

The book contains only five short examples besides a two-page example of a 2-hinged arch and 13 pages devoted to a proposed suspension bridge at Quebec, by Gustav Lindenthal.

The bibliography is ten years behind the times, being brought down to 1904.

The publishers are entitled to credit for the excellent typography and general composition of the book, though some of the text figures are not very clear and the folding plates are not at all in keeping with the original German production.

Oxy-Acetylene Welding and Cutting. By Calvin F. Swingle, M.E. Published by Frederick J. Drake & Co., Chicago. First edition, 1915. 190 pages; 76 illustrations; $4 \times 6\frac{1}{2}$ ins.; cloth. Price, cloth, \$1.00; leather, \$1.50.

The scope of this little book is well indicated by the table of contents, which subdivides its subject-matter into thirteen chapters with the following heads: Welding; Welding Flames; Oxygen; Acetylene; Acetylene Gas Purification and Handling; Oxy-Acetylene Torches; Characteristics of Welding Torches; Welding Installations; Pre-Heating and Annealing; Operating a Welding Installation; Metal Welding Practice; Oxy-Acetylene Cutting, and Oxygen Carbon Removal. These chapters are covered by a well compiled index.

Important features of the work, not evidenced in the title which has been chosen for it, are the operation and care of acetylene generating plants and the oxygen process for the removal of carbon. The book is largely descriptive and is plainly for the practical man. It contains little theory, just enough to enable him to acquire a thorough understanding of the different phases of the subject.

Equipment for oxy-acetylene operations is rapidly being added to shops and plants. The process is superseding a large number of old methods and is now to be found frequently in structural and general contracting work. Books upon the subject are few, and for this reason the clear presentation which this little work contains will likely receive wide appreciation.

Constant Voltage Transmission. By H. B. Dwight, B.Sc. Published by John Wiley & Sons, New York; Canadian selling agents, Renouf Publishing Co., Montreal. First edition, 1915. 115 pages; illustrated; size, $5 \times 7\frac{1}{2}$ ins.; cloth. Price, \$1.25 net. (Reviewed by Ralph G. Matthews, B.A.Sc.)

The sub-title of this little volume is "A Discussion of the Use of Synchronous Motors for the Elimination of Variation in Voltage in Electric Power Systems."

To use the author's own words in the preface "the purpose of this book is to urge that more synchronous motors be installed in alternating current power systems and that dependence be placed on them to secure the desirable results of controlling the voltage of lines at the opposite end to that of usual practice and of more than doubling the power load of most lines.

The book is divided into thirteen chapters, arranged in logical and systematic order. In the first chapter, after introducing the subject, the author discusses constant voltage transmission in a general way. A power line, as ordinarily operated, has at some part of its length a noticeable variation in voltage. Constant voltage is required at the receiver end while adjustments are made at the transmitting end. The author points out that the

rational place at which to control the the voltage is at the receiver end. This result is attained by the aid of synchronous machines in the constant voltage method. The second chapter points out the limits in alternating current transmission according to present practice, and leads up to the third and following chapters on synchronous motors. He shows their action in counteracting the voltage variation which is the most troublesome feature in designing lines for the transmission of electric power. He likewise discusses the advantages and disadvantages of the system in an effort to show where it is desirable to change over to that system. Finally, since the decision regarding important changes in design and operation must be made according to thorough pre-determinations of cost and operating characteristics, the author gives cost comparisons and valuable working formulae, together with carefully worked out examples for these comparatively new calculations.

The book is written in clear and concise language. A noticeable feature of the work is that the author is not afraid to give explanations and definitions of technical terms which, while not exactly unfamiliar to the average reader, are still of uncommon enough occurrence to puzzle one at times. It will well repay one for the short time required to peruse the pages of this volume. Moreover, the book will be found to be a valuable one for reference purposes.

Masonry. By Malverd A. Howe, C.E., Professor of Civil Engineering, Rose Polytechnic. Published by John Wiley and Sons, New York. First edition, 1915. 160 pages; 115 illustrations; 6×9 ins.; cloth. Price, \$1.50.

The author's several recent publications, including a text book on Foundations and another on Influence Lines, have met with considerable favor among construction engineers. The present work, which is a short text-book on masonry construction, including descriptions of the materials used, their preparation, and arrangement in structures, furnish a very concise treatment of the subject. It cannot be called comprehensive, but rather, as the author states in his preface, a skeleton for a more extended course of study. Several pages of carefully selected references are added at the end. These references cover completely the available literature in books and periodicals.

One is naturally surprised to note that a consideration of reinforced concrete masonry has been entirely omitted from the book, although to concrete masonry is devoted nearly one-quarter of the entire space. The author gives as his reason the fact that the former subject is fully treated in numerous books. However, the reviewer believes that his treatment of the subject, concise as it is, would be improved materially by a similarly concise reference to reinforced concrete construction.

Part I. deals with materials, *viz.*, natural building stones and artificial building material. Part II. deals with stone, brick and hollow tile and concrete masonry. Part III. gives a classification of railroad masonry and specifications, from the American Railway Engineering Association.

The illustrations are clear and for the most part instructive. Extended use has been made of catalogue cuts of different manufacturers, both of machinery and building materials. Considerable space is devoted to description of various tools, such as hammers, picks, axes, mallets, chisels, etc., but considering the practical nature and use of the subject-matter throughout, these descriptions can by no means be called out of place.