

THE MINERAL INDUSTRY. Its Statistics, Technology and Trade in the United States and Other Countries, to the End of 1902. Edited by J. STRUTHERS, PH.D. New York. The Engineering and Mining Journal: 1903. Large 8vo. 891 pp. Price, \$5.00.

This publication is so well and favorably known and appreciated at home and abroad that it will be quite sufficient recommendation to say that the present volume (Vol. XI) fully lives up to the standard of its predecessors.

Of the features deserving particular mention, we may notice a 31-page article by Frederick H. Lewis on "The Mechanical Equipment of a Modern Portland Cement Plant," which is a valuable and timely article; J. B. C. Kershaw's review of "Progress in Electrochemistry and Electrometallurgy in 1902;" C. H. Fulton's "Review of the Cyanide Process in 1902;" Prof. Hoffman's 30-page article on "Recent Improvements in Lead Smelting;" W. R. Ingall's 15-pages on "Zinc;" R. H. Richards on "Ore Dressing;" W. Campbell on "Metallography;" J. A. Mathews on "Alloy Steels;" W. McDermott on the "Concentration of Ores by Oil;" and T. S. Rickards' 40-page treatise on the "Sampling and Estimation of Ores in a Mine." Besides these are the always-good reviews by other regular contributors, including much valuable work by the editor.

There are few of us who could afford to be without this welcome annual visitor, even if the volume cost several times its present moderate price.

J. W. RICHARDS.

EVAPORATING, CONDENSING AND COOLING APPARATUS. Explanations, Formulæ and Tables for Use in Practice. BY E. HAUSBRAND. Translated from the second, revised German edition by A. C. WRIGHT, M.A., (Oxon), B.Sc. (Lond.). 21 illustrations and 76 tables. xxiii + 400 pp. London: Scott, Greenwood & Co.; New York: D. Van Nostrand Company. Price, \$5.00.

This book fills a long-felt want of technical and manufacturing chemists in this country. Here, too often, the chemist must be his own engineer. Too often the education of chemists fails to cover the principles of mechanics and engineering so necessary to rational work. Experience is therefore frequently costly, even when the chemist has had the assistance of the professional engineer who, having limited knowledge of chemistry, fails to grasp the true needs of the situation. The author, in his preface, very rightly says: "The problems which are to be solved in the

construction of apparatus for evaporating, condensing and cooling are intimately connected with the laws of transfer of heat. Although, generally speaking, these laws are known, *yet reliable knowledge of the practical coefficient applicable in each of the many different cases is often wanting.*" The italics are ours. A great truth is here expressed and many who have had to struggle with the familiar difficulties, will thoroughly appreciate it and will heartily welcome the assistance this book will certainly afford. It is fortunate that one who has the knowledge and experience has also had the time and the will to make such splendidly systematic record of it. Every point in the practice seems to have been covered, and equations and tables are generously provided to enable one to work out his needs in each particular case. We heartily commend the book to the favorable attention of all working chemists, as well as to engineers who may be called upon to treat the problems it covers.

WM. MCMURTRIE.

**THERMODYNAMICS AND CHEMISTRY.** A non-mathematical treatise for chemists and students of chemistry. BY P. DUHEM. Translated from the French by G. K. BURGESS. New York: John Wiley & Sons. 1903. 8vo. 433 pp. Price, \$4.00.

Professor Duhem's works on thermodynamics and chemical dynamics easily place him at the head of the French school in these subjects, and it is fortunate that English readers now have access to one of the most useful works of this author. A characteristic of this volume is the high appreciation which the author expresses for the work of J. Willard Gibbs; in fact, he goes to the extent of saying that this book is largely an exposition of ideas coming originally from America.

The work is admirably translated, and beautifully printed, with plenty of light and shade in the type used, so as to set out the headings and important paragraphs. The linotype machine is probably responsible for the frequent dropping out altogether of a letter, a freak which occurs so often as to become annoying to the reader.

To the student of chemistry who wishes to learn thermodynamics in the easiest manner possible, this work is recommended as probably meeting the requirements better than any English book heretofore published.

J. W. RICHARDS.