

New York, and the late Alfred Craven, Esq., C. E., of that city. They gave their judgment as follows:

"In View of all the circumstances, which it is believed have been fully discussed, the plan of pumping a supply from Lake Ontario as recommended by Mr. Keefer is regarded as the most simple, the most free from unfavorable contingencies, likely to be attended with the least ultimate cost and capable of expansion as the wants of the city may require; it is therefore proposed by the undersigned for adoption."

In the twenty years which have elapsed since these works were completed your population has increased from 18,000 to 35,000, the length of distributing pipe from 13 to 50 miles, the number of water takers from less than 300 to 7,000, and the annual revenue from less than \$3,000 to \$90,000.

The amount expended upon construction or capital account in the last 18 years has been \$305,432.46, of which the filtering basin enlargement has taken \$30,149.37, and the high level reservoir \$17,757.39, the remainder (over \$250,000) upon the extension of the distribution. Nothing has been done toward increasing the pumping power because the limit of that now provided has not yet been reached and because any expenditure in that direction would have been useless without an enlargement of the channel for conveying the increased quantity to the city. The present pumps are capable of affording the weekly supply required without pumping on Sundays, and if at any hour of the week the consumption, as in case of fire, exceeds the hourly delivery of both engines, the reservoir always stands ready to make up the deficiency, but in consequence of the small size of the pumping main the quantity now required cannot be sent forward fast enough or in sufficient volume to prevent a great loss of pressure in the distribution, some portions of which are 3 miles distant from the reservoir and 6 miles from the pumps. The water is withdrawn in the distribution at 7,000 different points (exclusive of hydrants or leaks) and except the hydrants these may be all drawing at once, while it has only a single channel 18 inches in diameter and  $3\frac{1}{3}$  miles in length from the reservoir to supply all these outlets; if the ends of the pipes nearest the bay were all opened there would be practically no pressure at the Gore, and the reservoir water would not flow out of an opened hydrant there, although it might be rushing past with great velocity to the outlets at the lower points.

This state of things was foreseen in 1856. Mr. Keefer's original plan, as shown by his report of January, 1856, proposed a pumping main of 24 inches in diameter to the reservoir, and a supply main from thence of 20 inches in diameter. In May, 1856, the standing committee on fire and water of the City Council called for a reduction of the estimate, and in his report of June, 9th 1856, he replied that in the pumping schemes a considerable reduction could, with great propriety, be made, as his instructions had required him to provide "an ample supply for 50,000 people," but he stated that the first outlay could be restricted "by reducing