MANHOLE FOR DEEP SEWER.

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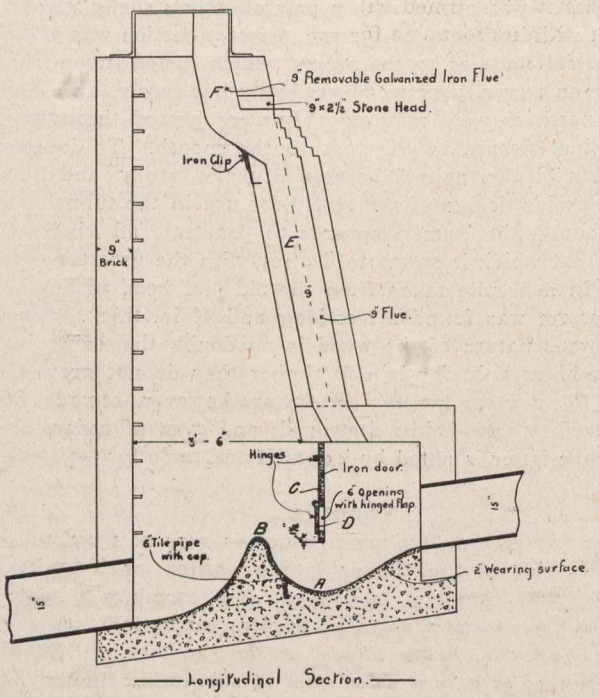
There is one branch of Sanitary Engineering which has not up to the present time received sufficient attention. Wherever sewage systems have been installed there is a general complaint regarding sewer gas. These complaints come particularly from the residential districts which are, as a rule, situated on the highest elevations. The gas accumulates in the sewers serving these districts. Some



Sanitary Engineers have agreed that an important step towards the elimination of sewer gas nuisance would be made if a cheap, simple, and effective device could be designed to prevent its accumulation in the lateral sewers. If every lateral were trapped at its connection, then the amount of gas generated in each sewer would be small and easily ventilated without a very noticeable odor by the ordinary opened top manhole. With this object in view, I have designed a trapped manhole. The accompanying drawing although not complete in detail will give a general idea of the construction.

The manhole is of the general type used in Toronto. The invert instead of being on the grade of the sewer takes the form as shown on plan with a weir across. Depression A. and Crest B. varies according to the grade and size of the sewer. In case of flat grades where B. is the same height as the invert, A. has to be deep enough when trapped not to diminish the amount of discharge. For steep grades A. can be made shallow and Crest B. fairly high.

The ¼inch steel trap door "C" is hung on the side of the M.H. and is the same width. It is placed about the centre of the pocket, and is sufficiently deep to allow 1½ in. seal. With this door sealed the gases will escape through the manhole instead of rising from the lower to the upper sewer. In order to produce a current of air through the upper section of the sewer there is a flue E. built into the wall of the manhole. This extends from the trap chamber to near the top and is continued by a removable galvanized iron flue "F" to the underside of the opening. In case of any sediment lodging in "A" the auxiliary flap gate "D" will provide relief for the overflow.

To allow for inspection of the sewer or manhole, the galvanized iron flue may be removed and the door "C" swung back thus making everything convenient.

This scheme will also be found workable for the prevention of erosion in cases where a lateral enters the main sewer at a steep grade. The sewage would first fall into a pocket of water and quietly flow over weir "B."

FAILURE OF WOODEN PILING DUE TO PRIVATE AGENCIES AND METHODS OF PREVENTION*

W. Putman

The destruction of timber by various worms and insects may be spoken of as "Animal Rot." These destructive insects which prey upon timber tress may be divided into three classes according to their method of attack, viz. :—

(1) Those which feed upon the leaves and tender shoots.
(2) Those which feed upon the bark and the albumen.
(3) Those which feed upon the heart wood.

Now many of these insects which feed upon the heart of the wood do not cease their ravages upon the removal of the tree—but continue to devour the wood long after it has has been placed in buildings. There seems to be very few means of defense against this class of insects, and very few reliable indications of their existence or the extent of the damages they have committed and it thus frequently happens that a sound, hearty-looking stick of timber may be so seriously bored by these insects as to be of comparatively little value for building purposes of any description, now, it is those woods which are soft and tender, and whose juices are not bitter which are assailed by these worms. Hence thorough seasoning of the wood to get rid of these juices is one of the best methods of fighting this pest. Further safety may be insured by the infusion into the wood of some bitter decoction which will be a very effectual preventitive.

And if cut when full of sap is very much subject to the attack of the worms. Beech, alder, birch, oak, silver fir, under similar conditions are also liable to this attack. On the other hand, cedar, walnut, cypress and mahogany are fairly free from these attacks.

The White Ant is the most destructive insect to timber on land, while the Teredo is by far the most dangerous of Sea worms. The destructive effects of these marine worms have been known for hundreds of years. It is generally supposed that the worm is a native of India, and that it was introduced to Holland 200 years ago, from whence it spread over the coast waters of Europe and to the shores of the American Continent.

*Read before the Nova Scotia Society of Civil Engineers.