

of vaccination which does not produce an eruption on the skin must be, in the present state of our knowledge, unreliable, because it is only by the appearance of the vesicle that we are able to say whether the vaccination has been successful or not. The hypodermatic method is also objectionable, it seems to me, because perfectly efficient virus, which is fit for use, may contain skin cocci, which may produce suppuration when injected beneath the skin."

If it is permissible to criticize these remarks it may be said :—First, with reference to the contention "that perfectly efficient virus may contain skin cocci, which may produce suppuration when injected beneath the skin." It has been proven that most hermetically sealed vaccine is at least almost sterile. To this may be added in proof of the statement, that over thirty such hypodermic injections of vaccine have been made without the slightest untoward effect, while it is certain that vaccination by the open method often leads to a false sense of security, inasmuch as it may induce a local staphylococcic or streptococcic infection, which is entirely distinct from true vaccination, and such result is not protective against smallpox.

Unfortunately the contention made by Huddleson, that any method which does not produce an eruption must be unreliable is only too true, and this is the reason why this method has been received with so little favour. Recently, however, Dr. W. O. Rose of Nelson, British Columbia, has suggested that this objection may be eliminated by the superficial injection of the lymph used, and it is to a record of cases vaccinated by this method, that your attention is directed. It may be advantageous, however, to consider briefly before discussing this recent method of vaccination, what can be considered a successful operation. Many believe that the formation of one or more vesicles, appearing usually between the fourth and tenth day at the place of inoculation, is all that is necessary to assure a successful vaccination, and if such be true, are we not justified in preventing further reaction, with the infection which so frequently accompanies such reaction, either by the use, after the open operation, of strong antiseptic applications on the exhibition of such phenomena or better, by the prophylaxis of such condition by the intracutaneous method of inoculation?

Is it not possible that even if it be essential that a prolonged reaction from the vaccine should occur after the vesicular formation, such subsequent reinfection—and experiments seem to have proven that the pustular stage is that of a mixed infection—is deleterious to the further development of the toxins of the vaccine virus, and thus to the further and prolonged reaction due to the virus of vaccine?