MAIN DRAINAGE WORKS.

CHAPTER I.

EARLY HISTORY OF SEWERAGE AT BOSTON.

The conditions which necessitated a change in the system of sewage disposal at Boston, and the problems to be solved in making that change, can be better understood after a brief consideration of the early history of sewerage at that city and the manner in which the sewers were originally built.

Boston was first settled in 1630. When the first sewer was built cannot now be determined, but it was earlier than the year 1700, for already, in 1701, the population being about 8,000, a nuisance had been created by frequent digging up of streets to lay new sewers and to repair those previously built; and in town meeting, September 22, 1701, it was ordered, "That no person shall henceforth dig up the Ground in any of the Streets, Lanes or High-ways in this Town, for the laying or repairing any Drain, without the leave or approbation of two or more of the Selectmen."

The way in which sewers were built at this time was, apparently, this. When some energetic householder on any street decided that a sewer was needed there, he persuaded such of his neighbors as he could to join him in building a street drain. Having obtained permission to open the street, or perhaps neglected this preliminary, they built such a structure as they thought necessary, on the shortest line to tide-water. The expense was divided between them, and they owned the drain absolutely. Should any new-comer, or any neighbor, who had at first declined to assist in the undertaking, subsequently desire to make use of the drain, he was made to pay for the privilege.
what the proprietors saw fit to charge. When a drain needed repairing all persons using it were expected to pay their share of the cost.

As might have been expected, under such a system, great difficulty was experienced in distributing fairly the expenses and in collecting the sums due; so that it became of sufficient importance to engage the attention of the Legislature, and in 1709 an act was passed regulating these matters. It is entitled, "An Act—Passed by the Great and General Court or Assembly of her Majesty's 1 Province of the Massachusetts-Bay. For regulating of Drains and Common Shores. 2 For preventing of Inconveniences and Damages by frequent breaking up of High-Ways . . . . and of Differences arising among Partners in such Drains or common Shores about their Proportion of the Charge for making and repairing the same."

The act recites that no person may presume to break up the ground in any highway within any town for laying, repairing or amending any common shore, without the approbation of the selectmen, on pain of forfeiting 20 shillings to the use of the poor of said town; that all such structures, for the draining of cellars, shall be "substantially done with brick or stock;" 3 that it shall be lawful for any inhabitant of any town to lay a common shore or main drain, for the benefit of themselves and others who shall think fit to join therein, and every person who shall afterwards enter his or her particular drain into such main drain, or by any more remote means receives benefits thereby, for the drainage of their cellars or lands, shall be obliged to pay unto the owner or owners a proportionate part of the charge of making or repairing the same, or of that part of it below where their particular drain enters. In case of dispute the selectmen decided how much each person should pay, and there was an appeal from their decision to the courts.

For one hundred and fifteen years the sewers in Boston were built, repaired, and owned by private individuals under authority of this act.

It may be doubted if most of them were "substantially done with brick or stock," and there certainly was much difficulty

1 Anne. 2 Sewer. 3 Stone.
about payments; so that in 1768 the act of 1709 was amended, the amendment reciting that "Whereas it frequently happens that the main drains and common shores decay or fill up . . . and no particular provision is made by said act to compell such persons as dwell below that part where said common shores are repaired, and have not sustained damage, to pay their proportionable share thereof, as shall be adjudged by the selectmen, which has already occasioned many disputes and controversies," therefore it was decreed that in future all persons benefited should pay for repairs.

No further change was made till 1796, and then only to provide that persons who did not pay within ten days of notification should pay double, and that the sewers, besides being of brick or stone, might be built of such other material (probably wood) as should be approved by the selectmen.

Under this act the greater part of Boston was sewered by private enterprise. The object for which the sewers were built was, as indicated, "for the draining of cellars and lands." The contents of privy-vaults, of which every house had one, and even the leakage from them, were excluded; but they received the waste from pumps and kitchen-sinks, and also rain-water from roofs and yards.

That much refuse got into them is proved by their frequently being filled up, and as they had a very insufficient supply of water they were evidently sewers of deposit. That they served their purpose at all is due to the fact that the old town drained by them, as shown in Plate I., consisted of hills with good slopes on all sides to the water. Of this early method of building sewers Josiah Quincy, then Mayor, said, in 1824: "No system could be more inconvenient to the public, or embarrassing to private persons. The streets were opened with little care, the drains built according to the opinion of private interest or economy, and constant and interminable vexatious occasions of dispute occurred between the owners of the drain and those who entered it, as to the degree of benefit and proportion of contribution."

In 1823 Boston obtained a city charter, and one of the first acts of the city government was to assume control of all exist-
ing sewers and of the building and care of new ones. The new sewers were built under the old legislative acts, and the whole expense, as before, was charged to the estates benefited, being divided with reference to their assessed valuation. A small, variable portion of the cost was, however, generally assumed by the city, in consideration of its use of the sewers for removing surplus rain-water from the public streets.

The city ordinances regulating sewers required that, when practicable, they should be of sufficient size to be entered for cleaning. Some supervision was exercised over connecting house-drains, and, if thought necessary, a strainer could be placed on each. Fecal matters were rigidly excluded until 1833, when it was ordered that, while there must be no such connection between privy-vaults and drains as would pass solids, the Mayor and Aldermen, at their discretion, might permit such a passage or connection as would admit fluids to the drain. This action was perhaps due to an advent of cholera during the previous year. To assist in flushing out deposits, it was provided, in 1834, that any person might discharge rain-water from his roof into the sewers, without any charge for a permit. The same year control of the sewers and sewer-assessments was given to the City Marshal. He was especially to devote himself to the collection of assessments, new and old, which were largely unpaid. The other duties of the marshal probably prevented him from devoting sufficient energy to the accomplishment of this task; for it appears that, while there had been expended by the city, for building sewers, from 1823 to 1837 the sum of $121,109.52, there had been collected of this sum but $26,431.31.

That there might be some one to give his whole time to the financial and administrative duties connected with the sewerage system, a “Superintendent of Sewers and Drains” was appointed in July, 1837. He was empowered to assess the whole cost of any new sewer upon the real estate, including buildings benefited by it. In 1838 the city decided to assume one-quarter of the gross cost; and in 1840, in obedience to a decision by the Supreme Court, it was ordered that the three-quarters of the cost of sewers which was to be paid by the
abutters, should be assessed with reference to the value of the land only, without taking into consideration the value of buildings or other improvements, and such has been the practice up to the present time.

It is estimated that there are at the present time (1885) about 226 miles of sewers in Boston. In 1873 there were about 125 miles, and in 1869 about 100 miles. There are at present supposed to be more than 100,000 water-closets in use in the city; in 1857 there were 6,500.