

MUNICIPAL DEPARTMENT

THE VENTILATING AND FLUSHING OF SEWERS.

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PARTICK.

The staggering thing about this subject is the conflicting statements of sanitary engineers and medical officers. One set would have us shut up street manway ventilators, trap all gullies, close all openings, and depend entirely on a series of vertical pipes carried to the roof tops. Sometimes it is proposed to abolish entirely the intercepting trap between the houses and the sewer, and ventilate the sewers by the house pipes. Others suggest the closing of all openings, and connecting with factory chimneys and house chimneys; while another set, who have abandoned the idea of shafts altogether, consider that the true solution of the matter lies in the deodorization and chemical treatment within the manways. The only comfort one can take from many of these vagaries is that they belong more or less to the other side of the border. In this, as in many other sanitary matters, experience is to be gained by experience, and while in Scotland we have not the same impulse to try costly experiments, we are reaping to a large extent from some of the expensive experiments, and, shall I say, failures of our English brethren. The local conditions of a drainage district have the effect of determining to what extent the sewers should be ventilated. The question of levels will make a difference; then it will make a difference where there is a number of narrow streets, and also whether the general lie of a sewer is open to prevailing winds. Another element to be considered is the question of the water supply, and whether the average consumption per head will be sufficient to give a good run to the sewers. It cannot be laid down as an absolute rule that all classes of sewers should be ventilated alike. Pipe sewers with smooth surfaces are not to be classed with brick sewers having a more or less rough face, and, therefore, more liable to arrest deposit and slime.

Again, in the case of a large outfall sewer which receives the flow from several intercepting sewers, and where the minimum discharge will probably be about half full, the necessity for frequent ventilation does not exist to the same extent, the average velocity of such a carefully designed sewer being probably from 3ft. to 4ft. per second, and, therefore, self-cleansing. The scare created by the proposal to ventilate the outfall sewers of the Glasgow main drainage, now in progress, with open gratings at the surface of the street is to a large degree without justification. With the exception of a short-length of the sewer near pumping stations, where, after the churning in the pump well, the sewage will probably throw off disagreeable emanations, the

cutfall sewers, throughout their whole length, will be found to be entirely free from nuisance by the open gratings in the streets. The recurring action of the tide in locking up the mouths of sewers in certain localities has an important bearing on this question. Where there happens to be the coincidence of a high spring tide and a heavy rainstorm, as has been experienced in the burgh of Partick to the extent of a rise of 8ft. 6in. above mean high water, or equal to a level of about 14ft. above Ordnance datum, it can easily be understood that the pressure within the sewers is very much increased; and it is absolutely necessary to provide more than the usual number of ventilators near the limits of the high-tide levels in the sewers, otherwise the traps on the house drains would be unsealed by the extra pressure, and sewer gas would probably find its way into the dwellings. In some of our main sewers the ordinary high tides extend for a distance of 200 yards from the sewer outlet, and in special high tides at least double that distance. Within the near future, however, the laying down of the Partick intercepting sewer, which is to be from 2½ft. to 8½ft. below high water level, will make the excessive pressure due to tide-locking disappear, a double tide valve chamber being provided clear of the actual connection between the two sewers to keep the tide from flowing back in the burgh sewers or down into the intercepting sewer. The beneficial effects of such an arrangement to Partick sewers will be threefold—viz. the relief of pressure, the prevention of

damming back, and the constant ventilation of the sewer down to the junction with the intercepting sewer.

The methods and the patents for ventilation of sewers existing at the present moment are too numerous to mention. It will suffice for our purpose to-day to simply introduce certain of these with a few remarks in order to provoke a free discussion on the question. The city of Bristol stands out as the great exception to sewer ventilation, no provision having been made either by manways or shafts to ventilate the main sewers. The striking thing about Bristol is that the health statistics compare favorably with other places having an elaborate system of ventilation. Mr. Reid, city engineer of Gloucester, in criticism on the case of Bristol, says that although there is no official attempt to ventilate the sewers, nevertheless they ventilate themselves, because being an old city there are a great many drains that have no intercepting traps at all and in such case the rain-water pipes and soil pipes act as ventilators. Although Bristol stands out as almost the only exception to the rule, no sanitary engineer would think for a moment of laying down new sewers without providing a ample means for ventilating them.

(To be continued.)

It is estimated that 500,000 yards of asphalt pavement have been constructed in the city of Winnipeg this year.

The city engineer of Toronto has announced that in future he will recommend to a large extent, tar macadam pavements for residential streets where the traffic is not heavy. The only tar macadam pavement in the city is on Wolseley street.

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