# MUNICIPAL DEPARTMENT

## PROPOSED SEWAGE FARM.

The city council of Montreal is considering the establishment of a sewage farm to dispose of the drainage of St. Denis ward. It has been recommended by the Road Committee that the contract for preparing and equipping the proposed farm be given to Mr. C. Janin, C.E., at $16,000, the amount City Surveyor St. George estimates the work can be done for. This contract will include the making of all connections from the present sewage system and the placing of the farm in a condition to receive and dispose of the entire drainage of the ward.

This new method of disposing of sewage has been under the consideration of the Road Committee for some time past. It was first mooted by Mr. Janin, who has had considerable experience in France as a sanitary expert and in the equipment and operation of sewage farms. The committee, after hearing of Mr. Janin's scheme, instructed City Surveyor St. George to prepare plans and specifications showing the scheme as applied to the present drainage system of St. Denis ward, and the cost of its installation. After discussing these plans and specifications, the committee decided to recommend to council the adoption of the scheme as an experiment. If the experiment is successful, it is likely that the acreage of the proposed farm will be increased and the drainage from the other wards of the city disposed of in the same manner.

This is the first attempt ever made to operate a sewage farm in a climate as cold as that of Montreal during the winter months. This system of disposing of sewage has, however, been successfully operated by a number of cities in the State of Massachusetts, and it is the opinion of the city surveyor that there is no reason why the experiment should not be successful in Montreal. The advantage of the system is that it does away with the necessity of discharging the sewage of the city into the river, and turns the impurities, which now simply pollute the water about the wharves and harbor, into a valuable fertilizer. This is an important consideration for Montreal, for the construction of the outer guard wall of the harbor has converted the swift running water along the front of the wharves in the upper portion of the harbor into dead water, into which a number of the city sewers empty. The absence of current prevents this sewage discharge from being carried away, and it floats on the surface of the water and is deposited along the crib work of the docks, causing an effluvia which is a menace to the health of the city.

It is claimed for the sewage farm system that the impurities in the sewage are applied to the fertilization of the soil, and the residuum of water not so used is by filtration, in passing through the soil into a system of sub-soil pipes, discharged into a natural water course in a perfectly pure condition.

St. Denis ward under the proposed plan will be drained by what is known as the separate system. The storm water collected by the street drains will be drained direct into a natural water course. The household sewage, on the other hand, will pass through a process of filtration at the sewage farm, before being discharged into a natural water course.

The pipes carrying the household sewage of the ward will be collected at a point on Belanger street, from where it will be conveyed in a large brick sewer to the sewage farm. The sewage will empty itself from the brick sewer into a receiving well underneath the tank house. This well will be ten feet long by eight feet wide, built of brick and covered with concrete, having a smooth and waterproof surface. From this receiving well the sewage will pass into distributing basins on either side through sluices, which will be furnished with valves, so that either one or both basins may be used, according to the volume of the sewage discharged. These two distributing basins will also be constructed of brick with waterproof concrete surface. From these two basins the sewage will pass through iron screens, made to stop rags and paper, into two other larger distributing chambers, each thirty feet long and fifteen feet wide, with an inclined bottom. From these chambers, which have a capacity of 11,250 gallons each, it will be discharged into a large conduit pipe running along the front of the tank house and extending across the farm. From this conduit pipe the sewage empties into longitudinal open trenches which extend lengthwise through the farm. These main trenches are intersected by a system of smaller trenches, which carry the sewage to the beds into which the surface of the farm is divided. These beds will be about fifty feet long and twenty feet wide. From these smaller trenches, which are furnished with sluice gates, the sewage can be discharged over the surface of the beds, the sludge depositing itself in the soil about the roots of the plants under cultivation, and the water not absorbed by the soil filters through into a system of filtrative or weeping pipes laid on with open joints five or six feet under the surface of the ground.

These filtration or weeping pipes are placed from twenty to fifty feet apart all over the farm, varying according to the nature of the ground. The sewage water, after filtering through the soil into these weeping pipes, is discharged in a pure condition into open ditches along either side of the farm, from which it is drained into a natural water course at the lower end of the farm, by which it is carried into the Back river, descending the Sault au Recollet Rapids.

The object of the double distributing basins under the tank house is that the accumulation of rags, papers and other extraneous substances caught by the iron screens can be easily removed by closing the sluice gate from the receiving well, thus turning the flow of sewage into one basin only. The two larger distributing chambers are also supplied with shut-off valves, so that the discharge of sewage into the conduit pipe can be regulated. The outlets from the conduit pipe into the longitudinal farm trenches are also furnished with valves which control the discharge into the main drains. By this system of valves and sluice gates the sewage can be kept under perfect control, and distributed over the surface of as few or as many of the cultivation beds as may be desired.

The tank house itself will be a modest building, 33 feet 6 inches wide and 42 feet 6 inches in length. The floor will contain a series of trap doors opening into the well, basins and chambers underneath. Owing to the limited amount of sewage which it is expected will be obtained from St. Denis ward alone, only ten acres of the farm will be prepared for use at the present time. Should the experiment prove successful, the city have an option for the purchase of property immediately adjoining of an extent sufficient to dispose of the drainage of the entire city.

Mr. Janin has offered to personally supervise the working of the farm after it is in operation, and supply all the labor and expense of operation, if the city will allow him to cultivate the farm for his own use and dispose of the products.

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The death is announced of Sir John Fowler, a distinguished civil engineer, of London, England.

Mr. Newton J. Kerr, assistant in the City Engineer's Department, Toronto, has accepted the position of assistant city engineer of Ottawa.