

Metallurgy of Copper.—By H. O. Hofman, E.M., Met.E., Ph.D., Professor of Metallurgy, Massachusetts Institute of Technology. Published by McGraw-Hill Book Co., New York City; 556 pp.; 548 illustrations; 130 tables; size 6 x 9 ins.; cloth. Price, \$5 net. (Reviewed by Geo. A. Guess, Metallurgical Engineer, Toronto.)

To write the metallurgy of copper is unquestionably a difficult undertaking. Progress in the art is so rapid, each year seeing new developments, that a book can hardly be written before new metallurgical features are in successful use.

Dr. Hofman in his "Metallurgy of Copper" has, however, given us a book that is up-to-date, and which covers the field as no other book does. The work is essentially a compilation of the published literature on the metallurgy of copper, supplemented by data obtained from several of the larger American smelters and refineries. The work is clear, concise and free from padding. It is difficult to find anything but praise for the book. If inclined to be critical one might object to descriptions and cuts of roasting furnaces hopelessly antiquated, or of descriptions of smelting operations which recall the days when an air of mystery surrounded the metallurgist. Such a description is given in the smelting in of a reverberatory furnace bottom. Under leaching methods considerable attention is paid to wet processes for treating copper mattes, a practice which is extinct in America. It is to be hoped that, in view of the rapid development of wet methods of ore treatment, the author will rewrite in a year or two his chapter on the leaching of copper ores. The book quite correctly does not deal with any form of wet concentration or flotation. It is written for the profession and the advanced student of metallurgy.

The work is purely descriptive. The author refrains from criticizing furnace or plant design. He states without comment, conditions as they exist, as to equipment of plant, and scheme of operations. He reviews the evidence and leaves the case with his readers.

Practical Iron Founding.—By Jas. G. Horner, A.M.I., Mech. E. Published by Whittaker & Co., London and New York. 409 pages; 285 illustrations; size, 5 x 7 ins.; cloth. Price, \$1.25 net.

The principles and practice of iron founding are depicted in this work for the special guidance of the student and of the practical man, relating particularly to the two branches of machine molding and the melting of iron. This is the fourth edition of Mr. Horner's treatment of the subject, and it has been thoroughly revised and enlarged to conform with the great changes which the industry has experienced since the first edition was published. In it the portion devoted to machine molding has been entirely rewritten and new chapters prepared with additional examples of molds introduced. The volume has outgrown the stage of elementary treatise and its value has increased accordingly.

Its scope may be briefly summed up by an enumeration of the subjects of the 16 chapters. They are as follows: Principles; Sands and their Preparation; Iron-Melting and Testing; Cupolas, Blast, and Ladles; The Shops, and their Equipment; Molding-boxes and Tools; Shrinkage, Curving, Fractures; Faults; Principles of Green Sand Molding; Examples of Green Sand Molding; Dry Sand Molding; Cores; Loam Work; The Elements of Machine Molding; Examples of Molding Machines; Machine-molded Gears; Miscellaneous Economics; Weights of Castings.

Foundry workers will find in this new edition a wealth of material quite up-to-date and in keeping with the present stage of iron founding.

Electrical Practice in Collieries.—By Daniel Burns, M. Inst. M.E., Professor of Mining and Geology, Royal Technical College, Glasgow. Published by Chas. Griffin & Company, Limited, London. 353 pages; 207 illustrations; size, 5 x 7 ins.; cloth. Price, \$2.00 net.

In this work the three previous editions have been carefully revised and brought abreast with the latest developments of the industry, as well as the alterations of the laws of Great Britain pertaining thereto. Its publication is justified by the increasing of electric power in mines, particularly in the improvements with respect to coal-working machinery.

The book as a manual of information will be found useful, particularly in the author's native country, by colliery managers, under-managers, and students going up for certificates as such. The purely scientific aspects of the subject are ignored with the exception of a portion of the opening chapter, which has to do with elementary details of electric currents and units of measurement. The chapters following discuss the dynamo, the electric motor, and the applications of electricity to lighting, pumping, haulage and coal-cutting, while the closing chapter of over 50 pages deals with miscellaneous electrically-operated appliances of service in mining operations. Several chapters are concluded by arithmetical examples for the benefit of those students who may peruse the volume.

As a work generally descriptive of the application of electrical power with a minimum of technical discussion this book will be found of considerable assistance to those for whom it was especially written.

Elementary Principles of Illumination and Artificial Lighting.—By Arthur Blok, published by Scott, Greenwood and Son, London, Eng. Illustrated; size, 5 x 7 ins.; cloth. Price, \$2. (Reviewed by H. W. Price, Associate Professor of Electrical Engineering, University of Toronto.)

For a small book, the treatment given principles of illumination and lighting is really good. The author has not only explained how to attack many practical problems, but has presented here and there actual cases with the solution completely carried out as he would advise.

Chapters I. and II. cover general principles, selective radiation, effect of light color on color of body illuminated, color matching, etc. The meaning of and methods of using in calculations the units of light and intensity are well explained. Only flame standards of candle power are mentioned in detail. One wonders why electric incandescent secondary standards and their proper use are given seven lines only, when a thousand of them are in use in industrial photometry for every flame standard in service.

Chapter III. gives illustrated description of various commercial photometers, followed by four pages of excellent advice on the use of them in field work. Chapters IV., V., VI., devote 60 pages to all sorts of calculations on lighting and illumination. Explanation of each method is followed by examples from practice completely solved as the authors would recommend. Numerous diagrams and tables are arranged to assist the reader. Chapter VII. is devoted to typical distribution curves from gas and electric light sources, and the science of converting these as efficiently as possible to any other form desired by reflectors, globes and shades. Chapters VIII. and IX. are specially upon problems of indoor and outdoor illumination. Examples are included showing how to value actual requirements of practice. The last chapter deals specially with the properties of illuminants.

The book is pocket size, yet it has a complete contents, list of tables, five useful appendices, a list of symbols employed, a reference list of 20 equations used, a cross index,