

MILK EPIDEMICS*.

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THERE is now no question of the fact that numerous epidemics of enteric fever, diphtheria, cholera, sore throat and scarlet fever have occurred in which milk has been the medium of conveyance and multiplication of the specific microbes.

In the case of typhoid fever the organism has gained entrance to the milk, either by adulteration of the milk with water containing the bacillus of Eberth, or by washing the milk vessels with similarly befouled water; and, in a few cases, it has been found that the only source of contamination was from a person who had milked the cows with hands soiled with the dejecta of patients suffering from typhoid fever. Another means is that of the udder of the cow becoming fouled with water containing the typhoid bacillus.

In a large percentage of milk epidemics of diphtheria, it has not been possible to trace the source from which the milk derived its infective quality. This, however, is not to be wondered at, for, in the first place, our knowledge is not yet sufficiently definite to enable us to exclude diphtheria, from the class of diseases which are not necessarily dependent on an immediate pre-existing case, and which appear to arrive at times from ordinary unsanitary condition; and, in the second place, slight cases of diphtheria are very difficult to trace—the diphtheretic character of a sore throat not always clinically being recognizable by doctors, and in these mild cases a careful bacteriological examination is not always made. Notwithstanding this, one need not hesitate to say from the abundant evidence now existing that diphtheria has often been conveyed through the medium of milk.

In the case of sore throat certain diseases of the cows themselves, especially of the teats and udder, have been found to act as a primary cause; but this has really nothing to do with milk as a vehicle for the conveyance of infectious diseases.

A good example of an actual case of cholera being conveyed by the medium milk, is that reported by Dr. Simpson: "An outbreak of cholera occurred on board the ship *Arden Leutha*, lying off the port of Calcutta. Of the crew of this ship all those who drank milk brought by a native milkman suffered. This milk vendor was found to have his dairy near a tank into which dejecta from a cholera patient was thrown. He confessed to have habitually diluted the milk one part in four with water from this tank.

In those epidemics of scarlet fever which have been traced to milk, it has been usual to find that the milk was infected through human

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