

that venous bleeding from any source may be controlled permanently by well applied pressure. Both the original wound and that made for the ligation of the artery remained aseptic throughout.—*Canada Medical and Surgical Journal*.

THE AIR OF SEWERS.*

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Owing to the complaints which had been made of bad smells in the House of Commons, a Select Committee was appointed in the spring of 1886 to inquire into the ventilation of the House. By that committee the authors were instructed to make a series of analyses of the air in the sewers under the Houses of Parliament, and to report thereon. Since then they have examined a considerable number of sewers in Dundee, and have also made a number of laboratory experiments. The object of the research was to obtain a general idea of the amount of some of the more important impurities in sewer air, and to throw some light on their sources, and the conditions affecting their dissemination.

After giving a brief résumé of the results of the analyses which had been previously made of sewer air, the authors describe the methods they have employed, and the nature and the condition of the sewers they have themselves examined.

As a result of their investigation they found: (1) That the air of the sewers examined was in a much better condition than might have been expected. (2) That the carbonic acid was about twice, and the organic matter rather over three times as great as in outside air at the same time, whereas the number of micro-organ-

isms was less. (3) That in reference to the *quantity* of the three constituents named the air of the sewers was in a very much better condition than that of naturally ventilated schools, and that with the notable exception of organic matter it had likewise the advantage of mechanically ventilated schools (*cf.* paper by the authors and Dr. Anderson in *Phil. Trans.*, 1887.) (4) That the sewer air contained a much smaller number of micro-organisms than the air of any class of house, and that the carbonic acid was rather greater than in the air of houses of four rooms and upwards, but less than in two and one roomed houses. As regards organic matter, however, the sewer air was only slightly better than the air of one-roomed house, and much worse than that of other classes of houses (The data for all the classes of houses refer to sleeping rooms when occupied during the night)

The amount of carbonic acid found by the authors was much less than that noted by earlier observers, showing that the sewers they examined were much better ventilated than those previously investigated.

On taking the average of a comparatively large number of analyses it was found that the quantity of organic matter in sewer air increased with the carbonic acid, whereas the micro-organisms on the whole decreased with increase of the other constituents.

With regard to the sources of the several impurities in sewer air the following conclusions are drawn: (1) The *carbonic acid* in excess of outside air may be partly due to diffusion from the neighboring soil, but its chief source is probably the oxidation of the organic matter in the sewage and in the air of the sewer. (2) The *organic matter* in excess of outside air is most probably wholly or for the most part gaseous, and is of course

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