

States, or the "flat" of Scottish cities. These people are not able to put in "the latest modern improvements," nor have they the space to devote to them. The buildings and occupants are far from squalid; the occupants are cleanly and tidy people, with a very marked taste for flowers; the houses, generally, in good order.

Under the present régime, which was inaugurated two years ago, when the city received its present form of government, great and marvellous changes have been effected. The present municipal control is vested in a "municipal council;" it is expected that at the next meeting of the Legislature, a proper form of civic government will be granted to the city. When this is effected its influence on the good of the city will be rapidly felt.

That portion of the town site which slopes towards the harbour was in the early days intersected by a number of natural waters, twelve or fourteen in all, which were used for a long time for culinary and dietetic purposes. With the gradual growth of the population, these water courses were turned into drains or storm-water courses, and in the ordinary course of events they became sewers, discharging into the harbour.

WATER SUPPLY.

The first effort to obtain water supply was made about 1850, when water was brought from a small lake situated at the hill commanding the entrance to the harbour, called "Signal Hill." The lake is 300 feet above the sea level. A small distribution was made along Water street, on which the pipes still remain, supplying water from the present system under a pressure of 100 lbs.

In 1858, the present system was laid out by Messrs. Robson, Fore, man and McCall of Glasgow. The water is brought from Windsor Lake, $4\frac{1}{2}$ miles northwest of the city. The surface of the lake is 500 feet above the tide water; it has a surface area of 1370 acres. The grade for the first mile is very flat, compared to the rest, particularly to the last $2\frac{1}{2}$ miles, where the fall is 273 feet. The supply of water was not satisfactory, and the Company who originally constructed the work consulted Messrs. Kinipple and Morris in 1873. Then Mr. Morris came to Newfoundland and made exhaustive researches, which were presented in a full and carefully detailed report. The pipe as originally laid was 16 ins. diameter for its entire length. Mr. Morris found, as would be expected, that the portion nearest the lake was incapable of supplying to its full capacity the pipe nearest the town. He also found a remarkable and unnecessary waste of water going on: in some houses in the lowest lying parts, where pressure was greatest, there were no fixtures on the pipes, only a bent end, with the water flowing at the full bore.

After making many practical suggestions as to prevention of water waste, he advised certain alterations on the sizes of the pipes, which were carried out. A 24 inch supplanted the 16 in. for 903 yards from the lake, two double 16 inch stretched for 1496 yards further, and the single 16 inch remained for the balance of the distance.

This arrangement worked well for some time, though it did not give entire satisfaction. In 1883 Mr. John Martin, M. Am. W. W. Assoc., added a 12 inch pipe to the end of the double 16, for a distance of 1188 yards, bringing it to the head of the heavy grade next the city. This addition now balances the relative discharging capacities of the grades, and keeps the single 16 inch full. The daily flow is now close on 5,000,000 gallons (Imperial) per day.

In spite of these gradual approaches to the full capacity of the pipe, the supply was unsatisfactory, as the upper part of the city had very poor supply and low pressure, and during winter was without water.

The writer has just finished an examination into the causes of the dearth of water in the higher levels. He finds that an undue amount of water is run to waste in winter through constant flowing taps in the lowest levels; that economy in the use of water is not practised in winter; and that the main supplying "Water street" robs the other streets, the water having to rise to the upper levels chiefly from this low level of Water street. Observations taken with a pressure gauge have agreed closely with calculated pressures. The alterations recommended by the writer will probably be carried out next year, when all the trouble, it is hoped, will pass away.

The pipes are of cast iron, with turned and bored joints; they have