

the "length of beam in feet, or distance between centres of beams." In the example on page 3, the required moment of inertia on the basis of limiting deflection is computed without stating for the guidance of the student what the maximum permissible deflection is in this case. The following beginning to a sentence is not particularly auspicious: "Also, that if these formulas can be materially simplified, much time and labor can be saved, and it may become . . ."

Apart from the cases which can be solved much more simply by reference to tables in existing handbooks, the matter presented in Professor Ricker's book will be found useful for the architectural draughtsman and junior structural designer, provided no building regulations prevent the adoption of the working stresses on which the simplified formulas are based. Where this does occur, some assistance may be obtained by deriving new simplified formulas from the general formulas which the author gives.

The Improvement of Rivers: A Treatise on the Methods Employed for Improving Streams for Open Navigation, and for Navigation by Means of Locks and Dams.—By B. F. Thomas and D. A. Watt, United States Assistant Engineers. Published by John Wiley & Sons, Inc., New York. Publishers' agents for Canada, Renouf Publishing Company, Montreal. Second edition, two volumes; 713 pages of text, 346 illustrations and 84 appended plates; cloth; 9 x 12 ins. Price, \$7.50 net.

There are eighteen chapters in all having the following titles:—

Part I.—Characteristics of Rivers—Regulation—Dredging and Snagging—Dikes—Protection of Banks—Levees—Storage Reservoirs—Improvement of the Outlets of Rivers.

Part II.—General Design and Construction of Locks and Dams—Locks—Lock-gates and Valves—Fixed Dams—Movable Dams—Chanoine Wicket Dams—Gate and Curtain Dams; Bridge and Shutter Dams—Drum Wickets, Bear Traps, Rolling Dams—Accidents to Structures.

Both volumes are models of typographical excellence, and the editing and arrangement of subject-matter is admirable. One pleasing feature is an unusually complete system of cross-referencing, which enables the reader to find expeditiously all that the work contains with reference to any particular subject.

This book is remarkable in that it epitomizes world-wide engineering practice in river regulation and improvement. The method of treatment is distinctly practical throughout, and the chief merit of the books lies in the multitude of practical ideas which the encyclopedic scope of the work makes accessible to the reader. While there is much in both volumes of interest to hydraulic engineers generally, the nature of the subject dealt with makes them particularly valuable and interesting to engineers engaged on governmental and other public works. To them the book is confidently recommended.

The first volume consists of eight chapters, devoted principally to the discussion of river improvement for open navigation, "Improvement by Regulation" being the sub-title of this portion of the work. Chapters I. and II. are of an introductory nature, containing a more or less academic discussion of river characteristics, and a brief description of various schemes of regulation in use on the larger rivers of Europe and America. The remaining chapters, as their titles indicate, are devoted to the discussion of the various methods now in use for providing and maintaining open navigation on navigable streams. In Chapter X. the principles which govern the economic use of storage as an aid to navigation are covered in a general way.

As related to navigation alone, there is nothing in the first volume of vital interest to Canadian engineers, as it deals almost exclusively with navigation on silt-bearing streams, notably the Mississippi, and problems of this nature are rare north of the international boundary. The value of the first volume lies rather in the fact that the various methods outlined for the improvement of open navigation can be effectively and economically applied to the prevention of flood damage on non-navigable rivers.

Volume II. consists of ten chapters covering river improvement by means of locks and dams, "Improvement by Canalization" being the sub-title. Chapter I. is devoted to general discussion of the principles of design. The succeeding chapters, entitled as above, cover the subjects dealt with more or less in detail. Most of the chapters furnish cost data, and also a considerable amount of mathematical discussion.

The chapter on fixed dams is too brief to be of much value, the intention of the authors being doubtless to indicate, in a general way only, the functions of fixed dams in connection with canalization, rather than enter into the details of a wide subject already well covered by Wegmann Schuyler et al.

The chapters on movable dams constitute the most interesting and important feature of the second volume, the various types now in use in Europe and America being described at length and amply illustrated.

The possibility of using this type of dam in Canada for the development of mill powers on torrential rivers is worthy of very serious consideration, and it is safe to say that no single publication extant contains more information bearing on this question than the work under consideration.

Engineering as a Profession: Scope, Training, and Opportunities for Advancement.—A. P. M. Fleming, M.I.E.E., and R. W. Bailey, Wh. Sc., Principal of the Technical Institute, Crewe, England. Published by John Long, Limited, London. 288 pp.; 4½ x 7½ ins.; cloth. Price, 75 cents, post paid.

"While much has been written as to the manner in which the technical and practical portions of an engineer's training should be co-related so as to ensure the best results, very little has previously been written setting forth the facilities that actually exist for obtaining the most satisfactory training and employment."

The book sets about to supply this deficiency by giving a broad, general outline of the fields of engineering activity, by discussing modern methods and facilities for obtaining a thorough training, and by enumerating suitable apprenticeship courses and scholarships for those who are and those who are not in possession of sufficient means for a university training.

* It must be admitted that the major portion of the book deals exclusively with conditions and facilities for training in the British Isles, thus rendering its value to young men elsewhere as that for general information only. But its clear-cut classification of the various channels which a young engineer may follow up makes it a most acceptable addition to his library. The chapters concern: The Engineering Profession; The Training of the Engineer; Facilities for Obtaining Education and Training for a Minimum Financial Outlay; Engineering Appointments; Foreign Methods of Training Engineers; and Modern Developments in Engineering Training and Employment.

The curriculums of English technical institutions, the enumeration of Government and professional appointments, and the summary of apprenticeship courses for various branches of the profession, contained in this book, make it a useful one for university and professional men in any country.