SHUTTLEWORTH: TYPHOID IN ITS RELATION TO MILK SUPPLIES. 121

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hundred gallons daily only one bottle may be infected, this result is not surprising.

In one of the months above referred to, and in the same affected district, there occurred nine cases of typhoid among the patrons of a small dairy, who, for the most part, went for the milk themselves, carried it in their own vessels, and only purchased it occasionally. The first three cases were not reported to the department, the first noticed being that of the attack of the proprietor, who was sent to hospital, and the dairy thoroughly inspected, and placed under special regulations, with the effect of terminating the outbreak. The actual source of infection could not be definitely traced, but it was probably to be attributed to contaminated vessels or utensils in the dairy.

Another instance was furnished by a dairy outside the eity limits, in which the milk—some forty-four gallons daily—was produced by seventeen cows, which were kept on the premises, and pastured near by. Three cases of typhoid were reported during three days, and three others developed five days later. The dairy was visited immediately after the first report, and was not found in good condition. The most marked features were the absence of a sufficient supply of water, owing to the pump having become dry. There was also a very roughly constructed, pitless, and foul privy near the milk house, the latter being floored with rough boards bearing evidence of the transfer of much mud from the surrounding paths, no doubt including that from the privy. The removal of this closet to a distant location, the dressing of the site with lime, the deepening of the well, the thorough cleansing and lime washing of the milk house, and the sterilization of vessels and bottles, were ordered with good effect, as no more cases occurred.

It seems likely that the excrementitious matter in the open privy was the most likely cause of the trouble, though none of the inmates of the dairyman's house, or any of his employees, were suffering from any intestinal affection. It is, however, quite possible that a privy so easy of access might have been used by some perambulatory typhoid case. The transfer of germs by the feet of persons passing from the privy to the milk house, or by means of flies, which were numerous, might thus be easily accounted for.

One of the most interesting cases was that of a small dairy located in the sparsely populated confines of the city. This enterprise commenced with the keeping of one cow so that milk might be furnished for a family of eight young children. But ultimately three cows were added, and milk was furnished to some seventeen families in the neighborhood. Four of the latter were on the same day reported as having typhoid, and