

by false assumption, is in itself *prima facie* evidence that it has been fairly earned, and has not been misplaced.

This is a scientific period in which fact and experience reign supreme, and dogma and opinion take second place.

The sanguine hopes of Dr. Jenner, that "the annihilation of small-pox, the most dreadful scourge of the human species, must be the final result of the practice of vaccination," has not, and is not likely to be realized. But, that the practice of vaccination is worthy of confidence as a protection against small-pox; while the fact that the protection it affords is neither unconditional nor unlimited; but, that many of the conditions upon which it depends are under the control of ourselves; are self-evident propositions.

The first and most conclusive proof, in fact the only unexceptionable test which can be applied to an individual to show the degree of protection afforded by their having undergone the *vaccine disease*, is the "*inoculation test*" applied by Jenner himself and his early followers. What test could have been devised, more satisfactory, and more free from exception, than the direct introduction of small-pox virus, one cannot conceive; as no question can arise as to whether or not the vaccinated individual has been subjected to exposure to the influence of the contagion. I learn from the records of the early vaccinators that they were in the habit of taking great pains to give small-pox by contagion to persons who had recently been vaccinated; but invariably without success. Dr. Woodville, physician to the Small-Pox and Inoculation Hospital in 1799, finding a milkmaid who had become infected with cow-pox in a dairy in Gray's-Inn, inoculated seven persons by a single puncture from the teat of the cow, and subsequently endeavored fruitlessly to impart small-pox to them, both by inoculating the virus and by exposing them freely to the contagion. And, within two years, he transmitted the disease to 7,500 persons successively, one half of whom were subsequently inoculated with variolous matter without success. Dr. Pearson's experiments were upon sixty vaccinated individuals in 1804, but without imparting the disease; and in France, several physicians applied the *inoculation test* unsuccessfully. In India, also, I find that in 1841 Assistant Surgeon Russel inoculated with small-pox six natives who had been previously vaccinated, without success.

This test has always been regarded as the *experimentum crucis*, and may safely be undertaken in any case where animal virus, or virus of a

recent remove from the animal, has been used, and the patient has gone regularly through the several stages of the disease. Moreover, I believe it to be the duty of the profession to invite this trial, as the surest possible way of overturning the antagonism of the anti-vaccinationists, and restoring confidence among the public.

This has been disturbed on two points: first, as to the protective power of vaccination; and second, as to the purity of the lymph in use; and the danger arising from erysipelas, syphilis, &c., from which it does appear, that the second query demands a reply in the affirmative. This danger can be effectually provided against by the use of animal virus in preference to the humanized, and the former difficulty can be got over by the prompt application of the *inoculation test*, which should satisfy the most sceptical.

That there is no means open to us, whereby we may so effectually guard vaccine lymph against degeneration, and the possible contamination with blood taints of constitutional diseases, as by animal transmission, is not only *prima facie* self evident, but this view is endorsed by some of the finest minds in the profession.

UPON WHAT HYPOTHESIS CAN POST-VACCINAL CASES OF SMALL-POX BE EXPLAINED.

Vaccinia is but one member of a group of exanthems among which *non-recurrence* is the rule, and a second attack in the life-time the exception; and another is *small-pox*; with which *vaccinia*, as one of the varioloid maladies, has the very closest relationships; so close, that the vaccine disease, when undergone destroys that in the human system which imparts to it the capability of developing *vaccinia*.

Now, the rule is that small-pox only occurs once in a life-time, yet secondary attacks are frequently met with in every recurring epidemic. The rule is that one attack of small-pox destroys for a life-time the receptivity of the system for the same disease, but not always.

Dr. Jenner mentions a Mrs. Grinnet as having had the small-pox five times. Dr. Baron mentions a surgeon who was so susceptible that he could not attend a case of small-pox without taking the disease. Mr. Simon narrates a case on the authority of Mr. Baker that was severely pitted in two attacks, and a Mr. Inhausen gives a narrative of a lady who was pitted and scarred up in three successive attacks; also two years ago I lost a patient sent to Small-Pox