ORGANIC CHEMISTRY FOR THE LABORATORY. BY W. A. NOYES, PH.D. Illustrated. xii + 257 pp. Easton, Pa.: The Chemical Publishing Co. Price, $1.50.

Several excellent works on the preparation of organic compounds have recently appeared and it can no longer be said that the absence of comprehensive guides of this kind is a cause for complaint. Some of these have been kindly received by the critics and now this latest addition seems to be wholly worthy of equal praise. After an examination of this volume one feels that it may without apology be placed beside the best of similar efforts, although it is not intended to occupy precisely the same field as other laboratory guides.

Professor Noyes has done this work in a systematic form and evidently with great care; he has made it comprehensive enough to include the best methods of preparing the principal classes of carbon compounds, not confining himself to single examples in any class. The result is a reference book which can be used by the student but which also presents much more than the average student will attempt to accomplish. It does not outline a course of study nor are the various preparations presented in the order which a student would be likely to follow. The work is essentially for reference, adapted to the needs of advanced workers and instructors, although no part is beyond the capacity of the ordinary student who may wish to select certain of its contents for his own use.

There are twelve chapters, dealing in the order named, with acids; acid derivatives; halogen compounds; nitro compounds; amines; hydrazo, azo, and diazo compounds; alcohols and phenols; aldehydes and ketones with their derivatives; sulphonic acids; hydrocarbons; miscellaneous compounds; and qualitative reactions and reagents.

The method of treatment of these subjects follows a uniform order. Each chapter opens with a general discussion of the principal methods relating to the group of compounds under consideration, and then follows the discussion, in detail, of typical compounds within the group. Under acids, nineteen distinct examples are fully discussed and other groups are treated with appropriate fulness. Each preparation is described systematically, beginning with a statement as to the general character of

the method, and the specific character of the preparation to be undertaken. Then comes a summary of the literature bearing upon the subject ; an exact statement of the kind and amounts of the materials required ; and finally a careful description of the operation to be performed. Graphic formulas are freely employed, and the author frequently takes occasion to point out some historical significance or some general application of the particular experiment under discussion. Cross references are numerous and the book is well indexed. In all, ninety-six separate preparations are fully described.

The mechanical work of the book has been well done, although the illustrations can hardly be called elegant. This criticism applies so frequently to scientific literature that it suggests the possibility of the employment of conventional designs for the representation of common forms of apparatus like flasks, burners, coolers, receivers, supports, washing and drying vessels, etc., which would admit of common use, would be inexpensive and would serve for illustration in a simple and understandable way. The book is not wholly free from typographical errors and an occasional "chemical idiom," but these detract in no way from the highly creditable character of the work, which will without doubt be well received and successfully realize the author's purpose.

W. E. STONE.

BOOKS RECEIVED.

Laboratory Experiments on the Class Reactions and Identification of Organic Substances. By Arthur A. Noyes, Associate Professor of Organic Chemistry in Massachusetts Institute of Technology, and Samuel P. Mulliken, Instructor in Organic Chemistry in Massachusetts Institute of Technology. Second, Thoroughly Revised Edition. Easton, Pa.: The Chemical Publishing Co. 28 pp. Price, 50 cents.

The Freezing-point, Boiling-point, and Conductivity Methods. By Harry C. Jones, Instructor in Physical Chemistry in Johns Hopkins University. Easton, Pa.: The Chemical Publishing Co. vii + 64 pp. Price, 75 cents.

Twenty-first Annual Report of the Connecticut Agricultural Experiment Station for 1897. Part II. Fertilizers. 93 pp. Part III. Mildew of lima beans ; Prevention of leaf-blight and leaf-spot of celery ; Cause and prevention of a fungus disease of the apple ; Investigations on a disease of carnations ; Literature of fungus disease. 64 pp. The Connecticut Agricultural Experiment Station, New Haven, Conn.