

THE SANITARY REVIEW

REPORT OF THE METROPOLITAN SEWERAGE COMMISSION OF NEW YORK.

In 1906 the Legislature directed the city of New York to appoint a Metropolitan Sewerage Commission. The Commission has recently issued a most complete report dealing with the whole subject of sewage pollution of the waters in the vicinity of New York city.

The report at once constitutes a "classic" in sanitary literature. The character of the data collected with reference to studies of tidal phenomena in harbor waters and the influence of sewage pollution upon shellfish, bathing and general local nuisances affecting the public health will be read and studied with great interest by sanitary engineers throughout the world.

The most important feature of the report is at once apparent in that the question of sewage pollution, or possible sewage purification, is intimately connected with the principle of dilution, or the capacity of the waters of New York harbor to assimilate sewage.

In Canada, in connection with the Great Lakes, the problem of the ability of large bodies of water to successfully take care of sewage effluents is most important.

In connection with the city of Toronto there exists an excellent example of the clear failure of the waters of Toronto Bay to assimilate the sewage of the city without danger to public health. Lake Ontario, viewed as a whole, with its hundreds of square miles of water surface, has the undoubted capacity of assimilating the sewage of many hundred cities without producing apparent change of character. The difficulty, however, is the impossibility of obtaining general diffusion.

It would appear, and more especially so with quiescent bodies of water, unaffected by tidal influence, that only a comparatively small or local portion of any large body of water, no matter what the extent of the whole, can be relied upon for assimilating sewage.

Although the above deduction applies more acutely to inland waters than to tidal, it also applies to the latter to a degree, depending upon the extent of drainage area and population.

Referring to New York harbor, the Commission states:—

"The growth of this enormous population, with its manufactories, markets and industries along the borders of the harbor, has gradually resulted in polluting the harbor water sufficiently to attract public notice. The more important communities which lie about the larger bodies of water, such as the five boroughs of New York, Newark, and Jersey City, have heretofore given little attention to the question of the ultimate disposal of their sewage except in the manner practised since the earliest times: that of dumping it into the harbors and rivers. The larger communities, however, are now approaching the time when their local waters are becoming over-polluted, just as the smaller districts reached this situation some years ago."

The history of other large centres is repeating itself at New York. The situation is neither unique nor exceptional. Large centres of population in other parts of the world situate at or near large bodies of water have had similar histories.

Sewage disposal by dilution, more so in its earlier stages, lays popular claim to perpetual efficiency. The amount of sewage at first appears so small, and the body

of water receiving it so great, that any future occurrence of nuisance is not even considered. London, however, has now her main drainage works; Chicago has diverted her sewage from Lake Michigan to the Mississippi River through an artificial canal of size comparable with a ship canal; Marseilles takes her sewage to the sea through a large tunnel; the city of Mexico has extensive works to conduct her sewage from the centres of population; Boston has her metropolitan main drainage works to abate nuisances in her harbors and inland waters; Baltimore is building extensive works for sewage purification; and Hamburg, Glasgow, Dublin and Belfast have elaborate systems to secure the satisfactory disposal of their sewage. There may also be added the large number of seaside resorts, which, although they have the wide expanse of ocean at their feet, have been compelled to treat sewage in order to avoid local nuisance. The experiences which the cities around New York harbor are undergoing contains nothing new.

The following are among the main questions and answers dealt with by the Commission:—

Question—What methods of collecting and disposing of the sewage and other wastes which pollute, or may eventually pollute, the waters are most worthy of consideration?

Answer—The methods of collecting and disposing of sewage in the metropolitan district most worthy of consideration are district collecting sewers leading to local works for purifying the sewage to a greater or lesser degree, depending upon the facility with which the effluent can then be disposed of without injury to the public welfare. The principles of purification most worthy of consideration are sedimentation, screening, filtration and sterilization, applied with such modifications as experience in other places and local circumstances indicate.

Question—Is it desirable to establish a sewerage district in order properly to dispose of the wastes and adequately protect the purity of the waters, and, if so, what should be the limits and boundaries of this sewerage district?

Answer—It is desirable to establish a sewerage district in order properly to dispose of the wastes, and the Commission believes that this would be the best way in which the sanitary condition of the harbor could be conserved. The most desirable limits for the sewerage district would include a territory of about seven hundred square miles, about half of which would be in New York and half in New Jersey.

Here we have recommended an interstate metropolitan sewerage district, with a further recommendation of an interstate sewerage commission to be established by Acts of the Legislatures of New York and New Jersey, these Acts to be confirmed by Congress, the purpose of this commission being to effectually guard the tidal waters around and about New York from sewage pollution.

The policy of creating drainage areas, under controlling central authorities, independent of the chance boundaries of provinces, states, or municipalities, is the only one by which the conservation of the purity of the lake and river waters of this continent can be maintained efficiently. The subject is not only interstatal and inter-provincial, but it is also international.