

ness. At the end of August, while the cholera was raging, it was found out that many sufferers had drunk of the pump water, but the fact was not sufficiently decisive, and so a pathological experiment was required. In Broad street there was a percussion-cap factory belonging to Mr. Eley. The persons of this establishment suffered from cholera, and many of them died. Mr. Eley remained well, but he did not live at the factory, though he went there daily and returned home to Hampstead after business, and there lived with his mother and a niece. His mother, who formerly lived in Broad street, had a great liking for the water of the pump-well, which was shown in the fact that her son daily took home the water for his mother and niece. In Hampstead there had been no case of cholera until the mother and daughter fell ill and died of cholera, without having any other communication with Broad street than through the means mentioned. What more is wanted? Who can doubt any longer? An experiment on two human beings with a disease which animals are not susceptible to! A sad privilege. Never before had facts received a more frivolous interpretation. Suppose, for a moment, that Mr. Eley had gone to and from Hampstead to Broad street without having taken the water to his mother and niece; and, further, that they had become ill of the cholera without having drunk the pump-water, would it have been imagined that the cholera had been carried by the son, who remained in good health? The contagionists would probably reply that Mr. Eley may have had the cholera in a mild form. The localists would say that a poison locally originated might be passed on by healthy people without giving signs of illness in them. In 1854, for example, a young lawyer went from Munich to Darmstadt, where his father resided. Up to that time the father had never lived out of Darmstadt, and Darmstadt was as free from cholera as Hampstead, and the distance from Munich was much greater than Hampstead from Broad street. The lawyer was as well in health as Mr. Eley had been, but the lawyer's father fell ill and died of cholera. There was no other factor in the case than the return of the son from Munich. Darmstadt enjoyed an immunity from cholera as great as that of Lyons, Versailles, Stuttgart, and many other large cities. In 1854 a workman went home from the exhibition of

Munich to Darmstadt, where he fell ill and died of cholera without the disease being spread to any other house, and no means for disinfection or isolation had been adopted. In 1866 Prussian troops were quartered in Darmstadt and brought the cholera with them. About thirty of the soldiers became ill with cholera, and many of them succumbed; again, none of the inhabitants of Darmstadt had the disease. It must be admitted that Mrs. Eley might have been infected through the inter-communication of her son, just as the lawyer's father had been, without the intervention of drinking-water. The argument in favor of the drinking-water theory rests on the fact that the cholera ceased when the supply of water was cut off, and yet the epidemics came to an end. Again, in Broad street the pump-handle was not taken off till September 8th. Now, an examination of the facts will show that the cholera was already subsiding. In Broad street, on August 31st, there were thirty-one cases of cholera; on September 1st, one hundred and thirty-one cases; on the 2nd, one hundred and twenty-five; on the 3rd, fifty-eight; on the 4th, fifty-two; on the 5th, twenty-six; on the 6th, twenty-eight; on the 7th, twenty-two; and on the 8th, fourteen. Just as occurs in India and elsewhere, a violent epidemic generally subsides rapidly.

The further one investigates the drinking-water theory the more and more improbable does it appear. Robert Koch, too, the famous bacteriologist, has hitherto failed to substantiate the drinking-water theory, and I feel convinced that the time is not far distant when he will own that he has gone in the wrong direction. Koch has succeeded in finding the comma bacillus in a water-tank in a region where cholera was prevalent. I have the greatest respect for this important discovery, not as a solution of the cholera question, but only as a very promising field for pathological, not epidemiological, inquiry. It must be remembered that cholera was already prevalent in the neighborhood of the water-tank from which Koch obtained the bacillus. Now, this tank was used not only for drinking purposes, but also for bathing the person and washing clothes, as Koch himself admits. According to my view the comma bacillus must have been present in the water. It had not been shown, however, that the bacillus was in the water before the outbreak of the cholera. Koch is of the opinion that all the bacilli in the water-tank