

the examples of good practice following the discussions on the various types of roadways. They present in brief form the specifications actually in use in localities that have secured satisfactory results with the types in question.

The chapter headings are: (1) The Development of Highway Systems; (2) Surveys and Plans for Roads; (3) The Design of Rural Highways; (4) The Construction and Maintenance of Earth Roads; (5) Testing Non-bituminous Road Materials; (6) Sand-Clay Roads; (7) Gravel Roads; (8) Waterbound Macadam Roads and Pavements; (9) Concrete Roads and Pavements; (10) Vitrified Brick Roads and Pavements; (11) Wood-block Pavements; (12) Stone-block Pavements; (13) Bituminous Road and Pavement Materials; (14) Dust Layers and Bituminous Carpets; (15) Penetration and Mixed Macadam Roads and Pavements; (16) Sheet Asphalt and Asphaltic Concrete Surfaces; (17) Selection of Type of Surface for Rural Highways; (18) Selection of Type of Pavement Surface; (19) The Design of Pavements; (20) Tests for Bituminous Road and Paving Materials. Glossary index.

The material in Chapter 1 is good, but it dismisses with a rather brief discussion the ever-increasingly important subject of highway administration. Chapters 2, 3 and 4 require no special mention. Chapter 5 will be read with special interest by the engineer in general practice who has not followed closely recent developments in materials testing. While some of the tests described as, for example, those on vitrified paving blocks, are well known, most of them are of comparative recent origin. This is particularly true of the tests on sand, stone and gravel.

Chapter 6 satisfactorily describes a type of road which deserves a more extensive trying-out by Canadian road builders than it has yet received.

Chapters 7 and 8 describe two well-known forms of improved highways.

Chapter 9 (Concrete Roads and Pavements) deserves special notice, for it is one of the best discussions on this comparatively recent type of paving that has as yet appeared. It is an unprejudiced statement of present practice and its tendencies. As long as the phenomenal increase in motor traffic continues there must be a growing interest in this type of construction for the more important roads as well as for many of the streets in villages, towns and cities.

Chapters 10, 11 and 12 describe well-known types. Canadian engineers will be specially interested in Chapter 11, for much of the material on wood-block paving is from a recent paper by A. E. Macallum, formerly city engineer at Hamilton, Ont. Mr. Macallum's success with this form of construction is widely known.

Chapters 13, 14, 15, 16 and 20 are a thorough treatise on present practice with the various forms of bituminous paving.

Chapters 17 and 18 are of value, but develop no rule-of-thumb by which the very serious problem of selecting the most suitable material for any particular case can be solved.

The chapter on design of pavements contains more than the usual amount of information. The sections on unsymmetrical streets, intersections, and car track paving are noteworthy.

While primarily a work on construction, it is a question if more importance could not profitably be attached to problems of maintenance. A chapter on guardrails would be of interest as would a section on street signs. There also should be room for a discussion of the aesthetic side of highway improvement. There are some typo-

graphical errors which will no doubt be corrected in later editions. The general appearance of the book is pleasing. The illustrations have been carefully selected and practically all of the plans and sketches are unusually legible. There is a real need for this up-to-the-minute book on highway construction.

The Control of Water. By Philip A. Morley Parker.

Published by George Routledge & Sons, Limited, London, Eng. 1,055 pages, 283 diagrammatic sketches, 6 x 9 ins., cloth. Price, \$7.00 net. (Reviewed by T. H. Hogg, C.E., Assistant Hydraulic Engineer, Ontario Hydro-Electric Power Commission.)

The full title of this book is "The Control of Water as Applied to Irrigation, Power and Town Water Supply Purposes." As the author states in his preface, "it is essentially the product of actual engineering experience and should not be regarded as a text book, but rather as a manual for engineers in active work." This premise should be carefully noted by those interested in its subject matter, for the author assumes on the part of the reader an initial knowledge of his subject that may be considered as rather unusual.

The book is divided into sixteen chapters, entitled Preliminary Data, General Theory of Hydraulics, Gauging of Streams and Rivers, Gauging by Weirs, Discharge of Orifices, Collection of Water and Flood Discharge, Dams and Reservoirs, Pipes, Open Channels, Filtration and Purification of Water, Problems Connected with Town Water Supply, Irrigation, Movable Dams, Hydraulic Machinery Other Than Turbines, Turbines and Centrifugal Pumps, Concrete, Ironwork and Allied Hydraulic Construction. These chapters are followed by a series of hydraulic tables, and graphic diagrams for the solution of hydraulic problems, and the column is closed by a very complete index.

This book is undoubtedly one of the most complete, published at the present time. The ground covered is tremendous, and one marvels at the painstaking labor necessary to collect and prepare it. The author appears to have investigated personally most of the recent literature of hydraulics, dealing with special conditions, such as the standing wave, back water curve, and the bore. His treatment, while in many cases not complete, is usually full and adequate.

The most complete treatment of the surge tank, both simple and differential, published in text book form is given, and there appears for the first time, to the writer's knowledge, the arithmetic integration method of investigating the surges induced in pipe lines under varying conditions of velocity. This feature alone is worth the price of the volume to the hydraulic engineer who has not had occasion or time to develop the method himself.

The writer has no hesitation in recommending the book to those of the profession interested in the control of water, as the most complete and accurate available in the English language.

Engineering Applications of Higher Mathematics—Part

II. Problems on Hydraulics. By V. Karapetoff. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. 103 pages, 50 figures, 5¼ x 8 ins., cloth. Price, 75c. net. (Reviewed by T. H. Hogg, C.E., Assistant Hydraulic Engineer, Ontario Hydro-Electric Power Commission.)

This volume forms Part II. of the engineering series by the author and covers "Problems on Hydraulics."