

and subtropical regions the hot months are the typhoid season. A great deal has been done by improved sanitary administration to check the spread of typhoid fever, but clearly we have not yet touched the causes that lead to this seasonal prevalence, which, in spite of the diminution in the number of cases, still shows itself so clearly in the statistical returns. In what direction are we to seek our clue? In the first place, it must be remembered that the period between infection and the development of the first symptoms cannot be set down at less than a fortnight on an average, and that the onset of the disease is so insidious that the sufferer seldom seeks advice until the disease has been on him for several days, perhaps a week—that is to say, about three weeks after the entrance of the infective principle into the system. We are therefore safe in concluding that the majority of patients are infected in September, and generally in the last weeks of September, that is, at the end of the summer, if we count the summer to be in Europe, as we very fairly may, July, August and September.

Eberth was the first (in 1880) to place the theory of a typhoid bacillus on a sound basis, and his researches have been confirmed in every particular and extended by Koch, Meyer, Gaffky and others. The bacillus is a short rod-shaped organism, which is found in the diseased organs arranged in radiating or retiform groups. It will grow on nutrient gelatine at ordinary temperatures, forming in twenty-four hours a delicate whitish cloud, which under a low power of the microscope is seen to be made up of a number of minute round colonies. Under a power sufficiently high to show the contour of the individual bacilli, it can be seen that they are endowed with spontaneous movement, which enables them to travel across the field of the microscope. These artificial cultivations reach their maximum development in about four days, but continue to live for at least three or four weeks more. The bacilli also grow very luxuriantly on potatoes, and also in many vegetable infusions (carrots, marrows, etc.).

An important point in the life-history of the typhoid bacillus is that when grown on potato in a warm, moist atmosphere, it readily forms spores on the third or fourth day. At 86°F. the