. The application of the second method above indicated is facilitated by the use of extension tables which are appended; and in addition to these are given several other tables required in the reduction of the observations; such as tables of refraction; logarithms of numbers; logarithmetic sins and versed sins; a table giving the value of the sun's declination from 1909-1912 inclusive, etc. Tables are also given for reducing stadua measurements.

The problem of determining azimuth is the most important one in Practical Astronomy from the standpoint of the engineers, who may be called upon at any time to determine the direction of the meridian; and Professor Hosmer's little book may be heartily recommended to those who have not the time to master the theory of the subject as laid down in our standard text-books, but who wish to have at hand the practice set forth in a concise form.

L. B. S.

Engineering Wonders of the World, Part 5.—C.P.R. Number, edited by Archibald Williams; published by Thomas Nelson & Sons, London, England, and New York, U.S.A., with map and twenty-eight illustrations. Price, 15 cents. Specially written by J. M. Gibbon and Stephen Pardoe, of the Canadian Pacific Railway Company.

Popular in style, but interesting alike, to the engineer and the general reader, is the story of the Canadian Pacific Railway—one of the engineering wonders of the world. If the selling price of the publication were increased fourfold, it would still merit the same demand. From a cursory glance at the article, some idea of its scope and value may be formed. An elaborate specimen of color printing is offered by the frontispiece which depicts, in vivid tints, a snow shed typical of those built over the tracks as they wend their way across the steep slopes of the Rockies, while the article itself is replete with scenes and views profusely illustrating some of the more interesting incidents and landmarks connected with the history of the road.

At the head of the article, which is cleverly written by men on the inside—one of them actually helping to lay the track—appears a drawing of the new viaduct at Lethbridge, the largest structure of its kind in the world.

In 1871, British Columbia entered the federation of the provinces of Canada—on conditions, one being that a railway should be built across the continent to give her more direct access to Eastern Canada and the Atlantic. It is largely to this agreement that the Canadian Pacific owes its origin.

Following the introduction, the authors briefly outline some of the difficulties, including political differences, which had to be faced.

Some information is then given regarding the financing of the project, and the men at the helm. This is immediately followed by an account of Sir Sanford Fleming's exploratory expedition across the prairies and the Rockies, from Nepigon to Victoria, via Fort Garry, (now Winnipeg), Fort Edmonton, the Yellowhead Pass, and the Fraser River, a trip that now occupies three days taking him and his party as many months. Interesting reference, in which Sir Sanford Fleming's observations apropos at the cpening of the Lake Superior section of the line are quoted at some length, constitutes another portion of the story. This includes notes worthy of study upon the obstacles that had to be overcome and the engineering feats which the men in charge of the construction work accomplished.

Figures relative to the time and cost of construction, paragraphs telling in detail how the prairie section was built, a page describing camp life, a survey story, some amusing anecdotes well told, and numerous illustrations of a high order form what is probably the most attractive part of the volume. And yet, thrilling from start to finish is that portion which is devoted to a description of the line from the "Great Divide," at the summit of Kicking Horse Pass, to Vancouver, now one of the first five cities on the route by which travels the trade of the world—"the keystone of the world's commercial arch." To read of the mountain section of the road is the next best thing to seeing it. The story recalls fairy tales of flying trips in a magic carpet and is extremely suggestive of aerial navigation dreams and travels by the latest mode, whose joys are fondly anticipated by all. Every incident of importance, from the location of the line to the driving of the last spike, at Craigellachie, by Lord Strathcona, is chronicled in a style which is pleasing. Events of national importance are referred to.

The C.P.R. has done much for Canada. The C.P.R. has made the West. It has made a nation. And thus, as the authors remind us, it has forged one of the strongest links in the chain which now binds together a mighty Empire. Wm. M.

Northland Exploration.—There has just been issued from the Railway Lands Branch of the Department of the Interior, by order of the Hon. Frank Oliver, Minister, a report on Northland Exploration under his Department during the season of 1908, covering that portion of Saskatchewan north of Prince Albert as far as the Churchill River, extending from Montreal Lake and Lac la Ronge, on the east, to Green Lake, and connecting waters as far north as Portage la Loche on the west. The report was prepared by Frank J. P. Crean, C.E., and copies can be obtained free on application to the Superintendent, Railway Lands Branch, Department of the Interior, Ottawa.

Tables of the Properties of Steam, and other vapours and Temperature-Entropy Tables, by Cecil H. Peabody. Published by John Wiley & Sons, New York, 133 pages. Price, \$1 net.

This is the eighth edition of the author's well-known Steam Tables, published in 1888, and was thoroughly revised in 1907, introducing information from the important experimental investigations by Callendar, Barnes, Knoblanch, Thomas and others, and adding a Temperature Entropy Table. The properties of saturated and superheated steam have recently been determined by methods susceptible of certainty and precision, so that computations based upon them show satisfactory concordance. This information has been used and the tables entirely recomputed The introduction contains original experimental data and the derivation of formulae used in computing tables. The Temperature-Entropy Tables are constructed for both saturated and superheated steam, and facilitate the solution of adiabatic problems which are given prominence by the development of the steam turbine.

A Brief Course in Elementary Dynamics for Students of Engineering.—By Erwin S. Ferry. Published by Mac-Millan Company, New York, pages 182, illustrations and diagrams, 121. Price, \$1.25 net.

A text book for students, presenting a clear and consistent development of the laws of dynamics, discussing statics or the laws of equilibrium, friction between solids, kinetics, or the laws of connecting force and motion, statics of fluids, motion of bodies under variable forces, etc., with numerous problems collected by the author over a number of years, which are made more practical than usual. The book is well written and will prove of value to the engineering student. The principles and fundamental laws are thoroughly taken up without discussing a vast range of different phenomena, and the illustrations are chosen from familiar subjects.—F. A. G.

The Economy Factor in Steam Power Plants.—By Geo. W. Hawkens, published by Hill Publishing Company, 505 Pearl Street, New York; pp. 133, with 50 diagrams. Price, \$3 net.

The material embodied in this book covers a most valuable lot of data and diagrams bearing on the efficiency of apparatus and economy of steam power plants. It is divided into four parts:—Part I. treating of the individual pieces of apparatus forming a steam power plant; discussing briefly their economy and the conditions which tend to vary it. A number of valuable curves on boiler and engine economy are given.