

To have moderate gradients with as small a difference as possible between the maximum and minimum, it being understood that in exceptional cases gradients may be sacrificed if necessary to avoid sharp curves.

To have the least camber compatible with the easy running off of rain water.

The radii of curves should be as great as possible, 164 ft. at least, the curves being connected with the tangents by parabolic arcs. The outside of the curves should be slightly raised, but so as not to inconvenience ordinary vehicles; no obstructions to the view should be allowed at the curves. A narrow sidewalk, bounded by a kerb, should be laid on the side of the shorter radius, and the depositing of heaps of materials should be forbidden.

The vehicles propelled by mechanical power cannot cause extraordinary damage to the curved portions of roads, provided that at these points a sufficient super-elevation is given, and that the curved portion is not approached or traversed at an unreasonable speed.

BOOK REVIEWS.

Good Engineering Literature, by Harwood Frost, Chicago Book Company, 226 So. La Salle Street, Chicago, size 5 x 7½, pages 420, price \$1.00.

The author of this book was formerly editor of the *Engineering Digest*, of New York, and in this volume he has outlined the more important considerations in preparing articles for the technical press. The opening chapters deal with grammar, rhetoric and English composition; following that, the author takes up the matter of copy and publication.

The engineer is finding it not only more necessary but more pleasant to contribute to technical societies and periodicals and to edit his discussion before technical bodies.

The writer has had a wide experience in technical literature and has in this work produced a book that will prove of great value to every student, instructor, librarian, contractor, and engineer.

Notes on Irrigation Works, by N. F. Mackenzie, lately Under-Secretary for Irrigation to the Government of India; size 6 x 8¾, 107 pages, containing 11 illustrative drawings and six plates; price \$1.80.

Under the auspices of the Common Fund of Oxford University a course of lectures on irrigation works was delivered by the author in the winter of 1909. The following were the subjects of the lectures: (1), Introductory, giving some general idea of irrigation works and their results. (2), The statistics required for the preparation of an irrigation project. (3), Types of weirs and the principles on which their design is based. (4), The development of Egyptian irrigation since 1884. (5), On the design of irrigation channels. (6), Irrigation revenue and land revenue in India. In short, this work is a presentation of these lectures in book form.

In the introductory pages of the book the author draws from experiences connected with irrigation as carried on in the past and in various parts of the world. The purpose and advantages of irrigation are discussed, and examples drawn from previous works undertaken in the past. In his chapter on statistics required for preparing an irrigation project, the author emphasizes the importance of this part of the work. His illustrations are drawn from the methods in practice in India at present. His discussion on types of weirs is of technical importance, and should be of interest in connection with this work. From a historical standpoint and indirectly from the demonstration of how the various methods of irrigation

have been successful the chapter dealing with the development of irrigation in Egypt since 1884 is useful. A chapter upon the design of irrigation channels gives much interesting and valuable information, including an interesting comparison between previous practice in design and the best present methods.

The last chapter dealing with irrigation revenue and land revenue in India, while not directly pertaining to the structural features of irrigation, is nevertheless interesting, and from an economic standpoint is most fitting in a treatise on irrigation works.

Backbone of Perspective, by T. U. Taylor; size 4 x 6½, 56 pages; price \$1.00. A book containing the theory of perspective and the explanation of its application to practical work. The discussion is arranged in three chapters, the headings of which are the Primary Methods, Vanishing Point Method, Axometric Projection and Shades and Shadows. The notes have been given in the form of lectures and drawing-board exercises by the author, but in this work they are reduced to neat attractive form, the mechanical arrangement of the work making very plain the topics under discussion. The subject of shadows is explained fully, many illustrative diagrams being given. In the book there are forty descriptive drawings.

Concrete Workers' Reference Books, by A. A. Houghton, 5 x 7, each containing about 60 pages. Published by the Norman W. Henley Publishing Company, New York City; price 50 cents each.

Four more of A. A. Houghton's reference books have recently been published. Each of these books contain some useful information about some special feature of concrete constructions, and are in handy form for use. Those in the series just published are:—

Practical Silo Construction, giving some valuable information relative to silo construction. Some of the subjects dealt with in the treatment are requirements of a silo, size of a silo, location, foundations for a silo, forms for silo construction, plastered silos, concrete block silos, kind of concrete and reinforcement to be used, doors and roofs for silos. The book contains 18 illustrative diagrams.

Molding Concrete Chimneys, Slate and Roof Tiles, treating with concrete chimneys and roof construction, shows many arguments for the use of concrete if used with discretion and honesty. Some of the topics discussed in this little book are requisites of chimney construction, small monolithic chimneys, inter-locking blocks for small and large concrete chimneys, forms for monolithic concrete chimneys, various types of concrete roofs, monolithic and reinforced slab roofs, concrete slate or tile roofs, molding hip ridge roll and gable ornaments, and preparing plans for roof loads. This book contains 15 descriptive diagrams.

Molding and Curing Ornamental Concrete gives many useful hints for the successful production of this growing field of concrete usage. Division of molds, coating of molds to prevent sticking, placing the concrete, repairing defects, surface treatment and curing of concrete, marble and granite imitations and molding concrete to imitate tool-dressed stone are some of the topics of this book. A rather thorough treatment of various types of molds concludes the book.

Concrete Monuments, Maasole and Burial Vaults, gives some pages to a discussion of another field of construction in which concrete seems to be steadily gaining in favor. For burial vaults concrete is said to be most desirable providing a strong and protective vault. Considerable space is given to the discussion of constructing concrete maasole. There are in this book eighteen descriptive diagrams.