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Report of the Subcommittee on Water Pollution I*

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Report of the Subcommittee on Water Pollution

This summer, Dr. T.T. Bannister and Dr. Roger Christensen, both of the University of Rochester, have been testing the coliform bacterial count at Lake Ontario beaches and related water. They measured the "coliform index", (defined as the number of "coli-aerogenes" type bacteria present in 100 ml of water); this is the measure of fecal pollution most widely used in the United States.

Methods. This year, we have used the Millipore Filter<sup>R</sup> technique; this method is approved by the American Public Health Association, and is described in their Standard Methods (11th ed.).

Results.

July 10, early afternoon. Brisk N.W. breeze.

<u>Location</u>	<u>Coliform index</u>
Durand-Eastman Beach	50,000
Charlotte Beach	20,000
Genesee River-Triangle Marine (East bank)	1,500,000
Irondequoit Bay-Rochester Cance Club Pier	100

July 13, morning. Calm. Dilutions of these samples were made on the assumption that the level would be similar to the samples taken three days before. This turned out to be wrong. For this reason, only maximum or approximate levels can be stated.

Durand-Eastman Beach	less than 1,000
Charlotte Beach	less than 1,000
Genesee River-Triangle Marine	less than 100,000
Genesee River-foot of Petten St. (West bank)	approx. 500

July 20, morning. Moderate S.W. breeze

Durand-Eastman Beach	2,000
Summerville Beach (200 ft. East of jetty at mouth of Genesee)	1,000
Genesee River-Triangle Marine	450,000
Genesee River - foot of Petten St.	2,000

Interpretation. The results show a widely varying, and sometimes extremely high, level of pollution along the Lake Ontario Beaches. The cause of this fluctuation is not known, but it seems reasonable to assume that such factors as wind direction, rate of flow in the river, etc. would have very large effects on the distribution of polluttional material.

As for the level of the pollution on the beaches, it may be noted that a number of authorities<sup>1</sup> and legally constituted interstate compacts<sup>2</sup> have set a standard of 100 as the maximum coliform index for water used for bathing or recreational purposes, although some of these standards permit an occasional sample to be as high as 1,000, so long as the average of samples from a given site does not exceed 100. No sample should exceed 1,000. We have three samples from Durand-Eastman Beach; two of these exceed 1,000, and the average is in excess of 15,000. Thus, even from the three observations, the coliform index of the water at this publicly operated bathing facility clearly exceeds by far the standards cited above. Similar conclusions seem warranted on the basis of the two samples from Charlotte Beach. There is insufficient data to date concerning Summerville Beach to permit any firm conclusions, but a single count of 1,000 certainly raises suspicions.

It seems obvious that the Genesee River is a major source of the pollution found at the beaches; whether or not it is the only significant source has not been determined. Furthermore, it is obvious that the pollution load is being added to the River below the level of Petten St. (about 2 blocks south of the Stutson St. bridge).

Last year, our committee found that the Irondequoit Sewage Disposal Plant was discharging a heavy load of sewage into the River; at that time, the Democrat and Chronicle quoted Town of Irondequoit authorities as stating that the situation would be taken care of within one year. However, on May 26, 1965, at a public meeting held by RCSI, Mr. Ralph Matteson, Supt. of Sanitation for the Town of Irondequoit, admitted that he could not guarantee that sewage from the Irondequoit plant would not pollute the Lake Ontario Beaches. It seems pertinent to ask three questions at this point. Does the Monroe County Health Department know of any significant steps that have been taken, or are now underway, which will abate the pollution near the mouth of the Genesee? Does the Department know of any source of gross pollution near the mouth of the River other than the Irondequoit Plant? How does the Department feel about high coliform counts at the swimming beaches?

Conclusions. Public bathing beaches on Lake Ontario are seriously polluted. The Genesee River is a major source of the pollution. The water at the beaches will not come close to meeting the accepted standards for water used for bathing and recreational purposes until the pollution in the River is cleaned up.

Acknowledgements. We wish to thank the Millipore Filter Corp., Bedford, Mass. for their generous donation of the filters used in this work.

References.

- <sup>1</sup> Imhof and Fair, "Sewage Treatment", John Wiley and Sons, (1940); Federation of Sewage Works Associations, "Modern Sewage Disposal", (1938).
- <sup>2</sup> Tri-State Standards of Connecticut, New York, and New Jersey, (1936, applicable to tidal waters in the New York City area); Ohio River Valley Water Sanitary Commission, (1951).