

observations should be valuable as well for the designing engineer.

Chapter III. deals with the design of irrigation structures. A good deal of valuable data, most of it original, is presented in concise form on seepage losses from canals. This chapter forms a most interesting digest on the hydraulics of canals.

Chapter IV., on hydraulic diagrams and tables, includes a series of diagrams based on Kutter's formula, for the losses in canals, circular pipes, etc., also diagrams giving the various hydraulic elements of various sections, discharge and velocity in pipes of various materials, discharge over weirs, etc.

Chapter V., Structural Diagrams and Tables, covers a variety of subjects, such as, diagrams of excavation and embankment for canals, formulas, diagram and tables for reinforced concrete design, tables for use of timber in timber structures, tables for design of wood-stave pipe, diagrams for estimating and design of steel pipe, and various other diagrams and tables.

Chapter VI. contains a collection of miscellaneous tables and data, such as weights of various substances convenient equivalents, metric conversion tables, and a number of mathematical tables.

Chapter VII. has a digest of specifications on the various works and appurtenances used on irrigation systems. This chapter is one of the most valuable in the book, providing it is used with caution.

Taking the book in all, it is well worth the purchase price to the engineer who deals with hydraulics. In fact, it might even be called indispensable to the hydraulic engineer. Perhaps some will consider this statement extreme, yet the vast amount of data collected and made so easily accessible by means of tables and diagrams, makes the book a most valuable one.

Alternating Current Work. By W. Perren Maycock, M.I.E.E. Published by Whittaker & Co., London and New York. Second edition, 1915. 415 pages; 258 illustrations; 5 x 7½ ins.; cloth. Price, \$1.50 net.

This book is virtually a revised and extended edition of "The Alternating Current Circuit and Motor," an earlier work from the same pen. In its new form it is said to be an introductory book for engineers and students.

The present book is written in simple language leading up step by step from the simplest electrical phenomena to the more complex, a very elementary knowledge of the subject, on the part of the reader, being assumed. The diagrams are numerous and effectually illustrate the points to which they refer.

The author is evidently a great believer in mechanical analogies, which are almost essential to many minds if they are to obtain clear conceptions regarding alternating currents. A number of points regarding such currents, their behavior and effects are elucidated by means of these analogies.

The main headings in the book are: General Principles, Power, Polyphase Currents, Alternations, Transformers, Choking Coils, and Motors. A few formulæ of a very simple character are used but the book is not at all mathematical.

Those readers for whom it is intended, should find it very helpful and owing to the character of the book and the way in which it is written the information contained will be as useful in Canada as in England.

Electrical Measurements and Meter Testing. By David P. Moreton, B.S., E.E., Associate Professor, Armour Institute of Technology. Published by Frederick J. Drake & Co., Chicago. First edition, 1915. 328 pages; 191 illustrations; 5 x 7 ins.; cloth.

The author of this work has endeavored to present a book to meet the requirements of the practical man, unable to take a technical course in electrical engineering, but desirous of a working knowledge of the subject. The elementary principles relating to electricity, magnetism and direct-current circuits are concise and effectively presented. The measurement of resistance, inductance, capacity, current and voltage are similarly treated. The last five chapters of the work are devoted to descriptions of electrical measurement apparatus of various kinds. These descriptions are for the most part quite up-to-date, and they should prove of considerable value to the student as well as to the practical man.

The fundamental theory underlying the applications of electricity is not dealt with in a technical way, but the method is simple and readily understood. It is supplemented by practical applications where possible, and the examples given afford the reader a fair idea of modern practice.

An appendix presents wire tables, temperature coefficients, capacities, etc. The book is well indexed.

PUBLICATIONS RECEIVED.

Composition of Natural Gas.—A 22-page pamphlet of the U.S. Bureau of Mines, giving the composition of gas used in 25 cities, with a discussion on the properties of natural gas.

Director of Forestry.—Report for year 1914, being part 6 of the annual report of the Department of the Interior. It contains also the reports of district inspectors of forest reserves in various provinces.

Coal Mines in Canada.—List of coal mine operators, arranged according to location of mine by provinces and districts, also a list of manufacturers of oven coke. Issued by the Mines Branch, Department of Mines, Canada.

Ontario Mining Publication.—Bulletin No. 25, Ontario Bureau of Mines, being a list, revised to October 1st, 1915, of all publications of the Bureau, including reports, maps and bulletins; compiled by W. R. Rogers, topographer of the Bureau.

Value of the High-Pressure Steam Test of Portland Cements.—Technologic paper No. 47 of the U.S. Bureau of Standards, prepared by R. J. Wig and H. A. Davis (abstracted in *The Canadian Engineer* for September 23rd, 1915, page 401).

Monazite Thorium and Meso-thorium.—A 32-page bulletin of the U.S. Bureau of Mines, dealing with the properties of the minerals, their occurrence, production, methods of mining, estimates of resources, valuation, etc., in the United States.

Mines in Canada.—A list of those other than metal and coal mines, stone quarries, clay plants, etc. It includes such products as asbestos, corundum, feldspar, graphite, gypsum, kaolin, peat, petroleum, etc., etc. Issued by the Mines Branch, Department of Mines.

Investigation of the Durability of Cement Drain Tile in Alkali Soils.—A report on results of first year tests of the U.S. Bureau of Standards, prepared by R. J. Wig