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I.

*Reply to Dr. Chandler Robbins on
the subject of Re-vaccination.*

By GEO. HAYWARD, M.D.

THE remarks of Dr. Robbins, in reply to my observations on his paper on re-vaccination, seem to call for some notice from me, lest my silence should be construed into an acquiescence in the correctness of his views. I fear the discussion will be tiresome, if not unprofitable, to the readers of the Journal, but I shall not willingly protract it beyond the present number.

Dr. R. has (unintentionally no doubt) misstated me in more than one instance, and throughout his article has assumed an air of triumph that is hardly warranted in this stage of the controversy. "Let not him that girdeth on his harness boast himself as he that putteth it off."

I objected to his proposition for general re-vaccination, 1st. Because it was calculated to "unset-

tle the public mind with regard to the preventive power of" cowpox. Dr. R. thinks that it is calculated to produce an opposite effect. Let us suppose, then, that all the physicians of Boston were to become converts to this theory of the necessity of re-vaccination, and should come forward and with great unanimity recommend the measure for the adoption of their fellow citizens, telling them that though they had been for the last twenty-eight years perfectly protected from smallpox by cowpox, still that they were not safe without resorting to re-vaccination. Would not this produce alarm in the community, and unsettle the public mind with regard to the preventive power of cowpox? If it would not, I am to learn what would; and yet this is the very measure that Dr. R. recommends.

2dly. I objected to this plan of re-vaccination, because "there would be no end to it." For if

the second vaccination took, it would be no proof, according to this theory, that the third or some subsequent one would not take, but merely that the susceptibility was not before exhausted; and if it did not take the second, third, or any other time, we could not be positive that something might not have occurred at the time of the operation, that prevented the communication of the disease. "The fallacy of this objection," says Dr. R. "it is unnecessary for me to show." This is a very easy mode of getting over an objection, but by no means a satisfactory one, and I should be glad to have the fallacy pointed out, for I must confess I am unable to discover it.

3dly. I objected to this plan, because there was not evidence of a sufficient number of cases of successful vaccination after the patient had once had the genuine cowpox, to render such a measure necessary. I stated that I had re-vaccinated forty persons during the last winter, without communicating the disease to one of them. Dr. R., in noticing this statement, does me great injustice when he speaks of this number as being my "whole experience" on the subject. There is nothing in my paper to warrant an opinion of that kind; on the contrary, it is distinctly stated to have been the experience of a few months only, and the cases were brought forward because they were fresh in my mind, and I had a memorandum of them by me. During the period that I have been engaged in business, now nearly fourteen years, I have annually vaccinated several who have previously undergone the disease, and have never, in a single instance, com-

municated the cowpox to one, who, there was reason to suppose, had had the genuine disease before. In addition to this, I take great pleasure in publishing the following note from my friend Dr. John Randall, whose extensive practice renders his experience of great value.

Dr HAYWARD.

Dear Sir,—I send you the following statement in answer to your inquiries on the subject of vaccination. From the year 1803 to 1815 I was pretty largely engaged in vaccination, but kept no regular account of my cases. I recollect, however, to have tested many of those cases by re-vaccination, but do not remember a perfect vesicle in any of them, when I had supposed the previous disease genuine. Since 1815 I have vaccinated less frequently than before, but have endeavored to keep an accurate register of my cases. The whole number since that time is 774. 79 of these cases were such as I considered bad; or they were the cases of transient persons, whom I did not see after the operations, and therefore know nothing of their results; 695 I considered genuine cases, having all the characteristics of the perfect disease. Several of these cases I have at different times re-vaccinated, without producing in any of them a perfect vesicle. Since the preventive powers of kinepock became questionable in regard to itself as well as smallpox, I have selected out of the above number of 695, 26 individuals, whom, as I have stated above, I considered as having had the perfect disease. Each of these persons I re-vaccinated with fresh vaccine matter.

Each puncture began to inflame within the first 24 hours, and they were followed by little angry sores; but disappeared by the fourth or fifth day. I was myself vaccinated twenty-five years ago this month, and had two good vesicles; have been twice inoculated since with the smallpox, remaining in a smallpox hospital three weeks, constantly exposed to the variolous influence. I had a little sore in my arm at each inoculation, but no symptoms. I have since that time visited eleven persons having the smallpox the natural way, one of whom I attended three days, and visited him from three to four times a day. I have been occasionally exposed to other persons having the smallpox, but have experienced no trouble from my exposures. These different exposures, having taken place at different periods of time and under various circumstances, will be considered perhaps as furnishing good tests of the genuineness of my vaccination. I have also vaccinated myself at five different times since my first vaccination, but have had nothing like a perfect vesicle on any of these occasions. My book is at the service of any gentleman who will take the trouble to inspect it.

Until the doubts which have been lately raised in regard to cowpox, I had supposed that a person could have the perfect disorder but once; and although I do not pretend to decide the question, nothing has, as yet, occurred in my own practice, to alter my early opinions.

I am, dear Sir,

sincerely yours,

JOHN RANDALL.

May 28th, 1828.

4thly. I objected to the plan of re-vaccination even if it were found true that some persons will have a genuine vaccine vesicle, who have before had the cowpox; for there is in my opinion strong reasons for believing that the vesicle is a local affection; that it may exist when there is no constitutional affection, and that the affection of the constitution is consequent to the formation of the vesicle. I believe also that a vesicle may have existed, and yet the system may not be protected against smallpox or cowpox; and a vesicle may sometimes be formed, on the introduction of the vaccine virus, in those persons who have had the smallpox or the cowpox. But I shall say more on this subject hereafter.

I cannot discover, in examining Dr. R.'s reply, that he has removed one of these objections. Instead of opposing them by fact and argument, he has suffered himself to wander into digressions, which appear to me to be irrelevant, and only calculated to make the reader lose sight of the question under discussion. Does he believe, because he quieted the fears of some boarding-school misses by assuring them that "a second vaccination would prove, in all probability, a perfect security against" smallpox, that the intelligent part of the community will not require something more, or that a fact of this kind can have the slightest bearing on the subject which we are discussing? I would not do him the injustice for a moment to suppose he thinks so.

But I forbear pressing this point further; enough, I trust, has been said to show that the objections which I made to re-vaccination were not quite so futile as Dr. R.

wishes to make them appear. There are other topics, however, in his paper, which demand notice.

In my former article I said, that I believed that most of the cases of smallpox after cowpox were owing to imperfect vaccination. I endeavored to support this opinion by a comparison of the facts that have occurred in Boston in relation to the smallpox, with those that are continually occurring in the country towns. In the former, though one or more persons have arrived every year with the smallpox, the disease has not for the last twenty-five years been communicated to an individual who has been vaccinated, while in the country it has been communicated, in almost every instance where it has appeared, to one or more who have been vaccinated. I explained this by supposing that in Boston vaccination is performed with great care, while in the country it has been too often entrusted to ignorant itinerants and pretenders. Without denying my statement, Dr. R. says, "These facts, however, when viewed in their true light, lead to a very different result. The truth is, that whenever a case of this disease (smallpox) has been among us; most, if not all, who have been exposed, have been induced to be *re-vaccinated* in order to be on the safe side." I have no hesitation in pronouncing this statement to be incorrect. I do not deny that re-vaccination has in some instances been practised, but I do know of the occurrence of smallpox among us, where the vaccinated, who had been exposed to it, (and who amounted to several hundreds,) were considered as safe as those who had before had the smallpox, and were

not re-vaccinated, and not an individual took the disease.

The first case which I shall mention occurred about twenty-three years ago in Newbury St. The patient's name was Clark. He had the smallpox with great violence; many visited him before he had had medical advice and the nature of his disease was known, and those only were vaccinated who were not protected by the smallpox or the cowpox. I have this from the physician who attended, and who assures me, that not a case of smallpox occurred from exposure to this individual.

The second case came under my own observation about ten years since. A black woman went to see her husband, on board the Frigate Congress, which had just arrived at the Navy Yard. The smallpox was on board. At the usual period she sickened, and was afterwards covered with an eruption. No physician was called till the eruption had been out several days, and during her whole sickness she had been visited freely, in a small, badly ventilated room, by all her neighbors and acquaintances. When I saw her I had but little doubt about the disease, and she was afterwards visited by the late Dr. Hayward and Dr. Welsh, and under the direction of the latter gentleman, who was then Resident Physician of the Board of Health, she was removed to Hospital Island, where she recovered. I informed the persons in the neighborhood that I would vaccinate gratuitously any who had been exposed to take the disease, if they had not been before vaccinated or had not had the smallpox; and I did vaccinate a very considerable number; but

I am confident that none were vaccinated who had before had the cowpox, and yet the smallpox was not communicated to an individual.

The third case was that of two children, who broke out with the smallpox about five years since, in Hatter's Square, a few days after their arrival from New-York. Many were exposed to them; there was a school, in the room directly opposite, of forty small children, yet no one took the disease; and the physician who attended is confident that none were re-vaccinated.

The fourth case is more recent, and occurred at the Marlborough Hotel in May, 1827, in an individual who arrived there from Halifax, and who was shortly after seized with the smallpox. Dr. Randall, the attending physician, informs me, that none of the members of the family, nor any individual in the house, who had had cowpox, was vaccinated, and yet the disease was not communicated.

The fifth case, and the last that I think necessary to bring forward, is that of Mr. Blackstock's son, who broke out last winter with smallpox or varioloid, (for I believe it was somewhat uncertain which,) in Kneeland Street, on his return from New-York. The eruption appeared as early as Monday, but no measures of precaution were taken till the Saturday afternoon following. During the whole week all the members of the family and some individuals out of it, freely and frequently visited the patient in his room; the children went to school as usual, without any measures being taken to prevent the contagion from being conveyed in their clothes; no members of the

family had any other protection than what vaccination afforded, except the parents, and yet no one took the smallpox. This case is as strong a one as can well be imagined, if we regard the season of the year, when our apartments are usually badly ventilated, the extensive eruption, and the age of those who were exposed, for there is no doubt, I presume, that the young are more liable to be affected by contagion than the old.

These cases might be multiplied, but they are sufficient to show that Dr. Robbins must resort to some other explanation than that of re-vaccination to account for the protection of all the individuals who have been exposed to smallpox in this city since the introduction of vaccination. If his theory were true, that one in twenty can have the cowpox a second time, or the smallpox after cowpox, there would have been at least twenty cases of smallpox from exposure to the individuals mentioned in the five cases above.

And is it not true that when a case of smallpox occurs in the country, it excites more alarm than the same occurrence in Boston? And might we not fairly conclude, that under such circumstances, they would resort to re-vaccination there as well as here, if this were the common practice of medical men? But I will admit, for the sake of the argument, though I know it is not the fact, that when cases of this kind occur, re-vaccination is always resorted to; still it proves nothing, unless it can be shown that the second vaccination takes effect; for if this be not the case, it is obvious that the immunity from smallpox is derived entirely from the first vaccination, and Dr.

R. does not even attempt to show that the second vaccination in these cases was successful.

But there is another part of the same paragraph from which I have quoted that is more remarkable still. "In the course of the past winter," says Dr. R., "a case of varioloid broke out in the Massachusetts General Hospital. Every inmate of the institution was re-vaccinated; and on the arm of the girl who watched with the patient the night before his removal to Rainsford Island, the vaccine vesicle was regularly formed, and on the eighth day was properly distended with limpid fluid." Now I ask the reader, if it be not intended by this sentence to intimate that the girl who watched with the patient had been before vaccinated, was now successfully re-vaccinated, and thus probably protected from the smallpox. It certainly conveys this idea to my mind; I hope that I am not uncharitable to Dr. R. in thinking that he intended to convey this, and yet there is not a shadow of foundation for it. *This girl had many years before had the smallpox*, marks of which she still has, was never vaccinated till that time, and then did not have the cowpox.* I know not how to express my astonishment that a statement of this kind should be made, as it is not only entirely groundless, but can so easily be proved to be so.

With regard to the other part

* The most important part of this statement is corroborated by the following certificate from the House Physician of the Hospital:

"Mrs. Mahan, who watched with Mr. Crane the night before his removal, had had the smallpox by inoculation many years before in Ireland, as she stated to me.
JOHN B. S. JACKSON."

of the statement respecting the case of varioloid in the Hospital, it is true that all or nearly all the inmates of the establishment were vaccinated without delay, those as well who had had the smallpox or the cowpox, as those who had had neither; and this was done, because it was easier, where all the individuals were together, and where there was abundance of fresh matter at hand, to vaccinate all, than to examine and investigate each one's previous vaccination or inoculation. But what was the result of all this? That the cowpox was not communicated to a single person who had before had that disease or the smallpox.* There was one person, to be sure, on whose arm there were vesicles, but these had not the characters of the genuine disease; the patient had no constitutional symptoms, no areola formed around the vesicles, and suppuration took place in them by the seventh day. The case was considered spurious by the physician.

Before I conclude this part of the subject, I must not omit to advert to Dr. R.'s want of candor in representing throughout his article, that I attributed all the cases of varioloid to imperfect vaccination. He does not say this in so many words, but that is the impression he conveys in several places. It is hardly necessary for me to deny this to those who read my first article, in which I remarked, that "I do not mean to say, that those who have had the genuine cowpox can never take the smallpox!" This language is certainly explicit enough, and no one, who reads with any care,

* See Dr. Channing's paper in No. 18 of this Journal.

could, I should think, mistake my meaning. And yet Dr. R. brings forward an array of authorities from the *Edinburgh Review* down, to show that the varioloid may sometimes occur after genuine vaccination, as if I had asserted the contrary.

There are one or two other points in Dr. R.'s paper that must not be passed over in silence. "If the scar," says he, "is said to be the criterion, the dilemma remains the same, for it can only be judged of long after the operation." This objection, allowing it all the weight possible, might be easily removed, if physicians would adopt the practice of giving certificates, in all cases of successful vaccination. These certificates could surely be preserved till the scar was perfectly developed.

Dr. R., with the view apparently of giving a sanction to this theory of re-vaccination by the authority of distinguished names, says, "see letters of Drs. Chapman and Jackson, &c. &c. referred to in the *National Intelligencer*." I should be very happy to see these letters, and I am confident they would establish the fact, that these gentlemen re-vaccinated either to test the former vaccination or to remove the doubts of the patients or their friends, and not because they supposed that it was necessary for the system to undergo the disease more than once to protect it from smallpox. But these letters have never been published as I can ascertain, but merely referred to by Dr. Sewall as a proof that these gentlemen sometimes re-vaccinated. I hope Dr. R. did not know this when he wrote the sentence I have quoted.

I have already occupied so much space that I am unwilling to trespass further. But I cannot forbear making a short reply to the second part of Dr. R.'s answer contained in the 17th No. of this Journal, and which is confined to two topics. 1st. To the objections which I made to his remarks respecting the influence of cutaneous diseases in preventing the effect of cowpox. I have only to observe that if he abandons the ground he first took, I am satisfied; and if he does not, he places his authority against that of Jenner and Gregory, and the profession must decide to which they will submit. Almost every man, I have no hesitation in saying, who is much in the habit of vaccinating, has frequently witnessed the influence of the diseases of the skin over cowpox. It is a point that hardly admits of an argument, resting as it does on facts alone, an immense number of which could be brought forward to establish it.

2d. Dr. R. objects to my opinion of the character of the vaccine vesicle. I believe it to be a local disease till the limpid virus is formed in it, and that the protection of the system is from the absorption of this virus. He does me wrong in supposing that I should adopt this opinion or any other, so general in its nature, from an insulated fact. The idea was first suggested to me by the late Dr. Barton of Philadelphia, in 1812, while I was pursuing my studies under his direction. He stated to me, that in several instances he had vaccinated a number of persons in a family; the disease had gone on in all till there was formed in the vesicles virus that was capable of communicat-

ing the disease ; that the vesicles on the arms of some of them became irritated in a high degree, from rubbing or some other cause, while the disease went its usual course in the others. That he afterwards inoculated them all with the smallpox, that those took it uniformly, whose vesicles had been irritated, while those as uniformly resisted it who had had the disease in an uninterrupted manner.

These facts are stronger to my mind in favor of the opinion I have advanced than all the reasoning in the world on the subject, and I am therefore unwilling to extend this article further by entering into a discussion. I must say however that I still think the analogy on this point between cowpox and syphilis to be very strong, while I cannot perceive the slightest between cowpox on the one part and scarlatina and measles on the other, when I consider the mode of communication of these diseases.

The following extract from Dr. Cross's work on the varioloid disease at Norwich, has an important bearing on this point as well as on the question of the influence of diseases of the skin over cowpox.

"My own experience," says he, "has not afforded me any explanation of the vaccinated taking modified smallpox, beyond the probability of its depending upon incomplete vaccination, and the table which I have given of 500 individuals who presented themselves to be vaccinated, shews that incomplete cases of the disease, from rubbing, accident or other cause, will, amongst the poor at least, happen in as great a proportion as modified smallpox in those who are subsequently ex-

posed to the variolous contagion. Abstracting ichor carelessly from a patient who has only a single vesicle may be one, but is far from the only cause. Besides interrupting the vesicle by rubbing or the extraction of too much ichor, there are numerous other causes which may interfere with the progress of the vaccine pock, and which may be disregarded at the time, or subsequently in the absence of a register entirely forgotten, as—diseases preoccupying the system on the surface of the cutis, eruptions, scald-head, teething, prevailing contagious disease, &c."

Having thus defended as well as I could in a short time my objections to re-vaccination, I have but a word or two more to add. Dr. R. in more than one place I think speaks of this proposal for re-vaccination as being a blessing to the community, if it should be adopted. He does not seem to be aware of the increased expense which it would occasion (which is no trifling consideration with the great mass of society), and the endless trouble, both to patient and physician, which this blessing would bring with it. Admitting it to possess all the advantages he claims for it, I am confident it would never be extensively practised, and that it would be better to go back to the inoculation of the smallpox, taking its greater certainty as an offset for its greater danger. But neither of these measures I feel certain is necessary, and if I have not made it appear, that his proposition rests on no stable foundation, the fault is in me, and not in the cause which I maintain.

Boston, June 16th.