Recommendations.—The cure for the electrolytic trouble should come from the electric raiiway company, as the city cannot do anything to protect its piping system from stray currents.

Remediai means are mainly those which I have aiready stated in my preliminary report, dated April 1, 1909, and addressed to your secretary, namely:

1. Installation of substations at different points of the system—this with a view of diminishing the amount of current to be returned through the rails in the centre of the city.

2. Proper rebonding of all tracks that show defect.

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3. Special bonding and cross bonding work at intersections.

4. A system of inspection of track returns by the railway company.

Substations.—A substation system of power distribution will greatly help do away with the electrolytic trouble. At present the whole current for the rallway service being fed from one station, gives rise to a concentration of current in the tracks situated in the heart of the city. The current density in the rail returns must be kept low. The soil in this city shows a very low resistance, and only very smail difference of potential in rail returns can be allowed.

Rebonding of Tracks.—This must be assisted by a rebonding of the tracks which now show defects, that is, which indicates excessive drop. All bonds showing a reading of more that 4.5, that is, whose resistance is greater than 4.5 feet of rail, should receive attention and be made good. Track intersections should also receive careful attention, ground plates at sides of bridges to carry return currents from one side of the river bank to the other, must be done away with and insulated feeders placed instead.

Action by Company.—i am pleased to state that the Winnlpeg Electric Railway Company is carrying its work along these lines. Foilowing recommendations made by William B. Boyd, Chief Engineer Toronto Railway Company and Toronto Power Company. Toronto, and approved by the writer, the Winnipeg Railway Company have placed orders for electrical machinery, which will be Installed in three new substations, located as follows: One substation near the car barns at Fort Rouge, another on the line running to the County Club, approximately 17,000 feet from the Mill Street substation, and the third in the north end of the city near the car barns. This will reduce very irrgely the amount of current returning through the rails on Main Street. These rails are now very much overloaded with current.

In connection with the rebonding of the tracks, the railway company have now in the city, and in operation, a bonding car for electrically brazing copper bonds on the rail joints. This type of bond, carefully insta.led, will secure an effective system of rail return. It can be easily applied on old work with very little disturbance of