## PUBLICATIONS RECEIVED

Report on Health in the City of Manchester, Eng.—By James Niven; distributed free by the city of Manchester.

Non-Bituminous Road Materials.—By L. Reinecke, of the Geological Survey of Canada, Ottawa. Reprint of paper from "Economic Geology." 42 pages and cover,  $6\frac{1}{2} \times 9\frac{1}{4}$  ins. Seven illustrations.

Economizers.—By D. Brownlie, J. Compston and H. W. Royce. Reprint of an article in "Engineering," issue of November 1st, 1918, on "Exact Data on the Running of Steam Boiler Plants." Distributed by Brownlie & Green, Ltd., Manchester, Eng.

Coal Consumption.—Report issued by the Hydro-Electric Power Commission of Ontario on the rate of coal consumption in various electric generating stations and industrial establishments in Canada and the United States. Written by A. S. L. Barnes, of the Commission's engineering staff. Ten pages and cover,  $6\frac{1}{2} \times 9\frac{1}{2}$  ins., accompanied by two diagrams and seven tables. Distributed gratuitously by the Commission, 190 University Avenue, Toronto. This report has also been published by the Honorary Advisory Council for Scientific and Industrial Research, Ottawa.

Heating of Houses: Coal and Electricity Compared.—By A. S. L. Barnes, of the engineering staff of the Hydro-Electric Power Commission of Ontario. Published by the Honorary Advisory Council for Scientific and Industrial Research, Ottawa, as Bulletin No. 6. Free distribution. Demonstrates the impracticability of electricity for domestic heating, excepting in a very limited and auxiliary manner, the electrical heating being too costly, and also insufficient power being available. This report has also been published by the Hydro-Electric Power Commission of Ontario.

Test of a Flat-Slab Floor.-Bulletin 106 of the Engineering Experiment Station of the University of Illinois gives the results of tests on a four-way reinforced concrete flat-slab floor of the Western Newspaper Union Building, Chicago, just before it was razed in 1917 to secure space for the present Union Passenger Station. The floor construction used in the first five floors of the building was slab and girder type, while that of the upper three floors was Turner mushroom flat-slab type with four-way reinforcement. The tests were made on the sixth floor. A test load of 913 lbs. per sq. ft. was applied over four panels, each 17 ft. 51/2 ins. by 19 ft. 41/2 ins. This load was considerably greater in proportion to the design load than had ever been used in previous tests of buildings. The information secured, therefore, which shows the action of the slab in its various parts, given by the strain measurements, has an important bearing on the design of flat-slab structures. Copies of Bulletin 106 may be had gratis by addressing the Engineering Experiment Station, University of Illinois, Urbana, Ill.

Chlorine Control Apparatus.-Handsome catalogue published and distributed gratuitously by Wallace & Tiernan Co., Inc., 349 Broadway, New York City. Sixty-four pages and cover, 81/2 × 11 ins., coated paper, printed in two colors, profusely illustrated. Relates briefly the history of sterilization of water and sewage by chlorine, and describes in a technical manner the measurement of chlorine, the chlorination of water and sewage, and the operation of the various types of chlorinators manufactured by the company. Both solution feed and dry feed machines are described. Either type can be controlled manually or automatically, and both types of control are fully explained. The automatic apparatus is either venturi, float or pito operated, and all three operations are described. Semi-automatic chlorinators are also illustrated. The publication includes a partial list of installations, some reference data regarding chlorine, and a useful summary of types and characteristics of Wallace & Tiernan chlorinators. This summary tabulates the limiting capacity of each type of chlorinator in pounds of chlorine per 24 hours; the proper ratio of minimum to maximum flow for accurate control; applicability; point of application of the chlorine; method of introducing the chlorine into the water or sewage being treated; the limiting pressure against which the chlorine can be applied, etc.

## VICTORIA TELESCOPE AT WORK

I N the course of the regular program of work with the 72-inch reflecting telescope of the Dominion Astrophysical Observatory, Victoria, B.C., which has been in active operation only since May last, thirty spectroscopic binaries have already been discovered.

These stars, which visually appear as single, even when viewed with the most powerful telescope, can only reveal the fact that they in reality consist of two stars revolving around one another, by measurements of their radial velocity towards or from the earth by means of the spectroscope. If the star is always moving with the same speed towards or from the sun, then it is single; but if this speed changes, or if at one time it is moving towards us and at another time away from us, then it is a double system, a spectroscopic binary as distinguished from a visual binary, which appears double when looked at in the telescope.

Nearly 1,300 spectra have already been obtained with this telescope, of stars mostly fainter than the sixth magnitude, from a list of 800 stars to be observed at Victoria, this list being arranged in co-operation with Mt. Wilson.

About half of these spectra have been measured, with the result that 30 of the 125 stars whose velocity has thereby been obtained are shown to be binary. This gratifying record, one never before approached in such a short time after the completion of the telescope, gives promise that Canada will soon become an even more important factor than at present in the advancement of astronomical research.

## DOUBLE PAGE ADVERTISEMENTS ALLOWED

**F**OR several years past, the Post-Office Department has refused to permit advertisers to use double-page "spreads." This ruling has now been revoked; double-page advertisements can now be published. Needless to say, *The Canadian Engineer* will now be pleased to accept all the double-page advertisements which any of its readers or advertisers may care to insert.

The Whalen Pulp & Paper Mills, Ltd., have sold \$500,-000 7% notes to a firm of Chicago brokers. It is not known whether new construction is proposed or whether the money is wanted for other purposes.

To-morrow evening, at 8 o'clock, the Ford film, "Coal is King," will be shown in the Chemistry and Mining Building, University of Toronto, under the auspices of the Toronto Branch, Engineering Institute of Canada. The film shows the operation of soot-blowers and their effect upon the efficiency of a boiler plant.

In a judgment given at Osgoode Hall last month by Justice Middleton, municipalities are upheld in their right to enter upon private property for the purpose of laying sewers. A municipality should not be compelled, said the Judge, to acquire absolute title to land when all that is necessary is an underground passage that does but little damage to the property.

The Ottawa Electric Railway has offered its assets to the city of Ottawa for \$6,500,000, and has given the city an option to May 1st at that price. The company's franchise expires in five years. The city council has authorized the Board of Control to engage any engineering or other assistance that may be required to obtain a full report on the advisability of accepting the company's offer.

The Ontario Highways Department, which recently took over the Cobourg and Port Hope toll road as part of the new provincial highway, has purchased an extra 10 ft. on each side of the road, making same 86 ft. wide. It was stated in the Toronto "Globe," that it is understood that the department is paying three times the assessed value of the land taken over. Negotiations are under way for the taking over, also, of the Cobourg and Grafton toll road.