calcite ratios of Pleistocene corals
W. H. Grant: Example of diopside amphibolite weathering near Atlanta, Georgia
H. W. Lakin: Comparison of toxic and nontoxic seleniferous soils
F. A. Brooks, Jr.: Trace and minor elements in Woodbine subsurface waters of the East Texas Basin
P. K. Theobald, D. B. Hawkins, and H. W. Lakin: Composition of water and precipitates in the confluence of Deer Creek with the Snake River, Summit County, Colorado

Phase Relations. Friday Morning, Nov. 7.

S. Aramaki and R. Roy: Further equilibrium studies in the system Al_2O_3-SiO_2-H_2O under hydrostatic and uniaxial pressure
M. Koizumi and R. Roy: System CaO-Al_2O_3-SiO_2-H_2O. VII: Synthesis and equilibrium stability of the calcium zeolites
D. B. Stewart: System $CaAl_2Si_3O_8$-SiO_2-H_2O
J. J. Hemley: Mineralogical equilibria in the system K_2O-Al_2O_3-SiO_2-H_2O
D. R. Wones: Phase relations of biotites on the join phlogopite-annite
H. P. Eugster and C. Milton: Mineral assemblages and phase relations in the Green River formation
J. F. Schairer and N. Morimoto: Preliminary report on the system forsterite-diopside-silica-albite
F. Dachille and R. Roy: Experimental study of the olivine-spinel inversion in Mg_2SiO_4
A. Muan: Stability relationships among some manganese minerals
W. G. Ernst: Study of synthetic and natural magnesioriebeckite

R. I. Harker: Formation of tilleyite, $Ca_5Si_2O_7(CO_3)_2$, in the contact metamorphism of siliceous limestones
O. F. Tuttle and P. J. Wyllie: Calcite-water join in the system $CaO-CO_2-H_2O$
G. Kullerud and E. H. Roseboom, Jr.: $Cu_9S_5-Cu_5FeS_4$ system
J. MacChesney and A. Muan: Studies in the system iron oxide-TiO_2

Geochronology. Saturday Morning, Nov. 8.

G. R. Tilton, G. W. Wetherill, and G. L. Davis: Mineral ages from rocks of the Appalachian orogenic zone
G. L. Davis, G. W. Wetherill, G. R. Tilton, and C. A. Hopson: Age of the Baltimore gneiss
M. Grunenfelder and L. T. Silver: Radioactive age dating and its petrologic implications for some Georgia granites
P. M. Hurley, H. W. Fairbairn, and W. H. Pinson, Jr.: Intrusive and metamorphic rock ages in Maine and surrounding areas
H. J. Bullwinkel, H. W. Fairbairn, W. H. Pinson, Jr., and P. M. Hurley: Age investigation of syenites from Coldwell, Ontario
L. T. Aldrich: Mineral age measurements in metamorphic zones of Iron and Dickinson counties, Michigan
J. K. Osmond and J. A. S. Adams: Normal granite as a source of anomalous leads
J. C. Cobb and J. L. Kulp: Uranium-lead dating of black shales
J. A. S. Adams, G. Edwards, W. Henle, and J. K. Osmond: Absolute dating of bentonites by strontium-rubidium isotopes
D. Thurber, E. Purdy, and W. Broecker: Radiocarbon studies of the Bahama Banks
E. A. Olson: Problem of humic acid contamination in radiocarbon dating

General Geochemistry. Saturday Afternoon, Nov. 8.

J. V. Smith: Crystal structure of proto-enstatite
D. M. Roy and R. Roy: Comparison of the high-low inversions in carnegieite and cristobalite
M. S. Crowley and R. Roy: Possible Al-Si ordering in sheet structures
J. R. Goldsmith: Cadmium-dolomite and the system $CdCO_3-MgCO_3$
D. L. Graf, C. R. Blyth, and R. S. Stemmler: Mixed-layer computations using Illiac: the three-layer case
R. M. Garrels and R. Siever: Stability of some carbonates in aqueous solution
R. F. Schmalz: Thermodynamic calculations relating to the origin of red beds
B. Nagy and J. P. Wourms, Jr.: Chromatographic separation and concentration of organic compounds in sediments
A. W. Rose: Significance of the iron content of sphalerite
D. S. McCulloch and L. I. Briggs: Growth temperatures and vacuole disappearance temperature in halite
C. E. Legate: Gas chromatographic study of a clay mineral-organic system: Determination of activity coefficients and heats of adsorption
R. E. Bisque and J. Lemish: Susceptibility of some carbonate rocks to silicification

By Title

F. R. Boyd and J. L. England: Apparatus for phase-equilibrium studies at pressures up to 70 kilobars and temperatures up to 1750°C
J. R. Clark, M. E. Mrose, C. L. Christ, S. Block, A. Perloff, and G. Burley: Investigation of veatchite
E. S. Erickson, Jr., and R. Roy: Re-examination of the system $Al_2O_3-H_2O$
S. A. Greenberg: Kinetics of hydrothermal reactions: I: Reaction between silica and calcium hydroxide

L. E. Long and J. L. Kulp: Isotopic ages of rocks in the vicinity of the City of New York
C. J. Schneer: Heat treatment of sphalerite-type crystals
N. M. Short: Element variations during weathering of four residual soils
K. K. Turekian: Distribution of trace elements during the fractional crystallization of the Stillwater complex, Montana

The Society also maintained a booth at the meetings at which were displayed copies of the Geochemical News and of issue No. 1 of the translation of the Russian journal Geokhimiya.

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GEOCHEMISTRY in AUSTRALIA and NEW ZEALAND
by W. S. Fyfe

In Australia and New Zealand geochemistry appears to be receiving its share of the general expansion in scientific effort. As would be expected, the study of element distribution has always held an important place in our geochemistry. Both countries depend heavily on agricultural exports, and Australia is richly endowed with a variety of metals. In the battle against plant and animal disease, trace element research has always been in the front line, and work on cobalt, zinc, manganese and molybdenum deficiencies, to mention only a few, has paid what must be fantastic dividends, if they could be adequately assessed, for the expenditure on such research.

More recently expansion in Australia has been partly promoted by large uranium discoveries, and it also seems that New Zealand may have some valuable deposits. There is no doubt that Australia

can look to a bright future in the field of inorganic raw materials. In New Zealand the task of utilizing geo-thermal energy for producing electricity has stimulated research in hydrothermal chemistry. On the experimental side, a laboratory for hydrothermal chemistry has been established at the University of Otago (N.Z.), and the C.S.I.R.O. in Australia has an active group concerned with high pressure chemistry and physics.

In this account it is proposed to outline some of the research work in progress and further to discuss three projects in more detail as they represent more recent developments. Finally, a limited bibliography of work published in Australian and New Zealand journals is given.

Canberra

Bureau of Mineral Resources. Dr. A. M. Condon and staff.

As well as geochemical prospecting for Pb, Cu, Ni, Co, and Au, the department is studying the occurrence of perchlorate in soils, ground water, seawater, brines and evaporites, as it is considered that this species may be important in oxidative weathering. Work is also in progress involving the origin of syngenetic ores and in particular the behavior of metal ions in natural colloid systems.

Australian National University. Dr. J. Lovering.

Work is concerned with the chemistry of meteorites and with the geochemistry of a primary meteorite body. At the present time this has necessitated further study of the geochemistry and petrology of eclogites.

New South Wales

University of Sydney. Professor C. E. Marshall and Dr. A. Draycott.

Geochemical work is largely concentrated on the study of coal, both fundamental and applied. At the present time studies are concerned with petrographic, chemical and carbonization problems concerned with the utilization of New South Wales coal.

University of Technology. Dr. G. T. See.

Studies are in progress of the infra red spectra of micas and related minerals.

University of New England. Professor J. F. G. Wilkinson and R. L. Stanton.

Work at present is concerned with trace elements on the chromite of New Caledonia, the distribution of Cu, Pb and Zn in sulfide deposits and the geochemistry of ultramafic rocks.

Queensland

Bureau of Mineral Resources. Dr. A. H. Debnam and staff.

Biogeochemical studies are in progress with emphasis on the distribution of Cu, Zn, Pb, U in plants. Geochemical prospecting for Ni is also being studied. Mt. Isa Mines Ltd. and the National Lead Company have extensive programmes of geochemical prospecting for Cu, Pb, Zn in soils.

South Australia

University of Adelaide. Professor A. R. Alderman and Catherine W. Skinner.

A detailed study of the conditions of dolomite sedimentation is in progress with emphasis on the crystal chemistry of carbonate minerals.

Department of Mines (Parkside, S.A.). Dr. A. W. G. Whittle and staff.

An extensive study of trace element distribution in the primary rocks is in progress to obtain more knowledge of the distribution of potentially useful metals in the igneous provinces of the state.

Tasmania

University of Tasmania. Professors S. Carey and E. E. Kurth.

The distribution of Ni, Cu, Zn, Mo, V, and Mn is being studied in a range of minerals and rocks including the distribution in differentiated basic sills.

Western Australia

University of Western Australia. Professor Rex T. Prider, A. F. Wilson and M. J. Frost.

A very extensive study of igneous and metamorphic rocks including leucite lamproites, dolerites, granites, granulites and charnokites is in progress. Remarkable examples of olivine dolerites which have metamorphosed the Archaen basement or have assimilated granitic material have been described. A study has also been made of the distribution of divalent Fe, Mn, Mg and Ca, between garnets and ilmenite, magnetite, staurolite, biotite, anthophyllite, hornblende, cordierite, olivine and pyroxene, and it is considered that with some pairs this distribution is suitable for the estimation of temperatures of metamorphism.

Government Chemical Laboratories (Perth). Dr. L. W. Samuel and staff.

A study has been made of the chemistry of over 500 rock samples from the gold and tin fields to obtain more information on the mineralization processes.

Commonwealth Scientific and Industrial Research Organization, Division of Industrial Chemistry, High Pressure Laboratory, University of Sydney.

The C.S.I.R.O. of Australia is a most progressive organization and offers considerable facilities for both pure and applied research. This progressive attitude is reflected in the work of the high pressure laboratory and in the placing of this group on a university campus. The group is led by Dr. S. D. Hamann and, although the work is in the field of pure physical chemistry and physics, any work of this type must find application in the geological sciences.

In recent years the group has been concerned with organic reaction kinetics and the properties of acids and bases at high pressures. It has been shown that weak acids and bases become much stronger at elevated pressures. For organic acids a pressure increase of 1000 atmospheres almost doubles the dissociation constants and for nitrogenous bases the effect is even greater. At 45°C measurements have been made up to 12,000 atmospheres.

More recently shock-wave techniques have been used and the range of pressure and temperature greatly extended. Conductance studies on water at 1045°K and 127,000 atmospheres show that the self dissociation constant is 10^{12} greater than that at 25°C and 1 atmosphere (i.e. 10^{-2} compared with 10^{-14}). Under these conditions the estimated density is 1.717 gms/cm . The same techniques have been used on other materials and it has been shown that sulfur becomes metallic at approximately 230,000 atmospheres. Recently, even more extreme T, P conditions have been achieved.

Geochemical Studies in the Wairakei Thermal Area of New Zealand.

The Department of Scientific and Industrial Research and the New Zealand Geological Survey have been concerned with geochemical problems involved with power production in this area. About 50 bores have been sunk over a range of depths down to 4,000 feet, and these penetrate rhyolite ash, mudstones and sandstones, and at depth ignimbrite and vesicular rhyolite.

Scientific work has been directed towards prospecting for the best drilling sites and elucidating the chemistry of the hydrothermal systems involved. Leading workers on the mineralogical and chemical aspects are A. Steiner, S. H. Wilson and A. J. Ellis. Steiner has described the typical hydrothermal alteration of the area which involves in part large scale zeolitization.

Chemical work indicates that activity in the area is due to a large body of hot chloride water. The ratios of chloride to boron, arsenic and fluorine are constant for each thermal area but differ from one field to another. Gases have been analysed from fumaroles ranging from 100°C to 700°C

(on White Island), and Ellis has interpreted this data from thermodynamic functions for the system H_2O-CO_2-S_2-H_2. The trend is from H_2S-CO_2-H_2O at low temperatures to SO_2-CO-CO_2-S_2-H_2 at high temperatures. A feature of interest is the high lithium content of the water and investigations are in progress to test the feasibility of extraction.

As well as chemical research, work has been carried out on the isotope variation in the water to estimate possible sources and the temperatures at which some exchange reactions may have occurred. Isotopes studied are those of carbon, sulfur and hydrogen (T. A. Rafter). When the complete story is integrated it should provide a most valuable study of an active thermal area, including the petrology, mineralogy, geochemistry and geophysics.

Hydrothermal Chemistry, University of Otago, New Zealand.

Three years ago a laboratory was established at the University of Otago for geochemical studies by W. S. Fyfe, with the help of R. M. Carr, A. J. Ellis and A. M. Taylor. One of the most extensive projects has been the study of stability relations of Na-Ca zeolites and their breakdown into feldspars and prehnite. This project has benefited greatly from the cooperation of the Geology Department, where Professor D. S. Coombs has for a number of years been concerned with low-grade metamorphism. In recent years he has described very thick sections (up to 30,000 feet) of regionally zeolitized rocks. There has thus been a most suitable environment for the correlation of experiment with field observation. Mineralogical studies at Wairakei have also been of assistance.

The most striking feature of this experimental work has been the difficulty of obtaining anything approaching equilibrium in the experimental studies. It has also been found that reactive starting materials, gels, oxide mixes, glasses, etc., are far from ideal if it is hoped to attain equilibrium. A phase boundary may be shifted by more than 100°C by changing a silica starting phase from amorphous silica to quartz. We believe the results found with zeolites have wide application and that in any reaction of the type:-

$$Ax\ By \longrightarrow Ax\ By\text{-}z + zB$$

if the state of phase B in the starting material is one of high free energy with respect to the stable state of phase B, then the phase Ax By will be favored and will be produced outside its field of stability. Simple thermodynamic arguments confirm this conclusion. Data are now complete for a range of zeolites and prehnite, but in many cases they do not represent true equilibrium.

A further aspect of the same problem appears to occur in some preliminary studies in the system Al_2O_3-SiO_2-H_2O. It appears that mixtures of alumina and amorphous silica give mullite where mixtures with quartz may give andalusite. Where equilibrium is difficult to attain, we are exploring the possibility of solubility measurements. The method could give reliable results and present work appears to be promising.

A. J. Ellis has made an extensive study of some aspects of the system CO_2-H_2O and $CaCO_2$-H_2O. Conductance studies indicate that the acid dissociation of CO_2 is very pressure sensitive and the results may have some bearing on problems of oceanography and ore deposition.

A Bibliography of Some Recent Geochemical Work Published in Australia and New Zealand.

Papers are arranged in an order related to the text above. It should perhaps be noted that most work is published in the standard English and American journals.

Lovering, J. F. The geochemical behaviour of the elements in meteorites. J. Roy. Soc. N.S.W. 91, p. 149, 1957.

Marshall, C. E., and Draycott, A. Petrographic, chemical and utilization studies of the Tangorin high organic sulphur seam, Greta coal measures, New South Wales. Univ. Syd. Geology and Geophysics Memoir 1954/1 (65 pp).

Marshall, C. E., and Draycott, A. Vitrain: Fusain. A study of the variation in constitution, gas- and coke-making characteristics of important seam constituents and types of certain Permian coal seams of New South Wales. Ibid, 1954/3, (68 pp).

Ford, R. J. Notes on the occurrence of trace elements in the clays of the Huon district. Proc. Roy. Soc. Tasmania 88, 1954.

Prider, R. T. The granulites and associated rocks of Galena, Western Australia. Aust. I.M.M. Stillwell Festband (in press).

Wilson, A. F. Pyroxene granites and related rocks in the Jerramungup-Calyerup area, Western Australia. J. Roy. Soc. W. Aust 42, 1958.

Advances in the knowledge of the structure and petrology of the Precambrian rocks of Southwestern Australia. J. Roy. Soc. W. Aust. 42, 1958 (includes chemical data on granites).

Hamann, S. D. Physico-chemical Effects of Pressure. Butterworths Scientific Publications, London, 1957.

Grange, L. I. Geothermal Steam for Power in New Zealand. N.Z.D.S.I.R. Bull. No. 117, 1955 (contains a summary of chemical and petrological work).

Rafter, T. A. Sulphur isotropic variation in New Zealand geothermal bore waters. N.Z.J. Sci., 1, p. 103, 1958.

Ellis, A. J., and Fyfe, W. S. Hydrothermal Chemistry. Revs. of Pure and Applied Chem. (Aust.), 7, p. 261, 1957.

BOOK REVIEWS

SCIENCES DE LA TERRE. Annales de l'Ecole Nationale Superieure de Geologie Appliquee et de Prospection Miniere de l'Universite de Nancy et du Centre de Recherches Petrographiques et Geochimiques (C.N.R.S.) Vol. 4, Nos. 3-4. Ed. by Fondation Scientifique de la Geologie et de ses Applications, Nancy, France. 1956. 3.250 fr.

This volume of a series begun in 1953 continues the previous high standards, and contains the following papers, all of which are in French (titles in translation):

Freneix, S. Contribution to the study of the lamellibranches of the Cretaceous of New Caledonia.

Goloubinow, R. Geochemical prospecting for cobalt at Bou Azzer, Morocco.

Carrat, G. H., and J. Berbezier. Utilization of radioactivity for grading and evaluating a uranium deposit.

Sarcia, J. A., and J. A. Sarcia. The uranium deposits of North Limousin. I. General characteristics of the uraniferous province of North Limousin.

Sarcia, J. A., and J. A. Sarcia. The uranium deposits of North Limousin. II. The Henriette mine.

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CLARENCE KING: A BIOGRAPHY. By Thurman Wilkins. The Macmillan Company, New York, 1958. 441 pp. $7.50.

This is a definitive biography of one of the leading geologists of the United States of the late 19th Century. Clarence King, who has been described by Henry Adams as "the most remarkable man of our time", was head of the first U. S. Geological Survey, mapping geology between the California line and the Rocky Mountain front. In this work he studied Rocky Mountain structure and stratigraphy, the geology of the Sierra Nevadas, and investigated many of the early famous mining districts in the western United States. His work eventually led to the establishment of a permanent U. S. Geological Survey, which is today one of the foremost governmental organizations for the investigation not only of the geology of the United States but also for fundamental studies in the fields of mineralogy, petrology, and geochemistry. King is often best remembered by present-day geologists for the prominent part that he played in the unmasking of the famous diamond hoax, a fantastic

attempt to hoodwink uninformed investors into developing so-called gem fields near the Wyoming-Colorado border. It was King's careful detective work which led to locating the undisclosed spot and determining that the area had been salted.

The writer also remembers an anecdote told to him by the late Dr. Charles Palache, who had some contact with King during his (Palache's) early days in the U. S. Geological Survey. Palache, who had been encountering some difficulty in straightening out his accounts of governmental equipment, was told by King that similar difficulties had beset King when he closed his relationships with the Survey. According to Palache, for several years after King had returned all his equipment he would receive at the end of each fiscal year a statement from a clerk, demanding that he account for an unreturned ball of twine. Finally after several such missives King scrawled on the bottom of one "A mule et it", thereby apparently satisfying the clerk and ending the matter.

All geologists will be interested in this interesting and careful account of the life of a man who did much to raise geology to its present status. In both professional and personal activities, he was an interesting and controversial figure.

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MINÉRAUX D'URANIUM DU HAUT KATANGA. "Les Amis du Musée Royal du Congo Belge", Tervuren, Belgium, 1958(?). 88 pp. 240 Belgian francs.

One of the most beautifully illustrated mineralogical monographs that has ever been published is "Mineraux D'Uranium du Haut Katanga" which displays, in 27 outstanding color plates, crystals of the chief uranium minerals of Katanga, Belgian Congo. Species illustrated are: uraninite, schoepite, becquerelite, billietite, curite, fourmarierite, vandendriesscheite, wölsendorfite, masuyite, ianthinite, unnamed carbonate, rutherfordine, studtite, sharpite, renardite, dumontite, parsonite, saleeite, torbernite, sengierite, carnotite, soddyite, kasolite, uranophane, sklodowskite, cuprosklodowskite, and "paraschoepite." The illustrations, of which all but that of uraninite are photomicrographs, are by A. Destas and are tipped-in color prints made by the Kodak dye transfer process. Each illustration is accompanied by an up-to-date mineralogical description of the species, prepared by C. Guillemin. In addition to the illustrated species, descriptions also are included of vandenbrandite, "droogmansite", richetite, uranopilite, and a magnesium uranomolybdate. The introduction is by J. F. Vaes, and a final section discusses the conditions of alteration of the Shinkolobwe uraninite.

Whether you enjoy minerals professionally, scientifically, or avocationally, you will not wish to be without this work.

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TRACE ANALYSIS. Papers presented at a Symposium on Trace Analysis held at the New York Academy of Medicine, New York, N. Y., November 2, 3, 4, 1955. Edited by John H. Yoe and Henry J. Koch, Jr. John Wiley and Sons, Inc., New York, 1957. 672 pp. $12.00.

This is a book written by 24 recognized leaders in the field of analysis in an effort to bring together modern descriptions and discussions of most of the significant techniques and methods that are presently used in trace analysis. The book is the first work which is devoted entirely to the entire field of trace analysis, that is, the analysis of sub-microgram quantities. It deals not only with the methods but also with instruments, separations, and concentrations, as well as contamination difficulties.

The book is divided into three parts. Part I, dealing with Methodology, has twenty chapters, each of which describes a different analytical technique. These are: 1) Chromatography and Electrochromatography, 2) Ion Exchange, 3) Extraction, 4) Chemical Microscopy, 5) Spot Tests, 6) Colorimetry, 7) Fluorometry, 8) Flame Spectrometry, 9) Potentiometry, 10) Coulometry, 11) Polarography and Voltammetry, 12) Amperometry, 13) Emission Spectrochemical Analysis: Basic Principles and Applications, 14) Emission Spectrochemical Analysis: Determination of Trace Elements in Plants and other Biological Materials, 15) Gamma-Ray Spectroscopy, 16) Mass Spectroscopy, 17) X-ray Spec-

troscopy, 18) X-ray Micrography: Analysis of Elements by Microtechniques Utilizing Absorption Emission and Scattering of X-rays, 19) Neutron-Activation Analysis, 20) Microbiological Techniques: Inorganic Ions.

Part II, which is the section on instrumentation, has two chapters, one of which is entitled 21) Instrumentation and the other 22) The Interaction of Beta Particles with Matter.

Part III, on Sensitivity, Separation, Concentration, and Contamination also has two chapters --23) Trace-element Sensitivity: Comparison of Activation Analysis with other Methods, and 24) Separation, Concentration, and Contamination.

This is a book of the utmost significance to all geochemists because it is, as far as the writer knows, the only work of its kind which brings under one cover a modern discussion of analytical techniques for dealing with small amounts of material. It is an absolute requirement for the library of all geochemists.

E. W. H.

PUBLICATIONS RECEIVED

Death Valley. Mineral Information Service, California Division of Mines, Vol. 11, No. 10, Oct. 1, 1958. The publication "Mineral Information Service" is one of the outstanding publications devoted to presenting general geological and mineralogical information by any U. S. state geological survey.

Petrogenesis of the Voluntown and Oneco Quadrangles. By Ralph M. Perhac. Connecticut Geological and Natural History Survey. Bulletin 89, 1958.

Topographic Maps of Missouri. By T. R. Beveridge, F. C. Whaley, and L. E. Lambelet. Information Circular No. 15, Missouri Geological Survey and Water Resources.

Topical Study of Lead-Zinc Gossans. W. C. Kelly. Bull. 46, Mexico Bureau of Mines and Mineral Resources, 1958. Contains information on the reconstruction of lead-zinc ores from studies of their leached outcrops.

Transactions, Sixtieth National Western Mining Conference, United Uranium Industry Council. Sponsored by the Colorado Mining Association, Denver, Colo., Feb. 7, 8, 9, 1957. Vol. 1, 265 pp. Contains the papers presented at the Sixtieth National Western Mining Conference.

Congress Bulletin, 21st Geological Congress, Copenhagen, August 1960. Presents general information on the Congress, its tours, what to see and how to get there.

Advanced Materials Technology, Vol. 1, No. 4, Sept. 1958. A publication by Carborundum. Contains an interesting and general informative article on hafnium--an atomic age metal.

El Batolito de Sauce. By Q. I. Juan C. Goñi. Geological Institute of Uruguay, Bull. 35, July 1956.

Data on the Mineralogy and Geology of the Dolomite-Bearing Northern Contact Zone of the Quérigut Granite, French Pyrenees. Henri Struwe. Doctoral dissertation at the University of Leiden, Netherlands.

Jahreshefte des Geologischen Landesamtes in Baden-Württemberg. Vol. 2. Freiburg, 1957.

Tektonik und Genesis der Erzlagerstätte von Freiberg (Zentralteil). By Ludwig Baumann. C 46 of

Mineralogie-Lagerstättenkunde, Freiberger Forschungshefte.

Clinohumite Sausar Series, Bhandara District, India. By T. N. Muthuswami. Proc. Indian Academy Sciences, Vol. 48, 1958, pp. 9-28.

CALENDAR OF FORTHCOMING EVENTS

Dec.	
26-31	AAAS, Ann. Mtg.--Washington, D. C.
Jan.	
5-9	2nd Caribbean Geological Conference, Univ. of Puerto Rico and Economic Development Admin. of the Commonwealth of Puerto Rico, sponsors--Univ. of Puerto Rico, Mayaguez, P. R.
12-14	Minnesota Sec., AIME, Ann. Mtg.--Hotel Duluth, Duluth, Minn.
25-28	ASTM Committee on Industrial Water--Savannah, Ga.
28-29	Internat'l. Symposium on Nuclear Fuel Elements--New York City.
Feb.	
1-6	ASTM Committee on Petroleum Products and Lubricants--St. Louis, Mo.
5-7	Centennial Celebration and Mining Convention, Colorado Mining Association--Denver, Colo.
15-19	AIME Ann. Mtg--St. Francis, Sheraton Palace and Sir Francis Drake Hotels, San Francisco.
Mar.	
2-6	10th Pittsburgh Conf. on Analytical Chemistry and Applied Spectroscopy. Spons. by Amer. Chem. Soc. and Spectroscopy Soc. of Pittsburgh--Penn-Sheraton Hotel, Pittsburgh, Pa.
31-2	21st American Power Conference, Illinois Institute of Technology--Hotel Sherman, Chicago, Ill.
Apr.	
5-10	EJC 1959 Nuclear Congress--Public Auditorium, Cleveland, Ohio.
16-18	AIME Pacific Northwest Regional Conference--Olympic Hotel, Seattle, Wash.
27	Internat'l. Symposium, Physical Chemistry of Extractive Metallurgy--Pittsburgh, Pa.

ION EXCHANGE COLUMN

Future plans for the Geochemical News

During the first two years of its existence, the Geochemical News has been published whenever sufficient material has accumulated to form a worthwhile issue. This is, of course, far from a satisfactory state of affairs, and it has been toward a regular publication that the efforts of the editor have been directed. The Geochemical Society is now in a position to insure the regular appearance of the Geochemical News, largely because of the availability during the coming year of a large report on geochemical research in the United States. This report will be published in installments,

we hope starting with the February issue, 1959. No geochemist worthy of the name will wish to be without a copy of this valuable report, so if you read the News secondhand and have not yet joined the Society, you can insure yourself a copy by becoming a member. Just send your application to Dr. George T. Faust, Treasurer, U. S. Geological Survey, Washington 25, D. C.

It is hoped that in 1959 we can issue six numbers of the News, with the following approximate publication dates: February, April, June, August, October, December.

Status of the translation of Geokhimiya

Although we did not pick up many new subscriptions at the booth at the St. Louis meeting, translation copies of the first issue were widely examined and attracted a great deal of favorable comment. That the publication has some value seems guaranteed by the fact that someone promptly appropriated one of our display copies. You can help the Society and thus help yourself by directing the attention of all interested parties to this, the Society's initial effort in the field of Russian translation. Work on issue No. 2 has been somewhat delayed owing to delays in translation and editing. It is expected that copy for this issue will be assembled for the printer very shortly.

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Thanks to M. H., the Sand-in-the-Gears of Learning Department is happy to include the following item:

Reference:
Perret, F. A. The eruption of Mr. Pelee 1929-1932. Carnegie Inst. of Washington, 1937.
On p. 89, footnote 1 at bottom reads: "The origin and mode of emplacement of the great tuff deposit of the Valley of Ten Thousand Smokers, page 60."

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Doubtless some of you noticed the exotic material which is being sought in South Africa as reported in the July 1958 issue of the Engineering and Mining Journal, p. 19: "A search for beryl oil led to the discovery of what may be 'the finest and most beautifully colored emeralds the world has ever seen.'"

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After listening to the several papers at the St. Louis meetings describing syngenetic ores in sedimentary rocks, the following sprang full-blown into being:

In contests involving syn and epi
The infighting continues to be pepi.
Tho syngenetic some may be,
Mobilization is always necessary

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The editor is still hopeful that the coming year, which will begin his third associated with the News, will be one in which the membership responds more actively and submits items of general interest that are publishable. Remember, as the dance-hall cutie told the well-heeled prospector, "You don't need a Geiger counter to click with me."

E. Wm. Heinrich
Editor

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