

bustion in a tube of glass, porcelain, or platinum. After a full discussion of the reagents and apparatus required for the analysis of compounds containing only these elements, the preparation of the tube and the process of combustion are described in an admirable manner. Directions then follow for the combustion of solids containing, besides carbon and hydrogen, nitrogen, the halogens, sulphur or the alkali metals, and also for the analysis of explosive, or difficultly combustible bodies, and liquids. The suggestions which accompany these directions are most valuable, while the numerous references to journals and text-books will be of the greatest assistance when new compounds are to be analyzed.

We believe this book will be helpful to all chemists who may have occasion to carry out the determinations mentioned above, and of still greater value to the student of little experience.

L. B. HALL.

A HANDBOOK OF INDUSTRIAL ORGANIC CHEMISTRY. BY SAMUEL P. SADTLER, PH.D., F.C.S. Third edition. Philadelphia: J. B. Lippincott Co. 1900. 543 pp. Price, \$5.00.

Chemists who have had an opportunity to use the earlier editions of Dr. Sadtler's excellent work will welcome most heartily this new edition. It represents more thoroughly than any similar publication the practice of the United States in the organic chemical industries and at the same time covers what is best in the European practice. Full justification is found for the statements of the preface to this edition to the effect that "every chapter has been revised and new matter added. * * * It has been sought to incorporate in this book all of this advance in our knowledge that is definitely acknowledged by chemists. The bibliography has in all chapters been brought down to date and the statistics are the most recent obtainable."

So we find, among other things, new mention and description of the forms of artificial silk, formaldehyde, tanning, dégras, Rohrmann's process for 90 to 100 per cent. acetic acid in one operation. S. B. Boulton's diagram, illustrating the process of distillation of coal, the latter curiously omitted, although mentioned, in the second edition is here introduced.

The matter presented is excellently and logically classified as in the former edition. Raw materials, processes of treatment, products, analytical tests and methods, bibliography and statistics follow each other in the order named. Raw materials and pro-

cesses of treatment are considered fully but in a general way and details often of the utmost importance to the manufacturer are omitted. Yet the information conveyed will be most useful to students and instructors, while the analytical tests and methods and the bibliography and statistics, since they have been brought to date, will be of great value and convenience to the general chemist and in many cases to specialists.

It is to be regretted that some of the later and more widely used forms of machinery have not been included in the illustrations of the book. For instance, in discussion of sugar manufacture the vacuum evaporator of Yaryan is described at some length, while the more widely applicable forms of Wellner-Jelenek and of Swenson are not noticed. The Hepworth centrifugal is figured, but the Weston and the Lafferty forms are not mentioned. In the discussion of recovery coke ovens, the older Appolt and Simon-Carvés' ovens are described and the later Semet-Solvay and Otto-Hoffmann forms, the use of which is so widely extending, both in this country and in Germany, are mentioned only in the table of statistics. Yet it must not be forgotten that in such a volume, devoted to practically the entire field of organic industrial chemistry, space is limited and too much of it cannot be devoted to the various forms of machinery available for the several processes.

Some embarrassing typographical errors, which have carried through the two editions, appear to have escaped the attention of the proof-readers, but they are not such as to be misleading. For instance, only the most inexperienced reader would be misled by the statement that starch "is soluble in cold water, alcohol, ether," etc.

The book is made in the attractive style and finish of the Lippincott Company, is provided with an excellent table of contents, a list of illustrations, and an index, and is to be commended to the favorable consideration of instructors, students, and working chemists.

WM. McMURTRIE.

COMMERCIAL ORGANIC ANALYSIS. BY ALFRED H. ALLEN, F.I.C., F.C.S. VOL. III. PART I. TANNINS, DYES, AND COLORING-MATTERS, WRITING INKS. Third edition. Revised and edited by J. MERRITT MATTHEWS, Ph.D. Philadelphia: P. Blakiston's Son & Co. 1900. 589 pp. Price, \$4.50.

Since the first edition of Mr. Allen's valuable work, its horizon has been considerably enlarged, and the value of the work largely