

etc., is provided for convenience of those actually engaged on transmission line calculations.

(3) This book does not assume to be the only competent source of information on the subject treated. As any proper engineering book should, it contains numerous footnotes and references advising the reader of authorities and further information on points in question.

Transmission lines are considered from many points of view: Economic choice of system, of spans; conductors, flexible and solid towers, insulators, protective devices, etc., etc. Considerable space is given to a method of applying Kelvin's Law to collected data to determine the features of system to yield maximum economy. A brief is given of the latest information on high-voltage, high-frequency disturbances and their effect on line and connected apparatus. High-voltage, direct-current transmission receives some attention. A sample set of specifications for a transmission line is included, which the author hopes will be of service, in that it may suggest points to be covered which might otherwise be overlooked.

Switchgear and the Control of Electric Light and Power Circuits.—By A. G. Collis, A.M.I.E.E. Constable & Company, Limited, London, W.C. 82 pages; 46 illustrations; cloth; 4 x 7 inches. Price, 30 cents net.

Reviewed by A. S. L. Barnes,
Hydro-Electric Power Commission, Toronto.

This is a book of 82 pages, forming one of a series, called "Electrical Installation Manuals," which is being put forward by the publishers.

The best feature of the book is its insistence on simplicity in the design and arrangement of switchgear.

Many diagrams of connections for all kinds of service are given. Some of these are good, but several of them are very difficult to read, and in one or two cases it is hardly possible to do so at all, this being partly due to the author's having attempted to include rather too much detail, partly because, to indicate various types of apparatus, he has employed symbols that are not very generally used. Again, in some cases the diagrams are surrounded by marginal lines which are badly confused with the lines of the diagrams. In one figure a dynamo appears to be short-circuited, and in another a shunted ammeter is mysteriously connected across the main bus bars—unless, perchance, these two extra lines are intended to supply current to a lamp at the back of the instrument, which appears to be of the illuminated dial pattern!

The book is not one which, in its present form, is likely to make much of a mark for itself, although its usefulness might be much improved by a careful revision of the diagrams in order to make them more intelligible.

General Metallurgy.—By H. O. Hofman, E.M., Metallurgical Engineer, Ph.D. Professor of Metallurgy, Massachusetts Institute of Technology. Published by McGraw-Hill Book Company, New York City. 909 pages; 836 illustrations; 252 tables; numerous inserts of plates; cloth; size, 6 x 9 inches. Price, \$6.00 net.

Reviewed by T. R. Loudon, B.A.Sc.

As stated in the Preface, it is the object of this book "to cover the field of General Metallurgy." There are, of course, certain principles common to the various fields of metallurgical endeavor, and it is to the expounding of these principles that this book is given over. The book is very well written and the illustrations are good. As to the value of such a work portions are appropriate as a reference for the advanced metallurgist and other sections will be of

value to the beginner. In most books covering a wide field of scientific work, there must necessarily be many sections of reading matter that are not truly explanatory, but are mere statements of fact. For this reason the value of such books is often doubtful, as the beginner requires above all things, clear explanations; and, on the other hand, the advanced reader already knows the facts. It must be said, though, that the amount of explanatory matter given in this book is in a very good proportion to the amount of mere statement of fact. One very noticeable feature about the book that is good is the enormous number of references given. The author has certainly spent a great deal of time on the work of gathering together a list of references that in themselves constitute a very valuable addition to metallurgical literature.

There are thirteen chapters to the book, the titles to which are as follows: Introduction; Properties of Metals; Alloys; Metallic Compounds; Ores; Fuel; Refractory Materials; Pyrometallurgical Processes and Apparatus; Hydrometallurgical Processes and Apparatus; Electrometallurgical Processes and Apparatus; Mechanical Metallurgical Operations, a chapter which is subdivided into sections dealing with Ores, Metal Alloys, Liquids, Gases, Preheating and Drying of Air, Purification of Gases; Metallurgical Products; and Economic Considerations.

The chapter on Mechanical Metallurgical Operations is very well put together, and, on account of its large amount of illustrated explanatory matter, is a valuable general reference. On the other hand, such a chapter as that on Electrometallurgical Processes and Apparatus, while it does contain certain laws that apply in Electrometallurgy, is so fragmentary that it is difficult to see just where its value lies. The chapter on Refractory Materials is very good.

As stated before, the book is a valuable addition to Metallurgical literature if for no other reason than the references given in connection with the written matter.

PUBLICATIONS RECEIVED.

The Approximate Melting Points of Some Commercial Copper Alloys.—10-page leaflet, issued under authority of the United States Bureau of Mines, by H. W. Gillett and A. B. Norton.

Mine-Accident Prevention at Lake Superior Iron Mines.—A 38-page bulletin, compiled by Dwight E. Woodbridge and issued by the United States Bureau of Mines, dealing with mine-safety problems.

Coal Mining Disputes on Vancouver Island.—40-page report of the Royal Commissioner on coal mining disputes on Vancouver Island. Issued with the authority of the Minister of Labor, by Samuel Price.

Problems in Physics.—23-page leaflet, based upon the Text-Book of Physics, by A. Wilmer Duff (editor), etc. Issued by Morton Masins, Ph.D., of the Department of Physics, Worcester Polytechnic Institute, Worcester, Mass.

Uses of Commercial Woods of the United States.—56-page bulletin, No. 12, published by the United States Department of Agriculture. Written by Hu Maxwell, expert, and dealing principally with beech, birches, and maples, as commercial woods of the United States.

Vitrified Brick as a Paving Material for Country Roads.—34-page illustrated bulletin, No. 23, authorized by the United States Department of Agriculture, and edited by Vernon M. Peirce, Chief Engineer, and Charles H. Moorefield, Senior Highway Engineer, office of Public Roads.

First Aid Instructions for Miners.—A 66-page bulletin compiled by M. W. Glasgow, W. A. Raudenbush and C. O. Roberts. It is well illustrated, and serves as a guide to