

MUNICIPAL DEPARTMENT.

CORNWALL WATERWORKS ARBITRATION CASE.

The end of the Cornwall waterworks arbitration is not yet. Last week an appeal case was opened at Osgoode Hall, Toronto. The original arbitration was between the town of Cornwall and the Cornwall Waterworks Company, in regard to the taking over by the corporation of the works of the latter. The arbitrators were Judge McDougall, of Toronto, Robert B. Carman, of Montreal, and John Kennedy, of Montreal. They gave their decision on the 5th of June, 1897, awarding the company \$86,491 and interest from date of award. The town was also mulcted in the costs, which amounted to \$4,269. The town took over the waterworks, but were dissatisfied with award and entered an appeal. They claim about \$36,000 more, the principal complaint being that the arbitrators based their award on the present commercial value of the plant, instead of the actual cost. For seven years the company ran the waterworks without any return, and they think they should be given the interest on the capital invested during that period. Moreover, they claim that owing to the lowering of the water in the St. Lawrence they were compelled to reconstruct their intake system no less than three times. For this they also asked to be reimbursed.

MONTREAL WATERWORKS.

In answer to the charge of extravagance in the management of the waterworks of Montreal, Que., Mr. Leforest, the superintendent, shows from figures that they are exceptionally small—so small that the city occupies a leading position in the order of cost per capita of the population. He gives the following list of annual expenses per head of population:

1. Montreal, (1896), 56c; Detroit, (1896), 84c; 1. Montreal, (1896), 0.56; 2. Detroit, (1896) 0.84; 3. Brooklyn, (1895) 0.94; 4. Buffalo (1896) 0.95; 5. Philadelphia (1896), 0.95; 6. Chicago (1896), 0.98; 7. Boston (1896), 0.98; 8. Toronto (1894), 1.03; 9. Cincinnati (1896), 1.50.

He gives the following figures as to the annual cost per million gallons of water consumed per head according to population. The population figures come first, then those of the consumption (in gallons) per capita, and, last, those of cost:

1. Buffalo, (1896), 355,000, 265, 9.03; 2. Philadelphia, (1896), 1,367,815, 172, 15.16; 3. Detroit, (1896), 277,256, 151, 17.69; 4. Chicago, (1896), 1,800,000, 127, 19.13; 5. Montreal, (1896), 250,000, 67, 22.80; 6. Boston, (1896), 612,400, 131, 24.12; 7. Brooklyn, (1895), 866,343, 98, 26.37; 8. Toronto, (1894), 181,220, 99, 28.20; 9. Cincinnati, (1896), 405,000, 110, 27.53.

In addition, the following cities give

figures showing the cost per million gallons to be higher than Montreal: Brockton, \$25.92; Burlington, \$65.23; Fall River, \$54.28; Fitchburg, \$31.06; Lynn, \$28.33; Oberton, \$66.14; Quincy, \$42.70; Reading, \$56; Taunton, \$39.32; Waltham, \$74.81; Willsley, \$56.65; Woonsocket, \$49.39; Yonkers, \$35.89; Newton, \$31.03.

Another set of figures shows the annual cost of each million of gallons of water in the five principal cities in the preceding table, to establish a comparison on an equal consumption per head of the population, and subtracting from the Montreal figures the special expenses caused by the rigor of the climate. The order followed is, first the name of the city, then, the population, then, consumption per capita in gallons, and lastly, the cost:

1. Buffalo, 355,000, 67, \$19.68; 2. Montreal, 250,000, 67, \$20; 3. Detroit, 277,256, 67, \$29.12; 4. Philadelphia, 1,367,815, 67, \$29.93; 5. Chicago, 1,800,000, 67, \$33.91.

The annual consumption per capita Mr. Leforest gives as under:

Buffalo, 265 gallons; Rome, Italy, 247; Philadelphia, 172; New York, 150; Detroit, 131; Chicago, 127; Boston, 111; Cincinnati, 110; Brooklyn, 98; Toronto, 99; Montreal, 67; Berlin, Germany, 60; Paris, 42; London, 37; Brussels, 20.

Mr. Leforest concludes by giving the expense of maintaining the waterworks of Montreal from 1893 to 1898:

1893, \$188,987; 1894, \$144,511; 1895, \$129,873; 1896, \$132,992; 1897, \$130,607; 1898, \$118,433 (expropriation).

The annual report of the health department of Sherbrooke, Que., shows that 12,000 feet of sewerage mains were laid in that city in 1897, and states that a rigid house to house inspection of the plumbing done in Sherbrooke houses prior to the new regulations of the city will be instituted, as much of this plumbing is defective and imperfect.

Mr. A. W. Campbell, Instructor in Road Making for Ontario, has received information from the province of New Brunswick that the Legislature of that province has had printed the report prepared by him on their roads. Mr. Campbell issued the report after a careful study of the requirements of the province as regards roads, and recommended the abolition of the statute labor system and the appointment of road commissioners for each municipality. He advised dividing each municipality into five-mile districts, and placing a path-master over each. He also advised the use of the latest improved road-making machinery.

At the recent meeting of the Board of Examiners, of the Ontario Land Surveyors Association, the following candidates successfully passed the examination

for admission to practice, and were duly sworn in as land surveyors for Ontario, viz.: Wilbert Silas Gibson, Willowdale; John James Newman, Windsor; William Butterton Ford, Hamilton; James Nevin Wallace, Hamilton; James Samuel Dobie, Port Arthur; William Arthur McLean, Toronto; William Walter Meadows, St. Thomas; Franklin Joseph Robinson, Middlemarch; George Laing Brown, Morrisburg. J. Herbert Jackson, of Windsor, passed the preliminary examination.

Mr. T. Harry Jones, city engineer of Brantford, submitted his annual report for 1897 to Council recently. It shows that there are now 14½ miles of mains and 12 miles of house sewers (of which 7 miles are private property), 180 manholes and 56 flush tanks, constructed at a cost of \$144,000. The cost of maintaining the system last year was only \$373, which is considerably less than for any previous year. There were made during the year 131 plumbing inspections, and the water or peppermint test was applied 97 times. The fees received for plumbing inspection amounted to \$104. There were issued during the year 81 building permits, the estimated expenditure under the same being \$73,000. The city engineer prepared plans and estimates of all work ordered by the mayor, council, chairman of committees and the Water Commissioners, including the preparation of a plan and report upon a proposed new market building and of plans of the waterworks and lighting systems of the city.

Fire hydrants are being tested upon an elaborate scale by Mr. Charles L. Newcomb, M. Am. Soc. M. E., for the city of Holyoke, Mass. The tests are made with various types and makes, to determine their friction, and the water hammer produced by closing them as rapidly as possible. The method of measuring the loss of head, when discharging various quantities of water, has been carefully worked up. The water for testing the hydrants is measured by an accurately calibrated Worthington meter, and the result of its reading checked by a nozzle meter, designed by John R. Freeman, M. Am. Soc. C. E. The difference in pressure between the inlet and outlet is determined by means of a U tube, partially filled with mercury. The short leg of the tube is connected to the inlet, and the long leg to the outlet, giving the difference in pressures with proper corrections. The water-hammer is tested by means of a steam engine indicator, the pencil of which records the pressure. The drum is made to run at a speed of one inch per minute. When the drum is put in motion the hydrant is opened and then closed as rapidly as possible. The pressure at all times is recorded upon the paper. It has been found that with a water pressure of 75 pounds, with some hydrants, pressures as high as 230 pounds have been produced by rapidly closing them.

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