

reinforced concrete columns; centroids and moments of inertia of areas, (the latter as an appendix). The book concludes with numerous tables usually found in works on this subject.

Hydraulics. By Louis A. Martin, Jr., Professor of Mechanics, Stevens Institute of Technology. Published by John Wiley & Sons, Inc., New York City; Canadian selling agents, Renouf Publishing Co., Montreal, P.Q. First edition, 1914. 223+12 pages; 114 illustrations; size, $5 \times 7\frac{1}{2}$ in.; cloth. Price, \$1.50 net.

This work appears as Volume 5, of a set of books by the same author, devoted to mechanics. The previous volumes cover statics; kinematics and kinetics; mechanics of materials; applied statics. In his preface the author states that he has sought to produce a text book which will encourage the student to think and not to memorize, to do and not simply to accept something already done for him. The fundamental principles underlying hydraulics are systematically developed and arranged, with special attention to those underlying the theory and design of impulse wheels and turbines.

The first part of the book is devoted to liquids at rest, and takes up the pressure and the force exerted by a liquid, applications, and floating bodies. Liquids in motion are dealt with in the remaining nine chapters of the book, the work being arranged as follows: The free surface of liquids moving with acceleration; the flow of liquids; flow through orifices, weirs and pipes; force exerted by moving liquids; axial-flow and radial-flow impulse water wheels; turbines.

A feature to be admired in the work is the care that has been given to the selection of exercises and examples. There is an abundance of material in this section of the book to make it of absorbing interest to the student.

Concrete Roads and Pavements. By E. S. Hanson. Published by the Cement Era Publishing Co., Chicago. Revised edition, 1914. 338 pp.; $5 \times 7\frac{1}{2}$ in.; illustrated; bound in cloth. Price, \$1.50. The first edition of this book was reviewed in *The Canadian Engineer* for August 28, 1914.

The present volume shows one-third increase in size by the addition of seven chapters. The author has made many revisions in the older portion of the work, bringing it up-to-date in every detail. The introduction of new subjects, such as how to promote the construction of concrete roads; the economic methods of handling materials; experimental work, etc., give the book a tone of usefulness that will enhance its value considerably to the road engineer. Other subjects which were treated only briefly in the first edition of the book have been expanded into full chapters. Some new matter has been added to Chapter I., showing the advantages of concrete as a road material, and after this is a chapter discussing the various types of concrete roadways. Following this, the various steps in the construction of concrete roads and pavements are taken up in separate chapters, these covering the preparation of the sub-grade, the selection of materials, economic methods of handling materials, mixing and placing the concrete, finishing and curing. The chapter on joints has been brought fully down to date, while the chapters descriptive of work done in various localities have been considerably augmented by the addition of descriptions of recent work accomplished.

To the appendices appearing in the first edition there has been added the specifications of the American Concrete Institute. The list of specifications now includes, in addition

to the above, specifications for Wayne County, Mason City, Illinois Highway Commission, Blome Grani-toid and Granocrete pavements, Bitustone, Dolarway, Hassamite, Vibrolithic, bridges and culverts, sidewalks, curb and gutter.

The expansion of the book is well worth the notice, even of those already familiar with the first edition.

The Calculus. By John Graham, B.A., B.E. Published by E. and F. N. Spon, Limited, 57 Haymarket, S.W. Fourth edition. Cloth; 5×7 in.; 355 pages; 116 illustrations. Price, \$1.25 net.

This volume is an elementary treatise on the calculus for engineering students. It covers the differential and integral calculus and the solution of differential equations. The book is very complete with numerous examples and problems worked out.

Hydraulics. By W. M. Wallace, Wh.Sc. Published by the Technical Publishing Company, Limited, 55 Chancery Lane, London, W.C. Cloth; 5×7 ins.; 276 pages. Price, \$1.00 net.

This little volume is intended to supply the wants of the practical engineer and the student. In the first two chapters, hydrostatic principles and hydraulic machines are dealt with; the flow of water in pipes and through orifices is covered in Chapters III. and IV. Chapter V. deals with the impact of water on surfaces; Chapter VI. with centrifugal head, while Chapters VII., VIII. and IX. deal with the water turbine, the centrifugal pump and the turbine pump. The titles of the other chapters are: Chapter X., Loss of Energy Due to Shock; Chapter XI., Pumps; Chapter XII., Measuring the Flow of Water; Chapter XIII., Channel Flow; Chapter XIV., Fluid Friction; Chapter XV., Vibration and Rolling; Chapter XVI., Hydraulic Problems. This is a valuable little reference book for the engineer in practice, and a good text book for the student.

Hand Book of Construction Plant: Its Cost and Efficiency. By Richard T. Dana, M.Am.Soc.C.E. Published by Myron C. Clark Publishing Company, Chicago. 702 pp.; numerous illustrations; size, $4\frac{1}{2} \times 7$ ins.; limp leather. First edition. Price, \$5.00 net.

The object of this book is to furnish contractors with information in ready reference form concerning the cost, capacity, operating expenses and adaptability of equipment most generally required. Much well-arranged information is given that is invaluable to an inexperienced contractor, and that would undoubtedly be of considerable interest even to a man of broad experience. The book is especially useful to a contractor who has kept but little cost data or who is not in close touch with the costs, merits and sources of supply of equipment.

The usefulness of the volume to Canadian contractors, however, is hampered by the fact that only United States, and no English or Canadian equipment, is discussed, and the lists given of prices, makes and kinds cover only United States firms. While a vast amount of excellent equipment is bought in the United States every year by Canadian contractors, it is obvious that no Canadian contractor could afford to make any purchase without giving due consideration to the competitive merits and prices of Canadian and English goods. The book is not simply compiled from the Canadian standpoint, but will no doubt meet with a very good sale in the field which it is intended to cover.