

METHODS FOR THE ANALYSIS OF ORES, PIG IRON, AND STEEL. In use at the Laboratories of Iron and Steel Works in the region about Pittsburg, Pa. Together with an appendix containing various special methods of analysis of ores and furnace products. Contributed by the chemists in charge, and edited by FRANCIS C. PHILLIPS. Second edition. Easton, Pa: The Chemical Publishing Co., 1901. 170 pp. Price, \$1.00.

Probably in no manufacturing district in the world can there be found such a brilliant company of technical chemists as belong to Pittsburg, and its vicinity. Unfortunately for their brethren of other localities their work has been recorded almost exclusively in the *Proceedings of the Engineers' Society of Western Pennsylvania*. The publication of the first edition of this book came, therefore, as an exceedingly welcome event, and the second or present edition, containing as it does so much that is new and valuable, deserves and will get an even heartier appreciation. While eastern chemists have not come to a realizing sense of the superiority of barium hydroxide as an absorbent in the determination of carbon in steel, nor recognized the advantages of weighing over titrating the yellow precipitate in phosphorus determinations, there are nevertheless very many processes given whose value places them far beyond the possibility of difference of opinion. McKenna's wonderful method for chromium and chrome iron ores, his improved reductor, his delightfully easy and ingenious method of determining carbon in ferrochrome; Handy's noted method for phosphorus in newest form; Camp's clever method for phosphorus in coal, his valuable paper on phosphorus in ores and steel containing arsenic, his very convenient method of determining alumina; and Glass and Manby's simple and convenient volumetric method for tungsten. There are besides many original and ingenious little manipulative details. Occasions for criticisms are meager. There is to be noted, however, a very general disposition to ignore the precautions laid down by Blair in the determination of sulphur by the aqua regia method. It is the writer's experience that even more stringent ones are necessary. Again many of the western chemists have discontinued the use of Drown's method in determining silicon in pig iron. On account of titanium this would seem inadvisable even when the hydrofluoric treatment is used, and entirely inadmissible, of course, when this treatment is omitted.

This edition is well printed on good paper, and attractively

bound. Like its predecessor, it will find a place in every metallurgical laboratory.

GEORGE AUCHY.

LES CARBURES D' HYDROGÈNE, 1851-1901. RECHÉRCHES EXPERIMENTALES, par M. Berthelot. Three volumes. VOL. I.—ACETYLENE AND THE TOTAL SYNTHESIS OF HYDROCARBONS. VOL. II.—PYROGENIC HYDROCARBONS; VARIOUS SERIES. VOL. III.—THE COMBINATION OF HYDROCARBONS WITH HYDROGEN AND OXYGEN, THE ELEMENTS OF WATER. Paris: Gauthier-Villars. 1901.

The classic researches of Marcellin Pierre Eug. Berthelot upon the total synthesis of carbon compounds from their elements constitute the chief cornerstones of the beautiful and elaborate structure of modern synthetic organic chemistry. The appearance of the present publication, therefore, from the hand of the master, should be welcomed with deepest gratitude by every organic chemist. It is as unnecessary to recommend such a book to the student of organic chemistry, as it would be to recommend Shakespeare to a student of literature.

The work is not in any sense a treatise embodying all that is known about the hydrocarbons, but a collection and republication of the author's researches in this particular field. All of these investigations were conducted in the laboratory of the Collège de France, where the author made his début as "preparateur" (1851-1859), and where he has occupied a professorial chair since 1864. For over half a century he has made a study of these compounds, especially in the direction of their synthesis from the elements and of the effect of high temperatures upon them, publishing many hundred memoirs, notes, and notices, which are scattered through various scientific journals, more having appeared in the *Annales de Physique et de Chimie* than in any other single journal. These scattered articles have been gathered together and properly classified in the present work, so as to show clearly just how far each leading thought has been carried out experimentally.

The subject-matter is arranged in seven books which are bound in three volumes.

Book 1 (263 pages) is divided into sections as follows: Section 1 (18 chapters) contains a description of the synthesis of acetylene from carbon and hydrogen; the details of its preparation and properties; its synthesis by the action of electric sparks upon simple gaseous compounds; studies of electrical equilibrium be-