

MUNICIPAL DEPARTMENT

THE USE AND WASTE OF WATER.*

(Continued).

Private meter records.—To check the records of the Water Department as to the consumption of water by meters, a copy of the records of the monthly readings of 600 metres on buildings of various classes in the city for the past three years was procured from Mr. Joseph H. Bellis, who has been engaged on monthly inspection of metered premises by the owners for the purpose of inspecting and checking useless waste of water, and a careful analysis of the records furnished by him shows the following result :

Year.	Number of meters.	Number of gallons per day per meter.
1897.....	580	1,585
1898.....	584	1,674
1899.....	574	1,491

The quantity of water which passed through single meters of the 574 recorded in 1899 ranged from 64,885 gallons a day in a large manufacturing plant to 17 gallons a day in a clothing store ; but the average of all was 1,491 gallons a day, as against the average derived from the Water Registrar's report of revenue from 35,755 meters, which gave a consumption of 1,417 gallons per meter.

Water used for domestic and general purposes.—It may be assumed that none of the metered water is wasted ; at all events, it is accounted for, and it produces a revenue to the city. Attempts have been made in New York to determine the proportion of the premises on which water is used in which a constant waste occurs. The difference between a liberal use of water for legitimate purposes and a parsimonious use is very slight, on the whole. It is the constant loss of water from deliberate wastefulness or unknown defects in plumbing which causes the great difference which is found to exist in the consumption per house in cities where the majority of buildings are metered and those in which a few or none are metered. When it became evident in New York that the demand for water was increasing at such a rate that the supply would soon be exhausted, an effort to determine the proportion of buildings in which waste occurred and to take steps to check such waste was begun by Mr. Allan Campbell, who was then Commissioner of Public Works. In December, 1876, an inspection was made of all the houses in the city, and such inspections were continued with more or less thoroughness for ten years by Mr. Campbell and his successor, Mr. Hubert O. Thompson.

Extracts from a report by Mr. James J. R. Croes, M. Am. Soc. C. E., to the Engineering Committee of the Merchants' Association of New York.

The result of the inspections made for nine years was as follows :

Year.	Premises inspected.	Premises on which leaks were found.
1877..	106,577	15,718
1878	55,386	9,572
1879	46,307	8,845
1880.....	18,347	2,935
1881.....	19,302	2,122
1882.....	24,189	3,531
1883.....	15,308	1,770
1884.....	19,277	5,944
1885.....	47,590	5,231
Total....	352,373	52,668

Leaks were found in only 15 per cent. of the premises inspected.

To determine the amount of water which ran to waste in buildings where leaks were found, inspections of the house drains leading to the sewers were made, from 1882 to 1884, with the following results :

Year.	Drains inspected.	Leaks discovered.
1882.....	9,268	1,411
1883.....	9,893	1,623
1884.....	9,275	939

Total.... 28,436 3,973

In this case the leaks discovered amounted to 14 per cent. of the total number of drains inspected.

The quantity of water flowing out of the house drains about 2 o'clock in the morning was estimated in each case where it was found, and the aggregate—from the 3,973 cases in which water was

found running—was at the rate of 13,232,160 gallons per day, which made the average for each of the 28,436 houses examined a waste of 465 gallons per day. This was not a close gauging, but an estimate from inspection of the water running in the drain pipes.

In Boston, during the last four years, an inspection of buildings has been carried on with the following results :

Year.	Houses inspected.	Leaks discovered.
1896.....	15,288	2,635
1897.....	47,778	7,652
1898.....	54,007	11,051
1899.....	52,425	13,440

Total.... 169,498 34,728

Proportion of premises on which leaks were discovered, 20.5 per cent. In 1899 it was 25 per cent.

In this case no effort seems to have been made to determine the amount of leakage from the several premises.

It would appear from these observations that in 75 to 85 per cent. of the premises on which water is used there is practically no leakage or excessive waste of water when a systematic inspection of buildings is carried on. Continued inspection reduces the proportion of the premises on which leaks exist, but does not check waste entirely, which cannot be accomplished without putting a meter on the service pipe and requiring the consumer to pay for all the water that passes through it.

(To be Continued.)

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