

the ground emitted "a vile smell," and as the soil is mostly stiff clay, it would appear that it has very little deodorising or absorbent effect upon the "soup."

6. Some of the water is similarly used and pumped up as "soup" on to the hills by the freezing company in the same way as in the case of the tallow-factory; and it was admitted that a lot of the water is used to wash down the premises and slaughteryards, and that when this is done the water flows back again into the stream with all the impurities it has gathered and which may not have been stopped by settling-tanks.

7. The water is also used for the purpose of washing down the premises of the Dunedin City Abattoirs; but in that case a more elaborate method is used to try to purify the water. In these works the water is treated by steam, for the purpose of coagulating the blood it contains, and it is also chemically treated and made to pass through settling-pits and through a series of filter-beds. This rids the water of a good deal of its impurity, but when I saw the effluent emerging from the last filter, just as it passed again into the stream, it was hot and of a brown colour, and looked like beef-tea or thin soup, but it is probable that it was sterile. Both the freezing-works and the abattoirs have an independent supply of clear water for the purposes of washing the carcasses, &c., but this supply is insufficient for all purposes, and they have to use the stream-water as already indicated.

8. The water of the stream is used for steam or condensing purposes at a flour-mill and also at Kempthorne and Prosser's chemical-works. It is not contaminated by these processes, as what is used for steam becomes evaporated, and what is used for condensing purposes is practically returned to the stream in the same state of purity or impurity which it had when taken therefrom; but evidence was given that the water is sometimes almost too bad for steam purposes.

The stream is still further polluted by surface and household drainage from the Green Island Borough. They have no proper system of drainage, and all slops and other liquid refuse, except nightsoil, are thrown out on to the ground, and some of it, no doubt, finds its way into the stream.

It is alleged that some of the factories are in the habit of turning the filth from their settling-pits into the stream on Saturdays and Sundays, as the smell and condition of the stream at these times is alleged to be worse than at any other time, but no definite proof of this was given.

It will be seen from this statement that the stream is a polluted stream, and that it is high time something was done to purify it.

DIVISION II.—THE BEST MEANS OF PREVENTING SUCH POLLUTION.

A great deal of evidence was given on this subject, and it appeared that for several years past efforts have been made to devise some scheme of drainage that would be satisfactory to the various interests concerned; but, so far, no scheme has been suggested that meets with the approval of a majority of the local authorities concerned.

The fact is that no really efficient means of drainage can be devised that would be a radical cure of the evils that exist and at the same time allow most of the present industries to continue without a very much increased water-supply, and to obtain such a supply would mean the expenditure of a very large sum of money. The local authorities have not been indifferent to this matter, and they have tried from time to time to come to some understanding among themselves about it, and money has been expended by them in formulating schemes of drainage, but without success.

Three main schemes and two subsidiary schemes of drainage have been formulated, and they are known respectively as—

- (a.) The Caversham Tunnel scheme,
- (b.) Leslie Reynolds's scheme,
- (c.) Hay's scheme,
- (d.) Septic-tank system,
- (e.) Green Island scheme.