book is devoted to maintenance work. Materials of construction and operation used in the various branches of maintenance are very fully discussed. A chapter on rails, dealing with standard sections, strength and methods of manufacture being particularly well written. In this connection it might be said that materials have received the greatest attention in the book, while methods of construction have been cut short.

Chapters on station buildings, fuel and water stations and icehouses are of value, the chapter on icehouses and methods of harvesting ice being larger than the others. A feature of the book which should commend itself to all maintenance engineers is that all names of makers of various appliances are given, with cost data covering some of them. Numerous tables included in the book will be of service to the practising engineer.

Electrical Pocket Book for 1916. Published by Emmott & Co., Limited, Manchester and London. 240 pages and diary, 4 x 6 ins., illustrated, cloth. Price, 30 cents.

The annual electrical publication of the "Mechanical World" series. A collection of engineering notes, rules, tables and data, with new information introduced and several sections re-written.

Machine Design. By Albert W. Smith, Director of Sibley College, Cornell University, and Guido H. Marx, Professor of Machine Design, Leland Stanford Junior University. Published by John Wiley & Sons (Inc.), New York. Fourth edition, revised and enlarged. 500 pages, 6 x 9 ins., cloth. Price, $3.00. (Reviewed by L. M. Arkley, M.Sc., Mechanical Engineering Department, University of Toronto.)

Chapter I. explains the elementary definitions used in the study of motion in machine parts without regard to the forces causing motion.

Chapter II., called "Motion of Mechanisms," treats of the relative motion of the parts of the slider crank chain, and gives in detail methods of finding the velocity of the reciprocating parts in quick return motions.

In Chapter III. analyses of several well-known straight-line motions are given.

Chapter IV. treats of cams, but in a rather brief way. This chapter could be enlarged to advantage to include such forms as cylindrical and sliding cams.

In Chapter XVII. tooth-wheels, or gears, are discussed at length and in the conventional fashion. Involute and cycloidal tooth outlines are described and methods of design of spiral and bevel gears given.

The subjects discussed in the above mentioned chapters are usually treated separately in books on Kinematics of Machines, as they deal primarily with motion without reference to force, while "energy in machines," taken up in Chapter V., comes naturally under the head of dynamics of machines.

The remaining chapters treat of machine design proper, and take up methods of design of riveted joints, bolts and screws, axles and shafts, journals and bearings, couplings and clutches, belts, ropes, brakes, flywheels, etc., and these subjects are treated in much the same manner as in all standard books on machine design. The last chapter on machine frames is one of the best in the book. In it the stresses developed in the frames of several commonly-used machine tools are analyzed and the best section for resisting these stresses indicated.

This book has probably been written primarily as a text book for students, and used as such should serve its purpose very well, especially if supplemented with exercises in Kinematics and machine design worked out on the drawing-board. From the above it will appear that the book appeals to the teacher of machine design rather than to the practical designer, who finds most useful books containing data on the subject in hand instead of a treatise on first principles.

Metal Statistics, 1916. Published by the American Metal Market and Daily Iron and Steel Report, New York. 368 pages, 4 x 6 ins. Price, 50 cents.

Is given over entirely to tables showing the prices and production of minerals, their manufactured products and various kinds of coal and coke. In most cases the tables include estimates for 1915, but in some places 1915 figures are completely omitted.

Empire Directory and Year-Book. Published by the Sanitary Publishing Company, Limited, London, Eng. 200 pages, 7 x 9 ins., and diary. Price, $1.50.

This is the 34th annual issue of the year-book of "The Sanitary Record and Municipal Engineering." A directory of municipal authorities for the United Kingdom and all British colonies and dependencies, while not complete as regards Canada, would likely be of use to Canadian firms looking for a market in Britain where the information given is more likely correct. Other information relative to municipal and sanitary engineering is given under various chapter headings.

PUBLICATIONS RECEIVED.

Mineral Production of Canada.—The preliminary report of the Mines Branch for 1915.

Timiskaming and Northern Ontario Railway Commission.—Report of the Ontario Government Railway for 1915.

Water Power Commission, Province of Nova Scotia.—Progress report, 1915, with a map showing progress of stream measurement and power investigations.

The Production of Cement, Lime, Clay Products, Stone and Other Structural Materials in Canada.—A report of the Mines Branch, giving statistics for the year 1914.

Iowa State Highway Commission Service Bulletin.—The March number of this interesting little paper, describing a new bridge at Iowa City and other Iowa road news.

Mineral Production, 1915.—Bulletin No. 1, 1916, of the British Columbia Bureau of Mines; a preliminary review and estimate of mineral production during 1915, by Wm. Fleet Robinson, provincial mineralogist.

Department of Mines.—Summary report of the Mines Branch, Ottawa, for 1914, describing investigations in connection with metallic and non-metallic deposits, testing of oils and fuels, examination of minerals and statistics.

Design of Intakes, Scroll Cases and Turbine Draft Tubes for Single Runner Turbines.—By A. G. Hillberg, hydraulic engineer, Park Row Building, New York City. A series of articles reprinted from the Engineering Record. Distributed free on application to the author.

The Colorado Industrial Plan.—A booklet by John D. Rockefeller Jr., in which is reprinted the article "Labor and Capital—Partners" and several addresses by the author respective of working conditions in the coal and iron mines of the Colorado Fuel and Iron Company.

Canada's Iron and Steel Industry.—A 14-page pamphlet, giving the history of the Nova Scotia Steel and Coal Co. Illustrating and describing the various plants and giving a synopsis of the financial affairs of the company.