

of bread they should go to the baker ; and similarly it might be expected that those who wish to learn about small-pox and its prevention would be wise to go to those likely to possess the most accurate knowledge of the disease—namely, those who have spent their lives in the practical study of small-pox.

You will find that the unanimity of opinion expressed by those who have so spent their lives as to the effect of vaccination is very striking, and that those who are opposed to vaccination are, almost without exception, those who have no very practical acquaintance with small-pox.

Means which might be adopted for deciding the Question as to whether, and, if so, to what extent, Vaccination protects against Small-pox.

The question as to whether or not vaccination protects against small-pox, and if so in what degree, may be approached in various ways :—

1. By vaccinating first, and inoculating with small-pox afterwards—a test which cannot, of course, be made in the present day ; but I shall refer to this again.

2. By observing the effect of vaccination on particular groups of persons exposed to the contagion of small-pox under more or less similar conditions.

3. By observing the comparative frequency with which small-pox attacks the vaccinated and unvaccinated in large communities, the degree of the severity of the attack in each of these classes, and the resulting death-rate.

4. By observing the effect of vaccination upon the age at which small-pox is most prevalent amongst those who have been vaccinated in infancy and among those who have not.

May I here, in parenthesis, say what I mean by “vaccinated” ? I mean efficiently vaccinated. It is well known that vaccination in infancy gives its most effective protection only for a certain number of years. It is necessary to bear this in mind, since there are many fallacies based on statements made to the effect that in adult life more vaccinated than unvaccinated persons suffer from small-pox. This statement is one of those falsehoods masquerading in the guise of truth, which, as I shall show later on, has but little justification, since a child vaccinated in infancy, although, in fact, vaccinated, does not continue to benefit to any large extent from the vaccination after from seven to ten years ; and, as regards liability to attack from small-pox, insensibly approximates to the condition of those who have not been vaccinated.

1. The method of testing the efficacy of vaccination by the subsequent inoculation of small-pox is, of course, now out of the question, since inoculation is forbidden by law ; but it was frequently adopted by Jenner, who, in 1801, wrote “that upwards of six thousand persons had been inoculated with the virus of cow-pox, and that the far greater part of them has since been inoculated with that of small-pox, and exposed to its infection in every rational way that could be devised, but without effect.” This was, at any rate, an experimental inquiry on a sufficiently large scale, and, even if the problem was not capable of being finally solved in this manner, was sufficient to convince his contemporaries of the efficacy of vaccination.

2. The second method of attempting to estimate the utility or the reverse of vaccination is to study its effect upon limited communities living under approximately the same conditions. There cannot be any better illustration than the experience of the staffs of the various small-pox hospitals. They are as follows :—

In Highgate Small-pox Hospital, from 1836 to 1896—a period of no less than sixty years—one case of small-pox, and one only, occurred among the hospital staff, and he was the gardener, least exposed to infection, but not revaccinated.* During the years 1883–96 there were 137 nurses and attendants employed ; thirty of these had previously had small-pox, but none of the others had suffered from the disease.†

At the Sheffield hospitals the staffs numbered 143 ; of eighty who were revaccinated as adults, not one contracted small-pox, whilst of sixty-two who had not been revaccinated six suffered from small-pox, as did one other who was not successfully revaccinated until he was sickening from the disease.

At Warrington, Homerton, and Fulham the experience has been similar. I will not weary you with the details of these ; it would not serve any useful purpose, since they merely confirm the conclusion that even the nurses, who are exposed to a concentrated form of infection, such as probably we never have to encounter, can be and are protected against small-pox by the simple expedient of revaccination.

To come down to quite recent experience. During the third week in February of this year a statement appeared in the daily Press to the effect that out of a staff of forty-three nurses employed in the Mile End Infirmary, thirty-five were revaccinated and have not suffered from small-pox, whilst of the other eight who were not revaccinated seven had already contracted the disease. Such a statement was not likely to be accepted without criticism and challenge, and, thinking it would be a good test case to put before you from the practical and common-sense point of view, I inquired into the facts, and I am sure that I may tender in your name as well as my own, our best thanks to Dr. Harley Brooks, the medical officer of the infirmary, for the great amount of trouble which he has taken to reply fully to my inquiries. The facts are at follows : Early in January, 1902, there were forty nurses and two matrons on the staff of the Mile End Infirmary, and one nurse on sick-leave, a total of forty-three ; not one of them had had small-pox previously ; of these thirty-one had been revaccinated at various dates up to two years before the outbreak. Four were revaccinated on the 28th and 29th January (two of them unsuccessfully). None of these thirty-five contracted small-pox. Of the remaining eight, one was away on sick-leave, leaving seven, who all suffered from small-pox. Of these, three were not revacci-

* It is stated (par. 403, Final Rep. R.C.V.) “that it is not possible to fix with absolute certainty the number of deaths connected with vaccination,” but during the years 1881–89 in England 1 death in 14,159 primary vaccinations was associated with vaccination on the certificate. In Scotland the proportion was much less : during the years 1883–90 it was only 1 to 38,872.

† Final Report of the Royal Commission on Vaccination, p. 85.