

1,844,571 HORSE POWER IN CENTRAL ELECTRIC POWER STATIONS IN CANADA.

A census and directory of the Central Electric Power Stations in Canada has just been completed by the Dominion Bureau of Statistics, and the Dominion Water Power Branch of the Department of the Interior working in co-operation and with the assistance of the Ontario Hydro-Electric Commission, the Quebec Streams Commission and other Provincial Departments concerned. The report is in two parts, Part I comprising a complete census and statistical survey, with accompanying explanatory matter, whilst Part II forms a comprehensive directory of all commercial and publicly-owned power stations in operation throughout Canada, showing the principal features of each, the locations where blocks of electrical energy are for sale, the prices at which power is obtainable, transportation facilities available in the vicinity, etc. The collection of the data was made by the Bureau of Statistics and the Provincial Departments and the analysis and preparation of the data by the Water Power Branch.

The statistics include only central electrical stations, that is, stations developing electrical power for sale; all other electrical establishments, such as electric railways, etc., are excluded. Outstanding features of the report are as follows:

CAPITAL AND LABOR.

The capital invested in central power stations totals \$356,004,168, of which 79.5 per cent. is invested in commercial stations, and 20.5 per cent. in municipal or publicly-owned stations. Total employees number 8,847 receiving wages and salaries totalling \$7,777,715 per annum.

REVENUE.

The total revenue received from the sale of electrical energy is \$44,536,848, of which \$29,135,399 were secured by commercial and \$15,401,449 by municipal plants.

POWER INSTALLATION.

The primary power installation in central stations totals 1,844,571 h.p., of which 78.3 per cent., or 1,444,314 h.p. is installed in commercial stations, and 21.7 per cent., or 400,257 h.p. in municipal stations. Of the total primary horse power installed, 1,652,661 h.p. is derived from water, 180,800 from steam, and 11,710 from gas and oil.

COST OF CONSTRUCTION.

Of special interest is the actual cost of construction of hydro-electric power stations per installed horse power. Omitting all real estate, transmission and distribution equipment, seventy representative hydro-electric stations throughout the Dominion, with an aggregate turbine installation of 745,797 h.p. and a total construction cost of \$50,740,458 show an average cost of \$69.11 per installed turbine horse power. The figure in brief represents the average capital cost of construction at the power site and is of considerable interest to engineers.

HYDRO-ELECTRIC POWER IN THE CENTRAL STATION INDUSTRY.

One of the most important facts disclosed as a result of the statistics is the outstanding position which water power takes in the central station field. Out of a total installed primary capacity of 1,844,571 h.p., 1,652,661 or 89.6 per cent.—practically 90 per cent.—is derived from water. This figure is indicative of the extent and availability of the water power resources of the Dominion and of the remarkable degree to which their adaptability for central electric station work has been appreciated in principle and realized in practice. The vast water power resources of the Dominion, the ready adaptability of hydro-power to the production of electrical energy and the increasing extent and scope of economical electrical transmission from an industrial asset which probably more than any other will ensure a full measure of future prosperity.

DIRECTORY OF CENTRAL STATIONS.

The directory of central electric stations in Canada, which forms Part II of the report, constitutes the first governmental attempt to systematically compile a ready reference to the central electric stations of the Dominion. Garcke's Annual, issued in

England and McGraw's Directory, published in the United States, have attempted to deal with this field in Canada, in order to provide reference data in the general interests of commerce and industry. The material which has now been compiled is much more exhaustive and comprehensive in every way than either of these publications, and it is thought that it will prove a valuable asset in the reconstruction period as it permits a bird's eye view of the present status of the industry in all parts of the Dominion, and indicates the locations where expansion is readily feasible. As already stated, a special effort has been made to secure from the various corporations and municipalities, information relative to blocks of electric power available for sale; the prices at which such power can be provided; the available sites for industry in the vicinity, and the transportation facilities available. The corporations and municipalities have co-operated heartily in this connection. It is intended that, in so far as possible, this information shall be kept up to date.

DECREASE IN CANADA'S TRADE BALANCE.

The balance of trade in favor of Canada in the calendar year 1918 amounted to \$322,537,840, a decrease of about 220 millions, as compared with 1917, and of about 2½ millions as compared with 1916.

Exports of domestic produce and imports entered for consumption for the full twelve months of each of the past seven years, with the balance for or against Canada, are given in the following table:

Year.	Exports.	Imports.	Balance.
	\$	\$	\$
1918	1,229,208,244	906,670,404	+322,537,840
1917	1,547,430,855	1,005,071,716	+542,359,139
1916	1,091,706,403	766,501,512	+325,204,891
1915	614,129,845	450,517,774	+163,612,071
1914	379,291,000	481,214,000	-101,923,000
1913	436,213,000	659,061,000	-222,848,000
1912	341,978,000	635,585,000	-293,607,000

DECEMBER EXPORTS DOWN.

The contraction in agricultural exports was the outstanding factor in the decrease of December exports as a whole. These exports of grain, which had amounted to no less than \$91,716,447 in December, 1917, were only \$38,871,623 last month.

Exports of manufacturers held well, amounting to \$32,266,381, the decrease from the previous year being less than \$1,500,000. Exports of animals and their produce, which include dairy products, showed an impressive gain at \$21,819,189, an increase of more than \$10,000,000.

Dec.	Exports.	Imports.	Balance.
1918	\$107,474,401	\$73,341,265	+34,133,136
1917	148,411,000	61,634,000	+86,777,000
1916	130,037,000	68,014,000	+62,023,000
1915	92,171,000	45,690,000	+46,481,000
1914	37,193,000	30,292,000	+6,901,000
1913	55,803,000	45,004,000	+10,799,000
1912	38,568,000	51,142,000	-12,484,000

RECORD BY MONTHS.

September stood out as the best trade month of 1918, the total of exports standing at 138 millions, and the balance in favor of Canada at 67 millions. The banner month in 1917 was November, with exports of 187 millions, and a favorable balance of 114 millions, a record that is likely to stand for a long time.

The course of exports, imports and trade balance through 1918 is given in the following table:

	Exports.	Imports.	Balance.
Jan.	\$96,216,284	\$60,677,414	+35,538,870
Feb.	86,361,671	52,206,448	+34,155,169
Mar.	99,854,987	87,255,698	+12,599,289
Apr.	71,161,652	78,623,941	-7,462,289
May	79,002,039	89,809,083	-10,807,044
June	108,509,788	82,094,786	+26,415,002
July	103,019,447	82,907,900	+20,111,547
Aug.	90,153,888	79,652,526	+10,501,362
Sept.	138,738,700	71,469,480	+67,269,220
Oct.	129,554,438	75,541,815	+54,012,623
Nov.	119,161,003	73,090,048	+46,070,955
Dec.	107,474,401	73,341,265	+34,133,136
Total	1,229,208,244	906,670,404	+322,537,840

PULP AND PAPER ASSOCIATION TO MEET.

The sixth annual meeting of the Canadian Pulp & Paper Association will be held at the Ritz-Carlton Hotel, Montreal, on Friday, January 31. It will open at 10 o'clock in the morning with a business meeting, and close in the evening with a formal dinner at which the principal guests of honor will be Sir John Willison, Brig.-Gen. J. B. White and George W. Sissons, Jr., president of the American Pulp & Paper Association.

The meeting promises to be of unusual importance, as considerable attention will be given to a review of the industry's affairs during the last year, including the effects had upon it by Government regulation of newsprint paper; and to a discussion as to how the industry can best be made to serve the country during the readjustment period. Special consideration, it is announced, will be given to the industrial side of the question with a view to bettering the conditions of the mill operatives, woodsmen and other employees. It is estimated that the total number of workers now employed in Canada, including woodsmen, is between 35,000 and 40,000. A general scheme for improving the welfare of these employees is among the tentative objects of the meeting. Mr. F. J. Campbell, manager of the Canada Paper Company, and president of the Association, will preside.

The meeting of the Association proper will be preceded by a meeting of the Technical Section on Thursday, January 30, continuing into the following day. Various addresses of interest to paper-makers will be delivered, including one by Dr. V. K. Kriebel, of the Department of Chemistry of McGill University, on "Canadian Waste Sulphite Liquor as a Possible Source of Alcohol," and another by J. Newell Stephenson on "The Place of the Pulp & Paper Industry in the Readjustment Period." Among the interesting features of the Section's programme are motion pictures of power plants taken by the United States Fuel Administration Board and a visit to the Montreal Technical School as the guests of Principal Macheras.

Mr. O. Rolland is chairman of the Technical Section Programme Committee, and his associates are J. N. Stephenson, R. W. Hovey and A. L. Dawe.

BANK OF GERMANY.

Berlin, January 25.

The statement of the Imperial German Bank for the week ending January 15, shows the following changes (in marks):

Increases — Treasury notes, 38,756,000; bills, 1,567,675,000; investments, 1,279,000; securities, 63,822,000; circulation, 189,526,000; deposits, 1,751,236,000.

Decreases — Coin, 2,925,000; gold, 2,925,000; notes, 138,000; advances, 920,000; liabilities, 273,213,000.

Total gold holdings, 2,257,186,000.

DULUTH-SUPERIOR TRACTION CO.

Comparative weekly statement of gross passenger earnings for month of January, 1919:

	1919.	1918.	Inc.	Dec.
1st week	\$31,747	\$31,855	\$106
2nd week	33,270	31,045	\$2,224	...
Month to date	\$65,018	\$62,899	\$2,118	...
Year to date	\$65,018	\$62,899	\$2,118	...

BRANCH.

Another branch of the Bank of Hamilton has been opened in Western Canada. On the 10th of this month a new branch at Weldon, Sask., was opened with Mr. O. Olafson as manager.