

of areas, and one welcomes this, as it is a quantity entering into problems on the bending of unsymmetrical sections, and is too frequently ignored.

Minor criticisms would be out of place where there is so much to be commended, but the reviewer, in paying tribute to the many merits of this book, regrets that Prof. Maurer countenances the "slug" and the "gee-pound." These nicknames for the so-called "engineer's unit of mass" are not really needed. Engineers who understand mechanics do not have to think in terms of engineer's units of mass, and those persons who do not understand mechanics are not really helped by the introduction of any such special unit. They "get the answers" in terms of units used by engineers if they can "just remember where that 'g' comes in," but their understanding is in no sense broadened by the achievement. Engineers must, of course, continue to use the pound as their unit of force, and the "engineer's unit of mass," while unnecessary, has probably come to stay, but we do not need the "slug" and the "gee-pound." The reviewer considers that the "slug" is a nasty, disagreeable thing—its proper place is underground.

### THE STRENGTH OF SHIPS

Reviewed by W. B. Macdonald

Plant Engineer, Canadian Aeroplanes, Ltd., Toronto

By J. Bertram Thomas, A.M.Inst.C.E. Published by Scott, Greenwood & Son, London. 295 pages, 114 diagrams, 31 tables,  $4\frac{3}{4} \times 7\frac{1}{2}$  ins., cloth. Price, \$1.25 net.

The books dealing with this subject at a moderate price are few in number, so this book should certainly be appreciated. The ground work of the book is a series of chapters dealing with beams, strength and flexure under various loadings, and is well written and instructive, the most interesting of the series being the one dealing with sheer stresses. It would be very difficult to write something new about beams, considering the amount of space devoted to this subject in engineering handbooks. The stresses set up in rectangular plates under water pressure and the relationship between stiffeners and plate are very ably dealt with, as is also the criticism of the various formulæ dealing with the strength of columns. Much useful information is given in that part giving approximate methods for finding a tentative load curve.

The book suffers a little owing to the want of care taken with the diagrams, both as regards clearness, size, lettering, and, in some cases, their place with regard to the text. The student might well ask, when he looks at the formulæ on page 249: "Force at

$A = \frac{2(60 \times 46) \times 20 \times 36}{12 \times 19} = 27.4 \text{ tons,}$ " and Fig. 112,

on page 250, where is A? Is the figure a plan or an elevation? Is the deck the cambered line, or does the deck lay on the same plan as the page? What depth is the girder shown on Fig. 113?

The strength of submarines can only have an academic interest to us here, but the subject of gun-mountings will be greatly appreciated, and might have been with advantage enlarged upon.

Only the outstanding features of the book have been mentioned, but the book is generally well written and easy to understand. It will make a splendid companion volume to, say, Attwood's "Theoretical Naval Architecture" and Walton's "Know Your Own Ship."

It might be noted that the ton used is the gross ton (2,240 lbs.), and that where the figure 35 is used it refers to the cubic feet of salt water in a gross ton.

### PETROLEUM IN CANADA

By Victor Ross, financial editor of the Toronto Globe, Toronto, Ont. Published by the author. First edition. 109 pages, 102 illustrations,  $5 \times 8$  ins., cloth. Price, \$1.00 net.

This little volume gives a very interesting non-technical history of the oil industry in Canada. The facts are well condensed, yet presented in an interesting and readable manner, statistics being generally avoided, and dry facts concerning dates and names being relieved throughout by clever treatment and by a touch of the romance and adventure that has always accompanied the oil industry. Besides the introduction, this work is divided into eleven chapters, of which the titles are:—

Theories of the Origin of Petroleum; Petroleum Industry in Western Ontario; Early History of the Western Ontario Oil Fields; Drilling and Shooting of Oil Wells; Methods of Storing and Refining; Boom Days in Alberta; Petroleum in Western Canada; Petroleum in Eastern Canada; Companies, Refineries and Individual Producers; Some Products and Uses of Petroleum; Future of the Industry in Canada.

"Our own production at present," says the author, "is not merely an insignificant contribution to the world's output, but a small part of our own consumption. From 1865 to 1870 the yield in the Western Ontario field was about 200,000 barrels annually. The export demand produced wide fluctuations in the production and brought the output up to half a million barrels per year at times, until 1877. There ensued successive increases and declines until 1907, when the production reached 800,000 barrels, which would appear to be the maximum for the Canadian field."

Imperial Oil, Limited, of Toronto, have purchased a number of copies of this book, which they are distributing to their friends and customers.

Subsequent to the publication of this book, the author has been offered and has accepted a position as assistant to Walter C. Teagle, president of the Standard Oil Co., of New Jersey, who was president of the Imperial Oil Co. when this book was being written.

### A TREATISE ON ROADS AND PAVEMENTS

Reviewed by W. A. McLean

Deputy Minister of Highways, Province of Ontario

By Ira Osborn Baker, C.E., Professor of Civil Engineering, University of Illinois, Urbana, Ill. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Limited, London; Canadian selling agents, Renouf Publishing Co., Montreal. 667 pages, 235 illustrations, 80 tables,  $6 \times 9$  ins., cloth. Price, \$4.50.

This is the third edition of a work first published in 1902. Progress in road and pavement design and construction during the past sixteen years has necessitated numerous radical changes in the text of the first edition, and the present edition, now up to date, should be of considerable value as the author has been intimately familiar with the development of the art.