

be of any use, they must exist at short intervals, it is difficult to find situations in which they will not discharge their current in quite as dangerous proximity to dwelling-houses as the street gratings. At best they are but a palliative of an evil which ought not to exist. The plain truth is, that if a sewer is well laid, well kept, and well flushed, the air in it should not be offensive. It is only when sewage is allowed to remain and decompose in it, owing to the sewer having an insufficient fall, or being unevenly constructed, or too large for the amount of sewage passing through it, that the air emitted by the ventilators is really offensive. Of course, if the sewage is already decomposing when it enters the sewer, as is the case where the latter receives the overflow from foul cesspools, or decomposing blood from slaughter-house cesspits, or even fresh blood, which coagulates and adheres to the sides of the sewer, the ventilators will smell, however well constructed the sewer may be. But, in a properly arranged drainage system, nothing but fresh sewage should be sent into the sewers, and that should leave them before it has time to decompose. Another most important point in the management of sewers is to keep them clear of roadsand, which, if it gains admission to them, will form deposits, impede the flow of sewage, and, becoming impregnated with decomposing matter, will emit a most offensive odour. This exclusion is only to be attained by efficient road-making and scavenging, and by the use of proper road-gullies, so constructed as to intercept sand and mud, and only to allow surface water to enter the sewer. In semi-rural districts a separate surface-water system may be required. As to manholes, they ought never to notify their existence to the nostrils of the passer-by, if they are properly constructed. But often the bottom of the manhole is lower than the level of the

sewer; in which case sewage is allowed to accumulate in it, and the whole becomes little better than an open cess-pool. It should always be borne in mind that, whether they smell or not, street ventilators are a safeguard; it is better that the sewers should discharge their offensive gases into the free air of the street than into the close air of our houses, for few houses even in the richest quarters of towns are so well constructed as never to admit an invasion of sewer-air. But we ought not to be satisfied until a drain-smell is as much unknown in our streets as in our houses. Wherever they exist they may bring with them disease and doctors' bills.

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#### THE SEWERAGE OF TOWNS, (NAHANT MASS. U. S.)

As an illustration of what a town can do when it goes about it in earnest, we give the following description of the way in which the town of Nahant, Mass., U. S., has provided itself with a system of sewers, the cost &c., from the last annual report of the State Board of Health.

The little town of Nahant, containing about 1500 inhabitants, was considerably disturbed during the latter half of 1881, and the first half of 1882, by the appearance of typhoid fever in various parts of the town.

The questions presented for solution were, 1st, what was the cause of disease? 2nd, what should be the remedy? 3rd, how long would it take to give relief? 4th, what would it cost?

The disease being zymotic, the remedies suggested were cleaning of premises, securing better drainage, plumbing, etc., and removal of all decomposing matters; afterwards trying to better the quality of water, ice, milk, etc.

Without going into details that would