

cane also contains a small quantity of pectin. The ash of the cane is composed chiefly of potash and silica. Small quantities of soda, lime, magnesia, oxide of iron and sulphuric acid are also found in the ash.

The technical part of the work gives in a condensed form a statement of processes of manufacture which obtain on the island of Java. The articles on clarification, filtration and evaporation will be found useful to those engaged in technical sugar work.

Every one who is engaged in the manufacture of sugar will find Mr. Geerligs's book practical and full of useful suggestions.

H. W. WILEY.

THE GAS ENGINEER'S LABORATORY HANDBOOK. BY JOHN HORNBY. Second edition, revised and enlarged. London, E. & F. N. Spon. New York: Spon and Chamberlain. 1902. xvi + 304 pp.

This volume describes the various analytical operations that are necessary to the proper control of the manufacture of illuminating gas. Parts I, II, and III (112 pages) are devoted to the consideration of elementary quantitative analysis, the topics there discussed being the balance, weights and weighing, sampling, precipitation, filtration, gravimetric determinations and volumetric analysis. Part IV deals with the special analyses required in gas works, such as the analyses of coal and coke, the examination of crude gas, testing of purified gas, analysis of ammoniacal liquor, lime, limestone, oxide of iron, spent oxide and fire-clay, the assay of coal-tar, fractional distillation and the determination of the specific gravity of gases. In Part V, technical gas analysis, calorimetry and the examination of oils are considered. The Appendix contains the English Gas Referees' Instructions concerning the examination of the purity of illuminating gas, and these are followed by various useful tables.

The book contains only what is essentially English practice, and recent improvements in methods and procedures that have been adopted in Germany and in this country have rarely been incorporated by the author. For example, the method for the analysis of coal as recommended in the Report, to the American Chemical Society, of the Committee on Coal Analysis is not even referred to, and the many recent improvements in the methods of analysis of gas mixtures appear to have escaped the author's attention. The work contains, however, much valuable and interesting informa-

tion and will be found a convenient book of reference by those who have to do with the manufacture and analysis of illuminating gas.

L. M. DENNIS.

GUIDE TO PREPARATION WORK IN INORGANIC CHEMISTRY. BY DR. BLOCHMANN; translated by JAS. LEWIS HOWE. Published by Washington and Lee University, Lexington, Virginia. Price, 60 cents.

The translation of Blochmann's "Anleitung zur Darstellung chemischer Präparate" by Professor James Lewis Howe places this excellent little book within reach of students who are unable to read it in the original. While the demand for an elementary text in inorganic preparations is perhaps not so great as it is abroad, inasmuch as many of our texts in general chemistry include considerable work of this nature, nevertheless, too much emphasis can not be placed upon the making of inorganic compounds in exactly the line followed by Blochmann; namely, determining the amount of pure substance which can be made from a given amount of raw material.

Most of the processes given are simple but important, and if faithfully followed out, will give the student a pretty clear idea of the common methods used in making of these simpler inorganic substances. In fact, it would seem that the book might be used to advantage by advanced students of general chemistry before they have had the work in analytical chemistry mentioned by the author.

Several of the first experiments are found in nearly all of our texts on general chemistry, the only difference being that the quantitative results emphasized here, are usually omitted in general chemistry. Among these preparations are hydrochloric acid, nitric acid, ammonia, sodium hydroxide, sodium nitrite, iron sulphate, disodium phosphate and the acids of phosphorus. Among the less common ones are urea, hydroxylamine, crystallized silicon, antimony trichloride and amidosulphonic acid.

While the text is scarcely large enough for a full course in inorganic preparations, it might be used in connection with a course in advanced chemistry with good results. Indeed it is to be hoped that the time will soon come when much of the advanced work in general chemistry will be along the line indicated in this little book.

G. B. FRANKFORTER.