

sewer to the water-closet and from thence up through the roof of the house, and with proper workmanship and water supply, all sewer affluvia will be effectually excluded from the water-closet. We have other duties, however, for this branch drain or soil-pipe to perform, and before describing these, it may be well to say a word or two about dimensions. It is perfectly absurd to see the pipe drains which are used to carry away the water waste and excreta from even small dwelling houses in Montreal; they are often used of eight to ten or more inches in diameter, whereas there are not a dozen houses in the city that require a drain of more than six inches diameter, and for the great multitude of dwellings a pipe of five inches diameter is better than one of six inches. Better, because the syphon traps are generally more perfect than in larger ones; and better also, because the smaller pipes will be more often and easily flushed clean, than is possible with the larger. The metal soil-pipe is made from four to four and a-half inches in diameter and these dimensions are ample for all purposes.

To return—this branch sewer by being made of the above dimensions for the water-closet service, is also quite large enough to carry off the entire water waste of the house, and thus add to the efficiency of the whole by flushing out the drain and keeping it clean. Accordingly, all the waste water from the bath, the washstands, sinks, and lavatories, runs either into the soil-pipe or "D trap," and in consequence it is most essential that every one of these waste pipes should have a proper air trap, and that the combined area of all these waste pipes should exceed as much as possible the area of the soil-pipe or drain, so as to provide thereby the means of flushing the same whenever it may be necessary.

Now, the before mentioned comprise all the essentials of a proper system of house drainage, the whole is of a very simple character, but the great and paramount requirement is, that all these works shall be begun, carried on and completed under the strict supervision of an Inspector of house drainage, and that no house drain shall be allowed to be used under any pretext whatever until a certificate has first been obtained from the Inspector that such drain is fit for service.

*(To be continued),*