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CONTENTS.

ook Reviews:	
General Specifications for Concrete Work, as	
Applied to Building Construction. By Wilbur	
I. Watson, Mem.Am.Soc.C.E.	623
Mechanical Drawing. By Jas. D. Phillips,	-
B.S., and Herbert D. Orth, B.S.	623
Surveying Manual. By William D. Pence and	
Milo S. Ketchum	623
How to Make a Transformer for Low Pressures.	
By F. E. Austin	624
The Testing of Machine Tools. By George W.	
Burley	624
Descriptive Geometry. By H. W. Miller, M.E.	624
The Corrosion of Iron. By L. C. Wilson	624
The Essentials of Descriptive Geometry. By F.	
G. Higbee, M.E.	624
Simplified Reinforced Concrete Mathematics.	111
By Melvin D. Casler, B.E	624
Directions for Designing, Making and Operat-	
ing High-Pressure Transformers. By Prof.	a shi
F. E. Austin	624
North Pacific Ports, 1915	625
Field Engineering. By William H. Searles,	
C.E., and Howard C. Ives, C.E	625
ublications Received	625
atalogues Received	625

BOOK REVIEWS.

General Specifications for Concrete Work, as Applied to Building Construction. By Wilbur J. Watson, Mem.Am.Soc.C.E. Published by McGraw-Hill Book Co., Inc., New York City. Second edition, 1915, 56 pp., diagrams and tables, 81/2 x 11 ins. Price, \$1.00 net.

This is the second edition of a work published in 1908. Progress in reinforced concrete design and construction during the past seven years has necessitated numerous radical changes in the text of the first edition, and the present general specifications, now up to date, should be of considerable value, as the author, a well-known structural engineer, has been intimately familiar with the development of the art.

The sections covered are as follows: Clauses, Definitions, General Provisions and Uses; General Rules for Computing and Designing; Working Unit Stresses; Formulas; Quantity of Materials for Concrete Work; Proportioning, Mixing and Placing Concrete; Requirements for Placing Reinforcing Steel, Inserts, etc.; Placing Concrete in Cold Weather; Forms and Centers; Surface Finish; Waterproofing; Reinforced Steel Construction; Cast Stone and Blocks; Concrete Piling; Flat Slab Types for Floor Construction; Floor Finish, etc.; Inspection and Tests; General Provisions; and, Designing Tables and Data.

The author justly calls attention to the necessity for careful inspection and competent supervision of work in structural concrete which has developed, in a few years,

from an experimental into a standard type of construction. He points out that with conservative design and good materials, with careful supervision and with adequate inspection, practically all failures and accidents can be eliminated.

Mechanical Drawing. By Jas. D. Phillips, B.S., and Herbert D. Orth, B.S., both of the University of Wisconsin. Published by Scott, Foresman & Co., Chicago. First edition, 1915. 283 pp., 295 illustrations, 6 x 9, cloth. Price, \$1.75.

This volume is intended for use in colleges and universities and is one of a series of text-books for use in the vocational courses that have found a prominent place in educational work. A course in drawing is here presented that bids well to cultivate the habits of observation and perception in the student. Being an elementary course, it goes into considerable detail in presenting the elements of drawing and the authors have been very successful in combining the elements in a manner that is logical and readily followed.

A brief synopsis of the contents of the volume is as follows: Perspective sketching, orthographic sketching, pencil mechanical drawing, tracing and blueprinting, instruments and materials, conventions, lettering, advanced drawing, auxiliary views, isometric and cabinet drawing, tables, etc. A concluding chapter serves as an instructor's guide and outlines a course in mechanical drawing.

Groups of problems have been chosen that ably illustrate the principles underlying the various chapters. They suitably distribute the introduction of theory and the use of the various instruments.

Surveying Manual. By William D. Pence, Professor of Railway Engineering, University of Wisconsin, and Milo S. Ketchum, Professor of Civil Engineering, University of Colorado. Published by McGraw-Hill Book Co., New York. Fourth edition, 1915. 388 pp., illustrated, 4 x 7 ins.; flexible leather. Price, \$2.00 net.

This is a manual of office and field methods for the use of students in surveying. The subject is one concerning which little new matter can be expected, especially in a book that must necessarily deal extensively with elementary details. Concerning the present volume it can be said, however, that the new edition has materially increased its value as useful tables have been added and the whole work revised, cuts redrawn, and text reset. The size of the book has been increased by about 130 pages.

One distinguishing feature is the variety of practical problems which the authors present, designed to bring the student into immediate familiarity with approved surveying methods. Besides a chapter on general constructions, there are chapters on the chain and tape, compass, level, transit, topographic surveying, land surveying, railroad surveying, errors of surveying, methods of computing, topographic drawing and free-hand lettering. The concluding tables are those indispensible to every handbook of this kind. A notable addition in the present volume are tables for meridian determination by observations on Polaris.

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