

MEDICAL SCIENCE

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REPORT OF COMMITTEE NO 5 ON WATER SUPPLIES AND THEIR POLLUTION.

PRESENTED BY DR. E. GRIFFIN, BRANTFORD, BEFORE THE ANNUAL MEETING OF THE ASSOCIATION OF EXECUTIVE HEALTH OFFICERS OF ONTARIO.

THE subject of water supplies and their pollution in this province is so wide, and the limits of a paper suitable to offer here are so narrow, that it is not proposed to attempt more in this paper than to offer some general observations on the subject of public water supplies, and perhaps to consider a little more particularly the question of private supplies of drinking water from wells, especially among the rural population.

The natural advantages of the Province of Ontario in regard to water supplies, like her natural advantages in so many other respects, are unsurpassed, if indeed they are equalled, by those of any other country of equal magnitude. The Province is nearly surrounded by great lakes and rivers containing volumes of fresh water, so vast that no possible pollution can apparently affect them. The inland country is studded by numerous smaller lakes and intersected everywhere by many rivers and streams. An ample and uniform rainfall assures an abundant and constant supply from the myriads of wells from which practically the great mass of people, excepting those in a few cities, obtain their whole supply of water for drinking and cooking. The question of securing an ample supply is therefore not often attended with any difficulty. The difficult question is to obtain it free from pollution.

The special prominence given to this question at the present time is due partly to the increased pollution of water supplies, owing to the growth of cities and towns, and partly to the recent more

general diffusion of sanitary knowledge among the people, especially in regard to the manifold dangers of drinking contaminated water.

At the present time some eight or ten cities and towns in Ontario are provided with public waterworks intended to supply their citizens with water for all purposes, and many others are anxiously considering the merits and demerits of different methods of establishing works.

The principal sources of supply available for public waterworks are:—

- 1st. The great lakes and rivers, as Lake Ontario and the St. Lawrence.
- 2nd. The large inland rivers.
- 3rd. Small streams often connected with little lakes or ponds fed in part by springs, but chiefly collecting surface water.
- 4th. Subterranean or living springs.
- 5th. Driven wells.

For those cities situated on the great lakes and rivers where the volume of water is so vast that impurities become inappreciable, the supply is not only convenient, but also perfectly good, if taken up sufficiently remote from the point of discharge of any considerable amount of sewage.

The larger inland rivers, such as the Grand river, afford during the greater part of the year a supply of good water; during the periods of heavy rains and thaws, however, the water becomes muddy and more or less polluted by surface washings. This evil may be much lessened by ample reservoirs, settling basins and filtering beds; but the more serious danger of contamination by the drainage of towns above still remains and is likely to become constantly greater in the future. Great objections to such a source of supply must continue to exist until some more satisfactory system of filtration than is usually adopted can be applied.

It is claimed that the Hyatt filtration system or