

logical has been the growth of our modern theories from the older ones.

This book cannot be too highly recommended to those interested in physical chemistry. The sane view of each question considered, the excellent exposition of each theory, and the clear, close reasoning with which the fallacy of often misunderstood points is exposed, together with the excellent English, make the book one that it is a pleasure to read. The chapter headings are as follows: Introduction—The use of theories; Old hypotheses in chemistry; Existence of hydrates in solution; Discussion of the validity of Dalton's law; Electrical force between the atoms; The law of Faraday; Chemical valency and affinity; The development of the doctrine of valency; Composition of the atoms.—Electrons; Theory of gases; Chemical kinetics and statics; The influence of temperature and pressure—Dissociation; Osmotic pressure—General laws for dissolved substances; Electrolytic dissociation; Problems to be solved—Objections.

J. LIVINGSTON R. MORGAN.

WELLCOME'S PHOTOGRAPHIC EXPOSURE RECORD. BY BURROUGHS, WELLCOME & Co., 45 Lafayette Street, New York City. Price, 50 cents.

A large amount of useful information for photographers, more especially in regard to exposing and developing, together with a diary; all this made up in an elegant little volume of practical dimensions to be carried in the pocket.

L. H. BAEKELAND.

HYDROMETALLURGY OF SILVER—WITH SPECIAL REFERENCE TO CHLORODIZING, ROASTING AND THE EXTRACTION OF SILVER BY HYPOSULPHITE AND CYANIDÉ SOLUTIONS. BY OTTOKAR HOFMANN. pp. V+345. 83 illustrations. Hill Publishing Co., New York, London: 1907. Cloth, \$4.00.

The author of this book introduced the Patera Process of leaching silver ores with hyposulphite solutions in 1868 in Mexico. Since that time he has been prominent in this branch of metallurgy and has won for himself the enviable position of an acknowledged authority.

The book under consideration is on the whole a record of personal experience based upon established principles. There is presented not a general treatise like that of H. F. Collins,¹ in which all that leading workers have accomplished is brought together in a most satisfactory manner, but a book resembling more the well known volume of the late C. A. Stetefeldt.² While Hofmann aims to bring out mainly the full details of practice and is antagonistic to the Russell modification of the Patera process, Stetefeldt lays more stress upon chemical conceptions and is the acknowledged defender of the late E. H. Russell. The three publications supplement one another and about cover the field.

In addition to the Patera process which, with chlorodizing roasting, takes up 255 of the 328 pages of text, the Augustin and Ziervogel pro-

¹ "Silver," Griffin & Co., London, 1900.

² The Lixiviation of Silver Ores with Hyposulphite Solutions, author, New York, 1895.