

MUNICIPAL DEPARTMENT

THE LIERNUR SEWAGE SYSTEM.

The Liernur sewage system, though in use for more than twenty-five years in some of the European cities, notably Amsterdam and Leyden, in Holland, acquires fresh interest from the account of its recent introduction, according to the Engineering Magazine, into Trouville, one of the noted Continental watering places. The description of the Liernur system, given by our contemporary, shows that it differs from all gravity systems in that the sewage is removed entirely by atmospheric pressure. The discharges from each house are delivered into an air-tight metal reservoir, from which they are in turn drawn by suction into larger collecting tanks, these latter delivering the matter to an out-of-town works, where all the refuse is converted into an inoffensive fertilizer. It will thus be seen that the house service is entirely distinct from the storm water drainage. By thus removing all the sewage in air-tight metal pipes, the highest degree of sanitary excellence is obtained.

Since its introduction in the early seventies, the pneumatic method of Captain Liernur was extended in Amsterdam, until at the end of 1895 the area served contained nearly 85,000 inhabitants, while the military quarter of St. Petersburg, the entire city of Riga, and a number of other places, have been provided with the system.

Trouville, the latest to apply its principles, is especially well adapted for the successful installation of the method, and the location also makes the application of any satisfactory gravity system impracticable. For the Liernur plant there are provided eleven main collecting tanks, each of these being at the lowest point of the district which it drains. With these tanks, which are air-tight shells, all the delivery pipes from the houses connect, while one main collecting pipe runs from the tanks to the *poudrette* factory. A powerful suction air-pump at the factory makes it possible to produce a vacuum in the system, and once a day the entire system is exhausted. The valves on the connecting pipes between the houses and the tanks being closed, a vacuum is produced in the latter, and connection with the pump then being shut off, the rapid opening of the house connections causes an immediate and entire clearing of all the house tanks into the vacuum tanks. The house connections are again closed, and the vacuum tank exhausted into the main leading to the factory, air being admitted by a special valve to permit the flow to take place. The entire operation is the work of one man, who makes the tour of the town in about four hours, his only labor being the opening and closing of the valves, the pump at the works

being kept in constant operation during the time.

The manufacture of the *poudrette* being conducted at a proper distance from the city, there is nothing to give offense; all the tanks are underground, the valves being operated from connections at the surface in the streets.

Owing to the manner in which the material is collected, its conversion into fertilizer is commercially possible so as to yield a considerable revenue, and at Trouville, where the population during the season reaches 20,000, it is estimated that the receipts from the sale of *poudrette* will furnish a material income over and above all operating expenses.

As the practical value of the Liernur system has been a subject of discussion among sanitary engineers for a number of years, this new installation will be watched with interest, especially in view of the importance of the place where it has been introduced.

CEMENT VS. VITRIFIED PIPES

Discussing the respective merits of cement and vitrified pipes, the St. Johns, Que., News says. We understand that it is proposed to use cement for the connecting drains which the government are to lay in St. Johns to convey the sewage of the town through the discharges underneath the canal. We trust that it is not definitely decided to do this, inasmuch as it has been demonstrated in numerous instances that cement pipes are not impervious to the acids and alkalis which find their way into the sewers. A letter recently appeared in the Engineering News, of New York, from Mr. Peter Hogan, of Albany, N. Y., giving the experience of that city with respect to sewer pipes. Almost every variety of pipes have been used in Albany within the last fifty years—brick, stone, cement, glazed and unglazed pipe—and the vitrified glazed pipe he declares have proved to be the best; as for cement pipes they went out of the race altogether. Regarding the durability, or rather we should say the impishability of the vitrified clay pipes, some interesting information has lately come to light. Mr. F. De Hass, late U. S. Consul at Jerusalem, makes the assertion that vitrified clay is among the most durable material known.

"The use of terra cotta," he adds, "for images, drum pipes, coffins, etc., dates back to the remote ages. Sewers and coffins have been found in Pompeii, Troy, Ninevah, and also in Ur of the Chaldees, the home of Abraham. Here vitrified pipe was in general use, and the tombs are drained with clay pipes which are today as sound as when laid in the ground 4,000 years ago."

With such information as this before

us, and with the further fact staring us in the face that the vitrified pipes that have repeatedly stood the most severe tests, are made right here in St. Johns, it would seem strange, indeed, if one should send abroad for material with which to build this important drain. Pipes are made in the Standard Pottery of St. Johns as large as 30 inches in diameter, and if any one of these is not large enough for the purpose, two could be laid side by side after the manner in which the discharge pipes are constructed under the canal. The sewer pipes have other advantages over cement—they are much more quickly laid down, and we believe are also considerably less expensive. It is to be hoped that all concerned will give this matter the attention its importance deserves.

STATISTICS OF THE PAVING BRICK INDUSTRY.

The production of paving brick in 1896, according to the report of the United States Geological Survey, declined to 347,167,000 from 381,591,000 the previous year, and the value fell to \$2,794,585 from \$3,130,472 in 1895. The average value per thousand was \$8.20 in 1895 and \$8.05 in 1896. The only one of the middle states that increased its product was Indiana, which went from 22,313,000 in 1895 to 41,292,000 in 1896. The price ranged from \$15 per thousand in Oregon to \$4.14 in Virginia.

FAILURE OF COMBINATION OF SEWER PIPE COMPANIES.

The committee appointed to obtain the signatures of sewer pipe manufacturers to the agreement to organize an \$11,000,000 corporation out of the companies doing business in Ohio, West Virginia and Pennsylvania, report that several large plants have failed to join the movement, and as a consequence the formation of the proposed company has been practically declared off.

James Warren, C. E., of Walkerton, Ont., has been appointed county engineer of Waterloo county, Ontario.

The plumbing firm of Purdy, Mansell & Mashinter, has been dissolved. Mr. Mashinter has retired, and will conduct a plumbing and gasfitting business at 97 Adelaide street west, under name of W. Mashinter & Co.

A test made of Perth's waterworks has proven satisfactory. The water was pumped by electric power, and with 100 pounds pressure on, the branchmen had all they could do to keep the stream under control. A 1¼-inch branch pipe was used, and a stream of water was thrown 135 feet with about 12 or 13 lengths of hose on. The electric power is all that was claimed for it.

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