

Engineering Applications of Higher Mathematics—Part V., Electrical Engineering. By V. Karapetoff. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. 65 pages, $5\frac{1}{4} \times 8$ ins., cloth. Price, 75c. net. (Reviewed by H. W. Price, University of Toronto.)

Engineers as a rule avoid mathematical books written by mathematicians because those gentlemen almost invariably interest themselves only in abstract manipulations. They rarely see the engineer's need of this type of machinery, which becomes valuable only when he has expertness in applying it to known facts and in physically translating calculated results.

The author of this little book is an engineer as well as a mathematician, and has the engineer's point of view.

The book contains six chapters, each including some general information, sample solutions, and problems in great variety with hints and guidance where necessary.

The variety of problems considered is much greater than the titles of chapters would suggest. Some are: Resistance of tapered conductors, leakage resistance of cable insulation; air-gap reluctance of induction motors, and of alternators with graded gap; the minimum weight of copper in branched distribution systems for given loads and voltage regulation, the size of conductors for minimum annual total operating cost of transmission lines; properties of long telegraph lines having considerable distributed leakage over insulators; problems relating to economical design of transformer windings, and of cores in which cross-section is less through the coils than in parts outside the coils; losses in laminated cores, etc., etc.

Those wishing assistance toward skill in applying mathematics to engineering problems will find in this book many suggestions and sample applications.

PUBLICATIONS RECEIVED.

Suggested Specifications for Concrete Floors.—A 10-page leaflet published by the Portland Cement Association, 111 West Washington Street, Chicago.

Public Road Mileage and Revenues in the New England States, 1914.—Bulletin No. 388 of the United States Department of Agriculture, Washington, D.C.

Vapor Pressures of Various Compounds at Low Temperatures.—Technical paper 142 of the Bureau of Mines, Department of the Interior, Washington, D.C., by G. A. Burrell and I. W. Robertson.

Investigations of Gravel for Road Surfacing.—By T. R. Agg. Bulletin 45, Engineering Experiment Station, Good Roads Section, Iowa State College of Agriculture and Mechanical Arts, Ames, Iowa.

The Tractive Resistance on Curves of a 28-Ton Electric Car.—By Edward C. Schmidt and Harold H. Dunn. Bulletin No. 92 of the Engineering Experiment Station, University of Illinois, Urbana, Ill. Price, 25c.

Department of Mines.—Summary report of the Mines Branch, Department of Mines, Canada, for the calendar year ended December 31st, 1915. Price, 25c.

Public Road Mileage and Revenues in the United States, 1914.—Bulletin No. 390 of the United States Department of Agriculture, Washington, D.C., showing for each state total and surfaced mileage of public roads at the close of 1914, revenues for roads and bridges in 1914, state and local road and bridge bonds outstanding January 1st, 1915, and other related data.

Answers to Problems in Alternating-Current Electricity, first and second courses.—By W. H. Timbie and

H. H. Higbie. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. 30 pages, $5 \times 7\frac{1}{4}$ ins., paper cover. Price, 50c. net.

Sun Oils-Refining.—Fourth of a series of illustrated pamphlets issued by the Sun Co., 1428 South Penn Square, Philadelphia, Pa., on the progress and rapid growth of the oil industry.

Province of Quebec.—Municipal statistics for the year 1915.

The Carburization and Burning of Powdered Coal as a Fuel.—A paper read before the American Institute of Mining Engineers, Chicago Section, December 22, 1916, by Alonzo G. Kinyon, chief consultant, Board of Engineering Research in Power Generation in Steam Locomotives, of the Powdered Coal Engineering and Equipment Company, 1903 McCormick Building, Chicago.

The "Mechanical World" Pocket Diary and Year Book for 1917.—A collection of useful engineering notes, rules, tables and data published by Norman, Remington & Co., Baltimore, Md. 453 pages, illustrated, 4×6 ins., cloth. Price, 35c.

City Budget Facts, 1916.—An analysis of Toronto's budget for 1916, based upon the official estimates, rearranged by the Bureau of Municipal Research, 813-820 Traders' Bank Building, so as to show costs of services rendered and of things purchased.

Directory of Cement, Gypsum and Lime Manufacturers. Eleventh edition, 1917, corrected to January 1st, 1917. Compiled and published by The Cement Era, 538 South Clark Street, Chicago. 244 pages, 3×5 ins., leather. Price, \$2.00.

Ontario Safety League.—Third annual report of the Ontario Safety League, Royal Bank Building Toronto, being a brief statement of the fire and accident prevention campaign conducted during the year 1916. R. B. Morley, secretary-treasurer.

National Safety Council.—Findings of the committee of fifty safety experts of the National Safety Council, Continental and Commercial Bank Building, Chicago, summed up in the council's leaflets entitled respectively, "Ladders," "Stairs and Stairways" and "Boiler Rooms."

CATALOGUES RECEIVED.

Cochrane Heaters for Steam Power Plants, as used in heating, metering and softening water for boiler feed and other purposes. Catalogue No. 710 issued by the Harrison Safety Boiler Works, Philadelphia, Pa. Contains 106 pages and is well illustrated.

Concrete Machines.—Miniature catalogue, 1917, of 48 pages, issued by the London Concrete Machinery Co., Limited, London, Ont., illustrating in condensed form the entire line they manufacture.

Motor Trucks of America.—Fifth edition of an annual book distributed gratuitously by the B. F. Goodrich Co., Akron, Ohio, illustrating and giving the specifications of over a hundred different makes of motor trucks.

Mesta Automatic Plate Valves.—Bulletin "D" issued by the Mesta Machine Co., Pittsburgh, Pa., describing the Mesta automatic plate valves (Iversen patent), which are being used in both new and re-built air and gas compressors, ammonia compressors, vacuum pumps and blowing engines.

Walschaert Valve Gear.—Bulletin No. 1018, issued by the American Locomotive Co., New York. Sixteen pages, nicely illustrated.