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BOOK REVIEWS

COMPOSITION AND PETROLOGY OF THE EARTH'S MANTLE. By A. E. Ringwood. McGraw-Hill, New York, 1975. xiv + 618 p $29.95.

This book of 618 pages by one of the foremost contributors to our understanding of the physics and chemistry of the earth's interior is long overdue and very welcome. The price ($29.95 U.S.) may seem a trifle high but the printing is of high quality, and every page is liberally supplied with footnoted references, a valuable feature for those who would pursue the arguments presented at greater length. The book is well written and reads easily, with the author's views presented in a strong and unambiguous fashion. Considerable care has been taken to explore areas where opinions differ. For example Chapter 4 deals at length with the origin of basaltic magmas and Chapter 14 with the chemical constitution of the deep mantle. The reader is always well supplied with references to articles presenting contrary views. The book is easily the best summary of the interpretation of mantle petrology from phase equilibrium and geophysical considerations.

Most of the views on petrologic processes of the deep earth expressed by the author are natural outgrowths of experimental work conducted by himself and his colleagues, and a persuasive case is made for most of the interpretations made by the Canberra Group in these studies. However, the bibliographic references are profuse and in no circumstance is the reader forced to accept views of the author without the possibility of checking contrary views. Essentially, all of the work cited in the book has been published and there are satisfyingly few personal communications and references to unpublished manuscripts. It is the opinion of the reviewer that the book is a landmark in the petrology of the mantle and belongs on the shelves of every library and of most active researchers and teachers in the field.

A minor criticism might be that the quality of the binding of the book is not as good as the quality of the printing and reproduction. It may suffer considerable wear on the shelves of libraries.

H. J. Greenwood
University of British Columbia

INFRARED SPECTRA OF MINERALS AND RELATED INORGANIC COMPOUNDS. By J. A. Gadsen. Butterworth and Company, Reading, Massachusetts, 1975. 277 pages, 6 figures. $34.95.

This book is intended to be a compact reference for mineral identification by infrared spectroscopy, and as such it is successful.

It is divided into three parts. The first is a description of principles and techniques, with sections on applications of infrared spectroscopy to mineralogy, instrumentation and quantitative analysis. Part II is a discussion of the outstanding infrared spectral features of the important types of compound ions, and of the major mineral groups. Both the first two parts are rather abbreviated, but adequate to the purpose, and abundant references are given. For a more complete discussion of these aspects of infrared spectroscopy, other texts exist, such as the recent volume edited by V. C. Farmer (*The Infrared Spectra of Minerals*).

Part III is a listing of the absorption peak locations (in wavenumbers) for 739 minerals and related inorganic compounds. The approximate relative strength and width (where appropriate) of the peaks are given. Most spectra were taken from the literature and are referenced.

This is the most complete and convenient compilation of infrared mineral spectra presently available. It has more spectra and is certainly more compact than the previous compilation by H. Moenke (*Mineralspektren I* and *II*). It is unfortunate, however, that there is no systematic way to access the spectra if one is trying to identify a completely unknown mineral.

The infrared method is comparable in power to the powder X-ray method for identification, although each method has somewhat different areas of strength and weakness. Perhaps future compilations will be systematized with an indexing system similar to the Hanawalt method for X-ray powder diffraction.

This book will almost certainly be of value to any laboratory which makes use of infrared spectra of minerals.

Eric Dowty
Princeton University

PHASE DIAGRAMS FOR CERAMISTS, 1975 SUPPLEMENT. Compiled by Ernest M. Levin and Howard F. McMurdie. American Ceramic Society, Columbus, Ohio, 1975. 513 pages. $35.00.

As stated in the introduction . . . "This volume supplements the two previous collections entitled *Phase Diagrams for Ceramists*, published in 1964, and *Phase Diagrams for Ceramists, 1969 Supplement*. This third compilation contains 850 new diagrams, mainly from literature published since 1967." Together the three volumes provide 4999 phase equilibrium diagrams, organized and indexed for convenient reference. The 1975 Supplement contains cumulative indexes for all three volumes.

The 1975 Supplement is more informative than its predecessors, in that it contains commentaries pertinent to the accuracy of the diagrams, methods and chemicals used, correction of obvious errors, sources of information, particular features or applications, and the relation of the system studied to similar systems. Diagrams are organized in seven sections: (1) metal–oxygen systems, (2) metal oxide systems, (3) systems with oxygen-containing radicals, (4) halide systems, (5) systems containing halides with other substances, (6) systems containing cyanides, selenides, sulfides, *etc.*, (7) systems containing water. As this synopsis shows, the term "ceramist" has been used in a very broad sense.

Certainly, however, this book will be as useful to mineralogists and geochemists as it is to ceramists. I would rate it as indispensible in any institution where research on phase relations in rocks and minerals is being carried out. In view of information content per page, the price must be considered very reasonable.

Brian Mason
Smithsonian Institution

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ERRATA

The deep blue Maxixe-type color center in beryl: correction

KURT NASSAU, BETTY E. PRESCOTT AND D. L. WOOD

Bell Laboratories
Murray Hill, New Jersey 07974

In Table 2 of this study[1] the element Mg was inadvertently listed as a major ingredient in addition to the correct low impurity levels also listed. In a related earlier study[2] the designations ordinary and extraordinary ray in the caption of Figure 4 were reversed.

[1] NASSAU, K., B. E. PRESCOTT AND D. L. WOOD (1976), Deep blue Maxixe-type color center in beryl. *Am. Mineral.* **61,** 100–107.

[2] WOOD, D. L. AND K. NASSAU (1968), The characterization of beryl and emerald by visible and infrared absorption spectroscopy. *Am. Mineral.* **53,** 777–799.

New Mineral Names

(Am. Mineral, **61,** 339)

The formula in the kuranakhite abstract should read $PbMn^{+4}Te^{+6}O_6$.

NOTICES

September, 1976

6–10 3rd European Crystallographic Meeting, Zurich, Switzerland. For details, apply to the Conference Organizer, Dr. Rita Grieb, ECM-3, Institut fur Kristallographic ETH, Sonneggstrasse 5, CH-8006, Zurich, Switzerland.

November, 1976

8–11 Annual meeting of the Geological Society of America, Denver, Colorado.

8–11 Annual meeting of the Mineralogical Society of America, Denver, Colorado. Short Course, November 5–7.

11 Mineralogical Society, London, General Meeting.

January, 1977

10–13 National Bureau of Standards workshop on applications of phase diagrams in metallurgy and ceramics, Gaithersburg, Maryland.

August, 1977

17–25 2nd International Symposium on Water-Rock Interaction. International Association of Geochemistry and Cosmochemistry: Water-Rock Interaction Working Subgroup, Strasbourg, France (*Am. Mineral.* **61,** 507).

Workshop on applications of phase diagrams in metallurgy and ceramics

A four-day workshop on applications of phase diagrams in metallurgy and ceramics will be held at the National Bureau of Standards in Gaithersburg, Maryland, on January 10–13, 1977. The workshop will bring together metallurgists, ceramists, electronic engineers, materials engineers and scientists, and solid state chemists and physicists to assess the current national and international status, needs, and priorities for phase diagram determination and evaluation for alloys, ceramics, and semiconductors.

Knowledge of the structure of materials is important in understanding several industrially significant properties and applications such as aging, hardness, occurrence of brittle intermetallic compounds, magnetic transition temperatures, high temperature solubility of impurities, and corrosion resistance. The study of a phase diagram appropriate to a particular material can often provide information important to its scientific and technical applications.

One aim of the workshop is to stimulate production of more relevant and useful compilations of phase diagram data. Topics to be discussed will include identifying resources that are now being expended that could be made more useful by coordination and to suggest areas of international cooperation.

Workshop sessions are tentatively planned to include: (1) present status of phase diagram compilation activity, (2) user needs for phase diagrams, (3) experimental and computational teachniques to generate phase diagrams, (4) presentation methods for and distribution of phase diagram data.

The workshop is sponsored by the NBS Institute for Materials Research and the Office of Standard Reference Data. Persons interested in receiving additional information about the workshop should write to Ronald B. Johnson, Materials B348, National Bureau of Standards, Washington, D. C. 20234.

The Norewegian government has issued a set of four commemorative stamps honoring four geochemists/petrologists: J. H. L. Vogt (0.65 kr), V. M. Goldschmidt (0.85 kr), Th. Kjerulf (1.00 kr), and W. C. Brøgger (1.40 kr). The stamps may be purchased from Postens Filatelitjeneste, Kirkegata 20, Oslo 1, Norway.