ceived a special consideration. One of the chapters deals with Ultraviolet Radiation which is coming more and more into prominence in various departments of biology. With the modern trend towards physical chemistry a great deal of attention is paid to an exposition of physical chemical procedures and theories. Throughout the book there are numerous references to most recent articles of importance in biochemical literature and a special emphasis is given to review articles which are of great value to the teacher, physician and investigator. The authors have received coöperation as well as commendation and moral encouragement from some of the leading biochemists in the country. The whole volume is very elegantly gotten up. The use of different type for the text and laboratory directions is very appropriate and the whole volume is profusely illustrated with useful drawings and charts in addition to a number of full-page color plates. Altogether we consider this textbook an extremely useful one to keep on the library shelf of any medical or biological laboratory. D. I. M.

Volumetric Analysis for Students of Pharmaceutical and General Chemistry. Fourth Edition by Charles H. Hampshire. P. Blakiston's Son & Co; Philadelphia. Price $1.75.

This little book of 125 pages, written for students, is one of the best of its class.

It is refreshing to note the absence of the conventional introductory chapters on Calibration, Weighing, Apparatus, Indicators, Ion Concentration, etc., which surely discourage the beginner and make the task of the instructor doubly onerous. Imagine the impressions made on a beginner when confronted with an incomprehensible mass of technical details such as is customary in many of our books on Volumetric Analysis.

Mr. Hampshire plunges directly into the essentials, that is the practical work, in a simple, direct and comprehensible style, that cannot fail to awaken the interest and understanding of the dullest student.

Every operation is accompanied by its necessary calculations made especially easy, while the use of Empirical Solutions, incomprehensible or rather confusing to many, is adroitly introduced among the first examples.

It has always seemed to me that when introducing something that deviates from the straight and narrow path of the beginner's line of work, it is best to work it in incidentally until comprehended, then dilate. In other words, do not herald such as new matter under special chapters until later.

All essential points necessary in securing accuracy while handling calibrated vessels are introduced by degrees in the course of the student's work. He is made to note the value of accurate calibration, the proper methods in pipetting and precautions as to temperature.

Five indicators are introduced and applications thoroughly and clearly explained after having previously trained the worker on methyl orange.

Various chapters on Acidimetry, Alkalimetry, Oxidation and Reduction Reactions and Precipitation Reactions are followed by a section on Miscellaneous Reactions. Under this head, we find determinations of mixtures such as sulfuric and oxalic acids with hydrochloric and phosphoric acids, ferrous and ferric iron, boric acid and borax, etc.

Calculations exemplify every titration given including all B. P. chemicals. This affords every variety of titrations known under volumetric analysis.

Mr. Hampshire has entirely eliminated the worn out incorrect term "estimation;" he "determines" his unknowns. The index is rather laconic.

A splendid little book for every pharmaceutical chemist as well as student.

The press work is characteristic of Blakiston.

VIRGIL COBLENTZ.

Hydrogen Ion Concentration. Its Significance in the Biological Sciences and the Methods for Its Determination—By Leonor Michaelis, M. D. Professor in the University of Berlin, Resident Lecturer in Research Medicine in the Johns Hopkins University. Volume I, Principles of the Theory, represents the authorized translation from the second revised and enlarged German edition by William A. Perlzweig, Ph.D. of Johns Hopkins University and Hospital. Cloth bound, 6 x 9, publishers, The Williams & Wilkins Company, Baltimore, Md. Price $5.00.

This book represents a concise and yet comprehensive outline of the theoretical physicochemical principles of hydrogen-ion concentration. It is to be followed up by two further volumes in which will be presented the methodology and the colloid-chemical physiological and medical applications. From this it will be noted that this edition is presented especially for the consideration of biological readers. The present volume, however, deal-