

MUNICIPAL DEPARTMENT

WATER FILTRATION PLANTS IN EUROPE.

Mr. Charles Brandeis, consulting engineer of Montreal, recently returned from a business trip to Europe. He took occasion to make a special study in England and Germany of water filtration plants for large cities. Sand filters are generally used, by which a high degree of purity and sterilization of the water is attained. At Berlin the volume of water passing through the sand is about 200 gallons per hour per square yard, with 4 feet thickness of sand and stone. In Lon-

don the volume is about 280 gallons per hour per square yard, with thickness of sand and stone 5 feet. This entails the necessity of very large filtering area at a cost of about \$17 per square yard. Sterilization of water on a large scale is also being done electrically by means of ozone. Water containing 39,000 germs and more of bacillæ per cubic centimetre is sterilized to such an extent that practically no germs are left. The ozone does not affect the water in any way, the latter remaining odorless and tasteless as before. This system has been installed in the towns of Paderborn and Wiesbaden, the former having a capacity of 11,000 to 13,000 gallons per hour, the latter a capacity of 55,000 gallons per hour. The cost of sterilizing with 12 working hours daily is estimated with the cost of coal at \$4 per ton as follows: With a plant capacity of 45,000 gallons per hour, about 3½ cents per 1,000 gallons; with a plant capacity of 450,000 gallons per hour about 1 cent per

1,000 gallons. This includes 4 per cent. for interest on capital and 3 per cent. for sinking-fund. With water power the cost would be less. Should filtration be desirable to remove the dirt, then since the germs have been killed with ozone, this may be done at the rate of 1,100 gallons per hour per square yard, which is about 5 times the speed allowed where the sand filters have to retain the germs also. Where ground is expensive this is, of course, a very important item. According to Berlin statistics, the average consumption of water per head of population is 100 litres per day, the water being charged according to consumption as indicated by meter. At Hamburg there are no meters and the average consumption runs as high as 200 litres per day per head, showing the great amount of waste.

The name of the Dominion Steam Heating Company, Winnipeg, has been changed to the John Plaxton Company, Limited, and the capital stock increased from \$24,000 to \$50,000.

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