

with many dimensions, thus making them of considerable value as guides to the designer.

The book, on the whole, is well gotten up, its make-up being much better than is found in general in engineering books, but it is rather unfortunate that it has not been made into a more portable form. The large pages, heavy paper, well-spaced lines and good margins are attractive, but tend to make a book rather heavy and unwieldy, as in the present case.

The engineer who is well versed in his theory should find the book a real addition to the literature on this subject; other readers will have to confine their attention largely to the descriptive parts.

**American Civil Engineers' Pocket Book.** Published by John Wiley and Sons, New York. Canadian agents, Renouf Publishing Company, Montreal. Second edition, enlarged. Morocco, 1,483 pages, 500 tables, 1,200 cuts, 16 mo. Price, \$5 net.

This pocket book, which has now appeared in the second edition, and of which Mr. Mansfield Merriman is editor-in-chief, has been very well received by the engineering profession.

Two new sections have been added to this second edition: Section 14, setting forth those fundamental principles and facts of Steam and Electrical Engineering, which are of especial importance to civil engineers, and Section 15, giving the most recent practice in the construction and maintenance of highways and streets. Eight new pages have been added to the chapter on Earthwork Computations. Section 3, which formerly treated of roads and railroads, has been revised, and is now entirely devoted to Steam and Electric Railroads, seven new pages being added. Many other changes throughout the book are noted, to correct ambiguities, supply deficiencies, and bring the subjects up-to-date.

The index has been revised and entirely reset, and the preface states that all known errors, typographic and otherwise, have been corrected, and that alterations and corrections have been on more than one-fourth of the pages of the first edition. Necessarily, in the first edition, this book, which is the compilation of so many different authors, contained a number of errors. A list of these errors has been prepared, and a copy will be sent to any purchaser of the first edition who forwards his address for that purpose.

This issue contains 23 articles, 43 tables and 18 cuts more than the former edition. The volume in its enlarged form will certainly be most useful to the members of the profession and everyone who is at all interested in engineering should possess a copy.

**A Manual of Cement Testing.** By Richards and North. Published by D. Van Nostrand Company, New York. Cloth, 137 pages. Price, \$1.50 net.

**Reviewed by P. Gillespie, B.A.Sc.\***

This little volume is intended for the guidance of analysts and inspecting engineers, and gives in small compass, the methods in general use of making physical and chemical examinations of Portland and other cements. No attempt to elaborate any special theory or to leave the beaten path has been made. An examination of the text gives one the impression that precision of statement and literary accuracy have not received the attention that they should receive in the preparation of a text book. Clay for example, is defined as a "more or less plastic substance composed chiefly of aluminium silicate formed by the decomposition of

minerals"; limestone is said to be "a substance formed where clay has been deposited with a calcareous matter." Elsewhere we are told that "samples should be taken more often," and that "tests often do not check closer than 10 per cent." On page 41, one observes that "compression tests are not used as standard tests for the reception of a cement," and that "the form and size of the specimen most generally used are two inch cubes. . . ."

Within the covers of the little book, notwithstanding, is found much information on the appliances for and methods of cement examination. The appendix consists of a reprint of the standard specifications for Portland cement of the American Society for Testing Materials, 1909, and the methods of analysis of raw materials, cements, etc., suggested by the Society for Chemical Industry. The book, as a handy and compact guide to routine work, possesses some value.

**Manufacture of Iron and Steel.**—By H. R. Pearson, M. I. Mech. E., Kiangnan Arsenal, Shanghai, China. Published by E. & F. N. Spon, Limited, 57 Haymarket, London. Cloth; size, 6 x 9 in.; 104 pages; 21 illustrations. Price, \$1.15.

This book seems to have for its object the giving of an outline of the principal operations connected with the manufacture of iron and steel. It is put in an interesting way for all, and is designated a hand-book for engineering students, merchants and users of iron and steel. This about correctly infers what one would expect to find in the book. It is not highly technical, but where technical expressions are used and necessary, they are often not explained till several pages further on in this book. For an untechnical man to properly read and understand the book it ought to be read through twice, the first time to obtain a general idea of contents, and then more carefully. It contains thirteen comparatively short chapters, with numerous little cuts and tables, as follows:—

Chapter.	Page.
I. Chemical Elements in Iron and Steel.....	1
II. Iron Ores .....	6
III. The Blast Furnace .....	9
IV. The Manufacture of Wrought Iron.....	22
V. The Manufacture of Steel .....	27
VI. The Siemens-Martin or Open-hearth Process...	38
VII. The Basic Open-hearth Process .....	50
VIII. The Acid Bessemer Process .....	58
IX. The Basic Bessemer Process .....	66
X. The Treatment of Steel Ingots .....	76
XI. Effects of Adding Other Metals to Steel.....	85
XII. Mechanical Testing of Steel .....	88
XIII. Heat Treatment of Steel .....	97
Index .....	102

This book ought to be of interest to all who, in a general way, are interested in the manufacture of iron and steel, and of value to students or others starting work in steel plants and desiring to quickly understand the practical work going on around them.

**The New Building Estimator.** By William Arthur. Published by the David Williams Company, 231-241 West 39th Street, New York. Flexible leather. Size, 4½ x 7 inches, 712 pages. Price, \$3 net.

This book on estimating, first published in 1904, has now reached the eleventh edition. It is, without question, the best book of its kind to be obtained to-day covering the necessary data for the calculation of the cost of building construction. The subject matter is taken up both in detail and approximately. The value of this double arrangement lies in its giving the appraiser or estimator—who has to give quick and approximate figures—the information desired, while the detail section provides figures covering quan-

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