

are plenty of places where these conditions do not obtain; for instance in the case of armies going into the field you cannot ensure perfect sanitation; likewise in private life there are many places where those conditions are bad; and it seems only right and proper that we should avail ourselves of any measures which would protect the people under such circumstances. The recommendation for its use is therefore somewhat limited, in this sense, that one would not advise a wholesale inoculation of the general public; it is not necessary. But where you have places notorious for typhoid, and you know that people—it does not matter whether they are men, women or children—are going to be in that place or those places, then this preventive treatment ought certainly to be encouraged under those conditions, and there is very strong argument in favour of it under those circumstances.

Another great objection or argument against its use which is brought forward by many is the reaction that is brought about during the treatment. I may tell you that when this method of prevention of typhoid first started the reaction was very marked. I remember the earlier cultures that were used and the method of making those cultures, and they certainly produced undesirable results. But that argument has lost a good deal of its force because, as I remarked at the beginning, within the last five years or so great strides have been made in bettering this vaccine or prophylactic, and we no longer see the terrible reactions that were fairly frequent in the very early days. I will have a little more to say about the reaction when I come to deal with the method of preparing the vaccine.

Lastly, one other argument against its use that I wish to touch on is the protection afforded by this method of treatment. We may look upon it as very similar to the protection afforded against smallpox by vaccination; and there, as we know, you get undoubted protection for a considerable period. In the case of this typhoid prophylaxis the duration is decidedly shorter, and as far as we can make out, about 18 months seems to be a safe limit. There are a few cases that seemed to show that they retained protection for a longer period than 18 months, but averaging it all round that seems to be the rational figure to adopt. Now, even though you could only rely upon 18 months as being the period of protection, surely that does not militate in any way against its use; at least to my mind it ought not. Bearing in mind the remarks I have already made as regards the conditions under which one would advise its use, the people who are going to stay in places where typhoid is rampant, probably, in the first place, would not stay there 18 months, and secondly, if they did, probably the bad sanitary conditions answerable for the typhoid would not exist for 18 months. Therefore the shortness of the time is not an argument against the treatment.

Hon. Mr. DAVID.—Does it apply to children as well?

Prof. STARKEY.—Oh yes. I would not pick out men only. Children, as a matter of fact, stand the vaccination very well indeed; on the average they do not react like grownups do; they show very slight reaction.

Hon. Mr. DAVID.—Was it not said that they suffer sometimes from the administration—that the effects sometimes were bad upon children?

Prof. STARKEY.—Oh, you get those claims made against it for all—men, women and children; but, as we shall see later on, I doubt whether these reactions, these bad cases, can be looked upon as the result of the vaccine purely and simply. I think there are other factors which creep into it, on which I will touch in a moment.

Reviewing, then, the arguments in favour of its use, I have already pointed out that the vaccination against typhoid certainly protects against that disease—there is no question about it whatever; and in the practice of this protection there are one or two very important points to observe, particularly in connection with the objections which have been raised against it. The very first thing is to procure a good vaccine.

Now, in the preparation of this typhoid prophylactic there are two methods of preparation, totally different in many respects. The early method, and which is still