

Dr. Ruttan and myself in July, 1891, brought to light facts which show that the intake of the St. Cunegonde supply is not very favourably situated.

The discharge from the tailrace, which empties into the Nuns Island channel 150 yards above the St. Cunegonde intake, brings with it the contents of the river St. Pierre. This little stream receives the drainage of all the land lying to the north of the canal between Montreal and Lachine, with the result that its water half a mile west of Cote St. Paul was found to contain over 13,000 bacteria per cc. A little further on it receives the washings of the West End Abattoir. This addition gives the water a very offensive character, and I found it to contain 172,000 bacteria per cc. In examining the tailrace water upon several occasions I never failed to detect floating portions of offal and animal debris. After receiving the tailrace water this number was reduced to 92,500 per cc. owing to the dilution.*

As the discharge of a large volume of this filthy water at a point 450 feet above the St. Cunegonde intake which is situated, 900 feet from the shore, was so obvious an objection, I made, jointly with Dr. Ruttan, an examination of samples obtained on July 7th, 1891, at 5 points in the line between the shore and the intake in order to see how far out the zone of pollution extended. The wind was off shore and its velocity 15 miles per hour. The water level was fairly high in the channel. The water close inshore opposite the intake contained 69,000 bacteria per cc.; at 100 feet out it contained 669 per cc.; at 200 feet out it contained 238 per cc.; and at 400 feet 157 per cc. The number obtained from a sample of tap water at the pumping station was 127 per cc. which one would expect in pure water.

The chemical results obtained by Dr. Ruttan showed marked pollution inshore and at 100 feet, with slight pollutions at 200 feet and none at 400 feet, thus corresponding closely with the biological result.

It is evident that on that occasion the zone of pollution

* This contamination of the tailrace has no bearing upon the Montreal supply as the water only becomes polluted after leaving the settling basin.