

Typographical errors are rare, and the make-up of the book is good.

JAS. LEWIS HOWE.

**METALLURGICAL CALCULATIONS** By JOSEPH W. RICHARDS, A.C., PH.D.  
PART I. INTRODUCTION, CHEMICAL AND THERMAL PRINCIPLES,  
PROBLEMS IN COMBUSTION. New York McGraw Publishing Com-  
pany 1906 Price, \$2.00.

This book contains a reprint of a series of papers published in "Electrochemical and Metallurgical Industry" from March, 1905 to March, 1906, to which have been added many problems for practice. Other papers yet to appear in the same journal are expected to make up a second and a third part of the completed work.

Chapter I fully explains the use of chemical equations for such computations of weights, and of volumes in case of gases, as may be required in metallurgical operations. The second chapter treats of the applications of thermochemistry, and the third chapter explains and well illustrates the applications of thermochemical data. Chapter IV treats of the thermochemistry of high temperatures, and chapter V, of specific heats, heats absorbed in fusion, and other related matters. The titles of the three following chapters are, "Artificial Furnace Gases," "Chimney Draft and Forced Draft," and "Conduction and Radiation of Heat." There is an appendix containing twenty-three problems in addition to the twenty-four given in the text. Chapters II, IV and V contain copious tables of data. The metallurgical master will need this harmonious collection of the physical data of his art, and the metallurgist who is not yet a master will find the clear teachings of this book an indispensable guide to the understanding of the scientific principles on which his art is founded, and by the knowledge of which only can it be intelligently advanced.

EDWARD W. MORLEY.

**A HANDBOOK FOR CANE-SUGAR MANUFACTURERS AND THEIR CHEMISTS.**  
By GUILFORD L. SPENCER, D.Sc., formerly Chief of Sugar Laboratory  
U. S. Department of Agriculture, Chief Magnolia Plantation, Chaparra  
Sugar Co., Cuban-American Sugar Co., Nicaragua Sugar Estates, Ltd.,  
etc. 16mo. viii + 331 pp. 52 illustrations, morocco. New York :  
John Wiley & Sons. London : Chapman & Hall, Ltd. 1906. Price,  
\$3 00.

This book is the fourth edition of the same work by this author,

and is greatly enlarged both in its general scope and the scientific data presented.

The first fifty pages are devoted to the manufacture of cane sugar from the sugar-cane, which is given in compact form, covering the methods generally used, also appearing for the first time in an English publication combined with the chemical control of sugar houses. This brief treatise is very complete and reliable, covering both general and special methods.

Article No. 31, on the composition of sugar-cane molasses, by Dr. C. A. Browne, Jr., chemist of the Louisiana Sugar Experiment Station, Audubon Park, New Orleans, La., is a very clever and useful treatment of this subject, and the most complete report on this subject published in technical form.

The properties of the sugar in the cane, and methods of analysis, are concisely given and in addition the general analytical work on sugar estates is included.

The remarks on the control of the sugar house work are given very fully and many valuable suggestions as to the scope of the chemist's work are clearly brought out.

The concluding chapters refer to analyses and examinations of materials used in sugar manufacture and in the sugar house, with a collection of useful reference tables, and the properties of the carbohydrates completing the volume.

The edition is a marked improvement over former editions of th's work (which were highly appreciated by sugar house chemists and manufacturers) and the author has carefully kept pace with the advancements in this line.

Those desiring a concise and ready reference treatise on the manufacture of sugar and the chemical control of sugar houses will find this work worthy of careful attention.

R. E. BLOUIN.

JAHRBUCH DES VEREINS DER SPIRITUS-FABRIKANTEN IN DEUTSCHLAND.  
Sechster band, von DR. G. HEINZELMANN. xiii + 499 pp. Berlin :  
Paul Parey, 1906.

The annual report of the Society for the Manufacture of Alcohol in Germany comes at a very opportune moment. The people of this country are much interested at the present time in the subject of free alcohol in the arts, and there is a woful lack of technical knowledge among our people respecting both the raw materials from which alcohol may be made, and the methods of making