THE EPIDEMIC OF TYPHOID FEVER IN THE CITY OF OTTAWA.*

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In the city of Ottawa there have occurred two outbreaks of typhoid fever within eighteen months. This is so unusual an occurrence in our present knowledge of hygiene and sanitary engineering that it is no longer of local interest merely, but attracts the attention of physicians and sanitary engineers the world over. Besides sharing with the medical profession this general interest, my attention was specifically directed to the epidemics by being consulted by several citizens of Ottawa regarding the safety of residing in that city during the coming year.

Through the courtesy of some of the government authorities I was enabled to acquaint myself with the conditions leading up to the outbreak. As the whole matter is under investigation, to be reported upon later, I will not attempt here to deal with these conditions in detail, but will state some general facts regarding the dangers, to the community at large, which such epidemics occasion.

Typhoid is a preventable disease—its cause and mode of transmission are among the best known to the science of medicine; where the measures for prevention have been intelligently and conscientiously carried out, typhoid fever, in epidemic form, does not appear.

Transmission of Typhoid by Individuals.—The germ is carried and transmitted by individuals in the following ways:

(1) By those who have sufficient resistance to entirely neutralize the poisons and who are therefore not ill. Such individuals (immunes), though they discharge the organism in virulent form, show no other sign of the disease.

(2) By those who have only enough resistance to partially neutralize the organism, and who are, therefore, partially disabled. Such individuals (walking cases) discharge the organism in virulent form and the sequels of the disease may develop in as severe a degree as in typical cases.

(3) By those who have passed through a typical attack and have recovered. These and the walking cases may harbor the organisms for months or years. Such individuals (typhoid carriers) discharge the germ, in full virulence, from time to time.

FORMS OF THE DISEASE.

The disease appears in two forms ::

1. The Sporadic Form .- This is usually traceable to some source outside of the locality in which the disease appears. For example, people returning from travel or from a summer resort, may bring in their systems an infection which runs its course and is not found beyond that particular group of persons. The Fests in Germany and the fairs and exhibitions in other countries are frequently the means of receiving and transmitting such an infection. This is also true of soldiers returning from campaigns. It will probably be a long time, and then possibly only through vaccination, before such outbreaks can be prevented. In all outbreaks it is possible for carelessness on the part of those in attendance upon the sick to extend the infection to themselves and others. This occurs through every point of contact between the fecal and urinary discharges of the typhoid patient and the alimentary tract of the uninfected individual. Such transmission is the fault of the physicians, nurses and attendants and is exclusively chargeable to them. These outbreaks, claiming their complications, sequels and mortality with the same exactness as the largest ones, are none the less tragic, but public opinion is not, as a rule, aroused.

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Of late years the medical profession, without the goad of public opinion, has diligently striven to prevent such, and has incorporated into every medical and nursing school the training which will enable physician and nurse to safeguard the community against such transmission.

2. Epidemic Form.—Under this head comes the Ottawa visitation. It is hardly necessary to mention the less common causes of such an epidemic or to describe its features. The two outbreaks through which Ottawa has passed were caused by the commonest and best understood of all the causes of disease—namely, the contamination of drinking water by sewage. In other words, that which is scrupulously avoided in the care of the typhoid case, was; by the contamination of the Ottawa water supply, brought about in the grossest possible way.

While nurses were disinfecting discharges and sterilizing the utensils of those known to have typhoid, thousands of other persons, harboring the germ in one or the other of the ways referred to above, were transmitting organisms through the foul water directly into the alimentary tract of innocent victims.

Ottawa is outwardly a beautiful city. It is the seat of the government of Canada, a country rapidly striding into international prominence. Her people, by ever-increasing railway and steamship systems, are traveling, not only through Canada, but also through the United States and other countries.

From the modes of harboring the organisms given above, it will be seen that during and after such epidemics as Ottawa has had, every individual from the seat of outbreak may be a menace, not only to his own community and country, but to any which he may visit. The typhoid epidemic to-day is an unpardonable crime against the world. It is scientifically punishable under the sixth commandment. By scientifically is meant that science has proven that typhoid epidemics are preventable by well known and thoroughly tested methods, which, if not adopted, render the authorities guilty of murder. The command to adopt such measures should be coupled with the charge, "Thou shalt not kill."

Prevention of Typhoid.—In no other disease has science so clearly and so simply pointed out the methods of prevention. The stage of experiment in this matter has long passed.

Smallpox, yellow fever, cholera and typhus, from being a constant menace to society have become, through the work of science and sanitary engineering, almost unknown.

Tuberculosis, in spite of the persistent ignorance of some communities, is, in its severer forms unknown, and from being looked upon as an inevitably hopeless disease is now among the almost certainly curable. Diphtheria and malaria also must be mentioned in this list of curable and preventable diseases. To acquire these results, the highest type of scientific acumen, the sacrifice of life, the expenditure of enormous sums of money, and legislation, municipal, national and international, have been necessary.

To prevent typhoid, on the other hand, two things only are necessary—two things long recognized as essential to the health of any community—pure water and proper drainage. The official report shows that the Ottawa epidemics, claiming their hundred and fifty-six deaths, were due to the failure to supply these requirements. To this list of the dead must be added those who will suffer from many sequels now known to be directly due to the typhoid organisms, some being incapacitated for years with consequent poverty and suffering, the full story of which will never be known.

To this also must be added that host of victims stricken down by the typhoid carriers and walking cases, emerging from such an epidemic. These latter can transport the germ