pumping—first, to supply the water for carriage—second, a pumping of sewage to obtain an outfall for the sewers.

At Leyden the first cost of the Liernur works was $9 per head of the population served. For Glasgow, Capt. Liernur's estimate of the first cost is $9.50 per head. The cost in American cities will of course depend upon the width of the streets, the denseness of the population, and the current price of material and labor. In the judgment of Col. Haywood, the first cost in England would be more than that of the first cost of the water system ; but the latter causes a source of heavy indirect expenses from year to year, besides offering no return by the sale of manure ; whereas the former contemplates, after its operation is established, a clear paying profit on its first cost, besides covering maintenance.

The sale of the manure in Holland is an established fact, and has paid for the cost of working during three years of its operation in Leyden. The surrounding districts of those towns in Holland where the system has been adopted, are flat,—in fact, only marshes dyked and devoted to pasture, requiring little other manure than the droppings of cattle and sheep. In consequence of the low wet nature of the soil, they are unfavorable absorbents of the fecale. The broad upland country around Montreal, already much depleted by hard croppings, would be more susceptible to its manurial value.

The necessarily limited space of these papers does not admit of full analyses and estimates of value of the poudrette. Professor Voelcker estimates its value at $42 per ton. Mr. Arthur Angell, Public Analyst for the County of Hants, at $55 per ton.

The following is an analysis of the poudrette prepared from fecale as given by Alfred Silison, F. C. S., a distinguished English analyst :—

Moisture	15.34
* Nitrogenized organic matter and salts of ammonia.......	64.13
† Phosphates and oxide of iron containing phosphoric acid...	5.40
Alkaline salts, &c....................................	11.33
Insoluble matter....................................	3.30
	100.00

* Containing nitrogen, 8.30
† Equal to ammonia, 10.08.