

water was provided, and we sterilized the excreta, and yet we had this lamentable result.

What has typhoid inoculation done to better this condition?

With a view to getting the results exhibited statistically we divided what was called the test unit of experiment, that means that we selected with approval, of the war office as soon as we could, such a vaccine as could do no harm and one we believe would do good. We took the responsibility of recommending it. They accepted this and allowed us to appoint a medical officer to every unit that left England for foreign service. This officer had a special course of training at the Army Medical College in modern methods of diagnosing fevers, methods of blood analysis, etc. These officers after this course, were attached to these units. They had to take on them the part of lecturing these men and to convince the soldiers that they should accept this offer of protection. Their chief task when accompanying these units abroad was that they should keep accurate record of the soldiers inoculated, and see that every case of continued fever in each battalion should be investigated by blood culture, etc., with view to deciding if it were enteric fever, or, if not, to find out what fever it really was.

During a period of experiment lasting five years, twenty-four units were dealt with, and the report of twenty-six medical officers collected into tables, and summarized as follows: Of these twenty-four regiments the average period of exposure to infection was dated from the time of their arrival in tropical station till the time we ceased to keep records, the average period was one year and eight months. The number of men who were in the experiment concerned, was 19,514. Of the men who were vaccinated among this 19,514 the number was 10,378, and among these 10,378 in this average period of one year and eight months were 56 cases of enteric, five of whom died.

Contrast that with uninoculated group. The smaller group, 8,936 practically 9,000, against the 10,000. In this smaller number there were 272 cases and 46 deaths. That is, nearly as many cases died of enteric in the non-inoculated group as contracted infection in the inoculated. Figures are not true indicators of what typhoid inoculation can do, for we figure among these every case that was inoculated whether properly inoculated or not. A very considerable proportion of these cases were inoculated with ineffective vaccine, superheated vaccine. In other cases soldiers who contracted enteric had been inoculated with vaccine kept too long, which must have lost all potency. These are all lumped together there, and if I excluded these and those soldiers who got one dose instead of two doses, if I put these all outside, the table would have worked out ten to one instead of five to one in favour of inoculation, as it has worked out in our experiment. It is, however, the best experiment on record, although better figures are shown in the American army and in the French army. In this experiment the external conditions were more accurately kept than in any other similar experiment. In each of these units soldiers were living under the same conditions as regards food and water and as regards exposure to infection. The two groups of inoculated and non-inoculated were strictly comparable. We found it a better test than in the case of groups of men altogether inoculated. I know this from our French colleagues, and they quite agree that these figures are the best evidence we have in support of inoculation. We have had very much better figures than those in individual units exposed to infection within comparatively short time of inoculation, that is within six or eight months afterwards. There the results are more instructive. One is not exaggerating to say those results are comparable to the results given by small-pox vaccination. Immunity tends to die away, and as the time approaches two years the individual should be re-inoculated.

The effect of this in India, only recently extended to the whole garrison, shows from the year 1907 a continual growth in the yearly number of those inoculated. This growth has been most gratifying and now has reached close on 95 per cent of our