
THE
VACCINATION PROBLEM
IN 1903

Alexander Paul

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The Vaccination Problem

IN 1903

and

The Impracticability of Compulsion

BY

ALEXANDER PAUL

Author of "A Royal Commission's Arithmetic," "Short Parliaments,"

"A History of Reform."

"Let not the Judge meet the Cause halfe way; nor give occasion to the partie to say his counsell or proofes were not heard.—*Bacon*."

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NOTE BY THE AUTHOR.

Since this Book was written, the Prime Minister has announced the desire of the Government to turn what is here called "The Vaccination Problem in 1903" into a problem for 1904. It is proposed to continue the present temporary Act for one year, and to defer till next session the reconsideration of the vaccination laws. This is a practical recognition of the difficulties in the way of a prompt compliance with the urgent demands of the Imperial Vaccination League. It encourages the author to hope that this small volume, showing what some of those difficulties are, will be all the more acceptable to the inquiring public. It may perhaps even be welcomed and examined with patient toleration by others who have not hitherto deemed it to be desirable or safe to give much encouragement to the questioning of what is so widely believed to be the voice of authority on this subject. There are few Englishmen who will carry their respect for authority so far as to say that when it enlarges its claims and demands increased assistance from the arm of the law, all other voices must be silenced. A natural resentment of any such pretensions may here and there have found expression in these pages. The author hopes, however, that in what is here written from the point of view of a Conscientious Objector (who feels himself bound as a private individual to strive against the disabilities and disqualifications with which he and his family, and friends of like opinions, are threatened by The Imperial Vaccination League), there is nothing that can properly offend the susceptibilities of any worthy and chivalrous opponent.

A.P.

MARCH, 1903.



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THE VACCINATION PROBLEM

IN 1903.

CHAPTER I.

THE CONSCIENTIOUS OBJECTOR COMING UP FOR JUDGMENT.

The time having arrived for the Parliamentary reconsideration of the experimental Vaccination Act of 1898, which expires with the year 1903, that ill-starred, unblessed, troublesome creation of this statute, the Conscientious Objector, should come before his authors to hear their judgment and to learn his fate. Until a few months ago he could only have looked forward to this moment with unfavourable anticipation, perhaps with despair, remembering the proverbial chances of the dog with an injured name. For the measured years of his miserable existence the Conscientious Objector to Compulsory Vaccination has been hounded from pillar to post as, not a harmless, but an extremely harmful lunatic; branded in epigrammatic editorials as a "freetrader in small-pox;" denounced in the petty Courts as a danger to Society; and publicly warned away from the service of the Supreme Court by the Lord Chancellor himself. Impressed by his evil reputation, his own creators, the members of the Legislature, with a few courageous exceptions, have felt constrained to give him the cold shoulder when he has privately appealed for a consideration of his grievances and a protest against the denial of his statutory right. "Enough of you till 1903!" they have virtually said. "Sufficient for that year is the evil thereof! Come up for judgment when called upon!" And—until a few

months ago—he had good reason to believe that this judgment would be a doom.

A notable change of attitude.

But then a strange thing happened. Those whom the Conscientious Objector had reason to regard as his greatest enemies came forward and said with their own voices and the voices of Bishops and Dukes: "Slay him not; let him live!" By the mouth of the Imperial Vaccination League, which that most zealous of vaccinists, Mrs. Garrett Anderson, has the credit of organising,* they said: "We do not propose to urge the abolition of the Conscientious Objector Clause." They went further. They said they wished to see it "worked in strict conformity with the spirit and the letter of the law." To realize the astonishment which such a declaration has awakened in the breast of the Conscientious Objector one must recall the words of Mrs. Garrett Anderson, the founder of the League, in a letter to *The Times* of January 10th, 1899. "What can be done," she then asked, "to minimise the evil with which Society is threatened?" (meaning that the evil of small-pox was threatened by the Act of 1898, and that small-pox, in the view she then apparently held, nothing but vaccination and re-vaccination of everybody could avert). This was her answer to her own question:—

"Indirect pressure in support of vaccination can be applied to young adults. In the course of a few years many of those who survive childhood will be protected from small-pox by having already struggled through it. It will be possible to say to every one who reaches adult life, 'You must prove that you have had small-pox, or that you have been vaccinated and re-vaccinated before you can be admitted to college, shop, warehouse, or factory, into ships or services, before you can insure your life or enter a sick benefit society' . . . Indirect pressure of this kind is already largely used, and it is submitted to with a good grace. No one has 'conscientious objections' on such a score when it is a question of earning his living."

That was four years ago, of course, and as the Imperial Vaccination League was only launched in August, 1902, the bewildered Conscientious Objector in his lucid moments, if any

* Dr. Edward J. Edwardes, referring to the new League of which he is Secretary, said, at the Manchester meeting of the British Medical Association, that "Mrs. Garrett Anderson, M.D., its Honorary Secretary, had been the leading spirit in its formation."

are graciously permitted to him, might have reflected that in from three to four years a lady may be permitted to change her mind. But it happened that as recently as April, 1902, this eminent lady gave proof of her unaltered severity of view with respect to the Conscientious Objector. She was then present at a meeting of the Institute of Actuaries, where a paper on Vaccination and the Act of 1898 was obligingly prepared with what one Insurance Journal—the *Post Magazine*—described as a “hearty acceptance of the orthodox medical view.” The statistics given in this paper did not entirely escape the penetrating criticism which figures must undergo in a Society composed of experts in arithmetic. Speaking after one actuary (Mr. Douglas Watson), who proved to be the most sharp-sighted critic, Mrs. Garrett Anderson urged that they must “not be too fastidious as to the statistics not being strictly true in all directions,” and went on to say:—

“She would make it necessary for people to be vaccinated before they went into schools or went from them, and before they went into any kind of business. Business people, such as actuaries, should insist upon it that they would not employ people who could not produce their certificate of re-vaccination. If a little trouble were taken to make that certificate a proper thing, so that every person would have to have one for almost every thing connected with business life it would help the cause of vaccination very much indeed.”

With these things in his mind, but he fears all too probably non-existent in the minds of his Parliamentary judges, the luckless Conscientious Objector has dire forebodings as to the result of this unexpected proffer of clemency from his persecutors. What will be the future spirit and letter of the law to which they promise conformity, if as the result of this offer, his appeal to Parliament is weakened, if the discussion he invites, a discussion apparently never welcome, is cut short on the pretext that he is not to be injured, and has no *locus standi*? He remembers how this statute of 1898 was nominally and in its letter a relief to him. He has realized how its spirit, which the letter clothed and disguised, was a re-affirmation of the principle of compulsion, and how much it has become in a much more real sense a relief, and in fact a powerful aid, to his adversaries, the compulsionists.

The Position in 1898.

It is well to bear in mind that in 1898 the Conscientious Objector asked no concession. He asked that the compulsionists should

prove their case. He asked this the more confidently because the re-opening of the Vaccination Question at all was due to the Report of a Royal Commission which gave him a verdict on many points. For instance, it made it absolutely impossible to go on with the old lymph and the old methods of vaccinating. It sanctioned his objection to the vaccination of very young infants, in deference to which the Government, by the "letter of the law," raised the age limit for vaccination exemption from three months to six. (The Local Government Board a few months later showed how the letter of the law might be altered by the spirit of its administration. It ordered that vaccination should be "offered" by the Workhouse Vaccinators at the age of two months, and punished the St. Pancras Guardians because they fought for the offer being made only at four months in accordance with the actual terms of the Statute). Further, the Commission unanimously censured cumulative penalties, whereas Mrs. Garrett Anderson, as we have seen, has counselled, and successfully counselled, penalties of the most deterrent and overwhelmingly ruthless character, in every department of life. The Commission was even unanimous in the view that the Conscientious Objector should be relieved from penalty altogether, and was only divided as to the precise amount of trouble he should have to take in order to escape it. Four of its members would have given him no trouble at all. They objected to the retention of compulsory vaccination "in any form." Two of these four (one being an ornament to the medical profession) were unable to sign the main Report. They put in a reasoned Dissent to show that "the evidence not only justifies, but requires a more complete reconsideration of the present state of the law as well as of the methods adopted in dealing with smallpox." They gave "reasons for thinking that other more effective and practicable (as well as less objectionable) modes of stamping out smallpox or protecting communities from its introduction (than vaccination) are available." This reply of the Dissident Commissioners to their colleagues, re-opening what had so long been regarded as a *chose jugée*, made for the Conscientious Objector what in his opinion was an irresistible case, but in any event a case that must receive the careful attention of Parliament. The verdict of the Commission was not only on many points unanimously in his favour, but it was in no case unanimously against him. The very appearance of a new Vaccination Bill was, or ought to have been, a presumption in his favour. It was the Local Government Board's own scheme of

John Collier
MS

in vacuo
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reparation for past wrong, its own assurance against future mistake, its own offer as to the extent to which it would yield to the Royal Commission, its own decision as to how far it would lift a heavy persecuting hand from the shoulders of those who had won a substantial victory against it. That was the reasoning of the Conscientious Objector, and he naturally looked to Parliament to say whether justice had been done, and whether the presumption any longer was to be against him. The Conscientious Objector looked in vain for any discussion of principle. Mr. Chaplin, then President of the Local Government Board, brought down a new lymph with certain assurances, of which more presently, and not only declined to discuss the merits of compulsion, but even proposed to ignore the Conscientious Objector, except as regarded his liability to be more than twice punished for the same offence. The accident of an election at Reading, an anti-vaccinist stronghold, extracted from him the Conscience Clause. But the Conscience Clause, conceded under such pressure and on such terms, was seen to be inconsistent with the whole attitude of its con-ceder, and was widely regarded, in consequence, as cowardly and dangerous. The sanction of the Act for five years only was a vivid addition to the suggestion of danger.

The Presumption of the Conscience Clause.

Thus the Conscience Clause, which, without this limitation, was a witness to the important fact that the case for absolute compulsion had not been made out either to the satisfaction of a Royal Commission, or to the satisfaction of Parliament, altered the whole complexion of the law. The presumption, from being rather in favour of the Conscientious Objector, was turned against him. Except for a month or two, when the flagrant contempt shown for the Conscience Clause by some Magistrates, provoked a momentary re-action in his favour, he has had short shrift from everybody. Even these Magistrates were censured less for their injustice to him than for their own bad example of resistance to the requirements of the law. Few looked into his case and asked whether he had not been more in the right in the past than his opponents, and what was the meaning and what would be the ultimate limit of the demands for more and more vaccination. But the majority, taking for granted that all the authority

was on one side—one of the fallacies of modern times—drew no moral from the increased demands of the vaccinators excepting one, and that was adverse to the Conscientious Objector. For it was that since doctors now said that we must all be vaccinated at least twice, the Conscientious Objector must be the bigger fool to set himself against even one vaccination. And not only a fool, but a danger to Society. His healthy children were spoken of as if they were bad drains, his sanitary house compared to one on fire. And it was ridiculous to argue with him. This cautious and temporary measure of exemption by Parliament settled the question. For this momentary but lamentable and dangerous aberration of Parliament amends must be made by every good citizen, who must see to the more stringent application of private compulsion.

Parliament invited to repeat its "aberration."

Amends *have* been made to an extent that Parliament has not realized, and would probably be glad not to realize if the question were one that it could leave alone. But startled as it must now be by the sudden abandonment of the "danger" theory, and by a practical invitation to renew its "aberration" of 1898 upon fresh terms—these terms being the definite incorporation in the Statute Book of the principle of "obligatory re-vaccination of school children at a specified age"—it is not to be believed that Parliament will not now hear what the Conscientious Objector has to urge on the subject of this pretended clemency. If the present presumption and spirit of the law as administered have made his life a martyrdom, if under present conditions it has been legitimate and even praiseworthy to bully the Conscientious Objector in the way suggested by Mrs. Garrett Anderson, to put him to the martyr's test, to see whether he will persist in Conscientious Objection when it is made a barrier not only to Government employment, but to all means of earning a living, to sick benefits for his children, to insurance of his life; if now under the guidance of such advisers the philanthropy of the charitable who subscribe to the Children's Country Holiday Fund is only administered to those who will first be vaccinated; if the Church assists in coercion on the faith of controverted statements and statistics supplied by one side; if the local authorities,

through whom the people can make their representations when officials are too harsh, have now been manoeuvred out of their control of prosecutions, a control previously so undisputed that it was one of Lord Salisbury's chief arguments in persuading the Lords to let the Conscience clause pass; if all this has been possible under a limited law of vaccination, what will be the Conscientious Objector's plight when the law is placed on a general presumption that obligatory re-vaccination is really essential to the public safety? The Conscientious Objector would be even a bigger fool than he is assumed to be if he viewed with favour the proposal of the Imperial Vaccination League to continue his very nominal statutory exemption with an illusory promise to work it in strict conformity with the spirit and letter of such a law. There is no fear of such a veritable "confidence trick" imposing upon him. What he waits to know is whether it will impose upon Parliament—whether Parliament for the sake of sparing time and trouble over him, will yield to such an obviously designed temptation. The Conscientious Objector trusts to Parliament to settle once for all, if it can settle, the question whether he is a "danger" to Society or not; if yes, to treat him accordingly; if not, to give him Parliamentary protection from private sentences of excommunication when he avails himself of his statutory freedom.

Let it be believed that at the hands of Parliament even the Conscientious Objector will submit to judgment and endure his punishment where he cannot conform. He only pleads that he be not delivered over without hearing and judgment to the tender mercies of a Medical Inquisition, and of Magistrates and employers who interpret statutory and common law rights not according to the doctors of the law but according to the doctors of medicine. No one who has read the passages already quoted from Mrs. Garrett Anderson, or will study in Appendix A. the contrast there drawn between the intentions of Parliament and the way in which the Act of 1898 has been administered, can doubt for a moment that the principle of exemption must either be altered or abandoned. It were better abandoned, for in a matter of this kind if there is a case for compulsion at all there should be no case for exemption. But if there is to be both compulsion and exemption the state of the controversy seems to demand that Parliament should itself not only draw the line but

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see that it is respected publicly and privately, in the Government Departments and in the public Courts, and make it illegal to threaten or disqualify, or at least to induce others to threaten or disqualify the Conscientious Objector for merely availing himself of his Parliamentary rights.



CHAPTER II.

THE LYMPH DIFFICULTY AS AFFECTING THE VACCINATED.

The most formidable obstacle in the way of universal compulsion is the lymph difficulty. It is a great mistake to suppose that this was removed by the substitution of calf lymph for arm-to-arm vaccination in 1898. The assurances which Mr. Chaplin, then President of the Local Government Board, was induced to give to Parliament on this subject in that year were in truth seriously misleading, and the fact that they were given, and were so generally accepted, has seriously aggravated a danger justifiably dreaded among the poor. It is very important that this part of the Conscientious Objector's case should be fully understood. He marvels that it is so little known and heeded.

The "Accidents" of Vaccination.

The vaccination "accidents" which are most dreaded are those horrible eruptions for which the blame is cast either on the impurity of the lymph, or on the taint of the child. And for many years, unfortunately, after it was perfectly well known in scientific circles that the lymph might be to blame (Final Report of Royal Commission on Vaccination, pars. 420 and 421),* the Local Government Board persisted in defending the lymph (Dissent from Final Report, par. 201),* and in sanctioning the circulation of an explicit assurance that the alleged injury arising from vaccination was disproved by all medical experience. Thus, in case of vaccination accidents, reproach and disgrace were cast upon the parents. After the Report of the Royal Commission, it became impossible to deny any longer that disease had been and could be transmitted from one person to another by means of the lymph. The Commission stated that "no degree of caution can confer an absolute security" (Final Report, par. 430). It was true that this particular accusation was disposed of when only lymph of fresh origin from the calf was given out of the Government Laboratories.

* These statements are quoted at the end of this volume in Appendix B.

But there was another accusation against the lymph of which nothing was said to Parliament in 1898, and of which Mr. Chaplin gave no sign of knowledge, although it formed the subject of important paragraphs, both in the main report of Lord Herschell's Commission, and in that of the Dissentient Commissioners. It was stated on the highest authority that it was possible for calf lymph to evoke symptoms so closely resembling the disease so justifiably dreaded as to lead occasionally to a difference of opinion among medical men as to whether the child was suffering from that disease, or from vaccinia. The Royal Commission's cautious references to this subject, and the startling development of this important theme by the Dissentient Commissioners, are fully set out in Appendix to which the reader has already been referred. The position, therefore, in 1898, unmentioned in the Parliamentary debates, unknown to all but close students of the Parliamentary Blue Books, unknown to people who refuse to read antivaccinist publications, unknown to magistrates, coroners, and others, to whom the knowledge was vital, was this:—Not all the accidents of vaccination which had wrongly cast a vile suspicion upon the parents of the suffering children were due to the communication of a taint from one family to another in arm-to-arm vaccination. They were admitted to be also due (although the cases were minimised and said to be rare), to latent qualities in the calf lymph. But the calf lymph had been cleared in the public estimation by the Parliamentary declarations, the public not knowing that these declarations did not go far enough to clear it. So that in the event of any accident, and especially any horrible eruptions occurring after the abolition of arm-to-arm vaccination, it would be more difficult than ever, in fact almost impossible for parents to clear themselves of the responsibility that would inevitably be cast upon them for the illness and death of their child. As it was put by Mr. Alfred Milnes in *The Vaccination Inquirer* of June, 1898, disease would still be their accusation and the calf would have deprived them of their defence.

A Painful Illustration.

An inexpressibly painful experience of this kind was undergone by a poor woman at Westcott, near Dorking, as recently as December last (1902), during an inquest on her child who had died after vaccination. It was her misfortune, unhappily, to have had in her life a secret chapter which came to the knowledge of those whose duty

it was to defend the lymph, and of a Coroner who was under the impression that the character of the lymph had been entirely redeemed by the changes of 1898. Not concealing their indignation at what in the circumstances they thought to be an unwarranted aspersion cast upon the lymph, which was blamed for the death of the child, the authorities ruthlessly brought out the unhappy woman's slip before marriage many years before, and fought for a verdict on the hypothesis of inherited disease. The Counsel for the mother (Mr. Schultess Young) desired in these circumstances to inform the jury what had happened in the Leeds case, which was investigated by the Royal Commission, and also to cite some cases showing that calf lymph may evoke symptoms resembling the suggested disease. The Coroner refused to hear this. He afterwards rebuked the antivaccinists for setting his court, or as he said, the law in motion, and threw upon them the responsibility for "dragging the woman's name in the dirt." The jury, according to the report of *The Morning Leader* found a verdict "according to the medical evidence," whereupon the Coroner said interrogatively "That is in other words, that death was due to the disease named"? The *Leader's* report continues:—"The foreman said that they would prefer not to say that; but it being pointed out to them that they could not do otherwise in accepting the medical evidence, the verdict, altered so as to ascribe death to a certain disease, was agreed to." Thus in the words of the Lord of the Manor (Mr. Evelyn, once a member of the House of Commons), "the jury returned a verdict to the effect that the death of the child was not in any way attributable to vaccination, and they sanctioned the cruel imputation that it was owing to an inherited taint from the mother." As the original certificate of the child's death was not in harmony with this verdict, and as the evidence of a doctor who had nothing to do with the vaccination was against the supposition that the mother had communicated disease to her child, the opinion of Mr. Jonathan Hutchinson, the eminent surgeon, and most distinguished expert on this branch of pathology was taken, and given in the following terms:—

"15 Cavendish Square, W., Dec. 19, 1902.—"I hereby certify that I have carefully examined Mrs. Cheesman, and heard the history of her married life. I do not think that there is any reason whatever to suspect that she has ever suffered from syphilis. I find no indications of such disease.

(Signed) JONATHAN HUTCHINSON."

It would be bad enough if the accidents of vaccination only brought such an ordeal as this woman has gone through to those parents whose conduct in early life had not been faultless. There are many people now living good lives, of whom it may not be possible to say—

“Whatever record leap to light,
He never shall be shamed.”

and vaccination is not to be popularised even by an assurance that lymph would only expose parents to such ordeals when there were records to leap to light. But the point made against cow-pox lymph, as shown by the Dissentient Commissioners in the story of the Leeds case (told in Appendix B.), is that it can bring wrongful suspicion upon those in whose lives there is no bad record. And the point made by the Conscientious Objector, and on which he rests his strongest appeal to the conscience of Parliament, is that the assurance given in 1898 has increased the presumption against any parents whose children suffer from those possible calf-lymph accidents, which were not specifically disclosed when the Bill of 1898 was before the Legislature.

No Guarantee Possible.

Mr. Long, now President of the Local Government Board, informed Mr. (now Sir George) Bartley in the House of Commons on March 1st, last year, that there was no guarantee either of the official or the unofficial lymph. He said: “It is impossible to guarantee lymph. What the Government does is to secure the greatest care in its preparation in the hope that it will prove efficacious” A similar answer to Mr. Corrie Grant will be quoted fully towards the end of this volume in the chapter entitled, “The Lymph Difficulty as affecting the Vaccinator.” So that there is still no safeguard against accidents, and it must have been remarked by the most casual readers of the newspapers that when these accidents happen the lymph is defended at all hazards. Even if parents can escape the suspicion of imparting to their children “an infection so ghastly”*

* Sir Thomas Watson, M.D., said in *The Nineteenth Century* for June, 1878: “I can readily sympathise with, and even applaud, a father who, with the presumed dread and misgiving in his mind, is willing to submit to multiplied judicial penalties rather than expose his child to the risk of an infection so ghastly.

it is found to be very hard for them to escape other imputations. When there is a Local Government Board Inspector sitting by the Coroner, and there is a vaccinating doctor whose interest naturally is to acquit himself and the lymph of any blame, every hypothesis, even to the prejudice of the parents, is welcome rather than one raising presumption against the lymph which the President of the Local Government Board has confessed he cannot guarantee, and the possible ill effects of which are even contemplated in the Vaccination Order of 1898 in the model contract for Public Vaccinators.†

Blaming the Baby.

In the case of a vaccination accident at Halifax in 1901, which fortunately stopped short of death, a Committee of the Poor Law Guardians of that borough at first decided that the sufferings of the child, Ruth Barnes, were due to vaccination and that the Local Government Board ought to compensate the parents. No imputation in this case was cast upon the operator. He was expressly exonerated, and credited with the usual care in performing the operation in the approved manner. Nevertheless the vaccinating doctor demanded further inquiry. At this the medical evidence forthcoming, while failing to decide definitely what was the cause of the undoubtedly severe injury of the child, secured the vindication of the lymph by nothing but hypothetical suggestions, the principal one being that the child herself in her restlessness might have injured her arm by knocking it against the side of her cot! In this case Dr. Creighton, who went down from London at the request of the parents to see the child, promptly recognised one of those exceptional cases of ulceration and subsequent blood poisoning which do not require to be accounted for by any mischief done to the wound after vaccination. The Royal Commission has attributed cases of ulceration "to what

† The form of Vaccination Contract in the First Schedule of the Vaccination Order, 1898, contains the following clause among others setting forth the duties of the Public Vaccinator:—"If any child vaccinated by him shall, in his opinion, require medical treatment in consequence of the vaccination, he will, if the parent or other person having the custody of the child consent, attend the child and prescribe such treatment as may be required."

is known as idiosyncrasy on the part of the child, a peculiarity of health attended by exceptional susceptibility to the specific virus of vaccinia."

The Commissioners thus admit the possibility of injury from the specific virus without any more active responsibility on the part of the child than an unfortunate idiosyncrasy. Such unexpected manifestations of virulence in congenial soil were familiar to Dr. Creighton, and he reported that this was one of those cases where the cause of the corroding ulceration and sloughing was to be sought in the nature and properties of the virus, ordinarily kept latent but capable of being roused into activity. He stated that in his book on "The Natural History of Cowpox" he had collected instances of the same kind of ulceration and sloughing from the earlier history of vaccination, and might have added many more from recent times, some of them seen by himself. The local doctors resented, and induced the Guardians to disregard this interesting and important opinion and to come to the conclusion that no further inquiry need be made, one of the grounds they gave being that had blood poisoning been set up by the vaccination itself it would have been manifest in from twelve to forty-eight hours at the outside. Now in the case which the Royal Commissioners attributed to the specific virus of vaccinia in an exceptionally susceptible child, the sufferer had what the Halifax Committee called a "normal vaccination arm" on the eighth day after the operation, and all the symptoms which have made the case historical came on some time after that day. So far from the Halifax case therefore not being one for further inquiry, such inquiry was of the utmost importance. The public interest demanded its full comparison with the cases which happened before the supposed improvement of the lymph. Another reason for not attributing this case of misadventure to the lymph itself was that it had been used in many other cases, and no injury had followed. But in the case referred to by the Royal Commission the vaccination was done by a physician who took the precaution always to vaccinate two children from the same tube of lymph but with a clean needle in each case. The child whose case came before the Commission was vaccinated first, with terrible results. The other child vaccinated from the same lymph did "absolutely well." It was upon this evidence that both the vaccinator and the Commission, having assured them-

selves that the child was not tainted, came to the conclusion that, owing to the idiosyncrasy of the child, the lymph might do injury in one case and not in another. The bearing of such experiences upon Dr. Creighton's theory of latent virulence in cowpox is of obvious scientific interest as well as of importance to parents. Yet whenever such a case occurs the supreme necessity of maintaining public confidence in the character of the lymph, and the reputation of a Department engaged in its manufacture, seem to require the sacrifice of every other consideration. Does this after all establish confidence in the lymph?

The Working Man Blamed.

A remarkably frank report regarding injury from vaccination was last year (June, 1902) presented by Dr. Stewart to the Hospitals Committee of the Metropolitan Asylums Board. Dr. Stewart acted as Vaccination Officer at Gore Farm Lower Hospital Works from March 10 to June 7, 1902. He performed 444 vaccinations, but attended in all to 587 vaccinated men, some of the men for whose treatment he was responsible having been vaccinated at the Upper Hospital before he began his work. The method of vaccination was "on the lines of that approved by the Local Government Board, every precaution being taken before the operation to thoroughly cleanse the part to be vaccinated, and to keep it subsequently as well protected and as free from irritation as possible." But each man was only vaccinated in two places, unless he had not been previously vaccinated, in which case he was vaccinated in three places. Notwithstanding this moderation and the care taken in vaccinating, no fewer than 28 per cent. of the 587 men who were treated at the station were on the sick list in consequence. The conditions which a man had to satisfy before going on the sick list are explained in the Report, to show that due and constant supervision was exercised. Thirty-five men were off work for 193 days, an average of five and a half days per case, these cases being cases of "fever and general feeling of illness, usually seen in cases which reacted or 'took well.'" But there were also 125 men incapacitated for 861 days—an average of nearly seven days each—by "septic inflammation at or in the neighbourhood of the vaccination wounds." Three serious cases were those of abscesses which incapacitated

the three men for 115 days, or an average of between thirty-four and thirty-five days each. In these cases, the Halifax doctors who attended to the case of Ruth Barnes, will be interested to learn, there was a distinct break between the termination of the inflammation and the onset of the abscess, which appeared in each instance during the time the vaccination wounds were improving, but before they had actually healed. There were also three cases of "a general pustular eczema" unfitting for work for sixty-nine days, or an average of twenty-three days per case. No complaint is made by Dr. Stewart against the lymph, which came from two sources, Faulkner's Vaccine Institution and "The Association for the supply of Pure Vaccine Lymph," Pall Mall. On the contrary, a tribute is paid to both supplies as constant and reliable in their action. Nor is it recognised that the specific virus of vaccinia operated in any of these cases, as in the case reported on by the Royal Commissioners already referred to, on specially susceptible constitutions. In accounting for the septic inflammation the conditions of work, the rubbing of the clothing "never at any time too clean," "the absence of any provision for treatment of the men's arms through the night"—a significant suggestion—and even a supposition that some of the men were seeking to be put on the sick list are the things which occur to the vaccinator. This is the passage in which the misconduct of the men is put forward. It will not make it easier for Parliament to justify Compulsory Re vaccination. The bonus referred to in the quotation was a bonus of five shillings given to the men for a time in order to induce them to submit to the vaccination.

Supcradded to these causes there was, probably, in about five per cent. of the total number treated, an utter want of care, occasionally intentional, exercised by the men in the treatment of their arms; the aim and object of these men being to get put on the Sick List, in addition to obtaining the bonus, and this they were not long in seeing was most readily obtained by neglecting their arms and only irregularly attending at the station. It was, consequently, no unusual thing to find an arm which, though discharging and inflamed either had no dressing on at all, or only one which because of its filthy state was actually harmful to it. Combined with causes such as these, there frequently was the fact that a man had been drinking more or less heavily for the previous few days. This in all cases had a most deleterious effect on the arms, and, doubtless, was frequently responsible for the onset of this inflammatory condition, a contention which is supported by the fact of its occurrence on Mondays more frequently than any other day. In no instance, however, was I in a position to affirm that the arm had been intentionally injured, as by tearing off the scabs, etc.

“Something Septic was introduced.”

In the case of Mr. Essex, a toll clerk at the Smithfield Meat Market, who died in January, 1902, only eleven days after vaccination, the doctors admitted blood poisoning. In this case the Coroner who held the Inquest was Dr. Danford Thomas. He was reported in *The Morning Leader* to have said to one of the medical witnesses—who had said oracularly that he should think something septic had been introduced, and, of course, the vaccination wounds might have been the means of entrance, “In the very exhaustive examination into this question held some years ago, it was proved that it was possible that in arm-to-arm vaccination there might have been some impurity to cause blood-poisoning. But under present conditions that cannot occur. This was not necessarily due to the vaccine, doctor?”

It need not be said that the answer was “Not necessarily,” but there was the frank addition that there were no other wounds and no evidences of small-pox. The man had suffered from a hæmorrhagic eruption, which probably rendered the last part of this answer necessary. Again, the Coroner asked a second medical witness: “If it had been from vaccination would the trouble not have come on at a much earlier date?” Neither the Coroner nor the witness was apparently aware of the Evelina Hospital case,* which would have justified a second time the answer “Not necessarily.” In this instance the answer was, “That is so.” Afterwards the Local Government Board Inspector declined an invitation to give evidence, but being appealed to by the Coroner to say whether his summary of the medical evidence was right he said, “I think it is a very fair conclusion of the matter,” adding, “I should like to draw the jury’s attention to the fact that the deceased man had left off the dressings.” But the daughter promptly denied that her father had left off the dressings. The conclusion of the inquest as given in *The Morning Leader* is as instructive as the rest of the case:—

“Then, gentlemen,” the Coroner said, “we may say that the deceased died while in a state of coma from the effects of septic meningitis, probably caused by some septic condition following vaccination. And that is your verdict?”

* The Royal Commission Case. see p. 16.

“Yes,” answered the foreman of the jury; “but we do not know the cause of the blood-poisoning.”

Then, as a sort of afterthought, they added to the verdict which they had had suggested to them the words, “and the vaccination was properly performed.”

Lymph Exoneration impossible.

In some cases it has been found impossible to exonerate the lymph, for example in that of the soldier Donovan, who died in February, 1900, from acute pemphigus, after vaccination with glycerinated calf lymph from the Army Vaccine Institute. The Financial Secretary to the War Department said in Parliament on March 13, that it was one of three cases (two fatal) and that the lymph used was from different calves. Probably this man's death is not attributed to vaccination in the Registrar General's Returns, for septic pneumonia was the secondary cause of death. As the diminution of cases of death from vaccination in the Registrar General's Returns is now being cited in evidence of the improvement of the lymph, it is important to note that even in this matter the public records are not made helpful to those desirous to get at the facts; for last year, at a time when rumours of injury from vaccination in London were common, the heading in the Registrar General's Returns “Cowpox and other effects of Vaccination” disappeared, and only “Cowpox” was retained. Thus the ordinary inquirer is now powerless to draw conclusions. Deaths from natural cowpox are very rare, and deaths from the effects of vaccination are now merged indistinguishably, when they occur, in the deaths from the different diseases that may be its “effects,” for example the several septic diseases including septic pneumonia, and meningitis, convulsions (in infants), and others, not excluding tetanus or lockjaw.

Lockjaw after Vaccination.

Although the alarms concerning lockjaw as a possible sequel of vaccination have come chiefly from America, there have also been suspected cases in this country, suspected and disputed, of course, as all vaccination injuries are and naturally will be while compulsion exists and therefore requires vindication, but yet suspected by authorities on the subject, not merely by “fanatical” objectors to vaccination. A case of tetanus following re-vaccination

was the subject of a communication to *The Lancet* of February 22 (1902). Its medical reporters collect and discuss other cases in their communication (including one that was the subject of investigation by the Royal Commission on vaccination). While the lymph is acquitted as a direct cause, the reporters of this case bring no comfort to those who dread injury, and no help to those who want a strong plea for compulsion, for they say that the "accident" (which they attribute to some obscure source of infection in the skin), could "hardly have been foreseen, and possibly could only have been prevented by adopting the same elaborate measures (extending over days) to render the skin aseptic which the surgeon employs before performing a major operation." Although in this case it is argued that all possibility of extraneous infection had been prevented, the following incidental argument in this paper by two medical men actually tells us that the vaccinator's lancet is more dangerous than the surgeon's knife:—

"Tetanus is specially common after punctured and contused wounds, and what is the vaccination wound but a congeries of minute punctures and contusions? A surgical operation could most likely have been carried out on this leg with impunity without any additional antiseptic precautions, for the clean incision of the surgeon's knife militates against the very conditions which the vaccinator's lancet fosters."

The lockjaw cases in Camden, New Jersey, gave rise to a most interesting controversy in which the Drs. Findlay, of Glasgow (the reporters to *The Lancet* of the case just mentioned) took part. When there is only one case of tetanus after vaccination the usual contention is that it cannot be the lymph that is to blame, and so Drs. Findlay had argued. But in Camden there were so many cases that a committee of experts had to be appointed to investigate them, and then this was a proof that the fault was not in the lymph, but that there must have been tetanus in the air! Whereupon the Drs. W. and J. W. Findlay remark:—

Of course the tetanus germs were in the air—they are always there more or less; but is not the logical conclusion to be derived from these facts what we have already stated, namely, that the vaccination wound offers special facilities for growth to tetanus bacillus? If atmospheric and telluric conditions were alone to blame, vaccination would not have claimed cases while injuries claimed but one case.

The reference of the last sentence is to a case of tetanus, after a gunshot wound in an unvaccinated boy. This the Camden Committee took as confirming the theory of atmospheric causes. The last word on these American cases, so far as this country is

concerned, has, however, probably been said by Dr. Joseph M'Farland who went out to the States and made a special inquiry into the lockjaw cases, and reported to *The Lancet* of Sept. 13 (1902), that the virus was to blame after all, but it was impure virus, and greater care in the preparation in the lymph is the way to avoid such disasters. To show the difficulty that such accidents must place legislators in when deciding between doctors and other good citizens on the question of compulsion one single comment of *The Vaccination Inquirer* on this subject may be quoted. Accepting Dr. M'Farland's report as justifying its previous sneers at the atmospheric and telluric conditions theory, it remarks: "The only evidence of bias we can see in this report is a bias against anti-vaccinators, the people who are misguided because they do not choose to run risks of tetanus, or any other risk of vaccination."

The Reputed Lockjaw Case at Hackney.

The Bishop of Stepney at the first meeting of the Imperial Vaccination League attributed to "a few cases with unfortunate consequences" the success of the anti-vaccination movement in the East End, where "the ingenuity, the pertinacity, and the widespread success of those who engineer it" astonish him. It may be pointed out in passing that this mode of referring to a movement that confessedly owes its strength to vaccination "accidents," is a striking confirmation of the Bishop's own avowal that he placed his reliance on expert opinion. If "engineering" is the proper word to use, it is as well to note that one of the most active of the engineers is a man of deep religious conviction, one whose life is as exemplary as any prelate's, and whose self-vindication, and his reply to the Bishop, will be mentioned presently. Perhaps among the cases to which the Bishop referred was one of those suspected cases of lockjaw which agitated Hackney at the beginning of last year. A child of eight years, who had already been vaccinated in infancy (Harriet Stow), died after re-vaccination with the Local Government Board Glycerinated Calf Lymph. The child's jaws were certainly locked. They could not be opened for the administration of nourishment. The doctor, who was called in, said at the inquest:—

"I should say the child died from pneumonia. There may have been tetanus or there may not, and if there were it is also impossible for me to

say if it was in connection with the vaccination. The clenching of the jaws was only among the first symptoms of tetanus; in the deceased the other general characteristics were absent. It was impossible for the lymph to have caused tetanus."*

The Coroner remarked that a stiff jaw was not a usual symptom of pneumonia. The doctor replied that the symptoms were somewhat contradictory. The Coroner said to the jury that he doubted whether they could give any definite verdict. In the end they brought in "Natural Causes," and added that these had "no association with vaccination as far as the evidence before us goes." But the Bishop of Stepney probably knows that this is not the general verdict of the East End, where other deaths said to be due to "dermatitis" and other diseases with names much more familiar to the Local Government Board inspectors than to the people are also unhesitatingly assigned, rightly or wrongly, to vaccination. If this impression should be wrong, and it is desired to remove it, may it be said without evoking indignant protests at fancied reflections on public officials, that it would be well to have the Coroner assisted by other Inspectors than those whose business it is to stimulate vaccination and to insist on vaccinating officers prosecuting the people who are in default under the vaccination laws? It is not considered an unreasonable or insulting thing to demand in any other inquiry that the investigators into the suspected causes to be declared or absolved should be absolutely disinterested and therefore of open mind.

The Conscientious Objector's testimony.

Even if it were possible, as it is apparently not possible, to clear the lymph entirely, and to assume that in every case where the vaccination went wrong the fault lay somewhere else, that the blood poisoning was not due to the lymph but to some septic matter obtaining entrance at the vaccination wounds, it would still be impossible to answer the Objector's simple rejoinder that had there been no vaccination there would have been no blood poisoning and no death. One of the services done to the Conscientious Objector, quite unintentionally, by the magistrates

* From *The Morning Leader* Report, January 30, 1902.—This journal gave a special report of the inquest.

who have submitted him to a hostile catechism from the Bench has been to pile up an accumulation of popular complaints against vaccination. It has also revealed what is of some importance in a self-governing country, the strength of the feeling on this subject. To this by the way there is further, and thought-stimulating testimony in the anxiety of some compulsionists to take the power of controlling the vaccination law out of the hands of local authorities which are too responsive to public opinion. But reverting to the experience of the Justices during these last four years, it is in many cases that of Lord Spencer, who said in the debate on Lord Newton's Bill last year: "The strength of the feeling displayed by Objectors who came before the Bench of Magistrates had been to him a perfect revelation." Experience of injury from vaccination has been the leading motive of most of these applications for exemption, and many Magistrates do not seem to have realised that while they were busy cross-examining Conscientious Objectors they were daily bringing into prominence the fact that the lymph had not yet won public confidence. Is it possible for Parliament to make compulsion more stringent, or to legalise compulsory re-vaccination while these difficulties as to the lymph are still unsurmounted. Do not Lord Salisbury's words in 1898 still apply?

Lord Salisbury on the fear of injury.

He assumed the beneficence of the law, he assumed that the reasons for the apprehensions of the people would be removed by the new lymph, but he ridiculed the idea that there was nothing then to do but go on with coercion on the assumption that immediately on the adoption of some new process, and the mere assurance that it was free from the evils of the old, the resistance with which they had to deal would disappear. He warned the Peers that the feelings which were worked upon were the deepest, the tenderest, the most tenacious and difficult to overcome of any in the whole range of human sympathies. Then he said: "It is idle to tell me that the people are wrong, or that they are deceived; as long as they have feelings they will resist. They are Englishmen, and it is no use to quote to me the precedents of India and Ceylon to show the way in which their prejudices are to be overcome."

A New Lymph already wanted.

Lord Salisbury's reference to the "mere assurance" regarding some new process suggests the prescience of the seer. The process is not perfected yet. The last Medical Supplement to the Local Government Board Report intimates that search is being made for a substitute for that glycerine which was so strongly recommended to the public in 1898, a medium being wanted that is "more competent to eliminate from the lymph extraneous micro-organisms, and more free also from that ultimately deleterious effect on the activity of vaccine, which is apt to result from long-sustained association of the lymph with the glycerine." But of that subject more will be said in another chapter.

The Railway Accident Analogy.

It has been said by Lord Herschell's Commission that, after all, the accidents from vaccination bear an infinitesimal proportion to the number of successful and apparently harmless vaccinations, that the risks of railway travelling are much greater than the risks of being vaccinated. This might be relevant to an argument in favour of vaccination. Is it relevant to an argument on compulsion? Even although nobody disputes either the necessity or the advantage of railway travelling, there is no law compelling any free man in the United Kingdom to incur even the trifling risk of a railway accident. When Parliament is asked to compel every father to submit his child even to an infinitesimal risk the necessity must be overwhelming, and the advantage certain; and both must be proved. The answer has yet to be found to the remark of the conscientious objector who was told by Judge Bradbury that only one child in so many hundreds was liable to suffer from vaccination. "I do not know," said the applicant for exemption, "that my child may not be that one." Had it been a question of running the risk of wounds or death on the battlefield, where his country's existence or its honour was at stake, this man's sacrifice, as he deemed it, of his child would still in this country have been voluntary. And yet, is there anything like so strong a case for compulsory vaccination as there is for conscription?

CHAPTER III.

THE RELIGIOUS DIFFICULTY AND SANITARY OBJECTION.

The religious difficulty in the way of compulsion will hardly encounter the same impatience in Parliament, where religious objections are always regarded as entitled to respect and consideration, as it sometimes meets with in journals where the trouble is not even taken to distinguish between one set of Conscientious Objectors and another, and antivaccinators and "The Peculiar People" are bracketed together. The antivaccinators on religious grounds have a far stronger case than "The Peculiar People." Antivaccinators do not deny to their children the assistance of the physician when they are ill. The majority of them are ready to admit that when there is a dangerous disease in their houses they must submit to the house, and the patient, being dealt with under the law so far as is necessary for the general protection, like a house that is insanitary in any other respect. What the Conscientious Objector does demur to is the assumption that his sound and healthy child shall be deemed insanitary and a dangerous nuisance. He stands on far surer religious ground than the Peculiar People when he quotes from his Bible: "They that are whole need not a physician, but they that are sick." He blesses the sanitarian, and both preaches and practises sanitation; but he resents those pretensions by which insidiously, in the name of "preventive medicine," a part of a profession whose business it is to cure disease, claims dominion over the healthy, declares them a danger to Society, until they have accepted a periodical dose of artificial disease by insertion of unguaranteed lymphs, counsels their ostracism if they claim the exemption which the law allows, and seeks (and in too many cases obtains) the assistance of the Church in this policy of excommunication.

Even religious scruples may be overborne by Parliamentary enactment in case of national necessity; but Parliament will require a most powerful inducement and irresistible proof of necessity before over-riding the scruples of men like the leader of the East End antivaccinists. Writing to the Bishop of Stepney, after the

Imperial Vaccination League Meeting, this leader expressed surprise that the Bishop should oppose his people on this subject, because of his reliance on expert opinion. "Many thousands of men and women in your diocese," he said, "regard vaccination as a sin, and it will astonish them to read the words of their spiritual father that in regard to vaccination you let others think for you." The writer of this protest, Mr. John Brown of Stepney (as indicated in the preceding chapter), is himself a Conscientious Objector on religious grounds, but also from study forced upon him in a way which he has recently himself described in a letter to old co-religionists in Scotland. Such letters published there, as this has been (in a recent issue of *The Ardrrossan and Saltcoats Herald*), will not make the work of the compulsionists easier even in that comparatively orthodox part of the kingdom.

An East End Religious Objector's Story.

The following is Mr. Brown's narrative. The reader may think as he pleases regarding the conclusions which Mr. Brown has formed on vaccination after a study of the writings in its favour. With the merits of vaccination this chapter has nothing to do. The question is how Parliament proposes to deal with men—God-fearing men and useful citizens—whose conscientious belief is expressed in this way:—

Up to fifteen years ago I was, like most Scotsmen, a firm believer in vaccination, on the ground that it was a medical question, and one that doctors had best means of knowing. All my children were vaccinated, and so strongly did I hold my views that I would not attend any meeting against vaccination.

Fifteen years ago I was elected a member of the Mile-End Board of Guardians. The vaccination question was not mentioned during the contest, but at the first meeting of the new Board, the vaccination officer brought up a list of 300 defaulters, and asked for the Board's instructions in order that he might prosecute them. Then a very surprising thing happened. Four newly appointed Guardians rose and avowed themselves amongst the 300 defaulters. Now these men were not drunkards, nor wife-beaters. On the contrary, they were exemplary men. One was a lay-preacher; two were deacons of Congregational Churches, and one was a deacon of a Baptist Church. They were all men eminently religious: men greatly esteemed by all who knew them. To the attack made upon vaccination by these men no one at the Mile-End Board had any answer. They attacked vaccination on religious and sanitary grounds, and they stood up for liberty of conscience in this matter even as in religious matters. The names of some of the Noneonfor-

mist places of worship added peculiar force to their appeal, for we have a Latiner Chapel, a Wycliffe Chapel, a Coverdale Chapel, and a John Knox Church in Stepney.

The Mile-End Board unanimously voted against compulsion that day, but I cannot say that my faith in vaccination was one whit shaken. It was five years before I began to study the question for myself, and during these intervening years had I been asked I would probably have delivered myself thus: "There must be something good in vaccination else the doctors would not uphold it."

In 1893 I could no longer keep the question at arm's length. The number of the Mile-End defaulters had increased to 8,000, and the Guardians were taken to the court of Queen's Bench by pro-vaccinists, charged with refusing to enforce compulsory vaccination. The law was kind to us, and we came off with flying colours, but there was a time when a long term of imprisonment and a heavy fine were regarded as certainties for all the Guardians who had voted against prosecution. It was then I set myself to study the vaccination question for myself, that I might rightfully go to prison.

The study of the question was a tremendous revelation to me. When I read Jenner's own words, in which he told how the fetid disease horse-grease was the origin of vaccine lymph; how the loathsome disease cow-pox, with its gangrenous ulcers, in addition to the horse-grease, was the channel by which "lymph" used in vaccination was obtained, no words can express the horror and disgust which filled my mind. Yes, I was ready to go to prison, and stay there for a long time, if by so doing attention could be so focussed on this ugly, and awfully impure, method of fighting a disease which is amenable to cleanliness. Reading the story of vaccination down the intervening years, as told by pro-vaccinists, my feelings were intensified. A whole multitude of unclean and sinful experiments, each one seemingly more vile and filthy than those which preceded it, stretched from the year 1801 down to the time when I was looking into the nauseating business. Worst of all were the specious promises which led to the passing of a compulsory law, not one of which promises dare now be made.

In the following year (1894) the Registrar-General's figures showed that fewer children under one year died in Mile-End than in surrounding districts where vaccination was enforced.

In 1895 a little child died within a stone's throw of my house, and the certificate of death gave vaccination as the cause. The child had been exceptionally healthy, but blood poisoning followed vaccination, and after three weeks' terrible suffering death put an end to the hopeless struggle. In 1896 the Report of the Royal Commission on Vaccination appeared, and there it was plainly seen that small-pox matter was actually put into calves in order to get what is libellously called "calf lymph." Then followed the late Dr. Cory's book (Dr. Cory was head of the Government calf lymph establishment), "The Theory and Practice of Vaccination," in which accounts are given of some of the leading lymphs which were obtained by inoculating calves with small-pox.

Next followed Dr. Monckton Copeman's book, "Vaccination : Its Natural History and Pathology," in which a whole series of instances are given in which small-pox, and only small-pox, is given as the origin of calf lymph. More recently still, Dr. Copeman has experimented on monkeys, and, after giving monkeys small-pox, has taken the matter from the sores in the monkeys and thence put in into calves.

The latest pro-vaccinist word is that vaccinia can be evolved from small-pox.

From first to last the whole business is inexpressibly loathsome; it is wanting in humanity, both in regard to calves and to children, and it is grossly insanitary.

I am sure of this, that if my Kilmarnock friend sat down and looked into this so called pure calf lymph business, he would do as I did, viz, he would register a vow in the presence of the Lord, that so long as he lived he would do all in his power to end that which is only fit for debased Pagans, and which would smirch the good name of an average heathen. A more unchristian practice than that of vaccination could not be imagined, and the worst of it is, that it is practised upon the little ones who know not their right hand from their left.

I became an anti-vaccinator because I came to know that vaccination is an evil practice, on which it would not be possible to ask God's blessing.

I am working for the coming of the time when the diseases that are caused by uncleanness shall go the way of the plagues and pestilences of the middle ages; for the time when it will be deemed a crime to attack health and sow disease in the human frame.

That time is nearer than pro vaccinists think.

The spirit of that narrative of a convert to anti-vaccination is the spirit to be reckoned with in calculating the probabilities of a successful policy of compulsion, the spirit which Lord Salisbury had in his mind when he advised those who wanted to throw out the exemption Clause to "make an armistice" and not "renew a dangerous contest."

Mr. Herbert Spencer and the Conscientious Objector.

The scruples of the religious objector have been strongly reinforced by the argument of a philosopher whose writings have great influence in this country. This will undoubtedly command the respect of Parliament. Mr. Herbert Spencer, in his last collection of essays "Facts and Comments" puts a point which needs to be considered in connexion with the Royal Commission's suggestions concerning what seemed to them to be the comparative smallness of the risk of injury. He says:—

"It is held that the immunity produced by vaccination implies some change in the components of the body: a necessary assumption. But now if the

substances composing the body, solid or liquid or both, have been so modified as to leave them no longer liable to smallpox, is the modification otherwise inoperative? Will any one dare to say it produces no further effect than that of shielding the patient from a particular disease? You cannot change the constitution in relation to one invading agent and leave it unchanged in regard to all other invading agents. What must the change be? There are cases of unhealthy persons in whom a serious disease, as typhoid fever, is followed by improved health. But these are not normal cases: if they were, a healthy person would become more healthy by having a succession of diseases. Hence, as a constitution modified by vaccination is not made more able to resist perturbing influences in general, it must be made less able."

Vaccination and "morbid" conditions.

The Conscientious Objector who quotes Mr. Spencer cannot be silenced by the objection that Mr. Spencer's authority, even although he has written "The Principles of Biology" is not to be put in this matter before that of the medical profession, for then the Conscientious Objector simply produces medical opinion in endorsement of this philosophical view. He quotes the late Sir James Paget, who, although he signed the majority Report of the Royal Commission, is their authority for the statement (in his celebrated Lectures on Surgical Pathology) that morbid changes in the blood follow the insertion of the virus of disease, and that untoward results of vaccination are "probably only examples of a general rule that a part" (of the body) "whose natural force of nutrition is in any way depressed is, more than a healthy part, liable to become the seat of chief manifestation of a general blood disease." Such a partial condition of depressed nutrition, it was also held in these lectures, was very favourable to the manifestation of constitutional disease. If a citizen of Mr. John Brown's calibre says he must resist at all costs, and help others to resist, a proposal that he should periodically effect a morbid change in his blood by vaccine, and welcome a specific poison, what reply is possible? Can Parliament say that he must conform, or say that he should conform in such emphatic tones as to give Mrs. Garrett Anderson's suggestion of excommunication a practical sanction? The Conscientious Objector sometimes quotes the late Dr. Farr, who in discussing zymotic diseases said with all his great authority:—

"The primary object to aim at is placing a healthy stock of men in conditions of air, water, warmth, food, dwelling, and work most favourable to their development. The vigour of their own life is the best security men have against the invasion of their organisation by low corpuscular forms of life, for such the propagating matters of zymotic disease may be held to be."

Dr. Farr added "Vaccinate by all means" but he always gave vaccination a secondary place. That it should now be given the first and by some zealous organisations the first and even the only place has raised up by the side of the Conscientious Objector men who are alarmed at the subordination of the broader policy which strikes at the root of all zymotic diseases. Men naturally consider that they are standing upon their indefeasible rights when they claim that they are only preserving "the vigour of their own life." The motto of the National Anti-Vaccination League is a passage from the writings of Professor F. W. Newman contesting the right of any lawgiver to forbid perfect health. Put in that way, it is easy to see how strong the forces must be that derive their strength from the belief that Newman was right when he said: "The law is an unendurable usurpation and creates the right of resistance."



CHAPTER IV.

IS COMPULSION NECESSARY?

Mr. Herbert Spencer's question, and the other opinions of thinking men cited towards the close of the last chapter, lead to the question: Is it really necessary, in order to keep smallpox under control and finally extirpate it, that everyone should be compelled to accept vaccination at least twice in childhood and perhaps periodically thereafter? It will be convenient to consider this question on the hypothesis of the vaccinators, keeping in suspense further contentions of the Conscientious Objector as to the lymph, since it is impossible to have these dispassionately considered so long as it is supposed that the abandonment of compulsion means the increase of smallpox. The question whether compulsion is necessary has been forced on the attention of the Medical Officer of Health for Leicester (Dr. Millard) because in that town, neither the Orders of the Local Government Board, nor the Decrees of the Supreme Court have made any great difference to the quiet determination of the Leicester people never to try vaccination again.

Leicester's Experience.

Mr. Millard, although a strong believer in vaccination, informed the Health Congress at Exeter last August that Leicester's experience suggested that the danger of smallpox, supposed to arise from the presence of a large unvaccinated element in a community had been somewhat overrated, so far as casual importations were concerned. As a believer in vaccination he was less concerned about the past neglect of vaccination in that town than about the intense local prejudice, as regards it, which he feared would prevent the people availing themselves of it even in the face of an epidemic. Such prejudice he attributed to its attempted enforcement (although he will learn from the evidence given before Lord Herschell's Commission that disappointing epidemic experiences and vaccinating disasters were the primary causes) and he assured his audience that compul-

sion had utterly failed in Leicester. While personally believing in the connexion of German immunity from smallpox in recent years with a drastic re-vaccination law, he dismissed such a scheme for this country as outside practical politics ("for Germany is not England") and advocated rather an extension and modification of the Conscience Clause of 1898, so as to make the loophole for the objector to vaccination on principle "as easy as possible." Then came this remarkable declaration which is exactly relevant to the question now before the reader:—

"The question must also be considered, however, owing to the perfection of our municipal machinery for preventing the spread of smallpox by other means than vaccination, a time is not arriving when compulsory vaccination will cease to be any longer absolutely necessary; for, it is only so long as such necessity exists that compulsion remains justifiable. It must never be forgotten that vaccinia is, after all, a disease, and those of us whose profession it is to prevent disease should be ready to abandon it at the earliest possible moment consistent with the public safety. The control of disease by the substitution of one disease for another, whilst it may be expedient, can never be regarded as an ideal method; and, whilst I fully recognise the immense and lasting utility of vaccination under certain circumstances (*e.g.*, after exposure to infection), I venture to suggest that universal compulsory vaccination need only be regarded as a temporary expedient. Whether the time has yet arrived when the compulsory law could be entirely relaxed I am not prepared to say, but in the meantime I certainly think we should endeavour to learn all we can from the experience of such towns as Leicester, and of such countries as Switzerland, where the experiment of abandoning compulsion has already been made."

A Derby Doctor's Opinion

The same considerations have forced themselves upon Dr. Rice of Derby, who, although like Dr. Millard, a believer in vaccination wrote in *The Derby Daily Telegraph* of Dec. 24:—

"The whole question of vaccination requires to be reconsidered. It may have been necessary when the Acts were first passed and smallpox was ever present to insist on infantile vaccination. I am not sure that in these days of notification, isolation and disinfection, together with the gradual disappearance of 'slums' the necessity of infantile vaccination is so pressing. I would rather wait until the children had got through the little ailments many of which have been put down to vaccination."

Another recent opinion *à propos* of a vaccination crusade in the Colony of New Zealand is that of Dr. Bakewell, who also from the point of view of a believer, and with the authority of

his former experience as Vaccinator General of Trinidad, and Physician of the Smallpox Hospital there, wrote to *The New Zealand Herald* of September 16th last:—

It is a strange thing that every vestige of the pathology that was taught in Jenner's time has been abandoned as false or injurious and yet we persist in artificially producing by inoculation a single eruptive fever, entirely ignoring the whole teaching of modern science that the eruptive fevers are the results of insanitary conditions or modes of life, and can be entirely prevented by putting the population under proper sanitary conditions I see nothing but an act of needless cruelty in inflicting on a perfectly healthy babe in this Colony at the present time an acute febrile disease like vaccination.

Dr. Bond a Witness to Isolation.

Even that high priest of Vaccination, Dr. Bond, of the Jenner Society, in one of those candid moments in which he astonishes both sides of the controversy, has said:—

“If we could make one, and in this respect the most important branch of our “sanitation,” namely, isolation, perfect, we might dispense with vaccination, or at any rate might relegate it to the position of those works of supererogation, which may be safely left to individual conviction to perform or neglect as it may feel expedient.”*

The Local Government Board Relies on Isolation.

Professor E. M. Crookshank, in concluding his evidence before the Royal Commission on Vaccination (Fourth Report, p. 123), and drawing an important distinction between inoculation of the healthy, and inoculation to counteract disease, expressed the opinion that the system of universal protective inoculation of healthy individuals had had its day; and also that “the chance of any person being infected with smallpox is infinitesimally small when notification and isolation are conscientiously carried out.”

In its latest Report (Supplement for 1900-1) the Local Government Board reprints a copy of a memorandum prepared or revised by the Medical Department it issued to local authorities on the provision of isolation hospitals. It says:—“The most important function which such a hospital serves is that of the isolation of the first cases of infectious disease, with a view

* Story of Gloucester Epidemic, p. 72.

to preventing its further spread into the household or locality invaded." Sir James Simpson laid it down in 1868 that isolation was the first and leading measure required to stamp out small-pox. It seems to be flat heresy in the eyes of the Medical Department to say that now-a-days, yet their own anxiety on the subject of isolation hospitals and of the isolation of first cases, shows that Sir James Simpson's view prevails in practice whatever other doctrine be preached; and it is easy to cite official admissions that we have often owed our salvation from small-pox epidemics to this recognition of the necessity of separating the sick from the healthy in the case of infectious disease.

The Convincing case of London.

The most striking of these admissions refers to the case of London: Even without these confessions London's indebtedness to something else than vaccination for the remarkable diminution of smallpox is demonstrable by the most clear and convincing proof. The fuss that has been made in London about the outbreak in London in 1901-2, is the best testimony that could be given to the rarity of smallpox in London in recent years. The London smallpox death-rate was 50 per million living in 1901, and 287 per million living in 1902. The larger of these rates was exceeded five times in the ten years immediately before 1886, without exciting any great alarm; the lower rate was exceeded in nine of these ten years. A sudden change came about in 1886—a change all the more remarkable because it synchronised with, and lasted throughout a period of decline in vaccination which was arrested by the Act of 1898. (It is rather curious that it is since the increase of vaccination, and the domiciliary visitation of the Act of 1898, that the Metropolis has been revisited by an epidemic of smallpox, and that the London epidemic was preceded by one in Glasgow, which city a short time before was said to have adopted vaccination and re-vaccination to an extent unparalleled in any other locality."* The Act of 1898 did not apply to Scotland, but domiciliary vaccination is the rule there.) The following table, constructed from the Registrar General's Annual

* Letter of Sir J. B. Russell, February 5, 1897. See McVail's Review of the Dissentients' Statements, p. 120.

Reports, contrasts the London smallpox mortality during the thirteen years of declining vaccination, 1886 to 1898, with the previous years, back as far as 1847. It should be borne in mind that the first compulsory vaccination Act was passed in 1853, and that other Acts increasing the stringency of the vaccination law were passed in 1867, 1871, and 1874.

London Smallpox death-rate per million living in four periods of thirteen years from 1847 to 1898.				Percentage of Children born in 1886-98 not accounted for in Vaccination Returns.
1847-59.	1860-72.	1873-85.	1886-98.	
427	323	34	6	7·8
724	77	17	2	9·0
229	128	13	2	10·3
215	687	207	0	11·6
448	185	710	1	13·9
478	214	388	2	16·4
86	457	121	10	18·4
277	436	125	48	18·2
408	190	619	20	20·6
204	87	111	13	24·9
59	302	35	2	26·4
90	2422	313	4	29·1
425	537	357	0	33·0

No one looking at that table can fail to see at a glance that some new and persistent factor must have come into play in 1886. There is no alternative explanation, unless, indeed, the decline of vaccination is connected with the decline of smallpox. What was the new factor? It was something that began to operate immediately after 1885. Now, towards the end of that year the Managers of the Metropolitan Asylums Board took a resolution thus referred to in their Report for 1891:—

“The outbreaks (of smallpox) were limited in their scope, and were effectually checked by the removal of cases to the floating hospital at Thames Reach. The Managers’ decision in 1885 to maintain an hospital always ready for patients, and to remove thither direct from their homes all smallpox cases able to bear the journey, has been repeatedly justified.

This quotation from the Report of 1891 is made first, because of its explicit reference to the resolution of 1885, and the acknowledgment that in the intervening years it had been “repeatedly justified.” But the earlier reports take note of the immediate

results of this new factor of isolation. Two years after the resolution, one after it had been fully in operation, it was referred to; and in the 1889 report appeared the following:—

“These very satisfactory results confirm the view taken by the Committee two years ago to the effect that the rapid and systematic removal from overcrowded districts of infected persons, each of whom might have become a centre of contagion, is an important factor in stamping out smallpox from the Metropolitan population. The notification of cases will also greatly facilitate the action of the Managers in this direction.”

The last sentence is a reference to the Notification Act then about to be made law for London. By 1890, the Metropolitan Asylums Board was surprised at the length of time which had passed over without an alarming amount of smallpox. Dr. Birdwood, then Medical Superintendent, spoke of “the prolonged immunity of the Metropolis from an epidemic of smallpox,” and said it was “the consequence of the wise measure of isolation determined on by the Asylums Board five years ago.”

The Isolation Factor in the London Epidemic.

It has been said that the revival of smallpox in London in 1901-2, after such a long period of comparative immunity, was due to the accumulation of unvaccinated persons. When Lord Newton's Bill for the precipitate abolition of the Conscientious Objector was before the House of Lords last year (1902), the late Lord Pirbright expressed the opinion that the epidemic was “materially increased” by the Conscientious Objector's statutory recognition. Both these suggestions have been officially discountenanced. Lord Balfour, of Burleigh, on behalf of the Government, said that there was not the slightest evidence to prove that either this epidemic, or any other occurring since the Act of 1898 was passed, was due to the legislation of that year; and Dr. Ricketts, now Superintendent of the Smallpox Hospitals, in a report published in the daily papers of September 24th, attributed the “somewhat unusual experience” of 1901 to repeated mistakes in diagnosis, and added that the most part of the cases that occurred in London in 1901 might have been prevented very readily. His remarks confirm the view that the system of notification and isolation properly worked would have averted danger, and he says:—“It is unfortunate that medical men as a rule do not

conceive it to be their duty to notify all cases where a diagnosis of smallpox appears to be not only possibly, but probably the correct one, and to allow the responsibility of deciding as to the disposal of such cases to rest with the Managers." Those who think that the neglect of vaccination had something to do with the epidemic of 1901-2, would still have to admit that the figures of the outbreak bear most eloquent witness to the important part played by the isolation method in controlling the smallpox. Even accepting the hospital classification (which, however, it must be remembered is based upon principles which antivaccinists dispute, and dispute with plausible reason as will be later shown), there were for 1901 only 192 cases of unvaccinated children under 10 in the hospitals, out of the vast accumulation of such children in the ten years. Moreover, out of a total of 1,743 patients of all ages, no fewer than 1,282 were acknowledged vaccinated. No figures for 1902 distinguishing between vaccinated and unvaccinated had been issued up to the middle of January this year. If any are forthcoming before this volume is in the press, they will appear in the Appendix.

The Medical Officer of Health for Kensington, Dr. Orme Dudfield, appended to his Report, No. IX., 1902, a retrospect of the epidemic as far as his borough was concerned. In this document isolation is placed "in the first rank of measures for the prevention of spread of disease," and it says this was secured in nearly every case by the removal of the patient to hospital. "The patients were removed in every case in the ambulances of the Asylums Board, with a promptitude altogether commendable—many of them at night." The room or rooms were disinfected without loss of time, and the bedding removed. In no instance was there any spread of the disease suggesting that the disinfection had been ineffective. Those who had been in contact with the disease were kept under observation. Dr. Orme Dudfield further says :—

"Through the intermediary of the Medical Officer of Health of the London County Council there was daily intercommunication between the borough medical officers of health, which kept each fully informed of the occurrence of illness in their districts of the Metropolis. The Asylums Board, moreover, forwarded to each medical officer daily a list of deaths and discharges at the several hospitals; and weekly, a list of cases admitted, embracing a short history of each, indicating where possible, the source of infection."

That is but one of many accounts of the organisation now at work to prevent the diffusion of disease in the Metropolis. They naturally lead to the conclusion formed by an obviously well-informed writer, signing himself "An Inquirer," in *The Times* of December 2, 1901, that isolation and sanitation instead of being our second line of defence is our first and only trustworthy one. "Those who are never exposed to infection cannot take smallpox whether they are vaccinated or unvaccinated." The same writer urged in *The Times*, in an earlier letter, that it was surely obvious that where there are no centres of infection there can be no spread of smallpox whether people are vaccinated or not. This leaves still open the question of the compulsory vaccination of those who are necessarily brought into contact with smallpox cases as part of their daily business, doctors, nurses, and sanitary officials. But it may perhaps already be admitted, that there is something to be said against the necessity for keeping smallpox at bay by the drastic method of universal compulsion to vaccinate and re-vaccinate. At this point, however, we are still dealing, not with the question of vaccination *per se*, or compulsion in particular cases, but with the issue whether it is impossible to fight a disease like smallpox without giving disease artificially to every child in the land and repeating the performance at intervals under legal penalty or lawless excommunication. At this point it will be convenient to glance at the argument from Germany, on which great stress is laid by Mrs. Garrett Anderson and The Imperial Vaccination League.



CHAPTER V.

THE ARGUMENT FROM GERMANY.

It is persistently urged that the immunity of Germany since the adoption of her re-vaccination law affords a justification for universal compulsion, and ought definitely to close the mouth of the Conscientious Objector. The object being to stamp out smallpox, it is held that by co-operation with Germany in an equally rigid law of re-vaccination, Great Britain and other nations would realise the dream of Jenner and finally extirpate the disease by a quicker and cheaper method than the universal establishment of costly isolation hospitals. But if this argument is to enable Parliament to muzzle and coerce the Conscientious Objector, with a clear conscience of its own, it will be necessary to prove that it is by re-vaccination that Germany has found her salvation, and not by isolation machinery. At present it is the habit of those argumentative persons, who, like the Conscientious Objector, think for themselves and refuse to come under the dominion of the *chose jugée*, to claim that they have a little Germany in Leicester, which in this issue, is at once a parallel and a contrast.

Leicester and Germany.

Re-vaccinated Germany gets smallpox cases from surrounding countries with less stringent vaccination laws (so runs the argument) but they never get far beyond the frontier. Hail! re-vaccinated Germany. Unvaccinated Leicester, as a Midland town, has, for many years past, been invaded by sporadic cases of smallpox brought in by tramps ("mostly vaccinated," as Professor Crookshank has pointed out), from surrounding counties with orthodox views on vaccination, or from London, and they have been successfully prevented from bringing on this largely unvaccinated community the oft-predicted decimation. Hail! unvaccinated Leicester. Mr. Millard, the Medical Officer of Health, and Mr. Alderman Windley stated the facts to the Exeter Health Congress;

and of those facts the most important is—not the easy stamping out of the smallpox when it comes, important as that fact may be—but that the adoption of a method striking not at one disease, but at all zymotic diseases, reduced the general death-rate of Leicester from close upon 27 in the 1000 in 1872 to a fraction less than 16 in the 1000 in 1901. While this book is in preparation, the Leicester system is undergoing another test. Through some relaxation of vigilance, or owing to the mildness of smallpox in a town fortified by good sanitation against conditions favourable to zymotic disease in a virulent form, there are more cases in Leicester at present than have been known since 1893. As far as can be judged at the time of writing, the Leicester system is as likely to prove equal to the emergency now as it was then, when the community congratulated themselves upon the fewness of their cases, and on having only one twenty-third of the deaths recorded in the previous epidemic year of 1872 before their revolt against vaccination. If Leicester were left unmolested, the respective experiences of Germany and of this Midland town would in time constitute a decisive control experiment. Such experiment is hindered by the persistent attempts of the Central Government to force vaccination upon Leicester; but so far as it has been possible to recognise such an experiment as in progress that experiment does not allow conclusions as to re-vaccination. If it should ultimately be found that isolation is the real cause of the reduction of smallpox in both communities Mrs. Garrett Anderson must consent to make a present of her argument from Germany to the opposition, or National Anti-vaccination, League

Germany's Isolation Arrangements.

As it happens, Germany's isolation arrangements are much more stringent than our own, and in one respect her vaccination law is less harsh. Our vaccination law contemplates vaccination not later than six months of age in theory; in practice no age is considered too young, some children being vaccinated as soon as they are born if an epidemic affords an excuse for the operation.

In Germany, compulsory vaccination is not operative before the second year of life. The first book of popular reference to which one turns, the *Conversations-Lexikon* of Brockhaus (1895

edition) puts the "immediate and strict isolation of the patients" in the first rank of measures for the management of smallpox; while in the article on Isolation we read:—

Isolation, as a medical term, means the location of patients in separate places, hospitals, or even only separate nursing rooms. It is chiefly resorted to in the treatment of violent maniacs or infectious cases. While in the first named employment, its use is limited as much as possible, and certainly not to the detriment of the patients, in the second it has in recent times been more than formerly regarded as necessary for preventing the spread of infectious disease; and in nearly every large town Isolation Hospitals, particularly for smallpox and cholera, have been erected.*

Dr. Carlo Ruata, Professor of Materia Medica in the University of Perugia, one of that increasing band of medical men who, on emancipating themselves from the *chose jugée*, and entering on original research into vaccination, have renounced their former faith in it, stated in a public address at the opening of the session of his University in November, 1898, that the Prussian Government was alarmed at the recrudescence of smallpox some years after the passing of their more stringent law of re-vaccination, and had immediate recourse to increased stringency in regard to isolation. He quotes the following enactment of 1883:

"The local police shall include isolation for smallpox of the entire house as well as of the chamber where the patient lies. This isolation shall be continued after removal of the patient to hospital and until all medical measures of disinfection shall have been carried out. Anyone wilfully disregarding these orders will be punished with imprisonment."

Professor Ruata adds: "Ever since this enactment has been in force smallpox has almost disappeared from Germany; of

* In der Medizin versteht man unter Isolierung die Unterbringung Kranken in besondern Anlagen, Spitälern, oder auch nur besondern Verpflegungsräumen. Die Isolierung wird hauptsächlich angewandt bei unruhigen Geisteskranken und bei ansteckenden Kranken. Während man die erstere Verwendung möglichst einschränkt, gewiss nicht zum Schaden der Kranken, hat man die letztere in jungster Zeit mehr als früher als Schutzmittel gegen die Verbreitung ansteckender Krankheiten für nötig erachtet und fast in allen grossern Städten Isolierspitäler, namentlich für Blattern und Cholera-Kranken errichtet.

which country it may be truly affirmed that during the last sixteen years smallpox has practically been non-existent, while furnishing the only example in the world of a nation where isolation is by law compulsory."

It appears from the following references to isolation in a private letter (the answer to an inquiry addressed on the present writer's behalf two or three years ago to a well-known newspaper correspondent in Berlin) that isolation had been for some time previous to 1893 practised so rigorously in Germany that the opinion of the judges had to be appealed to in order to save private householders from the zeal of the police who had been insisting on isolation where they merely suspected infectious disease:—

The police exercise the right to remove patients from their homes to isolation hospitals if no guarantee is given for their strictest isolation at home. The law dates from the 5th August, 1835. Coercion is to be avoided as much as possible and only used in urgent need. It is important to know that in 1892-3 when the cholera was in Hamburg the Supreme Imperial Court at Leipsic pronounced that the authorities had no right to remove by coercion people from their homes to isolation stations on the mere suspicion that they might be infected. When last spring (1900) here in Berlin some cases of smallpox occurred imported from Russia, all persons, and even those who had attended upon the patients were conveyed to isolation hospitals. As they did not protest, one cannot know whether such a protest would have been successful. Every doctor is bound instantly to report to the police when cases of smallpox occur. Houses where smallpox has broken out are disinfected by the police free of charge.

This glimpse of the isolation practice in Germany, an isolation including even those who attend on the patient ought to be informing to those who insist on recognising no influence at work in the control of smallpox in Germany except re-vaccination.

The German Infectious Disease Law of 1900.

Any doubt as to the powers of the Health Authorities and of the police in Germany, or as to the universal application of the most stringent isolation, cannot possibly survive a perusal of the Imperial Law of June 30, 1900, for the subduing of diseases of common danger. Advantage was taken of the fear of bubonic

plague a few years ago to agitate for the unification and the strengthening of the law, with the result of the passing of this Act, and the issue of provisions made under it by the Federal Council. Most stringent regulations provide for the notification of infectious disease. When the police even suspect the existence of infectious disease they must inform the proper Medical Officer of Health, who is bound to institute inquiries forthwith. The inhabitants are liable to penalty if they refuse information or obstruct the Medical Officer. His orders with a view to prevent the spreading of the disease take effect at once, although they have to be renewed in due course by the proper administrative authority. Police orders for isolation and supervision cannot be suspended, even while they are being questioned and opposed. The protective measures recognised by the law include (1) The observation of the sick and suspected. (2) Their isolation. (3) The requirement that persons arriving from other places shall report themselves. (4) Restriction of trading where necessary, and the prevention of public gatherings (5) Restrictions of school attendance. (6) Restriction of any arrangements calculated to promote the spread of disease. (7) The compulsory evacuation of dwellings. (8) Disinfection. (9) Destruction of vermin. (10) Control of the treatment of dead bodies, and so on. It is especially provided that persons having to look after infectious cases may have their intercourse with others restricted. Any clergyman visiting isolated patients must submit to precautionary measures against the spread of disease. There is a section providing that the authorities of the several states may, in townships and districts where dangerous diseases (smallpox being among those mentioned) exist, *or are threatened*, make orders in regard to manufacture, treatment, and storage of articles calculated to spread disease, and may forbid the export of such articles. Travelling traders (pedlars) fairs, markets, transport arrangements, are all subject to interference under these powers. To facilitate the evacuation of overcrowded and insanitary dwellings, other shelter must be at once provided for the families dispossessed. Certain warnings are given, lest unnecessary damage should be done to property by disinfecting processes, or the public freedom of intercourse be unduly restricted. But these warnings are declared not to apply to such diseases as smallpox, which may be communicated by touching articles which a patient has used.

Re-vaccination not an alternative to Isolation.

It must be assumed that the promoters of the Imperial Vaccination League are so much absorbed and preoccupied with the idea of re-vaccination as to be unaware of these provisions and as to the really drastic enforcement of isolation in Germany. Unless this were charitably supposed, that League could not be acquitted of disingenuousness when in their letter of December 20, 1901, they pleaded that "protection from smallpox by systematic re-vaccination would be very much cheaper than by providing costly smallpox hospitals and attempting to deal with epidemic smallpox by isolation of the patients." Their only ground for the assumption that re-vaccination without isolation would protect the country against smallpox is the argument from Germany. From what has been stated in this chapter it will be seen that if the experience of Germany is to be our guide, which is not likely, that experience does not afford the slightest justification for the assumption that the adoption of compulsory re-vaccination would relieve this country of the duty of maintaining its isolation practice.

Mistakes of the Imperial Vaccination League.

In the same letter it was explicitly stated that the recent epidemic in London had added, for hospital accommodation only, a rate of 3d. in the £1 all over London. Improving on this statement Dr. McVail, one of the active supporters of this League, has since stated in *The British Medical Journal* that "the late outbreak in London has added a permanent charge of 3d. per £1 per annum to the rates." The actual fact, which has been much coloured when looked at through Imperial Vaccination League spectacles, may be ascertained from the last annual report of the Metropolitan Asylums Board. The hospital accommodation of the Board was deficient, and more was provided. The report said:—

"What the whole cost of the outbreak of smallpox of 1901-2 may prove to be it would be difficult, perhaps impossible to say, but so far as this Board is concerned, if the cost be taken at the round figure of £500,000, the amount though it looks large is not so in reality, having regard to the enormous area and population concerned. This can be best shown by stating that if the whole cost were paid at once (instead of a large portion of it being spread over a term of years) it would be defrayed by a 3d. rate; whereas a small

provincial town has not infrequently paid more heavily for a single visitation of smallpox, and even districts just outside the borders of London have been, in this present epidemic, much more severely mulcted."

The astounding transformation which this simple and intelligible statement has undergone in the minds of the Imperial Vaccination League organisers may (the Conscientious Objector hopes), serve to defend him from a too ready acceptance of those other statements on which they claim a fresh vantage ground for the exercise of "indirect pressure" upon him.



CHAPTER VI.

DIFFICULTIES ON THE STATISTICAL CASE.

It is now clear that the case for vaccination, strong or weak on its own merits, is certainly subject to abatement so far as it has been built upon a foundation of credit not due to itself, but at least in part to isolation. Professor Crookshank, at the end of the first volume of his "History and Pathology of Vaccination," goes so far as to maintain that where vaccination and isolation have been carried out in the face of an epidemic, it is isolation which has been instrumental in staying the outbreak though vaccination has received the credit. Without expecting the advocates of universal vaccination to go so far as that, we may claim from them the admission that there is an overplus of credit to be surrendered. Will it not at this point be fair to consider what difference this surrender should make to their statistics? These have hitherto, in reliance upon their sources, been made to appear so overwhelming to all but a few keen statisticians, that the refusal of the Conscientious Objector to accept them as conclusive, has perhaps done more than anything else to prejudice his case, and to close the ears of many educated people to his appeals for a hearing. They appeared to think he might as well insinuate that the accounts of honest citizens were fraudulent. What stronger confirmation of his knavery could one have than the fact that he not only "wants to spread smallpox," but that he dares to question figures that are issued with official sanction, and are accepted and circulated in good faith by the profession and by the Church, and even recently (though not in this instance without sustaining some penetrating criticism) by the Institute of Actuaries? But if now the reader is willing in charity to assume that the Conscientious Objector does not want to "spread smallpox;" if now he sees that the figures may be examined in good faith and within the bounds of fair controversy, he may be disposed in the first place to tolerate the inquiry how far this isolation factor discounts the statistical case for compulsion.

Smallpox Mortality before Vaccination and now.

The first argument of the Council of the British Medical Association in a pamphlet issued in 1898, and since circulated in many thousands by the Jenner Society ("Facts about Smallpox and

Vaccination") was crystallized thus:—"The mortality from smallpox is much less now than in prevaccination times." The fact is patent, but this implied argument depending on the contrast between past and present is clearly subject to discount at one of the times compared—the present. All the difference must not be credited to vaccination, for we have had it on the highest authority that, since 1886 at least, smallpox has been repeatedly prevented from spreading by something else than vaccination, namely, the isolation machinery. That evidence has been supplied from both vaccinated and unvaccinated localities. For an addition to the instances already given the reader may be referred to a striking proof from a town usually held up as a terrible example and warning to antivaccinists—that is Gloucester. There is recorded in one of the Blue Books of the Royal Commission dealing with the Gloucester outbreak (Appendix VII. to the Final Report) Dr. Campbell's claim to have "averted" an epidemic in 1890 by the isolation of two cases. If isolation staved off an epidemic in an unvaccinated town for some five years, if it staved off a general epidemic in London during a period of rapidly declining vaccination for the unprecedented period of thirteen years, if for more than a quarter of a century it has kept smallpox epidemics away from Leicester (except in one year, 1893, when it controlled that epidemic so marvellously that the cases were not so numerous as the deaths in the preceding epidemic during a period when Leicester believed in vaccination, while its smallpox case mortality was kept as low as 5·8 per cent.), it is obviously impossible to say that the difference between the smallpox mortality since 1886 and that of 1796 is all to be spoken of as if it were due to vaccination and vaccination alone. Yet that is undoubtedly what one favourite form of statistical demonstration suggests.

***Post hoc* no longer apparently *propter hoc*.**

The fallacy of this demonstration was not so readily perceivable a quarter of a century ago, when the late Lord Playfair used it with great effect in a House of Commons debate, nor could it then be so readily reduced to an absurdity as it can be to-day. As a *post hoc, propter hoc* argument, it had a convincing look calculated to deceive the very elect. As a demonstration it was beautifully symmetrical. Lord Playfair produced five different

stages of vaccination, and at every stage he exhibited smallpox, as measured by the death-rate, declining as the means of vaccination increased. The *hoc* never altered its direction, and the *propter* was always in harmony with the *post*. But if Lord Playfair were living to-day, and if he were asked to add to his demonstration a figure to be found in the Registrar General's sixty-second Report (Table 27) and to place opposite that figure the state of vaccination in the period to which it belongs, the symmetry of his demonstration would be completely spoiled. As has just been said it would be reduced to an absurdity, for in that period—1889 to 1898—vaccination was rapidly declining, and the table would stand thus:—

SMALLPOX MORTALITY.

Before Vaccination	- - - - -	3000	per million living.
Vaccination Voluntary	- - - - -	600	"
State assisted Vaccination	- - - - -	305	"
Obligatory Vaccination	- - - - -	225	"
"	more efficiently administered	156	"
"	less efficiently administered	13	"

The table thus continued down to the present day discredits its own method, and positively forbids us to trust the *post hoc*, *propter hoc* argument, or to attribute the lower smallpox mortality to vaccination, and vaccination alone. But so sacred has this method been hitherto held that one has only dared to approach the imputation of it apologetically, and after first giving convincing reminders that there is beyond doubt at least one agency holding smallpox in check that is not vaccination. Lord Playfair unfortunately, as any one can see from his Memoirs, considered that he was subjected to personal annoyance by the antivaccinators, and therefore was not likely to accept their invitation to consider whether there was not a fallacy in this *post hoc*, *propter hoc* argument. He said they tried to make his life miserable by incessant personal attacks. To all who hate the intrusion of personal animus into important public controversies, and who know that nothing so much prejudices any movement as injurious treatment of eminent men, it must have been pleasant to have Lord Playfair's posthumous assurance that these attacks did "not hurt, or even annoy" him. If they had, he would surely have forgiven much to the men on whom he inflicted, as he claimed, a "crushing defeat," and who, on their part, were smarting under the stigma which he

placed upon them by imputing to them the hitherto unrecorded crime of "omissional infanticide." But if he was not hurt, nor even annoyed, he was not, one may be sure, much disposed to give any heed to their arguments. The question arises whether the modern development of the claims of vaccinators, founded as they are on an attenuated case for vaccination, would not have forced these arguments on his attention to day.

Revaccination and the Statistical Case.

If Lord Playfair could be asked to-day to look at his once convincing demonstration in the light of the revised and modified claims for vaccination, he would have to take note of this important fact. The vaccination of the earlier periods of his comparison is now virtually given up, because people with that kind of vaccination are the majority of the smallpox hospital inmates in modern times, and they die from smallpox in spite of their vaccination. Some of them even die of the worst form of smallpox, notwithstanding the tradition repeated so recently as April last by Dr. Symes Thompson, who said this to the Institute of Actuaries :- -

"Though the protective power of vaccination against smallpox might diminish as the years went on, the protective power against severe and fatal smallpox was prolonged throughout life."

It is curious how such traditional assurances linger on the lips of the most eminent men, and seem to be as it were unconsciously uttered long after their accuracy has been absolutely disproved by events. The official record of the Gloucester epidemic admits 29 deaths of undoubtedly vaccinated persons from the malignant variety of smallpox, and even the claim that the re-vaccinated do not die of smallpox is now abandoned. Dr. Ricketts mentions five hæmorrhagic smallpox cases among the re-vaccinated cases in the London hospitals in 1901. Salvation is now promised only to the "*recently* revaccinated," and when we ask, How recently?—the answer is far from amounting to a definite undertaking. The whole case for the urgency of revaccination is at any rate based on the theory that the old vaccination was insufficient and its protection limited. Do not these considerations imperatively invite us to re-examine Lord Playfair's once imposing demonstration.

Do they not suggest that in the earlier periods of the decline of smallpox, as well as in the present day, there was a "something else" reducing the mortality for reducing which vaccination was getting the credit?

"State Assisted" Vaccination Period.

By way of experiment take Lord Playfair's period of State-assisted Vaccination which is said to have reduced smallpox mortality from 600 per million to 305 per million of the population. The period referred to extends from 1841 to 1853, and the actual words in which Lord Playfair asserted the connexion between the State-assisted vaccination and the diminished smallpox mortality are these:—

"For the first forty years of this" (*i.e.* the 19th) "century vaccination was promoted by charitable agencies, and the mortality had fallen to 600 per million by 1840, or was then only one fifth of the rate of last century. Still, 600 per million is a high rate of mortality, and Parliament began in 1841 to give funds for gratuitous vaccination, so as to spread it more rapidly among the people. This continued till 1853, and the mortality was now 305 per million, so that gratuitous vaccination by the State reduced the mortality to one half."

That argument runs precisely on the same confident lines as the present day argument from Germany, that re-vaccination has wiped smallpox practically out of existence there. And its conclusiveness depends entirely, as in that case, on the answer to the question whether all the facts have been brought into view. Is it possible to say that nothing else, apart from vaccination, or jointly with it, influenced the smallpox mortality? On the contrary there were two most powerful influences at work during that period. One was the operation of a part of the very Act of Parliament to which Lord Playfair referred. It is really inexplicable that so much should have been made of one thing which that Act did, and that something else which it did with the direct and avowed intention of reducing the smallpox mortality should have been completely ignored by Lord Playfair. The "something else" was what Jenner himself said must be done if smallpox was ever to be subdued.* It was the stoppage of the old practice of inocu-

* In 1810 Jenner wrote to Dr. Worthington: "Smallpox will never be subdued, so long as men can be hired to spread the contagion by inoculation." *Baron's Life of Dr. Jenner*, Vol. II., p. 412.

lating smallpox. The Act passed in 1840 marked the final victory of the vaccinators over the inoculators, and the double purpose of the Act as passed is shown in a speech of Mr. Wakley, the member who introduced the amendment forbidding inoculation. He said, "Physicians and surgeons generally were of opinion that if inoculation were prevented, and vaccination used, smallpox would entirely cease." Inoculation *was* prevented; vaccination *was* used. And then as smallpox ceases, its cessation is represented as the result of but one of the changes the Act brought about, the other not being as much as mentioned by Lord Playfair.

What Reduced Zymotic Disease.

The other influence that was clearly operative in the latter part of the period, 1841 to 1853, was the awakening of the country to the insanitary condition of the towns. It is stated in another part of Lord Playfair's memoirs that after the Royal Commission on the Health of Towns the diseases arising from filth, as he calls the zymotic diseases, fell from 4.52 to 1000 in 1841-50, to 2.71 per 1000 in 1880-84. Here Lord Playfair himself associated the reduction of zymotic diseases from 1850 right on through the years which comprise his period of "obligatory vaccination" with another cause. Therefore, just as in the last quarter of a century, the most zealous advocate of vaccination must be called upon to make liberal discounts from his figures for the operation of the Public Health Acts, including notification and isolation machinery, quickened as they now are by telegraphic and telephonic communication, vigilance at the ports, inspection of lodging-houses, and other influences; so in the thirteen years, 1841 to 1853, Lord Playfair's claims for vaccination must be subject to deduction for the removal of evils brought to light by the Commission on the Health of Towns, as well as for the stoppage of inoculation.†

† There is also an argument against the arbitrary selection of periods in the Playfair demonstration. The German case is also affected by the sanitary progress of the Empire.

The decline in Jenner's day.

Lastly, taking the interval from 1840 going right back to Jenner's time, similar consideration must convince any reasoning mind that the assumption in favour of vaccination is far too large and altogether improperly exclusive. For again there are at least two competing claims for the credit of reducing smallpox mortality. One is indicated in the writings of the late Dr. Farr, whose fame as an exponent of vital statistics was in proportion to the splendid opportunities he had in the Registrar General's Department. He says definitely of smallpox that "it began to grow less fatal before vaccination was discovered, indicating together with the diminution of fever the general improvement of health then taking place." The other cause was the giving up of the wilful spreading of smallpox. As vaccination came into fashion smallpox inoculation went out, for although, as we have seen, it was only finally stamped out in 1840, it was being rapidly elbowed out by vaccination during the whole of the forty-two years preceding. One would naturally expect in the present day, when so much importance is attached to the isolation of smallpox patients and when everybody is warned how important it is even for the vaccinated not to be in contact with the disease, that there would be a ready assent to the proposition that smallpox inoculation must have spread smallpox, and therefore its abandonment would in itself, whether vaccination was substituted or not, reduce the small-pox death rate. But it is not from the present-day advocates of vaccination that any admission of this sort can be readily obtained. On the contrary, they endeavoured before the Royal Commission to minimise and ignore this factor as much as possible. Such are the changed exigencies of controversy! In Jenner's time this argument (now so much disliked) was a favourite arrow in the quiver of the vaccinators. In Dr. Pearson's Inquiry, published in 1798 and reprinted in our own time in Crookshank's "History and Pathology of Vaccination" is the following passage:—

"On account of the extremely contagious nature of the variolous poisons the extensive dissemination of it by inoculation, and the practice of inoculation being only partial it appears that the mortality by smallpox has been in a greater proportion since, than before, the introduction of inoculation."

The risks of the smallpox inoculation were implied in Jenner's recommendation of his own system when he said of vaccination

that "a single individual in a family might at any time receive it without the risk of infecting the rest, or of spreading a distemper that fills a country with terror."* Henry Jenner (brother of the founder of vaccination) in a pamphlet of 1799 setting forth the advantages of cowpox over smallpox, pointed out that the former was contagious and communicable by effluvia whereas "numerous experiments testified that this never happened in the cowpox." Dr. Seaton, in his "Handbook of Vaccination," by exception among modern vaccinators, dwells on the evils of inoculation:—"It was found that it multiplied the foci of contagion," he says. And again:—"Besides, as smallpox could thus be set a-going anywhere by merely sending a bit of cotton thread dipped in variolous lymph for the purpose of inoculation, it was constantly being introduced into places from which otherwise it might have been long absent. Hence the general mortality from smallpox after the practice of inoculation had become diffused was considerably greater than it had been before that practice was known." How strange that this should be recognised, while the contrary effect of the abandonment of inoculation is overlooked, and everybody rushes to the conclusion that it is the new specific, and not the dropping of the old, that must get the credit (and *all* the credit) for the difference between then and now! It shows that when you have once got a thing taken as *res judicata* any stick of an argument is good enough to beat a dog of an antivaccinator with. The *chose jugée* alone could close the minds of men to such considerations. Dr. Bond of the Jenner Society, in a letter in *The Times*, as recently as January 14 this year (1903), is very anxious to maintain the *chose jugée*:—

"We can clear away as futile and superfluous all need for discussing the merits of vaccination itself. That issue is now for all except those who are hopelessly beyond argument, *res judicata*, nor is there more need for labouring the necessity for re-vaccination The man who admits the value of vaccination in infancy is not likely to question the importance of renewing it. Those who do so are only antivaccinators whatever may be their disguise."

They are "only antivaccinators." Therefore, O members of Parliament! do not ask the man who is "only" the Jenner Society to discuss the merits of his case, or listen to anyone else who wishes in defence of his liberty, or of the national health to investigate the Jenner Society's arguments for what they are worth.

* Jenner's Inquiry, 1798.

If you are curious to know what it is that has created the "militant antagonism" against vaccination, do not listen to what must be the best evidence on that point at all events, the evidence of the "militant antagonists" themselves, but take it from the Honorary Secretary of the Jenner Society that "it is not theoretic doubt as to the value of vaccination which has created the militant antagonism against it, but that characteristic of the typical Briton which impels him to resist what he considers oppression in any form, especially when he experiences it in his own person." In other words give the Jenner Society a re-vaccination law, but guard it against argument or criticism by disarming the Conscientious Objector, whom the Society can otherwise manage by backing up Mrs. Garrett Anderson in the policy of "indirect pressure." It is just possible that Parliament may wish to inquire whether there is any justification for this pressing anxiety, this fear, that it may be impossible to have the law strengthened without going back to first principles; and there may be others who in consequence of Dr. Bond's desire to close their ears, will be all the more ready to follow, step by step, the further arguments of the Conscientious Objector.



CHAPTER VII.

MORE ABOUT THE INCONCLUSIVE FIGURES.

Should the reader have been sufficiently struck with the foregoing examples of obviously overstated claims on statistical evidence, he may think it worth while to investigate further the singular tendency of the Conscientious Objector to stand upright, after having other figures thrown at him and being left, as so many people have imagined, with "not a leg to stand on."

As a further inducement to this investigation, attention may be called to the interesting and significant fact that, when The Institute of Actuaries had most of these figures before them last April (1902), an independent critic, not at all an opponent of vaccination, and an able member of the Institute—Mr. J. Douglas Watson—remarked that "the statistics available were not very clear, and did not give such definite information as was desirable." He pointed out several respects in which the argument from statistics was inconclusive, and delicately hinted that "it was possibly a mistake to give statistics which did not absolutely prove the points it was desired to make." This actuary's remarks must have been particularly disconcerting to Dr. Symes Thompson, who, as afterwards appeared, was congratulating himself that the paper exposed to this criticism "was of great value, as it contained material for the medical profession when they desired to issue statistics in favour of vaccination." As a matter of fact the "valuable material" had largely come from the medical profession. This had been frankly avowed by Mr. A. F. Burridge, the reader of the paper, and Mr. Douglas Watson's criticism most inopportunistly interfered with the prospect of the "material" standing in the records of the Institute as having received unqualified acceptance there. For anyone who undertakes to speak on this part of the subject for the Conscientious Objector, it is a relief to be able to substitute for his own words those of Mr. Douglas Watson, for that in the actuary may be but a choleric word which in the Conscientious Objector would be flat blasphemy.

The following quotation, however, is omitted from the abstract of the discussion published in the Journal of the Institute of Actuaries. It is taken from a full report of the discussion in *The Insurance Record*, from which the abstract has obviously been made :—

“Possibly if doctors had a few lectures of statistics included in their curriculum it might be a very advantageous thing, because unless the statistics collected by them are carefully considered, both as to the form in which they should be published, and as to the limits within which they can safely and properly be used, it was very likely that statistics would be published which could not be relied upon to support the arguments they are asked to bear. He need only refer to the present returns of the Metropolitan Asylums Board, where the proportion of doubtful cases was so great that nothing could be done with the figures at all, and they consequently did not help the cause of vaccination.”

London Smallpox Statistics for 1901.

Mr. Watson's opinion that the figures of the Metropolitan Asylums Board do not help the cause of vaccination may be an ultimate truth. But few will agree with him that they did not temporarily help it, and that nothing could be done with the figures. A great deal was done with them, and it was done to help the cause of vaccination. The figures to which Mr. Watson was referring were published on January 13, 1902; and they were not only open to Mr. Watson's criticism, but they were undoubtedly misleading figures wherever they were republished without the explanations which were made when they were issued. They gave death-rates, which were avowedly not true rates, an absurd and statistically indefensible proceeding, even when the explanation circulated with the table. The statistics related to smallpox cases taken into the hospitals up to December 31, 1901. But the death-rates were computed only on the cases completed to death or discharge up to that time, without waiting for the completion of remaining cases. These incompleting cases were 726 in number. Most of them were recovering. A “good sprinkling” of them, it was stated by Sir Vincent Kennet-Barrington, were already “playing football.” Six hundred and eighty-one of them in the end recovered. The death-rate made out before these 726 cases were completed was therefore a false death-rate. But upon it the City Officer of Health founded a moral which no doubt did help the cause of vaccination. He said: “The mortality was high indicating a virulent type, and this must certainly be connected with the neglect of the only known preventive efficient vaccination and re-vaccination.”

False Unvaccinated Death-rates.

The false death-rate was falsest in the case of those who were classified as "unvaccinated." It debited them with a death-rate of 50·52 per cent., that is it made out that of every two unvaccinated persons attacked one died. Much capital was made out of this against anti-vaccinators. Journalists wondered what reply Conscientious Objectors could make to such figures; and when it was proposed to gratify their curiosity, refused to look at, or publish the reply. The false death-rate was made a formidable weapon in the "indirect pressure" which had been recommended by the Honorary Secretary of the Imperial Vaccination League. The report with the false death-rates, it has since been admitted by Mr. Duncombe Mann, of the Metropolitan Asylums Board, was "widely circulated." In the table the cases and deaths were classified simply as "vaccinated," "doubtful," and "unvaccinated;" but in the letterpress which obviously cannot be incorporated in a table (and which has in fact been very little regarded), the meaning of these words was interpreted. The unsuspecting general public has disregarded the interpretation, innocently believing that it knows what is meant by "vaccinated." But the Conscientious Objector has kept his eye on the interpretation. According to this, "vaccinated," does not mean all the vaccinated. It only means "cases having visible cicatrices." The cases stated to have been vaccinated; but bearing no visible evidence, were classified as "doubtful." Those cases were also classified as "doubtful" in which "no statement was made, but in which the eruption prevented any *reliable* observation as to cicatrices;" but it appears from a subsequent report that there was only one such case, and that all the others, numbering as many as 88, were "stated to have been vaccinated." The severity of these cases "stated to have been vaccinated," but deducted in this manner from the vaccinated class, is illustrated by the fact that their death-rate in the finally ascertained case mortality was found to be 51 per cent. In the figures to which reference is now being made it was 65 per cent. Even when relieved of these cases, and of the babies said to have been vaccinated only after infection with smallpox, the vaccinated showed a case fatality of a little over 14 per cent. This, though too high, was good to contrast with a death-rate of the unvaccinated, easily made out on such principles to be 50 per cent. The "unvac-

inated" were interpreted as "cases admittedly unvaccinated, or bearing no marks of the operation, and as to which no statement was made." From this it appears that children said to be vaccinated after infection must be classed as "cases admittedly unvaccinated." The death-rate of the "unvaccinated" classified on this principle, and originally put forth at 50·52, came out when finally ascertained at 31·99. What it would be when subject to the other corrections of which it is obviously capable on a stricter classification, who can say? But even this amount of correction has not gone forth in the same sense as the original figures which are now circulating in New Zealand and elsewhere, as a warning of the danger of being unvaccinated. There has been no anxiety to see that the corrections were "widely circulated." They are only seen by those who know where to purchase the Annual Report of the Metropolitan Asylums Board, and care to pay five shillings for the publication.

Requirements of a Satisfactory Statistical Case.

One need not insult the intelligence of any reader by arguing whether even the "finally ascertained" figures prepared on such a classification, and presented by a Committee which is called "Statistical" are conclusive or not. Assuming it to be fully realised how far such a classification really is from a conclusive one, no one can now miss the point of Mr. Douglas Watson's remark that statistics would likely be published "which could not be relied upon to support the arguments they were asked to bear." Now, practically all epidemic statistics are compiled on this system. What the Conscientious Objector asks is that before, upon them, any presumption is established against him, they should be differently compiled, so as to be conclusive, or as nearly conclusive as possible. And lest it should still be held that he is too unreasonable a being to listen to, let what is wanted be stated again, not in his words, but in the words of the actuary. Mr. Douglas Watson told the doctors who went to the Institute of Actuaries what was necessary to make a satisfactory statistical case.

"From a statistical point of view, if one was going to deal with the question in that way one must theoretically have the means of dividing the population accurately into a vaccinated and an unvaccinated class; not only that, but the

vaccinated population must be homogeneous, with regard to age distribution, class distribution, occupation, sanitary condition, geographical position, and also as regards time."

Perhaps Mr. Watson did not know it, but there he stated the Conscientious Objector's demand, giving it an actuarial *imprimatur* on an occasion which was meant to secure that advantage entirely to the other side.*

The Classification Difficulty.

With regard to the first essential laid down by the actuary, the accuracy of the division into "vaccinated" and "unvaccinated," the Conscientious Objector asks for more conclusive figures in vain. When he finds that the system already described is deliberately preferred to any attempt after greater accuracy, is it to be wondered at that he is apt to set down the medical obstinacy on this point to a fear that the resulting statistics would be less favourable to vaccination? Sir W. J. Collins, and Mr. Allanson Picton, in their Dissent from the Report of the Royal Commission, devote five paragraphs (105-109) to the evidence bearing on the difficulty of accurate classification, and make one suggestion in these words:—"We could wish, in view of the doubt cast upon the classification of smallpox patients into vaccinated and unvaccinated, that resort had been oftener had to the vaccination registers for corroboration or correction." They gave an interesting story from the Warrington epidemic experiences to illustrate the necessity for reference to the registers. But here a

*That this is not a prejudiced and unwarranted assumption may be seen from what the President of the Institute of Actuaries said in opening the discussion. Mr. Higham said: "a quarter of a century had elapsed since the matter had been before them, and it seemed that with an epidemic in their midst, it was possible that the Institute, within whose purview any question of life and death came, might possibly render some public service if it could in any way re-state the arguments, or make some new presentment of the facts and figures, so that if possible they might confirm the faith of any who were wavering, or better still, convert from the error of their ways some who were now in the opposite camp. . . . They would have liked to have asked one or two representative anti-vaccinationists, but it was felt that they could not decently invite a man as a guest, and then, metaphorically, knock him down."

It would hardly be possible to quote a speech more thoroughly exemplifying the influence of the "*chose jugée*" on the mind of the speaker.

later one may be given—a story of the London epidemic. The present writer chanced to hear at the St. Pancras Board of Guardians, of which he was then a member, a statement by a colleague to the effect that the Secretary of an anti-vaccination society at Erith had been cured of anti-vaccinist views by terrible personal experiences, including the loss of three children, all of whom it was said were unvaccinated. The statement was made at second hand, and great difficulties were experienced in its investigation, owing to the refusal of the original circulator of the story, who was strongly biased against anti-vaccinators, to give necessary clues. Eventually, the man was found. It was untrue that he was or ever had been Secretary, or even a member of any anti-vaccination League. He made an affidavit to this effect, and told an interesting story of the seizure of his family and himself with smallpox, the parts relevant to the present discussion being these :—

“Both I and my wife are vaccinated persons, and my eldest child George, who was only seven years and eight months old when he died from smallpox, was also vaccinated. Some nine years ago my first child died as I believe from the results of vaccination, and I was unwilling to vaccinate any more; but my son George was vaccinated, because I did not know how to avoid it. I was then living at Bow. . . . My boy George, who was vaccinated about seven years ago, is dead; and my wife and I, who were only vaccinated in infancy, have both recovered. I have no more faith in vaccination now than I had before.”

Although this declaration was sworn to and signed before a Commissioner for Oaths, the question of the boy's vaccination was not left to rest on this statement only. As it was stated by the father that he was residing at Bow when the vaccination took place, the Bow Registers were searched, and there was obtained from the Vaccination Officer a certified copy of the vaccination in July, 1894. This fact was made public at the time in a letter which Mr. C. H. Hopwood, K.C., wrote to the morning papers. The certificate of vaccination was found by one of the Metropolitan Asylums Board's own members. There was a correspondence with the Registrar General on the subject, which must have involved communications between him and the Metropolitan Asylums Board. The annual Report of the Metropolitan Asylums Board was not prepared for some months afterwards, and it does not to this day admit the death of that vaccinated boy, George Reddall, as a death of a vaccinated child; and it is

thus possible for the Registrar General and other Government officials to state on the faith of such statistics that no child under ten years of age who had been vaccinated died in 1901 from smallpox.

Inquiry discouraged and baffled.

It is not easy to obtain impartial inquiry when the demand for it follows instead of preceding compulsion. Parliament in 1898 so arranged that if hospital authorities would not themselves refer to the registers, or verify the doubtful cases, other people who were interested in this controversy might. Section 8 of the Vaccination Act, 1898, required the Clerk of any sanitary authority maintaining an hospital for the treatment of smallpox cases to keep a list of the names, addresses, ages, and condition as to vaccination of all smallpox patients treated in the hospital, such entries to be made on admission. At all reasonable times searches in this register were to be allowed, and upon demand copies of entries in the register were to be shown on the prescribed fees being made. By the facilities thus given those who were interested in the vaccination controversy were willing to make the inquiries and the references to the vaccination registers which the hospital authorities do not apparently see their way to undertake. Application was made under this section to the Metropolitan Asylums Board, and refused on the ground that the Board although an authority maintaining smallpox hospitals for all the sanitary authorities of London was not itself "a sanitary authority." The application having been made on behalf of the National Anti-Vaccination League and by an official of that body who is himself a convinced anti-vaccinator it was evidently deemed a good joke to add as a concession of grace that he might inspect the register at the Hospital Ships if he conformed to rule and was re-vaccinated. It subsequently came out that there is no enforcement of re-vaccination in every case of visits to the Asylums Board Hospitals. It is not enforced even in the wards when relatives are visiting patients. It is well known that Mr. Beurle, one of the members of the Board, who visits the wards, is an antivaccinator and has never been vaccinated. The plea offered in the Annual Report as the justification for issuing an interim report with rates of

mortality undoubtedly higher than they would be when all the cases should have been completed, and the final rates ascertained "was that it was done to meet the demands made at the time for information as to the vaccination of the cases admitted." It has been shown that legitimate demands for information in the manner authorised by Parliament were not respected.

The Test of General Case Fatality.

The fact at all events is established that figures issued during an epidemic and freely used as an argument for "indirect pressure" have within a few months been subject to great reduction for inaccuracies of which their authors were avowedly conscious, and must be subject to a further, and indefinite amount of correction for loose and unscientific classification. It is a remarkable fact that if the 1901 fatality rate as finally ascertained be taken as a whole, without division into vaccinated and unvaccinated, it comes out at 16·7 per cent. The same fatality was observed on a total of 60,855 cases of smallpox in the Board's hospitals from 1870 to 1894. The Dissident Commissioners, who quote this figure from the Board's 1894 report, refer to the figures collected by Dr. Jurin which gave a gross fatality of 16·5 per cent. for a large number of cases collected during the first half of the eighteenth century. An epidemic in Hull has occurred in 1899, since the Commission reported. The Medical Officer's Report for that year gave the fatality as 16·7, about the figure of Jurin's pre-vaccination days. It is singular, to say the least of it, that this figure should be so constant if there is no mistake in the influence attributed to vaccination. Another record puts the case fatality rate lower in the eighteenth century. The mathematician Bernouilli is quoted by the Vaccination Commission, both majority and minority, as having, in or about 1760, calculated the average natural fatality from smallpox as 1 in 7 or 8 (14·3 or 12·5 per cent.) This figure 14·3 becomes as interesting as the 16·5 in view of our next consideration, which may be stated in the words of the Minority Commissioners. They ask with reference to the recent comparison of fatality in vaccinated and unvaccinated not merely whether we are able to sort the two classes accurately, but, is vaccination the only material point of distinction between the two classes? They pointed out that the unvaccinated necessarily include the young

infants under vaccination age, and those whose vaccination is postponed on account of poor health. If this, they further said, is a factor in the unvaccinated death rate, then the towns in which the Vaccination Acts were most vigorously enforced would naturally show the highest fatality among the unvaccinated. They were able to illustrate this point by the great difference of the unvaccinated fatalities in Leicester and in places like Sheffield and Warrington. But their point was more strikingly illustrated by an epidemic at Middlesbrough after their remarks had been published. In Middlesbrough more than 98 per cent. of the population was vaccinated, and the unvaccinated remnant of 2 per cent. yielded 14 per cent. of victims to the epidemic, whose fatality was $47\frac{1}{2}$ per cent.* But the fatality rate on the whole of the cases was the same as in Bernoulli's days—14·3 per cent. The Medical Officer of Health, not knowing apparently that the high death-rate of the unvaccinated in these circumstances was in accordance with the theory of the Dissentient Commissioners, gave this unvaccinated fatality as an overwhelming proof of the value of vaccination, notwithstanding the fact that the epidemic had selected 86 per cent. of the attacked from the vaccinated part of the community. All this, of course, was what was in the critical actuary's mind when he said that we must not only have the means of dividing the population accurately into vaccinated and unvaccinated classes, but that both vaccinated and unvaccinated populations must be homogeneous in regard to age distribution, class distribution, occupation, sanitary condition, and so on.

Babies vaccinated "too late" classed "unvaccinated."

These are points on which the testimony of experience in smallpox hospitals can be cited as well as actuarial theory. For Dr. Birdwood, who was for years superintendent at the Hospital Ships told the Royal Commission (Sixth Report, Q. 31, 221, and Dissent par. 105):—

"In such statistics insufficient allowance is made for other circumstances, such as occupation, intemperance, and the existence of other diseases. An altogether different death rate might be anticipated if smallpox broke out in

*The antivaccinators of Middlesbrough after enquiries, strongly objected to the Middlesbrough statistics, as based on a wrong classification.

a public school, or in the infirm and aged wards of a workhouse. A typhoid fever patient, or an ill-fed baby, catching discrete smallpox and dying, would be counted a death from smallpox, obviously neither vaccination nor its neglect having anything to do with it."

The last sentence in this quotation from Dr. Birdwood is worth special note. Smallpox of the discrete variety is not generally fatal whether the patient is vaccinated or unvaccinated, and so Dr. Birdwood would evidently put down the death even of a baby, who had only discrete smallpox, to some other contributory or aggravating cause such as debility or improper nourishment. Here, therefore, the Conscientious Objector asks what, in the circumstances, is surely a natural question. Supposing a child, especially a very young infant, is vaccinated, after having been infected with smallpox, and dies although it had only had smallpox of the discrete variety, is it fair to charge its death, as the vaccination statistics imply, to absence of vaccination? Is it not a question whether the vaccination, added to its burden of smallpox, did not contribute to its death? It appears from the Metropolitan Asylums Board figures for 1901 that eight infants less than one year old, who only had smallpox of the discrete variety were among the children who died. They were all vaccinated and they are all included in the unvaccinated class, the authorities ruling them out of the other on the finding that they were vaccinated too late. There is a similar case of a child between one and two years old, another of a child between four and five, another under six. So that the deaths of eleven children under six years of age, forming a little more than nine per cent. of the total deaths of the "unvaccinated" in the London smallpox hospitals in 1901 were deaths of children from discrete smallpox, *plus* vaccination. There is a short list of deaths from intercurrent diseases. It gives two young children, whose deaths swell the unvaccinated fatalities as dying, one from marasmus, the other from general tuberculosis. They had only mild, discrete smallpox.

Conditions other than neglect of Vaccination favouring Smallpox.

To satisfy the actuary's curiosity as to the conditions of life of vaccinated and unvaccinated, and as to how far they are homogeneous little or no information can be gleaned from reports in which vaccination or the neglect of vaccination absorb so

much attention. But there is this passage about one-third of the cases in the Hospital Ships in 1901 :—

“The common factor was that their places of residence, their avocations or amusements took them into that part of London about Tottenham Court Road; and it was in that neighbourhood, in some crowded streets lying on the west side of Tottenham Court Road that smallpox broke out in the latter half of August, and shortly assumed an epidemic form. Between the 19th and 31st August, sixty-eight patients were admitted, of whom all but eight either resided in the district, I have mentioned or appear to have caught the disease there. In September the disease continued to spread in that district, but at the same time it appeared widely in all parts of London. Its prevalence in its original seat continued up to the end of the year, so that of the total number of cases which occurred in London during the year, one-third were removed from St. Pancras, Holborn, and Bloomsbury.”

Holborn, according to tables of the whole epidemic prepared by Dr. Sykes, Medical Officer of Health for St. Pancras, attained the unenviable distinction of being highest in what he calls “the order of morbidity”: its attack rate was also highest (74·3 per 10,000 of population) the average for all London being 20·6, and the next highest rate (Stepney’s) being 51·4. Yet Holborn is very far from being conspicuous among London parishes for its vaccination default. It is, however, well known that Holborn stands very near, if not quite at the top, of the list of overcrowded districts in London, by whatever standard of overcrowding it is judged. On the other hand, Hampstead, which is at the other extreme of the scale as regards overcrowding, yielded but three cases per 10,000 of population, and only two cases out of nine in 1901 were unvaccinated.

Dr. Orme Dudfield, whose Kensington reports are always informing, gives the occupations of all but five out of 106 Kensington patients. Forty were labourers, carmen, or hawkers, one was a lodging-house keeper, one a man from a common lodging-house calling himself an auctioneer, one an omnibus proprietor and one a postman, while four were clerks. The fatal cases were twelve, of whom seven were vaccinated “in infancy” (one of them had been vaccinated twice, however), concerning two there was “no statement” and three were unvaccinated. Three of those twelve who had fatal smallpox were from common lodging-houses. The three unvaccinated who died were—a woman of no occupation living in Campden Street, a child nine months old, son of an engineer’s fitter in Blechynden Street, and a grocer’s porter in Cromwell Road.

The Stepney Medical Officer of Health, in his report for 1901, says that out of 168 cases in that borough up to Dec. 31, forty-two, or one-fourth, occurred in common lodging-houses. "In some cases" the Inspectors found that "the bedding was in such a filthy state that it was burned." Some facts other than those relating to vaccination are stated in the case of a family at 25 Heneage Street. "The room they lived in was illegally occupied as it was an underground one and was overcrowded as well. It was also used as a workroom as well as a living room and bedroom."

The Medical Officer of Health for Poplar, Dr. Alexander, appreciating the importance of light and air, quoting the saying, "Where the sun shines, the doctor cannot live," and remarking that abundance of fresh air and sunlight is Nature's armoury against disease, has constructed diagrams to show the comparative absence of light and sunshine during the London outbreak, and has told how his officers used to predict a fresh crop of cases in fourteen days after cold, damp weather.

In the absence from the Metropolitan Asylums Board of useful information of this kind, and of a complete list of the streets from which the London cases were taken, or of any list of the patients' occupations, it is interesting to note this sentence from the Memorandum by Dr. Ricketts on cases alleged to have been successfully re-vaccinated:—"The patients received at a metropolitan smallpox hospital are generally speaking ignorant, and many of them recognise no distinction between re-vaccination and successful re-vaccination." It would be interesting to know how many cases of smallpox during the late epidemic can be traced to persons living in fair sanitary conditions and whose habits of personal cleanliness include the daily use of the bath.

CHAPTER VIII.

THE AGE INCIDENCE ARGUMENT FOR RE-VACCINATION.

The Conscientious Objector may well be called luckless. As regards the old case for vaccination, the ground is now virtually left to him. His argument on all that old ground is conceded. But with what results? Only to be told that all he has proved is that he is not vaccinated enough. It is said that the comparative immunity of children under 10 years of age, and of the re-vaccinated is irresistibly established and that there must be compulsory re-vaccination. Considering the results of the foregoing inquiry is it unreasonable to look into this contention more closely, and see whether it rests on conclusive evidence, dealing first, as in the previous argument, with the general case on the statistics and afterwards with the present day experience? The contention is mainly founded on what is called the age-incidence of smallpox. This, it is observed, has changed. Smallpox when it is with us is less of a child's disease now than in former times and more of an adult's, and this is held to be a conclusive proof of the blessings of vaccination. Is it conclusive? Is vaccination the only possible, or even the main, factor in such a change? If it accounts for a lower incidence of smallpox upon children what is the reason for the higher incidence upon adults made out by the same methods? If it were merely a change in the *proportional* incidence—the proportion of children's deaths to total deaths—of course a decrease in the children's deaths would alter the adult proportion. But as pointed out by the Dissident Commissioners (Dissent, par. 136) what has been observed is “not merely a change of distribution of a fairly constant or diminishing number of smallpox deaths as between infants and adults” but the fact that “there has been in proportion to the population at each age during certain years an increasing death-rate of adults from smallpox, notwithstanding the increasing use of vaccination and re-vaccination.” (The importance of the qualification “during certain years” will appear later.) “If therefore,” says the Conscientious Objector, “the vaccinators instead of jumping to the conclusion that fits in with their pre-conceived theory would patiently examine this change in age

incidence with me, I would suggest, as I have I believe, successfully done in my previous argument, that there are other factors that must be taken into account, and which in fact give a more satisfactory explanation of the change. First, I would point out that a change in the age-incidence of smallpox has taken place before, in days when no such factor as vaccination was known. Dr. Creighton, in his learned *History of Epidemics in Britain* quotes the testimony of seventeenth century writers to the effect that smallpox dealt lightly with children in those days. Secondly, I should show that new diseases, some of them suspiciously coincident with the increase of vaccination, have come into competition with the less frequent epidemics of the present times. Thirdly, owing to the longer intervals between epidemics more of those persons possessing susceptibility to smallpox have time to grow up, and this would explain the increase of adult smallpox in modern epidemics. In the Majority Report this was noted incidentally in paragraph 52 dealing with the former prevalence of smallpox. It says that 'since of those dying in the eighteenth century so large a number died at an early age, the number of those dying in adult and in advanced age without ever having had the disease would be much less.' Lastly, I would remind you that there are many testimonies to the effect that the decrease of infant mortality is not confined to smallpox. Dr. Longstaff, in his work on vital statistics established the fact that in our time death-rates in early life were falling, and in late life rising. The Dissident Commissioners, in discussing this question quoted from the Registrar-General's Report for 1879 a similar opinion together with this reasoning:—

'That the sanitary efforts made of late years should have more distinctly affected the mortality of the young is only what might be naturally anticipated; for it is against noxious influences to which the young are more especially sensitive that the weapons of sanitary reformers have been chiefly directed.'

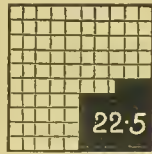
And Mr. Alfred Milnes has proved (see *Journal of the Royal Statistical Society*, Vol. LX., Part III., Sept. 1897) that the reduction in children's mortality from smallpox has occurred in the unvaccinated as well as in the vaccinated, and that 'the change which is held to demonstrate the indispensable value of vaccination is shown to have taken place to a hardly less extent amongst the unvaccinated than in the whole category of smallpox, taking vaccinated, unvaccinated, and not stated together.'

In this case also, therefore, as in the previous argument from the figures, the Conscientious Objector asks what abatement is to be made from the claims of vaccination in consideration of other not only possible, but actually demonstrated, causes of the change in age incidence.

The alleged immunity of children in well-vaccinated towns.

Interesting as the age-incidence problem is on account of these obvious contributory solutions, and well worthy as it therefore is of more thorough study, the promoters of vaccination insist on treating this part of the subject also as a *chose jugée* and on presenting to the public a supposed proof depending entirely upon the fallacious foundation of the proportional mortality statistics. They say that the part played by vaccination in the age-incidence change is illustrated by recent experience. It is shown that in six towns where smallpox broke out during the sittings of the Vaccination Commission there had been a varying disregard of vaccination, and that if we take the children's deaths from smallpox in these towns and consider them as a proportion of the total deaths from smallpox in these several communities it will be found that this proportion is smallest in the towns which neglected vaccination least, and highest in the towns which neglected vaccination most. The public are expected, and generally the expectation is justified, to draw the conclusion which in fact is drawn by nine persons out of ten, that this is the same thing as telling us that in the best vaccinated towns the children's death-rate was lowest and that in the worst vaccinated towns their death-rate was highest. In fact some of those who use the illustration actually interpret it in that way. Thus, Dr. T. D. Acland, in an address at the Mansion House, which was circulated through *The Hospital Saturday Fund Journal* in all the workshops subscribing to that Fund, actually said that the *number* (not the proportion) of deaths in every hundred children under ten years of age was increased in direct proportion to the neglect of infant vaccination. The Royal Commissioners without going so far as that, treated the variations in the proportion of children's deaths to total deaths as

“phaenomena accounted for on the supposition that vaccination has the protective influence alleged.” An argument so successful with Royal Commissioners has been rendered more impressive to humbler people by its presentation in the form of a diagram which would deceive the very elect. It represents the proportion of children’s deaths to total deaths in the six towns by means of squares, the first and last of which in all their impressive contrast is here reproduced. In well-conducted, vaccinating Warrington it is shown that the proportion of children’s deaths to total deaths was only 22·5 ; while in wicked Leicester, where vaccination is neglected, the proportion was 66·6.



Warrington.



Leicester.

Looking “on this picture and on that” how black is the impression produced against Leicester! What a cruel fate appears to have overtaken its children! On the other hand as the Royal Commission observed in effect how happy were the children of Warrington who were so protected by their vaccination as to show a contrast like this! What are the facts? They may be illustrated in other diagrams, less limited in their scope and so revealing more of the truth. The actual number of deaths as well as the proportion of children’s deaths to total deaths in these two towns can be seen at a glance in the two lines below, the deaths under ten years of age being represented by full stops and the deaths over that age by colons. The top line shows the facts for Warrington and the lower line the detail for Leicester:—

Warrington—deaths (at ages 0–10) 14 ; (over 10) 48.

.....:.....
:.....

Leicester—deaths (at ages 0–10) 15 ; (over 10) 6.

This diagram shows just as clearly as the other that the proportion of children’s deaths to total deaths (of dots to the whole line of dots and colons) is very much higher for Leicester than for Warrington, but the impression of the wickedness of

Leicester is very much diminished. And this although the proportional magnitude of the children's share of death is increased even beyond 66·6. For no allowance is here made for three deaths of children in Leicester, whose cases being complicated by scarlet fever were not taken into account in the construction of the other diagram, an appearance of fairness which rather aggravates its deceptiveness.

A Fallacy explained.

Dr. Arthur Newsholme, Medical Officer of Health for Brighton and an Examiner for more than one University, has in his *Vital Statistics* taught his readers the fallacy of stating deaths at one age as a proportion of the total deaths at all ages. The fallacy, he says, is that a relationship is attempted to be established between two factors both of which are variable in value. The diagram just criticised appears to be an admirable illustration of this fallacious kind of statement. It inevitably suggests to those who look at it that the rise in the proportion of the children's deaths in the second square representing Leicester, is due to a heavier mortality among the children. It seems to endorse and emphasize the conclusion of the Commissioners that there was a "striking variation" indicating a "potent protective influence" in the case of the children. But the other diagram, improvised as a sort of control experiment, reminds us that the children's deaths do not constitute the only variable factor in the ratio of children's deaths to total deaths, that the deaths of those above ten years of age may also vary, and that in fact, in the case of Leicester, as compared with Warrington, the difference in the proportions of children's deaths to total deaths was not due to the smaller number of children who died in Warrington but to the larger number of adults dying in that town from smallpox. Therefore, for the purpose of deciding whether the children of Leicester were worse off than the children of Warrington this method is shown by Dr. Arthur Newsholme's theory and by the test of examination to be perfectly illusory. The reader will be as surprised as the writer was to learn that the constructor of the diagram was Dr. Arthur Newsholme himself.

True Diagrams.

By using Dr. Newsholme's system of impressive squares to contrast separately the children's deaths, and the deaths over 10

years of age in proportion to those attacked with smallpox, it is proved that the smallpox mortality both of persons under and over ten years of age was greater in well vaccinated Warrington, than in deficiently vaccinated Leicester. If the difference of the populations is taken into account, the advantage of Leicester over Warrington is overwhelming. These new squares and all the facts essential to a just comparison are given below, except the figures representing the gross fatality, at all ages. That, it is clear from the other figures, must also have been in Leicester's favour. In fact Leicester's case fatality was 5·8, Warrington's 9·3; Leicester's case incidence per 10,000 living was 19·3, Warrington's was 123·3; Leicester's mortality per 10,000 living was 1·1, Warrington's was 11·4 (Dissent par. 92).

	Total Population.	UNDER 10.			OVER 10.		
		Cases.	Deaths	Per cent.	Cases.	Deaths.	Per cent.
Warrington ...	54,084	65	14	21·53	596	48	8·05
Leicester ..	184,547	109	15	13·76	248	6	2·42

CASE-FATALITY UNDER 10.

Warrington.



Leicester.



CASE-FATALITY OVER 10.

Warrington.



Leicester.



One Bad Argument Supports Another.

Both Dr. Newsholme and Dr. Acland, having had the inconclusiveness of this age-incidence argument pointed out to them, have used those opportunities of reply, which are much more freely accorded to them than to Conscientious Objectors, to fall back upon the old argument depending upon the controverted classification into vaccinated and unvaccinated, and to obtain fresh publicity for those contrasts, the worth of which has already been investigated. Being hard pressed in *The Post Magazine* last

July by an able writer on statistics, signing himself J.M., Dr. Newsholme admitted that whether this change of age-incidence of smallpox is caused by vaccination or not must depend on the evidence as a whole, and that the proportional mortality figures ought not to be given without being accompanied with other figures to prevent any possible misinterpretation. He claims that he himself accompanies such statistics, with a statement of the death-rates from smallpox per million living at each period. He also assumes the conclusiveness of the contrast between vaccinated and unvaccinated experience. Thus one set of bad arguments is used to support another, although neither can stand scrutiny alone. For example, at the Institute of Actuaries, Dr. Newsholme averaged the alleged unvaccinated fatalites in six towns, including Sheffield and Leicester, and contrasted with them the alleged vaccinated fatalities, and struck the balance in favour of the vaccinated, as if the only thing that affected that balance were vaccination. One fact suffices to condemn such conclusions. Looking at the unvaccinated side of the account only, it seems that the unvaccinated children are made out as dying in Sheffield at the rate of forty-three in a hundred, and in Leicester at the rate of only fourteen in a hundred. Here is an enormous difference in two of the towns for which condition as to vaccination cannot account, the figures in both cases relating to the unvaccinated class. And yet the ultimate contrast of totals assumes vaccination to be the differentiating factor in the fatality comparisons. Surely in relation to no other subject under the sun would such account-keeping be tolerated

A Paper Advantage.

It has been shown by Dr. Creighton that, by adding up the columns of a correctly made Berlin table, an enormous factitious addition to the apparently greater fatality of smallpox among the unvaccinated was made. He maintained that "the fractional advantages of vaccination—and no one says they are more than fractional—exist upon paper only." Even on the Gloucester invaded house statistics, another method of demonstration as arbitrary as, and perhaps even more fallacious than, the hospital classifications, the contrast does not bear scrutiny:—

"The average of inmates was almost exactly six in each house invaded. Supposing that in one such household all the six were vaccinated, and in

another all the six unvaccinated, then two of the former took smallpox but three of the latter. The actual fraction in favour of a vaccinated person so exposed as against an unvaccinated person, comes out at 0.16, which is just so much arithmetical nonsense, or is meaningless when we try to realise it in the concrete. Such a fractional advantage of the vaccinated can only be an apparent advantage and those who knew minutely the particular and several circumstances in the houses in the affected district of Gloucester, which no statistical averages can possibly reproduce, had no difficulty in accounting for the slightly unequal incidence of the contagion upon two artificially made classes of the population—the one cowpocked in infancy, the other not.”

Dr. Coupland, the compiler of the Commission's Gloucester Blue Book was challenged to meet Dr. Creighton on these figures, but nothing has been heard of the result.

Reversal of Proportions Investigated.

Some other statistics on age-incidence to which Dr. Newsholme is attached—and it must be remembered that these statistical arguments are all accepted by the profession as a whole without criticism—seem also to depend for their force on the fact that like the others they so state the proportional mortality as to leave out of sight essential facts. For instance, taking the average of three years' smallpox deaths at the beginning of the decades 1850-2 to 1890-2 as 1000, the proportion of deaths borne at ages under 10 and at higher ages are contrasted so as to show the incidence passing from youth to age. Here are the extremes:—

	1850-2.	1890-2.
Under 10	825	334
Over 10	175	666

Imagine the impression produced by a demonstration of this character upon an illiterate person; and even upon well-read people who do not readily follow argument in figures. Again, as in the case of Warrington and Leicester, a wider view of the real facts gives—

Actual Smallpox deaths in a million of population of normal age-distribution.

	1850-2	...	1890-2
Under 10	290	...	3
Over 10	61	...	6
	-----		-----
	351		9

From this, as much as from the other demonstration, the believer in the influence of vaccination on age-incidence might draw his moral. He might point out as easily from these figures as from the

others that the children under 10 used to bear more than 82 per cent. of the smallpox deaths, and now only bear 33 per cent. and this would be fair to his opponents. The other method conceals the fact so vital to the consideration of the opponents' case, that the reversal of proportions in this demonstration implies no reversal of experience. But this method shows that the ages over 10 have benefited from the reduction of smallpox mortality as well as the children, and in not so much smaller degree as has been supposed. It may be that "during certain years" as the Dissident Commissioners said there has been an increasing death-rate of adults from smallpox in proportion to the population at each age, but this also is evident. The smallpox deaths per million living under 10 in 1890-2, show a reduction on those in 1850-2 of nearly 99 per cent.; those over 10 have been reduced by over 90 per cent., the difference being less than 9 per cent. Why is the method of comparison which conceals this important fact, and suggests to non-statistical minds the precisely opposite conclusion, preferred?

Protection "Interrupted by Epidemics."

On studying the smallpox statistics according to the true method Dr. Newsholme makes a discovery of great importance. The true method is described by himself in these words:—"When special accuracy is required, and always when dealing with certain diseases, the deaths from each individual disease should be stated per 1000 of the population living at the same age group." Dr. Newsholme constructed mortality curves on this principle. The result was that the epidemic of 1871-2 sent up from the children's curve that precipitous and lofty line which the Conscientious Objector in his more daring moods has taken courage to call the monument of the failure of vaccination. Dr. Newsholme put it differently. As he was illustrating what he maintained to be a steady decline of smallpox mortality in infants, he jumped the lofty peak, saying quietly that the decline was "subject to inter-current epidemics." It must have been startling, nevertheless, to be called upon to import such a qualification into an argument designed to prove the efficacy of infant vaccination against smallpox. He found consolation in the observation that the "interruption" in the decline was shared "to a much greater extent by every other age of life." Thus it is concluded that vaccination is still all right, only its protective power does not last. The

Conscientious Objector listens with interest to any sacrifice of the former claims of vaccination, but submits, first, that there is as good an explanation of the proportionately greater rise in the smallpox mortality curve for these higher ages in the longer interval between epidemics and the consequent accumulation of susceptible persons. Secondly, he asks whether the hypothesis that vaccination protects for ten years is very firmly supported by the fact that seventeen years after the first Compulsory Act was passed, the smallpox death-rate in the epidemic year 1871 was for children under ten 1299, whereas in 1851, also an epidemic year, it was only 1299. He asks whether the accumulation theory does not fit even the figures for the children better than the vaccination theory, for this is what he observes. For children under five, the death-rate per million living was 2502 in 1871, as compared with 2066 in 1851; but for the ages between five and ten years the contrast is still more remarkable. In 1851, only 438 children per million living died; but in 1871, (such was the force of that "interruption of an intercurrent epidemic") their death-rate was 1,265. It is hard to explain the contrast on the vaccination theory. On the accumulation theory the difference hardly needs explaining. It speaks for itself, if we only compare the ravages of smallpox at the earliest ages for the preceding three years in each case. The full five years cannot be contrasted, as the figures quoted from the Royal Commission Final Report, page 155, only go back to 1848.

Smallpox death rates per million at ages under 5, and 5 to 10 years,
from 1848 to 1851 and 1868 to 1871.

	Under 5	5 to 10		Under 5	5 to 10
1848	2090	439	1868	396	78
1849	1364	326	1869	271	71
1850	1400	298	1870	388	136
1851	2066	438	1871	2502	1265

From this table it is seen that the three years preceding 1851 were years of heavy smallpox mortality for children under five. So that in 1851 those aged five to ten must have contained a large contingent of those who had gone through smallpox safely and of hardy and insusceptible survivors. But in the three years preceding 1871 the highest death-rate of the children under five was 396, so when the epidemic came a larger proportion of survivors were in the five to ten age period and

apparently were ripe for the smallpox harvest of that deadly epidemic whether vaccinated or not. These observations seem to be at least as legitimate argument as those made on the other side, and perhaps they would be regarded from any other quarter as more convincing. But the Conscientious Objector is such an unreasonable being! What right has he to argue?

Smallpox in Re-vaccinated Soldiers and Sailors.

It has now been shown that when the only legitimate statistical method is employed, even those who are committed to the defence of vaccination are reluctantly driven to the conclusion that the "protection" afforded by that expedient is subject to "interruption by epidemics." Actual experience in every epidemic contributes some facts to prove that this conclusion is correct. The Conscientious Objector complains with reason that these facts are brought out with great difficulty, and that attention is diverted from them by those statistics whose untrustworthiness is so apparent to actuaries like Mr. Douglas Watson. Nevertheless, some do emerge from every epidemic, and cannot be explained away. The well-vaccinated and re-vaccinated British troops in Egypt took smallpox, and the Royal Commission said (Final Report par 336), "It will be seen that in the years 1887-89, and especially in the year 1888, the fatality was very high. We are not aware what is the explanation of this. It may be that smallpox prevailed in Egypt in a specially virulent form in those years."

Staff-Surgeon Preston told the Royal Commission that since 1861 the death-rate from disease in the Royal Navy had diminished considerably more than fifty per cent. This improvement he attributed to shorter sea voyages, to greater care not to overcrowd, to plentiful and frequent supplies of fresh food, to the introduction of condensed water, and to the care which is now taken in the general economy and hygiene of the vessels. (Royal Commission, Second Report, Questions 3253 to 3285.) But he would not allow anything for these important influences when considering the diminution of smallpox in the Navy. Mr. Picton called his attention to an official report on the Health of the Navy, in which was recorded the death of two seamen from smallpox. One had been re-vaccinated only two years before, and the other four years. Witness said "the only remark" he,

the witness, had to make was that "in the former case, most probably as in the latter, the re-vaccination had been imperfectly performed. The type of smallpox in Rangoon was very severe indeed." But such cases continue to perplex the authorities both in the Navy and in the Army, and to justify Mr. Picton's sarcastic comment: "They are safe as long as they do not come into contact with the disease."

The Army Medical Department's Report for 1899 contains a record of fourteen cases of smallpox in the Army in India, and one death. Seven were at Peshawur; "all the men attacked bore satisfactory vaccination marks"; and there were three at Kowshera, two at Rangoon, one at Kirkee, and one at Mhow, of whom it is said: "All seven men had good vaccination marks, and in the Mhow case the patient had good marks of vaccination during infancy, and of re-vaccination after enlistment in 1898." The Report for 1900 recorded thirty-six cases and three deaths in India. "In all the instances," it is stated, "the men attacked bore satisfactory vaccination marks, some had been re-vaccinated since enlistment, and the Muttra case had had the smallpox before." Recent American army records are reported to contain numerous instances of smallpox after repeated vaccination, but the writer has not had the opportunity of consulting the official records.

Re-vaccination Failures in Gloucester.

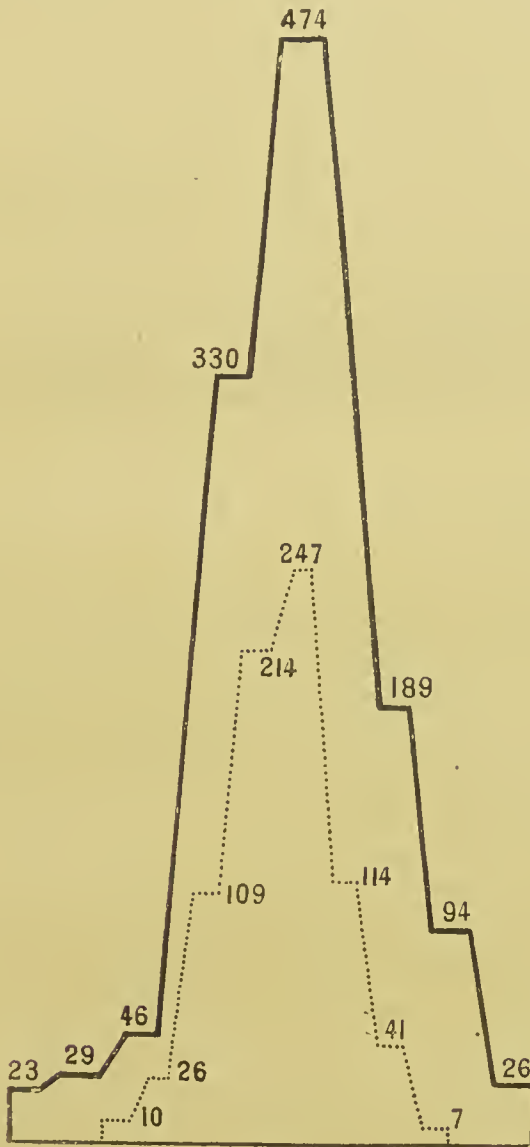
Dr. Ricketts appears to have been astonished at the appearance in the Hospital Ships in 1901 of a man who had been re-vaccinated only three years ago. He died from "intercurrent disease"—erysipelas. It may be taken as an indication of the difficulty of the medical profession in accepting a case of smallpox after re-vaccination, especially a case terminating fatally, that in this case a note is added:—Evidence as to re-vaccination inconclusive." In his Memorandum on Re-vaccination Dr. Ricketts says that in twelve cases re-vaccination was stated to have been performed more than four but less than ten years before the attack of smallpox. In Gloucester (1895-6) the vaccinated cases, always described in the Jenner's Society's tables as vaccinated "in infancy," included, according to Dr. Coupland's special report to the Royal Commission, 190 re-vaccinated cases, nine of them fatal. In no fewer than sixty-two of these (three fatal), the result

of re-vaccination is stated to have been *nil*, which by the way attracts attention to the fact that every theory of vaccination is readily surrendered if only the principle may be saved from attack. An unsuccessful re-vaccination used to be taken as good evidence of protection. By those practitioners who are not sufficiently alert in following the rapidly shifting theories of the leaders of the vaccination school it is still so represented. Thus during the London outbreak, one doctor wrote to *The Lancet* that the only answer to the question, "Ought I to be re-vaccinated?" was "Be re-vaccinated and see. If you do not need it, it will not take." The fact is that if it does not take the failure has become an excuse for non-protection. The Gloucester list of persons thus misled by re-vaccination include smallpox patients who had been re-vaccinated five and seven weeks before attack, one month, four months (2), six weeks (2), two and a half months, fifteen days, three weeks (2), four weeks, "twice recently," two months, and five weeks (2). Conceding all these cases, and others supposed to have been re-vaccinated while the disease was incubating, the Conscientious Objector asks, but asks in vain, what about the man "in prison service" who died of confluent smallpox at the age of forty, having been vaccinated in infancy and again "at twenty to thirty twice, first successfully"? Or the man of thirty-five who died of smallpox although vaccinated "in the army seven years before?" Or the other cases where successful re-vaccination cannot be questioned?

Vaccination in Gloucester.

It is stated by Dr. Coupland in this official report on Gloucester that "the leading principle of dealing with infectious disease, namely the effective isolation of the attacked, was for the chief part of the outbreak in abeyance." Then it is declared to be remarkable that the epidemic ceased so abruptly and it is clearly suggested (though not actually stated) in the very sentence acknowledging the unreliability of re-vaccination data that re-vaccination was the cause of the abrupt decline. The words are: "The share taken in this by the universal adoption of re-vaccination is difficult to estimate, as it was impossible for me to obtain reliable data of re-vaccination." The following diagram

s plotted out from Dr. Coupland's own table of the incidence of smallpox on the vaccinated and unvaccinated throughout the epidemic, calculated at intervals of four weeks :



Although Gloucester was largely an unvaccinated community, the outer and much higher outline stands for the rise and fall of the cases in vaccinated persons; the smaller and dotted line shows the progress and decline of the epidemic among the unvaccinated, both lines of course being drawn on the same scale. The first

stage on the pyramid showing the number twenty-three on the outer, and ten on the inner line, represents cases happening between June 1895, and January 4, 1896. The remaining stages represent the intervals of four weeks, and the numbers indicate the fresh attacks of smallpox in these four-weekly periods. Had the numbers been added together, the size of the diagram would have been much increased, but the relative proportions of the two pyramids would not have been seriously altered. In any case, the object of the diagram is not affected by any question of that kind, for it is merely to show that in both classes, the attacks reached their climax in the same period of four weeks. It will not be found an easy task to reconcile this diagram, based on Dr. Coupland's own figures, with either the proposition that there was an abrupt decline in the epidemic or the suggestion that vaccination was the cause of the decline. Its lesson is rather that of Dr. Newsholme's curves. The "protection" is interrupted by an epidemic. The lines of the diagram show that both vaccinated and unvaccinated were having their maximum attacks at the same time; and that the decline, like the ascent to the climax, is simultaneous. Both lines reach their apex in five steps; both reach to zero from the top in four. Had the diagram shown the weekly instead of the monthly progress of the epidemic, it would be found that the turning-point was actually a week earlier in the unvaccinated. The epidemic in fact ceased a fortnight earlier among the unvaccinated than among the vaccinated; and it began with a vaccinated case in June, 1895. The first case positively declared to be unvaccinated did not occur till September, although Dr. Coupland's diagrams show an "unknown" case in the first week of August. From the present diagram, however, showing the monthly return, the conclusion appears to be irresistible, that as the decline in both vaccinated and unvaccinated cases is simultaneous, such decline is clearly due to some cause common to them both and apart from vaccination. Nothing could vitiate this conclusion except a supposition that there was no more unvaccinated material for the disease to take hold of. But that supposition is not consistent with fact, nor with the curious thing to be observed in the diagram, that except when the epidemic (in the second to the third period) entered a stratum of the community, almost wholly unvaccinated (the school children), the rise and the fall march *pari passu* in both cases.

Re-vaccination Failures in Middlesbrough.

According to Dr. Dingle's Report on the Middlesbrough epidemic (1897-8), eighty-seven re-vaccinated persons took smallpox. By way of explanation, this Medical Officer of Health said fifty-six of the re-vaccinations were too recent, while seven were too remote. Of the remaining twenty-four, sixteen were re-vaccinated between the dates of February 11th and 14th. The Medical Officer, being unable to open his mind to any doubt of the value of vaccination, is perfectly satisfied to remark:—"This is such a large proportion of these cases, that it points very strongly to the fact that on or about those few days the vaccination was defective. This may have been due to the quality of the lymph, or to the operator." With this singular excuse the explanations concluded, leaving the remaining eight cases of smallpox in re-vaccinated persons absolutely unaccounted for.

The Failures in Glasgow.

Failures of re-vaccination in Glasgow in the late outbreak there are also the subject of official explanations, and the claim for the immunity of the re-vaccinated is reduced to this that none of the "recently re-vaccinated" population took smallpox. Under the modern plan of notification, isolation, and disinfection, note how easily such a claim is made. When a smallpox patient is found, he is sent off to an hospital. The place where he lay, and all the surroundings, are disinfected; every sanitary defect is overhauled; and the people with whom he has been in contact are watched, and where possible isolated after being offered re-vaccination. Henceforward no one there is, or ought to be, in danger of smallpox. The only persons among whom it might reasonably be expected to break out are the aforesaid contacts. Should any of these who have accepted re-vaccination have smallpox, it will develop within eight to fourteen days, and then they will not be counted as re-vaccinated, because they have been "done" too late. But should any have refused re-vaccination and develop smallpox, the world will hear of it as a warning against human folly. The Glasgow Report stated that in 126 cases re-vaccination had been recently performed. Of these, ninety-four sickened within eight days of re-vaccination; and seven

cases between nine and thirteen days after. But in four cases vaccination was admitted to have taken place only three and four years before the attack, and in six cases from six to twelve years before. There were nine cases of more remote revaccination, and of the remainder (six) there was no information given.

The Public Schoolboy Re-vaccinated and Smallpoxed.

During the recent London outbreak of smallpox *The Surrey Advertiser* mentioned the case of a public schoolboy who took smallpox during the Christmas holidays of 1901 although vaccinated some time before leaving school. After his recovery he returned to school on February 22, and on March 7, suffered from an eruption and was again declared to be ill with smallpox. The writer thought it well to verify these facts before stating them in this volume and made inquiry in an authoritative quarter. He was asked not to repeat the name of the institution but was otherwise left free to state the following facts:—In October 1901, J. W. G., aged sixteen, was vaccinated. All three places took ordinarily. A hundred other boys were vaccinated from the same batch of lymph and two from the same tube. Nothing untoward occurred with them. On December J. W. G. travelled to N— via London. Nine days later he was reported by Dr. W. of N— to have variola. He returned to school well, late in February. Nine days later, after again passing through London he developed an illness which seemed to be smallpox. The doctor, never having himself seen a case, had the boy seen by three other doctors all of whom were experienced in variola, varicella, and vaccinia, and all pronounced the ailment to be smallpox. One of these doctors continued to attend the boy and did not alter his opinion. The informant says that though many who did not see the case were ready with a diagnosis against variola, all who did see it were of opinion that it was variola. It may be added as another illustration of the power of the *chose jugée* that the informant, convinced as he apparently is that the case was smallpox, adds:—“The fact of a case of variola occurring in such a large and closely packed community, and not being succeeded by a second case, is indicative of one of two certainties (1) that it was not variola at all and was incorrectly diagnosed as such, or (2) that some powerful preventive against the spread of so infectious an ailment was at work, and that this preventive was vaccination.”

There will be stated, later on, some facts which appear to tell against this presumption that people in contact with smallpox must necessarily take it, but in the meantime there may be quoted the evidence of Dr. Birdwood (Sixth Report) in reference to a patient's unvaccinated sister who was exposed to infection for twenty-four hours after the eruption without contracting the malady. "Smallpox" said Dr. Birdwood, "is not particularly infectious at that stage. In the early eruptive period I believe that a good many do not catch smallpox."

Recent Vaccination.

With the case for revaccination, the case for recent primary vaccination stands or falls. Returning, therefore, to the claim that primary vaccination protects children under ten years of age from smallpox, or at all events, severe and fatal smallpox, the Conscientious Objector inquires whether the evidence of indisputable experience is any better than that of the figures. The case of George Reddall, already referred to (page 61), shows the untrustworthiness of the statistical claim that no child under ten, who was vaccinated, died in London from smallpox in 1901. In Glasgow, during the recent epidemic there, the age limit for revaccination was reduced to five years because of the number of children admitted to the smallpox hospital with trifling vaccination cicatrices. (The theory that the marks indicate the efficiency of the vaccination is a part of the controversy of vaccination as to which the Conscientious Objector may simply refer the reader to the interesting discussion of the subject in the Dissent (pars. 126 to 130), and to the evidence of Professor Crookshank and Dr. Birdwood, and to an opinion of Dr. Monckton Copeman's near the end of this volume.) When a boy of two years, who could not under any system of classification be ruled out as unvaccinated, or doubtful, did such an irregular thing as to die from smallpox in Glasgow in 1901, the occurrence was minimised in the official report in these words:—"Regarding the single fatal case occurring in the vaccinated column under five years of age, it is to be observed that the patient was a boy of two years, with a fairly abundant discrete rash, whose vaccination mark was .04 of a square inch in area, was glazed, and not foveated, and could not, therefore, be regarded as evidence of satisfactory vaccination." Suggestions that children

should be re-vaccinated after five years of age instead of after ten, have been increasingly frequent of late; and the Chief Rabbi, Dr. Adler, at the Imperial Vaccination League deputation to Mr. Long, indicated that children over eight had been re-vaccinated in the Jewish schools. Dr. Dingle's Report of the Middlesborough epidemic, showed four cases of smallpox, at intervals of twenty-two to forty-three days after primary vaccination, one of them a fatal case. In Dr. Coupland's Report on Gloucester to the Royal Commission is mentioned the case of a girl four years old, who, having been vaccinated on April 15, 1896, was attacked on May 7 with a severe type of smallpox, and died after ten days illness. In a family of seven, with five children, aged 3, 5, 7, 9, and 12, the two youngest were unvaccinated, the others vaccinated. The eldest boy (vaccinated) was the first to be attacked. The little unvaccinated ones died, and the vaccinated boy of seven years was attacked severely. He had four well formed cicatrices. His attack was a confluent one, and left his face much pitted. In a family of nine, all vaccinated, five were attacked with smallpox, three with the confluent variety. When a case such as that just mentioned is quoted, where the vaccinated boy of seven had a severe attack and a pitted face, but did not die, and two younger children, unvaccinated, died, the confluent attack and the pitted face of the survivor, although a conspicuous failure of the promise of vaccination, are not heeded, and the attention of the Conscientious Objector is severely called to the death of the younger children, without regard to the fact that the younger the child is, the more slender is its hold on life, or without supplying any information as to whether the cause of the neglected vaccination in an otherwise vaccinated family was not delicate health. But what impresses the Conscientious Objector is, that it was the youngest and most recently vaccinated child who, among the vaccinated members of this family, took the disease most severely. "His is, I think," said Dr. Coupland, "the most severe case I have seen in a vaccinated child." The Conscientious Objector also observes that in the house next mentioned by Dr. Coupland (p. 49 of his report), "the only unvaccinated member of the family (a child of seven) escaped; another child, over five, vaccinated five days before sickening, died, as also did a girl of fourteen; she had four vaccination cicatrices, and died of malignant smallpox." It is in the face of cases such as these that Dr. Symes Thompson still holds on to the doctrine of the

protection of vaccination "against severe and fatal smallpox" being "prolonged throughout life." Numerous instances are mentioned by Dr. Coupland of unvaccinated patients having mild attacks, and thus recalling to the Conscientious Objector's memory Dr. Birdwood's famous piece of evidence, so destructive of the general theory on which compulsion is based:—"How long immunity lasts, or modification results, I cannot say, for smallpox is a Protean disease, and its benign and modified forms do sometimes occur in the unvaccinated, its most severe (hæmorrhagic or confluent) and fatal do sometimes occur in the well vaccinated."

Mr. Long and the Ambulance Man.

"How long immunity lasts, or modification results, I cannot say." Can anybody say? Can any guarantee be given on this point, any more than on the point of the "purity" of the lymph? And how, again, does the absence of any assurance on that point affect the equity of compulsion? To those who having ceased to accept the *chose jugée*, have scrutinised the recent references to smallpox in the newspapers, the most striking feature of these allusions has been either the significant omission of any information as to the vaccination condition of the patient (an omission sure to be supplied with alacrity, if there was neglect of vaccination), or the assurance that the patient had not been "recently re-vaccinated." Inquiries on this point of recency generally prove inconvenient to the compulsionists. The President of the Local Government Board, in his reply to the deputation of the Imperial Vaccination League, pitched upon the case of a man in the Ambulance Department at Liverpool who, he said, "had not been re-vaccinated, and who was the one man to take smallpox, all the rest doing the same work and running constant risk of infection—getting off scot-free—because they adopted reasonable precautions." The answer of Mr. E. Cheshire, Hon. Secretary of the Liverpool and District Anti-Vaccination League, is a simple one. Mr. Long had been misinformed, or only partially informed. The unfortunate ambulance man who took smallpox was in reality a thrice-vaccinated man. He did not get vaccinated a fourth time, because he relied upon the fact that he had been vaccinated as recently as 1894. Replying to Mr. W. L. Beurle, of the Metropolitan Asylums Board, Admiral

Adeane said on March 12th last that two of their Ambulance staff had contracted smallpox. One had been successfully re-vaccinated within twelve months, and the other had not, the reason being that in the opinion of the Medical Superintendent he was already sufficiently protected by vaccination.

The case of the Nurses.

The claim of immunity for the hospital staffs must be taken in connexion with cases of the kind just mentioned, which do not come out except on close inquiry. With regard to the immunity of the hospital nurses, the actuarial critic who made light of the other statistics was impressed as most people are. Unfortunately, there can be no control experiment in this case; mock challenges to have one are sometimes given to the Conscientious Objector; but when they have been accepted, as they have been from time to time, nothing has come of the proposal. At the Metropolitan Asylums Board Hospitals, nurses' pay dates from the time of their submission to vaccination. But Mr. Beurle, a member of the Board who has never been vaccinated, enjoys an immunity equal to that of the nurses when he visits the hospitals, which he does frequently and without fear. If the nurses have for some years past enjoyed an unbroken immunity which they have not always enjoyed (for six of the staff had smallpox in 1893); and if, as has been amply proved, the re-vaccinated persons in the army and elsewhere are not found to be similarly immune, is it not again reasonable to ask what other circumstances besides re-vaccination mark out these nurses from their kind? Have they the same natural insusceptibility as the unvaccinated Mr. Beurle? How many of them have gone through smallpox? The theory of vaccination is that smallpox is artificially taken in order that the real smallpox may be averted, an unregulated and severe attack escaped, and it has been denied that vaccination accomplishes this, although variolation may. By the gradual acclimatisation of the smallpox nurses—a process known as seasoning—are the nurses variolated?

Smallpox Hospital Staff illness.

In this connexion the return of staff illness in the infectious hospitals of the Metropolitan Asylums Board during the year 1901 is really remarkable. Out of 575 officers employed at

smallpox hospitals 226, or close upon forty per cent. suffered from some form of illness. In the previous year the proportion ill was only fifteen per cent. In eighteen cases scarlet fever is assigned as the illness, in five, diphtheria; other diseases laid aside for shorter or longer periods two assistant medical officers, one steward's clerk, fourteen charge nurses, sixty-nine assistant nurses, seven nurse attendants, sixty wardmaids, four housemaids, nine laundrymaids, nineteen porters, three boatmen and one painter, two needlewomen, two kitchenmaids, five messroom maids and three stokers. The escape of the smallpox hospital staff from smallpox it will be seen was not entirely a pledge of health seeing it was attended by so much other illness, some of it not unaccompanied by eruptions. Upon the sight of these statistics of suffering, the Conscientious Objector will probably withdraw the sarcastic observation which he is apt to use when irritated by the use of the nurse argument, quite illegitimately, as an argument for universal compulsion to vaccinate:—"What a pity we cannot all be hospital nurses!"

The risk of infection—is it exaggerated?

One reflection is suggested by the immunity of the nurses, when considered in connexion with the similar immunity of an unvaccinated man like Mr. Beurle, and unrevaccinated Mr. Biggs of Leicester, who has been a leader of antivaccinists for many years and always visits smallpox hospitals when he can, without ever dreaming of any other protection than his own robust health. It is whether one regrettable result of the existence of a vaccination law has not been to foster an exaggerated and mischievous fear of the infectiousness of smallpox. There was once a Conscientious Objector among the Magistrates who was also a member of the House of Commons—Sir Jervoise Clarke Jervoise. He gave evidence before the Select Committee on the Vaccination Act of 1867, and tried to resign the magistracy when it appeared likely that he should have to administer that Act. He had relations who knew Jenner, and who had told him of cases of smallpox after vaccination by Jenner himself. He mentioned to the Committee the case of a pauper Emanuel Cook, who while under treatment for smallpox had escaped his guardians twice, without any infection being spread to others. One or two

similar cases have been heard of lately—the following, for example, on the authority of Dr. Robertson, Medical Officer of Health for Sheffield, referring to a case which is further worth notice as an example of an unvaccinated person having smallpox in a harmless form.

“The case was that of a gentleman connected with a Mormon Mission in Sheffield, who travelled to Sheffield from Nottingham in a crowded railway carriage while suffering from what was recognised to be a well-marked attack of discrete smallpox. The patient travelled in an infectious condition in a crowded railway carriage to Sheffield. While in Sheffield he lived in a crowded house where there were a number of unvaccinated people, and for four or five days before the nature of his illness was recognised he travelled in tramcars. He did not spread the disease to any other person. As regards the mild type of the disease, the patient was unvaccinated, and apart from his appearance seems to have suffered little from the attack.”

But a more important testimony is that offered by Dr. Orme Dudfield in an argument for the use of the ambulance steamers to convey fever and diphtheria patients to the country. Anticipating the objection that it would not be right to expose the sufferers to the risk of catching smallpox at the South Wharf Shelters, Dr. Dudfield said (the italics are not his):—

“I have indisputable authority for saying that there has been no spread of smallpox in the neighbourhood of the Shelters due to the transit or detention of patients. The immediate vicinity has been singularly free from smallpox; freer, indeed, than many other parts of the Borough of Bermondsey, although within the last few months upwards of 8000 patients have passed through the Shelters. Not long since some 140 workmen were employed in erecting an extension to the Shelters, at a time when eighty cases per diem were being admitted, and although they were necessarily brought into close proximity to the sick, and were *generally unprotected by vaccination*, only one of them fell ill—about a week or two before their work ended; and of him all that could be said was that it was not known whether he had contracted the disease *there or elsewhere*. The Shelters hold twenty-five patients, and on one occasion, fog having stopped the river traffic, 120 patients were detained therein, and on the steamers, without ill-effect in the locality. Barges constantly anchor close to the Shelters, *but I cannot learn of complaint having ever been made of any spread of disease to the crews.*”

Although the connexion which appears to have been established by recent experience between isolation and the stoppage of smallpox apparently negatives the conclusion to which Sir J. Clarke Jervoise came (for he disbelieved in the infection theory altogether), there does seem to be fair ground for holding that the infectiousness of smallpox has been grossly exaggerated, and

that, like the plague and cholera, it can obtain no permanent foothold, except in a favourable soil. The germ theory, if accepted, should be accepted all round. It is not only the bacillus, or whatever the micro-organism is, that is needful to the spread of a particular disease, but the favourable soil for its cultivation. It is not in robust, healthy, cleanly bodies, or habitations that such favourable soil is found, nor even in the smallpox hospital itself under modern conditions of hospital management. One nurse, when asked by the writer what she had to say on this nurse immunity problem, promptly replied that a modern hospital for the treatment of infectious disease was the last place where it ought to spread. She had the faith that to a nurse must be invaluable. It is not desired here to take up any such extreme position; but the aerial convection theory is still, if one may judge from occasional letters in medical papers, not yet universally accepted; and these arguments are good, so far as they warn us against going to the opposite extreme of inferring that all who are exposed to infection are likely to be attacked, unless "protected" by a particular rite. In this connection it is well to remember not only Dr. Farr's reminder that the "best security" men have is "the vigour of their own life," and that "epidemics appear to be generated at intervals in unhealthy places" (not in healthy persons); it is well to bear in mind also the trouble that was taken, in the old superstitious days of inoculation, to take the smallpox when that was thought to be the easiest way of getting over it. To make sure of taking it the skin was broken, and the smallpox material actually rubbed in. And in the present day, as will be seen in the next chapter, the Local Government Board officers in their search for confirmation of their theory of the origin of cowpox have been freely experimenting with smallpox matter at Lamb's Conduit Street, and elsewhere. Either they do not themselves believe in the great danger of infection, or they have incurred a serious responsibility in bringing into their laboratories, and making on animals there experiments with smallpox which it is so urgently impressed upon every medical Officer of Health must be removed far from the population, and isolated at extra-mural hospitals.

Increasingly Limited "Protection."

In one respect London Hospital Nurses are certainly more fortunate than the Conscientious Objector. Their Medical Super-

intendent has given them a definition of sufficient "protection." The evidence required from them is, "the presence of scars left by a former attack of smallpox, or successful vaccination within three years." This brings the question of compulsion to a definite point, unless the experience of the ambulance men already referred to (p. 88), has now brought down the limit to less than twelve months. The protection is for three years, or perhaps only for twelve months. The practicability of compulsory re-vaccination every three years at the least is the ultimate issue to which we are brought, if this vaccination problem is to be decided by the argument from the immunity of nurses.



CHAPTER IX.

THE LYMPH FROM THE VACCINATOR'S POINT OF VIEW.

All the foregoing facts and considerations raise fresh and wondering enquiries about the lymph and the scientific basis of those claims on its behalf which seem on close examination to be subject to so much abatement. The Royal Commission frankly gave up the bacteriology of the subject and rested their qualified, inconclusive, and not unanimous verdict in favour of vaccination upon the statistical case. The scientific defence of vaccination was acknowledged to be incomplete; the scientific attack—for there was a powerful scientific attack—was not at all repelled. What the cowpox disease (*vaccinia*) was, the Royal Commissioners did not find out. Jenner called it by a question-begging expedient, smallpox of the cow. The Royal Commissioners could not decide that it was smallpox of the cow, or that it was not, as was stoutly maintained before them, a totally different disease that could not afford specific protection against smallpox. Even if it should turn out to be a modified smallpox the Royal Commissioners acknowledged that they could not say why it should be held to furnish security against an attack of the genuine disease, seeing that now in every epidemic there are cases of second attacks of smallpox to show that smallpox does not necessarily protect against itself. "Science," they simply said, has not yet succeeded in freeing therapeutics, or kindred subjects from obscurity or in solving all the problems which they present." (Final Report, par. 362). They stood on what the majority of them took to be the facts established as to the different treatment of vaccinated and unvaccinated by the smallpox. That is to say, they stood on the statistical case. They said if that were satisfactory "no theory based upon hypotheses drawn from those obscure regions which science has not yet completely illuminated may safely and wisely be disregarded." (Final Report, par. 364). But this disposes of the frequent justification of the law on the ground of its approval by "the bulk of medical opinion." Statistical authority is not medical authority, and if "authority" is to be invoked in justification of compulsion, the authority appealed to

is the wrong one. It has been shown that the case on the facts and figures was not made out to the satisfaction of the whole of the Commission; and it was, and continues to be, heavily discounted by experience. The Royal Commissioners said in effect, Never mind the bacteriology, let vaccination rest on the figures. The disinterested statistician, not officially bound to vaccination, replies:—

“The great difficulty of dealing with the subject at all satisfactorily from a statistical point of view, owing to the many possible disturbing influences, made him hope that eventually the subject would be conclusively dealt with in the laboratory, from the bacteriological standpoint.”—Mr. Douglas Watson at the Institute of Actuaries.

A game of ping-pong.

Thus instead of placing vaccination on a rock as Jenner's biographer thought he had done sixty-five years ago the investigators are still keeping it tossing to and fro in the air in a veritable game of battledore and shuttlecock, or ping-pong.

Such invitations to “deal conclusively” with the subject were foreseen by those responsible for vaccination to be inevitable after the Royal Commission's Report; and ever since its issue the bacteriologists have been endeavouring to meet this reasonable demand, but do not appear to have come to any definite conclusion. The result is that the general practitioner is hopelessly at sea when he is faced with questions about his lymph, especially if they are asked by the inquiring Conscientious Objector. It is a simple matter, of course, to vaccinate for the easy-minded parent who can bring himself to let the doctor do anything with his child because he *is* the doctor. But there are other parents who learn enough of the antivaccinist case to ask questions, and questions which the physician feels it to be reasonable that he should try to answer. Can you guarantee the safety of the lymph? Can you guarantee its efficiency? Do you know for how long this lymph will guard me or my child against smallpox? These questions are gradually forcing the physician back upon the hitherto strangely neglected and all important question underlying the whole problem of vaccination—Can I, can anyone, tell my patient what the lymph is? To those who are now being asked to make not only vaccination, but re-vaccination compulsory, it ought to be rather staggering to realise that the answer to all these questions is “No.”

Vaccination always doubted.

But more staggering still ought to be the realization that there is nothing new in the scientific doubt about the lymph, and that just as the existence of a compulsory law and the necessity for saving the credit of a Department, was responsible for the false assurances of former days that disease could not be communicated in vaccination, so the same unfortunate fettering of the medical profession by the legal compulsion of vaccination has served to hush up questions about the lymph for more than half a century. This part of the history of vaccination is startling to the lay inquirer, and full of warning to the medical inquirer that so long as vaccination law is unrepealed, if he wishes to stand well with the powers that be, he had better restrain his ardour for research, and fall in with the orthodox creed on this subject.

In the House of Commons on June 14, 1867, Mr. Henley pointed out that seven per cent. of the answers given to the General Board of Health of 1856, and published in the Parliamentary Report now known as Sir John Simon's Papers on Vaccination gave affirmative answers to a question as to whether disease had been communicated in vaccination. These he said ought to have led the Privy Council to make further inquiry, as no amount of negative evidence in such a case should be allowed to override positive testimony. But it was allowed to override it (as has been shown on p. 11) for many years. Similarly, the communication of Dr. Joseph Hamernik of Prague, ought to have opened the eyes of the Government of that date (1856) to the need for a further investigation into the relations of cowpox and smallpox. Dr. Hamernik anticipating a modern criticism, pointed out that Jenner's name for cowpox *Variolæ Vaccinæ* covered an inaccurate assumption, and said:—

“We learn from all well marked smallpox epidemics that cowpox does not protect from smallpox even after repeated vaccinations, and that the two affections have no relations whatever with each other.”

He further pointed out that:—

“The complaints about the unsatisfactory or nugatory protective powers of the cowpox are as old as vaccination itself; nor will the attempts at changing the cowpox matter, the re-vaccinations, the use of numerous punctures, and their frequent repetition, help to put erroneous doctrines upon a better footing.”

In another part of his paper put at the service of our Government, this celebrated physician of his day, and Professor of Clinical Medicine, said:—

“The cause why many individuals escape smallpox altogether; why some have it even twice; why the inoculation of the disease sometimes takes no effect; why variolous evaporations may by some be inhaled with impunity, is entirely concealed from us.”

A Notable Prediction.

And at the end of his paper he said:—

“If the question of vaccination is entrusted for renewed discussion to men looked upon as conversant with the subject, and to medical and other officials, it is quite certain that the old system will be carried on, and will become worse, because reforms of this kind have never been effected in this manner. Such a question can be settled only by an uninterested and independent committee, who would have to take cognisance of the simple facts bearing upon the matter. This is, according to me, most easily feasible in England; for the *Times* of November 20th, 1856, says very justly—‘We consider that our country is destined to hold a place in the history of the world, to which no other country in the world will be able to lay a claim.’”

Sanguine Dr. Hamernik! His confidence in the freedom of our Government Departments from any domination by fixed ideas was sadly misplaced. His paper as published, was interspersed with notes by Sir John Simon, calculated to minimise and even discredit his opinions. Long afterwards Sir John explained in his “*English Sanitary Institutions*” that his Papers on Vaccination were intended to meet the objections which were expected to be made to vaccination before a promised Parliamentary Committee; but fourteen years, as he said, elapsed before “that sort of use” was found for the volume.” It was put to “that sort of use” in 1871, and time has brought its revenges to the anti vaccinators against whom it was used; for now, whenever they want to illustrate the inconsistency in the vaccinist case, they quote from Sir John Simon. Dr. Hamernik’s suggestive opinions were thus put aside, and have only assumed new importance in the present day on account of the writings of Dr. Creighton and Professor Crookshank, who have independently arrived at conclusions not dissimilar in many respects to those of Dr. Hamernik, and who now have the satisfaction of knowing that their work cannot be ignored, and has in fact had the effect of setting the bacteriologists

and the vaccinists upon inquiries, which up to now have failed to shake their conclusions. In particular, it has been found impossible to follow the example of the majority of the Royal Commission and treat Dr. Creighton's theory accounting for the occasional resemblance of vaccinal symptoms to those of syphilis as a "point of speculative, almost it might be said of transcendental pathology, upon which for practical purposes it is useless to enter" (par. 423 Final Report). This is the very point upon which those responsible for vaccination have found it absolutely necessary to enter, and to the much wished-for refutation of which all recent experiments have been directed, under the instinctive conviction that until the minds of inquirers can be settled on that point, it is hopeless to expect that vaccination can ever be universally accepted. Thus it has come about that the origin of the lymph, after many years of neglect, has at last become what it ought to have been all along the subject of first importance.

The Origin of Vaccination.

It was Dr. Creighton, who, in the preparation of his epidemiological articles for the "Encyclopædia Britannica" was led into historical and other investigations concerning the basis of Jenner's discovery. Like Dr. Hamernik, he appears to have been struck with the want of adequate foundation for the designation of cowpox as smallpox of the cow, and he pointed out in a small professional work called "Cowpox and Vaccinal Syphilis," that the theory of cowpox required revision. At the end of his technical essay, in which he referred to the original and virulent characters of cowpox, and to the "occasional reversion of type, with disastrous consequences in the ordinary course of vaccination practice," he used these words:—

"I appeal to facts that are as well authenticated as any facts can be, and I invite the most rigid scrutiny of my use of them, or of my reasoning from them. I deprecate no criticism; but I warn the apologists of the Jennerian doctrine that any attempt to wrap themselves in a mantle of orthodoxy will be a grave dereliction of that duty which the profession owes to the public. I am as sensible as any of the need of securing our professional credit and dignity in the controversy which has been raised, by an intelligent and ceaselessly active body of the laity, touching the whole subject-matter of compulsory vaccination; and it is because I am persuaded that the profession

must lead rather than follow public opinion in bringing the theory of cowpox up to date, that I have thrown this contribution to the subject into a strictly professional and even technical form."

The "rigid scrutiny" invited was promptly applied. The late Sir James Paget mentioned Dr. Creighton's little book to Professor Crookshank, who was just then investigating an outbreak of cowpox in Wiltshire on behalf of the Agricultural Department of the Privy Council. This was, apparently, what led to Mr. Crookshank's book on the History and Pathology of Vaccination. Says Mr. Crookshank in his preface, from which this story of the book's origin is derived:—

"The question naturally arose whether my observations supported or refuted the conclusions arrived at by Dr. Creighton as the result of his historical researches. While attending at the National Vaccine Establishment of the Local Government Board, I was unable to obtain any exact details, clinical or pathological, of the source of the lymph which was employed there. From my experience of this and other vaccination stations, I found that both official and unofficial vaccinators were completely occupied with the *technique* of vaccination to the exclusion of any precise knowledge of the history and pathology of the diseases from which their lymph stocks had been obtained. Thus, at this early stage of my investigation, I felt that what Ceely said in 1840 was still true: 'the imperfect knowledge which we at present possess on many points connected with the natural history of the variolæ vaccinae, and the numerous and formidable impediments to the extension and improvement of that knowledge, demand the continuance of vigilant inquiry.'"

Mr. Crookshank was led on to an investigation which to put it mildly did *not* refute the conclusions of Dr. Creighton. He came to the conclusion that there was no foundation for the statement that Jenner believed cowpox to be derived from human smallpox and that therefore his term *Variolæ Vaccinae* was justifiable. The facts of the case, he said, are that Jenner believed that the cowpox was derived from the diseased heels of the horse; he also believed that smallpox and some other diseases arose from the same source. Professor Crookshank, as "a result of an investigation into the history, and especially the pathology of vaccination felt convinced that the profession had been misled by Jenner, Baron (Jenner's biographer), the reports of the National Vaccine Establishment and by a want of knowledge concerning the nature of cowpox, horse pox, and other sources of vaccine lymph." His final conclusion is that ere long a system of compulsory notification and isolation will replace vaccination.

Having regard to the circumstances which led first Dr. Creighton and then Mr. Crookshank into these researches and to the fullness of their investigations, begun in both cases with a belief in vaccination, it is surely absurd to plead the opinion of the bulk of the medical profession against these two men and others who have made special inquiry into the subject.

Penalty of Professional Inquiry.

Dr. Scott Tebb, for writing "A Century of Vaccination," in which he asked his profession and all legislators to consider whether there was any scientific basis for vaccination, had an appointment vetoed by the President of the Local Government Board. The final words of his preface were thus justified. They were to the effect that if the law of compulsory vaccination and the endowment of the practice were done away with medical men would find themselves free for the first time since 1803 to discuss the vaccination question as a scientific one on its own merits.

Under such discouragements as independent professional inquirers meet with, if their conclusions are contrary to the presumption of the law in favour of vaccination, it is not to be wondered at that "the bulk of medical authority" can still be pleaded by magistrates and others against Conscientious Objectors. Even such a strictly judicial attitude as that maintained by Sir William Collins, in becoming recognition of the impartiality required of him since his appointment as a Royal Commissioner on Vaccination, did not save him from an attempt on the part of a professional advocate of vaccination to instigate his medical brethren to vote against him when he was a candidate for the representation of his University in Parliament. An increasing number of medical men, however, are privately showing themselves well disposed to the Conscientious Objector, and a few have even been impelled by a sense of justice to appear on anti-vaccinist platforms. Dr. Hadwen of Gloucester has shown conspicuous courage in this way. Taught by personal experiences, and professional inquiry, to sympathise with the Conscientious Objector, he has openly espoused the cause of the antivaccinator, and it is significant that in Gloucester after that town's experiences, which he was able to represent in a light so different to that of the official reports, he was sent to the Town Council and the

School Board by an unparalleled popular vote to remedy those sanitary defects in streets and schools which were locally believed to be the true reason why smallpox found a footing there in 1895-6. Dr. Hadwen's Reply to Dr. Coupland's Report on Smallpox at Gloucester does not seem to be open to rejoinder.

Experiments with lymph.

Meanwhile, what of the inquiries and experiments which are encouraged by Government—the experiments of their own inspectors and bacteriologists? They have been directed to finding if possible some justification for Jenner's view that vaccinia is, or might be, smallpox of the cow after all. It is not pretended that these experiments (which will be referred to presently), are decisive or complete. Yet it is assumed that before final and decisive experiments have been made, compulsion may legitimately be carried on just as if everything had been settled, the experimenters availing themselves of the facilities for continuous experiment which the system of compulsion affords, and the vaccinating doctors being still expected to receive the lymph that is sent to them in faith without question as to its real origin and character. Thus in 1898, attention was directed to the new medium—glycerine—in which the lymph was conveyed, and the public had to accept the assurance that this medium had the peculiar power of destroying all injurious germs except the still undiscovered and unisolated germ of vaccinia itself, which was to protect from smallpox. Horace Walpole, in a letter (quoted in Dr. Creighton's *History of Epidemics in Britain*) referred to Johanna Steven's Solvent for the Stone in a humorous description which would need to be matched in order to meet the remarkable case of the glycerine lymph. "It is of so great violence that it has to split a stone when it arrives at it, and yet it is to do no damage to all the tender intestines through which it must first pass. I told him I thought it was like an Admiral going on a secret expedition of war with instructions which are not to be opened till he arrives in such a latitude." The mission of the glycerine, as explained to Parliament and public was still more wonderful. It was to make general war in the sea of lymph so as to kill off every pathogenic germ and yet to spare one among them which does not happen to be distinguishable from the rest.

The Glycerinated Calf Lymph.

It is important to note the manner in which this glycerinated calf lymph was commended to the confidence of Parliament and of the men who have to use it. The Royal Commission had declined to express a favourable opinion of glycerinated lymph, or without further inquiry, to endorse the conclusions of its advocate, Dr. Copeman. They said the investigation had not reached a point at which it was possible to give this lymph the credit claimed for it, and they noted the fact that it had been at one time suggested that the introduction of glycerine was likely to be mischievous. As the Royal Commission left the subject, therefore, it seemed to require further investigation. In less than two years Mr. Chaplin came to Parliament and stated that the investigation had been held and that all the wonderful claims for the lymph had been substantiated. But who made the investigation? Was Dr. Hamernik's sagacious principle applied that "only an uninterested and independent Committee should take cognisance of the simple facts bearing on the matter"? The men who made the further investigations were Dr. Monckton Copeman, whose glycerine method was the one to be investigated, and the late Sir Richard Thorne Thorne, both Local Government Board Officials, and both, if vaccination and the credit of their Department were to be saved, under the urgent necessity of finding a new lymph. They visited the Continent to report on the preparation and storage of glycerinated lymph there, and Dr. Copeman prepared the Report on the subject in which he had this peculiar personal concern. Dr. Blaxall also had an investigation entrusted to him. How was that arranged? Dr. Copeman explains with perfect frankness in his Milroy Lectures:—

"The Local Government Board instructed me to make arrangements with Dr. Blaxall, the Lecturer on Bacteriology at Westminster Hospital and now Bacteriologist to the Government Glycerinated Lymph Laboratories, to carry out a further series of experiments on the lines indicated by me in the evidence which had been tendered to the Commission with the object of eliciting more fully the exact value of my glycerine method for the purification and preservation of vaccine lymph."

No imputation is cast, of course, on the perfect honesty and good faith of those gentlemen; but it is legitimate to ask whether these inquiries by the proposer of the method, by the Bacteriologist of the new lymph factories, and the principal

Medical Officer of the Local Government Board, whose old lymph was virtually condemned by the report of the Royal Commission on Vaccination and who was in immediate want of a new variety, are the kind of inquiries which the Royal Commission contemplated, or which any ordinary business man would describe as amounting to an impartial and satisfactory investigation. Even in reference to this Report, Sir Richard Thorne, who wrote the introduction, said that "much remained to be ascertained by careful scientific research in order to learn what are the precise conditions under which glycerinated calf lymph can be prepared and stored so as to secure to the utmost freedom from extraneous and especially from pathogenic micro-organisms whilst at the same time retaining to the utmost the undiminished protective value of the lymph material against smallpox." It appears from the report referred to* that the samples of the glycerinated calf lymph obtained abroad were used, as a matter of course, experimentally on British children at Lamb's Conduit Street, and this is part of the system of vaccination; for Dr. Monckton Copeman told the Royal Medical and Chirurgical Society on December 10, 1901:—

"We, unfortunately, at present, possess no test of the efficiency of lymph other than the clinical one, and it is further of interest in this connexion that samples of lymph capable of affording fair results on the calf may fail to cause equal response when employed for vaccination of the human subject. It is, therefore, of importance that, as is invariably done in the case of the lymph issued from the Government Laboratories, every batch should be tested on children before being distributed for general use."

A Sarcastic Medical Criticism.

The following comments on the glycerinated calf lymph by the Sanitary Commissioner for Madras (Lieut.-Col. Dr. W. G. King) and Dr. Srinivasa Rao, Bacteriologist to the Government of Mysore, as published in *The Journal of State Medicine* for December, 1901, are necessarily more impressive than any that can be offered by a layman. Dr. King's comment is:—

"It seems to me that to decide on the merit of a particular preservative, such as glycerine, because of its supposed special action on 'extraneous micro-organisms' to the exclusion of other considerations, may have aided the especial

* Parliamentary Paper [C. 8587] 1897.

policy of the Local Government Board in popularising animal vaccine; but certainly has not been of advantage to the great body of private practitioners in England and the colonies. So far as information from published records is available, it would seem that the decision as to this action of glycerine was founded upon a single series of limited experiments by Dr. Blaxall. These experiments went to show that with glycerine a sterile product was obtained after four or five weeks storage, whilst with lanoline this was far from the case. Glycerine was credited with extraordinary selective powers; it respected the still hypothetical microbe of vaccine, and slew indiscriminately all the interlopers; the tubercle bacillus was to be slain by a medium that had formerly been sedulously used for its cultivation in bacteriological media. It was darkly hinted that *on one occasion* an observer had in vaccine lymph found a streptococcus remarkably like that of erysipelas; from such perils the public were promised future protection."

Dr. Rao stated that it was clear that glycerine did not render the lymph sterile even at the end of six weeks, and added that his results were at variance with Dr. Copeman's. He asserted the superiority of lanoline over glycerine as a preservative medium for vaccine lymph.

A Pure Vaccine still to seek.

It now appears, as already stated (on page 25), that the glycerine lymph is not proving satisfactory in experience, and it is also clear from the following passage in Dr. Blaxall's latest report, published in the Supplement to the Thirtieth Report of the Local Government Board, that "a vaccine pure in itself, and certain in action," is still to seek.

"The study of vaccine as obtained from the calf, and of the changes which take place in it during the process of glycerination and in the period of storage prior to its issue, presents a large and complex field for investigation; and it is from knowledge derived from such investigation that we can alone expect to ensure the attainment of a vaccine pure in itself and certain in action. The empiricism of the older method of vaccination, to a large extent, left unexplored the principles which underlie the production of a vaccine possessing the most desirable properties, and retaining none but these properties. So many are the conditions that go to the securing of such a vaccine, and so complex are the biological phenomena of its origin—liable as they are at any moment to undergo change through slight variation in atmospheric conditions, light, humidity of temperature or altered nutrition—that there is needed most patient and painstaking research to arrive at a definite exposition of even the most simple of these principles."

Experiment on Children and Lower Animals.

Among recent experiments at the Bacteriological Laboratories were some with glycerine lymph treated with the Röntgen rays, and others with chloroform water used as a substitute for glycerine for mixture with the lymph. In both cases the lymph was tried on children. The numerous other experiments tried on all kinds of animals, and the treatment especially of the calves themselves, are worthy of the attention of those who care for animals. So ignorant are the public of the nature of lymph that some (probably deceived by the ambiguous, and in this case misused term "pure") have imagined pure calf lymph to be some animal product like milk or butter. They have not the least idea that the calf has to endure many vaccinations in a tender part of its frame, the lymph being introduced into the skin in "numerous parallel linear incisions by a sharp scalpel," that it has to suffer the intense irritation of these wounds, and the subsequent vaccination sores for days, being all the time so secured in its stall that it cannot touch them, and that then after other preparations which include putting the skin "thoroughly on the stretch," the "vesicles and their contents are collected with a sterilised Volkman's spoon."

Medical questionings.

While these experiments have been going on, the medical papers have from time to time contained indications of great perturbation of mind on the part of practitioners both as to the efficiency of the lymph and as to the nature of its action. At the Royal Medical and Chirurgical Society on December 10, 1901, Dr. Leonard Dobson is reported by the *British Medical Journal* to have said that there was no test at present known by which lymph could be standardised, and that in some cases vesiculation could be obtained again and again in the same person with different lymphs. A case of three successful vaccinations of one child in four months was mentioned. What efficient re-vaccination was, he said, had not yet been established. He also said, according to *The Lancet* report of the same speech, that he himself, after having been successfully vaccinated with lymph from the Government Laboratories, shortly afterwards inoculated his finger with lymph from another source, and a good vesicle resulted.

Government answers on the lymph.

Mr. Corrie Grant, M.P., on January 27, 1902, asked the President of the Local Government Board (1) whether he could state the original source of the vaccine lymph supplied by the Government; (2) whether any of it was derived from the inoculation of smallpox on animals; (3) whether a pure culture of the organism of vaccinia could be supplied in place of lymph; (4) whether the strength of the virus could be standardised so as to measure the dose administered; (5) whether the Government guaranteed the purity and the innocuity of the lymph they supplied; and (6) whether the Government could take steps to secure the control and supervision of all the lymph used in this country.

Mr. Long made answer:—"The lymph supplied by the Government is derived from calves which have been vaccinated with lymph from other calves and is not obtained by inoculating animals with smallpox. The reply to the third and fourth questions is in the negative. The Government give no guarantee: but they use every effort to secure that their lymph shall be free from undesirable organisms. As at present advised, I do not propose to ask for power to control the lymph supplied from other sources."

It is fair to say that in the same lecture in which Dr. Monckton Copeman said there was no test of the efficiency of the lymph other than the clinical one, he indicated that there was not only great care in its manufacture, but bacteriological examination to demonstrate its freedom from suppurative and other extraneous micro-organisms. Is this practically as good as a guarantee against injury from the lymph? It appears not, for in a most interesting exhaustive and able article in *The British Medical Journal* of July 5, (1902), on the bacteriology of vaccinia and variola it is stated that the German Commission found on bacteriological examination of the inflamed tissue surrounding the site of inoculation in children's arms that nine-tenths of all the cases of intense reaction proved bacteriologically sterile, whereas pustules which were accompanied by no such reaction were found to contain large numbers of bacteria. The same writer says that the argument based on the eliminative action of glycerine must be received with caution.

The Government assurance to Mr. Corrie Grant that the lymph is derived "from calves which have been vaccinated with lymph from other calves," and that no pure culture of the organism of vaccinia is yet possible is calculated as the French say to lead to furious thinking on the whole subject of vaccination, and some of those whirling thoughts have found expression even in the medical papers.

The Marks Theory Exploded.

The Hospital of December 20 (1901), remarked :—"The criteria of efficiency are very unsatisfactory. It may indeed be doubted whether we know what is the exact relationship between the vesicle and the disease." For a short time the practitioner was taught to attribute failures of vaccination to inefficiency, and to judge of the efficiency or inefficiency by the number of marks; and elaborate tables had been made out to prove that in proportion to the goodness of the marks so was the measure of immunity from severe or fatal smallpox. Although this marks theory was severely criticised by Professor Crookshank and by the Dissident Commissioners, it may be said to have held the field until 1901, when it was shaken by a remarkable contribution to *The British Medical Journal* of November 30, and in the following month rudely demolished by Dr. Monckton Copeman himself. This was the contribution to the medical paper. The writer was Dr. J. Kingsford Barton :—

"I have been particularly struck with the splendid marks (four and five large scars) many country-born patients carry on their arms, bearing witness, as Dr. Lovell Drage says, to the excellent vaccination of the much-abused country Public Vaccinator. At the same time, I have specially noticed the fact that by no means infrequently such markedly scarred arms take a great deal more severely in re-vaccination than many arms which have only one or two scars. I am therefore inclined to think that very large scars only indicate a greater tendency to take vaccinia (and, therefore, presumably smallpox) more readily, rather than that they mean extra efficiency of vaccination."

Dr. Monckton Copeman was evidently referring to this communication, when he said in his address to the Royal Medical and Chirurgical Society :—"There can be little doubt but that the huge and deep scars which not infrequently resulted from the vaccinations of former years were due to some extent to excessive destruction of skin tissue by micro-organisms other than specific to vaccinia.

If this be so, then it becomes apparent that persistence of such large and deep scars practically throughout life does not necessarily afford evidence that any equivalent degree of immunity against the infection of smallpox is enjoyed by their possessor. To this fact attention has been called in a recent communication to *The British Medical Journal*, although the writer propounds a somewhat different interpretation of the facts which he has observed."

Consider the successive shocks thus given even to medical believers in the science of protection! It used to be said that if vaccination protected against itself so that you could not be re-vaccinated you could not take smallpox. That position is surrendered, and now unsuccessful vaccination is no sign of safety, while deep scars are no guarantee that you cannot be re-vaccinated nor even that you will escape smallpox. "What is efficient vaccination?" exclaims *The Hospital*. The Government 'four mark' standard is no answer. The whole problem requires to be re-investigated." A third source of comfort used to be that if the vaccination was severe the protection was the surer. *The British Medical Journal* has unkindly allowed doubt to be insinuated here too by copying into its pages an American experience from *The Cleveland Journal of Medicine* to this effect:—

"The conclusion is forced on practitioners that some vaccine conveys only pyogenic infection. The inoculation of such vaccine is followed by severe reaction, including fever, erysipelatous dermatitis, a sloughing sore, and great swelling of the arm. Such a vaccination, in spite of its apparent thorough reaction, produces no immunity to subsequent smallpox."

Vaccine from Smallpox through Monkeys.

What, one asks, is there left for the ordinary practitioner, who humbly follows authority, to believe in? There is the fact that Dr. Monckton Copeman has succeeded in obtaining a vaccine by sundry experiments in smallpox cultures ultimately and indirectly implanted in the calf. In these experiments, it is again worth noting, helpless British children, as well as the lower animals, have played an involuntary part. An egg, it is explained in Dr. Copeman's lectures, was inoculated with an emulsion obtained from smallpox crusts from the hospital ships. It was sealed and kept in an incubator for a month at a certain temperature. With matter then taken from this egg a calf was inoculated. Four days

later the scrapings of the wound were used to inoculate a second calf. From that calf a child was inoculated by the late Dr. Cory, had five good marks, and the mother said the child "did splendidly." Dr. Copeman says: "Eight calves in all were inoculated in this manner, and on the 28th May, 1895, lymph taken from vesicles at the third remove from the egg culture was in my absence employed for the vaccination of a large number of children at The Animal Vaccine Establishment." In 1892 Dr. Copeman experimented on monkeys with calf lymph, with humanised lymph, and with smallpox. The calf lymph protected the animal against vaccination with humanised lymph for seventeen days. No later test was applied, or at all events mentioned. A monkey was inoculated on the 19th July with two tubes of smallpox lymph from the hospital ships. On the fifth day the right arm of the monkey showed papulation and commencing vesiculation. On the 18th August, a month after inoculation, the monkey was inoculated with calf lymph and no result followed. In 1898 human smallpox lymph was inoculated directly on calves without effect, but to monkeys smallpox was successfully communicated, and "when, after one or more passages through these animals, the contents of the local inoculation vesicle were employed for insertion on the calf an effect was now produced which, after one or more removes in that animal, was indistinguishable from typical vaccinia. Moreover, from the contents of vesicles raised in this manner on the calf, a considerable number of children have in turn been vaccinated and afterwards kept under observation for about a couple of months. Every such vaccination 'took' normally and in no case was any bad result subsequently observed by myself, or by the parents of the children, no 'generalisation' of the eruption occurring in any instance." Dr. Monckton Copeman was, here, more fortunate than some vaccinators in 1901; for a number of cases of generalised eruption were sent down to the Hospital ships in that year in the belief that they were smallpox, and sent back as "vaccinia."

The Part the Monkey Plays.

When Mr. Long was questioned in Parliament as to the experiments with real smallpox, he said he had tried hard, in following the questions, to find out what part in the puzzle

the monkey was supposed to play, but had not arrived at any satisfactory solution of the problem. But he apparently did know of the still unrepealed section of the Act of 1867, which provides that any attempt to produce smallpox by inoculation, or by exposure to, any matter, article, or thing impregnated with variolous matter, shall be liable to prosecution and imprisonment. And he said that the lymph thus obtained from smallpox had been destroyed two years before. He saw the connexion which anti-vaccinists would be ready to trace between such experiments and the revival of smallpox. No doubt he now knows "the part the monkey played." The monkey was the intermediary through which the smallpox had to be passed, before it could be got to create on the calf a typical vesicle. And this was held to establish a probability that the original cowpox was derived from milkers who had been inoculated for the smallpox in and before Jenner's day! The cultivation of a vaccine vesicle, or a vesicle like a vaccine vesicle, from smallpox passed through a monkey, is accordingly the one fact of modern science, which is offered to show that Jenner *may* have been right in his supposition that smallpox and cowpox had originally a common ancestor. That this does not much advance the problem of vaccination appears from the history of the lymphs in Mr. Crookshank's work, which shows that resemblances to vaccine vesicles have been produced on calves by many kinds of pox, none of which in his opinion can protect against smallpox. It may be seen from the Supplement to the latest Local Government Board Report, however, that the raising of such a vesicle has come to be regarded as proof of the existence of the specific organism of vaccinia, which has never yet been seen on sea or land.

The Battle of the Bacteriologists.

At this point come in once more the murmuring voices in the Medical Press, for it is not permitted to the layman to have a voice in these questions of etiology, histology, and bacteriology. One reverts to that remarkable confession in *The Hospital*:—"It may indeed be doubted what is the exact relationship between the vesicle and the disease." and to the suspicion which as we have seen was suddenly borne in upon Dr. Kingsford Barton that large scars only indicate "a greater tendency to take vaccinia and therefore presumably smallpox." Such medical confessions have

given a fresh start to the battle of the bacteriologists which it appears is raging over the nature and identity of the micro-organism of vaccinia. The great dispute, about which full details were given by Dr. M'Weeney, Bacteriologist to the Local Government Board of Ireland in *The Journal of State Medicine* for November 1901, is as to whether the infective agent in smallpox and vaccinia (assuming that it is the same) belongs to the bacteria or to the protozoa. If to the protozoa the analogy of smallpox is to the agues of which one attack does not protect against another, a conclusion which will enable Dr. Kingsford Barton at all events to congratulate himself upon his acumen. At the present moment the protozoon advocates appear to hold the field, a thought that would give the Conscientious Objector more satisfaction if they had not reached their conclusions by innumerable experiments upon the cornea of the rabbit, these being followed by crueller experiments still (on the side of the bacterium party) who have felt themselves entitled to show that the same effects could be produced on the cornea of the rabbit by the use of croton oil and other irritants, and that therefore the presence of the protozoon had not been proved. A clear account of these controversies without these horrible details has also been given in the article to which reference has already been made—the article on the bacteriology of vaccinia and variola in *The British Medical Journal* of July 5, 1902. The writer, who claims, apparently with justice, to have endeavoured to present in an appreciative and impartial light the heterogeneous and irreconcilable theories upon the etiology of variola and vaccine current at the present day, says that on one point the opinion of the entire medical profession is practically unanimous and that is that the etiology of smallpox is still an unsolved problem. "If only," he remarks, "the whole category of phantom organisms were to be passed in review which once possessed variola or vaccinia for terminal appellation what a significant commentary they would silently present upon the history of human error."

Conclusion.

Such are the confessions of science in answer to the appeal to strengthen a feeble statistical case. Such, as here examined from the first chapter to this last, is the case upon which Parliament is

asked to continue and extend the powers of compulsory experiment with the young lifeblood of the nation. To the disappointment of *The British Medical Journal*, the King's speech (delivered as this volume is being got ready for press), has promised no compliance with the request for a re-vaccination law; and either the measure is held in reserve, or the Cabinet Ministers have still to make up their minds whether they will do anything more than include the present enactment in the Expiring Laws Continuance Act. Mr. Long told the Imperial Vaccination League that it would be undesirable to give the opponents too much time to get into battle array against his proposals. That extraordinary plea should in itself awaken a desire to re-open and re-investigate the Conscientious Objector's case.



APPENDIX A.

Vaccination Law as Parliament Intended, and as it is Interpreted and Administered.

Where Vaccination Statutes are quoted in this Appendix, they are quoted as Amended by the Act of 1898.

I.—PROSECUTIONS.

The Vaccination Act of 1867 provided (Section 16) that “the parent of every child born in England shall, or where, by reason of the death, illness, absence, or inability of the parent, or other cause, any other person shall have the custody of the child, such person shall, cause it to be vaccinated by some medical practitioner”; but the provisions for enforcing this enactment or punishing neglect, bear evidence of the intention of Parliament to keep compulsion within limits. There are two kinds of procedure, a summary prosecution under Section 29, and an application for an order under Section 31 of the Act of 1867.

Summary Procedure.

Section 29, relating to Summary Prosecution, does not say that neglect of vaccination is the offence; it says, “Every parent or person having the custody of a child who shall neglect to cause it to be vaccinated, or after vaccination to be inspected, *and shall not render a reasonable excuse for his neglect*, shall be guilty of an offence and be liable to be proceeded against summarily.” The Royal Commission agreed that there was much to be said for the contention that this pointed to the reasonable excuse being rendered before proceedings were taken. But, as they also point out, no body or person to whom an excuse can be rendered is indicated; and as the Royal Commission anticipated in the circumstances, the section has been construed as intending that the excuse should be rendered to the tribunal. The history of the Act, however, shows that the Guardians were intended to decide questions of prosecution. As the Act originally stood it contained Section 27, which made it the business of the Registrar to send a list of vaccination defaulters to the Guardians every six months, and the Guardians were ordered to cause proceedings against the persons in default. When in 1871 the appointment by the Guardians of a prosecuting officer, called the Vaccination Officer, was made compulsory instead of discretionary, the duty of the registrar to

report as to defaulters was transferred to that vaccination officer, so that Clause 27 was no longer necessary. The following proofs that the Guardians were meant by Parliament to have control, as the local authority, over the prosecuting officer, subject only to the powers of the Local Government Board to make regulations according to Statute, are offered:—

- (1) The Vaccination Act of 1874 (“an Act to explain the Vaccination Act, 1871”) enacts that the powers of the Local Government Board include making rules prescribing the duties of *Guardians and their officers in relation to the institution and conduct* of the proceedings to be taken for enforcing the provisions of the said Acts. If Guardians had nothing to do with the taking of proceedings there would have been no need to call upon Parliament to arrange for the prescribing of their duties.
- (2) It was in fact the practice of Boards of Guardians to authorise proceedings against defaulters, and the Local Government Board under the Act of 1874 made orders directing them to authorise the Vaccination Officer to take proceedings. For disobedience to these orders a mandamus was obtained against the Keighley Guardians and they were sent to prison.
- (3) The reasons given by Lord Salisbury and other ministers for accepting the Conscience Clause of 1898 included the assurance to Parliament that without some such relief to Conscientious Objectors the Guardians (whom Lord Salisbury described as “the masters in this matter”) would refuse to prosecute.
- (4) The Parliamentary Bills Committee of the British Medical Association in 1898 urged as a *change in the law* that the difficulty with Boards of Guardians might be got over by “laying on some official the duty of taking legal proceedings without receiving any mandate from the local authority, and notwithstanding any opposition by the local authority.”
- (5) An amendment to the Vaccination Bill of 1898 expressly recognising that the Guardians could control or veto prosecutions was withdrawn on the Government assurance that it was not necessary.

The Independence of the Vaccination Officer.

A few months after the passing of the Act of 1898, the Local Government Board adopted the suggestion of the British Medical Association Committee, and in their Vaccination Order declared the doctrine of the Vaccination Officer's independence of the guardians in the initiation and conduct of proceedings; and in this the Local Government Board has since been upheld by a decision of the High Court (*Moore v. Keyte*) on March 5th, 1902. Therefore, it is no longer the case that, as the Act of 1871 says, a parent guilty of an offence and is liable to be proceeded against when he fails to vaccinate his child, and does not render a reasonable excuse. He is liable to be proceeded against for the neglect alone, and the reasonable excuse is no bar to proceedings, though Lord Herschell's Commission held there was much to be said for the contention that it was.

Procedure Under Section 31.

With regard to the other form of proceeding—application for an Order—the wording of the Act of Parliament lends more countenance to the contention that in this case the Registrar, or the Vaccination Officer on whom this duty has now devolved, might lay an information independently of the guardians; but if the section were in other respects as strictly interpreted, the parent would be protected by magisterial discretion. For the magistrate is only required by the statute to make an order for vaccination, “if he see fit.” Should the order be made and not obeyed, it is not even then laid down by Parliament that the punishment shall necessarily follow. It is only enacted with regard to the defendant that, “unless he can show some reasonable ground for his omission to carry the order into effect,” he shall be liable to a penalty not exceeding twenty shillings.

How the Conscience Clause has Prejudiced Defence Under Section 31.

In the interpretation of this section, the magistrates rarely exercise any discretion. It is administered as if Parliament had left them no discretion whatever. Especially since the passing of the Conscience Clause in the Act of 1898 most Magistrates will listen to no excuse, and accept no plea as a reasonable ground for omission to vaccinate, the remark generally being made: “You should have applied for an exemption.” The Conscience Clause has thus actually had the unexpected effect of making things worse in one important respect for the Conscientious Objector. The Conscience Clause only allows him to ask for an exemption within four months of the birth of his child, and then only on one ground—the plea that he “conscientiously believes that vaccination would be prejudicial to the health of the child.” A Conscientious Objector is entitled to refuse to take his chance of exemption within such narrow limits of time and condition, and to try whether he cannot, under Section 31, take wider grounds upon which to persuade the magistrate not “to see fit” to make an order; or if an order has been made, to recognise “a reasonable excuse.” But if he has not asked for an exemption certificate, this is unjustly regarded as a bar to a defence under Section 31.

II.—THE AGE FOR VACCINATION.

The Act of 1898 provided that “within six months” should be the age for vaccination, and that the domiciliary visitation and offer to vaccinate should be at the end of four months; and it was also enacted that “notwithstanding any regulation of any lying in hospital or infirmary or other similar institution, the parent of any child born in an institution, should not be compelled under such regulation or otherwise to cause or permit the child to be vaccinated at any time earlier than the expiration of six months from its birth.” The Local Government Board in its Vaccination Order required a contract to be made with the Medical Officer of the workhouse that he should offer vaccination at the age of *two* months, and by the pressure of its control of the finances forced this form of contract upon the St. Pancras Board of Guardians who had preferred the statutory term of four months because they disapproved too early vaccination.

III.—THE VACCINATION FEES.

In making the rules and regulations with respect to the duties and remuneration of public vaccinators and of vaccination officers the representations of Guardians have as a rule proved of no avail; but at the annual dinner of the Association of Public Vaccinators in 1901, it was stated by Dr. A. E. Cope, one of the Hon.-Secretaries, that the minimum fee for public vaccinators, originally fixed at 3/6 had as a result of the interviews which the representatives of the Association of Public Vaccinators had with the Local Government Board, been ultimately fixed at 5/. The cost of such vaccination fees and expenses as are also recorded in local taxation returns has risen from £72,665 in 1898-99 to £233,512 in 1900-01. This does not of course include the cost of lymph establishments and Local Government Board inspection.

The Vaccination Officer receives a fee of not less than 3d. for every entry on the birth lists sent to him by the Registrar of Births, and a fee of not less than 9d. for every registration of successful vaccination but no fee in respect of his trouble with Certificates of Exemption received from Conscientious Objectors.

IV.—THE CONSCIENCE CLAUSE.

In the Form of Notice of Requirement of Vaccination to be given by the Registrar to the parent on the registration of a birth, the notice that exemption under the Conscience Clause is possible is not mentioned in the same paragraph (No. 2) which mentions the other exceptions to the law of vaccination within six months, but is deferred until paragraph 6. Many parents having complained that they had postponed the study of their notice paper until nearer the expiration of the limit of six months and were then surprised to find that application for exemption was not permissible after the child was four months old, efforts have been made to get the provision as to the Conscience Clause made more conspicuous on the notice paper. This small concession on behalf of the Conscientious Objector has been opposed both by the Registrar General and the Local Government Board.

It is the administration of the Conscience Clause by the magistrates, however, which has furnished the most startling contrast between the spirit of the Vaccination Acts and that of their administrators. By Section 2 of the Act, it is promised that "No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867 if within four months from the birth of the child he satisfies two justices or a stipendiary or metropolitan police magistrate, in petty sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the Vaccination Officer for the district a certificate by such justices or magistrate of such conscientious objection." Doubts were entertained in Parliament as to the meaning of the peculiar wording of this Section; but these were met by explicit assurances from members of the Government. Mr. Chaplin, the minister in charge of the Bill, said the magistrates, unless convinced that the declaration made before

them was absolutely false, would accept it as a matter of course. Sir Robert Finlay, then Solicitor-General, said no inquiry as to the validity of the grounds of the Conscientious Objector was possible. Mr. Balfour said :—

“What the magistrate has got to convince himself upon is not whether the man’s belief is well or ill founded, not whether the man has investigated the important medical problem involved, but whether as a matter of fact, however it has arisen, the belief exists and is a genuine one. I think everyone will admit that if the duty of the magistrate is limited, as I have stated, his business is clearly restricted to convincing himself that the man, be he right or wrong, ignorant or wise, whether he has investigated the grounds of his belief or not, genuinely entertains the belief, he is bound under the clause, as the Government intended it to operate, to secure the man from any further prejudice.”

The examples of administration in entire contradiction of these assurances would fill a large volume. A few cases only are given here from a selection in *The Vaccination Inquirer* of November, 1902, to illustrate the magisterial treatment of Parliamentary intention.

The Rev. Robert Walker, Baptist Minister at Chesham, was refused an exemption certificate by his local magistrates, and only ultimately obtained one by coming to a London Police Court. He writes to *The Chesham Examiner*:—

“I go to the Petty Sessions and swear on oath that I have the belief required above, and am refused. Why? Because the magistrates believe I have sworn a lie, and have no such conscientious belief? Because my belief is not such as is required *by the Act*? Or because my belief is not such as is required *by the magistrates*?”

At Dorchester, the wife of a sailor serving in the Navy in China, was refused a certificate for her second child, although she had already had her conscientious objection acknowledged by the granting of exemption in the case of her first child. The magistrates took her up sharply on her statement that vaccination would cause her child unnecessary pain. This colloquy followed, according to a report in *The Dorset County Chronicle* of August 28 :—

The Chairman—Have you asked a doctor’s opinion on the subject of vaccination? Applicant—No, sir, I have not. I don’t care to have doctors in the house if I can keep them out. (Laughter.) It is not likely I should go to a doctor. The Chairman—I don’t think “causing unnecessary pain” is any proof whatever of conscientious objection. Applicant—I believe vaccination will be injurious to my child’s health in many ways. I have seen the very bad arms of children. The Chairman—We know everybody has bad arms. It is the object of vaccination to produce them.

Mr. Shiel, at Westminster, was told by an applicant that he thought the risk of inoculation was greater than the risk of smallpox. *The Morning Advertiser* of October 2, reports his reply—"If that is all, I won't grant you a certificate."

From *The Birmingham Daily Post* of October 4—"At Wednesbury, a man named William Thomas Holmes, who applied for a certificate to exempt his child from vaccination, was asked by Major Proctor, one of the magistrates, if he was a Christian. On his replying in the affirmative, Major Proctor expressed the opinion that a Christian could not conscientiously object to vaccination. After further remark, the Bench granted the application, but said they did so very reluctantly."

From *The Leeds Mercury* of September 30:—"At Altrincham, yesterday, applications for the exemption of children from vaccination were made by George Watson, Altrincham, and Arthur Fenton, Broadheath. Both applicants stated they had a conscientious objection, and when questioned as to whether they had evidence to show that their children were likely to suffer from vaccination replied in the negative. They, however, said the Act entitled them to exemption if they swore they had a conscientious objection. Fenton caused much laughter by remarking, when told by Judge Bradbury, the presiding magistrate, that statistics proved that only one child in a hundred was liable to suffer from vaccination, that there was no proof that his child would not be the one child out of a hundred. Judge Bradbury observed that his view of the Act was that an applicant must satisfy two magistrates that his own child was liable to suffer from vaccination, and he must bring evidence to that effect. A general objection to vaccination was no good.

Both applications were unanimously refused."

At Marylebone, on August 20th, Mr. Curtis-Bennett argued with a school teacher who was making a fourth application, one previous and unsuccessful one having been made to Mr. Curtis-Bennett himself, and two, also unsuccessful, to Mr. Plowden.

Mr. Curtis-Bennett now, according to *The Morning Advertiser* report of August 21, referred the applicant to the statistics of Germany, and asked him whether he had seen the manifesto of the Imperial Vaccination League. He replied that he had not seen everything on the subject; it was impossible.

Mr. Curtis-Bennett: I see you look at everything on one side and neglect the other.

The Applicant: It is hardly my place to make out a case against the subject of my application.

Mr. Curtis-Bennett: Why not take the Report of the Royal Commission.

The Applicant: I have.

Mr. Curtis-Bennet: That is against you.

The Applicant: That is a matter of opinion. But there was a Minority Report.

Mr. Curtis-Bennett: We don't go by the minority.

The Applicant: But the Act was the result.

Mr. Curtis-Bennet: Well, you have cited one good case; the rest is moonshine. Take your certificate.

The magistrate in the following case appears to have presumed that Parliament would abandon the conscience clause.

The Dover Express of September 26th said that a defendant on a vaccination summons, Walter Lacy Nowers, pleaded that he had complied with the law and applied for exemption as a Conscientious Objector, but had been refused.

The Bench pointed out that the defendant had to satisfy the magistrates as to a conscientious objection, and he had not done this. There was no question but that vaccination had retarded the spread of smallpox, and it could not be waived for a few faddists.

The defendant still seemed unsatisfied, and did not see the use of the clause about Conscientious Objectors if the exemptions were not granted.

The Bench said that next year the clause would be abandoned, and also that he was the only defaulter out of 672 cases.

He was ordered to pay the costs, 7s. 6d., and to have his child vaccinated within 21 days.

V.—THE EXECUTIVE AND THE JUSTICES.

It need only be added that the policy of prosecution, which it was the object of the conscience clause to do away with, is strongly urged on vaccination officers by the inspectors of the Local Government Board, and that the number of proceedings for offences against the Vaccination Acts, not including proceedings to obtain orders, rose from 567 in 1898 to 2205 in 1900. On September 17th, 1901, the Local Government Board actually issued to Guardians a circular letter suggesting that when the Justices seemed inclined to dismiss a summons on a ground antagonistic to the views expressed in the letter, they should be made aware of the opinion of the Local Government Board and of the fact that the opinion was based on the advice of the Law Officers of the Crown.

APPENDIX B.

The Leeds Case of Vaccino-Syphilis. Similar Cases possible after Calf-Lymph.

From the Dissent of Dr. Collins and Mr. Picton from the Report of the Royal Commission on Vaccination (Paragraphs 208 to 216).

Not only is the danger of vaccine syphilis now admitted to be "real and very important," but the safeguards which have been laid so much stress upon are now known to be illusory. It remains to be considered whether the use of calf-lymph will, as has been suggested, obviate the occurrence of syphilitic symptoms as the result of vaccination.

This subject is closely connected with what is known as the Leeds Case of Vaccino-Syphilis. In view of the publicity which has been given to, and the importance of the issues involved in this case, we think that the mode in which it has been dealt with in section 427 of our colleagues' report can scarcely be regarded as satisfactory. The child in question was vaccinated in March, 1889, and died at the Leeds Infirmary on July 1, in the same year. An inquest was held, at which Messrs. M'Gill, Ward, Littlewood, and Dr. Barrs, all members of the infirmary staff, testified to the fact that the child died from vaccino-syphilis. The verdict of the jury was that the child "died from syphilis acquired at or from vaccination," and a rider was added to the effect that "when a parent requests calf-lymph, it is the duty of the medical man performing the operation to supply it if obtainable, or to explain to the parents his inability to comply with their request."

On July 17, 1889, Dr. Ballard, one of the Medical Inspectors of the Local Government Board, received instructions, in the usual way, to inquire into the case, and he reported to the Board.

On February 27, 1890, in reply to a question in the House of Commons, Mr. Ritchie, then President of the Local Government Board, stated that "an inquiry has been made by an Inspector of the Board with regard to the case. His conclusions are not the same as those arrived at at the inquest. He states that the child in question was the only sufferer from subsequent syphilis among all the children he reached and whom he saw that had been vaccinated with the same or any other lymph in the whole course of the vaccinator's March vaccinations: and further, that the entire family to which the alleged vaccinifer belonged were, as far as he could discover by examination of them, free from any syphilitic taint or suspicion of such taint. The report of the Inspector will be at the disposal of the Royal Commission on Vaccination."

The above reply implies, and the report of Dr. Ballard states, that the child died from hereditary syphilis. He alleges that the family of the deceased child was "a syphilitic family." He adds, "This conclusion is the direct contrary to that arrived at by the coroner's jury, as also by the surgeons at the Leeds Infirmary. Both the jury and the surgeons formed their opinions on the evidence and statements they received. If both came to an incorrect conclusion, as I hold they did, it was because they had not before them the whole story, as I have discovered and narrated it, and they were consequently misled."

Here the matter would probably have terminated as far as official inquiry went had the Commission not been sitting.

It was, however, agreed to ask Dr. Barlow to make an independent inquiry into the history of the case and the health of the family. He has reported to us that there is "no evidence of syphilis" in either parent of the child, and there is "no evidence of inherited or acquired syphilis" in either of the two elder children, and further, he adds, "nor does the history of the third (deceased) child suggest to me that it was "the subject of inherited syphilis." On June 18, 1891, the results of Dr. Barlow's inquiry were stated by the President of the Local Government Board in the House of Commons in reply to a question by Mr. Herbert Gladstone.

We have since examined Messrs. Littlewood and Ward and Dr. Barrs, who adhere to the opinion that the child died from syphilis acquired by vaccination, and confirm the opinion of Dr. Barlow that there was no suspicion of syphilis in the parents of the child or their elder children.

Mr. Hutchinson has also in a publication (*Archives of Surgery*, Vol. I, No. 2) added the weight of his testimony to the fact that there is no evidence of syphilis in any of the family.

What then was the nature of the disease from which the child died? This question involves the larger question of the relationship of cow-pox and syphilis, between which diseases Dr. Creighton suggests that there is a close analogy.

Our colleagues hold, in accordance with the opinion on the case which Mr. Hutchinson published, that "it may probably be classed with a few "others as examples of gangrene and blood poisoning, the direct result of "vaccination, which are not to be explained by supposing the introduction "of any syphilitic or other poison."

It has indeed quite recently been recognised that it is possible for vaccination, even where the matter has been derived from the calf, to give rise to a certain train of symptoms (including snuffles, thrush, eruptions on the genitals, bubo in the arm-pit, phagedænic sores and nodes), symptoms, which have hitherto been regarded as peculiar to syphilis, and which in some cases have been benefited by mercurial treatment. The real nature of such cases has given rise to much dispute; well-experienced surgeons, who saw these symptoms and examined them carefully, thought they could be none other than

those of syphilis. Others of high authority regard them as "vaccinia" in a severe form. Dr. Creighton explains all such cases, as well as those of vaccino-syphilis, as due to cow-pox without contamination by human syphilis. Whatever their real nature, it is impossible to refuse to recognise them as the direct consequences of vaccination. Fuller knowledge is required to explain them, but when the assertion is made that the *transmission* of syphilis by vaccination is exceedingly rare, it must be borne in mind that the fact that vaccination with calf lymph, and therefore independent of venereal contamination, is capable of evoking symptoms indistinguishable by experienced surgeons from those of syphilis, has only recently been brought to the notice of the profession.

Mr. Hutchinson says these cases look to him quite as much like vaccinia as syphilis, and were so closely parallel that were syphilis conclusively proved in any one, he would be prepared to admit it in the others.

The publication of these cases brought to light others of a similar kind, including several cases in the practice of a public vaccinator in which the four vesicles merged into one deep ulceration and took months to heal up, and another series in which the lymph had been taken from a child who was vaccinated from calf lymph from the Local Government Board. In this last series there was not the same gangrenous inflammation as in the others, but a persistent formation of scabs.

In view of the fact alluded to in our colleagues' report that these abnormal results may follow vaccination *with calf lymph*, the following words of Mr. Hutchinson are significant: "The final supposition is that it is possible for vaccination independently of any syphilis, whether implanted or hereditary, to evoke symptoms which have hitherto been regarded as peculiar to the latter malady, and which are apparently greatly benefited by specific treatment."

This view of the affinity and results of cow-pox is that which was foreshadowed in the writings of Auzias-Turenne, and which in this country has been chiefly advocated by Dr. Creighton.

The remarkable increase of infantile syphilis, which some statistics show since 1853, has not received an adequate explanation. There is much to be said against setting the increase down to vaccination. We should only have expected vaccination to be to a very slight extent the cause of deaths from syphilis, and likely to be overshadowed by more potent influences, unless indeed there were ground for believing, as has been alleged on high authority, "that a large proportion of the cases of apparently inherited syphilis are in reality vaccinal."

The Majority Report on the same Subject.

(From Par. 427).

We have carefully investigated this case, and notwithstanding the opinion formed by the witnesses, there appears good reason to doubt whether it was one of syphilis. The case was made the subject of careful inquiry by Dr. Barlow on our behalf, who shared the doubt we have expressed. The

view taken by the Medical Inspector of the Local Government Board who in the first instance investigated the case was that it was a case of hereditary syphilis. It seems certain, however, that the parents of the child whose death was in question were not in any way effected with syphilis. The vaccinator also appeared to be free from any taint of that disease, and its family history confirmed this view. The co-vaccinees from the same lymph also exhibited no trace of syphilis. These facts of themselves make out a strong case against that having been the nature of the disease. Coupled with the fact that it could not have been communicated by the vaccinator himself, they seem to render it practically impossible that syphilis was the cause of death. If the symptoms exhibited had in all respects corresponded with those which are known to characterise syphilis, the proper inference might have been that there was some error in ascertaining the facts of the case. But it is beyond question that the course of events was very different in some respects from that experienced in undoubted cases of syphilis, and we think the true conclusion is that it was not a case of that disease. It may probably be classed with a few others as examples of gangrene and blood poisoning, the direct result of vaccination, which are not to be explained by supposing the introduction of any syphilitic or other poison. Fortunately, such cases are extremely rare, so much so that the witnesses concerned knew of no case precisely parallel.

(From Par. 423.)

The very close resemblance in certain very rare cases of the results of vaccination, whether with calf lymph or humanized lymph; to those attributed to syphilis (a resemblance so close that it has caused in a few cases a difference of opinion whether the disease was syphilis or vaccinia) has led to the expression by Dr. Creighton of the opinion that there is some essential relationship between the two diseases. This, however, is a point of speculative, almost it might be said of transcendental pathology, upon which for practical purposes it is useless to enter. It must be sufficient to remark that, whatever may be the relationship alluded to, it exists, if it exists at all, equally between smallpox and syphilis as between vaccination and syphilis. For all practical purposes variola and vaccinia are both wholly distinct from syphilis, and their differences are, with the rarest exceptions, easily recognised. They are alike in being attended by affections of the skin and mucous membranes, and exceptionally by disease of the bones, eyes, and other parts, but in all these it is a question of resemblance and not of identity with which we have to deal.

Two Questions by Sir W. Savory.

(From evidence of Mr. H. H. Taylor, F.R.C.S., in Sixth Report of Royal Commission on Vaccination, page 163).

I suppose the apparent similarity in some cases of vaccinia to syphilis would account for the constant mistakes that are made about the transmission of syphilis by vaccination?—I think most likely.

A great number of the cases which have been reported as syphilis have really not been cases of syphilis at all, but simply cases of exaggerated vaccinia; is not that so?—That is my opinion.

The Original Denials of Vaccination Syphilis.

From the Final Report of the Royal Commission on Vaccination.

FROM THE MAIN REPORT

(PARS. 420, 421).

Nothing has produced so deep an impression hostile to vaccination as the apprehension that syphilis may be communicated by it. It was at one time doubted whether syphilis could result, and it was even confidentially asserted that it could not. The fact that this was possible had been fully established, and was generally acknowledged by the medical profession before we commenced our inquiries. Our work has therefore chiefly been to ascertain the extent and character of the risk and the means of its prevention. As a general summary of the evidence on this matter, it may be stated that nothing in the least novel has been elicited, and that no hint has been given of the occurrence of any recent *series* of vaccination-syphilis cases in British practice.

Facts which were, not long after the issue of Mr. Simon's report, brought before the profession, and which were carefully investigated made it certain that the negative conclusion which had been arrived at was a mistaken one, and from that time no doubt can have been entertained by any that it is possible to convey syphilis in the act of vaccination.

FROM THE DISSENT.

(PARS. 201 AND 203.)

In regard to vaccine syphilis, in the pamphlet revised by the Local Government Board, and until recently widely circulated, it was stated:—

“The fear that a foul disease may be implanted by vaccination is an unfounded one. Such mischief could only happen through the most gross and culpable carelessness on the part of the vaccinator; and as all medical men now receive special training in vaccination, no risk of this kind need be at all apprehended. Of course, vaccination, like everything else, requires a reasonable amount of care in its performance. *The alleged injury arising from vaccination is, indeed, disproved by all medical experience.*”

It was not only maintained that care could prevent all ill results, but it was asserted on high authority that “a well-formed vaccine vesicle is certain proof of a pure and unmixed “vaccine lymph.” We agree with our colleagues that the possibility of vaccine syphilis, formerly denied, has been fully established.

In this connection we recall the words of the late Sir Thomas Watson, F.R.S., late President of the Royal College of Physicians. [See foot note p. 14 of this volume].

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