

Physical Properties of Aqueous Salt Solutions in Relation to the Ionic Theory, A. A. Noyes. Problems in Nutrition, Otto Cohnheim. The Present Problems of Physiological Chemistry, R. H. Chittenden. The last half of the volume contains six papers upon astronomical subjects and sixteen papers upon sciences of the earth.  
W. A. N.

FOOD AND NUTRITION. LABORATORY MANUAL. By MISSES BEVIER AND USHER, Household Science Department, University of Illinois. 1906-1907. 45 pp. Price, \$1.00.

The book is essentially a set of brief laboratory directions dealing with the chemical properties of the "proximate principles" and organic compounds which accompany them in the common foods. It also touches very briefly upon some of the processes of digestion. The successful use of the manual certainly presupposes a fairly comprehensive acquaintance with several of the biological sciences—an experience more extensive than is usually accorded to students of household economics.

The most serious criticism, perhaps, applies to the selection of subject-matter for discussion. Some of the text involves controversial questions (*e. g.*, the adequate classification of proteids) which must at most have a very superficial value. Additional topics (*e. g.*, the chemistry of purins) might advantageously have been included because of their peculiar significance in nutrition. The digestion of fats also deserves mention in a course which presents lecithins and fats in some detail, and considers the other familiar types of enzyme action.

The authors deserve credit, however, for attempting to indicate the broad applications of physiological chemistry to the problems of daily life.  
LAFAYETTE B. MENDEL.

LABORATORY MANUAL OF GENERAL CHEMISTRY. By THOMAS EVANS AND J. F. SNELL. Fourth Edition. University Press, University of Cincinnati, Cincinnati, Ohio. 1905. 8vo. 70 pp. Price, 50 cents.

This laboratory manual contains twenty-nine practice exercises on the non-metallic elements and compounds and eighteen on the metals. The directions for making the experiments are carefully written. A few quantitative experiments are brought in quite early in the course. These are: measurement and reduction of gas volumes, definite and multiple proportions, synthesis of water, weight of a liter of oxygen and the equivalent weight of zinc.

Some of the more salient properties of solutions, such as saturation, supersaturation, ionization and hydrolysis, are illustrated qualitatively. The experiments illustrating mass action are well selected and with accompanying lectures by the instructor can not fail to give the student a good idea of this subject. Additional questions requiring reasoning and study on the part of the student would have been an improvement. Taking it altogether, however, the newer views as well as the older descriptive facts are illustrated and the course as outlined is a very good one for beginners in chemistry.

EDWARD H. KEISER.

LABORATORY EXPERIMENTS TO ACCOMPANY OUTLINES OF INORGANIC CHEMISTRY. By FRANK AUSTIN GOOCH AND CLAUDE FREDERIC WALKER. New York: The Macmillan Co. 1905. 29+104 pp. Price, 50 cents.

The experiments in this laboratory manual are divided as the text-book which it is to accompany into two parts, one inductive and the other descriptive. In the first or inductive part, which consists of 29 pages, there are given experiments to illustrate chemical change, elements and compounds, chemical equivalents (four quantitative experiments), hydrogen, oxygen and oxides, water solution, hydration and hydrolysis, air and nitrogen, electrical equivalents and ions, acids, bases and salts, action and equilibrium.

In the second or descriptive part the elements are taken up in groups according to the periodic system of classification. The chief properties of each element are shown by qualitative experiments. There are constant references to the text-book for equations and explanations.

Taking the book as a whole, it contains a very good course in descriptive chemistry, and the student taking this course will, if he has a good memory, learn many facts concerning the elements and compounds and he will have had good practice in writing reactions. There are, however, very few questions asked him and he can get all his explanations in the text-book. There is nothing to make him think and reason. It would have been an improvement if he had been made to reason out the connection between the facts that he observes in the second part and the laws and principles of the first part.

EDWARD H. KEISER.