Treatise on Hydraulics. By Professor Mansfield Merriman, M.Am.Soc.C.E. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. Tenth edition, 1916. 545 pages of text, including numerous illustrations and tabulations and ten appended tables, cloth, 5³/₄ x 8³/₄ ins. Price, \$4 net. (Reviewed by H. G. Acres, hydraulic engineer, Ontario Hydro-Electric Power Commission, Toronto.)

Owing to the fact that Merriman's Hydraulics has been the vade mecum of every civil engineering student in America for the past twenty-five years, any extended analysis of the latest edition is not only unnecessary but unfitting. It is gratifying to perceive, however, that Professor Merriman has adhered consistently to his former practice, and in the tenth edition has been satisfied to maintain the status of his work as the premier American text-book on theoretical hydraulics, instead of following the lead of some of his contemporaries and diluting his working theory with a loose conglomeration of descriptive matter which would more properly be found in an engineering magazine or a manufacturer's bulletin.

As compared with the seventh edition, which happens to be at hand, the tenth edition contains 138 more pages, two more chapters, and a largely increased number of tables and illustrations. The two new chapters, entitled "Instruments and Observations," and "Pumps and Pumping," take up half of the additional pages, but otherwise the text of the tenth edition has been amplified only to the extent necessary to record the advance of the empirical branches of hydraulic science.

In his preface to the tenth edition the author mentions having rewritten the article on water hammer and the surge tank. This article contains a short summary of the theory of water hammer and a description of Joukowsky's experiments. The surge tank portion of the article is limited to a diagrammatic sketch of an ordinary standpipe and the derivation of the formula for the theoretical height of surge. The differential surge tank is disposed of through the medium of a rather unintelligible reference to a tank "with a closed top". The mathematical theory of the open differential surge tank, as developed by Johnson, would make ideal matter for study by advanced engineering students. Moreover, the theory shows such remarkable coincidence with tests made on working installations of the Johnson tank, and the practical utility of the same has been so clearly proven, that no modern text-book on hydraulics can be considered really comprehensive without an extended reference to it. It is to be hoped that Professor Merriman will make good this deficiency in the event of publishing an eleventh edition of his work.

The tenth edition of Merriman's Hydraulics should be included in the library of every civil engineering student and hydraulic engineer as a companion volume to Mead.

Wire and Sheet Gauge Tables and Metal Calculator. By Thos. Stobbs. Published by E. & F. N. Spon, Limited, London, England. 95 pages, 5 x 7^{1/2} ins. Price 3s. 10d. net.

This book seems to be very complete in a great many ways and contains much useful information, but the writer considers it to be one that is not specially useful to any merchant in the metal business, as it is thought that too much ground is being covered in the one publication. There are several books which give the same information in more concise form.

A thing that surprises one in this book is that while it professes to give information regarding gauges for

sheets, no mention at all is made of the new Birmingham gauge (B.G.) which is the standard in Great Britain for iron and steel sheets and hoops. This is a gauge which is used also by the Canadian iron and steel trade for those lines, as British sheets and hoops are rolled to this gauge unless otherwise specified. The book also refers to Birmingham wire gauge, which has been obsolete for some time.

Poor's Manual of Industrials, 1916. Published by Poor's Manual Co., New York. 3,112 pages, 6 x 9 ins., bound in cloth.

Poor's manual of Industrials for 1916, which has just been issued, contains 3,112 pages of text, or nearly 10 per cent. more pages than the previous issue.

The book contains the latest income accounts and balance sheets of industrial companies. These tables are in most cases presented in comparative form, showing at a glance the growth of the business. The general information in the book is revised to August 15th. It also contains an appendix giving recent information on the steam railroads and the public utilities.

In view of the fact that the United States industrial organizations had a phenomenal volume of business during the past year, profits having broken all previous records, Poor's Manual of Industrials is particularly valuable at this time. It gives the facts regarding industrial companies without bias or opinion.

How to Make Low-Pressure Transformers. By Prof. F. E. Austin, Hanover, N.H. Third edition. 22 pages, 16 illustrations, 7¹/₄ x 4³/₄ ins., board cover. Price, 40c. (Reviewed by Alfred S. L. Barnes, Ontario Hydro-Electric Power Commission, Toronto.)

This is a small book of some 22 pages, describing in very simple language, and with clear illustrations and sketches how to make small transformers suitable for use on 110 or 220-volt, 60-cycle circuits.

For anyone wishing to make a small transformer for experimental purposes, this book will prove extremely useful as the directions given are clear and concise and all necessary details appear to have been dealt with.

By bringing out taps from various portions of the secondary a considerable number of different voltages can be obtained. Two transformers are described, one having a capacity of about 100 watts and the other of 1 kw. Since this book has already passed through two previous editions, it is reasonable to assume that it has already proved its merits.

PUBLICATIONS RECEIVED.

The Flow of Water in Wood-Stave Pipe.—Bulletin No. 376 of the United States Department of Agriculture, Washington, D.C. By Fred. C. Scobey, irrigation engineer.

Regulations Respecting Highways, 1916.—Appendix to the annual report of the Ontario Department of Public Highways.

City of Saskatoon.—Annual report, 1916, of C. J. Yorath, city commissioner, Saskatoon, Sask.

Department of Labor.—Report of the Department of Labor, Ottawa, for the fiscal year ended March 31st, 1916. Price, 10 cents.

River Des Peres Plan.—A plan concerning largely the industrial and residential expansion and economic welfare of St. Louis, Mo. Prepared by the city plan commissioner, Harland Bartholomew, engineer.