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BOOK REVIEWS.

Influence Diagrams for the Determination of Maximum Moments in Trusses and Beams. By Malverd A. Howe, C.E., Professor of Civil Engineering, Rose Polytechnic Institute. Published by John Wiley & Sons, New York; Canadian consulting agents, Renouf Publishing Co., Montreal. 65 pp.; 42 illustrations; 6 x 9 in.; cloth. Price, \$1.25.

This is the first edition of a very useful work which explains the method of applying influence lines in the analysis of trusses, arches and beams. While their use is not new, the book has for its object the directing of attention to the fact that for loads on all ordinary trusses the influence diagrams for bending moments may be drawn by following a single simple rule and that no computations are required for the direct application of such diagrams when so constructed. In addition, it also brings out the fact that these influence diagrams for loads on continuous trusses, cantilever trusses and arches are based upon the one general diagram for simple trusses. Moreover, the author makes it clear that although the diagrams shown in the book are constructed for moments, yet they can be as easily drawn to indicate stresses or even areas of truss members.

The work is divided into five chapters: Simple trusses, double intersecting trusses, continuous trusses, arches and beams of constant section.

The definition of influence line as given by the author is a very convenient one, viz., "an influence line is one which shows the effect of a unit load moving across a structure upon any function of the structure for any position of the load." As might be expected, the work contains many technical calculations, but they are well illustrated in the diagrams and carefully explained in the text.

The work is well printed and bound, and a structural engineer will find it a valuable addition to his library.

Lackawanna Handbook. Published by the Lackawanna Steel Co., Buffalo, N.Y. 456 pp.; size 4 x 6½ in.; flexible leather binding. Price, \$2.00.

This is a 1915 edition of a handbook containing some very useful information for engineers, architects and

builders. It comprises diagrams, dimensions and weights of structural steel sections, special shapes merchant bars, sheet steel filing, standard heavy and light rails, track accessories, etc. The usual mathematical tables required in the use of such products are included. Among them might be mentioned the properties of rolled sections; the dimensions, properties and safe loads of steel columns and struts, and the dimensions and safe loads of girders and beams. The handbook also contains mensuration formulæ, notes on roofs and roof trusses, tables of weights, measures, specific gravities and others for arithmetical and logarithmic use.

Waterworks Engineering. By Fred. C. Uren, M. Inst. C.E. Published by Castle Litho, Limited, Bristol, Eng. 270 pp.: 186 illustrations besides numerous plates; size 6 x 9½ in.; cloth.

The author's wide experience in waterworks engineering, comprising company, local authority and parliamentary work is reflected throughout this book, which will be found a practical treatise on the construction of waterworks and therefore of benefit to engineers and engineering students. The work fills a want that has been more or less ignored by many volumes on waterworks engineering that have appeared throughout recent years. The theoretical side of the question has been treated with special brevity in order to devote all possible space to details of actual construction of small and large undertakings from their incipient stages to completed works. The author has recognized the fact that improvements that recent years have brought about in many phases of design and construction, have almost revolutionized former practice; hence, such sections as those on earthen and masonry dams, geology and well boring, distribution and purification, have been given special attention.

The following constitute the chapter headings: Sources—Storage; Impounding Reservoirs, Masonry Dams; Earthwork Dams; Reservoir Accessories; Rivers and Streams; Well Construction and Boring; Geology; Yield of Wells; Service Reservoirs; Raising Water from Wells; Motors for Pumps; Calculating the Dimensions of Pumps and Engines; The Flow of Water in Pipes and Channels; Gauging Water; The Purification and Softening of Water; Distribution and Utilization; Watermains and Accessories; Service Pipes and House Fittings; Metered Supplies, Waste Detection; Administration and Maintenance; and, The Law of Waterworks.

Work, Wages and Profit. By H. L. Gantt. Published by the Engineering Magazine Co., New York. 312 pp.; 27 illustrations; size 5 x 7 in.; cloth. Price, \$2.00.

This is the second edition of Mr. Gantt's book. It is considerably revised and enlarged over the first edition which appeared in 1910. The author has taken advantage of the rapid rise that has taken place in public attention to the methods used and the results secured in the application of scientific management to the various industries. In his preface the author is cautionary concerning sudden