

into a text-book suitable for those who are older ; that is, into a text-book containing fewer facts than those written solely for senior students." Part I contains a concise and well-written introduction treated under the captions: "The Chemistry of Fire; Gain of Weight and Combustion; Lavoisier's Researches on Combustion; Is Matter Indestructible? Can We Create It? and Principle of the Conservation of Mass." These topics are briefly treated and in language easily comprehended by a beginner and are illustrated by experiments to be performed by the student.

Chapters II and III contain an introductory study of water, illustrated by experiments which teach methods of determining melting- and boiling-points, the use of the barometer, fractional and destructive distillation, the pipette, specific gravity determinations, etc. Chapter IV tells how to dissolve, crystallize, the use of plotted curves to show solubility, the desiccator, etc. Chapter V treats of the electrolytic decomposition of water, the chemical elements, compounds and mixtures, synthesis, analysis, substitution, and double decomposition. Chapter VI continues the study of water and treats of water of crystallization, the nature of solution, the action of water with the metals, the composition of water by weight, the law of constant proportions, hydrogen peroxide, and the law of multiple proportions.

Chapter VII is a study of the atmosphere, combustion, flame, plants, and animals.

Part I as outlined above covers 94 pages and contains not a single symbol. In Part II chemical nomenclature is taken up and the rest of the book follows, in great measure, the ordinary line of treatment. Here again too much is given, but in other respects the book is a good piece of work and worth the careful study of teachers.

E. H.

AIR, WATER AND FOOD FROM A SANITARY STANDPOINT. BY ELLEN H. RICHARDS AND ALPHEUS G. WOODMAN. First edition. First thousand. New York: John Wiley & Sons. 1900. 226 pp. Price, \$2.00.

This is an extremely practical book dealing with the common problems of sanitary science in a simple yet thorough manner, and one can not read it through without being convinced that the authors know from their own observations what they are

writing about. After a brief general introduction we find 33 pages devoted to the study of the atmosphere, its general composition, usual contaminations, methods of ventilation, and methods of air analysis from the sanitary standpoint. Then follow, in 78 pages, 3 chapters on water in which many subjects besides those of analysis are discussed. Chapter V is supposed to be written from the "Householder's Standpoint," and Chapter VI from that of the chemist, but both may be read with interest and profit by persons who are not chemists and who have had no training in chemistry beyond that given in ordinary college courses. It is pleasing to see that the authors are not over-impressed with the importance of bacterial analysis in the practical investigations of water. Chapter VII contains a good collection of analytical methods and from the well-known experience of the authors in these matters it will prove valuable to those employed either as teachers of sanitary chemistry or as practical analysts.

The following 75 pages of the book deal with questions of food and partly from the popular standpoint. Many pertinent suggestions are made on the adulteration of common articles, and in the last chapters analytical methods are given by which the practical purity or value of a number of products may be determined. The book closes with a collection of tables, directions for making standard reagents, and with a bibliography of important books and papers dealing especially with topics discussed in the previous pages.

J. H. LONG.

ESSENTIALS OF MEDICAL AND CLINICAL CHEMISTRY WITH LABORATORY EXERCISES. BY SAMUEL E. WOODY, A.M., M.D. Fourth edition. Revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1900. viii+235 pp.

In this book, as in many others of its class, we find an attempt to present what the author considers as the "essentials" of medical chemistry, so-called, within the limits of a single small volume. The space devoted to general and inorganic chemistry, with experiments and qualitative tests, amounts to 124 pages; organic chemistry takes up 47 pages, and clinical chemistry, covering urine analysis and the examination of milk, saliva, and gastric juice, 50 pages more. A very good index completes the book. The author has condensed a good deal of information