most intelligent of them could profit by the brief treatment, which some of these topics receive. The sections on organic and physiological chemistry are painfully concise.

It is doubtless convenient to have in concise form "the data that are most likely to be of use in practical work," but students should have more than this. In the chapter on dental metallurgy is found much interesting information regarding alloys, amalgams, cements, solders, etc. In another chapter many local anesthetics are described. Nine half-tone plates with 54 figures of the crystals and the other bodies most likely to be found in microchemical study of the saliva, the urine, mouth-washes, and other substances of interest to dentists, should be of value to student and practitioner alike. L. B. HALL.

CONGRESS OF ARTS AND SCIENCE, UNIVERSAL EXPOSITION, ST. LOUIS, 1904. Edited by HOWARD J. ROGERS, A.M., LL.D., Director of Congresses. Volume IV: Physics, Chemistry, Astronomy, Sciences of the Earth. Boston and New York: Houghton, Mifflin & Co. 1906 x+766 pp. Price, $2.50 net.

The addresses presented before the Congress of Arts and Science at St. Louis, are being published in eight volumes, of which Vol. I contains the addresses on the subject of philosophy and mathematics and Vol. IV the addresses of most interest to chemists and physicists. Vol. IV contains the following addresses: The Unity of Physical Science, R. S. Woodward. The Fundamental Concepts of Physical Science, E. L. Nichols. The Progress of Physics in the Nineteenth Century, Carl Barus. The Relations of the Science of Physics of Matter to Other Branches of Learning, A. L. Kimball. Present Problems in the Physics of Matter, F. E. Nipher. The Ether and Moving Matter, D. B. Brace. The Relations of Physics of Electrons to Other Branches of Science, Paul Langevin. Present Problems of Radioactivity, Ernest Rutherford. On the Fundamental Conceptions Underlying the Chemistry of the Element Carbon, J. U. Nef. The Progress and Development of Chemistry during the Nineteenth Century, F. W. Clarke. Inorganic Chemistry—Its Relations with the Other Sciences, Henri Moissan. The Present Problems of Inorganic Chemistry, Sir William Ramsay. The Relations of Organic Chemistry to Other Sciences, Julius Stieglitz. Present Problems of Organic Chemistry, W. A. Noyes. The Relations of Physical Chemistry to Physics and Chemistry, J. H. van't Hoff. The

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.