

beginner will doubtless be willing to admit his own obtuseness, but he will be disconcerted.

The book is very free from typographical errors and is, of course, excellently produced. There are 31 efficient diagrams and figures in the text. Though the pedagogy is a weak feature, the style has a refreshing air of activity and modernness, while the matter selected is generally accurate and always interesting. We feel certain, however, that this is not yet the ideal "Introduction to Physical Chemistry." Let the Quest continue.

ALAN W. C. MENZIES.

Analyse der Silikat- und Karbonat Gesteine. Von W. F. HILLEBRAND. Deutsche Ausgabe von ERNST WILKE-DÖRFURT. Leipzig: von Wilhelm Engelmann, 1910.

This volume in its German dress contains numerous additions made by its author to previous editions. The fact that German students have recognized its merits and want it in their own language reflects great honor upon its author. Years ago, within the knowledge of some of us, the Fatherland was the seat of most thorough training in mineral analysis. To-day, however, as evidenced by the rich fund of reliable information in this special publication and in other similar publications, America may justly lay claim to this position.

The careful perusal of its pages proved most refreshing to the reviewer, and if he may be allowed a word of advice to students of chemistry, it would be: Study the contents of this book; put to test the methods and experiences therein described. A vast fund of new knowledge will be the reward, a deeper respect for analytical methods and their significance and value will be engendered, while the feeling of contempt so frequently manifested for the work of the mineral analyst will absolutely disappear, and a wider and wholesomer view of the whole field of chemical science will result. Teachers of more advanced students in analysis will realize the greatest pleasure and profit in the consideration of the many topics of this volume in their seminars.

EDGAR F. SMITH.

Das Radium und die Farben. PROFESSOR DR. C. DÖLTER, Vorstand des Mineralogischen Institutes der Universität Wien. Verlag von Theodor Steinkopf, Dresden. 1910. pp. 133. Preis, geb. M. 5.

The discovery of radium and a recognition of the complex influences of its several forms of energy have aroused unusual interest for several reasons, but mainly, because, first, radium salts, in their decomposition produce canal and cathode (magneto- or electro-magneto-deflectable) and gamma (Röntgen) rays, exert specific, analytic and synthetic influences, physical, chemical and physiological, which might in a large sense be grouped under the head of chemical; second, when all that is positively known of these influences is applied to the world's history, petrographical and geological, a revision of previous ideas of changes that have taken place and calculations as to the age of the earth have become necessary.

The author has had unusual facilities in Vienna for the study of the many and varied changes produced through the influence of radioactivity. He has taken advantage of them. The book presents the results of his elaborate investigation. It is filled with meat and cannot fail to be of interest to mineralogists, geologists and those chemists who desire further information as to the influence of these complex rays upon matter. It has a good index.

CHAS. BASKERVILLE.

The Simple Carbohydrates and the Glucosides. By E. FRANKLAND ARMSTRONG. (Monographs on Biochemistry Series.) 112 pages. Longmans, Green & Company. Price, \$1.20 net.

This short monograph by Dr. Armstrong, an English investigator of the first rank in carbohydrate chemistry, is a well-written summary of the advances of the last fifteen years in the chemistry of the sugars. Naturally it is impossible to describe these advances in a manner that is satisfactory to an inquiring reader in the space of 112 pages, and it is to be hoped that later editions will be more inclusive. But the monograph is a good beginning and should be widely read by chemists and biologists. To understand the chemical or biological actions of the sugars it is essential to have a clear knowledge of their mutarotation and Dr. Armstrong's book furnishes a good description of this phenomenon. A valuable eighteen-page bibliography is appended. On page 47 the discovery of β -lactose, which was made by E. O. Erdmann, is credited to C. Tanret. The discovery that the mutarotation of glucose is a balanced reaction is ascribed on page 8 to Lowry; the reviewer believes that he made the same discovery in the case of lactose in the year preceding Lowry's publication, and that his priority in the discovery of the cause of the mutarotation reaction has been recognized in such a standard work as Nernst's "Theoretische Chemie." Dr. Lowry and he worked independently, the former on glucose, the latter on lactose.

C. S. HUDSON.

A Course in Inorganic Chemistry for Colleges. By LYMAN C. NEWELL, PH.D. (Johns Hopkins), Professor of Chemistry, Boston University. Published by D. C. Heath and Company, Boston. pp. x + 594. Price, \$2.00.

This is practically a new and enlarged edition of the author's well-known Descriptive Chemistry. A chapter on Solutions has been added and the chapters on Silicon-Boron and Chromium-Manganese have been enlarged and divided into two separate chapters. While the main portions of the text are identical with the Descriptive Chemistry, yet considerable new material has been added and the subject brought up to date. In a few cases the order of the chapters has been changed. The questions at the end of the chapters have been omitted, but the lists of problems remain. The book is conservatively modern in spirit and is deserving the same cordial recognition given the author's former work.

WILLIAM MCPHERSON.