

include "an account of the work recently done on the properties of thin films, polarized molecules, and boundary lubrication." These turn out as excellent paragraphs on the work of Harkins, Langmuir and Hardy.

The volume will commend itself to those who wish a quick look into the field which it covers. For beginners there is lacking that gradual building up from experimental fact to law and hypothesis essential to good pedagogy; for mature students not enough is given to make the little learning not dangerous historically or critically. Willows is everywhere conscious, however, of the difficulties of his theme. Much praise must therefore be given him for his constantly expressed doubts regarding the adequacy of a given explanation and his advice to seek out the original communications of the authors whom he cites.

M. H. F.

Chemistry, inorganic and organic with experiments. By Charles Loudan Bloxam. 11th edition, revised by Arthur G. Bloxam, F.I.C., consulting chemist and chartered patent agent; and S. Judd Lewis, D.Sc., F.I.C., consulting and analytical chemist. With 310 illustrations. 10 x 7 inches, 832 pages, cloth. Philadelphia. P. Blakiston's Son & Co. Price \$9.00.

This volume presents a concise compilation of both theoretical and practical material including virtually every phase of chemistry. The continuous success of the work is best attested by the demands that justified the ten revisions, consequent to the first edition, which appeared in 1867.

Casual reflection, in retrograde perspective, relevant to the progress of chemical science in that intervening period of fifty-six years, must necessarily suggest to the reader a patent curiosity regarding the future extent of the advancement of chemistry fifty-six years hence! The size of the type characters has been somewhat reduced, thus accounting for the more compact form of the present volume. Eighty-three chemical elements are listed and their atomic weights tabulated in accordance with the Oxygen standard.

The work is a noteworthy exception among the small minority of recent publications of general chemistry texts, relevant to the accuracy and mature comments concerning the most recent contributions to theoretical chemistry, *i. e.*, present views on atomic structure, the quantum theory, crystalline structure, etc., and including brief notations regarding the

epoch-making endeavors of Mosely, Einstein, W. L. and W. H. Bragg and others.

The chapter on spectroscopy having been rewritten and enlarged, includes Mosely's work on the X-ray spectra, and is now equal, if not superior, to even Roscoe and Schorlemmer's exposition of that subject in their magnificent "Treatise on Chemistry"—Volume II, in so far as the inclusion and treatment of the procedure is concerned along general principles. The writers deviated from the usual course in the chapters on organic chemistry, by grouping certain of the aliphatic with the aromatic compounds. This new arrangement is readily appreciated on consideration of the facility afforded for comparison of substances of a similar order in the two divisions. The section devoted to orientation of benzene derivatives is well written, especially clear and well illustrated. Liberal space was allotted to the chemistry of percussion caps, T.N.T., and explosives in general.

The chapter including a discussion of fluorescence and phosphorescence constitutes a valuable repository of reference material along this line of scientific investigation.

Apparatus, graphs, crystalline forms, etc., are all neatly illustrated. The index is exceptionally complete with an exhaustive cross index scheme.

The volume is assuredly a valuable contribution to both technical reference and text literature and maintains if not exceeds its original purpose, which has in past years secured the confidence that has hitherto been deservedly bestowed, both in this country and abroad.

SIMON MENDELSON.

NEW PUBLICATIONS.

Determination of Hydrogen Ions. By W. Mansfield Clark. 2nd edition. 480 pp. Illustrated. Price, \$5.00. Williams & Wilkins Co., Baltimore.

Alcohol in Commerce and Industry. By Charles Simmonds. 119 pp. Price, 3s. net. Sir Isaac Pitman & Sons, Ltd., London.

Inorganic Chemistry. By F. S. Kipping and W. H. Perkin. 734 pp. Price, 8s. 6d. W. & R. Chambers, Ltd., London.

DEATH OF EX-PRESIDENT JOHN F. HANCOCK.

Just before completion of this issue we are advised of the death of Ex-President John F. Hancock, November 12. For sketch see Volume V, JOURNAL A. PH. A., pp. 460 and 793.