BOOK REVIEWS.

Publications reviewed under this heading may be secured in Canada from the Smith Publishing Company, 62 Church Street, Toronto, who are the publishers in this country of the books published by The Norman W. Henley Publishing Company, of New York.

The Anatomy of Bridgework.—By William H. Sharpe, Assoc. M., Inst. C.E., E. & F. N. Spon, Limited, London. pp. 190, 6s. net.

This compact little treatise on bridgework construction deals mostly with wrought iron bridges of quite small dimensions; but it is these which most commonly give trouble, both because the effects of impact are in such cases most severely felt, and possibly because the smaller classes of bridges are very generally designed by men of less experience, than large and imposing structures.

An endeavor has been made to secure some kind of order in dealing with the subject, but it has been found difficult to avoid a somewhat disjointed treatment, inseparable, perhaps, from the nature of the matter. All the cases quoted have come under the author's personal notice, making it a practical little book, and a ready reference for an engineer, as it cannot but be useful since it gives the results of the behavior of bridges, whether new or old, that have come under observation; and in this way keeps together the designing of bridges and their after-maintenance. The author points out that much may be learned from the study of defects and failures, even though they be of such a character, that no experienced designer would now furnish like examples. The introductory portions of the work deal with girder bearings, main girders and bridge floors, followed by chapters on bracing, riveted connections and high stresses, with much valuable information on deformations and deflections, defects, and how remedied, etc.

In the concluding chapters he deals with the various forms of bridges and their relative merits.

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Engineering Work in Towns and Small Cities.—By Ernest McCullough; M. West. Soc., Eng. Technical Book Agency, Chicago, U.S.A., pp. 471.

This is a book written for two classes of officials in towns and cities, having a population of less than twenty thousand inhabitants, though it may be found useful in some larger places.

The first class for which it is intended, are elected officials, and those who have had no technical education. The second class is composed of engineers and surveyors holding the position of town or city engineer, and especially for those who have had little or no experience in municipal engineering.

The book has been divided somewhat to meet the requirements of the two classes. Although some chapters will appeal to both. Chapters on bibliography and on the filing of fragmentary literature, will appeal to both. Chapters on field and office work, and engineering data will hardly be appreciated by the non-technical reader.

The book is a manual of municipal engineering, and is the accumulation of many years' experience in this kind of work, and the author has put in convenient form, odds and ends of professional knowledge which may be appreciated by the men whom it will benefit.

The book is strictly practical, and contains first hand information,—supplemented with selected matter from good authorities. The book hinges about engineering work, and therefore about the engineer. The author in the opening chapter gives a brief account of the different classes of men engaged in municipal work in towns and small cities, and the information most helpful to each. The comprehensiveness of this work can be better obtained perhaps from the subjects of the various chapters which are as follows:—The City Engineer and his Duties; Roads and Streets; Walks Curbs and Gutters; Street Pavements; Sanitation; Drainage; Sewerage; Water Supply; Concrete; Building Department; Contracts and Specifications; Office Systems; City Engineers' Records; Field Work; and Engineering Data. It also contains appendices on Machines for Mixing Concrete; Trenching Machines; Bibliography; Trade Literature, and Specification Index.

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Practical Mechanics.—By James Powell, Chief Draughtsman Grand Trunk Railway, Montreal. pp. 54.

This is the name of a little book, just received by the Canadian Engineer, from the author. The preface explains the object of the book in the following words:—"This work has been written and compiled with the object of laying a foundation and preparing the way for a better education and technical knowledge for apprentices and others in engineering shops, and has been based on what will actually be needed, and should be followed in conjunction with a course of mechanical drawing."

The book has been printed for the use of apprentices on the G.T.R. system, and many others outside who may desire to take it up. It has been made as simple as possible, dealing only with practical questions which come up in everyday work, and is followed out on the Grand Trunk Railway System along with a course in Mechanical Drawing, under instructors.

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Notes on Construction in Mild Steel.—By Henry Fidler, M. Inst. C.E., London. New York and Bombay: Longmans, Green & Co. 6½ x 9½, pp. 448; $5.

This volume is one of the well-known "Longman's Civil Engineering Series." It has been arranged for the use of junior draftsmen in the architectural and engineering professions, and the author has kept his subject, as set forth in the title, steadily in view. He has not attempted to treat the subject from the viewpoint of applied mechanics, and has given theories of construction, calculation for buildings or engineering structures only where they are absolutely necessary in connection with the subject under discussion. He assumes that the reader has a thorough knowledge of the theory of construction, and that he also has some idea as to the determination of stresses in the structures with which he has to deal. The book is divided into seven sections as follows: Chapter I. deals with the characteristics and manufacture of mild steel; Chapter II., with the various sections; Chapter III., with applications of rivetted girder work; Chapter IV., on the design of columns and struts; Chapter V., roof construction; Chapter VI., the use of mild steel and iron in marine engineering, and Chapter VII., with protection from corrosion of constructional steel work.

The education of the designer, says the author, is not complete even when to a sound knowledge of theory he has added the experience of the practical aspects of the design. He should, as opportunity affords, trace the previous history of the material he has been dealing with. He should place himself in touch as far as he can with the centres of the steel-making industry, the blast furnace, the cinder heap, the "sow" and her "pigs," the dazzling radiance of the molten metal in the open hearth or the converter, the methods (to say nothing of the risks and anxieties) of the steel founder, the ruddy atmosphere of the annealing furnace, and the spectral shapes of castings, refracted by the waving and glowing gases as they undergo the ordeal which relieves internal stress and makes them ductile and tough, the ingot, the soaking pit, the clangor, and hiss, and roar of the rolling mills. The scene changes, and he will follow the completed sections and shapes to the platers' yard, the templet-makers' machine and smiths' shops, the pickling or galvanizing tanks, and watch the processes whereby drilling machine, punching machine, riveting machine, pneumatic hammer, with its incessant rattle, cold saw, with its halo of sparks, hydraulic press, and the like, shape and fashion his material into the form he has evolved on paper; and, perhaps, he then becomes conscious, as the offspring of his thought grows into visible bodily shape before his