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Hadwen, Walter R. 1854-1932.
London School of Hygiene and Tropical Medicine

Publication/Creation

[1896-1908?]

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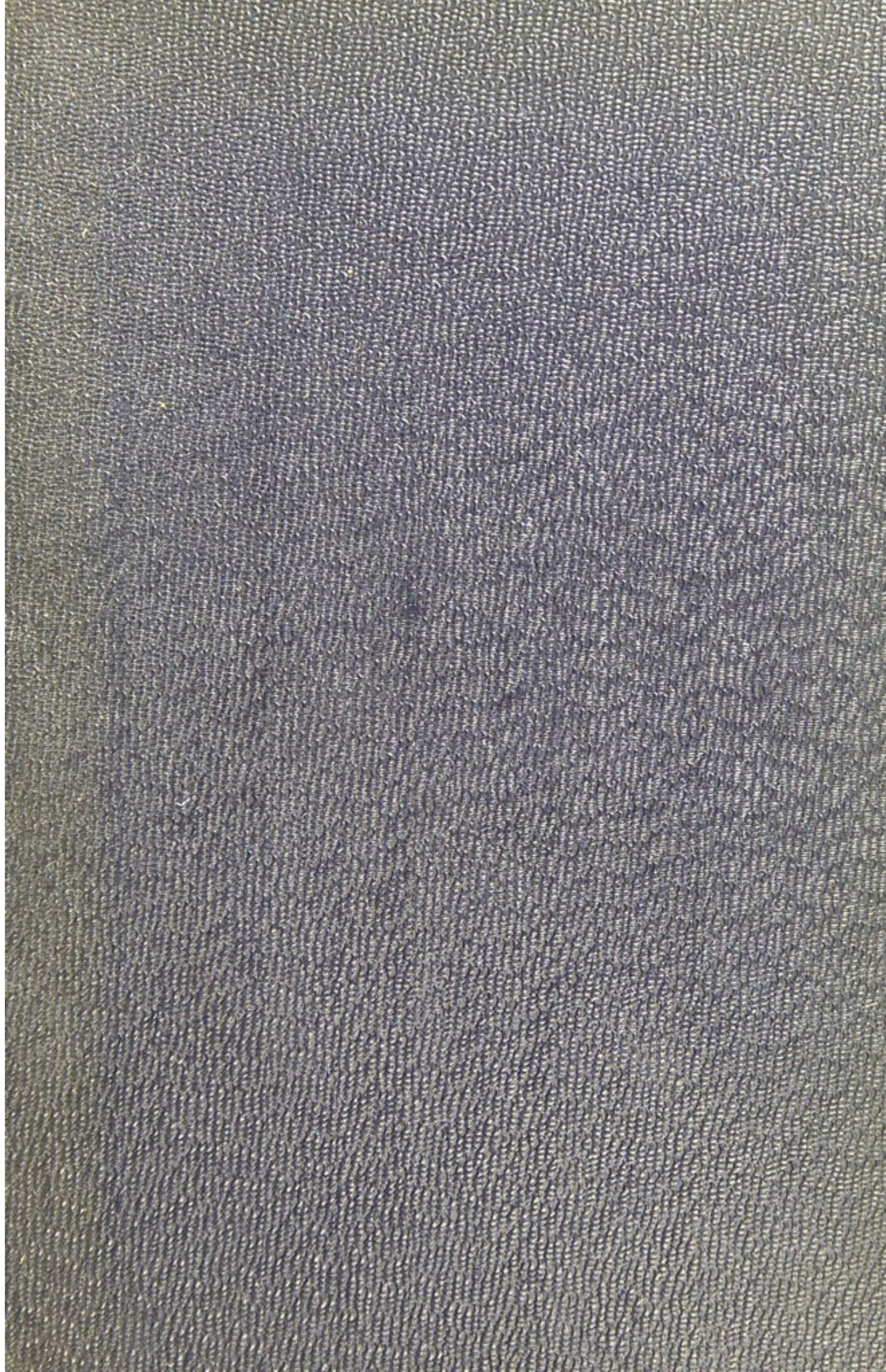
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THE FOLLIES AND CRUELITIES OF VIVISECTION.

AN ADDRESS DELIVERED BY DR. HADWEN,
At the Caxton Hall, Westminster, July 13th, 1905.

RESOLUTION MOVED BY THE REV. F. B. MEYER, B.A.

That this meeting condemns the practice of vivisection, and calls for its prohibition by law on the following grounds: (1) That it is opposed to morality, being inseparable from cruelty; (2) that it is opposed to true science, being uncertain in its results; (3) that the dangerous growth of the revolting system of serumtherapy, the enormous yearly increase in the number of experiments, and the strong bias evinced by the Government inspectors, give evidence of the futility of restriction and the necessity for drastic measures in dealing with a growing evil.

Dr. HADWEN, in seconding the above resolution, said:—

Everyone will admit that the resolution before the meeting is a comprehensive one—in short, that vivisection as practised to-day is cruel, immoral, unscientific, and opposed to the best methods of research. It plainly indicates also the policy of this Society, which aims at nothing short of the total abolition of a cowardly and un-Christian practice. We believe in no half-and-half measures in dealing with it; we believe vivisection to be a sin against the moral law, and we decline to play with it by proposing futile measures of restriction through which a coach and four could drive with the greatest ease. We are confident that it is far easier and more politic to fight with a total abolition Bill in our hands than with one of restriction, because in the former case we fight on the side of principle—that the thing in itself is wrong;

whilst in prosecuting restriction we are sacrificing principle, robbing ourselves of our most powerful weapon of attack, and admitting, in effect, that there may be something in vivisection after all. We are true and genuine anti-vivisectionists in every sense of the word. (Applause.)

The Morality of the Question.

Now there are three great objects that sway mankind—three prime motives which impel men forward in the great struggle of existence.

- 1.—The attainment of wealth or honour.
- 2.—The attainment of health.
- 3.—The attainment of knowledge.

I believe I am correct in placing these several ambitions in this order. No one can deny that the question of the almighty dollar has more to do with every department of public and private life than any other matter. Health is sought by all classes. Knowledge claims, perhaps, a smaller number of votaries than those of the former classes, but where she sits as goddess her rule is imperious in the extreme.

To attain these objects various methods are pursued, which appeal to many subsidiary emotions, and the methods vary in accordance with the idiosyncracies, habits, or training, of the pursuer.

Now there is one path along which men travel towards the attainment of all these three objects at one and the same time—namely, that of vivisection. It is this fashionable and mysterious pursuit which yields honour, emoluments and professional status ; it is urged to be the only scientific means of settling most problems of health, and it is credited with being the source of practically all medical knowledge. Vivisection, with its ramifications, has become one of the greatest commercial enterprises of the day.

Now, I should be the last to assert that men who labour in the pursuit of knowledge calculated to produce brilliant results in

lessening the sum total of human disease should not be rewarded. Such men are deserving of all the praise, honour, and reward we can bestow upon them—always providing that the means by which the alleged benefits to health and knowledge are sought for are consistent with the demands of justice, rectitude, and manly conduct. (Hear, hear.)

If I am asked, Is the practice of vivisection consistent with these qualities? I answer emphatically *No.* (Cheers.)

I do not ask at this stage, Have brilliant discoveries in methods of treatment been obtained thereby? Are such brilliant discoveries, judging by past experience, possible? or Is vivisection consistent with the laws of science? To all such questions I should still reply *No.* But it would be a cold, unreasoning soul that would argue in favour of an object that was scientifically right, but admitted to be morally wrong. I feel that a morally wrong process can never be held to be justifiable, even though certain beneficial results might in all probability be attained thereby. (Applause.)

It appears to me that extremely cruel and naturally unjustifiable actions perpetrated against innocent fellow-creatures incapable of resistance can never be held to be necessary in order to discover secrets for our own benefit. It is simply a repetition of the Spanish Inquisition applied to lower animals. To admit such a theory is to admit God as an ogre compared with whom the fetish of the African medicine man of long ages ago sinks into insignificance, and it puts an estimate upon human necessities which is far beyond their market value. (Hear, hear.)

The Plea of Restriction.

To say that you will render an act, which is immoral in itself, a justifiable act, by ensuring, as far as possible, that that act be painless, might have some claim upon the consideration of nervous and accommodating humanitarians, were the grounds upon which the specious plea is based absolutely reliable. Now, what is the

actual basis upon which such a result is proposed to be effected? It is this :—

That whenever a cutting or other severe operation is to be performed, a Government inspector shall be present in order to see that the animal operated upon is fully under the influence of an anæsthetic.

Now there are various fallacies associated with this suggestion : It has been stated by the recognised mouthpiece of the Vivisectors, Mr. Stephen Paget, that the injection of morphia beneath the skin of the animal is absolutely necessary to keep the animal at rest. If the administration of morphia be allowed, as it *must* be allowed under any circumstance, and, indeed, *is* allowed in the policy of the Restrictionists, no Government inspector, however desirous of carrying out his duties, could be absolutely certain that the subject was not under the influence of the narcotic rather than of an anæsthetic. And should he happen to be an inspector who holds the convenient theory that morphia itself is an anæsthetic, there would be very little hope for the creature whose interest he was supposed to safeguard.

Moreover, the absolute necessity, in consequence of an animal's physical conformation, that it should be firmly fixed to the operating table so that it would be powerless to move, places the kindest-hearted of Government inspectors at a great disadvantage in seeking to carry out his duties. The animal is partially narcotised by morphia and fright (or the morphia may be omitted) ; it is fixed firmly to a carefully-devised board, probably gagged, and its face covered by a mask ; the corneal reflexes under such conditions are untrustworthy. In what way, then, is he to judge if the animal is anæsthetised effectually or not? A mechanical anæsthetic spray may probably do its work, but ever and anon must come the warning not to push it too far or the animal will be lost.

The whole conditions are necessarily different from the anæsthesisation of the human subject. And if the inspector happen to be, as he most likely would be, a friend to the vivisector and to vivi-

section, his conscience would be even more easily satisfied, and the risk to the animal would be that much the greater.

Now I ask any one of my auditors to put himself in the position of a dog under these circumstances, helplessly strapped to a board, with a Government inspector specially appointed by the Home Office standing by, with the A.C.E. spray doing its beneficent work, with a hypodermic of morphia circulating through the blood stream ; in fact, every precaution known to science and to the State at your behest, and then tell me how you would like it? Could you say in encouraging a system of this sort that you are fulfilling the injunction, " Do unto others as you would that they should do unto you " ? (Applause.)

And yet this system of inspectorship and anæsthetisation, which upon the face of it is more or less a farce, is dangled before us by certain misguided anti-vivisectionists as the magnificent system of compromise by which animals are to be saved under the specious cry of " half a loaf is better than none." My answer is, for God's sake let me starve rather than give me bread of this description—a diet that can only prolong my misery under the fallacious guise of protecting me from it. (Loud cheers.)

The Only Effective Policy.

The long and the short of the matter is that in practical politics you cannot separate painless from painful vivisection. The pursuit of "painless" vivisection under the hollow cry of restriction is the pursuit of a will-o'-the-wisp. The only method of dealing with a gigantic evil of this description is by its total abolition. We say, like the Japanese to the Russians, " You are wholly in the wrong : we have proved you to be in the wrong, we have exposed your tactics of oppression and aggression ; we have smashed your great fortress of excuses ; we have sunk your ironclads of misrepresentation, defeated your armies of plausibility, and captured or rendered useless your worn-out weapons of defence, and now we demand your surrender. It is not for *us* to approach *you* with offers of armistice or compromise, or to dilly-dally about quantities of chloroform or fraudulent inspectorships, or limited inoculations ;

we say, Clear out from the whole disputed territory, from the Korea and the Manchuria of laboratory devilries, from the Port Arthur of legalised wrong, and let us have liberty—absolute liberty for those we fight for, for the empire of helpless creaturehood for which we plead. (Cheers.)

But I turn from the cruelty and immorality of the practice to a consideration of its professed scientific exactitude, and will give just one instance of its unreliability and uselessness.

Imperial Cancer Research Fund.

During the past week the public Press has published lengthy reports of a meeting of the Imperial Cancer Research Fund held at Marlborough House under the presidency of H.R.H. the Prince of Wales. The annual report, which was laid before the meeting by Sir William Church, was strange reading. Apparently the past year has been spent in the wholesale torture of mice. Now, I am not going to start a society for the protection of vermin from destruction, as I admit that there are conditions under which vermin must be got rid of, but I not only object to torturing rabbits in steel traps, but I also object to slowly dragging out the death agony of mice by developing growths of cancer in their sensitive frames. Those are not processes which are worthy of Englishmen, and certainly not of men of science, and I can only regret that this latter practice should have been unwittingly countenanced by the heir to the British throne. (Hear, hear.)

Now I will quote a sample of the so-called scientific story which was narrated at Marlborough House by Sir William Church. He said: "Professor von Leyden, of Berlin, was kind enough to send us a live mouse which had a tumour which had been transplanted through three generations in Berlin wild mice, together with twenty Berlin wild mice. 47·3 per cent. of the transplantations made into the twenty Berlin wild mice were successful, whilst the transplantations into London wild mice gave only 1·4 per cent. of success, and in London tame mice the proportion was even less." So it is quite clear that both the wild and tame mice of London are dead against the dumping of German manufactures upon English soil. (Laughter.) These scientists, knowing what was coming

off, ought to have had Mr. Joseph Chamberlain in the chair. (Renewed laughter.) At all events, the late Colonial Secretary will now be able to say that the very humblest citizens of the greatest capital of the mightiest Empire in the world are at least opposed to free trade in disease, and would support—to a mouse, any protection Bill he chose to introduce. This interesting refusal of English mice to take on German cancer only shows that

The best-laid schemes o' men on mice
Aft gang agley.

(Loud laughter and cheers.)

But the scientific free-traders were determined to overcome what they call these “initial difficulties.” They worked at the English mice until they had forced them to take on German cancer, just as King Charles forced the ship-tax on the people of England. King Charles lost his head and crown. English scientists win Royal smiles and honour and emoluments. But in the one case it was men who suffered ; in the other it was only mice. (Hear, hear.)

And now for the discoveries. First : These eminent scientists found out that, just as in human beings, cancer occurs spontaneously more among aged mice than it does in young ones. That is interesting, but I don't know that the knowledge is of any particular value. Secondly : They found that when they pumped cancer into the bodies of mice the young ones took it on rather better than their older friends. What the value of that information is I cannot say ; it takes an expert to find that out. Thirdly : “The power of continuous cell multiplication was demonstrated by the fact that a single mouse tumour produced an amount of tissue equal to more than a thousand mice,” but as they admit this fact of cell multiplication had been recognised long, long ago, I do not know why on earth they wanted to torture mice to discover it over again. Fourthly : They put sound mice with diseased mice and they found the sound ones did not take cancer ; therefore, cancer was not infectious. This was considered so important that H.R.H. repeated the fact in his speech. I thought we had had thousands of human beings living with cancer patients, for ages past, and accordingly knew all about this ; but they don't say whether they were Germa

mice or English mice, because, as already seen, the English mice might refuse to be exploited on behalf of Germans. Fifthly : There came the serum business. They put cancer cells into normal sera, and into immunised sera, and they couldn't come to any conclusion about it.

And yet with all this persiflage recorded in the most unsatisfactory report that I ever had the misfortune to read, Sir William Church has the temerity to talk about "real progress." I want to know where the progress is. I have searched carefully, but I have failed to find it, in spite of all the torture perpetrated upon these poor little victims, and in spite of four years of cruel vivisection experiments, and the expenditure of thousands of pounds. Not one single solid fact has been added to scientific knowledge which can aid toward the alleviation or cure of the disease, and the Prince of Wales closed his speech by admitting that cancer "still remains one of the greatest problems of human life." At all events this knocks on the head the loudly-advertised cancer serum of M. Doyen, another vivisectionist, who informed the world with all the confidence bred of ignorance, that he had discovered a "perfect cure." Is it not time some other method of research was adopted? (Prolonged applause.)

Suggested Method of Cancer Research.

The scientists at Marlborough House declared their opinion that cancer is not associated with diet, climate, or mode of life. In answer to this reckless statement from the bacteriological armchair one may quote the classical work of Mr. Alfred Haviland, M.R.C.S., who has proved in his "Geographical Distribution of Disease in Great Britain," by means of the statistics of the Registrar-General, that cancer flourishes in low-lying and water-logged districts, and that it can hardly gain a footing in land at high levels, on dry and gravelly, well-drained soils, where God's pure air reigns supreme. A hard concrete fact of this description is better than all the theoretical verbiage associated with the cruelties of poisoned mice. Among savage races farthest removed from civilisation, cancer is practically unknown, whereas in China and some of the thickly-populated parts of the United States of America it is of frequent occurrence. And in answer to Sir Wm. Church

and his Imperial Cancer Research Fund, I can only say, as one who has largely studied the question of cancer for some years from the common-sense standpoint of human observation, that the denser the population, the more low-lying the district, the more artificial the environment, and the weaker the vital resisting powers of the individual constitution, the more cancer appears to flourish ; and I believe that by means of right living, healthy conditions, proper drainage, purer air, and suppression of over-crowding—in fact, every means whereby the vital resisting powers of the system can be increased—lies the germ for future researches in the prevention, and perhaps cure, of this terrible disease. (Cheers.)

I feel that we thorough-going Anti-Vivisectionists, who decline to be parties to an absurd Parliamentary Bill (which offers to grant six inoculations to each licensee with the puerile proviso that if the speechless animal begins to suffer it is to be destroyed), are doing a great work far beyond that of merely opposing vivisection, for we are setting our faces against a wholly wrong system of medical treatment and are pointing to sounder, safer, and more scientific methods of research. A success in the laboratory is repeatedly a failure in practical life.

The System of Bacteriology.

We are being frightened to death by microbes. It is germs, germs, germs everywhere. I see one doctor lately says we must give up shaking hands because there are 80,000 germs in every palm. (Laughter.) Kissing has been tabooed long ago on similar grounds, although I have not heard this pleasant osculatory practice has in any way diminished. (Continued laughter.) There are germs above us, around us, within us, in everything we eat and almost everything we drink. It is a wonder that any of us are alive at all. One scientist has lately warned us most solemnly that fleas are very dangerous because they might give us the plague. Well, I always did try to avoid fleas, and I suppose I ought to be very thankful that I have ever tried to keep them at a respectful distance. (Loud laughter.)

Every question to-day is to be settled by a microbe.

Now I do not say one word against the science of bacteriology. It has its place, and that place is a valuable one, though I am

bound to confess its value has been sadly overrated ; but when it makes claims it cannot prove, and vaunts promises and prophecies it never fulfils, I begin to lose faith in it as a medical guide. Scientists lay down as an axiom of which they challenge contradiction, that practically all the acute specific diseases owe their origin to a specific microbe, and yet an undoubted specific microbe has never yet been discovered as the unerring cause of a single one of them. The whole of the system of serum-therapy and anti-toxin, with its cruelty to animals practised for the production of these filthy preparations, is based upon a theory which has never been proved, either by statistics or demonstration. (Cheers.)

Now I am not going to give you statistics to-day, for I quite agree there is nothing so fallacious as statistics except it be facts, but I want to get behind this bacteriological craze and by one solid argument to measure its value for the whole host of diseases it presumes to cater for. I will take the bacteriologist on his own ground and use his own argument. We will suppose for argument's sake that the various diseases owe their origin to a specific germ. Now, every bacteriologist asserts that healthy blood is the most powerful germicide we possess. No germ can live in healthy blood. Inside or outside the body healthy blood is equally fatal to the germs. Then, I say, by all means let us do everything we can to get healthy blood. When a child's blood is already inflamed by the absorption of the morbid products of diphtheria, are you going to improve its vital resisting powers by polluting the life-stream still further with the poisoned blood serum of a horse? A mother points with pride to a child who got well from diphtheria after an injection of anti-toxin ; just as the savage praises his wooden fetish when his tribe wins in the battle. If the baby die or the battle is lost, the anti-toxin in the one case and the fetish in the other was not resorted to soon enough—so says the medicine man. And between the cure and the failure there are many degrees of possible excuses, but whatever the degree, "quackery," as Cobbett says, "has always one shuffle left." (Applause.)

They tell us plague is caused by rats, and when rats have disappeared the plague has disappeared too. That was no doubt the case when the conditions under which rats usually exist were no longer present. Dr. Creighton, in his recent investigations into the plague in India, has shown that the insanitary conditions

which breed the rats are the conditions which breed the plague, and yet an army of so-called scientists are still poisoning the people with a filthy decoction of plague instead of spending their time and brains and money in sweeping away the foul conditions which exist throughout the plague area. (Hear, hear.)

What did Koch himself say before the British Congress on Tuberculosis : " It is the overcrowded dwellings of the poor that we have to regard as the real breeding-places of tuberculosis ; it is out of them that the disease always crops up anew, and it is to the abolition of these conditions that we must *first* and *foremost* direct our attention if we wish to attack the evil at its root, and to wage war against it with effective weapons." (Cheers.)

I might deal with typhoid fever, typhus, cholera, malaria, and many other diseases, all of which I should argue about from the same standpoint did time permit, but I cannot close this part of my subject without quoting a pregnant sentence from a leading article in the *Times*, when Sir Ernest Cassel gave his splendid gift for a sanatorium to the King. The *Times* said : " When medical science has said its last word, the best hope for the cure of disease lies simply in the strengthening by rational modes of living the resisting power of the human organism." Those are words I would have written in letters of gold. (Loud applause.)

Serum=Therapy Run Mad.

What a contrast to such sound, philosophic and truly scientific reasoning are the awful vagaries of Professor Metchnikoff, who has had the audacity to put a syphilitic serum upon the market obtained by artificially diseasing monkeys, and proposes to inoculate all the soldiers and sailors and fallen women in France with it, and to poison the blood of all lads when they commence school life. His serum to arrest the advance of old age is a contrast in comicality about which he appears to be really serious. But, perhaps, the strangest attempt to advertise this mad serum-therapy craze consists in the manufacture of a serum to cure fatigue. It is obtained by fatiguing a poor dog on a sort of treadmill until it drops down wearied and nearly dead, and then expressing juice from its muscles, which is forthwith injected into the veins of a horse, whose blood is finally drawn off to be afterwards pumped into

human beings under the name of anti-toxin, so as to invigorate them when they are tired out! Sancho Panza, when he threw himself wearied upon the ground, cried, "God bless the man who first invented sleep," and I wonder which remedy appeals the more to common sense, that of simple-minded Sancho Panza or the cruel, absurd, filthy, and complicated process of the modern bacteriologist. (Laughter and cheers.)

But I will take up your time no longer. I have sought to expose a great fallacy and to point to a high ideal. I know the battle we have to fight is a hard one, with prestige, tradition, emolument, and Royal favour all against us, but the cause is sacred. If results are sometimes disappointing, and our hearts grow sad at the delay, it must be ours to remember that all reformers have passed through similar experiences, but victory has crowned their efforts at the last. As Whittier says:—

With something of the seer
Must the moral pioneer
From the future borrow,
Fill his fields with sheaves of grain,
And on midnight's sky of rain
Paint the golden morrow.

We ask you to help us. We ask you to join our whole-hearted Society, founded by our revered Miss Frances Power Cobbe in her declining years, when another Society she had founded twenty years before had departed from the policy she had fought for in the strenuous days of the past. It is her motto which should actuate us all, namely, that she had formed a determination long years before that she would never lay her head upon her pillow at night without having done something, however small, toward the emancipation of those helpless creatures which lay so near her own heart. It is her voice which speaks to us still, and it is her great example which speeds us on. We shall not win at once, but we *shall* win. Of that I am confident, for the God of Victory is ours. And though the way be long and the battle severe, we must ever remember:—

Slowly moves the rock of ages,
Slowly grows the forest king,
Slowly to perfection cometh
Every great and glorious thing.

(Loud and prolonged applause.)

A DEBATE
ON
Should Vivisection be
Abolished?

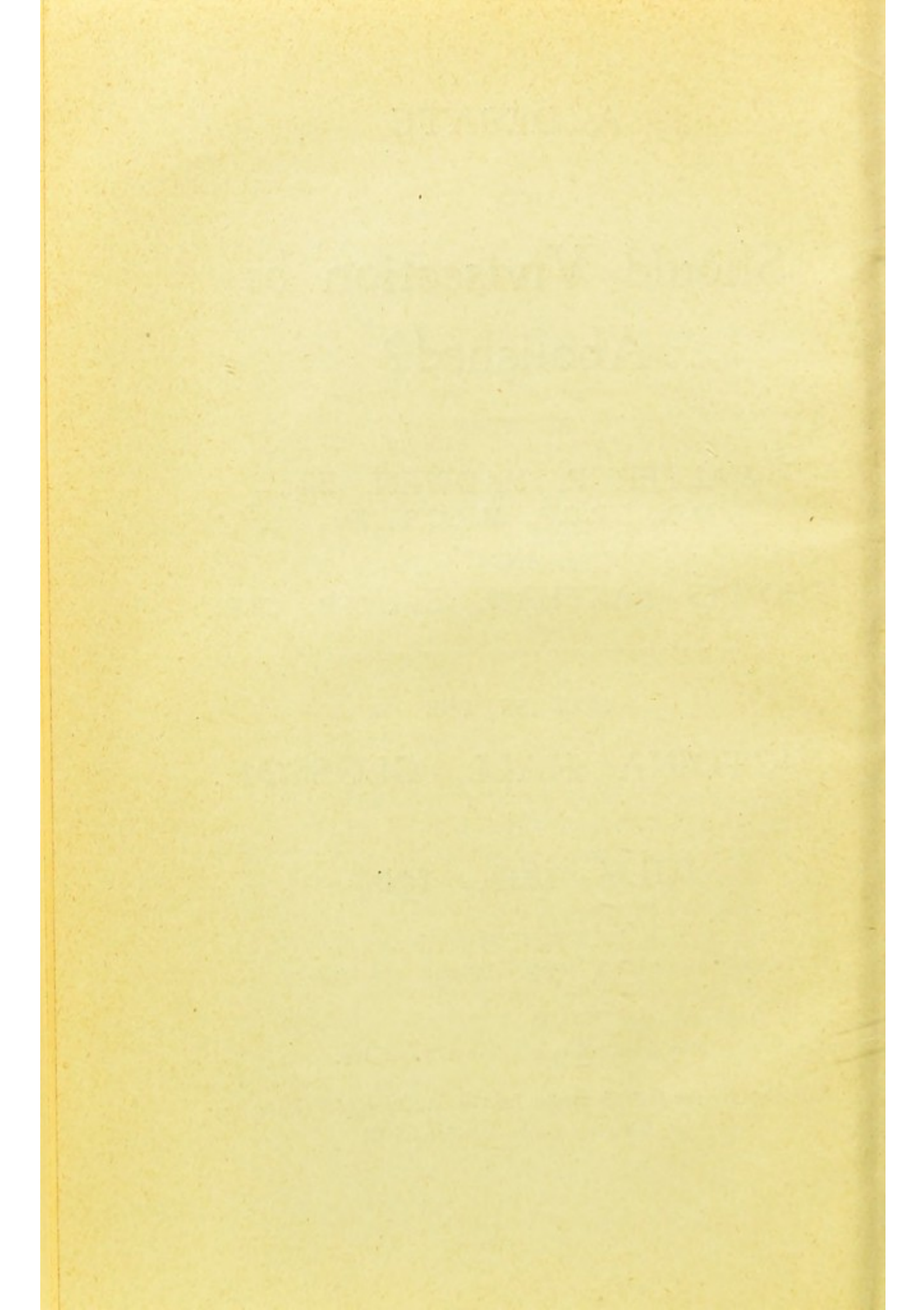
BETWEEN
WALTER R. HADWEN, Esq.,
M.D., L.R.C.P., M.R.C.S., Etc.,
AND
THOMAS EASTHAM, Esq., M.B., Ch.B.

HELD IN THE
VICTORIA HALL, GLOSSOP,
ON
JULY 18th, 1907.

Reprinted from "The Glossop Advertiser."

Price One Shilling per dozen ; 7s. per 100.

Published by the British Union for the Abolition of Vivisection,
32, Charing Cross, London, S.W.



PREFACE.

THE debate, the report of which follows, was the result of circumstances which I will briefly detail.

On April 15, 1907, an anti-vivisection meeting was held in Glossop under the auspices of the Manchester Anti-Vivisection Society. The subject was new to the people, and probably unattractive. Only thirty-seven persons assembled, although the chair was taken by the Mayor; and of these thirty-seven a certain proportion were the friends of two local doctors—Dr. Eastham and Dr. Ollerenshaw, who attended in order to oppose their opinions to those of the lecturer, Mr. J. H. Reed. Both doctors obtained permission to speak, and delivered addresses in favour of vivisection. One of the local newspapers, *The Glossop Chronicle*, reported the proceedings under the heading "Medical Opposition Carried the Meeting."

Having had some experience of the readiness of certain medical men to pit their "expert knowledge" against lay speakers, while shirking conflict with fellow medical men who take an opposite view to their own, I took the opportunity to write to Drs. Eastham and Ollerenshaw and ask them if they would publicly debate the question with a doctor; if so, the British Union for the Abolition of Vivisection would be prepared to pay all expenses. I received a reply signed by both doctors to the effect that they were willing to debate, but wished to lay down their own terms. These terms included the stipulation that "all the costs of the debate (including the travelling and out-of-pocket expenses of the speakers) should be paid *in advance* by my society." The committee of the British Union, having undertaken to pay all the ordinary expenses, naturally refused to blindly make themselves responsible for the personal expenses of their opponents (which, for all they knew, might reach an unreasonable figure). After some correspondence on this point, Dr. Ollerenshaw dropped out of the negotiations, it appearing that he had obtained an appointment in London (though living at Glossop), occasioning a demand for £3 for his travelling expenses. Dr. Eastham remained, and he finally agreed to a debate on equal terms, after a futile struggle to maintain the condition that Dr.

Hadwen should speak only once, which would have prevented his answering the arguments advanced by the other side.

The remaining conditions proposed by Dr. Eastham, to which the British Union immediately agreed, were as follows :—

1. The debate to be held in the Victoria Hall, Glossop (the largest available).
2. The debate to be well advertised by posters, handbills, and advertisements in the local papers.
3. A neutral chairman to preside.
4. The meeting to be free, and with no collection.
5. All expenses to be paid by the British Union.
6. The result of the poll to be well advertised.

Our opponent having finally agreed to our contention that there should be three speeches on each side of equal length, the only choice of a possible advantage to be gained by either was that of beginning or ending the debate ; and this choice was left to Dr. Eastham. He decided to have the last word.

On the evening of July 18 the Victoria Hall was crowded with an audience of about 2,000, and one more orderly, attentive, and intelligent, or more representative of all classes, was probably never gathered together to hear this great question discussed. The result of the poll (an overwhelming majority in favour of the abolition of vivisection) was no less a surprise to us than it must have been to the gentleman whose correspondence had been marked by such a tone of confidence, and who had been so desirous that it should be "well advertised." Glossop was altogether new ground to the British Union. The small previous effort of our Manchester allies had "fallen flat." Those among the huge audience known to be anti-vivisectionists numbered less than half-a-dozen. Dr. Hadwen came as a stranger, while his opponent was a native of the town. Our work had consisted merely in ordering the distribution of notices of the meeting ; we had asked for no support, nor had we made any effort to convert the inhabitants of Glossop to our views ; whereas our opponent, being on the spot, had had every opportunity of gaining a following beforehand. As a "test case," proving that the uninitiated public can appreciate our arguments when only they can be induced to listen to them, the Glossop debate stands unique in anti-vivisection annals, and we may hope that it marks an era in the awakening of the public to the fact that the question which forms its title must be faced by intelligent men and women of the twentieth century

BEATRICE E. KIDD,

Secretary B.U.A.V.

SHOULD VIVISECTION BE ABOLISHED ?

THE CHAIRMAN'S SPEECH.

WITHOUT any preamble the Chairman at once proceeded to the business of the evening. "When doctors disagree," he said, "who shall decide?" In this case it was the audience that was to decide. He took it that the two gentlemen present were both sincere and conscientious in the opinions they were propagating, and under those circumstances there ought not to be any personalities—(hear, hear)—or base imputations. What was wanted was a fair and square hearing of this vexed question. (Hear, hear.) They did not want each gentleman to vivisect the other's personality. (Hear, hear and laughter.) There was a duty for the audience to perform. During the speeches the audience might approve or disapprove in the usual form of "hear, hear," or "no, no," but he would not like there to be any other interjections. He hoped they would all listen calmly and dispassionately to the debate, and give the speakers

EVERY POSSIBLE CHANCE,

as interruptions often caused a speaker to lose the thread of the argument. Personally, he was quite impartial. It was the first time he had occupied a position of this kind, but he would endeavour to preside to the best of his ability. The time conditions were: First round, 30 minutes each speaker; second round, 20 minutes each; and third round, 10 minutes each. He had a statement to make from Miss Beatrice Kidd, the secretary to the British Union for the Abolition of Vivisection, and it was to the effect that she was not responsible for any literature that had been sent into the district. She wished to be perfectly impartial, and did not want the audience to think that she had been spreading literature for the sake of

propagating her own side. The first to take part in the debate was Dr. Hadwen, who would take the affirmative of the subject. (Applause.)

DR. HADWEN.

Dr. Hadwen had a cordial reception, and said he would like, in the first place, to express his satisfaction that the newspaper war carried on in the local Press had had the happy result of obtaining Dr. Eastham's consent to publicly debate the important question embodied in the resolution before the meeting, "Should Vivisection be abolished?" The indefatigable secretary of the British Union for the Abolition of Vivisection, Miss Beatrice Kidd, had had no object in view from the first but a fair and open debate between medical men upon absolutely equal terms, and that must be apparent to everyone who had followed the correspondence. (Applause.) The only choice of advantage that there could be in the matter was as to which of them should begin or end the debate. That point Miss Kidd left entirely to Dr. Eastham, and he had elected to have the last word. He thought it best to briefly state

HIS POSITION,

and to answer the arguments advanced by Dr. Eastham and Dr. Ollerenshaw upon the occasion when they opposed a lay Anti-Vivisection lecturer in the town, a circumstance of which that debate was the outcome.

Under the name of Vivisection was now included not only cutting operations, but all scientific experiments upon living animals, such as placing animals in vessels and slowly raising the temperature to inordinate heat; starving them for days together and then, perhaps, compelling them to work in that condition; suffocating and partial drowning; inoculating them with all manner of diseases and poisonous substances; putting irritating substances into their eyes, which after weeks of agony became slowly blinded; pouring boiling water down the throats of dogs, holding their paws over spirit lamps, crushing their most delicate organs, and many other revolting experiments. All that was done in the name of science with a view to obtaining knowledge calculated to relieve or cure human diseases. But although unparalleled cruelty had been practised upon sentient and sensitive creatures unable to defend

themselves against their more powerful tyrants, for some 3,000 or 4,000 years, there had not, so far as he knew, resulted any relief or cure of any human malady or disease which might be attributed to those repulsive investigations. That certain facts might have been gleaned from them he did not doubt ; one important fact was, that there was no discovery which had been made by one vivisector but had been denied by another, but there was certainly no useful knowledge that he was acquainted with, alleged to have been gleaned from vivisection, but could have been obtained, and had been obtained, equally well by other means. He was aware that medical men generally held an opposite view, but it must be remembered that the majority of medical men had never studied the subject and knew literally nothing about it.

THE PRACTICE OF VIVISECTION

was solely in the hands of 200 or 300 licensed men, many of whom were not medical men at all. Their experiments were published for the most part in very expensive journals which medical men, as a rule, never saw ; and the general public were deluded into the belief that no suffering whatever existed, but that the blessed word "anæsthetic" covered all question of pain. That the practice was a most serious one was proved by the fact that two Royal Commissions had been appointed to inquire into it within the last thirty years ; that a special Act of Parliament had been passed to control it ; that no one but a licensee was permitted to vivisect in licensed premises under the supervision of a Home Office inspector, and a description of the investigation had to be furnished in each case. But the Act of Parliament was a delusive one. It laid down certain important restrictions in the first part, and then granted certificates in the second part by which all the restrictions but three were absolutely withdrawn, and the animal was

LEFT TO THE MERCY

of the vivisector. The only duty of the inspector was to see that the ordinary regulations were complied with. That anæsthetics were used in the experiments there was no question, but as to how far they relieved the animals from pain was another matter. Vivisectional anæsthesia was one thing ; surgical anæsthesia was quite another. Nothing but the most extreme care and attention could

succeed in putting a dog fully under the influence of an anæsthetic, and in keeping it under without killing it. They were usually given an injection of morphia, which was not an anæsthetic, and which only tended to stupify them and destroy their power of resistance, and then an anæsthetic was administered up to a certain point, and continued to be administered automatically by an apparatus—an altogether different method from that employed in the case of a human patient. In numerous instances, deep anæsthesia would destroy the effect of the experiment, consequently “incomplete anæsthesia” was candidly confessed in many of the reports. In some reports of severe experiments morphia only was used, and was even called an anæsthetic by some vivisectors, although no surgeon would dare to perform a major operation upon a human subject under its influence, and he maintained that what they would not dare to do in the case of a human subject they had no right to do for a dog. (Applause.) Again, a drug called curare was also frequently used, which paralysed the muscular system; and the animal had to have an opening made in its windpipe in order

TO KEEP IT ALIVE

by an artificial breathing apparatus, so that it was quite incapable of making a movement or uttering a cry, and yet was perfectly sensitive to pain. Even if an anæsthetic were used under such circumstances, it was impossible to tell how far the animal was anæsthetised, because the morphia or the curare had rendered it incapable of expression or resistance. In the case of morphia some eminent authorities asserted it increased an animal's sensibility. But the most crushing testimony to the uncertainty of insensibility to pain was contained in the fact that the Home Office authorities had ceased to divide experiments into “painful” and “painless” in their reports, and the chief Home Office Inspector recently confessed to the Royal Commission that they “never could distinguish exactly which experiments were painless and which were painful, and the experimenters and observers themselves could not distinguish, in a very large number of cases.” But even if the animal were properly anæsthetised during the cutting operation, there is the long drawn out agony during the watching process, where the animal is allowed to linger on after its body has been mutilated in various ways; in addition there are thousands of instances where diseases of all descriptions are allowed to slowly germinate

in animals' bodies—some of them of the most revolting character. Apart from the

USELESSNESS OF VIVISECTION

and its torture, he maintained that it was unscientific. They could never be certain that a result obtained in an animal would apply to a human being. Professor Starling, a notorious vivisector, told the Royal Commission a few weeks ago that "the final experiment must be on man." Why, then, were animals submitted to all that torture for such a grave uncertainty? The fact that animals could not speak destroyed all hope of knowing anything about their symptoms, which were the most important means of obtaining correct information. Turning to alleged discoveries, he came to the arguments used by Dr. Ollerenshaw and Dr. Eastham when they opposed Mr. Reed at a small meeting in Glossop two or three months since. Dr. Ollerenshaw expressed his surprise that so little opposition was shown to anti-vivisection speakers who travelled about the country "armed to the teeth with uncorroborated statements and sentimental platitudes." Proceeding to give a few examples of experiments and of the valuable knowledge they had gained by them, Dr. Ollerenshaw's first statement was, "the cause of the terrible disease popularly known as consumption is a microbe." Even if that were the case, it could only be by the microscope that the tubercle bacillus could be discovered and not by experiments on animals; but because certain germs were found in certain diseases, it did not prove that they had caused that disease. The Chief Veterinary Officer of the Local Government Board recently acknowledged before the Royal Commission that he could not say positively that the bacilli found in milk were tubercle bacilli; a similar bacillus was found in the flanks of cows, in human beings, in manure and cowsheds, and abundantly in hay and grass. At that rate, agriculturists ought to be all decimated by consumption, whereas they are particularly free from it.

Dr. Ollerenshaw's next argument was that "until a few years ago surgeons did not dare to operate with a view to removing a kidney affected by such disease, it was thought to be too great a risk, and it was not until Professor Rose Bradford's experiments on dogs that surgeons began to remove the diseased organ." As a matter of fact the operation for removal of the kidney was one of the most ancient, and was quite common in the time of Hippocrates, who lived 400

years before Christ. (Laughter.) It was also done on criminals by Italian surgeons in the seventeenth century. Therefore

THE CRUEL EXPERIMENTS

of Dr. Rose Bradford in 1896 were quite unnecessary ; and yet Dr. Ollerenshaw said : " Such a great stride in the treatment of this awful condition could not possibly have been made had vivisection been prohibited " ! It had been done in that country forty years before Dr. Rose Bradford tortured any fox-terrier at all. Dr. Ollerenshaw went on to describe the alleged discovery of chloroform by Sir James Simpson by means of experiments on six rabbits, upon the recommendation of Dr. Lyon Playfair, and he added, " But for the use of these animals chloroform might never have been discovered." But that was a pure fairy tale. Chloroform had been already discovered by Liebig in his chemical laboratory fifteen years before Dr. Simpson made any experiment.

THOSE EXPERIMENTS WERE FIRST MADE

upon himself and his friends Drs. Keith and Duncan, who all became insensible, and shortly afterwards chloroform was given to a boy who was about to undergo an operation at the Infirmary. Dr. Lyon Playfair was nowhere near the place. No experiments on animals were ever made in connection with the discovery of chloroform or its anæsthetic properties. Dr. Ollerenshaw then proceeded to enlarge on brain surgery and the mapping out of the brain into motor areas by Ferrier through experiments of the most terrible character on monkeys. He extolled it as " wonderful research " by which a surgeon, as he says, " could put his finger on the patient's head and say under that spot exactly lies the area of irritation." No surgeon with a reputation to lose would ever dare to make such a statement upon the strength of experiments upon monkeys' brains. Ferrier himself said, " Nor do the facts of experimental physiology seem so consistent with themselves or with the undoubted facts of clinical research as to inspire us with unhesitating confidence as to their accuracy or as to their applicability to human pathology." The fact was,

THE CONTRADICTIONS

among physiologists upon that branch of research were notorious, and it was these very contradictions that first roused him to study

the subject of vivisection, and which finally led him to see that it was a totally untrustworthy method of research. These centres of the brain in man had been mapped out as the result of long and careful study upon human subjects.

TUMOURS OF THE BRAIN

by pressing upon certain parts had produced certain results which had been carefully examined after death, and the precise spots where the mischief lay had been identified. By a succession of such cases over long years, absolutely certain results had been obtained without any need of the torture of monkeys, whose brains were so different from man's that they formed no certain guide for localisation. That was admitted not only by Ferrier but by Charcot, the great French authority on brain surgery. Had they vivisected the brains of all the animals in creation they could never have discovered the centre for speech. And if they could discover a delicate centre like that without vivisection, surely vivisection was unnecessary to discover the coarser centres of muscular movement.

Dr. Ollerenshaw concluded by saying that they owed to experiments on animals the knowledge of decompression in the treatment of "caisson disease." Why, it was known long ago that divers brought up rapidly from a great depth were apt to suffer from pains and even paralysis, and that if thrust back and brought up slowly those symptoms were avoided. He himself wrote an article in a public paper in which he referred to that fact more than five years ago, and yet Dr. Ollerenshaw informed them the knowledge of how to prevent diver's paralysis was discovered by physiological experiments on dogs and cats last year by Dr. Leonard Hill! As a matter of fact slow decompression by means of a medical air lock was practised in making the Blackwall Tunnel as long ago as 1897. Thus it would be seen that the medical gentleman who talked about "uncorroborated statements and sentimental platitudes" of anti-vivisectionists made a series of assertions not one of which would stand the test of five minutes' investigation. (Laughter and applause.)

DR. EASTHAM FOLLOWED

Dr. Ollerenshaw in defence of the weird practice of Vivisection, saying that this was a scientific subject and demanded "scientific thought," and proceeded to give an instance of the value of vivisection.

tion culled from law reports. He said a woman was charged before a coroner's jury with having poisoned her child; she simply used arsenic ointment on the child's head to cure infection. The jury did not believe her, as the medical expert found arsenic in the child's stomach. She was found guilty of wilful murder. But vivisection was resorted to, and Dr. Eastham announced, amid applause, that rabbits anointed with arsenic died, and arsenic was subsequently found in their stomachs, so the woman was acquitted. He had sought all through the law reports for that case but could not find it. There was a case which bore some relation to it, however, the very earliest case he could find, and was reported in Taylor's Medical Jurisprudence. The case occurred in 1864. The girl was aged nine years. The mother had rubbed into her diseased head white precipitate ointment mixed with arsenic. The child died on the tenth day. The stomach was found upon post-mortem examination, inflamed, and arsenic was found in the mucous fluids. A portion of the diseased scalp was examined and yielded arsenic in large proportion. The report concludes: "From the evidence given at the inquest there was no doubt the mother's account was correct, and that her child had died from an ignorant application of arsenic externally to a diseased portion of the scalp." There was no verdict of wilful murder, and therefore no vivisection, and he could only conclude that Dr. Eastham had been misinformed, for it had been known from time immemorial that arsenic or other poisons rubbed into open wounds permeated the system.

The only other argument of Dr. Eastham was that anti-toxin had cured diphtheria, and the death rate had been reduced in hospitals from forty-six to twelve per cent.

THAT WAS THE LAST DITCH OF THE PRO-VIVISECTORS.

That the death rate in hospitals had been reduced he admitted, but he would ask Dr. Eastham to explain how it was that whilst the fatality had been reduced in hospitals, the mortality from diphtheria as compared with the living population according to the Registrar General's returns had gone up? The death rate in England and Wales for the ten years subsequent to the introduction of anti-toxin was 235 per million, whereas it was only 200 per million in the ten years before anti-toxin was known. That did not look much like a "cure." Whilst, however, he viewed scientific experiments upon living animals as cruel, unnecessary, unscientific and mis-

leading, he would say that even had it been justified by proved success in aiding the alleviation or the cure of human diseases, he would still look upon vivisection as unjustifiable upon moral grounds. Animals had rights, and they had no right to exploit them in this way for their own selfish ends.

IN DAYS GONE BY

it was customary to extort from helpless prisoners, by means of torture, secrets which otherwise could not be obtained. What was done in those days in the name of politics and religion was done in these days in the name of science. An increased sense of human rights and justice, as well as of pity for the helpless and oppressed, had caused such torture to be looked upon as immoral, and they made the same claim for the poor and oppressed in the animal creation.

THE RIGHTEOUS INDIGNATION

of a nation swept away the slave traffic and the black man or woman came to be looked upon as a fellow-creature who had a claim upon the sympathy of a Christian state. Look at that dog—as loyal, as affectionate as, perhaps more so, than any human being ; he had saved their lives a thousand times, he would lick the hand of the man who struck him his death-blow, and they allowed that noble creature, that trusts them so implicitly, to be cut and carved alive, and tortured in inconceivable ways in order to discover secrets for their benefit—for the benefit of a creature inferior to it in many noble traits. It was a cowardly science, it was contrary to the whole tenor and spirit of Christian love and sympathy and without hesitation he said it ought to be abolished. (Loud applause.)

DR. EASTHAM.

Dr. Eastham was greeted with applause on rising to respond. He asked first of all, What right had they to kill the animals which could not speak for themselves that they might satisfy their desire for food ? As they saw, Dr. Ollerenshaw was not there that night, against whom Dr. Hadwen had spoken the most. He (the speaker) had come in for very little. He was only caught on the rabbits. (Laughter.) His authority for that statement was the Blue Book

of the Royal Commission in 1875. Before that Commission Dr. Alfred Swaine Taylor gave evidence, and said that "the return of a verdict of wilful murder by the coroner's jury against a woman charged with poisoning her step-child was prevented only by means of specially instituted experiments on rabbits, showing it to be possible that a person could get arsenic in the stomach by applying arsenic ointment to the head to cure ringworm." Therefore, his authority was nothing more nor less than the Government Blue Book, pages 55 and 56, and question 1,162. Dr. Hadwen had described to them the experiments in a most emotional manner. He did not blame him for being emotional. It was his business sometimes to go into Court, but he was only emotional when it paid him. (Some little disorder was caused in the room.) Continuing, Dr. Eastham said he had to

APPEAL TO SENSE

that night, and it was absolutely necessary to speak to facts. Referring to the use of the drug curare, he remarked that Dr. Hadwen had stated it was in daily use, but he (the speaker) quoted the statements of three professors at different colleges, one of whom said the use of the drug was given up long ago, and another that in twelve months only four cases were treated with this drug. At Oxford curare was given to seven frogs, but they were previously deprived of their brains so that they would not feel anything. They would have no sensation; and it was also given to one rabbit and given in ether. He was not going to say that it was pleasant to experiment on these animals. Dr. Eastham then proceeded to deal somewhat with the history of experiments.

ONE OF THE FIRST EXPERIMENTS

made upon animals was an experiment made by a man called Galen, who wanted to find out what was inside the arteries and their action during life. It was not a big experiment, but he just mentioned it because it was a piece of interesting history, and at that time the physicians and doctors thought that inside the arteries they had the breath of life, whilst inside the veins they had blood. Galen cut down and opened an artery, and tied one end and tied the other a little distance from it. He then opened the artery and found it contained blood. Well, it was a simple, straightforward experi-

ment that prevented any further theories being brought out, and showed conclusively that inside the artery during life there was blood. In 1628, Dr. Harvey wanted to find out the working of the heart and the circulation of the blood. With great diligence, and by frequent investigation upon divers animals, he found out what he desired. Now, how were they to find out the working of the heart and the circulation of the blood if they only examined corpses? How were they going to find it out unless they examined animals? It was absolutely essential to know about the heart, and no scientific medical gentleman would endeavour to treat a patient with the heart disease if he did not know the working of the heart. Let them take another view of the question. These experiments were done to try and find

THE ACTION OF DRUGS

on living tissues. In the good old days, they used gold and amber and pearls, and anything that was costly, with which to treat disease. Then these experiments came in. If they took any ordinary text book, they would see described the action of the drug on the various parts of the body, and all that had been brought about by experiments on animals. Angina pectoris was a very dangerous disease of the heart. Some time ago Sir Thomas Lauder Brunton had a patient suffering from this disease. He found that during the attacks the pulse became quicker, the blood pressure increased and the arteries contracted. It seemed probable that the great rise in tension was the cause of the pain, and it occurred to the physician he had named that if it were possible to diminish the tension it would be possible to allay the disease. Sir Lauder Brunton said: "I knew from

UNPUBLISHED EXPERIMENTS

upon animals by Dr. A. Gamgee that nitrite of amyl had this power, and therefore I tried it upon the patient. My expectations were perfectly answered, and at the same time the pulse became slower, much fuller, and the tension diminished." That was the scientific treatment of the disease, and it was by a drug that had been used upon animals. And it acted upon animals just as it acted upon man, in spite of what Dr. Hadwen might say to the contrary, and it was tried upon man and proved successful. If they took Taylor's

text book on medicine, they would find that the treatment for angina pectoris was amyl nitrite, and that treatment was discovered as a result of experiments on animals. He was going to ask Dr. Hadwen if he would use that drug.

Dr. Hadwen : Yes.

Dr. Eastham said he was going to take advantage of those experiments on animals. A man who denounced experiments on animals, and yet used them, was very much like a man who denounced slavery, and yet made his living by it. The speaker then went on to refer to the extraction of digitalis from foxgloves. It was found that this drug varied very much in its intensity, and in order to equalise it there was only one thing to do, and that was to make the chemist standardise it, which was done by experimenting on animals. There was another drug, ergot, which was used by medical men in maternity cases in very critical times, and when it was used it must act promptly, but it was found in some instances that it was not up to the required standard. Fancy a medical man going out to a critical case and requiring the use of this drug, and then finding it was no better than water. It ought to be tested beforehand on some animal, and then it could be tested on the higher animal, man or woman. (Applause.)

DR. HADWEN'S SECOND SPEECH.

THE ARGUMENTS NOT MET.

Dr. Hadwen said he thought they would agree with him that Dr. Eastham had not attempted to meet any of the arguments he brought forward. The only thing that was left for him to do was to answer Dr. Eastham. (Hear, hear, and applause.) In the first place they were asked what right had they to kill animals for food. He could not be held guilty of that, because for the last thirty years he had been a vegetarian. (Loud laughter and applause.) Another thing, there was a difference between killing animals for food, and torturing them and keeping them under torture. As to the question of

RABBITS AND ARSENIC,

he himself had quoted Dr. Taylor, and in that case the jury decided, without experimenting upon animals, that there was no case of wilful

murder. What Taylor did after he did not know. As to the drug curare Dr. Eastham had completely given his case away, because one of the letters stated that it had been "given up," which showed that it had been used. Another professor admitted having given it in four cases, and so on. One said he "could not get any," which showed that he had been trying. He (Dr. Hadwen) had written a pamphlet called "Some Recent Vivisections in English Laboratories," which anybody could get by applying for it at the office of the British Union, 32, Charing Cross, London, in which he had collected from the vivisectors' own books many cases in which curare was given. He did not mean to suggest that it was used daily, and he had not used that expression, but it had certainly not been given up. The question of a medical man who experimented being conscientious had nothing to do with the case at all. He declaimed against any medical man having a conscience torturing the poor creatures in order to get something out of their torture for their own benefit. An argument had been adduced that Galen found the arteries did not contain air, but blood.

GALEN NEED NOT HAVE TORTURED

a poor sensitive creature, for he could have cut his own skin and found it out in two minutes. He did not know of anything more fallacious than the arguments Dr. Eastham brought forward. There was scarcely any drug they could be positive about by drawing an analogy between an animal and a human being. With reference to the statement as to the circulation of the blood, it would be a total impossibility to discover it by cutting into the living. It was not discovered until some ten years after Harvey, when Malpighi invented the microscope, and saw for the first time the delicate capillary vessels that completed the junction of the arterial and venous systems, which anyone could see to-day by examining the web of a frog's foot. Dr. Eastham had spoken of vivisection as being useful to discover the action of drugs upon living tissue. He supposed a grain of morphia might send anyone in that room into the next world. But they could give a pigeon twelve grains, and it would be as merry as a cricket on the hearth. They could give rabbits belladonna, goats hemlock, and they would not be any the worse, and goats could eat and chew tobacco like cabbage leaves without feeling any ill effects. Prussic acid could be given to horses with almost impunity, and yet a grain would kill off an elephant.

The action of strychnine upon two species of monkeys was dissimilar. Whereas they could give it to one without any fear a small dose to another would be fatal. It was one of the worst arguments which he could have brought forward, because the testing of drugs on animals was one of the most fallacious of ideas. Now he came to

THE STATEMENT

that he was prepared to use nitrite of amyl for angina pectoris, but he maintained that it was not discovered by means of experiments upon animals. Long before Sir Lauder Brunton used it Sir Benjamin Ward Richardson introduced nitrite of amyl into this country, and he discovered it by experimenting on himself. (Applause.) His exact words were: "I proceeded in the usual way. I made myself the first victim, and I tried the effect by taking it both in the form of vapour and of fluid." Coming to the question of digitalis, Dr. Hadwen stated that he had given a good deal of it in his time and also a good deal of ergot, but he had never troubled to get the specially standardised preparations. He had never gone to manufacturing chemists for their standardised drugs, because he knew the whole thing was nothing but

ABSOLUTE HUMBUG.

Professor Cushny might perhaps be a very good authority upon drugs as judged by the laboratory standpoint, but if he had to do with patients by the bed-side he would perhaps have more modified views upon the subject. They could not possibly be certain of definite results, because just as it was in human beings scarcely two animals were alike. Dr. Hadwen proceeded at some length to explain how Dr. Harvey had discovered the circulation of the blood. It could not have been discovered by vivisection, but even if it had been that was no reason why if those experiments were performed in the barbarous days of long ago, they should be continued in the advanced civilisation of the present day. (Applause.) Therefore, supposing great discoveries had been made by vivisection in days gone by, there was

NO REASON WHATEVER

why they should answer the question that would be put to the meeting in any other way than in the affirmative. Now with regard

to the question of the great point that Pro-Vivisectors raised, the value of brain surgery. The whole idea of vivisection as regarded brain surgery was absolutely fallacious, and the two great backbones of vivisection—the circulation of the blood and brain surgery—seeing that his arguments had not been met, must now go. There could be but one conclusion and that was that this cruel and iniquitous practice ought to be swept away from a Christian and civilised country. (Applause.)

DR. EASTHAM'S REJOINDER.

Dr. Eastham said the opinions he gave the audience a little while ago were not his own opinions. He simply gave the opinion of Dr. Cushny with reference to drugs. Dr. Hadwen told them that Dr. Harvey worked these experiments out on paper and thought them out. He (the speaker) knew that he thought them out. Scientists did think their experiments out, and then by means of experiments they ascertained whether their thoughts were correct. (Applause.) Dr. Hadwen flatly denied it—well, the audience could please themselves whether they would agree with Dr. Hadwen or Professor Cushny. Was vivisection unscientific? The Council of the Royal Society were all unanimously in favour of vivisection. That showed whether it was unscientific or not; for the Royal Society was the highest distinction to which any scientist could attain. And yet Dr. Hadwen told them it was unscientific. Were they going to follow the opinions of Dr. Hadwen or of the Royal Society? Dr. Eastham then went on to tell the audience

WHAT VIVISECTION HAD DONE

to prevent the spread of infectious diseases by means of inoculating animals with the micro-organisms, and studying their effect. The statistics of the death-rate with reference to diphtheria had been quoted by Dr. Hadwen, but they were of very little use for this subject, because the Registrar-General took the percentage of the deaths upon the whole of the population, whereas they ought to be taken of the cases which were treated. (Applause.) Referring to the value and preparation of anti-toxin for cases of diphtheria, the speaker

stated that he wrote to his old teacher, Dr. Goodall, medical superintendent of the Eastern Fever Hospital, Homerton, one of the largest fever hospitals under the management of the Metropolitan Asylums Board. He replied: "With regard to the anti-toxin serum treatment of diphtheria, I have had a most extensive experience of this disease both before and after the introduction of the anti-toxin treatment, and there is no question in my mind as to its value. I should consider myself a criminal if I knowingly withheld it in a case of diphtheria, except of the very mildest nature in an adult." Dr. Eastham gave further statistics showing how experiments and inoculation had greatly decreased cases of cholera, lockjaw, &c., and stated that these discoveries would not have been made had it not been for experiments upon animals. (Applause.)

THE THIRD ROUND.

In reply Dr. Hadwen said he had been asked to give the name of a single eminent surgeon of the present day who agreed with him in his views upon vivisection. He could assure them that no man who held his views would be looked upon as being eminent at all; it was a question of what was right and what was wrong. (Hear, hear.) It was

NOT A QUESTION OF MINORITIES OR MAJORITIES,

but of who was right and who was wrong. Dr. Eastham had told them that the whole of the Royal Society, composed largely of medical men, was dead against him (Dr. Hadwen). It was not more than sixty years ago that a young man tramped the streets of London in order to get his life insured. There was not one medical referee who would insure that young man at ordinary rates because he was a teetotaler. The medical profession were unanimously against him, they did not believe a man's life was worth insuring unless he took alcohol; so he set to work to form an insurance society of his own. Two or three years ago that young man took the chair at the jubilee meeting of the United Kingdom Temperance and General Providence Association. That was proof that a large

number of scientific men might be unanimously wrong, and that a single individual might be right. (Applause.) Their friend had referred to infectious diseases, but had not attempted to substantiate his statements.

HE WOULD CHALLENGE

Dr. Eastham to prove the existence of a single specific microbe for a single specific disease. There was not a single infectious disease at the present day of which a specific microbe had been definitely proved to be the cause. Again and again witnesses had come up before the Royal Commission recently, again and again they had been cross-examined on this point, and not one had been able to prove a single specific microbe as the origin of a single specific disease. If therefore they could not find a specific microbe for a single disease (and the whole of serumtherapy rested on that theory), it followed that the practice was devoid of scientific foundation. As to the claim on behalf of cholera serum, it was a fact that Dr. Koch was the first to discover the cholera bacillus. Dr. Klein laughed at it, and took a whole tube full of the bacilli in order to show his contempt for the discovery, and was living to-day to tell the tale. (Applause.) With regard to lockjaw, they had evidence of that before the Royal Commission. Mr. Stockman, the chief veterinary officer for the Board of Agriculture, stated that he could not say that tetanus serum was of much value as a curative agent. As a curative agent it was practically given up. Now with regard to the case fatality of diphtheria they had been given evidence of London hospitals. He would also furnish evidence. In the North-Western London Hospital belonging to the Metropolitan Asylums Board, as stated in their report for 1904, out of 530 cases of diphtheria admitted, 172 were treated without anti-toxin, and they all recovered, and of the remaining 358 treated with anti-toxin 42 died. He would give them the official report for the whole of the hospitals under the jurisdiction of the Board. 5,422 cases of diphtheria were admitted. Of these 4,839 were treated with anti-toxin, and 10 per cent. died, and of 583 cases treated without anti-toxin, only one per cent. ended fatally. But the reason why hospital statistics frequently show a great decrease in fatality since the introduction of anti-toxin is easily explained. Under the new regime of notification and the administration of

anti-toxin at the very earliest onset of the alleged disease, ordinary ulcerative sore throats that

THEIR GRANDMOTHERS

would have cured in four-and-twenty hours were now labelled "diphtheritic," the patients were hurried into the hospital and given anti-toxin, which, quoting very wickedly against his own profession, really meant "half-crown sore throats." (Laughter.) The number of cases—mostly harmless—was increased by this method; the increase of cases since anti-toxin had been introduced was enormous; and thus the fatality was brought down whilst the mortality was going up. In Hull the death-rate before anti-toxin was introduced was only .09 per thousand. At its introduction it rose to .11. The year following it went up to .17, and in 1901 it was .15. The Hull Corporation became alarmed, and in order to check the death toll they decided in 1901 to supply anti-toxin free to the medical practitioners in the city. The result in 1902 was that the diphtheria death-rate more than doubled and went up to .34. In 1903 it was .30 per thousand; in 1905 it stood at .27, and last year it actually rose to .51.

THE AVERAGE DEATH-RATE

in Hull from diphtheria for the five years it was supplied by the Corporation was more than four times greater than during the five years immediately preceding its introduction, when anti-toxin was unknown. Instead of anti-toxin reducing the death-rate, it seemed to have increased the death-rate. And yet by juggling with cases and case mortality the authorities had actually shown a decline in the diphtheria fatality although the death-rate was all the time going up! No fewer than 13 different diseases had been attributed to the introduction of anti-toxin. If they wanted to improve the health of the community, let them get rid of back-to-back houses, let them have pure water and a proper system of drainage, and inculcate healthier conditions among the people. If they had a healthy body they had the finest resistance against disease they could possess. They would never prevent disease by giving disease, and pumping into the human system every

kind of excrescence from an animal's body in a diseased condition, in the hope of preventing diseases to which it bore no analogy. (Applause.)

THE FINAL REPLY.

Dr. Eastham said that in the last speech they had had back-to-back houses, healthy houses, filth, insurance, and temperance, and he asked them, what on earth had they got to do with the question at all, except to appeal to their emotions? Let them get down to the solid issue, that was, should vivisection be abolished? Dr. Hadwen had quoted the death-rate figures of diphtheria, but the case mortality figures showed how fallacious his arguments were. Dr. Hadwen had spoken about half-crown sore throats, but before the introduction of this serum treatment the case death-rate in what were known as tracheotomy cases was much higher than after. Before the introduction 70 per cent. of the patients died. Now, if they would take the percentage in the same class of cases since the introduction, instead of being 70 per cent., it was only 31. Were they going to back up their opinions with the authorities, and go in for scientific treatment, or were they going to vote for Dr. Hadwen, against every eminent physician and surgeon in the land? Professor Sims Woodhead, Sir Frederick Treves, the Royal Society, and the President of the Royal College of Physicians (Sir Douglas Powell) were all against Dr. Hadwen. Sir Douglas Powell, who appeared before the Royal Commission on March 5, 1907, was asked: "Can you give us the name of any leading member of the College of Physicians who holds a different opinion, and thinks that animal experimentation either is wrong or leads to erroneous results?" The answer given before the Royal Commission was, "No; I really cannot. I do not know of anyone." That meant there was not a man of any eminence against vivisection. (Applause.)

Dr. Eastham then went on to state that the anti-vivisectionists had claimed Sir Frederick Treves as one of themselves, and that Sir Frederick had complained that his words had been wrested from their context and used in support of anti-vivisection, whilst Sir Frederick Treves himself has been claimed as an anti-vivisectionist. At the conclusion of Dr. Eastham's speech Dr. Hadwen rose on a point of order

to deny this, and the Chairman signified that an explanation could be given if Dr. Eastham were again allowed to reply. Dr. Hadwen then denied emphatically that Sir Frederick had ever been described as an anti-vivisectionist and challenged Dr. Eastham to show such a statement in any anti-vivisection publication. He proceeded to quote Sir Frederick Treves' words, which were in their very nature quite independent of any context, and which anti-vivisectionists felt were all the stronger as coming from a believer in vivisection : " Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man I found I was much hampered by my new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine."

Dr. Eastham, in reply, referred to the publication from which he had taken the quotation (which turned out to be a report of one of Dr. Hadwen's own speeches) and asked, if it were not intended to convey the impression that Sir Frederick Treves was an anti-vivisectionist, why was it quoted at all ? (Cries of "No, no !")

At the conclusion of the speeches, the chairman put it to the meeting whether the audience were in favour of the abolition of vivisection or not. The result was to be determined by a show of hands, and by an overwhelming majority testified to its disapproval of the practice of vivisection.

On the motion of Dr. Hadwen, seconded by Dr. Eastham, a vote of thanks was accorded to the Deputy-Mayor (Councillor T. Braddock) for presiding.



A DEBATE
ON
Is Vivisection Immoral, Cruel,
Useless and Unscientific ?

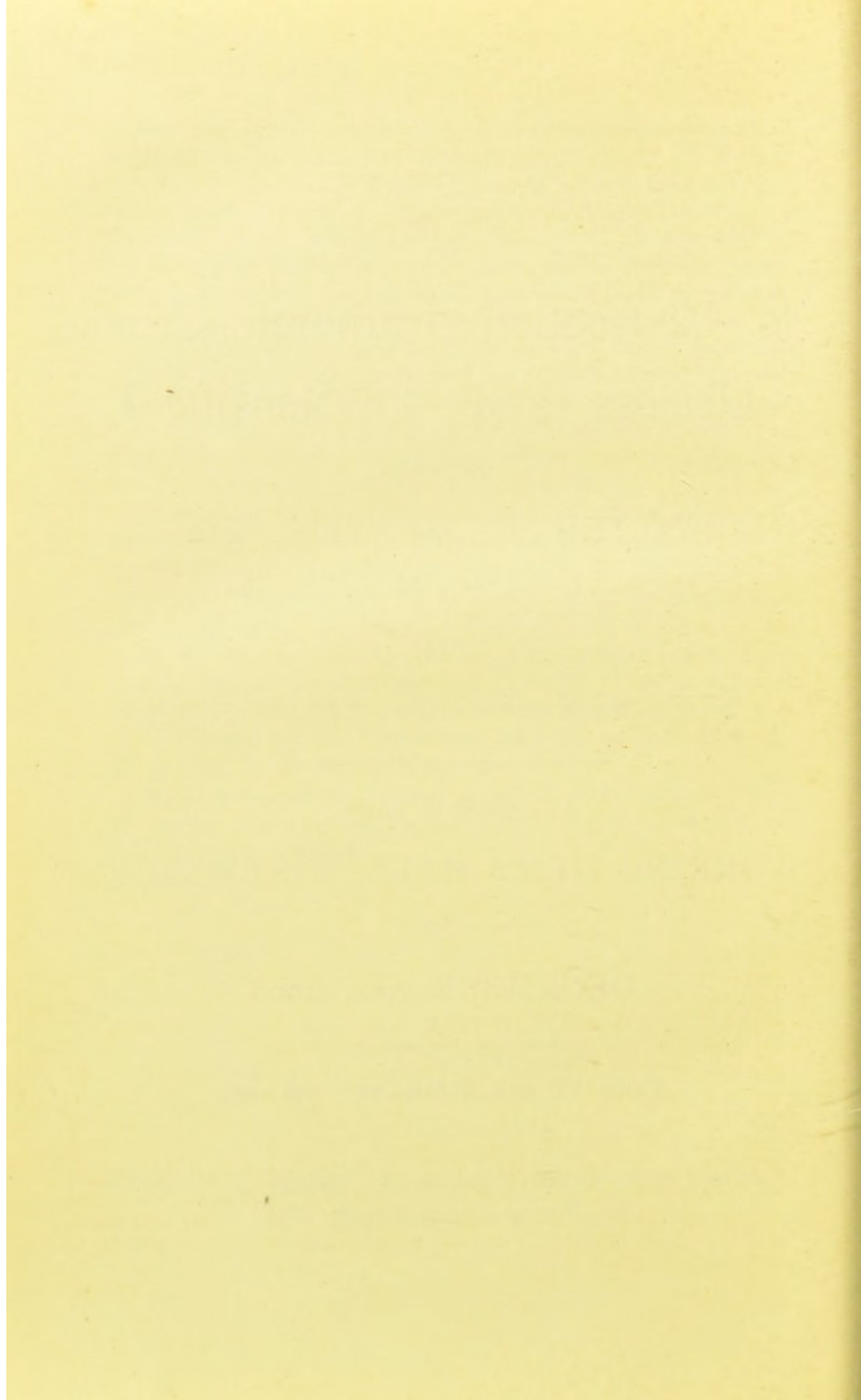
BETWEEN
WALTER R. HADWEN, Esq.,
M.D., L.R.C.P., M.R.C.S., Etc.,
AND
STEPHEN PAGET, Esq., F.R.C.S.

HELD IN THE
WORKING MEN'S HALL, SHREWSBURY
ON

DECEMBER 3RD, 1908.

Price 1/6 per dozen, 10/- per 100.

*Published by the British Union for the Abolition of Vivisection,
32 Charing Cross, London, S.W.*



IS VIVISECTION IMMORAL, CRUEL, USELESS and UNSCIENTIFIC?

*(Verbatim Report by the official shorthand writer of the
"Shrewsbury Chronicle.")*

The Working Men's Hall, Shrewsbury, was well filled on the evening of December 3rd, on the occasion of a meeting held under the auspices of the British Union for the Abolition of Vivisection. The front portion of the Hall was occupied almost exclusively by a large array of local doctors with their households, and a considerable body of nurses in uniform.

The Chairman, the Rev. F. Roberts, vicar of St. Giles', Shrewsbury, contrasted the dimensions of the meeting with one held 12 years ago during the Church Congress in Shrewsbury, when also he was chairman. He went on to explain that the present meeting had been called for the purpose of listening to a lecture by Dr. Hadwen, but had now resolved itself into a debate in response to a challenge from the medical men of Shrewsbury. For his part he considered Dr. Hadwen had offered very generous terms to the other side. Two questions would probably be discussed that night. The first would be, "Does the end sanctify the means?" and the second would be, "Is that end a satisfactory one?" Dr. Hadwen was approached, he understood, with a view to allowing an equal amount of time to that occupied by himself. That was rather an unusual request, where a lecture with a definite object had been announced, but it was immediately complied with by Dr. Hadwen—(hear, hear, and applause)—who offered to turn the meeting into a debate in which both sides were to have an equal amount of time, Dr. Hadwen reserving to himself the right of a brief ten minutes introduction in order to move a resolution and explain the basis of its provisions. Afterwards he (the Chairman) would call upon Mr. Stephen Paget to speak for twenty minutes, and then Dr. Hadwen would follow for twenty minutes. Fifteen minutes would then be given to some medical supporters of vivisection, to whom Dr. Hadwen would reply, occupying fifteen minutes. Afterwards Mr. Paget would have ten minutes, and then Dr. Hadwen would close the debate in a speech of similar length.

DR. HADWEN'S INTRODUCTION.

Mr. Walter Hadwen, M.D., L.R.C.P., M.R.C.S., &c., said : I must apologise for not complying with the published announcement to deliver a lecture upon the subject which has brought us together, but as Mr. Paget, who was to lead the opposition, has refused hitherto to meet me except under ludicrously unfair conditions, and as he has now offered to do so, I feel that there should be no hesitation on my part in according to an opponent the justice and courtesy which has so far been uniformly denied to me. (Hear, hear, and applause.) I propose to put to the meeting the following resolution to be voted upon at the close of the debate : " That this meeting looks upon vivisection as morally and scientifically unjustifiable, and contends that it ought to be abolished."

By the term vivisection I use it in the broad sense, as generally understood, signifying not only cutting operations, but inoculations, which form a large proportion of the experiments on animals, the injection of irritating matter into the eye, the starvation of animals, or the feeding of them with nauseous substances, the crushing of limbs, the extirpation of vital organs, and so on. Vivisectors declare that the end justifies the means, and the same reason has been given for the greatest tyrannies and wickednesses which have disgraced the pages of history. There could be no more immoral contention. (Applause.) An intimate friend of Mr. Paget's — Professor Starling — told the Royal Commission recently that if there were no such things as anæsthetics he would justify painful experiments on animals, and men who had the moral courage to carry out those experiments would be worthy of admiration rather than condemnation. That is a cowardly utterance and contrary to every principle of Christianity. (Applause.)

THE QUESTION OF PAIN.

But Mr. Paget may tell us, as he has said before at one of his semi-private meetings, that he has never heard of a case of intentional cruelty. I will not bandy words on the word "intentional": it is enough for me that there is cruelty, and that if Mr. Paget knows nothing about it it is time he made himself acquainted with the facts. (Hear, hear.) But what Mr. Paget does not know there were some vivisectors candid enough to admit. Prof. Pembrey, for instance, told the Royal Commission : " I think painful experiments are necessary; I mean painful experiments as against experiments under anæsthetics. A common-sense view should be taken of this question and pain must be admitted. I admit I have done painful experiments, and I am not ashamed of it. They are absolutely necessary."

And yet Mr. Paget told a Torquay audience a month ago that he had never heard of any. (Laughter.) Professor Thane told the Royal Commission: "Animals experimented on under Certificate B. do suffer *severely* while under observation after the experiment." And "in some cases, under Certificate A, the injection is followed by great pain and suffering." Dr. Power, Chief Medical Officer of the Home Office, admitted "no doubt but that pain or uneasiness will afterwards arise in cases where disease is the result of the experiment." Further, Professor Thane declared in making fistulas into pancreas, gall bladder, stomach, and so on, "it is quite likely that the animals suffer to a certain extent." Those were vivisectors' own statements, and yet Mr. Paget had never heard of any such thing. Those are grave admissions, and I deny the right of any man to do evil that good might come. (Hear, hear.)

Further, I deny that any good has come from vivisection, its cruelty and its blood have led only to blunders and contradictions, and have discovered nothing at all for the amelioration or cure of human diseases. More than that, it is unscientific. The anatomical and physiological construction of the lower animals is different from that of men. Sir Frederick Treves admitted that he was led astray on this account by his experiments on dogs, and Charcot, the greatest brain surgeon that ever lived, admitted, in view of errors in brain surgery through animal experiments, that "the study of the brain, if it is to bear fruit, must be on man"—the anatomo-clinical method was the only sure guide—*i.e.*, bedside experience, followed by an anatomical study on the post-mortem table. Moreover, an animal under fright upon the torture trough is never in a normal condition; the anæsthetic likewise tends to abnormality. The effects produced by drugs are largely different in animals and man. In fact, Professor Starling, Dr. Power, and Professor Thane have all admitted that "the last experiment must be on man." If, then, the last experiment, according to vivisectors, must be on man, the first real experiment must commence there, and all the previous experiments on the lower creatures, with all their cruelty, are uncertain and calculated to be misleading.

I declare that the vivisection of living animals is immoral, cruel, useless, and unscientific, and ought to be abolished. (Cheers.)

MR. PAGET'S OPENING SPEECH.

Mr. Paget was loudly cheered on rising. He said: I am very sorry I have lost my note-book. I had written a most beautiful speech, and I cannot find it. What I have to say must be said in a most halting fashion unless they find the note-book.

This is a very funny debate. I have got to speak first. It is rather like beginning with the dessert and working back from the cheese until you get to the soup. (Laughter.) I never asked to come here. I did not arrange anything. I am not here in any particular capacity, except as a friend of doctors in Shrewsbury. You know those doctors: they are here to-night. You know the Shrewsbury doctors. You see them in and out at their work; at work all day and a good part of the night. You don't know Dr. Hadwen, and he does not know Shrewsbury: I don't know whether he knows the Abbey from St. Mary's, or the Abbey from the Post Office. He is an ardent opponent of vaccination—(Dr. Hadwen: "Hear, hear," and applause)—and I hope if small-pox ever comes down among the Mardol slums those who now applaud him will not have cause to regret their decision to-night. I have to speak for 999 doctors out of every 1000. I am only going to tell you what every doctor believes. I have got to tell you something about the real amount of pain that is caused by all these experiments, and something about the results that have been got from them.

Now let me first say, I have not the faintest wish to see unrestricted experiments on animals in this country, and I don't know anybody who has. (Hear, hear.) I think that not only for the happiness of the public mind, not only for the standard we always maintain in this country of a decent care and regard for animals, but also in the interest of science it is most desirable that experiments on animals should be kept in the hands of experts. I cannot imagine anything worse than if everyone were enabled to do exactly what he liked without regard to his position in science or in medicine, or anything else, or without regard to his previous training or his mental gifts. If every ambitious young chap wanted to discover a cure for something or other the whole ground would be blocked by those who thought they had found a wonderful cure, and half the time would be spent in proving that what they had found was not true. Nothing better could be done than the restriction of vivisectional experiments on animals. For 12 years I was secretary of the Association which looks after the working of the Act, and advises the Home Office as to every application for a license or for a certificate under the Act. That is to say, for 12 years I was in constant correspondence with the Home Office over the whole business of experiments on animals in this country. Now it is quite certain that the working of the Act, and the administration of the Act, are very different matters. If you read the text of the Act you will see that all sorts of things are allowed. Nothing is said about antiseptic precautions, nothing is said about killing the animal if suppuration occurs, nothing is said as to the number of

animals that may be used in a series of experiments, nothing is said of the sending in of an interim report. All sorts of restrictions are in force by the Home Office which are not in the text of the Act. There is a great deal of difference between the administration of the Act and the text of the Act, and anybody who has worked for as many years as I did for this Act will understand that the Act is administered not only in the letter but in the spirit.

THE WORKING OF THE ACT.

Now I come to say something of the work that is actually done under the Act. Understand, I admire the Act. Of course it is an antiquated, obsolete, and out-of-date old Act; it is 32 years old, and it was drafted before there was any such thing as inoculation. It was drafted by a lot of people who were not prophets; they did not know what was coming; they had hardly heard of Pasteur; there was no provision for inoculation nor for a good many other things which have been discovered. The Act is out of date, and I hope the present Royal Commission will put the Act into the melting-pot; Certificate A and B you hear so much about will go into the melting-pot, and the Act will be brought into shape that will fit the needs of the present day, and I have no doubt more inspection will be arranged for, and a very good thing, too. When the Act was passed there were but a few hundred vivisections. Then came bacteriology, the work of Pasteur, and Lister, and their followers, and the work went up by leaps and bounds. Now the amount of work is a thousand-fold what it was. The result is that the inspectors are overworked: there are not enough of them. It is not only the work of actually looking on in the laboratory and seeing the animals in the laboratory that have been inoculated: it is the correspondence, etc. For my own part, I hope the new Act will provide for an increase in the number of Inspectors—it is most proper and right that it should.

Now I come to the work that is actually being done in our own country at the present time under the Act. I am not going to range over the whole history of the thing, as Dr. Hadwen proposes. He may have heard of dreadful things a long time ago and a long way off. Our business is with the work in our own country at the present time. (Dr. Hadwen: Hear, hear.) What is the fact about that work? Of all experiments made on animals in this country $96\frac{1}{2}$ per cent. are of the nature of inoculations. In them there is no sort or kind of surgical operation on the animal. It is not cut open, it is not cut, it is not mutilated, and it is not put under an anæsthetic: the actual inoculation is the prick of a needle. (Hear, hear.) Now the results of the inoculation. These inoculations are done,

a great part of them, for two great diseases which are the scourge of our nation—tuberculosis and cancer. I may say that these two diseases are inoculated into animals not to please any men of science, but to please you. They are done by the Government, they are done by the Home Office, by the War Office, and by the Board of Agriculture and its officials; Municipal Corporations and County Councils order all these inoculations. The testing of milk, the testing of cattle is part and parcel of the service of the public health. It is you who appoint, you who pay, you who approve the vivisectors. For the mere testing of milk and meat, for the mere guarding of your food supplies, thousands of animals are inoculated, vivisected if you like: the work is part of the work of the Government, part of the work of the public bodies. What is the pain of the operation for tubercle? How many of you are there who have not seen a child with a tuberculous gland in its neck? The gland may suppurate, but which of you does not know children with glands in their necks running about as happy as other children? Why should a tuberculous gland be painless in a child and painful in a guinea pig? (Hear, hear.) Besides, when the guinea pig has got an enlarged gland the experiment is done, and the pig is killed. Nothing is gained by keeping a guinea pig with an enlarged gland in its neck. You inject the guinea pig with tubercle, by-and-bye the gland enlarges; if the pig gets off its food you kill it.

Cancer—what is the pain of inoculation of cancer? The great increase—the number which seems so alarming to you anti-vivisectionists—is the inoculation of mice with cancer. That is the work of the Imperial Research Fund. There were 73,000 experiments made on animals in 1907. If I remember aright, out of those no less than 40,000 were inoculations of mice with cancer. Out of those 40,000, again I am right in saying, only about 25 per cent. were successful—that is to say, 10,000 mice got a little nodule of cancer under the skin. Now a nodule of cancer under the skin is painless, and the doctors wish to God it was painful, and then they would have a better story to tell of the treatment of cancer. (Applause.)

PAINLESS VIVISECTION.

It is just because cancer in its early stages is painless that it is such a damnably serious matter to have it. If cancer had a painful right of way you would take alarm, you would have something done, and you might never have it again. As it is now, it happens that the doctor is saying to the patient, "Why did you let it go on so long?" And the patient says, "Because it was not painful." And if that is the case with a man and a

woman, how much pain does a mouse have with a little nodule of cancer under the skin? Before the Royal Commission the President of the Royal College of Surgeons explained all about that. He told them the mice sleep, they feed, they seem quite comfortable; there are no nerves running into the tiny little nodule, if you squeeze it they don't seem to mind, and if they get a chance they breed. He said there were two sets of mice divided by a little partition, and they nibbled down the partition and bred. It is absurd to talk of torture in that sort of work. (Hear, hear.) Ninety-six per cent. of these sort of things are inoculations. I do not deny there is pain caused by inoculation. There were rats inoculated with lock-jaw: they were in pain for a quarter of an hour—the same sort of thing as if you had set rat poison about the house. Have you ever seen a case of lock-jaw? If you had you would let a thousand rats be inoculated—(hear, hear, and applause)—not to save yourselves, not from any selfish motives, only that you know that there are men and women who will die of it, a certain number bound to die of it. You will do anything to save these unknown men and women from dying of lock-jaw. (Applause.) That is 96½ per cent. of all the experiments on animals. I don't know whether there are any experiments being made with lock-jaw now; I hope there are. (Hear, hear.)

Now about the remainder: the experiments in physiology in which the animal is kept under anæsthetics. Professor Starling said in the course of 17 years constant work he had never once seen pain inflicted in a physiological experiment. He is a man of the nicest honour, of the prettiest honour. He won't shoot—he thinks it cruel. The President of the National Anti-Vivisection Society, which is eight times the size of Dr. Hadwen's Society, is a great sportsman. He is known in the newspapers for his big shoots, his country-house parties, and so on. (Laughter and applause.) He is the President of Mr. Coleridge's society and shoots, but Professor Starling won't shoot. If you don't believe me, here are one or two other beautiful Americans—you are bound to believe them. (Laughter.) Here is Dr. Hodge. I don't know much about him, but I daresay he is a great swell over there. He says in more than 10 years' experiments in various laboratories in his country and abroad he has never had occasion to perform or witness an experiment of a painful class, and Dr. Carrel, who is a great professor, a professor of physiology at Harvard, says, "I can testify to the same experience in my own career of 12 years."

I want to speak about myxoedema, yellow fever, plague, rabies. How can I do it in the time? But you have got your own doctors here; if you don't believe me, and even if you don't believe Dr. Hadwen—(laughter)—ask them. Here you have to-

night men whom you know and trust—no strangers, men you know. Take their advice in this matter. Now I have no time to talk science, I have only time to talk morality ; I am going to talk a little about the morality of anti-vivisection. I don't find it easy to see it. (Hear, hear.) Anti-vivisection is such a fine thing—it makes such an appeal to you. But an appeal made so ambitious as that is bound to regard the whole moral law—it is bound to regard the law of peace, and the law of charity, and the law of truth. Now, what has anti-vivisection to do with peace any more than Jehu in the Bible story? There are 17 anti-vivisection societies—I believe there are 18 now, and they quarrel like cats. (Laughter.) They are divided into two great camps—one who wants to get everything they can, and one who wants to get everything whether they can or can't. (Laughter.) Some call themselves Restrictionists; some call themselves Abolitionists. They quarrel, they denounce each other. No one has been more furiously denounced than Dr. Hadwen by other anti-vivisectionists—(laughter)—and he has done his share. Perhaps I should not say that, but, at any rate, they don't have much to say to him, nor he to them. The only thing they are agreed upon is getting in the money, and they have got in £80,000, and they have done with it nothing. I can't find out what they have done. They have been at work 35 years; they began when the Act was passed; there are 17 of them; I cannot find out what they have done. What have they done with the money? The biggest society of all accuses all the little societies of spending it on entirely unnecessary salaries of officers. The biggest society says: "I cannot be responsible for a lot of societies that print a lot of extremely inaccurate literature." (Laughter.) You cannot find out what they have done. Experiments on animals with the discovery of bacteriology have gone up by leaps and bounds, and really if you look at the record from year to year of the number of experiments they might all have been vivisection societies—

(At this point the bell rang, and Mr. Paget resumed his seat.)

DR. HADWEN'S REPLY.

Dr. Hadwen, replying, said; Mr. Paget opened by telling us this was a funny debate, but he has made it funnier. (Hear, hear.) He has not attempted to tackle one point out of the whole of the points which I laid down for him to meet, as to the morality or the scientific character of vivisection. He has had twenty minutes, and up to the present time he has not proved one single point. (Applause.)

He tells us that I have practically the whole medical profession against me. Well, I think if we look back through

history we shall find that right never has been with majorities. (Hear, hear.) But it does not follow because there are large numbers against me that I am therefore wrong. What we have to do with is to discuss not the question of majorities or minorities, but whether vivisection is right or whether vivisection is wrong. (Cheers.) He told us vivisection ought to be kept in the hands of experts. My opinion is this — if there is one person in the whole of God's creation that wants looking after it is an expert. (Laughter and applause.) It does not matter what department it is, an expert is one that requires to be very closely watched. Mr. Paget has gone into the question of the Act of Parliament. He appears to know a great deal as to what the Royal Commission is going to do. He appears to be in the secret of the Royal Commission. He says they are going to put Certificate A and Certificate B into the melting-pot. He does not tell us what it is going to turn out, but he says we want more power in regard to bacteriology. Considering there are 70,000 experiments in a year, as he tells us, already, Heaven only knows what we are going to get to next, if we are going to increase that sort of thing. (Hear, hear)

He says the present Act is antiquated. The present Act is simply this; The first part says that no person is to vivisect unless the animal is placed under an anæsthetic, and that it is to be killed before it recovers. But the second part of the Act will allow a certificate to be taken out to perform any experiments whatever that may pass the supervision of the Home Office and the Society for the Advancement of Medicine by Research. That is practically a Vivisection Society, composed of vivisectors, to whom is referred every application for a vivisection experiment. And that is the character of the administration which Mr. Paget has dilated so much upon; an administration which is absolutely contradictory.

He tells us that at the present time the inspectors are overworked. I don't know how that can be, for according to a statement made before the Royal Commission by no less a person than the Chief Inspector himself, out of the 2,506 vivisections that were not inoculations he himself had only seen in the past year 15. That did not look very much like overwork. (Hear, hear.) There are two inspectors for the whole of England and Wales. That is the total staff, and it was acknowledged by the Chief Inspector that no one complained at the present time of red tape as they used to do. The Chief Inspector told the Assistant Inspector that he was to visit registered places about three times a year, and said "he expressly told me I was not to act as a detective." So we are to have more of that kind of thing, says Mr. Stephen Paget. The inspectors are to be increased; we are to have men who are not to be like other inspectors, but who are simply to

look at the condition of the laboratories, and who are not to exercise anything like detective powers over those who are carrying on the work behind the laboratory doors! My own impression about the matter is that to increase the number of inspectors will be one of the most dangerous things that can possibly be done in regard to the vivisection of animals. And why? Because you are creating a great vested interest in vivisection itself, and the very men who will be appointed to look after vivisection will be the men who are keenly and financially interested in keeping this abominable system going. (Hear, hear, and applause.)

THE PRICK OF A PIN.

He tells us that inoculation is nothing more nor less than the prick of a pin. As Sidney Smith once said, "I should like to know what the dog has to say about that." (Laughter, and hear, hear.) It is all very well for him to say the mouse feels nothing. Somebody comes and sees this creature swollen up with a tumour three times its body weight. (Laughter, and cries of "No" from the doctors.)

These medical men in front of me say "No." That only shows what has been proved over and over again that medical men who profess to speak with authority on this subject don't know a bit what is being done in the laboratories. (Applause, loud and continued.) Thank you, but pray don't waste my time. These medical men don't know what they are talking about. The tumour that is created in the mouse under the Cancer Research Fund is not human cancer at all: it is Jensen's tumour. And the character of that tumour shows conclusively that it is no guide whatever to the elaboration of the human cancer, because that growth extends in the mouse to three times its own weight, and I challenge any one of these medical men who are boo-ing at me to-night to disprove a single word of what I say in regard to it.

Dr. Urwick: May I ask, have you ever seen it?

Dr. Hadwen: Sit down; sit down.

Dr. Hadwen, resuming: We were told it was only the prick of a pin in regard to the pain that is actually caused. Supposing the animals could themselves talk, we should have some grounds for believing it. But animals don't talk. Vivisectors do talk,—(laughter, and hear, hear)—and when they come to judge the pain animals suffer with these tumours inside them and profess to gauge that pain according to the suffering human beings pass through, then I say they have no right to come here and talk in that way, and say it means nothing more than the prick of a pin. It may be only the prick of a pin to inject a disease into that animal's body, but when that disease slowly

generates, when that disease increases and goes on until, as I have seen them by the hundred in the Pasteur Institute in Paris, the victims are in the greatest pain and agony, then I say it is nothing but fooling to stand here and talk about the mere prick of a pin. It is nothing more nor less than a discredit to humanity to inflict such suffering and pain as I have seen upon these poor, helpless creatures who cannot defend themselves against a higher power. (Loud applause.)

Again, Mr. Paget spoke about tuberculosis. That it was simply an enlargement of a gland, and all that sort of thing. Very well, I don't know why we should give these enlarged glands to these animals. If anything had ever been gained by it all well and good, but has anything ever been gained by it? ("Yes" and applause.) Very well, you cry "Yes." We will turn to no less a person with regard to tuberculosis than Dr. Koch. Dr. Koch in his "Cure of Consumption," page 8, refers to experiments upon guinea pigs. Dr. Koch is the man who is supposed to have discovered the tubercle bacillus, the man who invented tuberculin, and who declared emphatically that phthisis can be cured with certainty by this remedy, yet had to acknowledge before a large number of scientific men in London that after all his bombastic utterances there was no cure for consumption but God's fresh air. (Hear, hear, and applause.) He says, "Here again is a fresh and conclusive proof of that most important rule for all experimentalists, that an experiment upon an animal gives no certain indication of the result of the same experiment upon a human being." (Cheers.)

THE RIGHTS OF ANIMALS.

Now Mr. Paget has quoted lock-jaw. He said, had you ever seen a person die of lock-jaw you would be willing for thousands of rats to suffer. Why? Because you see a person die of lock-jaw what right have you to go and torture a thousand rats, even if they are only vermin? (Hear, hear.) He says he does not know if lock-jaw experiments are being carried on now, but he hopes so. I hope not. The fact is, they have been given up simply because they have turned out to be a failure.

Mr. Paget: I only said as far as I know no experiments on that subject are being made in England.

Mr. Hadwen: And I will tell Mr. Paget why:—The chief adviser of the Board of Agriculture told the Royal Commission, "I cannot say that tetanus serum is any advantage as a curative agent," and "the serum used in a case of tetanus is not efficacious after the symptoms are manifest." And Dr. Morris, the President of the Royal College of Surgeons, said, "as a curative it has been practically given up." Further, Dr. Whitla remarks, "not-

withstanding all the reported successes, there is little evidence of the value of injections of the anti-tetanic serum." Therefore, in the face of the evidence of these men, vivisectors themselves, of the absolute failure of tetanic serum, I ask why, because you see a man die of lock-jaw, you should go and torture thousands of rats, when according to their own evidence their own experiments have proved to be futile? (Applause.)

He says that Prof. Starling, whom he describes as a man of such pretty honour that he will not shoot, in the course of 17 years, had never seen a case of pain in his laboratory. Here I will quote from Prof. Starling himself. He wrote in his "Elements of Human Physiology," speaking of nerve stimulants, "They may produce one or more of four effects. (1) Pain as evidenced by the movements of an animal not fully under the influence of the anæsthetic." How does he know that? Prof. Starling speaks from personal experience; he speaks of pain being evidenced by the movements of the animal. On another page he enlarges upon the fact of such stimulation producing pain. How could Prof. Starling say that a painful stimulation of the nerve produces a certain result unless he had produced that pain and seen that pain for himself? And yet Mr. Paget tells us for 17 years he has never seen pain in the laboratory! (Laughter and applause.)

We don't want to make this earth a hell for animals. It is clear enough from the statements I produced from vivisectors themselves when I gave my introductory remarks that there is pain. That there is pain, and severe pain, is acknowledged by the vivisectors themselves, not as he says years ago in lands across the sea, but at home, and by the Home Office and Government Inspectors who declared it not six months ago before the Royal Commission. What we wish to see is this: There is Martin's Act at the present time which says any person guilty of cruelty to any animal shall be brought up before the Bench and punished for his cruelty. A costermonger may be summoned for working a donkey when unfit, or ill-using the animal. He may plead that because he has got a wife and family starving at home he was obliged to take and work that poor creature, although it was suffering. But the magistrates will say "we have nothing to do with the benefits you say are to be derived from the results of your cruelty: you have been cruel, and therefore we fine you and punish you for what you have done." And what we declare is this, that the scientist has no right to be placed on a higher level than the costermonger. It is a disgrace that in this land of boasted Christianity and justice there should be one law for the rich and influential and another law for the poor. (Applause, long continued.)

DR. URWICK'S SPEECH.

Dr. Urwick said: My only excuse for speaking to-night is that I think amongst all the people present to-night of the members of the profession, I may say I have seen more experiments on animals than anybody else here, and I think it is only fair that I should give you my experience, and afterwards my opinion on the matter. First let me say that if anybody says that no amount of benefit to humanity justifies cruelty to animals, I honour that man to a certain extent, but I cannot understand him. (Hear, hear.) I only honour him if he does not use animals for any purpose of his own, if he does not eat them or use them for any purpose by which they are put to pain or inconvenience. (Hear, hear.) To be thorough he must not do that, and I can only honour people who are thorough in that manner. I have worked in the Physiological Laboratory at Cambridge (where many awful things have been said to be done), in the Pathological Laboratory at Cambridge (where more awful things are said to be done), the Pathological Laboratory at St. Bartholomew's Hospital under Professor Klein. I have worked in these four laboratories, and may I testify to you, and swear if you wish, that I have never seen any unnecessary pain inflicted upon animals. (Hear, hear, and applause.) That is my own personal experience. Some of you know me, I am not a habitual liar—(laughter)—and that I will swear to—I have never seen unnecessary pain inflicted. The medical profession cannot get out of the responsibility by saying we don't know of the experiments. (Hear, hear.) We do know.

A few years ago doctors and scientists were quite separate: now, thanks to the improved education of doctors, a doctor and a scientist are synonymous terms. All doctors are scientists, and we are all obliged to know before we are qualified all that is possible about these scientific facts and theories. I say we all know these things are done, and no amount of quibbling that we have not seen them can relieve us of our responsibility. This attack on vivisection is an attack on the medical profession. (Hear, hear, and applause.) We cannot get out of it, and there are only two ways of looking at it: either we of the medical profession are so ignorant that we don't know what is right and what is wrong, what is scientific and what is unscientific, or, knowing that, our love of blood and cruelty, whichever way you like to put it, has so blunted our wisdom and knowledge that we cannot apply it, and we cannot see that these experiments are blind, blood-thirsty, and wicked.

THE VOICE OF AUTHORITY.

I should like to ask you, whether you signify your approval or not of the resolution, whether you agree to that. There is no

other issue: that is the clear issue. The medical profession as a whole approve of these experiments, in spite of what Dr. Hadwen says. They know them thoroughly, and know what is being done, and if they don't oppose them, as Dr. Hadwen, to his credit does, anybody who does not oppose them approves of them, and the clear issue is either to prove to us you do or you don't know. You are either ignorant, which is Dr. Hadwen's phrase, or you are cruel and bloodthirsty. May I say also this? The experiments I have seen done are exceedingly unpleasant, very very distasteful to me. I always hated them. Nobody enjoys seeing operations on people. There is a scientific interest in them, but it is unpleasant and loathsome. We do it because we think it is right. (Hear, hear, and applause.) We know it adds to our knowledge, and we think it is to the benefit of humanity. (Hear, hear, and applause.) We may be wrong: if Dr. Hadwen is cleverer than we are then we are wrong. Otherwise if we are not fools we are knaves, and we are cruel, we are heartless brutes, and that is the clear issue before you to-night. That is the clear issue: the whole medical profession are ignorant or else they are knaves. I have never seen unnecessary cruelty. I have seen very unpleasant things done. I have seen them done by people who have the same feelings as myself, and they have always done them in the most humane manner possible.

You say the expert is a man not to be trusted. That does not mean anything, but I will say this: you know the medical profession among you, you know what lives they have saved. I know myself from knowledge got from learning in other ways, and learning got from experiments on animals. Those two facts are bound up together: you cannot separate what is got from experiments on animals and what is got in other ways. Anyone who disapproves of experiments on animals and is a doctor should at once give up practice, because he cannot separate the knowledge got from experiments on animals and the knowledge got in other ways. You cannot separate the two. Dr. Hadwen, to be thorough and honest, should give up practice entirely. (Hear, hear, and applause.) From time immemorial vivisection has been done, and from time immemorial things have been found out by it. They might have been found out otherwise after many years, by other methods—that is impossible to prove. Things have been found out lately. Things might have been found out in ten or twenty years' time, but in the meantime how many valuable lives have been lost! (Hear, hear.) I hope you will remember it is either a case of the doctors being honest and straightforward, and wishing to do their best for humanity, or not—there is nothing else. (Hear, hear, and applause.)

DR. WHEATLEY'S SPEECH.

Dr. Wheatley (County Medical Officer of Health) said: I shall confine myself in these remarks simply to the bearing of the question on the protection of the public health. I shall not deal with whether it is admissable in any circumstances to perform experiments upon animals. I shall take it for granted that if we can see an enormous benefit to humanity by experiments upon animals, and that those experiments are conducted with the least possible pain, or without pain altogether, then it is perfectly right that those experiments should be made. (Hear, hear, and applause.)

Now I shall confine myself to the bearing upon three diseases—tuberculosis, diphtheria, and small-pox. We shall shortly be having in this county a large meeting, I hope, to consider the prevention of tuberculosis. (Hear, hear, and applause.) One aspect of the prevention of tuberculosis is to provide milk free from the tubercle bacillus. Now it is perfectly clear and well understood in the medical profession that at the present time the only way we can tell whether the milk contains tubercle germs is by inoculating an animal, say a guinea-pig, with a portion of the milk treated in a certain way. If we wish to have a pure milk supply to our town we have to sample the milk that comes in, inoculate it into the guinea-pig, and in that way we find out whether it is liable to convey tubercle or not, and the farm will be visited and the animals eliminated. That is being done at the present time in the large cities in this country—in Manchester, in Liverpool, and to some extent in Birmingham, and the milk is being freed from the poison of tubercle. The experiments that have to be made for this purpose are certainly painless except for the prick of the needle. The growth that takes place is undoubtedly a painless growth. We can judge this with certainty, because similar growths in the human subject are painless. And yet by these simple experiments we are able to detect the most serious poison in the milk, we shall be able to free the milk supplies of our large towns, and be able to prevent the serious diseases in our children which kill so many of them—(hear, hear, and applause)—phthisis of the intestines and of the joints and bones that so commonly affect children. Now is it an adequate result or is it not that we can free our milk supply in this way, and that we can protect the mass of the population from these diseases? (Hear, hear, and applause.) I say it is an adequate result of these painless injections. (Hear, hear, and applause.)

I wish to speak on the question of diphtheria. Personally, I have an enormous experience of the value of anti-toxin in the cure or the prevention of the spread of diphtheria. (Hear, hear.)

All medical men, I think, almost without exception, will admit that the injection of anti-toxin, which we have only been able to arrive at from these experiments, will cure diphtheria when injected early enough, and will prevent it if injected before the attack. (Hear, hear, and applause.) It is hardly necessary for me to say anything with regard to vaccination, but I have no hesitation in saying this county, since I have been in it, would have had most serious epidemics of small-pox if it had not been that the majority of the people were protected by vaccination.

Chairman : Now you have one minute more.

DR. SPRIGG'S REMARKS.

Mr. Sprigg, another local doctor, said : Recently we had a man suspected of anthrax, who had a pustule on his arm. The doctor very wisely took some stuff from that and injected it into a guinea-pig. The guinea-pig died, and that proved pretty conclusively that the man had anthrax. That man would certainly have been a dead man in a week if it had not been for what was done to the guinea pig. (Hear, hear.)

DR. HADWEN ANSWERS.

Dr. Hadwen, replying, said : We have had now three medical men who have dealt with the subject. The first one, Dr. Urwick, has devoted himself nearly the whole time to enlarging upon what Mr. Stephen Paget said in his first address, viz., as to the value of the opinion of the majority of medical men. I again assert I care nothing for the opinion of the majority of medical men. (Laughter and applause). But what I want proved is that the majority of medical men are right, and none of these medical men have done so yet. (Renewed applause).

Dr. Urwick says he has never seen any unnecessary pain inflicted upon animals. That blessed word "unnecessary" may cover a multitude of sins — (hear, hear) — and what Dr. Urwick may consider unnecessary pain and what another person may consider necessary pain, and what the poor animal may consider necessary are all vastly different things. He says a medical man must be either ignorant or cruel. I will tell you candidly from my experience of the matter I don't believe my brother medical men are as a rule intentionally cruel. (Laughter). I have given you instances of absolute cruelty and acknowledged cruelty by vivisectors themselves, and no medical man has dared to attempt to disprove these statements, but I must candidly say that I do consider the majority of my medical brethren are ignorant upon this subject. (Laughter and applause). And what is more, out of scores and scores of my brother medical men to whom I have spoken upon the subject,

everyone of them up to the present time has candidly confessed to me that he is ignorant. (Laughter).

Now, he says that a person has a right to vivisect because it adds to knowledge, and he says "we think it is for the benefit of humanity." It is all very well to consider it adds to knowledge and that it is for the benefit of humanity, but what I have tried to get at is, is this proved? (Laughter). It is all very well to say it adds to knowledge; I say it does not. It is all very well to say it has been proved to result in the benefit of humanity; I say it has never been of the slightest benefit in the amelioration or the cure of any human disease—"No, no," from medical men)—and I want someone to prove that it has. It is no use making statements—we want proofs. (Hear, hear, and applause).

He says "you cannot separate the knowledge obtained by vivisection from other things." Then let me know definitely what is the knowledge you have had from vivisection; let me know what you claim is the result of it. If you don't know, as Dr. Urwick appears to admit, then we will leave the subject, but if there are benefits be prepared to say what they are and I will be prepared to meet the assertions. (Applause).

TUBERCULOSIS FALLACY.

Now I admire Dr. Wheatley. (Laughter). Dr. Urwick has done nothing but make assertions and has proved nothing, but Dr. Wheatley has attempted to prove something and I admire him for it. He says "vivisection is for the protection of public health," and he instances first of all the case of tuberculosis. Very well, then, let us look at tuberculosis. He lays great stress upon the discovery of the tubercle bacillus. But supposing you have the man who discovered the tubercle bacillus, Prof. Koch, telling the Scientists in London two or three years ago that bovine tuberculosis was not communicable to man at all? If that is the case, all these experiments upon the milk are absolutely useless. (Hear, hear.). Then we have the Tuberculosis Commission in London. They spent £48,000 to prove that Koch was all wrong; these English vivisectionists contradicted the German vivisectionists, and came to the opposite conclusion. Last month we had the International Tuberculosis Congress in Washington, and they were in such a hopeless muddle that they had been experimenting upon some charity children in Hungary to try to settle the question that way, and the Washington Council had the audacity to provide ten more poor charity children to enable those scientists to carry on their experiments and to try to come to a scientific conclusion. And what was the result? Why the scientists, with Prof. Koch and other savants of the Tuber-

culosis Congress, came to high words and noisy squabbles, and they left the whole thing absolutely unsettled after all. And yet Dr. Wheatley told you it is absolutely necessary to be examining your milk for the bacillus when the leading experts upon the subject cannot agree among themselves as to its value. (Laughter, and hear, hear).

But how does Dr. Wheatley explain this:—Moeller—a scientist of European reputation, declared at Eastbourne in 1902, when Koch read his paper, that he had found a bacillus in the dung of *healthy* cows that could not be distinguished from the tubercle bacillus either by the microscope or by staining? Pray, what value are Dr. Wheatley's investigations in guinea pigs, when the cow itself declines to afford any satisfactory evidence upon the subject? (Laughter and applause). Why, actually Professor Stockman himself, Chief Veterinary Officer of the Local Government Board, told the Royal Commission in answer to question 3082 that he could not say positively that the bacilli he finds in milk are tubercle bacilli. How on earth, then, can Dr. Wheatley be positive as to his own conclusions in Shropshire? Professor Stockman owned that "owing to the similarities there is a great possibility of error." Furthermore, he declared that mere microscopical examination for the tubercle bacillus is not reliable and consequently you can get no definite result. Now, I will go farther and I will challenge Dr. Wheatley to prove that the tubercle bacillus is the origin of consumption at all. (Laughter and applause).

Dr. Wheatley went on to diphtheria, and he said the anti-toxin was very successful if it was injected before the attack (Laughter). That was one of the most remarkable statements I ever heard in my life. (Hear, hear, and laughter.)

Dr. Wheatley: I mean in the prevention of diphtheria it is extremely successful if injected before the attack. If a case of diphtheria breaks out and you inject it into the rest of the family it prevents it occurring. (Applause.) This distortion of statements is extremely unfair. (Hear, hear, and applause.)

Dr. Hadwen (to the Chairman): Take the time, please sir, because I am having my time wasted by these gentlemen in front, (Continuing). Dr. Wheatley says it prevents the disease in the members of the family who are going to have an attack. How does he know they are going to have it? (Laughter and loud applause).

Dr. Wheatley: Do you wish me to answer that?

Dr. Hadwen: That is the sort of logic we anti-vivisectors have to fight. ("Nonsense.") I guarantee if I were to take scrapings of the throats here to-night I should be perfectly justified in certifying many of you as suffering from diphtheria to the Medical Officer of Health. ("No." I say yes, and I

have proved it. These gentlemen seem to talk as if they had all the experience in the world. I am a medical man as well as they. (Hear, hear, and applause.) I have had probably as much experience in diphtheria as any man in this hall, and I know what I am talking about. (Hear, hear.)

DIPHTHERIA AND SMALL-POX.

Now the whole of this antitoxin treatment is based upon the germ theory of disease, and the germ theory in turn rests upon the postulates of Koch, viz.: That the supposed specific germ must always be found in association with the specific disease; that it must never be found apart from the disease, and that when injected into the body of an animal it must produce a disease of the same specific type. Now in the case of the alleged germ of diphtheria, everyone of Koch's postulates is falsified. Consequently, the antitoxin treatment has no scientific basis whatever to rest upon. Probably twenty or thirty per cent. of those in front of me to-night have the diphtheria bacillus in their throats at the present moment. (Laughter.)

Then, again, let us turn to the evidence of the Metropolitan Asylums Board, and let us see what they have to say about the subject. Only last January they published their statistics, and we read that in the Brook Hospital they had 494 cases; 359 were treated with antitoxin, of which 41 died—fatality 11.42. There were 135 cases not treated with antitoxin, and all of them recovered, but one, who died one minute after admission to the Receiving Room. ("Quite Right.") What about anti-toxin there? (Laughter, and hear, hear.) Furthermore, Prof. Woodhead acknowledged before the Royal Commission that if the bacillus is found, the injection of anti-toxin follows, without waiting for the false membrane. That is, with every common sore throat, if only they find the Klebs Löffler bacillus there, they at once inject anti-toxin, and if the patient recovers, as our grandmothers would have caused them to recover within 48 hours, then it is glory be to anti-toxin. We have had thousands upon thousands of sore throats in the present day magnified into "diphtheria," and the attributes of anti-toxin have been magnified accordingly. (Hear, hear.) For ten years before anti-toxin the death-rate per million from diphtheria was 200; the death-rate per million for the ten years since increased to 235. Instead of decreasing diphtheria, anti-toxin has increased it. In the Park Hospital the doctors declared the death-rate was lower than ever before, and that "it was to be attributed to the fact that so many had bacteriological as distinguished from clinical diphtheria": in other words, a large number of sore throats had been thrown into the count. They had a larger recovery, but the cases of genuine

diphtheria died off just the same. "There is nothing so fallacious as statistics, unless it be facts!" (Cheers.)

As to small-pox, I can't go into that subject now on account of time, except to say that probably I have seen more small-pox and have visited more small-pox hospitals than any man in this room—(laughter and applause)—and perhaps more than all the medical men here put together. I have never taken small-pox yet, and I have never been vaccinated. (Hear, hear, and loud applause.)

MR. PAGET'S SECOND SPEECH.

Mr. Paget, in closing, said: What is the good of ten minutes? How can you answer a man who comes down here prepared to call every member of his profession stupid? He has said all this before: I have it here in the Press Cutting book. He goes and tells it to any towns he thinks will swallow it. I suppose he attributes a certain amount of importance to it, but doctors do not. (Hear, hear.) His talk about anti-toxin and diphtheria: compare that with the experience of older physicians and surgeons who have seen the children die like flies before anti-toxin was discovered. (Hear, hear.) Take what happened to the King's sister—the Princess Alice and her children. That could not happen now to children of the poorest pauper in the slum; they would be better protected. (Hear, hear.) Take the anti-toxin in use in the Metropolitan Boards' area. They served a population of 6,600,000 people, which gives 75 per cent. of the infectious fever cases. Do you think the men there are fools, the men who year in and year out see the cases and treat them, and have done it since anti-toxin was invented in 1894? It has been in use 14 years, the cases being treated with it are numbered by hundreds of thousands. All over the world the thing is being tried! Will Dr. Hadwen say the whole world is a fool? (Laughter, and hear, hear.) That is what it comes to. If he denies that still, and we have to argue with him, ask him how is it that the mortality falls not only in the lighter cases, but in the dreadful cases of laryngeal diphtheria, where the larynx is involved, in which case you have to do tracheotomy? I say the mortality from these cases was 75 or 80 per cent. before the days of anti-toxin. (Hear, hear.) He cannot get out of it—he has got to say something to you and he raves. (Laughter.)

He can tell you all sorts of wonderful stories, but no one will be able to answer him now; he has got the last word to-night. (Hear, hear.) He will leave you—he will leave behind him that little shop on Pride Hill, that little shop which for many weeks has been disgusting and shocking all Shrewsbury.

(Laughter, and Nurse Cross : " A fortnight.") I am thankful to hear it is not more—with its lurid sensational pictures and its false literature. You will have to alter the name of Pride Hill and call it " Disgrace Hill," " Shame Hill," " Hill of Falsehood," " Hill of Lies." There is no other word for this anti-vivisection literature. I have studied it for 20 years, and it is chock full of lies. (A voice : Will you argue the points, sir? and applause.)

MYXŒDEMA AND MALTA FEVER.

I will take two diseases—myxœdema and Malta fever : Myxœdema was discovered after many years' work. The work was taken up by the London Clinical Society's Committee, and then was discovered the use of thyroid extract. Now people are cured by the thousand. The men and women who are myxœdemic are slow, dull, cold, apathetic ; they lose their memory, they lose their hearing, they get tired of their lives. They are cured by thyroid extract. He says it is not thyroid—it is the iodine. Well the Royal Society went into that, and they did not mention iodine. Thyroidine is something some German invented many years after the other work had been done. There is no answer. The people were cured, and they were not cured until the mixture was introduced into apes. (Hear, hear, and applause.)

Take Malta Fever. It had been studied for years unsuccessfully, and was the pest of the garrison. The discovery of the germ of Malta Fever was worked out absolutely by the inoculation of monkeys. Dr. Hadwen will deny that : he will say that Sir David Bruce, who did it, is a fool. (Dr. Hadwen : No.) Then you will say it was because they drained the harbour, and if you say that how will you explain that it was prevalent all over the place and not only around the harbour? How do you explain the fact that when they were studying the disease at Netley and a man scratched his finger with a needle with which he was going to inject a horse he cured himself by taking some serum from the horse? Can Dr. Hadwen account for that? He says germs do not cause the disease : if he believes that why does he not submit to inoculation? He can have his choice—anthrax, tetanus, or anything else. (Laughter and applause.) He says the germs don't cause the disease, that they look in somehow afterwards, just to see what is going on. He will not believe that germs cause these diseases. Well, if a man does not believe that—when he says, " I challenge you to prove that the earth is not flat, or to prove that two and two don't make five," which way is he to look? No wonder he thinks doctors fools. He has taken up a position absolutely unheard of. I believe they did take up one man who said the same thing before the

Royal Commission—that makes two. I challenge Dr. Hadwen to give us the names of ten doctors out of 30,000 who believe for one moment, or could ever dream, even in a nightmare, of taking the same view as he does of disease. (Laughter.) It is not possible. (Hear, hear, and applause.) But he comes down here—he did not know the doctors were coming here. He thought he would get an ignorant audience and give them a nice address; he thought he would have it all his own way. (A voice: "He is not far off now." Laughter and applause.) He may have his own way to-night, but to-night is not the last word spoken on this matter; it is not the last word you will hear. You will hear more of this. (Applause.)

AN AMUSING EPISODE.

[At this point Nurse Cross, Organizer of the British Union, walked up the Hall and seated herself in a vacant chair on the front row in front of Dr. Urwick, and as soon as the cheering of the doctors had subsided, the following dialogue took place].

Nurse: "Mr. Paget, may I ask you a question?"

Mr. Paget: "Eh, what is it?"

Nurse: "May I ask you a question?"

Mr. Paget: "Yes, what is it?"

Nurse: "Why have you come to Shrewsbury to-night, seeing that you have refused every challenge which Dr. Hadwen has offered you to debate with him in London and elsewhere?"

Mr. Paget: "I really don't understand you."

Nurse: "Then I will repeat my question." (The question was here repeated.)

Mr. Paget: "I suppose you mean, why has my Society—the Research Defence Society, of which I am Hon. Secretary—refused to accept any challenges from anti-vivisection societies?"

Nurse: "No, I don't. I mean what I say." (The question was again repeated.)

Mr. Paget: "Well, my Society——"

Nurse: "No, I don't mean your Society, I mean you"—(after a pause)—"*y-o-u—you!*" (Cheers, and laughter.)

Nurse: "Is it not a fact, Mr. Paget, that you would not have dared to face Dr. Hadwen to-night, had your father-in-law not been a resident here and had you not been promised the support of all the doctors in the town?"

[No answer.]

Nurse: "It is no use beating about the bush. You were informed all about it. Dr. Urwick told me last night that all the doctors in the town had arranged to come, and bring their wives and children and servants, and here they are, and I say it is a most unfair proceeding."

[Mr. Paget flung down his papers excitedly and resumed his seat.]

Dr. Urwick (to Nurse Cross): "This is scandalous. You have broken faith with me."

Nurse: "I have not. You asked me to say nothing about the Research Defence Society, nor have I done so. Mr. Paget did it himself." (Laughter and applause.)

DR. HADWEN'S FINAL REPLY.

Dr. Hadwen was received with rounds of applause. He said: I consider the Nurse's question was perfectly justified. Mr. Paget says in very blatant tones "You will hear more of this." How are we going to hear more of this: will he be prepared to come and properly debate these questions with me, or will he not? (Hear, hear, and applause.) I have challenged Mr. Paget again and again to meet me on equal terms upon a public platform, and he has always refused to do so except on two occasions. The first occasion was at the British Institute of Medicine. He put Prof. Starling in first with a 45 minutes' speech. Mr. Paget followed with another 15 minutes. Prof. Starling wound up with 35 minutes, and they gave me 15 minutes in between. (Laughter.) Down at Torquay a month ago I challenged him to meet me on equal terms. He refused. He had a meeting of his own next day—a ticket meeting. It was advertised that they were going to meet the arguments of the anti-vivisectionists—behind my back. We asked to be allowed to go there and meet them. They said yes, they would arrange a debate. How was it arranged? Mr. Paget spoke for 45 minutes to start with, then a debate was allowed for half-an-hour by six persons, three on each side, with five minutes each. Then Mr. Paget was to have an unlimited period to answer, and I received a letter to say that if Dr. Hadwen liked to be one of the three to have five minutes in that debate he could do so, but on no condition was his time limit to be allowed to be exceeded. (Laughter.) That is the kind of thing he calls fair play. (Shame.)

We have had this debate to-night, and I ask you, has a single one of my arguments been met? ("No" from the public, and "Yes" from the doctors.) He has referred to our headquarters shop on Pride Hill—the lurid, sensational pictures in the windows. Let me tell you every one of the pictures has been taken from the vivisectors' own books and drawn by the vivisectors' own hands, and if they are sensational and lurid, and if they are a disgrace to Shrewsbury, then they must be a disgrace to the vivisectors themselves. (Hear, hear, and loud applause.) He says our writings are chock full

of lies. (Mr. Paget : So they are,) Let him prove a single one of our statements to be such as he describes them. He has not done so yet. (Hear, hear, and applause.)

He has given two illustrations. Myxœdema is simply this: that where the thyroid gland is removed patients get into what Sir William Gull called a cretinoid state. As far back as in 1877 there were 18 cases of patients who had their thyroid glands removed in Berne Hospital, and it was found that they degenerated into a cretinoid condition, that is, it resulted in myxœdema, and if that was proved as far back as 1877, I want to know what they wanted to torture a lot of monkeys for in 1884 to find out the same thing. (Hear. hear.) If it was shown that with the thyroid gland you don't get myxœdema, but without the thyroid gland you do get myxœdema, why, bless me, it is plain enough without perpetrating cruel experiments upon the most sensitive of the lower animals. And if it was shown that by giving the thyroid gland you improve the patient, why should you not give it? There is no torture in that. They take the thyroid gland as a by-product from the butcher's shop, and there is no cruelty to animals in that as long as sheep are killed for food. Mr. Paget has declared that I will say "iodine" answers the same purpose, and I do say so. (Laughter and applause.) Prof. Baumann has isolated the active principle of the gland, and has found that it is simply iodine in an organic specific combination; and let me tell you iodine was given for myxœdema 20 years before Sir Victor Horsley performed the cruel experiments Mr. Paget has referred to to-night. Hence he has discovered nothing. (Appause.)

MALTA FEVER.

Then about Malta Fever. That is one of those fairy tales that have come to us from the country far over the sea. (Laughter). I take simply one instance. They inoculated a cultivation of the so-called Malta Fever germs into some goats; the germs multiplied as might be expected. That proved, said Sir David Bruce, that Malta Fever was produced in those animals because the germs were there. But he goes on to say they had no fever at all! He says they underwent no change, they ate the same as before and they gave just as much milk. Surely any charity boy would have concluded that if no fever was produced after the inoculation of some millions of germs, that germs could have had nothing to do with producing Malta Fever. And this opinion would be still further established when it was made known that numbers of people had drunk goats milk without contracting the disease.

Mr. Paget has referred to the harbour. The harbour has been the depository of sewage for centuries. With better sanitary precautions in the Island of Malta, Malta Fever began to go down at the beginning of 1906, and other fevers which had nothing to do with this germ, declined during the same period showing that there was a common cause which was reducing all the fevers in the island and that that common cause could be nothing else than the better condition of sanitation. (Hear, hear.)

And this is what I say is one of the most serious matters in connection with vivisection, that it takes the eye off the real remedy for zymotic disease, viz., removing their causes, when the effects will cease. Further let me say I consider it monstrous to suppose that a great and a good and all-powerful God has so arranged the plan of the universe as to make our freedom from disease depend upon the torture of these poor helpless and sensitive creatures who cannot defend themselves against those who are stronger than they. (Hear, hear, and applause). I am here to plead on behalf of those poor creatures that cannot plead for themselves. Those creatures are dependent upon us, we have no right because we are more powerful to adopt the cowardly course of holding a sanguinary inquisition upon the living bodies of fellow creatures as sentient and as sensitive as ourselves—

There were cries of "time" from the medical men present, and Dr. Hadwen sat down amid vociferous cheers.

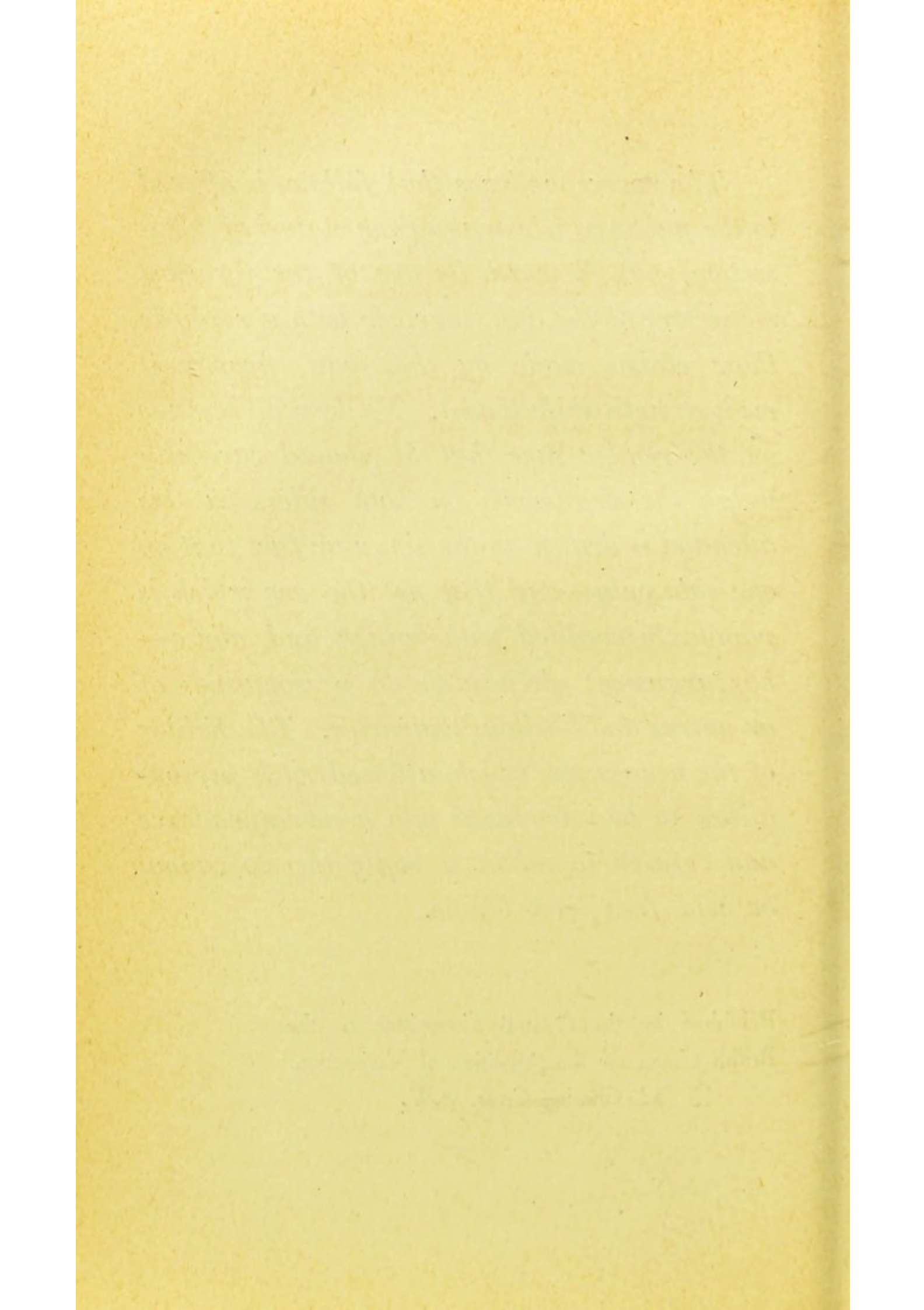
Mr. Paget: May I move an amendment? I think it is very important that we should separate experiments under the Act from other experiments.

The Chairman: I think it is out of order.

[A good deal of excitement and confusion occurred when the vote was taken, many of the local doctors standing up in the front row facing the audience, and a large portion of the audience refrained from voting. The Chairman subsequently announced that the resolution was defeated by about 30 votes.]

Dr. Hadwen moved a vote of thanks to the Chairman, and Mr. Roberts, replying, said he did not think they had ever had such an intensely interesting debate in Shrewsbury for at least 14 years, and he thought it had been conducted in a very fair way.]





THE "DAILY MAIL"

CORRESPONDENCE.

ASSERTIONS OF SIR VICTOR HORSLEY AND CHALLENGE BY DR. HADWEN.

[FROM "THE DAILY MAIL," WEDNESDAY, SEPT. 2, 1908.]

EXPERIMENTS ON ANIMALS.

"THE DEBT OF SUFFERING HUMANITY."

By **SIR VICTOR HORSLEY.**

To the Editor of THE DAILY MAIL.

SIR,—A short time ago a letter was published in *The Daily Mail* expressing a desire for information in regard to the part which has been played by the use of experiments on animals for the relief of suffering.

I therefore ask your permission to respond to the request in so far as it is at all possible to deal with a subject of such magnitude in the columns of a daily journal. Confining my remarks to the work of the last fifty years only in the subject of infectious diseases, I would begin by pointing out that the whole discovery of the parasitic nature of an immense number of maladies, whether surgical or medical, together with the consequent modern methods of

dealing with or preventing them, is the direct outcome or development of the experimental researches of Pasteur and Lister, and it is only when this fact is continually borne in mind that it is possible to realise what an immense debt suffering humanity and suffering animals owe to animal experimentation. The following are some examples of the beneficial results of their work :—

BOON OF ANÆSTHETICS.

Up to some forty or fifty years ago the case of any person who was in need of surgical treatment was indeed a deplorable one. There was no anæsthetic to obliterate the pain of cutting operations, so that the fear as well as the physical distress of the patient must have been extreme. Suppuration, frequently sloughing of the wound, great pain, and prolonged fever were (except by accident) the invariable consequences of any surgical procedures.

The mortality was extremely high. Operations upon the internal organs were in the vast majority of cases fatal, patients with abdominal diseases succumbing to acute peritonitis, which, as is well known, is one of the most distressingly painful modes of death. Surgical wards were veritable death-traps, and patients could with difficulty be persuaded to enter them, dreading not only the terrors of the operation itself, and the subsequent inevitable weeks of acute and wearing suffering, but the prolonged period of disablement, weakness, and semi-starvation at home consequent on the suppuration and fever which they would have to go through.

To those familiar with descriptions of hospital wards under the old *régime*, the change which has been effected can only be described as stupendous. Owing to the experiments of Lord Lister and Pasteur, the blood-poisoning diseases, hospital gangrene, pyæmia, septicæmia, erysipelas, have practically become extinct. Internal operations can be safely

undertaken for relief, and no longer death is the rule. Wounds heal quickly and without pain or fever, so that surgical wards are no longer shunned by patients, who often benefit very greatly in general health from their stay in the hospital.

In the incalculable diminution of suffering thus brought about in this one field of surgical operations alone, your correspondent's request for evidence as to the beneficent results obtained from experiments on animals must, I think, have been most amply satisfied.

I will, however, proceed to touch upon another point in this connection—namely, the immensely important subject of the employment of anæsthetics. In this field also the understanding of their mode of action, the consequent careful choice of drug, according to the nature of the operation, and the accurate determination of a safe dosage and method of giving it (all points of vital consequence to the patient), not only have been worked out by experiments on animals, but even in the case of ether (the safest anæsthetic we possess) Morton, the discoverer of its use, tried, as I hold he was morally bound to do, its poisonous effects upon a dog before giving it to men. Flourens also did the same.

HYDROPHOBIA.

The present generation is naturally liable to forget that hydrophobia was at one time a disease of this country. The cause of this terrible malady and real method of extermination and treatment were discovered solely by the experiments upon animals of Pasteur. In other countries, when rabies has not been exterminated, the mortality from hydrophobia of infected cases has been reduced from about 15 per cent. to 0·4 per cent.

But though the complete success of the methods born of the Pasteur experiments may have caused

many to forget that hydrophobia was once a justly feared terror in the land, there is one disease which unfortunately we have at present but little chance of forgetting, namely, tuberculosis, which, partly for its appalling prevalence and partly for its hitherto supposed incurable character, has been the greatest scourge to which the nation has been exposed. Of late years, however, a remarkable fall in mortality from this cause has taken place.

TUBERCULOSIS.

Since the true, *i.e.*, the microbic, nature of the disease has been recognised, the consequent appropriate methods of combating it have been adopted. Sources of infection in tuberculous animals have been detected and destroyed. Spread of infection from case to case has been largely prevented, and cases which formerly would have succumbed after a lingering and painful illness can now be cured. It is difficult to over-estimate the share which experiments on animals have taken in bringing about this tremendous diminution in the pain and poverty of the community.

The claims upon your space prevent my further extension of this letter, but before closing there is one other beneficent result of animal experimentation to which I desire very briefly to refer.

When everything that knowledge and skill can effect has been essayed and failed, there still, unfortunately, remain many conditions when all that can be done for the patient is to secure by the medical use of hypnotics and narcotics temporary unconsciousness of the tortures of disease. The incalculable value of the power of obtaining such relief can only be appreciated by those who are called upon to suffer or to treat suffering. It is a fact that the value of practically every drug introduced within the last thirty years for this most necessary and most merciful purpose has been determined by experiments on animals.—I am, &c.,

VICTOR HORSLEY.

[FROM "THE DAILY MAIL," WEDNESDAY, SEPT. 9.]

VALUE OF VIVISECTION.

DEMAND FOR PROOF.

To the Editor of THE DAILY MAIL.

SIR,—Sir Victor Horsley is not accurate in his statements. He talks of the "discovery of the parasitic nature of an immense number of maladies . . . with the consequent modern methods of dealing with or preventing them." I challenge Sir Victor Horsley to prove to demonstration the parasitic origin of any one of the maladies referred to, or to show by any truly scientific evidence that the "modern methods" deduced from the germ theory of disease have ever prevented the "infectious diseases" he refers to in a single instance.

Your correspondent draws a graphic picture of the condition of hospital surgical wards fifty years ago. He says the different conditions of to-day are due to the discoveries of Pasteur and Lister. I deny the assertion and I challenge him to prove it. The Listerian theory of antisepsis has had to be given up and the aseptic theory—that is, *common cleanliness*—demonstrated by Semmelweis in the Vienna Hospital in 1847, and prosecuted by Bergmann in Germany and Lawson Tait and Bantock in this country, is the "modern method" to which we owe our surgical success.

Sir Victor Horsley says "the accurate determination of a safe dosage and method of giving anæsthetics has been worked out by experiments on animals." Perhaps, then, he will account for the numerous inquests which are held in consequence of failure in this respect, and in which the anæsthetist is invariably

exonerated. Animals are the last creatures which could possibly form an efficient guide as to anæsthetic administration in man. He instances ether as having been first tried upon a dog before being administered to man. Even if such had been the case, no conclusive evidence could have been gained as to the human species. As Professor Starling—himself an arch-vivisector—told the Royal Commission on Vivisection, “The last experiment must be on man.” But Erichsen declares that the first experiment in anæsthesia was by Horace Wells, a dentist of Hartford, Connecticut, with nitrous oxide gas upon himself. That was in 1844.* A pupil of his, Dr. Morton, in 1846 used ether instead of nitrous oxide for the first time upon some dental patients, and it was first used in England in December of the same year by Liston upon human patients when Erichsen was present. The discovery of chloroform in 1847, as an anæsthetic, as we well know, was brought about entirely by experiments which Professor Simpson, of Edinburgh, carried out upon himself and friends.

How can hydrophobia have been exterminated in this country by Pasteurism, seeing that the Pasteurian treatment has never been adopted here? Mr. Walter Long and Company say it has been exterminated by muzzling. I will not argue that point. I simply say it is not by Pasteurism. I challenge Sir Victor Horsley to prove that Pasteurism in France has ever saved a life. I am prepared to prove to him that the hydrophobia mortality has increased since its adoption in that country.

Let your correspondent provide evidence to support his contention that tuberculosis has decreased in consequence of the alleged discovery of the microbic origin of the disease. It would be impossible to do so. Tuberculosis has been decreasing for many years

* Erichsen's statement, however, is not quite accurate. This gas was used by Mr. James Stodart and Mr. (afterwards Sir Humphrey) Davy in experiments upon themselves in 1801.—W. R. H.

side by side with the prosecution of sanitary laws. The microbic theories of Koch based upon animal experimentation have turned out a fiasco. The recognised remedy for consumption is fresh air. It cannot even be definitely proved that the tubercle bacillus is the *fons et origo* of the disease.

Finally, Sir Victor Horsley asserts, in the same bold way that he adopts throughout, that the value of narcotic drugs has been determined by experiments on animals. These particular drugs are so contrary in their action in numerous instances in animals and man that this closing statement is, perhaps, the rashest of all the rash assertions in your correspondent's long letter. Again I ask for proof.

WALTER R. HADWEN, M.D.,

Hon. Secretary British Union for the Abolition of
Vivisection, 32, Charing-cross, S.W.

[The above letter only appeared in certain editions of *The Daily Mail*.]

[FROM "THE DAILY MAIL," SEPTEMBER 15.]

SIR VICTOR HORSLEY.

Respecting the discovery of the parasite causing tuberculosis and of those producing other infectious diseases, I notice that the secretary of the society for the total abolition of experiments on animals (N.B., man excluded), signing himself Walter R. Hadwen, M.D., declares himself ignorant of any scientific method whereby a malady can be found to have a parasitic origin.

The Daily Mail cannot be exploited as a means of filling up all the hiatuses in Dr. Hadwen's medical education, but we may take this central point, since the postulates laid down by Dr. Koch more than a quarter of a century ago, and by following which

discoveries of the utmost value to the whole animal kingdom (N.B., man included) have been gained, may be of interest to your readers as well as information to Dr. Hadwen. From the blood or tissues of man or an animal suffering from a disease repeated cultivations are laboriously made by Pasteur's methods in a bacteriological laboratory until any microbe which may be present is obtained growing actively and in pure culture—*i.e.*, alone and uncontaminated by the concurrent growth of any other microbe.

The culture of such microbe is then injected hypodermically or into the circulation of a normal animal.

If this animal develops the symptoms of the disease, and if from its blood or tissues the same microbe is again obtained in pure culture, that organism is accepted as being the parasite which causes the disease.

VICTOR HORSLEY.

[FROM "THE DAILY MAIL," SEPTEMBER 16.]

DR. HADWEN.

SIR,—Sir Victor Horsley has evaded every point in my challenge for proof of his statements, and has avoided all reference to the points in which I definitely showed him to be inaccurate.

He professes to deal with one point and one point only—namely, that which concerns the germ theory of disease—by quoting the technique of microbe cultivation based upon the postulates of Koch. This is not an answer to my challenge, and his conclusions are again inaccurate, as I will show.

Koch's postulates are as follows: (1) The alleged specific micro-organism must be found in the disease of which it is supposed to be the sole cause. (2) It must not be found apart from the disease it is supposed

to originate. (3) It must reproduce the specific disease of which it is supposed to be the author when inoculated into the body of a lower animal.

Allow me to illustrate this in the case of Klebs Löffler bacillus of diphtheria. (1) The discoverer of the germ has himself acknowledged that he found it absent in 25 per cent. of the cases which he had diagnosed as diphtheria. (2) It is well known, and has recently been reaffirmed before the British Association, that it is frequently found in perfectly healthy throats. (3) When communicated to guinea-pigs and other animals the disease produced bears no resemblance to the diphtheria of the human species. Every postulate upon which Sir Victor Horsley relies is falsified. The trouble between English and German bacteriologists concerning the microbic origin of bovine and human tuberculosis saves me from dealing with that matter.

Moreover, there is a grave fallacy in all such experiments, inasmuch as you cannot transfer the micro-organism apart from the medium in which it exists, and there is every reason to believe that these micro-organisms are the results of disease and not their cause.

I would remind Sir Victor Horsley that I am not "the secretary of the society for the total abolition of experiments on animals (N.B., man excluded)." But I am, as I accurately signed myself, "Hon. Secretary of the British Union for the Abolition of Vivisection." Most decidedly man would be included were any known deliberate attempt made at the exploitation of human beings in a similar manner to that of our helpless and speechless fellow-creatures.—I am, Sir, your obedient servant,

WALTER R. HADWEN, M.D.

32, Charing-cross, September 15, 1908.

[N.B.—The last paragraph was not inserted in some editions of *The Daily Mail*.]

[FROM "THE DAILY MAIL," SEPTEMBER 22.]

SIR VICTOR HORSLEY.

To the Editor of THE DAILY MAIL.

Now for Dr. Hadwen and his alternate assumptions of ignorance and omniscience. In his first letter he professed himself ignorant of the existence of any scientific demonstration that any disease is ever due to a parasite or germ.

To this I replied by quoting the ordinary text-book postulates of Koch, which are known to and accepted by the whole scientific world, and have resulted, as I stated in my last letter, in many brilliant discoveries of such germs.

PASTEUR AND KOCH.

In his second letter he admits, without the slightest apology to your readers, that he knew of this universally accepted scientific demonstration even while suggesting to your readers that no such method existed. I must confess that it does not appear to me just that my time or that of any other busy man should be wasted in discussion with a contestant of this character, but I cannot pass by his wholesale travesty of bacteriological methods and allow him to mislead your readers by a confused statement on a complex subject like diphtheria. Let us begin at the beginning. Koch's first great work was the elaboration of the life history of the parasite or germ of anthrax—viz., the bacillus anthracis. W. R. Hadwen, M.D., stands alone in the world in professing to believe, as he tells your readers he does, that the bacillus is not the "cause" of the virulent disease anthrax, but only one of its "results." If Dr. Hadwen will inject a syringe of the anthrax bacillus into one of his veins he will soon be impressed by the scientific truth of Koch's postulates, and that his fatal illness is a "result" of which the bacillus

is the "cause." Until he performs this simple experiment your readers might well be spared the trouble of perusing what every honest medical man knows to be the exact reverse of the ascertained facts of pathology. I may perhaps conclude with a brief statement of the latest outcome of Koch's rules and the germ theory, and your readers will recognise how flimsy are the misrepresentations by which Dr. Hadwen seeks to obscure what is really a plain and simple subject. This, the latest example of Pasteur's and Koch's monumental work, is the case of Malta fever. This painful disease, often fatal or for some years shattering to the constitution, has for many years caused heavy losses to the nation by its ravages among the soldiers and sailors stationed at Malta. It is, indeed, computed that some 17,000 men have been invalided by it.

Using Koch's postulates and Pasteur's methods, Colonel Bruce, R.A.M.C., discovered by experiments on animals that the parasite causing the disease was a microbe which he named *micrococcus melitensis*, and which he had by indefatigable laboratory work isolated in pure culture.

The next step was the discovery that the disease was not a drain malady or air-borne, as had been imagined by the health authorities, but that the microbe was harboured by the goats in the island and was present in their blood and milk.

Finally it was proved that this milk was the vehicle by which this terribly poisonous parasite was introduced into the system.

The result of this magnificent work has been the practical freedom of our men from untold misery and suffering, for whereas in 1905 no fewer than 643 were struck down, there were only seven cases in 1907.

What a contrast your readers may now draw between the vivisectionist and the anti-vivisectionist! On the one hand Colonel Bruce, M.D., working incessantly for his fellow-men and receiving honours and thanks

from the British Medical Association for his noble addition to the resources of civilisation against disease and misery ; and on the other hand Walter R. Hadwen, M.D., sitting at home penning scurrilous abuse of Colonel Bruce and his colleagues, and receiving—the subscriptions of the public !

On this last point one cannot but be struck by the attitude of our nation towards experimental science.

While every advance in knowledge gained, as I have shown, by experiments on animals is eagerly accepted, the anti-vivisectionists have, as Mr. Coleridge boasted to the Royal Commission, extracted from the pockets of the public a sum not less than £80,000.

Yet they (the anti-vivisectionists) have not discovered, or even attempted to discover, anything that would relieve pain or arrest disease in man or the lower animals. No ; the whole of this vast sum of money has passed into their hands, and has resulted in nothing to the profit or well-being of their fellow-creatures.

VICTOR HORSLEY.

[SUPPRESSED LETTER.]

DR. HADWEN.

To the Editor of THE DAILY MAIL.

SIR,—I do not complain of the lack of courtesy displayed by Sir Victor Horsley in each of his letters, but I am justified in complaining of his persistent evasions of straightforward issues and of misrepresentation. He says :—

Dr. Hadwen . . . in his first letter professed himself ignorant of the existence of any scientific demonstration that any disease is ever due to a parasite or germ. . . . To this I replied by quoting the ordinary postulates of Koch. . . . In his second letter he admits, without the slightest apology to your readers, that he knew of this universally accepted scientific demonstration even while suggesting to your readers that no such method existed.

What are the facts ? My statement in my first letter was as follows :—

I challenge Sir Victor Horsley to prove to demonstration the

parasitic origin of any one of the maladies referred to, or to show by any truly scientific evidence that the "modern methods" deduced from the germ theory of disease have ever prevented the "infectious diseases" he refers to in a single instance.

Sir Victor Horsley, as your readers are well aware, not only failed to face my challenge, but he failed to correctly or fully quote the postulates of Koch upon which he professes to base his theory. In my second letter, therefore, I quoted Koch's postulates *in extenso* and quoted the cultivation of the Klebs Löffler bacillus of diphtheria in order to show that those postulates failed in every particular in establishing the claims of that bacillus as the origin of the disease in question.

How does Sir Victor Horsley meet my plain logical conclusion and my repeated demand for "proof" of his position? By complaining that his "time ought not to be wasted with a contestant of this character," and by dubbing my calm request a "wholesale travesty of bacteriological methods"! He deliberately runs away from diphtheria, as he had already run away from the other diseases with regard to which I pointed out his inaccuracy, and now actually roams off to anthrax and Malta fever. He occupies more than a column without meeting one of my points, and yet complains of my "wasting his time"!

I will not argue with Sir Victor Horsley as to whether I "stand alone in the world" in my contentions or not. I simply ask him to prove to me that he is right and I am wrong. So far he has made no attempt to do so. With your permission I will deal with the two fresh instances he adduces, and your readers will be able to judge whether he evades my answers in these further illustrations as he has done in every other.

I will answer his anthrax illustration very briefly by saying that no less an authority than Mr. Stockman, chief veterinary officer of the Local Government Board, told the Royal Commission on Vivisection (Q. 2,670): "There is great dubiety about establishing the diagnosis of anthrax in animals." Also in the last report

of the medical inspector of the Factory Department of the Home Office it is pointed out that cases of anthrax occur without the bacillus being found, and the importance is asserted of having regard to clinical as well as bacterial evidence. Thus again Koch's postulates are at fault. How does Sir Victor Horsley explain this ?

Now a few words as to Malta fever. But first permit me to protest against Sir Victor Horsley's unwarrantable language in speaking of "Walter R. Hadwen, M.D., sitting at home penning scurrilous abuse of Colonel Bruce and his colleagues, and receiving—the subscriptions of the public!" Unlike Sir Victor Horsley, I am careful to avoid personalities. I have never written a word about Colonel Bruce and his colleagues in my life ; and as for any pecuniary gain in my advocacy of anti-vivisection, I have never received a penny-piece of pay from the public ; my spare time and money I devote freely to the righteous cause I have at heart.

In regard to Malta fever investigations, Sir Victor Horsley writes of them as "the latest outcome of Koch's rules and the germ theory." Now, the strange thing is, that the very postulate which Sir Victor Horsley holds to be, apparently, of chief importance (for it is the only one he has quoted)—namely, that an inoculation of germs into an animal's body must produce a disease similar to that of which they are supposed to be the origin—is here, as in diphtheria, utterly falsified. I quote against Sir Victor Horsley Colonel Bruce's own words in his Royal Commission evidence (Q. 14,242) :—

The micro-organism (of Malta fever) did multiply in their bodies (those of the inoculated animals), but it did not give rise to any ill-health ; it *did not give rise to any fever*. By looking at the goat you could not say that that goat was ill—it gave as much milk as a perfectly healthy goat, it was as fat, as smooth-looking as a healthy goat, so that it was only by the blood examination that it was suspected that something was occurring.

In other words, Koch's postulate was not borne out ; the micro-organisms were multiplied, but the

disease was not produced. Surely this was rather an evidence that the micro-organisms have nothing to do with it !

But Colonel Bruce himself is not exact in his experiments nor correct in his conclusions. He told the Royal Commission that (Q. 14,240) the goat "does not even take tuberculosis." This is flatly denied by the Report of the experiments of the Royal Commission on Tuberculosis, Part I., pp. 63, 78, 79, where it asserts goats are "very susceptible."

Further, Malta fever is not restricted to Malta, but occurs in India and many parts of the Mediterranean Coast, in the Philippines and elsewhere, where goat's milk is not partaken of, but where insanitary conditions abound. The Malta harbour has been used as a sewer for hundreds of years, and the decrease of Malta fever has been concurrent with recent improved sanitary conditions there. But Colonel Bruce, in obedience to a "scientific" theory, did not consider the foul conditions of Malta Harbour responsible, because he could not find the *micrococcus melitensis* in the harbour water !

Sir Victor Horsley bases the responsibility of Malta fever upon goat's milk because the attack rate among the soldiers in 1906-7 was so much lower than in 1905. But the statistical fallacy lies in this : That the consumption of goat's milk was not stopped until July, 1906, and yet all the previous part of the year the attack rate was declining, proving that other factors were at work. And not only so, but other fevers for which the *micrococcus melitensis* was not responsible declined during the same period. How does Sir Victor Horsley explain this ? Certainly not by the goat's milk theory !

Surely if a certain number of men drinking goat's milk had Malta fever, and others who did not drink it were free, common-sense could have dictated a probable cause without torturing hundreds of monkeys to no purpose. But, as a matter of fact, numbers drank

alleged contaminated goat's milk without being affected, thus knocking on the head another of Koch's postulates.

Colonel Bruce informed the Commission (Q. 14,261) that a Local Government Board man, who was recommended by Mr. Power, went out to Malta to examine by the method of statistics the incidence among those who drank water, beer, milk, &c.; but after very hard work for six or seven months he came to the conclusion that milk at least was not the cause of the fever, and this conclusion was also reached independently by Colonel Davis and others sent out to investigate from the epidemiological standpoint—which, if the germ theory be correct, ought to have ratified it.

But, in conclusion, let me ask Sir Victor Horsley one more question: If, as he avers, Malta fever is due to this remarkable germ, how is it that the "modern methods" of serumtherapy, which he declares to be the scientific outcome of the discovery, fail to prevent it? Colonel Bruce himself (Q. 14,374) declares "it has failed."—I am, Sir, your obedient servant,

WALTER R. HADWEN, M.D.,
Hon. Secretary, British Union for the
Abolition of Vivisection.

32, Charing-cross, S.W., September 22.

[FROM "THE DAILY MAIL," SEPTEMBER 11.]

STANDARDISATION OF DRUGS.

To the Editor of THE DAILY MAIL.

SIR,—There is one class of experiment in which the value of trial upon animals is shown day by day, and which has not received attention in the present corre-

spondence on the subject. I refer to the *physiological standardisation* of certain drugs, among which ergot, digitalis, its allies, and cannabis indica may be mentioned. It is a well-known fact that preparations of such drugs are apt to vary very considerably in their efficacy, however carefully the crude drugs may be selected.

How many poor women have lost their lives, or have been retarded in recovery through want of really effective ergot it is impossible to say ; but it may be asked, Do husbands, members of some "anti-vivisection society," wish to see valuable time wasted while experiments are being made on their wives with preparations of unknown activity, when reliably tested ones can be obtained ?

Again, there is the constantly increasing number of new and valuable drugs, which are tried exhaustively upon animals before they are used upon man. In such cases questions of the known facts of bacteriology, asepsis, and antisepsis, which some people seem to find difficult to grasp, do not enter. If Dr. Hadwen really wants proof, say, of the effects of antiserums and of the facts of immunity, let him take out a vivisection licence in this country, or let him go abroad and work in a laboratory ; let him study the immunity which can be produced by means of snake venom against snake venom, or of ricin (the poison of the castor-oil bean) against ricin. Until he has done so let him not ask for proofs on paper—let him see with his own senses on his own work.

Some correspondents have written of cruelty and brutality, and I may say that I have seen more cruelty (and that wanton) in half an hour on market day in this city than I have during all the years from 1885 to 1905 in my work in physiological and pathological laboratories.

Finally, may I point out that a very sensible reply is given by the father in the old-fashioned child's book, "The Swiss Family Robinson" ? The children ask if they may eat some nice-looking fruit ; they are

told to try it upon the monkey first. Who would not do the same under the same circumstances for their children's sake ?

HERBERT E. DURHAM,
M.A., M.B., B.C., F.R.C.S.

Hereford.

[SUPPRESSED LETTER.]

To the Editor of THE DAILY MAIL.

SIR,—Dr. Herbert Durham says he has spent twenty years “in physiological and pathological laboratories,” and he advises me to “take out a vivisection licence and . . . work in a laboratory,” if I want proof of “the effects of antiserums and of the facts of immunity.” I should have thought the proper place to learn “facts” and “effects” would be by the bedside of human patients, and not among dogs and cats and guinea-pigs. I would remind your correspondent of the statement published by Koch (who, as a renowned vivisector and bacteriologist, will be respected by him) when writing on this subject in his “Cure of Consumption” p. 8 : “Here, again, is a fresh and conclusive proof of that most important rule for all experimentalists, that an experiment on an animal gives no certain indication of the result of the same experiment upon a human being.”

When Dr. Durham asks sensationally : “Do husbands wish to see valuable time wasted while experiments are being made on their wives with preparations of unknown activity, when reliably tested ones can be obtained ?” he is simply playing to the gallery. How are the drugs he refers to tested ? In what way are they “standardised ?” By experiments on the bodies of animals not two of which can be guaranteed alike. Such “standardisation” is so much clap-trap. For some years now the medical profession has been placing itself body and soul in

the hands of pharmaceutical manufacturers, who, with their enormous enterprise and ingenuity, provide brains, prescriptions and drugs for their confiding clients. It is simply one of the results of the absurd medical fashion of the time which necessitates certain manufacturing firms keeping huge menageries of living creatures for the purpose of so-called drug testing, instead of relying upon the old-fashioned chemical methods which invariably provide satisfactory results. I do not believe that there is a single medical man in actual practice who would be prepared to justify by his own experience in definite cases Dr. Durham's unwarranted insinuation that "many poor women have lost their lives, or have been retarded in recovery through want of really effective ergot." I am amazed at any medical man with presumed experience in the cases to which he refers venturing upon such a remarkable utterance.

Dr. Durham invites me to "study the immunity"—in a laboratory—"which can be produced by snake venom against snake venom." I prefer to see what it can accomplish elsewhere. Here is the result in India before and since the introduction of the wonder-working laboratory snake serum :—

Deaths from snake-bite in 1876,	15,819— <i>i.e.</i> ,	85.4	per million living.
" " " " 1905,	21,797— <i>i.e.</i> ,	94	" " "

As Sir Lauder Brunton told the Royal Commission on Vivisection, you require a special serum for every kind of snake, "that prepared for a krait will not act for a cobra. . . . The difficulty is that the serum and the snake are not likely to be in the same place." This witness declared that common permanganate of potash was "a universal remedy." This was confirmed by Major Rogers, Professor of Pathology in the Calcutta Medical College, who said, "It was known thirty years ago that if permanganate of potash were mixed with cobra venom outside the body it would destroy the venom." But so far

as the snake serum was concerned, he confessed that it was useless to give it unless you first found out what kind of snake bit the victim. So I fear that Dr. Durham's kind advice to me to become a vivisector and "see with my own senses my own work," would not be of much practical service.

I am glad, however, to find one point in which I can heartily agree with him. "In the 'Swiss Family Robinson,'" he says, "the children ask if they can eat some nice-looking fruit; they are told to try it on the monkey first." And with a triumphant interrogatory your correspondent concludes his letter, "Who would not do the same *under the same circumstances* for their children's sake?" The italics are mine. It is interesting to have the testimony of a vivisector to the intelligence and natural instinct of the Simian race. By nature a frugivorous animal, the monkey possesses the ability, denied to its superior in the scale of creation, of intuitively distinguishing harmless from harmful fruit. I ask if a creature so useful and intelligent and so closely allied to ourselves anatomically and physiologically should be submitted to the horrible and unnecessary experiments in regard to which your correspondent, Sir Victor Horsley, has to a large extent earned his fame?—I am, Sir, your obedient servant,

WALTER R. HADWEN, M.D.,
Hon. Secretary, British Union for the
Abolition of Vivisection.

32, Charing Cross, S.W., September 11.

THE ABOLITIONIST.

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A MEDICAL VIEW
OF
**The Vivisection
Question:**

A PUBLIC ADDRESS BY
W. R. HADWEN, Esq.,
M.D., L.R.C.P., M.R.C.S., L.S.A.,
OF GLOUCESTER,

At the Assembly Rooms, Bath, March 5th, 1903.

PRICE 3d. EACH ; 2s. PER DOZEN.

PUBLISHED BY
THE BRITISH UNION FOR THE ABOLITION OF VIVISECTION,
32, CHARING CROSS, S.W.

Sec.: Miss B. E. KIDD, to whom all orders may be sent.

See List of Publications on last page.

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OBJECTS—

1. The Total Abolition of the Practice of Vivisection.
2. Promotion of a knowledge of the subject by every means.

A MEDICAL VIEW OF THE VIVISECTION QUESTION.

ADDRESS BY DR. HADWEN,

At the Assembly Rooms, Bath, March 5th, 1903.

T a meeting held at the Assembly Rooms, Bath, on Thursday evening, March 5th, 1903, Dr. W. R. HADWEN, M.D., L.R.C.P., M.R.C.S., &c., seconded a resolution to the following effect which had been moved by the Rev. Dr. WARSCHAUER, M.A., of Bristol :—"That this meeting being of opinion that vivisection is both morally and scientifically wrong, demands its total and immediate prohibition."

Dr. Hadwen said :—Mr. Chairman, Ladies and Gentlemen,—There is one other enemy that the Rev. Dr. Warschauer (who had been pointing out the different enemies to be overcome before the effort to secure the abolition of vivisection could succeed) has not touched upon, and that is fashion. (Hear, hear.) Vivisection is a fashionable craze just now among a certain section of scientists, and I suppose if there be one thing in this world that reformers in general have to fight against, it is the fashion of the time. It is surprising how fashion lays hold of people, and what immense efforts are needed to overcome it. But let us remember that hard as may be the fight and difficult as may be the work in front of us, it is not for us to consider whether the practice is fashionable or whether it is not, the point we have to look straight

in the face is this : Is vivisection right or is vivisection wrong ?
(Applause.)

Now we are told that the anti-vivisection movement is a great bit of sensationalism. It is no such thing. It is the natural response to the throb of tender, sympathising hearts which are beating anxiously and earnestly on behalf of helpless, sentient creatures who have rights as much as we have, and yet who are made to suffer supposedly for our benefit. We are determined that we will be no parties to such an "abominable sin," as good Lord Shaftesbury called it ; and therefore it is that with unhesitating voice we denounce root and branch the whole system of animal experimentation. (Applause.)

Others again insist that we are the victims of mistaken opinions, and that humanitarian zeal has run away with our reason. But this charge could not be substantiated. In this matter

We Desire Facts.

I was walking through London the other day and I saw over an engineer's yard the trade mark of the firm—"Facts, not opinions." This is our motto. We want facts, we are not satisfied with mere opinions. (Hear, hear.) We maintain that the cult of "opinion" lies with our opponents and not with ourselves. Medical men say to us—those who argue in favour of vivisection—those who uphold the scientific experimenters—"there have been great discoveries made in the past ; there will be still greater discoveries made in the future." I say in reply, "Tell me what these discoveries are, tell me when they were made, show me authentic records of them, show me the facts, let us get to the root of this matter, and I shall be satisfied, but don't come to me with your opinions, your theories, your travesties of truth ; I want facts and nothing else." (Loud applause.)

Now this is the first meeting that has been held for a great many years concerning vivisection, I understand, in Bath. This being the case, possibly there are many people who know very

little about the subject ; in fact, my experience is that you find very few outside the ranks of the instructed anti-vivisectionist who understands what vivisection is. I am desirous that we shall to-night clearly understand this subject, or at all events get as clear an idea of its various bearings as is possible in the time at our disposal.

Let me first ask

What is Vivisection ?

Vivisection simply means this—the cutting up of animals alive. It means boring holes in their skulls and opening their vertebræ and applying electrodes to their brain and spinal centres, creating spasms and convulsions in various parts of their bodies. It means (as in experiments recently performed in England) pouring boiling water into the stomachs of dogs ; it means holding their paws over spirit lamps and crushing them by stone bottles ; it means mutilating the internal viscera at intervals, and crushing the most sensitive organs of the male ; it means inoculating every kind of disease into animals' bodies until by slowly germinating the helpless creatures die in lingering agony ; it means the passing of diseased and irritating matters into the delicate organ of the eye, and watching day by day and week by week the developments and the changes that take place ; it means poisoning by drugs, feeding with loathsome substances and starving to death ; it means numberless other repulsive acts, barbaric and refined cruelties, even those horrible atrocities perpetrated by Claude Bernard, who slowly baked to death seventeen dogs in an oven in order to discuss the question of hyperpyrexia, and the heartrending devilries of Mantagazza during his fiendish researches into Pain. This is what vivisection is. (Shame !)

Now comes the next question,

What is Vivisection Supposed to Effect ?

We are told that wonderful discoveries have been made. We

are told that but for vivisection some of the most remarkable phenomena, whether in surgery or in medicine, would never have been found out, that human diseases and ailments innumerable have been cured and alleviated as the direct result of vivisection, that thousands of lives have been saved in consequence, and that there is a grand field in the future still open, and that the field of discovery and untold blessing can only be reached by traversing the bloody pathway of this vile practice. All I can say is this : Let me have a list of these brilliant discoveries. (Hear, hear.) I myself have carefully examined this subject, I have earnestly investigated its proud claims, and I have failed to find any proved beneficent remedy for human ailments or diseases that could be attributed to vivisection, any definite discovery in all the long 3,000 years during which it has been practised, that has in any way alleviated or cured any human ailment or disease, and I cannot see that vivisection is ever going to be of any benefit whatever to the human species. (Applause.)

I was at one time as strong a believer in vivisection as anybody else. I was brought up to believe in it ; I was taught that it was right by my medical lecturers, as they were taught it was right and absolutely necessary by their lecturers before them, and I swallowed the whole thing down as medical students do swallow all that is told them, and then—I had to unlearn it all. (Laughter.) The first thing that opened my eyes was the report of a hot discussion between rival professors as to the precise locality of the centres of the brain. That discovery is attributed entirely to the work of vivisection, carried out upon the brains of numbers of poor creatures, mainly monkeys, who were submitted to untold tortures, largely without any anæsthetisation whatever, and I found, so far from any common agreement upon the questions at issue, these expert scientists differed upon the most material points with regard to it. I came to the conclusion that if upon this, which is declared to be the most brilliant victory in vivisection history, there was such difference of opinion, then how could I

depend upon the other supposed discoveries which have been laid at the door of vivisection blessings ? I began to inquire into the matter, and the result was, as I have already mentioned, I came to the conclusion that all that had been taught about the value and indispensability of vivisection was a myth, and that the practice of vivisection itself was a matter of no practical or scientific utility, and, in fact, could be looked upon as little else than a delusive, cruel and unscientific craze. (Cheers.)

Of course, we are repeatedly asked, Is not practically the whole of

The Medical Profession in Favour of It ?

Well, it is. There is no doubt about that. There have been and are some noble exceptions, but taking the medical profession as a whole it is in favour of vivisection. Well, accepting that fact, how does it affect the question we are discussing ? We have just heard something about majorities, and I have yet to learn that because practically the whole medical profession may believe in a certain dogma that therefore that dogma must of necessity be right. (Hear, hear.) As I have read my history there is no getting away from the fact, although I, as a medical man, am rather giving my profession away by saying so, yet I am bound to confess as far as history tells us, that when medical men have been unanimous about anything they have almost invariably been unanimously wrong. (Laughter and applause.) Look back at the days of blood-letting. Some of you with grey heads can recall the time when the first thing in the way of medical treatment was to withdraw a pint or so of blood from the patient, in spite of the fact that Moses ages before had declared that the blood was the life of the body. He was frequently bled till he was at death's door, and the medical profession unanimously believed in it and practised it. Where are the medical men who would go in for it to-day ? (Hear, hear.) It was the same with mercurialisation. People used to be mercurialised till their bones rotted and their

teeth dropped out of their heads. "Salivation is salvation" was the axiom of the profession. Every old lady had her stock of blue pills and black draughts in her cupboard ready for all occasions, but where is the medical man who would think of prescribing wholesale these mercurial remedies at the present time? (Laughter.) It was little more than sixty years ago that a young man tramped the streets of London to get his life insured. He went from office to office, but there was not a medical referee attached to any leading office in London who would dare insure his life, because he was a teetotaler. (Laughter.) "Well, then," said the young man, "if that is the condition of things, the sooner I get insured the better. If I am to go to heaven as quickly as the doctors tell me I shall, I must get insured somehow, so I will start a society of my own." (Renewed laughter.) He started it, and what was the consequence? That young man a few years ago presided at the jubilee meeting of the United Kingdom Temperance and General Provident Institution, which he had established fifty years before. (Loud applause.) It had flourished, the old man was living to tell the tale and to prove to demonstration that the cry of the "unanimity of the medical profession" is a fallacious cry, and that medical men may be unanimously wrong. (Renewed applause.)

Now, my friends, we have to settle this question, not whether medical men are unanimously agreed or not upon this subject, but whether vivisection is right or whether it is wrong. And here let me say this, you can understand all about it as well as any medical man as soon as you master the little technicalities connected with it. I don't find many medical men understanding anything at all about it. (Laughter.) The majority I have come across know nothing whatever of the subject. (Hear, hear.) The work is the work of a handful of scientific experimenters, and the great body of the medical profession accepts with becoming reverence and in simple faith the traditions of laboratory mysteries and miracles which are duly advertised for their delecta-

tion. And you, as I say, are quite as capable as the ordinary medical practitioner of understanding all about it. All you have to do is to inquire what are the discoveries ; when these discoveries were made ; are these discoveries real ; were these discoveries achieved by vivisection experimentations ; are the diseases cured that are said to have been cured by them ; and what are those diseases ; and when you have ascertained these facts of history you will find the whole thing " go bust " just like a gas balloon. (Laughter and cheers.)

But

All Medical Men are not Agreed.

Take Professor Lawson Tait, a name you can conjure with in any city in Europe. What did he say about it ? He said, " Vivisection has done nothing for surgery but lead to horrible blundering." Then, again, Sir William Fergusson, Consulting Physician to Her Majesty, said he did not know one single thing in the realm of surgery that had been initiated by any work or experiment upon the lower animals. Sir Frederick Treves (not a pronounced anti-vivisector), who performed the operation on the King only recently, what does he say ? Sir Frederick Treves wrote in *The British Medical Journal* as recently as November, 1898 : " Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man, I found I was much hampered by my new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine." And yet we are told that but for his vivisectioning operations upon the lower animals he would never have been able to perform that operation upon the King ! (Applause.) " A survey of what has been attempted of late years in physiology will prove," wrote Sir Charles Bell, " that the opening of living animals has done more to perpetuate

error than to confirm the just views taken from the study of humanity and natural motions."

We are repeatedly faced with one argument. The first doctor you come across, ask him whether he thinks vivisection is right. He will say, " Yes, it is the handmaid of science ; great discoveries have been made by it, and without it there could be no advance in scientific research." If you ask what are the discoveries, he will say, " Don't you know that

The Circulation of the Blood

was discovered by it ? " But was it discovered by vivisection ? I should like to see the person who could discover it by cutting up a living body ; the very flow of blood would render the investigation futile. But supposing it had been discovered by means of the cruel and barbarous methods of four hundred years ago, is that any reason why such repulsive methods should be resorted to in these days of scientific advancement, when we have so many other methods of a less barbaric type that we can accommodate ourselves with ? (Hear, hear.) Theophilus is said to have discovered that man had a pulse by dissecting six hundred criminals alive. Is that any reason why criminals should be handed over to vivisectionists now ? He could have made that discovery by feeling his own wrist. (Laughter.) But as a matter of fact Harvey did not discover the circulation of the blood by these means ; he reasoned it out on the dead human body by noticing the arrangement of the mitral and aortic valves of the heart, as well as the beautiful valves in the veins which only allow the blood to flow in one direction. His own writings show that this was the way it was conveyed to Harvey's mind. He endeavoured to confirm the theory afterwards by certain experiments on the living body, but it was never finally settled till the microscope was discovered, and then the last link in the chain of evidence was conclusively settled by capillary circulation, as can be seen by anyone to-day in the vessels which ramify in the delicate web of a

frog's foot. (Applause.) Having our chemical, clinical, microscopical and pathological research facilities, what on earth do we want with a barbarous, cruel, and clumsy method like vivisection ?

I have touched upon the brain and the centres of the brain.

Brain Surgery,

we are told, owes everything to vivisection. I do not know that we have ever gained very much by brain surgery. I don't know many lives that have been saved by it—that is, where surgical operations have been performed upon morbid growths or other lesions in the brain. I do not know whether there are more than a very few cases on record of definite results that have ever been obtained by any such surgery. Where benefits have been obtained they have almost invariably been in cases of acute mischief, such as result from blows on the head, &c., and you do not need knowledge of the localisation of centres to ascertain where to operate under such circumstances, as the point is visible to the naked eye. The Morbid Growths Committee of the Pathological Society some years ago held an investigation on this subject, and they reported that the conditions associated with tumours of the brain in fifty-four cases examined by them, were of such a character as to entirely falsify the views of the vivisectionists, and that their conclusions upon the brain centres, except, perhaps, in two very doubtful instances, would have been useless and misleading. The only certain knowledge we have gained of brain pathology is that which has been gleaned by noting symptoms during life, and comparing them with the signs after death. But, under any circumstances, considering the complicated structure of the human brain and its superiority over that of every lower animal, it is absurd to presume that experiments upon the brain of the latter could be any trustworthy guide in dealing with an organism like our own. (Applause.) Good-bye, then, to the circulation of the blood, good-bye to brain surgery, as triumphs of vivisection. And

what have you left ? The remainder of the professed achievements is but an equally dreary waste of speculation and failure.

At the London University College a short time ago an American doctor came over to perform some vivisection experiments concerning

Surgical Shock ;

some of the most extraordinary and atrocious that I suppose have ever been performed, were carried out by him in that hospital, nearly all of them upon dogs. The first sixteen were performed in this country under the very nose of the officials of Whitehall, the rest in America. What were these experiments for, such as pouring boiling water into the stomachs of dogs, holding their paws over a spirit lamp, crushing and cutting them, tearing out nerves, smashing jaws, extirpating eye-balls, and so forth ? It was all to discover the effect of shock. It is true, we are told : " In all cases the animals were anæsthetised," but we are not told what anæsthetic was used in each case, what quantity was employed, nor how long it was administered. In some of the experiments, Dr. Crile states, " Curare and morphine were used." He does not say whether alone or in addition to an anæsthetic, nor how much, nor when. But the fact that preliminary tracheotomy was performed in every case, and artificial respiration was necessary in many cases, makes the situation look suspicious and ominous. And where was the value of all this barbaric work ? Every surgeon has passing before him daily instances of shock and its effect upon the human system, where it is possible to recognise all the various changes and stages of such a condition. The case-books of our hospitals are full of such instances. What on earth do they want to be torturing these poor creatures for when you have human subjects suffering in every possible way under circumstances over which they have no control, from whom reliable information may be gleaned ? Besides, what can be gained by

such methods—an animal that cannot speak, an animal in an abnormal condition so that you cannot gauge the results, a lower animal too, and not man ? The whole thing is an utter absurdity.

Aye, and take again those terrible experiments I have already alluded to, which were done in Italy some years ago in order to elucidate the physiology of pain, when poor dogs had their paws larded with nails so that they could not put themselves in any possible position without feeling pain—(sensation)—when their shoulders were forcibly dislocated, their legs deliberately broken, their nerves torn out, sensitive organs violated, limbs wrenched off, whilst the hard-hearted vivisector stood and gazed at the poor suffering creature and coolly jotted down, stage by stage, the whines and cries, the howls and the agonizing looks of the poor palpitating, beseeching, terrified victim as these vile things were being perpetrated. The physiology of pain ! It makes one wonder how God could ever allow such human devils to exist. (Applause.)

But looking at it not only in relation to its wickedness and cruelty, let us ask another question :—

Is the Practice a Scientific One ?

My answer is, It is absolutely unscientific. In the first place, science signifies real knowledge ; it means something that you know, and implies something that possesses a real and solid basis upon which to proceed in an investigation. Now when you begin to dive and delve about an animal's body in the vague hope of discovering something that may be useful concerning another body anatomically and physiologically diverse, you cannot call that science. No, like Mr. Micawber, the vivisector is always blindly waiting for "something to turn up." The biographer of Claude Bernard (who, I suppose, was the most callous vivisector who ever lived) has described how he would walk in, take up his knife, come to the animal bound helplessly in the torture trough,

cut here and there, open up this and that organ just in the hope of being able to elicit some fact of science, some little detail not previously noted, or more often, apparently, to gloat over his sanguinary feast. This was the way Claude Bernard did his work; a dumb suffering creature, a sentient animal, was no more to him than a piece of mahogany in the hands of a carpenter. Claude Bernard had tortured, largely without chloroform, thousands and thousands of these poor sentient creatures day after day for years of his life, and just before his death he made this declaration :—
 “ Our mouths are full of promises, but our hands are empty of results.”

But why, further, do I assert vivisection to be unscientific ? For this reason. You can only get objective signs from a dumb creature, you cannot learn subjective symptoms. The animal cannot tell you what it suffers or experiences. There is no guide but what you yourself can see. The consequence is that one person who sees an object interprets it in an entirely different way from another, and that is the reason why vivisectors spend nearly all their time in contradicting each others' conclusions. I know hardly one single incident that a vivisector has ever written about but what he has been contradicted by another vivisector. A certain vivisector performs a series of operations or experiments upon a series of animals, and writes very long articles in one of the scientific journals. Presently there comes along another vivisector, and he performs a similar series upon similar animals, but arrives at exactly opposite conclusions, because, judging by the objective signs, he reasons in another way. The first vivisector must put himself right for the sake of his own dignity, and so scores more poor creatures are put on the torture trough. Then somebody else comes up to put them all right, and thus the game goes on. Majendie sacrificed four thousand dogs amidst most revolting cruelty to prove Bell's theory of the double action of the spinal nerves and four thousand more to disprove it again, when Flourens tortured to death a vast number to prove it once more. It is one

long history of contradictions. Therefore, whichever way you look at it the practice is unscientific. (Hear, hear.)

Being unscientific,

It is also Unreliable.

An animal under such conditions is not in a state by which satisfactory results can be obtained. You could not expect to get satisfactory results from an animal in an abnormal condition like that; were it under an anæsthetic it would be in a still more abnormal condition, and it would be still more difficult to arrive at any conclusions, and yet the slaughters go on. When you come to look at all this, it makes you wonder how it can continue, and yet in spite of the absolutely barren field that is presented as the result of all this wickedness and atrocity, vivisectors still cry out, "We must have more vivisection." It reminds me very much of Paddy, who put up his sign outside his door, "Beer sold here at less than cost price." When asked how he made that pay, he replied, "It's the quantity we sell." (Laughter.) So they hope to make up their losses by quantity. It does not matter even though they are losing all the time, although they have gained nothing all these weary years, although they have only degraded and insulted science and degraded themselves by what they have done, they still cry, "We must have more vivisection." I say, my friends, it is for you and for me to say whether they shall have more vivisection or not, and if only the great heart of the British people can be reached upon this question, and the British nation be made to realize what is going on in their midst—and it is learning to realize it more and more—they will ere long put their foot down once and for all, and cry, "Halt! we will have no more of this accursed thing." (Loud applause.)

But, you will say,

What about the Law?

Have we not a law at the present time which regulates vivisection? Yes, we have, but, as Mr. Bumble said, "The law is a hass," and

Mr. Bumble was not far wrong. The Cruelty to Animals Act distinctly declares that the animal is to be anæsthetized and killed before it recovers. Licences for the performance of experiments are granted by the Home Office to any man recommended by high scientific authorities, and if the operator states it would be impossible to gain the result he desires unless the anæsthetic were dispensed with, or unless the animal were kept alive after the initial operation had been performed, he would be allowed to take out certificates to that effect. Therefore, by such certificates any vile experiment can be performed with the full recognition and sanction of the law. But, you will say, Are there no inspectors appointed to see that the law is carried out? Well, there is one inspector and his assistant for the whole of England and Scotland, and this inspector has to write a report once a year, and that report is practically composed of the various reports which the vivisectioners themselves have written and sent to him. They are their own judge and jury.

Last year there were 257 persons licensed for vivisection; there were about thirty licensed laboratories in this country, and there were 11,000 vivisection experiments carried out.* And out of that number there were over 9,000 that were performed without any anæsthetic whatever. It is quite true the majority of these 9,000 were inoculations, but they are in my opinion the worst form of vivisection, because it means the inoculation of distinct diseases into these animals' bodies, and the slow germination of these diseases for weeks and months—simply a life of lingering torture. If you had seen them in Pasteur's Institute in Paris, as I have seen them, cramped in little cages labelled with various diseases, it would make your heart ache. What is done in Paris is done in thousands in England. The law declines to protect them—that is perfectly plain.

But even if animals subjected to cutting operations under an

* In 1904 these numbers had increased to the following: 366 licensed vivisectioners, over 60 licensed laboratories, and 32,562 experiments, 30,346 of which were performed without anæsthetics.

anæsthetic are allowed to recover for the purpose of subsequent investigation, we are told that the wounds are always so carefully attended to with antiseptics that there is no danger whatever of the poor creatures feeling any pain.

Now these words,

Antiseptic and Anæsthetic,

are so jumbled up together in the public mind that they are apt to be misunderstood, and the public have an idea that when the wound is treated antiseptically it means that there is an entire absence of pain. This idea is strengthened by the stress laid upon "antiseptic treatment" in the official reports. Antisepticism, as a matter of fact, means cleanliness. The old carbolic dressing, like the carbolic spray, by which Lord Lister gained his fame (and concerning which he has since confessed he was ashamed that he ever recommended it), is going out of fashion, and the one thing which all competent surgeons are discovering is this, that if you keep a wound perfectly clean, that is, aseptic, you will get just as good results as could be obtained by ordinary antiseptic treatment. But what I want to point out is this. They talk about animals feeling no pain from their dressings, and yet when His Majesty the King was operated upon recently by Sir Frederick Treves, we read in the medical papers that the great courage with which His Majesty endured the terrible distress and pain of his dressings had won the admiration of the whole of his attendant surgeons. And if His Majesty the King, with all the environments of a palace, with the great professor of antisepticism—Lister himself—attending by his bedside, suffered so much from his wounds after the operation as to win the admiration of his surgeons, what about the poor little things in their cages in the laboratories of the scientists whose wounds may or may not be treated antiseptically, and yet are supposed to suffer nothing at all? Alas, there are no trained nurses to care for these poor creatures in the laboratories, to give a sympathizing word, to

assuage the thirst they cannot complain about, or soothe the pain they cannot describe.

There were some cases which we presented to the notice of the Home Secretary some time ago carried out at the

Brown Institution in London,

a place founded by a philanthropist as a hospital for animals. The founder decreed that they should be carefully attended to like human beings ; doctors were to be appointed as in an ordinary hospital ; and it was provided that the animals should have a decent funeral when they died. That place has been prostituted from its original purpose, and the Brown Institution has become a great centre for vivisection work. (Shame.) It is a shame. And that place where it was intended to care for animals, and where the philanthropist said every kindness should be shown them, is the place where they have been tortured in the most disgraceful manner. In the instances I mention, the Professor of the Institute, Professor Rose Bradford, took 49 fox-terriers, and operated upon their kidneys. After making the usual incision through the external tissues, he cut out piecemeal, first at one time and then at another, small portions of the kidney. He removed the other kidney entirely. They lingered on after the operation was over, placed in glass cases on glazed floors, and watched for weeks and months. Some died of blood poisoning from their wounds, which were supposed to be antiseptically treated ; some from loss of blood. They suffered from thirst, and vomiting, loss of appetite great emaciation, and ulceration ; they grew so weak and emaciated, what with ulcerated sores, superficial ulcers, bleeding from the gums, etc., that they could not stand or walk. All that was to see with how little kidney a dog could live, and for how long without actually dying. (Shame.) They discovered that certain dogs after having their thyroids excised, died at the rate of 80 per cent., and those which had their parathyroids cut away died at the rate of 40 per cent. I want to know whether that is the kind of thing

we are going to allow the law to shield in this abominable way, and whether it is not time that we who put our law-makers into Parliament shall not insist on our representatives making their voices heard, and putting a stop to such iniquity? (Loud applause.) The Brown Institution is in the trusteeship of the London University, and for some years now the British Union has been fighting single handed against this scandal, and we implore you to "come over and help us." (Cheers.)

But now comes another point.

What about Chloroform?

Are these poor creatures, which, in most cases, during the primary operative procedures, are submitted to an inhalation of chloroform or ether, followed by a hypodermic injection of morphia—are they free from pain and suffering during that time or are they not? Of course, in the cases I have just described, where the animals survive the operative procedure, no chloroform is possible, and yet the after-suffering must have been very acute. Let us look at this question straight in the face. Nine thousand—mainly inoculations—were not chloroformed at all. About two thousand were anæsthetised. Leaving alone the question of after-suffering, let us look at the animal tied down on the torture trough (which is suffering in itself to a sensitive creature), inhaling an anæsthetic. I am not going to touch at present on the moral question as to whether we have the right to vivisect at all. We will ask the question plainly—Can these dogs be put under chloroform to such an extent as to feel no pain?

The dog is a very peculiar subject for chloroform. It has an intermittent action of the heart, and Professor Pritchard (among others of great ability) gave evidence before the Royal Commission to the effect that he never gave chloroform for operating on dogs because it took an immense time to get the animal under, and as soon as ever it was under its influence it was impossible to bring

it round again. I have proved that fact myself in regard to dogs. Consequently to operate upon dogs fully anæsthetised would practically mean to operate upon a dead animal. The operator dare not push the chloroform too far, otherwise he would lose his subject. Were you to examine the journals which contain a narration of vivisection experiments you would notice after a certain quantity of the anæsthetic has been given, morphia is then administered. In *The Abolitionist*, the monthly organ of our Society—the British Union for the Abolition of Vivisection—for January and February of this year, I have published articles giving details of experiments carried out in our English laboratories during the last three years, which I have culled from the writings of the vivisectors themselves, and they show conclusively that it is not simply abroad where these atrocities are carried out. Practically every case in which an anæsthetic is given is followed by morphia or curare.

What Effect has Morphia?

Mr. Stephen Paget, in his well-known apology for vivisectors, entitled “Experiments upon Animals,” speaking of morphia, says, “For the purposes of the experiment, to put the matter on the lowest ground, the animal must be kept at rest.” That is the secret of the whole matter. You dare not push the chloroform too far. I doubt if ever it is pushed to full anæsthesia, and so you give it morphia. If the chloroform does not anæsthetise the dog, it anæsthetises the public. (Hear, hear.) They are told it has been anæsthetised, and the public are satisfied. But morphia is a narcotic, it is not an anæsthetiser. Claude Bernard, the arch-vivisector, says under morphine an animal, though sensitive and feeling pain, lies motionless in the vivisection trough, having lost its power of self-defence, but placed on the ground it will move, walk, try to hide, and show every idea of sense and sensitiveness. There it lies, then, helpless, “at rest” under the influence of this narcotic drug. But is it the painless rest of peace? They dare

not give large doses of morphia, mind you. A vivisector, replying to me in *The Abolitionist*, said he gave "large doses" of morphia, and that the animals were entirely under its influence. I replied, You cannot give large doses, else excitement and convulsions would follow, with probably sickness and diarrhoea, and the experiment could not be continued. This was denied by another apologist for vivisection in a letter sent to *The Abolitionist*, but the writer has since discovered I was right, and has written a further letter admitting his mistake. Therefore you must give moderate doses of morphia, and such doses may quell resistance, but would any surgeon dare to operate on a human being under such circumstances? What right, then, has he to operate upon a dog? (Cheers.)

You will find in these experimenters' journals—worse than all—another drug is given—

Curare—"The Hellish Oorali,"

which paralyzes the muscular system, but leaves the nervous system intact—Claude Bernard says the nerves are increased in their sensitiveness. The very muscles of the lungs are paralyzed so that the animal cannot breathe, and an apparatus has been invented for the purpose of carrying on artificial respiration. The animal lies a living corpse, and yet capable of understanding everything that is going on. In that condition we read of the skin and underlying tissues being cut through, the backbone opened up, the vertebra crushed, the spinal cord divided, and electrodes applied to the cut ends for the purpose of exciting the nerves and, through them, the muscles in various parts of the body. Such is but one specimen of experiments performed during the last three years in English laboratories, and yet the public is anæsthetised with the idea that, as chloroform is administered, the animals do not suffer.

It is constantly said, and the question had much effect with

me before I fully examined the subject, "How are you going to get on with your drugs unless you have animals to experiment upon so as to test their properties and doses?" But that is also a most unscientific procedure, because

The Action of Drugs upon Animals

is for the most part entirely different from the action upon human beings. A rabbit can eat belladonna till further orders; I should like to see the human being who could do that. A goat can eat hemlock almost *ad lib.*; and whereas a grain of morphia might put an end to a human being, the pigeon has been known to take twelve grains and be none the worse for it. Many other instances might be mentioned, but these are sufficient to show you cannot be certain of your result after you have given your drugs to an animal, and you will still have to test them upon a human being. You can arrive at no definite results from animals; therefore in that respect again, vivisection is entirely untrustworthy and unscientific. (Hear, hear.)

And then there are the antitoxins—that is, the inoculations. What about them?—the injection into human bodies of every imaginable filthy disease. My own impression is that when the medical history of the present and past century comes to be written in a hundred years time, it will be declared to have been the most superstitious period of medical history. (Applause.)

The Inoculation Craze

is such an easy method. You don't attempt to find out the cause of the mischief from which a patient may be suffering; all you have to do is to squirt the virus of the disease itself into some poor wretch of an animal time after time until it is supposed to be immune. Then you draw off a quantity of its blood and allow it to coagulate, filter the serum, and you have an antitoxin to cure anybody from the same disease from which it arose! If they get better it was the

stuff that did it; if they don't, they ought to have done so, and there was something peculiarly wrong with the patient. (Laughter.)

It is only a few years ago that on the same theory Koch discovered a great remedy for consumption. Honours were heaped upon him, and he was lauded to the skies. At last it turned out a "hum," and the year before last he came before the scientists at an International Congress in London, and told them, after having tortured thousands upon thousands of poor creatures in making this discovery, and after slaughtering so many that he had to have a special crematorium set up to burn their bodies, that the only remedy for consumption was fresh air. (Laughter and applause.) They knew that in the garden of Eden six thousand years ago. (Renewed applause.)

Then, again, we had a splendid typhoid serum that was going to work miracles—there was to be nothing like it for enteric. They even inoculated our brave soldiers who went to the front. There was Capt. Chaloner, the brother of the president of the Local Government Board. He was inoculated with the serum, went to Capetown, was taken ill, and had to return home again without ever going to the front. So far from curing typhoid, we know that seven-tenths of the deaths in the Boer War were due to typhoid fever, which struck down three times as many as were riddled by Boer bullets. If instead of allowing officers to carry harmoniums and pianos over the African veldt, they had chopped them up for firewood to boil the water for the soldiers before they drank it, we should have had a vastly different result. (Loud cheers.)

So it is again with diphtheria. We have had a tremendous rage for diphtheritic antitoxin, and statistics are published to show how wonderful it is. We are told "there is nothing so fallacious as statistics except it be facts." (Laughter.) You are told diphtheria is notifiable now, and you must lay hold of the disease in the very earliest stages if the antitoxin is to do any good. The

consequence is that any ulcerated sore throat that any old grandmother would put right in three or four days, is frequently notified as diphtheria, and the patient gets inoculated with antitoxin. The true cases when discovered are frequently too bad to be inoculated, and the result is that the genuine cases of diphtheria die without antitoxin and the sore throats get well, and glory be to antitoxin ! (Loud laughter and applause.) In spite of all these statistics, the death-rate from diphtheria at the present time is three times as great as it was before antitoxin was discovered, and it is time the long-suffering public asked the reason why. It shows conclusively there is something wrong somewhere, and one asks the question whether antitoxin is not giving diphtheria instead of curing it.

There is one other great objection to this practice. It takes the eye of the profession off

The Real Causes of Disease.

If you wish to get rid of diphtheria and other zymotics, you must visit the slums of our cities, must teach the people to open their bedroom windows, and use more soap and water and the white-wash brush ; and municipal authorities must prevent overcrowding in our congested areas ; do away with the long dead lines of houses with no break between them which prevent the free play of fresh air round the poor man's dwelling. (Applause.) Let medical men promote the passing of the Act for the better housing of the Working Classes—(hear hear, and cheers)—let us have less cramped-up streets, where God's sunshine can find its way into the home of the poor ; let us see to good water, better drainage, and make medical officers of health do their duty—then you will get rid of zymotic diseases, of typhoid and of consumption, of diphtheria and small-pox, and you will not need your expensive sanatoria at five or six guineas a week. Turn every man's house into a sanatorium, and

you have settled the vexed question for ever. (Loud and continued applause.)

In conclusion, let me have a word to say on

The Moral Side of the Subject.

You say, " Well, if you can put an animal under an anæsthetic before experimenting, is that not right and just, and cannot you then do as you like with it ? What is a dumb animal compared with a human being ? " I say, No ; animals have rights as well as you have. (Cheers.) Take that beautiful Newfoundland dog, the firmest friend of man, which has saved our lives a thousand times, and would lick the hand that strikes it its death blow—do you tell me you have the right to do as you like with it ? I say, No. (Applause.) That principle of indifference to the rights of animals is incorporated in a Restriction Bill promoted by a so-called anti-vivisection society, which allows that an animal shall be put under chloroform, experimented upon, and killed before it recovers, as in the original Bill of 1876, which turned out such a ghastly failure. It is a wicked insult to that noble creature—a piece of heartless treachery. (Loud applause.)

I have endeavoured to show that the administration of anæsthetics is unreliable, and that you cannot feel sure of animals which are operated upon under it being free from pain, as complete anæsthesia would jeopardise the life of these creatures ; therefore, while the right to vivisect at all is allowed, a

Cruelty to Animals Amendment Bill,

which makes anæsthesia the base of its requirements, is not likely to become law, or, if passed, would prove little else than a curse. If you authorise the vivisector to experiment upon animals, as that Bill does, you are bound to permit him to prosecute his work under the only possible conditions consistent with the practice,

that is, by the addition of morphia, at least, to the administration of a respirable gas.

The argument will certainly be used by the vivisector that morphia is needful to abolish certain reflex actions, but that the animal would be fully anæsthetised independently of that ; and no Parliament under such representation would refuse its use, especially as so-called anti-vivisectors by their Bill do not hesitate to condone the practice of vivisection itself. With such permission the whole question of anæsthetisation would be vitiated, for, supposing for the sake of argument, complete anæsthesia were primarily obtained, the subsequent injection of morphia would prevent the onlooker from being assured of the continuation of that condition, and the door would be as wide open as ever to every form of abuse. It was such plausibility upon the part of vivisectors which foiled the efforts of Lord Shaftesbury in 1876, and which led him to say that from henceforth he would fight only on a total abolition platform. Such methods will foil every restriction policy again. And the Amendment Bill I refer to plays into the hands of the vivisector by admitting the easy possibility of placing an animal under complete anæsthesia,

The present Act, with the exception, perhaps, of the stoppage of curare (which we are all anxious about—its embargo forms part of the provisions of our own total abolition Bill), and an increase of inspectors, would be left practically where it is ; the evil will have been produced of the public conscience being deadened under the impression that something radically beneficial had been accomplished, and that animals were tortured no longer.

But it is argued that additional inspectors would be appointed, and one would be present at each operation to safeguard the animals' interests and to see that they are truly unconscious. But it is not so easy to decide upon a dog's insensibility to pain, and the corneal reflexes are by no means an infallible guide. Dr. Borel, an experienced experimentalist, has well stated in a letter

to *The Pall Mall Gazette*, August 5, 1899, that "it is nearly completely impossible to employ anæsthetics upon animals so as to render them insensible." The advocacy of vivisection under anæsthetics is a piece of amateur statesmanship which will eventually land its supporters in a morass and its victims in a lake of fire. If, on the other hand, any narcotic be allowed in addition to the anæsthetic, as will assuredly be the case if vivisection be continued, the inspector could not tell whether the animal were suffering or not; and if, as is most probable, the inspector (who is to be appointed by Government) is in favour of the practice, it will not take much to persuade him that the animal is not in pain. And the worst feature of all will be that a great army of useless inspectors interested in the maintenance of this vile practice, will be raised up, and thus will be created a great vested interest which will form one of the most serious blocks in the way of abolition in the future. The last state will be worse than the first. By temporising, you rob yourselves of your most powerful argument—the evil of vivisection itself. By admitting the right to vivisect, you give your whole case away, and such course must, if persisted in, bring about an issue which will throw back the movement for another quarter of a century at least; you will have squandered thousands of pounds of valuable money without having gained any real amelioration of the evil.

By pursuing a policy of total abolition you present a logical, straightforward course before the country, and compel the compromises—if there are to be any—to come from our opponents and not from ourselves.

But, supposing you can put the animal fully under an anæsthetic, have you a right to take a beautiful creature, like a dog for instance, much more intelligent than a baby, far more intelligent than many adults, and infinitely more faithful than the majority of mankind, and hack and carve it alive to satisfy morbid scientific curiosity, and then kill it out of God's creation? (No, no.) I say we have no more right to do that than to vivisect a baby. (Loud applause.)

For some supposed benefit to ourselves that we cannot prove—for after all these years nothing has been discovered, and there is no hope of discovering anything—I say you have no right to do it—no, not even if you could benefit by the experiment. (Cheers.)

But it is repeatedly asked :

Can Animals Suffer as Acutely as Man?

It is urged in reply by the scientist that its capabilities of pain are greatly inferior to our own. I ask what right have you to presume such a conclusion? The answer is that their sensory nervous system is less highly developed. Do you see that vulture, like a speck in the sky, waiting to pounce upon its prey? Is there a human creature with vision equal to that bird's? Your dog lies at your feet by the hearth; you are roused by a low growl, followed by a sharp bark. He starts to his feet, and stands on the alert with his ears pricked up; long before you have heard the sound on the path outside he has heard the lifted latch of the garden gate. Who can watch the pointer or the sleuth-hound but must confess that no human being can compare with them in the sense of smell? Pass the whip gently over the coat of the high-bred horse behind which you sit, and notice how it starts forward. And tell me, if these special sensory nerves of the lower animals as regards sight, and smell, and sound, and touch, are so much more highly developed than our own, what right have you to take advantage of the fact of their inability to talk, by asserting that their sense of pain is less acute than yours? (Loud cheers.)

These Animals have Rights,

and if it were just for you to experiment on them it would be equally just for you to take the drummer boy and experiment on him for the benefit of the Commander-in-chief of the British army, or to vivisect a curate at £80 a year for the benefit of the Archbishop of Canterbury. (Laughter and applause.) It is the

strong taking advantage of the weak and defenceless, and I say such a thing as that is contrary to the spirit of English manhood on which we pride ourselves so much. If we are to deal with this matter at all, we must recognise that vivisection is useless, wicked, cruel, and therefore it must be a bad policy to go to the House of Commons, and to practically say, "We do not denounce vivisection, we are ready to allow it, but only to ask that it be carried out painlessly"—a theory which in nine-elevenths at least of the experiments, namely, inoculations, which is vivisection in its worst form, the promoters of the measure decline to face, and in the remaining two-elevenths will prove as futile as the present Act. I reply you are cowards and traitors to a sacred trust, you are insulting creatures with God-given rights. If vivisection is to be touched it must go, and we must retain in our hands the strongest argument we have, and that is, that vivisection is a vile and wicked curse, and that it must not be allowed at any price. (Loud and enthusiastic cheers.)

I hear somebody say, "You will never get it; you might as well cry for the moon as to advocate

"The Abolition of Vivisection."

They told Wilberforce the same when he pleaded for the down-trodden slaves. They told him it could never be obtained. The greatest statesmen and clerics in the land opposed their liberation but Wilberforce went on until he roused the great heart of the British people, and keeping before him always his high ideal and noble aim, thank God, the liberty-loving and justice-loving British nation paid down their millions, and the crack of the slavedriver's whip was heard for the last time. (Loud cheers.)

It was the same with the white slave traffic in little children in this country. You know how the little ones, from early morn to late on in the night, were compelled to work in the factories and coal mines of the North. Lord Shaftesbury and his small band

of heroes, who toiled to set them free, were met with opposition from all the great commercial centres of the land. Even the burning eloquence of Gladstone and John Bright, and the earnestness and zeal of Richard Cobden were hurled into the fray in support of the wretched traffic. They declared that if the traffic in the health and lives of these little ones was stopped it would raise a commercial revolution and interfere with British enterprise. But the reformers went on, the Factory Act was passed, and the miserable trade abolished. (Applause.)

So it was when John Howard tramped through the English dungeons, and described the awful scenes in the dark, dank prisons of our land. Bishops of the Church of England defended the horrible conditions: they considered they must be maintained; and John Howard lived and died with the scandal still in existence. Then another generation came, and the dead man's voice was heard, and the English people once for all hurled away the reproach with one fell swoop, and demanded the justice which had been so long denied. (Cheers.)

And what has been done before can be done again. (Cheers.) All that is needed is

To Teach the People.

Already the voice of liberty is heard as it knocks at the doors of the House of Commons and says it must come in. Already the angel of judgment is hovering over the scientific laboratories; and as sure as ever the children of Israel came forth from their houses on that morning of long ago, so shall we come forth presently with the knowledge that the moment of deliverance for our helpless friends has come. When that morning dawns, Pharaoh's chariots may follow, but the God of power and truth and justice, who parted the waters of the Red Sea and let the children of Israel through, will lead us, and we shall raise the song of victory, "The Lord hath triumphed gloriously; the horse and his rider hath He cast into the sea."

Let me urge you to-night, you men and women of Bath, Englishmen and Englishwomen, who belong to a race that has ever prided itself upon defending the weak against the strong, let me urge you that heart with heart and hand in hand you will be determined from this time forth to go forward until this iniquity, this blighting curse, has been swept away from this land. Do not be frightened by the cry that it will never be carried. As surely as ever Wilberforce carried his abolition of the slave trade, as certainly as Lord Shaftesbury pleaded not in vain for the white slaves of England, as truly as John Howard spoke from the silent grave, so shall our voice be heard.

The hills have been steep for man's mounting,
 The woods have been dense for his axe,
 The stars have been thick for his counting,
 The sands have been wide for his tracks;
 The sea has been deep for his diving,
 The poles have been broad for his sway,
 But bravely he's proved by his striving,
 That where there's a will there's a way.

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SOME RECENT
VIVISECTION PRACTICES
IN
ENGLISH LABORATORIES,

1900—1902.

BY WALTER R. HADWEN,

M.D., L.R.C.P., M.R.C.S., etc.

ONE of the most common arguments urged against opponents of vivisection is that whatever may be the cruelties practised in foreign laboratories, there are no cruelties perpetrated in our own, and that whatever pain and suffering would be otherwise entailed, they are invariably covered by the use of efficient and well-recognised anæsthetics. Upon these grounds, it is contended, Anti-vivisectors have no case, and that as "great discoveries have been made by vivisection and great discoveries are yet possible in the future," we who consistently oppose the practice can be, according to such statements, merely fanatics and bigots of the worst type.

The moral part of the question is, as a rule, rarely considered by such controversialists, or if considered at all, it is but preliminary to its being brushed aside by the contention: "We have a right to do as we please with the lower animals; what is the life, or fear, or small amount of pain or suffering entailed upon them compared with the advancement of science and the benefits to the human race?"

Now if such a claim as this be correct, it is surely in these last days, with all the modern methods of practical experimentation and of advancement in scientific knowledge, that such results ought to be most clearly evident. If, however, no such results can be pointed to of late years, and yet, upon the other hand, it can be shown that cruelty has been inseparable from the experiments upon animal life, we shall have gone a long way towards justifying the position which Anti-vivisectors have taken up.

In this article I propose to extract brief details of a few of the experiments upon animals conducted in English laboratories by licensees under the British Government, during the last three years, from reports furnished by the vivisectors themselves to scientific journals.

In cases where *A.C.E.* mixture is used preliminary to operation, it will be understood to mean the usual anæsthetic of Alcohol, Chloroform, and Ether—the generally used anæsthetic for operative procedures upon the human subject. Where *Morphia* is used, it can only be looked upon as a narcotic—powerful in proportion to dose, but under which no surgeon would perform a major operation upon his human patient, for, whilst destroying to a large extent resistance to attack, it does not wholly destroy sensibility, except, perhaps, in doses dangerous to life itself. In cases of *Curari* we are face to face with a drug which paralyses the muscular system, but leaves the nervous system intact. Respiration must be carried on by means of a specially designed bellows, and the creature under operation, whilst lying like a corpse unable to resist, is not only conscious of what is going on around, but is capable of feeling every cut, and twinge, and shock of the appliances which are torturing his living body. Further, it must be remembered, although it may be urged the curari is administered *after* the inhalation of chloroform, that chloroform should require no addition of this sort, no surgeon would dare to administer it to a human subject upon the operation table, and further, whilst the animal lies in this powerless condition from curari, who is to divine whether the animal is anæsthetized? Indeed, its administration would be fraught with danger. Curari saves a deal of time and trouble. This may explain its popularity among vivisectors.

First let us turn to the *Journal of Physiology*, April 24th, 1900, where a long article appears on

"THE PHYSIOLOGICAL EFFECTS

of Extracts of Nervous Tissues," by W. A. Osborne, Assistant in Physiological Chemistry, and Swale Vincent, Assistant Professor of Physiology, University College, London.

Extracts were made from the brain, spinal cord, and sciatic nerve of various animals, and then injected into the large veins of dogs, cats, rabbits, rats, mice, and frogs, in order to record the effects upon blood pressure. To note the effects upon the heart, the chest wall was cut down upon and the ribs cut away so as to expose the heart, a hook was inserted in its auricle and another in its ventricle. The hooks were attached to fine threads passing over pulleys moving on a horizontal axis, and then vertically downwards to be attached to long elastic levers of steel, to the ends of which writing points were affixed.

The writers state "A.C.E." mixture has been the *primary* anæsthetic chiefly employed. "*This has been in most cases followed by morphia, and in some of the experiments by curari.*" The suggestion of the writers appears to be that morphia and curari are to be placed in a similar category to chloroform as anæsthetics, which are used *secondarily*. The resulting horror can better be imagined than described.

And what is the scientific conclusion arrived at after all this torture? That there is something in an extract of nerve tissue which produces temporarily a fall in arterial blood pressure. Previous experimenters, viz., Schäfer and Moore, found that although there were great irregularities in blood pressure in some cases, in other instances no effect whatever was manifested; so I suppose Schäfer and Moore will be anxious to try again; and pray what practical benefit will be gained when all is finished? The blood pressure of a poor pinioned creature enduring mental and physical agony as it lies like a corpse on the torture table, can surely supply no scientific data upon which the most imaginative theorist in the Universe could rely? Or is the 18th

century quack remedy of dead men's brains in teaspoonful doses to be scientifically revived?

In the same number of the *Journal of Physiology* appears a Note of Experiments performed by Mr. Ivor Lloyd Tuckett, M.R.C.S., L.R.C.P., in the

PHYSIOLOGICAL LABORATORY, CAMBRIDGE.

The question to be settled in his mind was as to whether the vagus nerve would regenerate if cut or crushed. It was known more than fifty years ago that if both vagus nerves were cut, death resulted, owing to paralysis of the important vital organs which those nerves supplied. If one nerve only was cut death did not necessarily result; and if a sufficiently long time elapsed between cutting the first and second nerve it appeared that death was staved off for periods of varying length, or did not directly result. In the present instance the operator experimented upon rabbits. He allowed three years to elapse before completing his experiment; how many rabbits he started with he does not say, but at the termination of the three years' limit all the semi-paralysed animals had succumbed but three. These had their necks re-opened, *curari* was administered to paralyse the voluntary muscles, and then the nerves were cut below the point where they had been cut or crushed three years previously, the cut ends stimulated by an electric battery, a tube tied in the œsophagus, and blood pressure also noted. The fact that nerves in general regenerated if circumstances were favourable has been well established as regards human subjects, and interferences with the functions of the vagus and its branches have been noted in numberless case books. No new fact has been elicited by the above cruel experiment carried out under the influence of curari, and, moreover, the case of a clear knife-cut or ligature-crush of the nerve in question in a laboratory is an abnormal condition rarely likely to occur to a human being, and the knowledge, if any, gained thereby, would be of purely academic interest, for it would not help the human sufferer.

Among the experiments indicative of purely scientific curiosity is that of a series performed at

UNIVERSITY COLLEGE, LONDON,

by Cyril Corlette, M.D., of Sydney University. They were conducted for the purpose of noting if the solid constituents of fæces were wholly the residue of the food partaken of or whether it did not include to some extent the waste of the body. A fantastic operation was performed upon several dogs, namely, opening the abdomen, detaching a portion of the large intestine, sewing up its cut ends and returning the segment to the abdominal cavity and then restoring the main channel by sewing together the upper and lower ends of the cut bowel. This was done under ether. The results, carefully worked out in detail page after page, are of the indefinite and absolutely unsatisfactory and useless nature one might expect under such abnormal circumstances. It is a case of "probably," "probably," "probably," and no one is "a ha'porth the wiser." But what the poor dogs went through during the many weeks they were kept alive after these severe operations may be gathered to some extent by the daily record of the experimenters, and the gaps may be filled up from the experiences of those who have undergone necessary abdominal operations under much more favourable conditions than those which these innocent creatures had forced upon them.

Perhaps some of the most revolting experiments are those conducted upon dogs placed under the influence of curari for the purpose of noting "the changes in volume of

THE SUBMAXILLARY GLAND

during activity" by Dr. J. L. Bunch, at University College, London, published in the *Journal of Physiology* for December, 1900.

The submaxillary gland was cut down upon and exposed, and fixed in a warm gutta-percha box with a glazed side through which the changes could be noted. The effects during the slow and horrible stages of asphyxia in the helpless creature are carefully detailed. Nerves were consecutively cut; the divided ends of the vagus nerves stimulated by electrodes, and the blood pressure marked, and then the vagus nerve of the wretched creature upon the other side of the neck divided also, and so on through weary pages of similar "scientific work." At the end

nothing new is discovered but simply old theories dressed up in new language, and placed in a long numbered list of "conclusions" at the end of the 29-page article.

In the *Journal of Physiology* for February, 1901, are recorded numerous experiments conducted by W. M. Bayliss and E. H. Starling at the Physiological Laboratory, University College, London, upon

"THE MOVEMENTS AND INNERVATION OF THE SMALL INTESTINE.

They were conducted in turn under A.C.E., ether, chloroform, morphia, and in some cases curare given in addition." In which cases the respective anæsthetics, or narcotic, or paralyser, were administered is not stated. They "were varied from experiment to experiment." As the title indicates, the experiments (which must have been very terrible if the animals were conscious in any of the procedures, a conclusion which is more than probable in many instances) were intended to satisfy scientific curiosity as to the comparative movements of the small intestine in various animals under irritation. Why it was of such "considerable importance" as the writers state, I am unable to discover, nor can I see that these new methods of eliciting already well established facts can be of any value in the better treatment of human diseases, or in the discovery of knowledge calculated to assist either the surgeon or physician in his work. The neck was opened and the vagus nerves divided so as to cut off the intestines from the influence of the central nervous system; the backbone was opened, and the spinal cord destroyed and several nerves divided. The animal was then placed in a warm saline bath and the abdomen opened, and the intestines allowed to float freely and their movements marked. Experiments were then made by opening the intestine and inserting boluses of lubricated cotton wool, or distended balloons, in order to see them forced down the canal by the peristaltic movements of the intestine, as we know well enough the normal contents of the gut are ordinarily got rid of. By increasing the temperature of the bath and increasing the tension of the intestine the contractions of the intestine were increased, as one might presume; and the

sublime conclusion was arrived at, after many complicated graphic records, that "the activity of the rabbit's intestine resembles that of the dog's." If it had not done so, I do not know that rabbits or dogs would have been any the worse.

When it came to turning on the electric battery and exciting certain nerves, of course these vivisectors discovered, as usual, that all the other vivisectors before them had gone wrong, due "either to faulty methods of experiments" or "mistakes." The implicated vivisectors are no doubt by this time putting themselves and these later vivisectors right at the expense of the sensibilities of a few more dogs and rabbits and cats and kittens.

One important "discovery" these investigators appear to have made is that when dogs and cats are given an ounce of castor oil "this drug had a distinct influence on the activities of the local nerve centres." I hope, therefore, it is now set at rest for ever that castor oil is an undoubted aperient for dogs and cats as well as human beings! It is a discovery of immense moment, and being stated in graceful and scientific language it carries with it the greater weight! This is the one practical point in an article which may be very gratifying to vivisectors, but very repulsive and ridiculous to those who are not.

In the same volume Mr. D. R. De Lonza, B.Sc., undertakes to put all other vivisectors right who had unanimously agreed that

LIGATURE OF THE RENAL VEINS

caused a cessation of urinary secretion. Dogs were the subjects of the experiment, and the anæsthetics used were morphia and A.C.E. mixture. Let us hope they were under the influence of the latter and not simply of the former; but knowing the difficulties connected with anæsthetizing dogs and yet keeping them alive, one is always suspicious in such cases. When both groins have to be opened, and tubes inserted into the tiny vessels leading from the kidneys to the bladder, the veins tied and brought to the surface; another tube placed in the carotid artery in the neck on one side to take the blood pressure, and in the carotid

artery and jugular vein on the other side for purposes of defibrination; and in addition to all this, the abdomen opened and another tube placed in the renal vein, one can sincerely hope that unconsciousness and speedy death marked the ghastly procedure. But when after all this, we find that it has simply resulted in establishing an already well-known fact, that the greater the blood flow through the kidney the more urine is secreted and *vice versâ*, it is very disappointing, especially when the vivisector has to admit that fallacies exist which may vitiate the whole business, and that certain other points are yet "undecided." It is a pity that a B.Sc. should be wasting his life in such fruitless and cruel work.

Once more, in the *Journal of Physiology*, as late as July, 1902, we have a record of work done in University College. This time it is by Mr. C. H. Fagge, "On the innervation of the

URINARY PASSAGES IN THE DOG."

The writer commences: "In spite of the large number of researches which have been made on this subject, there are still many differences of opinion with regard to some of the most important factors involved in the retention of urine and in micturition." Another delightful instance of vivisectionists' little disagreements! For these experiments dogs were again the victims. A.C.E. mixture was the anæsthetic, and in "a few cases *curari* was used in addition when it was necessary to exclude the action of voluntary muscles." *Curari* was also given "in many cases" where it was necessary to paralyze the muscles, and under these conditions, the bone protecting the bladder was split open, the spinal canal opened, and the nerves within divided, and all the nerve roots placed on a large pair of electrodes. Then a silver tube placed in the ureter; and the bladder or ureter opened and a catheter inserted, and the nerve results coolly noted on a prepared apparatus. Under such conditions does the writer seriously suppose that any sane man is going to place any confidence upon such results? And to the many contradictory theories of previous experimenters Mr. C. H. Fagge has added a few more—together with fallacies concerning a number of well-

established facts about which there is not the slightest need for discussion.

Some of the most severe experiments were those conducted by W. M. Bayliss at University College

"ON THE ORIGIN FROM THE SPINAL CORD

of the vaso-dilator fibres of the hind limb and on the nature of these fibres," a subject of no practical utility that I can discover, except to provide copy for the *Journal of Physiology*, which the men who do all the practical work in the cure and alleviation of disease rarely or never read, and who would be not one whit the wiser if they did. The part which curari plays in these experiments is very significant, and whatever may be said about chloroform and other anæsthetics used, it is clear, as already mentioned, that it is simply impossible when an animal is under the influence of this "hellish" drug to tell whether the anæsthetic is doing its work or not. So far as the administrator can tell by appearances, the creature in the torture trough may be consciously enduring all the agonies of the knife, battery, scissors, probe, and forceps, as in these experiments the skin is cut, muscles are torn, back-bones crushed, nerves irritated, and blood pressure recorded. It is very painful in some of these cases to read of the animals being allowed to recover from their ill-use, and of the "interesting" symptoms noticed by the operator which had already been "described" by other experimenters, such as one hind limb trailing on the ground with the sole of the foot uppermost, and the other limb manifesting "vigorous movements."

Not satisfied with this barren field of investigation, Mr. Bayliss continues his experiments in the *Journal of Physiology* for July, 1902. He found a difficulty in discovering a method for

EXCITING VASO-DILATOR NERVES

where they lay side by side with the constrictor nerves, and tried a number of experiments without success. He gives a list of them, such as "induction shocks of varying

rate and strength applied to one end of a divided sciatic nerve; with the constant current; with the latter made and broken at varying intervals; with the discharge of condensers of large and small capacity, and finally with break induction shocks, and all, too, upon "*curarized* and anæsthetized dogs and cats," but nothing could be relied upon. "Notwithstanding the disappointing nature of these experiments," he thought "it worth while to repeat" the extirpation of various nerve roots situated in the backbone of dogs. Then came the nerve cutting; the induction shocks; freezing the nerve ends; pinching, etc. The sciatic nerves on one side being cut, a second experiment of cutting the nerves on the other side was resorted to; then both limbs placed in plethysmographs; and the electric battery set to work. As a result of all this barbaric curiosity (for it certainly cannot be called science) the operator concludes that you only get vaso-dilator fibres in the posterior roots of the sciatic nerve. Certain results obtained by similar means by Morat and Bonne he declares to be "in complete contradiction of the well-known work of Sherrington"—another interesting instance of the way in which vivisectors appear to have entered into a unanimous agreement to contradict one another upon every occasion. The writer goes on to describe many revolting experiments upon dogs' intestines (the animals being anæsthetized with morphia and A.C.E. mixture and *subsequently curarized*) the result of which, after all, he admits, "is not of a very satisfactory nature." He writes in the most ordinary way of what may be witnessed if whilst a dog is put under A.C.E. and *curari*, the abdominal sympathetic nerves on both sides for a certain distance down the spine are extirpated, and the central end of the vagus nerve excited. Owing to the excitation causing dilatation of the blood vessels of the abdomen, the operator went on to extirpate, one by one, the abdominal organs. The stomach was taken out; sometimes the kidneys were removed as well; and the circulation of the liver cut off by tying the hepatic artery and the portal vein. Practically, there is nothing left but the limbs, skin, and muscles of the trunk, except, of course, the heart and lungs; and then upon this wretched eviscerated skeleton, lying helpless and motionless under *curari* ("the animal being fully curarized"), with its brain probably still capable of realizing and suffering all that is going on, the

electric battery once more begins to play. And all this—22 pages—to satisfy a bit of idle and worthless curiosity as to where the nerves come from which supply certain blood vessels in the hind leg of a dog.

The experiments by Dr. A. G. Levy, also at University College, in attempting

“TO ESTIMATE FATIGUE OF THE CEREBRAL CORTEX

when caused by electric excitation,” are very extraordinary, namely, after opening the skull he applied electric shocks to the brain in order to see to what extent the brain gets tired out by such annoyance. The various limbs of the wretched creature under operation were carefully secured so as to prevent any muscular contractions other than those to be investigated, and then a particular group of muscles on a certain limb were lifted from the bone and fixed to a pulley and loaded with a weight, and the resulting muscle curves caused by the contractions were mechanically marked on a recorder as the electric battery played upon the brain centre, and reacted on the muscles of the limb. If ever anæsthetics were required, they were required in such a horrible experiment as this, but alas, “as the nerve tissues of the cortex cerebri is extremely sensitive to the frequent, though often slight, variations of the degree of anæsthesia such as necessarily occur when ether is used, this latter anæsthetic could only be employed for the preliminary preparation of the animal.” The actual experiments were therefore, to quote the words of the vivisector, “generally performed under narcosis induced by morphine.” The writer goes on to infer that narcosis and anæsthesia are interchangeable terms, and specially pleads, “by means of morphine the animal may be kept in a state of anæsthesia which is practically unchanged in degree over periods of 15 to 20 minutes and often longer.” But with an evidently uneasy conscience as to the actual facts of the case he finally admits: “It cannot be claimed that the cortex will remain in an absolutely constant degree of anæsthesia (*sic!*), but under the conditions just stated, comparisons may be safely made between two or three consecutive curves.” Claude Bernard, one of the most barbarous vivisectors of modern

times, in *Leçons de Physiologie Opératoire*, page 155, says: "Narcotized with morphine, the animal still remains sensitive—he feels pain, but so to speak he has lost the idea of self-defence. Placed on the ground he can move, walk, try to hide—placed in the vivisection trough he lies motionless." Judge then what these helpless, firmly bound, and weighted victims must have suffered, and all for what? To find out that after applying an electric battery to the nerve centres of the brain for a considerable time, and producing for long periods an agonising cramp of the muscles of a limb, the centres at last get worn out and fatigued, and the muscles refuse to respond to the irritant! Did the cruel experimenter suppose ere he began that any other result would occur? Any costermonger in one of the back streets of University College could have told him that, without putting an innocent, faithful dog to untold torture in order to describe a simple commonsense fact by means of graphic and scientific language.

Here, too, is a case which the restriction craze of a certain section of so-called Anti-vivisectionists can never meet. Is Parliament going to define what an anæsthetic is? There can be no hope for animals but by the legal prohibition of vivisection itself. As long as it is allowed there will be endless loopholes for the prosecution of torture. Painless vivisection is a myth. This subject was continued with further experiments in the number for March, 1902.

THE USE MADE OF FROGS—

"God's gifts to Vivisectors"—is well seen in the same volume, where it is stated that iodine and iodides were injected into frogs, producing rigor mortis of the voluntary muscles in the course of several days. Frogs were placed under a bell-jar and exposed to iodine fumes until the brain and spinal cord became depressed and the muscles passed into complete rigor mortis in the course of from 20 to 30 minutes. Chlorine and bromine were similarly experimented with. If the operator were about to set up a frog hospital, this sort of thing might perhaps be excusable, but only so far as to warn other frog doctors not to put their patients under bell-jars in company with iodine fumes, and

to warn them against too free injections of iodide of potassium under the skins of batrachians.

In the *Journal of Physiology* for December, 1901, appears an article by Dr. Sherrington detailing experiments performed in the Physiological Laboratory of

UNIVERSITY COLLEGE, LIVERPOOL,

mainly upon tame monkeys, for the purpose of ascertaining the skin distribution of the spinal sensory nerve roots. The article is entitled "The Spinal Roots and Dissociative Anæsthesia in the Monkey," and the writer begins by frankly acknowledging that "the evidence obtainable from animals is gathered under obvious disadvantages." The experiments consisted in attacking the monkeys with hot wires—pinching them with forceps, and so on, operations having been performed under anæsthesia for the purpose of dividing certain nerves. And what is the conclusion of all this torment and annoyance to numerous tame monkeys? The experimenter confesses that his experiments are more or less fallacious, owing to the animals being unable to describe their sensations. "To know more of its character is urgently desirable," he says, but, he continues: "the information is only obtainable from examination of the human subject." In the last passage of the article, we read an unexpected confession of the only true solution of all such questions, a conclusion which Anti-vivisectors have been maintaining for the last quarter of a century. The author says: "I recognise that the problem here attempted has been one imperfectly accessible by inquiry upon animals. *It awaits fuller solution in the opportunities afforded by human disease where the attention of an instructed human subject can be enlisted and interrogated verbally.*"

In the *Journal of Physiology* for March of last year, 1902, appears an article by Dr. Francis D. Boyd, entitled, "Some Experiments on the

FUNCTIONS OF THE MEDULLA OF THE KIDNEY,"

performed in the Laboratory of the Royal College of Physicians, Edinburgh. It is one more attempt to "elucidate the complicated action of the kidneys in the secretion of normal urine." Various investigators have,

naturally, formulated various theories; each has his followers, and the more animals experimented upon and tortured the more complicated appears to become the complication, and it is about time the game was given up—for it must still remain “theory” at the end, and will serve no useful purpose in relation to the treatment of human subjects. Ludwig’s theory was found unreliable and inconclusive. Nussbaum thought he had decided the problem; then Adami proved him to be all wrong. Ribbert then had a “try” at it, and he appeared to think that there might be something in what Ludwig said after all; but now, after Ribbert’s revolting experiments upon rabbits’ kidneys, comprising the excision of those organs, or excisions of large portions of both, with subsequent lingering for days and weeks, Dr. Boyd comes forward to add further experiments and mutilations to the hundreds which have gone before, and declares Ribbert to be “extremely unsatisfactory and unconvincing!” His method consists of feeding rabbits upon a definite diet for a time, and then opening them and cutting away the greater part (the medulla) of one kidney; at the conclusion of another period he makes an opening on the other side of the body and the healthy kidney is totally removed. These severe operative procedures were carried out under the influence of an anæsthetic. As a rule the poor creatures only lived a few days after the second operation. But what did those few days of lingering mean? The experiment “proved nothing,” the investigator confesses, “except that it is possible to excise a considerable part of the medulla of one kidney without fatal results”—a fact established in the course of disease generations ago. The only result appears to be that Dr. Boyd finds everybody else is wrong, and he does not appear to be satisfied that he himself is right. It makes no difference to suffering humanity either way; but it makes all the difference to vivisectible animals.

Turning to the *Journal of Pathology and Bacteriology* for June, 1901, we find another instance of Scotch vivisection. Dr. Sinclair, of the Royal College of Physicians, Edinburgh, writes on the “Pathology of

IDIOPATHIC DETACHMENT OF THE RETINA,”

and seeks to correct more contradictions by previous

investigators. Among the experiments was, for instance, that of introducing particles of copper into the beautiful eye of the rabbit by means of the needle of a hypodermic syringe charged with filings; and then the eye was examined day by day through all its painful changes until forty days were ended, and the cornea had become so opaque that no further examination could be made, when the poor wretch was put out of its misery. Another experiment consisted in creating extensive hæmorrhage at the back of the eye by means of a large flat needle. In a further case salt solution was introduced behind the retina, and the changes noted for at least 28 days. Then some of the fluid was taken from the ball of the eye and injected behind the retina and watched for six weeks. And so on, and so on. The result of all this torture appears to be that the retina becomes detached as the result of uveal inflammation—according to Dr. Sinclair. Surely the hour has arrived when all this rubbishing waste of time and cruelty should be put a stop to.

In the same work for February, 1901, appears an article by Dr. Vaughan Harley upon the

EXPERIMENTAL PRODUCTION OF HEPATIC CIRRHOSIS

performed at University College, London. This consisted in the ligature of the hepatic duct. If the poor creatures suffered at all like human beings in the obstruction caused by a gall-stone in the bile duct, their life must have been very unenviable, and when we read "it is of importance to keep the animal alive for several months after ligature" we get some idea of what "Vivisection" really means. Ten cats, the writer tells us, were kept alive for twelve months.

Animals do not talk, and their inarticulate language may be interpreted to signify anything that the scientific onlooker, with a theory to establish, may choose to conjecture. If these are the demands of vivisection in the cause of science, then science must make way for justice and humanity. We may be faced by carefully compiled arguments framed to show the necessity of such practices as have been described in this article, and the presence of pain and suffering will by some be questioned, by others be denied; we have yet to meet with the competent and trust-

worthy interpreter of animal woes. The only course which any high-souled lover of animals can possibly take in the presence of such horrors is to denounce vivisection itself—root and branch—and to demand its immediate and total prohibition. To ask for less is to sell our birthright for a mess of pottage. We may have to temporarily accept less, but whatever we win, however far we force the Government to yield to our demand, the result achieved will be the nearer to the goal in proportion to the strength of our demand; and the power of the latter, the power which alone can lift this load from suffering creatures, is the cry—not of restriction—but that of good Lord Shaftesbury: “Vivisection is an abominable sin.”

Printed at the REFORM PRESS, 1 & 2, Took's Court, E.C., and Published
by THE BRITISH UNION FOR THE ABOLITION OF VIVISECTION,
32, Charing Cross, Whitehall, London.

Price 1s. per doz.; 7s. 6d. per 100.

THE CULT OF THE VIVISECTOR

By WALTER R. HADWEN, M.D., L.R.C.P.,
M.R.C.S., &c.

The meaning of the term " Vivisection."

THE strict meaning of the Latin derivative signifying the cutting of living beings is no longer adhered to, but the word Vivisection is used comprehensively to embrace all scientific investigations on living animals, including poisoning, starving, baking, suffocating, burning, inoculating and every other kind of similar research.

The object of Vivisection.

The object first and foremost in the mind of the vivisector is to attain knowledge. Few have admitted that their investigations have a *prima facie* purpose of directly benefiting either medicine or surgery ; many vivisectors scorn the idea. They readily confess that the gain of abstract knowledge, the clearing up of abstruse points in physiology, form the chief object of attainment ; and when it is remembered that original physiological research will gain the coveted Fellowship of the Royal Society and other learned bodies, together with the emoluments and honours which eventually follow in its train, one can readily understand the inducement which is held out to the vivisector to prosecute his methods.

The resulting alleged benefits.

Up to the present time I am not aware of any definite benefits either in the amelioration or cure of

human maladies or diseases which have resulted from this practice. Great promises are repeatedly made and high hopes are ever entertained in the direction of human benefit but still no practical result is forthcoming. It is true that the medical profession as a whole hold an entirely opposite opinion to this, but the medical profession know very little of this technical subject; very few of its members have ever investigated the correctness of the assertions made on behalf of the claims of the vivisector, and are far too busily occupied with their daily routine to interest themselves with a controversy which has really no practical bearing upon their work.

Is Vivisection a cruel practice?

In the Report of the Royal Commission for 1876 we read that Sir William Fergusson declared that if the public really knew what was actually going on in this country they would expect an interference on the part of the Crown and Parliament. And the Commissioners asserted, "Even if the weight of authority on the side of legislative interference had been less considerable we should have thought ourselves called upon to recommend it by the reason of the thing. It is manifest that the practice is from its very nature liable to great abuse. . . . It is not to be doubted that inhumanity may be found in persons of very high positions as physiologists."

Did the Act of 1876 modify this state of things?

"The Cruelty to Animals Act" prohibits any painful experiment on a living animal under a penalty of £50 for the first offence, and £100 or three months' imprisonment for any subsequent offence. This prohibition was made subject to certain restrictions. The experiment must be for the advancement of new physiological discoveries or knowledge useful in prolonging life or alleviating suffering. The experimenter must hold a licence and perform the experiment in a registered place. The animal must be anæsthetised and killed

before recovery if pain were likely to follow. And, finally, no such experiments were to be allowed for the illustration of lectures in medical schools, nor for attaining manual skill.

But certain provisos were added granting special certificates to licensees allowing them to experiment before students if absolutely necessary for their instruction; also, if anæsthetics would frustrate the object of an experiment, they might be dispensed with, and the animal might be kept alive as long afterwards as necessary until the object should be attained; and, lastly, experiments not necessarily for new discoveries, but for testing former ones, were to be allowed if "absolutely necessary" for the effectual advancement of such knowledge. Thus the second part of the Act entirely vitiated the first part, and the position of the vivisector was left precisely as it was before the Act was passed except for the restrictions as to licence and place. The fact that cruelty does exist may be proved for himself by anyone studying a modern work in physiology or medicine, or examining *The Journal of Physiology* and other similar publications during the last thirty years since the Act was passed.

Are not anæsthetics invariably used?

In the actual cutting operations chloroform or æther or A.C.E. mixture is generally administered; usually morphia is also injected, and frequently curare. Some very severe experiments are recorded under morphia alone (which, although only a narcotic, is nevertheless, for the convenience of the vivisectors on these occasions, not infrequently called an anæsthetic). Severe electrical stimulation experiments are recorded under morphia and curare. The latter drug paralyses the motor nerves, but leaves the sensory nerves intact. No natural respiration can then be carried on, even the muscles of the larynx being paralysed; artificial respiration has to be kept up, and

the animal can give no sign of the torture it may be passing through.

It may be urged, however, that at least the morphia will preclude suffering. But, in the first place, when an animal is curarised, it is impossible to be sure that it is under the influence of the morphia ; it is apparently lifeless and cannot respond to pain ; in the second place, morphia in itself does not render the animal insensible to pain ; it stupifies it to some extent and destroys its power of resistance. No surgeon would perform a major operation upon the human subject under morphia, or there would have been no ground for the surgeon's rejoicings when chloroform was discovered, and we passed from the terrible days of narcotising to those of anæsthetisation. But there is a further objection, in that an overdose of morphia would be dangerous, and very small doses frequently produce in dogs symptoms of diarrhœa, vomiting and convulsions, and interfere with experimentation. Curare obviates the necessity of any too great nicety upon this point.

So with chloroform and æther. Dogs—the chief animals used in major investigations—quickly succumb if the anæsthetic be pushed to its full extent, hence morphia and curare are frequently added and “light anæsthetisation” resorted to. In some cases, such as Drs. Brodie and Dixon's experiments on “bronchial muscles,” an anæsthetic would interfere with the inquiry into the reflexes.

When, however, the operative procedure is over, and the animal lingers on, often for a considerable period, the suffering and pain are at times very great. This is evidenced in Dr. Rose Bradford's experiments on fox-terriers in partial nephrectomy, and Dr. Walsh's experiments in excising the parathyroids of cats, and numerous experiments on the brains of monkeys by various physiological investigators.

Vivisection in relation to Medicine.

The greater part of experiments in this department, numbering many thousands annually, consist

of inoculations. These are frequently compared to a pin-prick, and such comparison is correct so far as the initial procedure is concerned. In the subsequent history, however, the matter is not so simple. Dr. Thane, the Home Office Inspector, in his Annual Report for 1901, says: "The experiment does not terminate with the injection. . . . The effect may be to set up a condition of disease accompanied by pain, and the experiment continues until the animal recovers, or dies, or is killed. . . . In some cases, such as the injection of certain drugs or of tetanus toxin, the effect produced is without doubt painful; in tuberculosis and standardisation of diphtheria antitoxin there is some difference of opinion among those who have had most experience as to whether the effects produced are attended by pain or not."

Are the Vivisection results reliable?

To quote men of experience upon this point, Lawson Tait said: "Vivisection has done nothing for surgery but lead to horrible bungling." Sir Wm. Fergusson did not know of anything in the realm of surgery that had been initiated by any work or experiment on the lower animals. Sir Chas. Bell, who discovered the double action of the spinal nerves, declared "experiments have never been the means of discovery; and a survey of what has been attempted of late years in physiology will prove that the opening of living animals has done more to perpetuate error than to confirm the just views taken from the study of anatomy." Sir Frederick Treves's testimony, which he published in *The British Medical Journal* in November, 1898, is striking: "Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man I found I was much hampered by my new experience, that I had everything to unlearn, and that

my experiments had done little but unfit me to deal with the human intestine."

When we come to examine the claims of brain investigations, no less an authority than Professor Charcot, of the Salpêtrière Hospital, Paris, has declared: "The only really decisive data touching the cerebral pathology of man are, in my opinion, those developed according to the principles of the anatomo-clinical method. That method consists in ever confronting the functional disorders observed during life with the lesions discovered and carefully located after death. To it, I may justly say, we owe whatever definite knowledge we have of brain pathology. As for the localisation of certain cerebral functions, this method is not only the best, but the only one that can be employed."

The differences between animals and man are fatal to correct conclusions as regards experimental drug testing and poisons; frequently a drug poisonous to man is inert when given to an animal, and the action will vary even in different species of the same class. Moreover, as regards the reliability of vivisection from a scientific point of view, conclusions are largely discounted by the fact that the investigator is limited to objective signs. He is not qualified to judge correctly of subjective symptoms concerning a creature which cannot express its feelings in articulate language. This fact probably accounts for the proverbial contradictions upon practically every scientific point which obtains among vivisectors. It is needless to say anything about the fashionable "up-to-date" method of treatment yclept serum-therapy, than that whilst the theory upon which it is based is unsatisfactory and scarcely scientific, the statistics by which it is sought to establish its reputation are equally unsatisfactory and still more unscientific. The dangers associated with the system are acknowledged by all.

The Morality of the Question.

That animals—each according to its own class—

have remarkable intelligence, no one will doubt. That they are equally as sensitive to pain as human beings, none who have taken the trouble to understand them will deny. In many cases the sensory nerves of lower animals are far more highly developed than in human. That these creatures have rights as belonging to the same creation as ourselves is a fact that few persons prepared to think for themselves will call in question. The only argument which can be urged as a ground for the exploitation of these sentient and sensitive creatures can be the cowardly one of vicarious suffering—suffering, too, on behalf of those whose right to demand it consists solely in the possession of the power of the strong against the weak.

If the practice be not only cruel, unreliable and unscientific, but also immoral, it is, in my opinion, the duty of a great and noble profession like that to which I have the honour to belong to decline to lend its countenance thereto.—*Reprinted from "The Manchester Medical Students' Gazette," January, 1907.*

Published by the British Union for the Abolition of Vivisection, 32, Charing Cross. Price $\frac{1}{2}$ d.; 4d. per dozen.

MR. WALTER LONG

AND THE

IMPERIAL VACCINATION LEAGUE



LECTURE

BY

DR. WALTER R. HADWEN

(of Gloucester),

AT A

PUBLIC MEETING

HELD IN THE

BOW BATHS HALL, ROMAN ROAD, BOW, E.,

On March 19th, 1903.

MR. WALTER LONG

1894

IMPERIAL VACCINATION LEAGUE

1894

LECTURE

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DR. WALTER R. HADSWEN

(for O. H. H. H.)

1894

PUBLIC MEETING

1894

1894

ON MARCH 10th 1894



IN connection with the Annual Meeting and Conference of the National Anti-Vaccination League held in London on the 18th and 19th March, 1903, a great public meeting was held on the evening of the second day in the Bow Baths Hall, Roman Road, Bow, E., and a large number of the Conference delegates were on the platform, including LIEUT.-GEN. PHELPS, MESSRS. BONNER, JOHN BROWN, T. MARSH, W. THIRTLE, W. BEGG, POCOCK, FRASER, WEST, REV. W. W. HOWARD, DR. W. R. HADWEN, etc., etc.

The chair was taken by Mr. Councillor Mark Dalton who, in opening the meeting, said that, although about 50 per cent. of the population in the district of Poplar had been unvaccinated, they had not suffered during the recent smallpox epidemic any more than the other great boroughs that made up the Metropolis. (Cheers.) He had come to the conclusion, after seeing the Medical Officer's report from fortnight to fortnight, that vaccination was not the least protection to anybody. (Cheers.)

The chairman then called upon Lieut.-Gen. A. Phelps, President of the National Anti-Vaccination League, to address the meeting. The General said he wished to draw their attention to certain points which he thought that even the pro-vaccinists would have to take into account if they were drawing up a fair-minded Bill in favour of vaccination. Looking at the matter from this point of view, he considered that the following were the desiderata they should specially attend to:—

1. They should identify the disease which was conveyed in vaccination.
2. All dangerous impurities in the lymph should be effectively prohibited.

3. There should also be an effective prohibition of the use of variolous matter. They had had ample evidence of the necessity for this in the fact that the recent London epidemic had followed upon the disgusting experiments by Dr. Monckton Copeman in connection with the inoculation of monkeys with smallpox matter for the purpose of propagating lymph for vaccination purposes.
4. Then they ought to see that the poor tortured calves were not sold as food. (Hear, hear.) In any honest Bill brought in by the pro-vaccinists there ought to be a provision for the cremation of all calves used as vaccinifers.
5. They ought to provide that the vaccination officers, who were employed and paid by the Guardians, should be under the control of the Guardians, and not of the Local Government Board.
6. Provision should be made for an accurate record of the vaccinal status of persons in death certificates. (Hear, hear.)
7. Then he thought they were entitled to receive accurate photographic records of the cases treated in the hospitals. If photographs of all the cases were available—of the vaccinated as well as the unvaccinated—the superstition would die in a fit, in a very rapid manner. (Laughter.)
8. They ought to have public access to the re-vaccination register on payment of a fee, in the same way that they now had access to the vaccination officer's register of primary vaccination.
9. Then there ought to be compensation in cases where vaccination failed to protect against smallpox. (Cheers.)
10. And also compensation for injury or death resulting from vaccination. (Hear, hear.) Vaccination only protected them from smallpox when it killed them. (Laughter.)
11. Then the honest pro-vaccinist should provide in his Bill that any person going to the registrar of births, to register a birth should be able to get from him a certificate of conscientious objection simply for the asking. (Cheers.) That would put an end to the flouting of the law by the anarchists upon the bench, who refused parents the certificate to which the law entitled them.
12. Certificates of successful vaccination and re-vaccination

should be given in all cases. This would tend to eliminate the "not stated" or "doubtful" cases. (Hear, hear.)

13. The written advice of any qualified medical man not to vaccinate any particular case should be a valid defence against prosecution.

14. Lastly, no medical officer of health, or candidate for that position, should be prejudiced in any way for the honest expression of his opinion on any scientific question relating to health. They had all heard about the scandalous treatment meted out to Dr. Scott Tebb by the Local Government Board, in refusing to sanction his appointment as medical officer of health for Penge, because he had written a book against vaccination. (Shame.) This sentence of boycott made the opinion of medical officers of health on the subject absolutely worthless. (Hear, hear.)

He thought they would all agree that these points were elementary and just, and that unless such provisions were included in any Bill that was brought into Parliament, the Bill would in no sense justify the action even of the pro-vaccinists, let alone of the anti-vaccinists. As for them, they had one unalterable decision from which they would not swerve. It was that they would not cease to agitate until freedom had been restored to them, and the whole imposture had been swept off the face of the earth. (Cheers.)

The chairman said one thing had struck him forcibly while Lieut.-Gen. Phelps had been speaking, and that was that they made a mistake in not getting the general into Parliament. (Hear, hear.) He would have been just the man to pioneer such a Bill through the House. He thought he ought to send his suggestions on to the Local Government Board. (Laughter.) He would now call upon Dr. Hadwen. (Cheers.)

DR. HADWEN.

Mr. Chairman and Friends,

Lieut.-Gen. Phelps has suggested to us to-night fourteen things which ought to be remedied in regard to the question of vaccination. Now, if we get rid of vaccination itself, the fourteen desiderata of a new Bill would be unnecessary. (Cheers.) What we are here for to-night is not to tell the Government

what kind of amendments they should bring into their proposed Bill, but—as the General wound up his speech by proclaiming—we are here to declare that we intend—and we *mean* it, and as Englishmen we say it—to get rid of this abominable Act altogether. (Cheers). We are not going to have any tinkering with this miserable law. We have had quite enough of that already. The thing has to go, and it *shall* go. (Cheers). If people want to have vaccination they can be tattooed from head to foot if they like, but what we say is this, that if *we* don't want it we are not going to have it forced upon us against our will. We are not going to have a filthy cattle-disease inoculated into the blood of our own healthy children, and we decline to pay for other people's children being humbugged in the same way. (Cheers).

Official Tyranny and Bribery.

The Local Government Board in order to find a safe position, as they fancy, for the few so-called medical experts who pull the wires at the back of the gentlemen upon the front Government benches in the House of Commons, have lately issued regulations—which stand practically in the place of Acts of Parliament—granting public vaccinators enormous fees, and deliberately giving permission to vaccination officers to flout the Guardians, who are their masters, and enabling them to take the whole laws into their own hands in order to embarrass people and practically compel them to have their children submitted to this filthy rite. Take the case of the public vaccinator for Marylebone,—Dr. Greenwood, the President of the Society of Public Vaccinators. On the 16th June last the Board of Guardians received a bill for vaccination of the Marylebone district, for three months, if you please, to the tune of £2,249. (Shame). And Dr. Greenwood says he believes in vaccination. (Laughter). He has been advising everybody in Marylebone to be vaccinated. (Laughter). I want to know by what right ratepayers have to pay for other people in this style. There was a medical man down in the west country who, as soon as he found he was entitled to 7/6 a head for everybody done at their own homes, and only 2/6 a head for everybody done at the surgery, called all his family and servants around him in the drawing-room, vaccinated them

there instead of in the surgery, and sent in a bill to the Guardians at 7/6 a head. (Laughter). They were all done in their own homes. (Laughter). The Guardians didn't like it, but they had to pay the bill; the ratepayers in their turn were "done" to that extent, and I have no hesitation in saying it is one of the biggest scandals upon the face of the earth. (Cheers).

A Remarkable Deputation.

Now the other day there was a deputation waited upon Mr. Walter Long, the President of the Local Government Board, from the Imperial Vaccination League; the Archbishop of Canterbury was at the head, and there was a Jewish Rabbi somewhere down near the bottom, (laughter) and sandwiched in between there were a number of doctors and other persons, and pretty figures they cut in the Whitehall parlour! (Cheers). They all made speeches. They evidently had all been specially coached up half-an-hour before-hand, and the rubbish they talked to Mr. Walter Long, and the rubbish that that gentleman talked back to them, would have done for one of those splendid farces of Gilbert and Sullivan. (Laughter).

Mr. Long and the Hydrophobia Cure.

Dr. McVail started by buttering Mr. Long. He told him that he had practically banished hydrophobia from the land and therefore they looked to him to banish smallpox in the same way. I happen to know a little about that hydrophobia business. There is an institution under the control of the London University—the Brown Institution, where they made a grand discovery the other day by means of which hydrophobia could be correctly diagnosed—so they said. As a result of this diagnosis they had been able to spot every mad dog in the kingdom (laughter) and Mr. Walter Long had been able to fix a muzzle upon every poor dog's nozzle, and the result was that hydrophobia was gone. Well, when I heard that I wrote up to the Superintendent of the Institute—Dr. Rose Bradford—and asked him if he would be so good as to tell me what was this great discovery by means of which they had been able to diagnose hydrophobia so accurately. He sent me a very curt letter back and told me any questions I wanted

to ask like that should be put to the Secretary of the University of London and not to him. I thought he was the proper man to know as he was supposed to have discovered it, (laughter) and as I was a scientific man myself, I naturally thought he would help me to cure my dogs as well as Mr. Walter Long. (Laughter). However, I wrote to the Secretary, and after waiting a little time received a reply to say that my letter had been transferred to another Secretary who was then on leave and would be back again in a month. This Secretary came back from his holiday, and wrote and told me that the matter was of such importance that he must lay it before his committee. I waited altogether two months to find out this wonderful means which had been discovered for the correct diagnosis of hydrophobia. When the committee set to work they in their turn brought it before the Senate of the London University itself, and then, at last, I got a letter from them telling me that they very much regretted that they could not supply me with any more information. (Great laughter).

At the very time that Dr. McVail came before Mr. Long and buttered him up in this fashion there were no less than five counties in South Wales, and large districts in Devonshire and Cornwall, that were muzzled because of officially certified hydrophobia. If this is the way that hydrophobia has been banished from the country, and if that is the sort of diagnosis that has been discovered, one can understand the delay in giving information; and if this is the way that Mr. Walter Long is going to get rid of smallpox, I pity him the job. (Hear, hear).

Officialdom Pledged to Vaccination.

Now, after they had buttered him a considerable time, Mr. Long turned to them to make his speech, and the first words that fell from his lips were these, "Nobody in the office of the Local Government Board would attempt to dispute either the assertions that had been made in support of vaccination, or the gravity which had rightly been attached to its successful performances throughout the country." I don't suppose anybody in that office would. (Laughter.) These men at the Local Government Board who are moving these things are getting their living out of it. (Hear, hear.) The whole of the wire-pulling of the Local Government Board on this

question is done by a dozen or so gentlemen with their £800 to £1,500 a year; it is their bread-and-butter; and it is these men that are working the public vaccinators throughout the length and breadth of the country. Of course the people in that office will be prepared to accept every argument that can be used in favour of vaccination. They will stick to it as long as ever they can, but we intend they shall give a reason for their position, or else, though they may sit as fast as ever they like, we will tell them in the words of the old nursery rhyme,

Humpty Dumpty may sit on a wall,
Humpty Dumpty shall have a great fall;
And not all the King's horses nor all the King's men
Will be able to put Humpty Dumpty together again.
(Laughter and cheers.)

The Bogey of Official Statistics.

Mr. Long then went on to tell them that "the Local Government Board had a constant and growing experience of the advantages of vaccination." Well, what is the experience that the Local Government Board gets? It is simply the evidence which is forwarded to them from the interested parties connected with the vaccination system, and as soon as ever we try to get those facts ourselves we find we are check-mated at every turn. Look at the Metropolitan Asylums Board. I see two members of that Board in this hall to-night, and if I do not say what is accurate they will be able to correct me. Now, the Metropolitan Asylums Board—that is the power, you know, which is responsible for the conduct of all the smallpox in London—had a number of cases carried down to their hospital ships and, according to the Act, which was passed in 1898, anyone by payment of a certain fee, shall be allowed to inspect the hospital registers. We have been so abominably humbugged for years past by the concocted statistics that have been sent up to the Local Government Board, that we managed to get a clause put into the Act of 1898 that in future we should be permitted to examine the books of every Sanitary Authority, to get the names and addresses of the smallpox patients, and so be able to test the conclusions as to vaccination which the medical men had been accustomed to put down. So we send down our representative—who is on

the platform to-night—with the money in his pocket, and we asked to be allowed to examine their books. The medical officer took stock of the awkward situation, and politely said, "We cannot allow you to come here unless you are first of all vaccinated." (Laughter.) Now the joke of the matter was this: it came out before the Metropolitan Asylums Board about the same time that friends of the smallpox patients were allowed, by a resolution, to visit their friends in the hospital without being vaccinated at all, but a messenger from the National Anti-Vaccination League must not go inside the doors unless he had the filthy lancet scratched upon his arm. (Shame.) Well, finding this was no good, we pressed the point that the Act of 1898 declared that the Sanitary Authority should show its books. "Oh, but," they said, "we are not a Sanitary Authority." (Laughter—a voice: Quite right, too—more laughter.) And the result was that they evaded that point. But fearing lest pressure might be brought upon them, the medical officer declared that it would not be of much use if we did examine the books, because the figures of the Registrar and the figures in his book did not tally. (Laughter.) "I never enter up my books," he said, "until the cases are completed." Why? Because dead men tell no tales. (Hear, hear.)

How Statistics are Made.

When the cases come in, and the marks are covered up with confluent smallpox, they cannot tell, of course, whether they are vaccinated or not. What the friends say has little to do with the question, the marks are hidden and those patients are unvaccinated; at any rate, unless they get well and the marks can be seen; they may, perhaps, be filled in then as vaccinated; but, as is often the case in these severe instances, when the patient dies the register is never filled up at all, and he dies an "unvaccinated" man. (Hear, hear.) This is how it is that the statistics have been concocted. (Hear, hear.) That is the sort of experience that Mr. Long says so thoroughly convinces them of the value of vaccination, and therefore he goes on to assert that "it was a great wonder that it should be necessary, at this period of the world's history, for a great deputation like that to wait upon him with regard to such a matter." I agree with him. It is a great wonder. It is

one of the wonders of the age, for if, after 100 years of experience, vaccination cannot speak for itself without having all these big-wigs coming up to try and prove that it is a good thing, then all I can say is it must be the biggest fraud of the century. (Cheers.) We have had 100 years of cow-poxing, and if it were a good thing it would speak for itself. (Hear, hear.) People don't want to have smallpox, and if this thing prevented smallpox it would have proved that it was a security against it ages ago; but the people of this country know that it is a sham. (Applause.) As the General has told us to-night every epidemic that has ever occurred yet has begun with a vaccinated person. (Cheers.) The first cases have always been amongst vaccinated people, and the majority of the sufferers have always been vaccinated (hear, hear) and I say that, instead of having a Vaccination Act such as they wish to bring into the House of Commons, we ought to have an Act passed to protect us against those people who are vaccinated. (Cheers.) It is a wonder that, actually, they are obliged to get all these people, who clearly know nothing whatever upon the subject, to go and wait upon Mr. Long in this way, and try to befool the public over this business, in order to make believe that vaccination is a real article, and to bolster it up with these artificial props. It shows that it must be a miserable superstition, or it never would have required bolstering in this way. (Cheers.)

The Measure of Official Intelligence.

But Mr. Long goes on to tell us that such a process as vaccination "ought to receive the unqualified support of every intelligent person." (Laughter.) But then he qualifies it by saying "he hoped that that remark would not be misunderstood by those who did not believe in vaccination." He also qualified it in this way by telling them frankly that "the more *he* had studied the question the more difficult he had found it to understand how anybody could hesitate to give their hearty support to the process." So that you see it is not the Local Government Board—we must not misunderstand Mr. Long—it is that every "intelligent person" ought to accept vaccination as the most wonderful remedy against smallpox. And this is based, as he goes on to tell us, upon his own opinion, that is, that he being, as he says, the respon-

sible head of a great public department, and he having studied the question, and he having come to this decision about it, and he being a most intelligent man, everybody who differs from him must be, according to his reasoning, the most arrant fool in creation. (Laughter.)

What Mr. Long Knows.

Then he goes on immediately to tell us how far he has studied the question, and what it is that so thoroughly convinced him that vaccination is the finest thing on the face of God's earth. It is this, because smallpox has been banished from Germany. (Laughter.) Well, you know, this is a day in which we hear a good deal about things that are made in Germany, and this is a story that is something like those tales that come to us from those fairy lands far away over the sea. So this story about Germany is dinned into our ears at every turn. One would have thought—seeing that the Local Government Board is getting such marvellous experiences from all parts of the country with regard to vaccination—that it would at once have trotted out statistics from our own country; their pigeon holes ought to be full of them. But not a bit of it. When this League issued its manifesto the other day, the A and Z, beginning and end, of the whole business was this wretched Germany. When the public vaccinators brought out their manifesto the other day it was the same thing—it was all Germany. And now, when Mr. Long tells us on what he bases his opinion as an intelligent man, it is all because of the condition of things in Germany. (Laughter.) He goes on to tell us a little bit further that within the last 24 hours—this is how he let the cat out of the bag—he had been reading a book by Dr. McVail (laughter and “Oh! oh!”) and it appears that this book had given him his special cue, his divine inspiration, for the speech which he retailed before his select audience. If he had only read my friend Mr. Milnes' “McVail unveiled” he might have known a little more about the subject. (Cheers.) But Mr. Walter Long, the president of the Local Government Board, appears to be very like that old lady that Sidney Smith talks about, who never read the other side of a subject in case she should be prejudiced. (Laughter.)

What Mr. Long Does Not Know.

It is very interesting indeed how Germany has settled the whole question. They have had no smallpox in Germany since the compulsory re-vaccination Act of 1875 was passed. But why do they begin with 1875? There was a compulsory Vaccination Act in Prussia from 1834, and, according to the Acts of 1834-5, every child in the country was vaccinated before it was twelve months old, and every child, before it began its school life, had to be re-vaccinated; again, every woman, before she was married, had to present a certificate of vaccination, and when the males reached adult life and entered the army they had to be vaccinated with ten marks on each arm, and the law declared that if they kicked up a shindy at it they were to be held down and vaccinated by force. (Shame.)

Now in 1871-2, that is 35 years after the passing of that stringent Vaccination Act, which vaccinated and re-vaccinated and re-re-vaccinated every citizen practically in the country; they had one of the biggest epidemics that ever occurred on this earth, and no less than 124,948 of Germany's vaccinated and re-vaccinated citizens died. The consequence is that when pro-vaccinators want to find an excuse for re-vaccination they try to cut these 35 years out. Everything before 1871-2, when the great pandemic occurred, was to be blotted out of sight and they wanted to start afresh with 1875 after the German empire had become consolidated and the Prussian laws had been incorporated in those of United Germany. They said it is since that Act was passed that smallpox has been banished from the land. But they won't explain the 35 years before, and they won't tell us what occurred since. Did it stop then? No it didn't! It is true smallpox declined after the great epidemic of 1871-2; it would be a wonder if it did not. But it had all practically disappeared before the Act of 1875 came into force at all. (Cheers).

Why Smallpox declined in Germany.

Between 1872-5 there was practically no smallpox in the country, because the susceptible material had been used up. But after 1875 it still lingered, there was even a recrudescence of the disease, and it rose and rose and rose right on to the year 1883, when a new Act was passed, and that Act ran in this

way : " The local bye-laws shall include isolation for smallpox of the entire house, as well as of the chambers where the patient lies, and the isolation shall be continued after the removal of the patient to the hospital and until all needful measures of disinfection shall have been carried out, and anyone wilfully disregarding these orders will be punished with imprisonment." It was sanitation and isolation that swept the thing out of the country. (Cheers). But Mr. Walter Long does not say a word about that. Smallpox decreased after 1883, and from 1887 they have had practically no smallpox in the country. Isolation and sanitation did their work. (Hear, hear). For when they received the money from the French government the Germans, like level-headed men, were not going to waste it, but they used that money for purifying their River Spree, for building model barracks for their soldiers, for clearing away the wretched rookeries that they had in their cities, for bringing good water and proper drainage into their centres of civilisation, and the end of the matter was that by sanitary measures and isolation they cleared this filth disease from their midst. (Cheers). But remember this, the result which has happened in re-vaccinated Germany in consequence of sanitation and isolation, has likewise happened in un-vaccinated Leicester for the same reasons. (Loud cheers). And in both cases—both in Germany and Leicester—the general death rate has been reduced ; indeed Leicester has carried off the palm in this respect, for her death-rate which was 27 per 1,000 in 1872, when practically all her inhabitants were vaccinated and sanitation and isolation were neglected, declined to less than 16 per 1,000 in 1901 (when practically all were un-vaccinated) under the influence of her hygienic laws. (Renewed cheers.)

Why Smallpox Spread in London.

And what has happened recently with regard to your own Metropolis? Where has your smallpox occurred? It has occurred in those parts of your city which have been the most overcrowded ; Stepney has been one of the worst places (Hear, hear.) And this is what Mr. Long needs to learn. You are not going to stop a filth disease by pumping fresh filth into the blood system of the healthy body. (Cheers.) What you want to do is this : get into people's houses God's fresh air. (Hear, hear.) Why don't the doctors set to work

and agitate to get that Act put into full force for the better housing of the working classes? (Cheers). Oh! this miserable inoculation business, they are beginning at the wrong end of the stick. (Hear, hear.) Look what they did the other day with their wretched typhoid serum—a practice based upon a similar stupid theory to that of vaccination—how they inoculated our brave soldiers who went away to the front. (Shame.) Mr. Walter Long's own brother, Colonel Challoner, was vaccinated with that typhoid serum to protect him against enteric in South Africa, and he became so ill that when he landed at Capetown he had to go to hospital, and then had to return back to this country without proceeding to the front at all. The inoculation of this filthy serum had been sufficient to render him *hors de combat* without any intervention of a Boer bullet. And what did it do for our soldiers? Did it stop them having enteric? Why, seven-tenths of the deaths were due to typhoid fever, which the poor wretches had been protected against. I tell you what, my dear friends, if instead of the officers carrying their pianos and harmoniums over the African veldt, they had been ordered to chop them up for firewood to boil the water for the soldiers——(Remainder of sentence drowned by cheers.) And that is the abominable part of this system—it is beginning at the wrong end of the stick. Instead of getting at the root of the matter, and stopping the causes of these diseases, they are playing with the disease itself, and professing, by inoculating what they consider to be a mild form of the same disease into the human body, to protect people against it. Instead of that, as the General told us to-night, they are only spreading smallpox through the country. As he truly told us, the more vaccination the more smallpox, the less vaccination the less smallpox. (Cheers.)

The Legend of Pock-marked Faces.

Then Mr. Walter Long goes on to favour his deputation with another sublime illustration of the way he has studied the question, or, rather, exposed his ignorance (laughter) and it is this: "It was a common remark, often heard from people of a certain age, who said that in their young days it was quite an every-day occurrence to meet men and women, one after another, in the daily avocations of life, who were dis-

figured by smallpox, whereas now it was the exception." Now, how on earth Mr. Long could have been so lacking in perspicuity—a man of his intelligence, too (laughter)—as to have quoted that old grandmother's story, I cannot, for the life of me, conceive. We often hear about the old women up at the Local Government Board, but, really, Mr. Long appears to shine as a grandmother amongst them. (Laughter.) Why, you know, they told the same story in the year 1821. The National Vaccine Establishment said it in their report in 1822; they repeated it in the year 1825 that vaccination—and it was not compulsory then—had worked such wonders that you never saw any pock-marked faces. In the year 1831 Dr. Epps said the same thing. He declared that vaccination had worked such wonders that there were no pock-marked faces to be seen. And then you come to the years 1871-2, that is, more than 40 years after these statements were made, and 20 years after vaccination had become compulsory, and then you read in the "Lancet" for June 29th the most deplorable fact that there were smallpox-marked faces in every direction. Why was this? It was because, in the years 1871-2, after 20 years of compulsory vaccination, we had the greatest epidemic of smallpox upon record, and where you have smallpox, if it is not properly treated, you are bound to have pock-marked faces. This was the reason: the more vaccination the more smallpox, and the more smallpox the more pock-marked faces. (Cheers.) But then you say: "Why is it that they had so few pock-marked faces in 1822?" Well, I will tell you:

Why Smallpox declined in England.

Before Jenner—that is the man who took up the dairy-maid superstition and made a good paying thing out of it—before Jenner invented this nostrum of vaccination, they had another grand remedy for smallpox, and that was what was called inoculation. The idea was this, everybody was supposed to have smallpox some time in their life. Just like you, dear mothers, fancy your children must have measles, chicken-pox, and all the rest of it, and you are heartily glad when they can have these infantile complaints and get them over. (Laughter). And so they fancied the same with smallpox; they said "Why not give people a mild attack of smallpox and get it over and

done with." Lady Mary Montagu, in the year 1721, wrote a letter from Turkey to some of the aristocrats in this country telling them that there they gave their children smallpox when they were quite young, and what a splendid thing it was for them to take it and get it over. And she advised everybody in this country to do the same. The King on his throne, the Duke of Clarence and all the illegitimate youngsters, (laughter) and all the courtiers that surrounded his august Majesty, were inoculated, and every honest mother in the kingdom had to follow in the same train. Why, you read in the old diaries of the past how these ladies used to hunt poor little wretches through the streets, and how they carried some of this smallpox filth in little tubes to inoculate youngsters in every direction. Parsons used to stand in their pulpits and preach the glories of inoculation ; of course *they* went with the genteel mob. (Laughter). And the end of the matter was that everybody, right through the length and breadth of the country, was inoculated with smallpox. Then when Jenner came with his cowpox they began to bully these people who were inoculating smallpox because they were spreading the disease, and at last he got his cowpox in in such a firm way that the same stupid people up in high places, who were taken in by the inoculation craze, were equally mad now after the cowpox craze, and last of all an Act of Parliament was passed giving a month's imprisonment to anybody who dared to inoculate a person with smallpox. By these means the doctors were stopped from smallpoxing people, and of course the pock-marked faces went out. (Cheers.)

Why Smallpox Rose and Fell.

But long after vaccination became an established institution, and 98 per cent. of the population were vaccinated, smallpox began to spread as before, and in 1872 once more the pock-marked faces appeared, and they had it pretty well as bad, according to the "Lancet," as it had been before vaccination was introduced. Since then sanitary measures have come in, and vaccination has become almost a dead letter. We have passed our splendid 1875 Public Health Act. Medical officers of health and sanitary inspectors have been appointed throughout the land. Good water has been introduced into all towns, hamlets, and villages. We have to have proper drainage and

every sanitary measure possible. The consequence is that, with less vaccination and more sanitation, we have less smallpox, and consequently less pock-marked faces, and except for this little outbreak in London—the result of your horrible smallpox-monkey-calf-lymph, and official bungling—the country has been practically free of smallpox for years. (Cheers.) And where smallpox has spread, there you will find pock-marked faces, although three-fourths of the victims were subjected to the Jennerian rite. That is the history of the pock-marked faces, Mr. Long. But Mr. Long has so studied the question he cannot understand how any intelligent person should not think the same as he does, and I am not surprised that he should think so. (Laughter.) He then goes on to tell us that nobody could suppose that isolation merely could possibly have got rid of smallpox. “What could do it,” he asked, “what could do it but vaccination?” But then isolation has only just been begun, and very badly begun, too, in London. If isolation had been properly carried out you would not have had even the epidemic that you had recently. What’s the use of Mr. Long saying isolation could not do it, when isolation has never been practised until recently. The fact is clear that all the time whilst there has been much sanitation and little vaccination smallpox has been going down. Contrast that with the condition of things before the passing of the Public Health Act, when, with more vaccination smallpox went up. (Applause.)

That blessed word “Re-vaccination.”

But he goes on to tell us this—we must have re-vaccination. This had been urged upon them because they had it in Germany, in spite of the damning story of thousands of our own re-vaccinated soldiers and sailors suffering and dying from the disease. Now I have shown you that the whole statement with regard to Germany is a downright fraud. But we have another experience, and a very marked experience, with regard to re-vaccination. A most colossal experiment has been tried in Japan. In 1872 a law was passed there making vaccination compulsory, but owing to the great mortality from smallpox in 1885 they passed another law for re-vaccination, and since then re-vaccination has been compulsory in Japan every 7 years. Now what is the result of it? Since 1885 in Japan,

in pursuance of that law, between the years 1886 and 1892, no fewer than 25,474,370 persons have been re-vaccinated and re-re-vaccinated. Two-thirds of the entire population of Japan were re-vaccinated and re-re-vaccinated during those seven years, and yet during the same period that country lost no fewer than 38,979 people from smallpox and 156,175 cases were notified. Thus you see re-vaccination has been tried in a most colossal style in Japan, and it has been proved to be as big a fraud as in Germany. And yet Mr. Walter Long comes before us and tells us *he* has studied the subject and *he* cannot understand how any intelligent person does not think the same as he does. (Cheers).

The Government Secret.

But he says they are going to do something, they are going to bring in a Bill, they are going to manipulate the whole matter, for, he says, it is most important that the views held by the Local Government Board should be thoroughly known and every effort should be made to prevent smallpox. So he is going to bring in a Bill. But he cries with stentorian earnestness—and this is delicious (laughter)—“I must not tell you what it is we are going to do. If I were to tell you what kind of a Bill I was going to bring in all the anti-vaccinators in the country would get themselves into line of battle much earlier than was desirable.” (Laughter). Oh, these poor despised anti-vaccinators! Why, the Local Government Board and Mr. Walter Long, and all the rest of them up there, are shaking in their shoes because of us, and they are afraid of their lives to tell us what they are going to do lest we should get into battle array too soon and shoot them all down. (Cheers). They are perhaps afraid that we should be coming through the Rye. * (Cheers). They are afraid that we should be giving them another dose of the Woolwich Infant. * (Laughter and cheers). He thinks he is going to bring in a Bill at the fag-end of a Session, late at night, when best part of the members are gone and everybody is worn out, and the anti-vaccinators cannot get into battle array to oppose him.

* Dr. Hadwen referred to the recent defeats of the Government at Rye and Woolwich, where candidates pledged to vote against compulsory vaccination were returned with immense majorities.

But he is very much mistaken, we are not such fools as we look. (Cheers). And we will let Mr. Walter Long know, with all his "intelligence" that he boasts about, that after all we are perhaps quite as intelligent and wide-awake as he is. (Cheers).

Mr. Long implores the I.V.L. to help him.

But, he says to the Imperial Vaccination League, "I do hope you will make your views known right through the length and breadth of the country." He says "the Anti-vaccination League are pressing their views, and it is a most unfortunate thing that the Imperial Vaccination League had not come into existence many years ago. (Laughter). He had seen numbers of good men put up for constituencies who had no definite views about vaccination—had never thought about the subject, never read its literature, never studied it at all—and the anti-vaccinators attacked them and they lost their seats." (Laughter and loud cheers). Now, he says to the Imperial League, do try and help them. Pick out these poor fellows right and left, bolster them up, salt their backs, bamboozle the electors, spread literature, have meetings, and make it known in every direction. I suppose the Archbishop of Canterbury, and the Jewish Rabbi, and the Roman Catholic Cardinal, and all the doctors and parsons of the I.V.L. are to become political recruiting sergeants, and all for the glory of the biggest medical superstition of the past or present century. (Laughter.) Well, the so-called "Jenner Society" said they were going to do that. They issued their circular some years ago, and they said: "This society is specially formed for the purpose of educating the working-men of this country upon the great benefits of vaccination"; and we waited and waited so anxiously to get educated; (Laughter) we were all going in a body to learn, and the months rolled by and the years sped on, but they have never held a public meeting yet. (Laughter). Dr. Bond, who is the "Jenner Society" itself, was present in the deputation, but he was mum about it. He no doubt looked upon the innocent Mr. Long as a huge joke. (More laughter). We sent up to the Imperial League the other day—a gentleman here to-night sent the request—and asked if they would send a representative, either a layman or a doctor, we didn't care which, to debate the subject with us. The secretary sent the

letter to the hon. secretary—Mrs. Garrett Anderson—and she said in reply “If you will look into our manifesto you will notice that it says we will circulate literature and we will hold meetings, but it does not say a word about debates (laughter) and the consequence is that we don’t intend to have any.” (Great laughter). My friend, Mr. John Brown, who is here, (cheers) also asked them to send down their best man, the other day, to come and debate the subject. Not a bit of it. They didn’t think it advisable. (A voice :—“They’ve a little sense left,” laughter and cheers). Yes, we get a faint glimmer of that scarce product occasionally. (Renewed cheers). And therefore poor Mr. Long when he asks them, and begs them, and implores them, to go and bolster up these good men who don’t understand the subject, and who get kicked out of the constituencies because they’ve never studied it—it is like the voice of one crying in the wilderness :—“Make your paths straight.” They cannot do it, and they dare not try. (Cheers.) The Imperial League don’t intend to attempt anything of the sort, they know a trick worth two of that. They will send out their literature, no doubt, and if they can get a hole and corner meeting packed with their followers they will have it, and send their own report to the newspapers, and their resolutions to Mr. Walter Long, but let them come on to a public platform, and let them face us here. (Cheers). No they won’t do it.

A New Poor Law Relief.

He then goes on to tell them that he would take the power away from the Guardians. He says “it is surely wrong for the Guardians to have the power of vaccination, and they ought to be relieved of such power.” Why, they have taken that away long ago. (Hear, hear). The Guardians have no power left, Mr. Walter Long! The humbugs at the Local Government Board have put all the power into the hands of the vaccination officer, and that officer snaps his fingers at his masters, and bosses them as much as ever he likes. The Guardians have now the power, he says, but they will give it in future, under their Bill, to the City and County Councils. Well, what difference will that make to us? We shall simply secure representatives on the Council instead of the Guardians, and Mr. Long will find that he’ll not be able to boss the Councils as he has the Boards of Guardians. (Cheers). We

shall make this a test question at the polling booths, and we will see if we cannot treat the Council candidates, who have not studied the subject and who do not know anything at all about it, in the same way as the good men that he talks about that get kicked out of the parliamentary constituencies because they won't become anti-vaccinators. (Loud cheers). I am heartily glad that Mr. Walter Long has woke up to realise the power that anti-vaccinators are in the land, (renewed cheers) and we are going to let him know that we are a greater power still. Anti-vaccinators must be determined to make this a real question and see that their representatives go to the House of Commons and other bodies, determined to give their votes on behalf of getting rid of this abominable superstition. (Cheers). If there is one thing in the world that will fetch a Member of Parliament it is to make him realise the fact that vaccination means votes. That is almost the only conscience that a Member of Parliament has in these days, (laughter) and if you show him that our question means votes then you have got him. He is not going to trouble himself one bit until you have shown him that. (Hear, hear).

Mr. Long gives his case away.

Mr. Long goes on still further to talk to these dear creatures; he goes on to tell them that "primary vaccination is practically a farce." Quite right, and yet Jenner, the inventor of vaccination, told us that one vaccination would protect a person for a life-time. (Hear, hear). He said the wonder of my discovery is that a person who is once vaccinated is ever after protected against smallpox, and the Government of that day gave him £30,000 for that abominable falsehood. And now after all these years, after 60 or 70 years of compulsory vaccination, the President of the Local Government Board comes forward and tells us that "primary vaccination is practically a farce." If, then, primary vaccination is a farce; if these Acts of Parliament, which were based upon that lie of Jenner's; if that for which honest men and honest women have been dragged into the Police Courts, (shame!) and for which their goods have been sold, and for which they have had to lie upon a plank bed and subsist upon prison fare—if all this turns out to be a farce, then we say to Mr. Walter Long, "give us back

the liberties you have filched from us, and put a stop to the abominable shame." (Loud cheers).

Mr. Walter Long and his Anecdote.

Mr. Long goes on to tell them, however, with regard to re-vaccination that "it must be done at proper ages." Yes, but nobody knows what the age is. Dr. Birdwood, of the Metropolitan Asylums Board, coolly tells us that he could not promise that vaccination would last more than a couple of years. We had in the Gloucester epidemic the case of a child successfully vaccinated in six places by a specially appointed public vaccinator; but three weeks afterwards that child took smallpox and died. It won't protect for a single month. He goes on to refer to the case of the Liverpool ambulance man, who, he said, had not been re-vaccinated, and who was the only man to take smallpox. He said that "fact" ought to be spread through the length and breadth of the land. And truth, I suppose, must limp after the artful dodger as it pursues its lying mission. (Cheers). We sent down to enquire into the facts of the case, and we found that that poor wretch had been vaccinated three times already! (Laughter). Besides we had some ambulance men during the Gloucester epidemic. They were not re-vaccinated, and they did not take smallpox. We had one man there—Bob Spicer—a splendid fellow, who went round to the smallpox houses, and gave out doles to them whilst they were in quarantine, and the authorities felt it such an awful disgrace that a man like that should go from house to house distributing food, and yet would not catch smallpox, that they sent down a special order from the Guildhall saying that they must insist on Bob Spicer being vaccinated. They brought him into the Board room and said "Spicer, you will have to be vaccinated." "Then I shan't" said Bob. (Laughter). "You must be or you leave your situation" they answered. "Then I'll go" said Bob, and he went. They advertised for another man, but amongst all the re-vaccinated individuals in the whole city of Gloucester there wasn't one who had pluck enough to take Bob Spicer's place, (laughter) and the result was that they had to fetch him back again, and he went on doing the work until the very end without contracting smallpox at all. (Laughter and cheers). And then we had the man that carried the patients to the hospital,

and the man who drove the vans and took infected clothes to the disinfectors; they were not re-vaccinated, and did not take smallpox. Why on earth then should this man that Mr. Long talks about—who was supposed to be un-vaccinated but who had been vaccinated three times—why should he take smallpox after such experiences as these? But this, of course, is an instance of the way Mr. Long has “studied the question.” (Laughter). I am, however, very glad indeed that we have the opportunity of giving Mr. Long a lesson and letting him know that he is not quite the well-instructed person that he thought he was, and that “intelligence” will certainly not die out when he has departed this life. (Laughter).

The Calf Lymph Dream.

But now, in conclusion, I will just touch on the last item that Mr. Long referred to and that was this—“it was most important that the lymph should be above suspicion.” (Laughter). Well, it is very important. (Hear, hear). He also said it was most important that the vaccination should be efficient. (Hear, hear). We think so too. (Laughter). But he has not told us what efficient vaccination is. (Applause). The Imperial Vaccination League says it wants to know. So do we. (Hear, hear). The public vaccinators say they want the Local Government Board to designate what efficient vaccination is, and even the Institute of Public Health is most anxious to solve the riddle. We are all in agreement in this demand, but why on earth should they want to go and bother that poor addle-pated Government—with all its troubles over War Office scandals and Education Bills—to define what efficient vaccination is? I really think it's too bad altogether. (Laughter). I think the public vaccinators and the Imperial League—with the Archbishop of Canterbury, the Roman Catholic Cardinal and the Jewish Rabbi—ought to try and settle this business between them. (Cheers). I am quite sure poor Mr. Walter Long has got enough to worry his poor brains—intelligent man as he is—without being bothered over a question like that. (Laughter). As for the lymph he says “it is most important that it should be above suspicion.” Well, how on earth you are going to get pure vaccine lymph is one of the funniest ideas I think one ever heard of. Now what is it?

The Purity of Disease.

At the very best it represents a stage in cowpox disease. Can you have a disease that is pure? (No). And here is the serious matter, when that disease bears an analogy to one of the foulest diseases upon the face of God's earth, viz:—to syphilis, and when you have the admitted and awful records as to what that disease has done, it is certainly one of the most serious things in the world for a Government in a so called Christian country to force a vile disease of that description upon the populace, and dare to call that disease pure. (Shame). Here we have a specimen of the wickedness of such compulsion in your own district. Recently a woman suffering from smallpox had a child, the child was vaccinated as soon as ever it was born (A Voice:—"Why didn't they do it before?") and the child died in a rotten condition. Our friend says he wonders they didn't do it before. That's just what they are suggesting. That is one of the very latest things out. (Laughter). They say vaccinate the mother and then the vaccine lymph will go through her system and so vaccinate the child before the child is born, (laughter) a sort of "House that Jack built" (continued laughter). I really believe the next thing that they will be doing will be to vaccinate the bed-post. (Loud laughter). And this disease, which they dare to tell us is pure, is to be scattered through the country at the behest of Mr. Walter Long and his obsequious advisers. Well, all we can say is this, we know it is a disease, we know the mischief that it has done, and we decline to have any of their filth. We are going to tell Mr. Walter Long straight away that if he does not at once put a stop to the whole business, we shall, like Trelawny's Cornishman, want to know the reason why. (Loud cheers).

A Warning to Tyrants—Lessons from History.

When King Charles forced the ship money upon John Hampden he refused to pay, and the result of the King's determination to force that ship money upon John Hampden and his fellows was that King Charles lost his head. (Hear, hear. A voice:—"Serve him right.") It was the same with the Covenanters, when the Government tyrants dared to hunt them from hill to valley, and from valley to hill, the

Covenanters turned round and got rid of the State Church in Scotland and Scotch religion became free. (Cheers). It was the same with the "Church Rates," when they dared to try to force them upon the Nonconformists of this country. It was then that the Dissenters turned and swept the Church Rates out of the Kingdom. (Cheers). And you my friends can do the same. (Hear, hear). It's no use looking hopeless about it. Supposing you have got Mr. Walter Long, and the great bureaucracy at Whitehall, pitted against you, its no use being afraid of them. When the anti-slavery movement started they told Wilberforce in those days that he had better give it up. The clergy came forward, and the planters came up by the score, they denied that there were any injuries or foul abuses cast upon the slaves, but Wilberforce went on and on until he touched the great throbbing heart of the people of this country, thirty millions of money were paid down, and the crack of the slave-driver's whip was heard for the last time. (Loud cheers). It was the same with the white slave traffic of little children in this country. Why, they used to take infants aye, almost infants, just out of their mother's arms, and take them up to the North of England, into the factories and coal mines, and work them from five o'clock in the morning until eight o'clock in the evening. Lord Shaftesbury (cheers) Oh, how earnestly Lord Shaftesbury worked to get that abuse stopped, and you will hardly believe it when I tell you that at that very time they had the burning eloquence of William Ewart Gladstone, and John Bright against them. Aye, they were splendid men, they were men, certainly, who have done a mighty deal to save this country of ours, but on that occasion their magnificent gifts were turned against Lord Shaftesbury and his little band of heroes. (Shame). Aye, even the earnestness and zeal of Richard Cobden was used to prevent Lord Shaftesbury carrying on his work on behalf of the white slaves of England. But Lord Shaftesbury went on in spite of them. Gladstone said "If you attempt to put a stop to this traffic you will interfere with the great commercial interests of this country, you will interfere with our foreign trade, you will create a perfect revolution throughout the whole trade of the North." "I don't care," said Lord Shaftesbury, "there is the health and the lives of these little children at stake," and Lord Shaftesbury stuck at it until, in spite of Gladstone, Bright and Cobden, and

the great vested interests of the time, the Factories Acts were passed. (Loud cheers). It was the same with John Howard, when he went through the gaols of this country and found men lying rotting from disease and neglect in the dark dungeons of our prisons, chained by the neck in the cold, dark dank places for months together, weltering in their own filth. Poor John Howard lived and died without getting this abuse relieved, and the very men who stood the foremost against John Howard's campaign were the Bishops of the Church of England. They said justice must be done, right must be maintained, and they let this wickedness go on. But when John Howard had gone, and another generation rose up, the voice of the dead man spoke, and spoke to their hearts, and they went forward afresh, just a little band of them, against the great autocratic and bureaucratic tyrants of this country until the abuse was swept aside. And, my friends, what has been done before can be done again. (Cheers). They may boast and brag as they will. We stand to-day like the children of Israel did in the land of Egypt, with their loins girt, their shoes on their feet and their staff in their hand, waiting for the morning's dawn. As surely as ever the dark night passed in that day and the herald of the golden morn broke out on the Eastern sky, depend upon it that we too shall go forward presently at the dawn of the morning; and Pharoah's chariots and horses may rattle behind us, and the great mountains of opposition may rear themselves upon either hand, and the great Red Sea of difficulty may stare us in the face, nevertheless the God of power and strength that parted those waters and shattered those chariots will do it again, and upon the other side of the river we shall stand presently and sing:—

“The Lord hath triumphed gloriously; the horse and his rider hath he thrown into the sea.”

(At the close of Dr. Hadwen's address a scene of tremendous enthusiasm was witnessed, the audience rising *en masse* and waving their handkerchiefs and hats to the accompaniment of round after round of applause).

The Chairman:—You have listened to-night to what we may characterise as a great oration which has been full of telling points, full of humour, full of knowledge and full of con-

demnation of Mr. Walter Long. (Laughter). A more marvellous and brilliant peroration I think I never heard in my life. (Cheers). With such a champion we ought to win everywhere. (Cheers).

After a few words had been spoken by the Rev. W. W. Howard, of Clay Cross, the following resolution was moved by Mr. John H. Bonner, seconded by Mr. West, and carried unanimously :—

“That we pledge ourselves only to support those candidates at all elections who are in favour of the repeal of the compulsory clauses of the Vaccination Acts.”

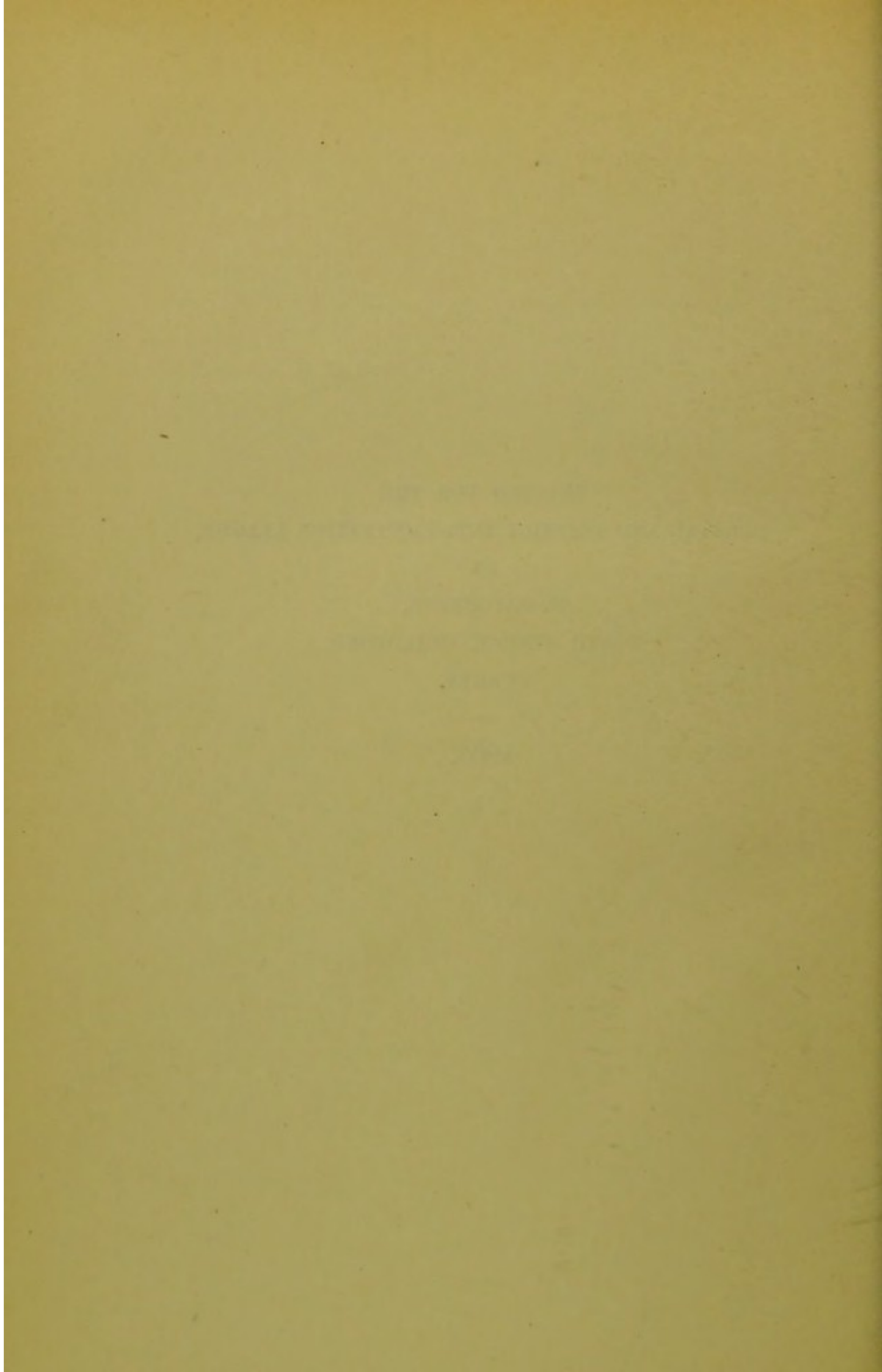






PRINTED FOR THE
DORKING AND DISTRICT ANTI-VACCINATION LEAGUE,
BY
W. BATCHELOR,
NORTH STREET, GUILDFORD,
SURREY.

1903.



What About the "Discoverer" of Vaccination?

WAS JENNER A CHARLATAN?

By **WALTER R. HADWEN, M.D.**

EVERY student of history is aware that traditions die hard; and even a limited acquaintance with human nature reveals the fact that there are few people who care to have their cherished views disturbed. Principles, politics, and ideas have very much of an hereditary tinge about them; and they are coloured and developed more or less by the environment of early years. The independent thinker or the pains-taking seeker after truth is a comparatively *rara avis*; many would prefer to be gulled rather than be disturbed by suspicions of chicanery, and the majority of people in this "best of all possible worlds" are prepared to play "follow my leader" to the first man who takes the trouble to captivate them, rather than carefully think out a subject for themselves. When, therefore, the "man in the street" is told, as a serious biographical fact, that Edward Jenner was "a great thinker" and "a great student," is informed of "his

patience, his caution, his modesty," and is told that the quarto in which he dressed up the folk-lore of his neighbourhood in a scientific garb, and which he succeeded in palming off upon the profession and the public as "the result of years of patient and anxious scientific investigation," was "a masterpiece of medical induction," who can wonder that the trustful individual falls down and worships at the shrine of the glittering image which Nebuchadnezzar the king has set up?

Now and then we find a Daniel looking askance at the popular decree, and breathing his scorn against the faith and the prejudice of idolatrous priests and their curious rite; but such men receive as a rule the lions' den or the fiery furnace as a reward for their temerity, and the world waits on in patience until the empty boasts of the necromancers and soothsayers have come to nought and truth casts the image from its throne. It was but "the voice of one crying in the wilderness" when Dr. Charles Creighton, the foremost epidemiologist of our time, wrote of Edward Jenner that he was "vain, petulant, crafty and greedy, and had more of grandiloquence and bounce than solid attainment," and yet every word in that indictment was true.

"It may be," he remarks in his classical work on the 'Natural History of Cow-pox and Vaccino-Syphilis,' "that our standard is higher now, but I am bound to say that when I did come to study thoroughly Jenner's three essays on cow-pox inoculation, I seemed to find myself dealing with reasonings which were anything but masterly, and with a writer who was never precise when he could be vague, and was never straightforward when he could be secretive."

Sir John Simon has told us, in glowing language, that for thirty years—from the period of commencing his apprenticeship, this boastful country apothecary

"incessantly thought and watched and experimented on the subject" of vaccination. But alas! for the enconium; there is not a shred of evidence in existence to prove that he had ever thought anything about it until a short while previous to flashing his crude superstition before the astonished gaze of the Royal Society, whose referees promptly refused to have anything to do with it. And as for experiments—we shall see.

JENNER'S CREDENTIALS.

Edward Jenner was a clergyman's son, born in the year 1749, at the little village of Berkeley, in Gloucestershire, under the shadow of the old castle. At the age of sixteen he was apprenticed for five years to Mr. Ludlow, a surgeon and apothecary of Sodbury, near Bristol; and at the completion of his apprenticeship when twenty-one years old he was sent, at his elder brother's expense, for two years to Dr. John Hunter, of London, better known as a naturalist than as a medical man, whose pupils had to devote most of their time to work connected with his particular hobby, rather than to patients. In the year 1772, when 23 years of age, Jenner returned to his native village of Berkeley, where his father was vicar, and at once commenced practice as surgeon and apothecary.

"Qualifications," in this young man's estimation, were a superfluity, and medical examinations not being then compulsory, he preferred profiting by the easy-going style of "those good old days when George the Third was king," so hoisted his signboard and took full advantage of that old-time latitude which medical students of the present day look back upon with envy. It was in 1792, twenty years after commencing practice, that Jenner appears to have awoke, for the first time, to the advisability of obtaining a medical qualification; and, as St. Andrew's University sold its degree in those days, he bought his M.D. for the modest sum of £15.

He had already, however, succeeded in securing other letters after his name three years previously—

the coveted title of F.R.S., thanks to the support of his old master John Hunter, upon the strength of an extraordinary paper read before the Society, concerning an historic cuckoo which Mr. J. H. Levy has wittily termed "The Bird that Laid the Vaccination Egg." This paper contained a few commonplace facts already well authenticated; but the *pièce de resistance* consisted of a wondrous sight Jenner professed to have seen through a leafy thicket hedge, on June 19th, 1787, towards the close of the breeding season. He alleged that a tiny cuckoo not a day old, and therefore immature and still blind, managed by skilful manœuvring to get its fellow hedge-sparrow, about the same tender age, on to a supposed anatomical depression in its back with which nature (so he affirmed without any anatomical investigation) has conveniently provided the cuckoo for the first twelve days of its life, and then, walking backwards with the fledgling as big as itself carefully poised in the anatomical hollow, performed the acrobatic feat of climbing, tail first, up the sides of the nest, and after reaching the top and carefully poising itself on the edge, waited, apparently in silent contemplation for a moment, and then giving a jerk toppled the hedge-sparrow to its doom. Stretching out its little wings the precocious fledgling felt all round with their tips to ascertain if the project were completely satisfactory, and then triumphantly dropped down into its nest again—the youthful monarch of all it surveyed. Truly a marvellous performance for a bird about the size of the egg which had hatched it but a few hours before! On the strength of this thrilling record, Jenner asked to be made a Fellow of the Royal Society; the request was complied with in 1789, and he was henceforth stamped with the water-mark of a scientific man. Jenner's latest biographer and apologist, Dr. Norman Moore, is constrained to admit that his Fellowship in the Royal Society was obtained by little else than fraud.

Evidently not quite satisfied with the quality of the only medical degree he possessed, Jenner applied to

the University of Oxford to grant him their honorary degree of Doctor of Medicine; but the authorities appear to have been very reluctant to bestow it upon this rather ordinary man—although a Fellow of the Royal Society. He repeated his application again and again, and at last reaped the reward of the importunate widow; for, in 1813, when he was 64 years of age, he had the satisfaction of being granted his request. Waxing bold in consequence, he applied in the following year to the Royal College of Physicians of London, in the hope of securing their diploma upon the same easy terms; but, although he presented his Oxford degree as an argument in his favour, the authorities considered he had obtained quite enough “on the cheap” already; and, to their credit be it remembered, that throughout they sternly refused admittance to this creditless applicant unless he passed the usual examinations. The latter were not a very serious matter in those days; but they were enough to put a stop to any further aspirations of Dr. Jenner in that particular direction.

THE SOURCE OF JENNER'S INSPIRATION.

To understand Jenner's interest in the cow-pox legend, it must be remembered that, for some 80 years prior to his startling pronouncement, the practice of small-pox inoculation had been in vogue. It was introduced by Lady Wortley Montagu into this country from Turkey about the year 1721, and consisted in inoculating persons with small-pox matter upon the arm (originally over the eye, hence *in oculo*) so that, under the double delusion that all must have small-pox at some time in their lives, and that if they once had it they would never have it again, it became the custom to give small-pox under favourable conditions as a life-long protective against attack in the natural way.

That system, held to be as infallible then as vaccination has been considered infallible since, turned out a failure. Small-pox but spread the more, and the medical profession was in despair at the breakdown.

It was at this juncture that Edward Jenner, M.D., F.R.S., appeared upon the scene.

From time immemorial, there had been a superstition among the dairymaids of Gloucestershire that a person who had suffered from cow-pox would never have small-pox ; and, although frequently discredited by the hard facts of experience, the legend still held its sway. Cow-pox consisted in an eruption which now and then appeared on cows' udders at certain seasons of the year and was rubbed by ignorant milkers into huge scres. When the milkers' hands were poisoned by the exudation from these sores, large blisters and ugly inflamed swellings and abscesses frequently resulted. This condition, known as cow-pox, bore no more likeness to small-pox than the moon does to cream cheese. It was not to be wondered at, however, that it should occur to the minds of some that if, as the dairymaids said, cow-pox was a protection against small-pox, they might just as well inoculate with cow-pox matter as with small-pox matter. Thus, it came to pass that a farmer, named Benjamin Jesty, did actually inoculate with cow-pox, that is "vaccinate," his wife and two children in the year 1774, fifteen years prior to the very first time we hear of Jenner taking any interest at all in the subject.

The first intimation we have of Jenner's connection with cow-pox was in the year 1789—the year that he got his F.R.S., when he took a drawing of a milker's cow-pox vesicle to London. So far as any absolute historical information can be obtained, there is no evidence whatever that he took any further interest in the matter for a period of five years, when—in 1794—he began to discuss the dairymaids' cow-pox legend with his friends. He was then 45 years of age.

For the next two years (so it appears from his friend Baron's biography) he wrote a fair number of letters to his friends on the subject, and talked about it a good deal with his professional colleagues and country cow-doctors, who met from time to time at

the local Medico-Convivial Society which disported itself principally at the Ship Inn. So far as the evidence of these men, experienced in the subject, was concerned, Jenner found no encouragement; one and all laughed at the story as an old grandmother's yarn, and, seeing that instance after instance of the failure of cow-pox to protect against small-pox was quoted by these men, no excuse of ignorance as to the real facts of the case can be made for Jenner. He knew from those well qualified to judge that the cow-pox legend of the dairymaids was an absurdity.

HOW JENNER SET TO WORK.

Jenner decided, however, to write a paper upon the subject for the Royal Society. He had had experience as to how easily that Society could be gulled, and the only thing necessary to do with the dairymaids' story was to make it look sufficiently scientific; so the paper, which contained some desultory information about cow-pox, and narrated a few cases of milkers who had had cow-pox and did not take small-pox afterwards, was graced with a solitary experiment. It was in May, 1796, that Jenner repeated Benjamin Jesty's performances, and taking some fluid from a cow-pox vesicle on a dairymaid's hand he inoculated a boy named James Phipps. On the 2nd of July he inoculated him with small-pox to test the protective properties of the cow-pox. The method of inoculation which Jenner cunningly advised to be adopted in tests was the bogus Suttonian method, which produced as a rule no effect beyond a slight local sore, and therefore afforded no evidence as to protection. As already mentioned, the paper was rejected, it was too much for the credulity even of the Royal Society in those days.

But perhaps the worst feature about this paper, where everything was bad, was the scientific name which its author gave to cow-pox on the title page. This was the high-sounding description:

“An inquiry into the causes and effects of the *Variolæ Vaccinæ*, a disease discovered in some of the

western counties, especially Gloucestershire, and known by the name of Cow-pox."

By this brand new title of *Variolæ Vaccinæ*, or "Small-pox of the Cow," Jenner deliberately intended to deceive both the profession and the public. The fact that he was acquainted with the physical appearances, as well as the cause and effects of cow-pox and small-pox respectively, is sufficient to remove all doubt as to his knowledge that there was no analogy whatever between the two diseases. The majority of medical men of the present day have never seen either disease, and therefore are not in the same position to judge. Jenner's object was this: Not being able to get away from the fixed idea of the value of small-pox inoculation which had held sway for three quarters of a century, he wished to persuade the profession that he was still continuing the old plan only with a small-pox virus that was harmless and non-infectious. Needless to say, he made no attempt in the pages of his pamphlet to justify the new title for cow-pox with which he sought to deceive his readers. It was due to this piece of deception beyond anything else that the widespread acceptance of the fantastic superstition among medical men was secured.

HOW THE PUBLIC WERE GULLED.

As the Royal Society would have nothing to do with his paper, Jenner decided to publish it himself. Two years later—1798—in view of the fact that ordinary cow-pox was proved, by all who knew anything about it, to be unprotective, he launched his "Inquiry" upon the public with a new and enlightened theory, namely, that the genuine life-preserving fluid was not ordinary cow-pox after all, but was a cow-pox caused by filthy persons who had milked cows with dirty, unwashed hands, after attending to the greasy heels of horses—horse-grease-cow-pox! He tried with scientific acumen, to "generate cow-pox from the heels of a horse"! He "kept a young

horse constantly in the stable and fed him with beans in order to make his heels swell, but to no purpose"! When, at last, he did come across some definite cases of horse-grease-cow-pox, he at once inoculated half-a-dozen children with the filthy excretion, and within five weeks, without waiting to see its protective effect, he dashed off to London to get his paper printed. One child, five years old, he inoculated with horse sore virus direct, and he died in a workhouse of a raging fever soon afterwards.

One would have thought that, as Jenner had only made one complete experiment up to this time, namely, that of James Phipps (a questionable business) he would certainly have tested the later ones; but no, he escapes from that necessity by the simple process of bold lying, and writes: "After the many fruitless attempts to give small-pox to those who had had cow-pox, it did not appear necessary, nor was it convenient to me, to inoculate the whole of those who had been the subjects of these trials." This is what Dr. Edward Jenner, Fellow of the Royal Society, himself calls "a scientific investigation."

And how did he attempt to shuffle out of the hard facts of the cow doctors, horse-doctors and experienced surgeons who ridiculed his pretensions? It was by declaring that there was a genuine and a spurious cow-pox, that those who had suffered from cow-pox and did not take small-pox afterwards had been protected by the genuine article, but those who did take small-pox subsequently had been affected by the spurious variety!

The "spurious" variety he declared was none other than "spontaneous cow-pox," which he said "left the system as susceptible of the small-pox as before"; and yet he was never tired of quoting his one and only complete experiment, that of James Phipps, as evidence of the wondrous power of his prophylactic, although James Phipps had been vaccinated by himself with none other than spontaneous cow-pox from a milkmaid's hand. When, however, in 1807, nine

years later, he was cross-examined upon the point, he had to confess to his deception ; and the College of Physicians declared in their Official Report "the public have been misled, as if there was a true and a false cow-pox." No wonder they refused him their diploma in 1814, when they remembered the impudent falsehood by which he had deceived both the profession and the public.

Upon this bogus evidence—this absolutely shredless material—without a proof or a solitary scientific fact or bit of experience to rest upon, but, upon the other hand, surrounded by evidences of failure, Jenner boldly wrote the following upon page 6 of his Inquiry.

"What renders the cow-pox so extremely singular is, that the person who has been thus affected is for ever after secure from the infection of small-pox ; neither exposure to the variolous effluvia, nor the insertion of the matter into the skin producing this distemper.

THE TRIUMPH OF SPURIOUS COW-POX.

But upon all hands horse-grease-cow-pox was denounced. Neither the profession nor the public would have anything to do with it. Jenner was advised by one stalwart friend : "For God's sake take the horse out or you'll wreck the whole business." So when Jenner had no more lymph and was not clever enough to continue a strain of his own, and he saw that the public was in no humour to patronize horse-grease, he fell back upon spontaneous cow-pox which Woodville had taken from a diseased cow at a farm in Gray's Inn Road, London, and this became the universal source of vaccine lymph.

It was not to be wondered at that Jenner promptly brought out another pamphlet in the following year—April, 1799—in which he talks loftily about

spurious cow-pox, but very gently drops the horse-grease theory with a few words (in fact the horse-grease variety appeared to be included in the "spurious" list), and when, at the close of the same year, he brought out another pamphlet on the subject, horse-grease-cow-pox had vanished! There is still a great deal about "spurious cow-pox" and the necessity of having "genuine," but alas! Dr. Jenner forgot to say where the genuine cow-pox could be found.

Jenner kept up the cry of "Spurious Cow-pox" with unremitting zeal, although he was all the while using "spurious" cow-pox supplied to him from London. At last there was a great outcry for a clear definition and distinction between "genuine" and "spurious." Jenner promised to supply some "accurate and very beautiful plates" so that the world might see the difference for themselves—that was in 1801, and he lived for 22 years after—but alas! alas! whether those "accurate and very beautiful plates" ever went into the printing office or not, one thing is certain, they never came out!

Thus Jenner had succeeded so far, by two mendacious tricks, in bamboozling the public, one by dubbing cow-pox "small-pox of the cow," and the other by spreading broadcast the warning word "spurious," without giving any indication, after the horse-grease theory failed, as to its pathology. Failures crowded in full and fast, but the magic word "spurious" kept everybody at bay.

At last Vaccination caught on. The medical profession, bothered to death by the untoward vagaries accompanying inoculation with small-pox virus, readily adopted cow-pox virus instead. It was only the change of one superstition for another running along the same lines. The new sensation gave the opportunity for copious advertisement, and the public began to rush to their respective doctors to share in the benefits of the charm. Royalty graciously patronized the novelty, and everybody wanted to be

first in proclaiming its virtues. One London doctor by the name of Ring even got up a great testimonial to its virtues and canvassed all the leading London doctors of the day for their signatures, and published an advertisement in the chief daily paper on July 19th, 1800, as follows:—

“We think it our duty to declare our opinion, that those persons who have had the cow-pox are perfectly secure from the infection of small-pox. We also declare that the inoculated cow-pox is a much milder and safer disease than the inoculated small-pox.”

Where is there a doctor with a reputation to lose who would sign such an advertisement to-day?

JENNER'S PARLIAMENTARY APPEAL.

The moment had arrived for Jenner's *coup d'état*. Bold, resourceful, cunning, greedy, ambitious, and untruthful as his whole history shows him to be, he was not slow to take advantage of the tide which had turned in his favour, or of the patronage with which he was favoured by those who knew nothing of the subject beyond the sophistries with which he had supplied them. On March 17th, 1802, the great man presented a petition to Parliament praying that he should be rewarded for his discovery, in which he had already shown his sublime faith by inoculating his own child—with cow-pox? No, it was in 1799, at the very time when his Inquiry was being scattered through the country, with its “ever after secure” and its artful attempts at whittling away the facts of ugly cow-pox chancres, that Edward Jenner, M.D., F.R.S., the new apostle of Vaccination, inoculated his own son with—small-pox! In 1789, when he took the drawing of the cow-pox vesicle to London, he had “gone one better,” for he vaccinated his first-born, Edward, not with cow-pox, nor with horse-grease, nor with horse-grease cow-pox, but with—chicken-pox!

Parliament appointed a Committee to consider his claims. The Committee, as its interesting constitution shows, was a packed one. The Chairman was a squire in Jenner's county. The witnesses were, for the most part, apologists for the new practice, and were as dogmatic and as evasive and elusive as were the witnesses who appeared on behalf of the modern vivisection craze before the recent Royal Commission; and the few independent witnesses were brow-beaten and insulted just as anti-vivisection witnesses have been. Of course, the recommendation was satisfactory, the Committee even entered upon the questionable field of prophecy: "As soon as the New Inoculation becomes universal it must absolutely extinguish one of the most destructive disorders by which the human race has been visited." But what the "New Inoculation" was, was not defined. Horse-grease-cow-pox—the "genuine" article, was not referred to; the Committee appears to have got no farther than the pathology of the dairymaids. It did not occur to them to ask if, as Jenner himself confessed, an attack of cow-pox (*i.e.*, "small-pox of the cow") would not protect against another attack of cow-pox, how it was that it could protect against real small-pox? It was enough to know on Jenner's dictum and the evidence of interested officials, that a person once cow-poxed was "ever after secure." Had these self appointed seers lived to the close of the century they would have learned to their chagrin that the more cow-pox flourished the more small-pox spread, and that small-pox only began to decline in proportion as cow-pox fell into discredit. Ten thousand pounds were granted the "never-to-be-forgotten," and five years later when Jenner complained that other people were getting the pull out of his invention, and that he was involved in serious pecuniary difficulties, he was granted another twenty thousand pounds in addition.

The terms of the petition which Jenner laid before Parliament ran as follows:

"That your petitioner has discovered that a

disease which occasionally exists in a particular form among cattle, known by the name of cow-pox, admits of being inoculated on the frame with the most perfect ease and safety, and is attended with the singularly beneficial effect of rendering through life the person so inoculated perfectly secure from the infection of small-pox."

This "reward" was a better advertisement for Jenner's quackery than any gold medal that Pears ever obtained for his soap or any manoeuvre that Beecham ever adopted for the sale of his pills. The payment for working the nostrum by public rates followed as a matter of course. The Government were bound to recognize the precious article for which they had paid such a price.

The creation of an army of officials with lucrative appointments and bonuses and fees came closely upon its heels, until it has become a great vested interest, fostered in every way possible by the interested medical bureaucrats at the Local Government Board. But for this, the miserable superstition would have been long ago forgotten. And yet, with all the compulsion, the persecution, the imprisonment, during the last half century, no Government has yet defined what "genuine vaccine" is, and no one dares to say. The chicanery of the medical shuffler who "discovered" the mysterious "protective" appears to have attached itself, like an evil spirit, to the whole system.

JENNER'S CLOSING YEARS.

One of the latest records of Jenner's cunning in the presence of disaster was when, in 1811, he was called to attend the Hon. Robert Grosvenor, son of Earl Grosvenor, ten years of age, who was suffering from confluent small-pox, although vaccinated by Jenner himself in infancy. It was then that he modified his "ever after secure" by which he had filched his £30,000, and invented the specious plea that Vaccination had saved his patient's life! This plea of

“modified small-pox” has been the plausible excuse in thousands of similar disasters since.

Epidemics of small-pox came and went as heretofore with utter indifference to the cow-pox creed. Growing discontent, except among medical officials with lucrative positions, was manifested on all hands, and the closing years of Jenner's life were years of misery, as instances of the failure of the vaccine fetish to ward off or even modify small-pox increased and crowded around him. The excuses he so glibly provided to meet emergencies failed to dispel the gathering clouds of discontent and annoyance expressed upon every hand. “Never was I involved in so many perplexities” wrote the disconsolate man to his friend Gardner on Jan. 23rd, 1823; and, within two days of that last recorded sentence, he passed suddenly away. The pernicious system was only saved from absolute disaster at last, by the agitation on the part of a few energetic medical men to charge failures at the door of the small-pox inoculators and to get vaccination recognized as a great State industry. The steady course of discredit which Jenner underwent during the last 20 years of his life had left him with but few friends to mourn his loss and with but little interest for the preservation of his memory. Westminster Abbey refused to open its portals to his remains, and he was interred in the parish church of his native village. Parliament was approached for the bestowal of a grant for a monument, but the proposal was unheeded. Baron, his biographer, started a subscription, but had very little encouragement. The only public bodies which would contribute anything were the Colleges of Physicians and Surgeons of Edinburgh; the first gave £50, the latter £10. With great difficulty enough was scraped together at last to get a statue erected in Gloucester Cathedral. It was not the popular will which raised the monument; and, just as his statue was long ago removed from Trafalgar Square to a corner in Kensington Gardens, so the time will arrive when the Dean and Chapter of Gloucester Cathedral will come to know Jenner, and his

monument will be removed to make room for that of a more honourable man.

I am quite cognizant of the saying *De mortuis nil nisi bonum*; but there are times when, in the interest of truth and righteousness, as well as of the physical and moral well-being of the people, it becomes necessary to strip off the mantle which covers the weaknesses and faults of the dead, that their real character may be seen.



HOW CALF LYMPH IS MANUFACTURED.

See Illustration on Second Page of Cover.

A calf is strapped down to a table, its abdomen shaved, about one hundred incisions, each about an inch long, are made, and cow-pox matter, or small-pox matter, or what not, dropped on and rubbed into each cut. The calf is then released and tied up for six days, with its head fixed so that it cannot lick the maturing and irritating sores. At the end of that time it is strapped again on the table. The hundred odd crusts are first removed separately with a lancet, each vesicle is separately clamped, its contents scraped out, and "the resulting mixture of lymph, epithelial tissue and blood, is transferred to a small nickel crucible . . . and an equal quantity of glycerine is added."

VACCINATION ABSURDITIES AND CONTRADICTIONS.

A PUBLIC ADDRESS

DELIVERED BY

W. R. HADWEN, M.D.,

*Licentiate of the Royal College of Physicians, London ;
Member of the Royal College of Surgeons, England ;
Licentiate of the Society of Apothecaries, London ;
Gold Medallist in Medicine and in Surgery, etc. ;
Councillor of the city of Gloucester ; and
Member of the Gloucester School Board ;*

ON THE 16th OCTOBER, 1902, IN THE MASONIC HALL, BIRMINGHAM,

BEING

A Reply to the Manifesto of the Imperial Vaccination League.

PRICE ONE PENNY.

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PUBLISHED BY THE BIRMINGHAM AND DISTRICT BRANCH
OF THE NATIONAL ANTI-VACCINATION LEAGUE.

Hon. Sec. :

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ROSE AND HARRIS,
PRINTERS,
BROADMEAD, BRISTOL.



VACCINATION ABSURDITIES AND CONTRADICTIONS.

Transcript of Speech, delivered at Masonic Hall, Birmingham,
on October 16th, 1902, by

Councillor W. R. HADWEN, M.D., L.R.C.P., M.R.C.S., L.S.A.,
of Gloucester.

THE Birmingham and District Branch of the National Anti-Vaccination League arranged a public meeting at the Masonic Hall, New Street, Birmingham, on the 16th October, 1902, to hear an address by Dr. HADWEN on the Vaccination Question in general, and the manifesto recently issued by the Imperial Vaccination League in particular.

In the unavoidable absence of the Mayor of West Bromwich (Councillor J. H. Chesshire) General PHELPS presided over a very large attendance. The Chairman opened with a few remarks on the recent slight epidemic of small-pox in Birmingham, pointing out that, including two certified as chicken-pox deaths, there had been 69 cases. Of these, three were doubtful, or 4·34 per cent. of the whole; 55 admittedly vaccinated (or 57, counting the two "chicken-pox" cases), a percentage of 82·6; and nine alleged unvaccinated, or 13·04 per cent. The deaths, as far as he could make out, numbered three, viz., two vaccinated too soon, and one vaccinated too late; being vaccinated, he supposed they had died "mitigated deaths." (Laughter.) Of the nine alleged unvaccinated not one died. (Hear, hear.) There was something more than that—there were no less than 729 cases of chicken-pox. It was well known that chicken-pox was a disease which is never fatal, and Sir Thomas Watson and the Registrar General had explained that when a child was put down as dying from chicken-pox, they might be quite sure that it was a vaccinated child who really had small-pox. Several hundred cases of chicken-pox or mild small-pox had occurred, though doctors did not seem to be able to differentiate one from the other very clearly; and there was always a risk that mild cases of vaccinated small-pox would be put down as chicken-pox, thus increasing the risk of infection. This would arise from genuine inability to believe that vaccinated persons could have small-pox. There were several remarkable lessons to be learnt from the epidemic. The first three cases were admittedly vaccinated, as is always the case now.

This shows that the vaccinated are the danger to the community, and not the unvaccinated, as is usually supposed. The three fatal cases were all vaccinated: this proves that vaccination does not mitigate the disease, as death is the worst possible result. Some cases having been vaccinated after recovery, it follows that small-pox is as inefficacious against cow-pox, as cow-pox has shown itself to be against small-pox. The three admittedly revaccinated cases demonstrate that re-vaccination cannot protect you for three years, ten days, or nine days. Then as to the pretence that the more the marks of vaccination the greater the protection, it turned out that the following was the number of marks noted, namely: with 7 marks 1 case; with 5 marks 4 cases; with 4, 13; with 3, 10; with 2, 10; with 1, 1; not stated, 19. As the first (and only) case with 1 mark occurred thirty-third on the list, it would seem that 1 mark is more protective than 2, 3, 4, or 5 marks; while 4 marks stand out as least protective of all. The analysis of the ages of the patients was also remarkable. There were 5 cases between 50 and 60; 7 over 40; 14 over 30; 19 over 20; 14 over 10; 5 over 5; 2 under 5; and 1 not stated. These results seemed to show that the more remote the vaccination the less liable people became to small-pox, while the more recent the vaccination, the greater the liability of adults. There must be now in Birmingham between 20,000 and 30,000 children who had not been cow-poxed; and like the 60,000 or 70,000 similarly fortunate children in Leicester, they acted as a shield to save us from severe epidemics of small-pox. (Applause.)

Mr. J. W. MAHONY submitted the following resolution:—"This meeting of inhabitants of Birmingham protests against the Vaccination Acts, which make it a penal offence to harbour a healthy child, calls upon the Government to restore freedom in medical matters to the people, and requests the Chairman to forward copies of this resolution to Mr. Balfour, Mr. Long, and the local Members of Parliament."

Mr. A. J. PASS seconded the motion, which was supported by Dr. HADWEN, who was received with enthusiasm, in the following address:—

General Phelps, ladies and gentlemen,—I am very pleased to hear the optimistic note which has been struck by the speakers who have preceded me, and of the splendid way in which apparently the knowledge of the vaccination cause is going ahead in Birmingham. Whatever differences there may be amongst us as to the methods of imparting general education in this city, I am thankful at all events that upon this subject there is no difference of opinion; no matter whether a man be a Tory, or a Radical, or a socialist, or a Liberal, or any other peculiar colour; whatever we are, we are all united on one common platform on this question, namely, that the whole Vaccination System is bad, and that we are never going to rest until we have got rid of it. (Applause.)

But still those who ought to know most about this subject are those who require the most education in regard to it. Those who profess to know most are those who, unfortunately, know least. (Hear, hear.) For instance, I notice in your *Evening Despatch* of a week or two ago, that owing to the scare which had taken place in regard to small-pox in Birmingham, the editor sent a reporter to the Medical Officer of Health, Dr. Hill, for the purpose of interviewing him upon the subject.

And the answer which he gave to the reporter as to how the small-pox scare was to be met, should small-pox become epidemic, was "Vaccinate, re-vaccinate, and re-re-vaccinate." (Laughter.)

"WHAT ABOUT SANITARY PRECAUTIONS?"

said the cautious reporter. "No use at all," said Dr. Hill. (Laughter.) "Small-pox defies them!" said the Medical Officer of Health. "Of course, cleanliness is all right," said he, "but it won't keep away small-pox." I expect every slum-owner and every jerry-builder in Birmingham will be very thankful indeed that they have such a Medical Officer of Health to care for their interests. (Applause.) But the strange thing is this, that a little lower down, when the reporter asks, "Baths any use?" Dr. Hill says, "Only in this way, that anything that tends to tone up the system is a help. The great thing is to do anything that will keep up the general health. That is the safeguard against all diseases." So that if you take baths, and if you keep up your general health, and if you thoroughly tone up your system, you will have, according to your Medical Officer of Health, a safeguard against all diseases. (Laughter and applause.) But Dr. Hill evidently fancied that he had gone a little too far, and suddenly pulls up and says that nothing will be *quite* effectual except vaccination. (Renewed laughter.) You have a most remarkable Medical Officer of Health, and I am certainly amazed that a gentleman holding such a position should so cleanly give himself away, and give his credit away; so completely nullify what he had said just before with regard to "Vaccinate, re-vaccinate, and re-re-vaccinate," and absolutely own after all that if you keep up your general health you can have a safeguard against all disease. (Applause.)

Now, if you are to keep up the general health, let me ask Dr. Hill this question: Can you produce a healthy body by inoculating into that body

A DEFINITE DISEASE

of the foulest description? Allow me just to quote another doctor—I am fond of quoting members of my own profession—A friend of mine said to me yesterday, "What am I to do?" My medical man has said to me so-and-so and so-and-so, and I don't know how to contradict him." I said, "Fling another doctor at his head, that is the best way." (Laughter.) Whenever you find a doctor says one thing, it is not a difficult matter to find a doctor who says another. When doctors differ, we are asked, "Who shall decide?" Well, I think the general public and common sense should decide, and upon this question you may take my word for it that the ordinary layman does know and can know quite as much about it as the medical man. (Applause.) And my experience is that the ordinary intelligent anti-vaccinator can dumbfounder nine-tenths of the medical men on the subject. (Applause.)

Now I hold in my hand an extract from an address which was given by Dr. Killick Millard, the Medical Officer of Health for Leicester, at the recent Health Congress at Exeter, and this is what he says: "It must never be forgot that vaccinia," that is, cow-pox, which is

inoculated in the process of vaccination, "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." Dr. Millard is getting on since he has been Medical Officer of Health at Leicester. (Laughter.) He has begun to learn something from the laymen, and apparently he is quite capable of teaching Dr. Hill, Medical Officer of Health for Birmingham, a lesson. And I am glad to see that they agree in this particular, that whereas Dr. Hill admits that the real safeguard against all disease is health, Dr. Millard tells us that inoculating cow-pox into a person is giving him a disease, and that that could never be regarded as an ideal method of treating another disease. (Applause.) When medical men, and medical men in the position of Medical Officers of Health, begin to climb down in this direction I certainly think one may echo the optimistic views which have been propounded by some speakers to-night, and we may really believe that we are beginning to get along by leaps and bounds.

Dr. Bond, of Gloucester, Honorary Secretary of the so-called Jenner Society—of course you know the Jenner Society is Dr. Bond, and Dr. Bond is the Jenner Society (Oh!)—lately published the fact that 1100 Medical Officers of Health were dead against anti-vaccination, and were entirely in favour of this extraordinary medical superstition. He claims from this fact that they had an

UNBIASSED MEDICAL OPINION.

But do you get an unbiased medical opinion from these 1100 Medical Officers of Health? Certainly not. The terms of their agreement, the terms of their appointment from headquarters, the Local Government Board, not only completely close their mouths, but prevent them from exercising their minds in full freedom on the subject. You know how it was a little time ago, when a man of the very highest attainments was appointed to the post of Medical Officer of Health at Penge, just outside London, selected unanimously by the Sanitary Committee out of a large number of competitors. When his name went to the Local Government Board, the Local Government Board refused to sanction the appointment, because he had written a scientific work detailing the question of vaccination, and showing that vaccination was a fraud. (Shame!) A Medical Officer of Health cannot hold, dare not hold, an opinion of his own on the subject, or the Local Government Board says, "Clear him out!" The vaccination creed becomes a question of his bread and butter. (Shame!) It is a shame; I echo what you say; it is a shame that a scientific man cannot exercise his opinion on this subject, that a scientific man dare not stand for what he believes to be right on this matter, without running the risk of being robbed of his situation, and of having a possibly brilliant future sacrificed at the behest of a miserable plea like this. And yet Dr.

Bond boasts that 1100 Medical Officers of Health have signed a testimonial in favour of vaccination! (Applause.)

But there are other people besides Medical Officers of Health who require educating on this subject. There has been lately formed what is called

THE IMPERIAL VACCINATION LEAGUE,

and this Imperial Vaccination League has issued a manifesto, which I hold in my hand. It is headed by the Archbishop of Canterbury. Well, it is not the first time an Archbishop of Canterbury has headed a manifesto in favour of a particular nostrum. It was in the year 1715 that a certain old lady by the name of Joanna Stephens had a wonderful remedy for stone, and it gained such notoriety that Parliament was petitioned by the principal people of the land to buy the recipe for the benefit of the poor suffering public. The Archbishop of Canterbury was appointed trustee for the fund. Fellows of the Royal Society and scientific men of every description came forward to support the movement to get this wonderful recipe, and when at last the recipe was obtained, she said, "My recipe consists of a powder, a decoction, and a pill. The powder was calcined snails and egg shells; the decoction was soap and water principally, with a few herbs; and the pills consisted of snails, carrot seeds, burdock seeds, all burnt to a blackness," and a few other delightful things of that description, which, when swallowed, were to effect a perfect cure. (Laughter.) And the Archbishop of Canterbury and the great scientific men and the Members of Parliament of that day paid the old lady £5,000 for that recipe. (Laughter.) They say a certain class of people and their money are soon parted (laughter), therefore I am not at all surprised to find another Archbishop of Canterbury heading the list of the Imperial Vaccination League in order to advertise this, a bigger fraud than that by which Joanna Stephens filched from the Government £5,000 for her benefit. (Applause.)

And Cardinal Vaughan, of the Roman Catholic Church, comes next, and

A JEWISH RABBI

brings up the rear (laughter), in spite of the fact that—I think it is in the fifth chapter of Leviticus and the second verse—it is most distinctly stated to the Jewish nation that the unclean animal they are not to touch under any consideration, and that if they touch it they would be held "unclean and guilty." But the Jewish Rabbi, having got into such company as this, appears to have forgotten all about the Mosaic ritual, and the care with which Moses inculcated these sanitary laws, and he goes along with the crowd to support this filthy practice of inoculating a filthy disease, contracted as the result of inhuman conditions, into the healthy bodies of the people of this country. (Applause.)

And then in between you have a number of doctors and parsons. The doctors are undoubtedly some of the first men in their profession. "Well," you will say, "that ought to go for something." It ought, but it does not always. (Hear, hear). In the year 1800 there was another testimonial got up, a very similar one to the one I have

described. It was got up by Dr. Ring, and in this testimonial, which was subscribed to by nearly every leading medical man of that time, it was distinctly stated that vaccination was a perfect security against all small-pox for the future. Every leading medical man signed that. Where is there a medical man who would dare to sign such a petition as Ring's to-day? and if medical men could make a mistake in the past,

MEDICAL MEN CAN MAKE A MISTAKE

in the present.

It is not very many years ago that the whole medical profession went in for blood-letting. It was the only way in which people could be cured, they said. Men would be brought in to a hospital, two or three pints of blood would be taken from them; and this was repeated until they were nearly brought down to death's door, and in spite of the statement of Moses, many a long century before, that blood was the life of the body, they went on drawing it away, and the whole profession unanimously believed in the creed.

It is not very many years ago that the whole medical profession believed with Jenner that one vaccination and one mark would protect a person for a lifetime. He said in his petition to Parliament—"The extraordinary character of my remedy is this: that a person once vaccinated is for ever after protected against small-pox." But now the Medical Officer for Birmingham cries "vaccination, re-vaccination, and re-re-vaccination." (Laughter).

It is only a few years ago that every medical man believed and declared that no injurious results could arise from vaccination. The Local Government Board denounced as ignorant fanatics anybody who dared to say such a thing as that the inoculation of the foul disease of syphilis could take place with vaccine lymph. It was an unheard of thing; it was a libel on the medical profession, so much so, that one medical man by the name of Dr. Cory said, "I consider the thing such a lie, that I will take and vaccinate myself with syphilitic lymph, for I know well enough that no injury can result." And he did.

AN INJURY DID RESULT,

and Dr. Cory lived to discover what a terrible deed he had done. He is dead now. If it had anything to do with his death I cannot say, but I do know this, that Government have given Mrs. Cory a pension on the ground that her husband lost his life in a scientific experiment. The whole medical profession had to give up the theory after that, that syphilis could not be conveyed in vaccine lymph. So that once again the medical profession had to acknowledge that the unanimity of the unanimous was a will o' the wisp. (Applause).

Why, my friends, it is not above sixty years ago that a young man tramped the streets of London in order to get his life insured, and he went to one Insurance Office after another, and he could not find a solitary doctor who would take the risk of insuring his life because he was a teetotaller. (Laughter). That young man said, "Well then, I will start an Insurance Society of my own. If I cannot live without drink according to these doctors, the sooner I insure my life and get all straight for those that belong to me before I go to the next world,

the better it will be for everybody concerned. And he started an Insurance Society of his own, and a few years ago he took the chair at the jubilee meeting of the United Kingdom Temperance and General Provident Institution—(applause)—a clear living proof of the fact that the unanimity of the medical profession is not always to be trusted. (Applause).

Now, it is

NOT A QUESTION OF GREAT NAMES

attached to a circular. The question is: What do the people who possess those names know of the subject? (Hear, hear). When one finds an extraordinary manifesto of this description, as brimfull of errors as an egg is full of meat, one wonders how on earth any scientific man could ever have signed his name to such a document. But vaccination is a fashion, vaccination is a professional fad; every doctor for the time being is expected to believe it, and is trained to believe it, and I suppose he will believe it for a certain time until some of the younger ones begin to rise up and see the folly of it, and then the whole thing will tumble down like a house of cards. It has become perhaps more popular among the medical profession recently because vaccination and re-vaccination can be carried out wholesale at the public expense. And although just before the orders issued by the Local Government Board after the passing of the 1898 act, the whole medical profession was beginning to bow at our feet and say that really they had such fearful opposition right and left that it did not pay them to go on with it, and they were ready to give it up, now we find them saying—"Oh! dear no, the whole medical profession is more strongly in favour of vaccination than ever." (Laughter and applause).

The Public Vaccinators of the Borough of Hackney have just claimed for

VACCINATION FEES

during the last twelve months no less than £4,839—(shame)—and the Public Vaccinator of Marylebone has sent in a bill for six months for £2,000. You cannot be surprised if they all believe in it. (Laughter). There was one medical gentleman down in the west country who was so delighted with the new rules issued by the Local Government Board that he called all his family around him; he vaccinated his boy, and he vaccinated himself, and he vaccinated his wife, and he vaccinated all his children; and he sent in a bill to the Guardians at seven-and-six a head. (Laughter). He could have taken them into the surgery, where, according to the rules, the fee would have been two-and-six a head. But, oh, no! it was all done in the drawing-room, "at the patients' residence," at seven-and-six each, and the Guardians had to pay it. (Laughter).

You cannot be surprised at the Medical Profession believing in vaccination, because it has become lately

A MAGNIFICENT ENDOWMENT,

and if there is one thing in the world that wants disestablishing and disendowing, there is no doubt about it, it is this miserable practice.

(Cheers). And we must take good care to let the public realise the fact, as they must realise it shortly, that it is not a mere medical question, it is not a mere question for the father and the mother, but it is a question of the ratepayers' pocket. (Applause).

Now what these gentlemen of the Imperial Vaccination League are so anxious to impress on the British public, is this: that Germany has got rid of small-pox, and Germany having got rid of small-pox we should follow their example. Why they should want to go all the way to Germany for their evidence, seeing that we have had one hundred years of vaccination in our own country, where sufficiently conclusive material ought to be found, is at first sight rather puzzling to any ordinary enquirer.

Now I am as anxious as these gentlemen are that we should follow

THE EXAMPLE OF GERMANY

in relation to small-pox, although I am not a great advocate of everything that is made in Germany. (Laughter). I think we can manage this business quite as well in this country as they can there, and why Germany should be held up, as it is right from the beginning of this manifesto to the end, as the great model for England to follow I cannot for the life of me conceive. But we will see what their reasons are. The fairy tale runs as follows:—"That we desire to see this country protected as thoroughly against epidemic small-pox as Germany is," and with this in view, the Imperial Vaccination League has been formed, with the Duke of Fife as its President, "to promote the study of the laws regulating vaccination, and to consider whether the vaccination law itself or its administration admits of improvement."

Now what they go on to tell us is this: that they have got

NO SMALL-POX IN GERMANY,

and they distinctly and absolutely declare that this is the result of the Vaccination Act which was passed in Germany in the year 1874. Why they want to start with the year 1874 is not very difficult to discover. There is one question they have not touched upon; there is one point these parsons and doctors have not attempted to prove. It is this: that vaccination has been better carried out *since* the Act of 1874 was passed than it was carried out before. When they can prove that it has been better carried out since then than it was before, they will have some just and logical ground for presenting their creed to the British public. (Hear, hear.)

But now look here:—Was the compulsory Vaccination Act of our Teutonic neighbours not passed until the year 1874? No. The great compulsory Vaccination Acts of Prussia were passed in 1834 and 1835. In 1834 the Military Act was passed. In 1835 an Act was passed, so rigid, that every child in the Kingdom had to be vaccinated; had to be re-vaccinated when he commenced his public school life; in going from college to college he had to show a certificate not more than two years old. In addition to that

EVERY HEALTHY MALE

when he entered the army had to be re-vaccinated again, and so

thorough was it that he had to have ten insertions in each arm, and if he dared to say he would not have it done, the Act said that he was to be held down and vaccinated by force. Well, surely that was good enough. That was the year 1834-5, and that was carried out right through the long, long years that followed. No woman even could get married unless she presented a certificate of vaccination.

In the year 1871-2 there came the great epidemic of small-pox. And what occurred? During that period, the period of 1871-2, no less than 124,948 of their vaccinated and re-vaccinated citizens died. "Ah!" says the Imperial Vaccination League, "ah!" cry the Archbishop of Canterbury, Cardinal Vaughan and the Jewish Rabbi and the doctors and parsons in chorus, "we must cut out all that 1871 to 1872; we must blot out all the 37 years previously; we will begin afresh with 1874." (Laughter). With stentorian voices they cry: "There has not been any small-pox since 1874, and it is the 1874 Vaccination Act of Germany that has done it." (Laughter). It must be understood that the German Act of 1874 practically embraced the laws of Prussia under the title of the laws of the new United German Empire. (Hear, hear).

But there is another little item they have forgotten, and that is this, that in the year 1873—that is the year before the 1874 Act was passed—there were

ONLY 35 CASES OF SMALL-POX

to 100,000 inhabitants in the whole of the German Empire, whereas the year before there were 262 to every 100,000. In the year 1874 it had actually fallen down to nine. In the year 1875 it dropped down to three, so that, seeing the Act was only passed in 1874, and it did not come into operation until 1875, and it took two years after that to get it into operation; why! the small-pox had all gone before the Act came into operation at all. (Applause). I suppose the small-pox smelt the Vaccination Act coming, and like the Midianites, when Gideon's army came up with their pitchers and their lanterns, it fled at the bare sight of the light of the Parliamentary pitcher—the coming Vaccination Act had frightened the wits out of it. (Laughter). I cannot see how anyone can suppose that this wonderful 1874 Act drove the small-pox away, seeing that small-pox had practically disappeared before the Vaccination Act came in at all.

But, why is it there has been no small-pox since? I will tell you why. Take

BERLIN, THE PRINCIPAL CITY

of the German Empire. Why, in Berlin there was scarcely a house in the whole city that had not got its own privy in the back yard, open cess-pools were common over the whole place. The barracks for the soldiers were nothing more nor less than filthy dens. The sewage of the city was emptied into the river Spree. What did the Germans do when they received the money as the indemnity from the French nation that they had conquered? They took that money and devoted it to sanitary improvements; they brought good water into their cities, they adopted a new drainage system, and they built model barracks for their soldiers. They got rid of the miserable dens that infected

their principal cities, and, what was the consequence? Away went the small-pox, flying like the Philistines before the children of Israel. And hence it is that sanitation has done for Germany what thirty-seven years of compulsory vaccination could not accomplish. (Applause). Ever since the year 1871, right on to the year 1888, Germany spent no less than half a million of money every year in Berlin alone for sanitary improvements, and yet that which is clearly the result of sanitation, that which is clearly proved to be the result of Germany's progressive sanitary laws, is claimed by the Imperial Vaccination League for vaccination, although the historical facts are dead against their absurd conclusion.

A still further proof is this, that whereas in 1871-2 and the long years previously, when they had vaccination without sanitation, the

GENERAL DEATH-RATE OF THE COUNTRY

was 29 per thousand, since they have introduced their sanitary laws, which have practically driven small-pox out of the country, that general death-rate has been reduced from 29 per thousand to 24 per thousand, thus showing, where you have got a general betterment of the health of the people, the worst zymotic diseases cannot find a footing. (Applause). Your Medical Officer of Health says: "No use whatever in sanitary precautions, small-pox defies them." (Laughter). Why even in Austria they call it "the beggars' disease."

Look at London during the recent epidemic there. Where has your small-pox broken out? Has it broken out in the West End of London where the general death-rate is several percentages lower than it is in the East? Has it broken out in the well-ventilated, well-sanitated, uncrowded parts of the city? No. It has broken out in the slums and dens of the East End. It has broken out in the filthy hovels where the sweeter lives and where the horrible jerry-built houses lie, where the people live in their damp, dark cellars, and where the workmen are crowded together in small rooms, getting their miserable pittance for their every-day work. That is where the small-pox has broken out, that is where it has lurked, where it has flourished, where it always finds a home. (Applause).

But though these conditions form the pabulum for the small-pox fiend to feed upon, still there is another point which this Imperial Vaccination League has entirely forgotten. They open their manifesto by trying to frighten the British public in regard to this awful epidemic which has just taken place. "It has cost

MORE THAN 1500 LIVES,"

they say, and 7,500 other people have been more or less seriously ill, and perhaps of those a large proportion remain permanently disfigured, and it has cost over half a million of money." Now that comes to a rate of 331 per million, this "awful epidemic." If you look back from the year 1871 to the year 1885—that is when the vaccination default was only about 6 per cent., practically everybody vaccinated—there were during those fifteen years no fewer than six epidemics of small-pox greater than this little epidemic that has just occurred in London. That was, mind you, when everybody was vaccinated. Now,

when we come to the last fifteen years, namely, from 1886 to 1900, when the vaccination default had risen to about 28 per cent., what do we find? That during the whole of those fifteen years there has been practically no small-pox at all. We now have an epidemic of small-pox. Why? Because we have had the 1898 Act passed, and vast numbers of the people living in the slums and dens, who never read the newspaper and know nothing about new Acts of Parliament, get

A DOMICILIARY VISIT

from the Public Vaccinator, for he has now, under the new Act, to visit the house. "I have come to vaccinate your child," he says. "Oh, but I don't want him vaccinated," replies the parent. "If you don't you will be summoned," the parent is told. And what are these poor creatures to do? How can they pay their fine? And here they are, tyrannised and treated in this way, whilst the Vaccination Officer and the Public Vaccinator visit them, and threaten them, until at last they give in. (Shame!) The consequence is, that since the passing of that Act, numbers of these poor people have been vaccinated who were not vaccinated before, vaccinated, too, with this vile concoction that Dr. Copeman has introduced, namely, small-pox itself inoculated into monkeys, and then transferred to calves, and then into human beings. (Shame!) And so, since the Act of 1898, vaccination has increased and small-pox has been spreading, and you have got your epidemic in London as the result of it. (Applause.) It is always the case: the more vaccination, the more small-pox; the less vaccination, the less small-pox. Vaccination without sanitation, small-pox goes on; little vaccination, but plenty of sanitation, and small-pox disappears.

But now we are told by this Imperial Vaccination League, "We admit, with much satisfaction, that the clauses of the 1898 Act, which allow the conscientious objector to expose his children to the risk of taking small-pox in the presence of infection has worked on the whole

LESS DISASTROUSLY THAN WAS EXPECTED."

(Laughter.) Yes, the whole population was to have been decimated. We were going to have a lot of little kegs of gunpowder all over the United Kingdom. It was going to light such a bonfire! All England would go bang! God only knows where the small-pox was going to end! (Loud laughter.) But now, "with much satisfaction"—I have no doubt (laughter)—they discover that "it has worked on the whole less disastrously than was expected." (Laughter.) There has only been a small outbreak after all, and the funny part of it is that nearly everybody who was attacked—more than two-thirds of them, so far as we can gather from the published statistics—were vaccinated persons. (Laughter and applause.)

But you know we have not been able to get those statistics, and we have not been able to check those statistics. (Shame!) It is true that for a certain time the Metropolitan Asylums Board published in the papers so many vaccinated and so many not, and in spite of all their jiggery pokery we still found that the vaccinated were suffering and dying at the rate of about two-thirds more than the unvaccinated, until

at last the vaccination officials seemed to get alarmed. They said that publishing statistics in this way was making people believe that really those who were vaccinated suffered from small-pox more than those who were not. (Laughter.) They feared that the ignorant jack-asses of the public would believe such a thing. They ought to remember that

THE WORD VACCINATION—

well, it did not always *mean* vaccination; that there were different ways of interpreting that blessed word. (Laughter.) The public were not educated up to the niceties, and the delicate variations of vaccination polemics, so they ought not to be trusted with statistics, even though compiled with all the care and sophistry known to medical vaccination officialdom. There were, for instance, a certain number of marks they must have; there was the shape of the marks, you know; all this has to be taken into consideration, and all this would take any number of "vaccinated" people out of the count. (Laughter.) So that, although you have paid your 5/- or your 10/6 to be vaccinated, and told that you are going to be protected for ever upon the strength of the word of the great Jenner himself, yet, when you get small-pox, that is quite another matter; then there was something wrong with the vaccination, and the ignorant public did not understand the reason why. (Laughter.) At last the order went forth, "No more statistics to be published," and they stopped the whole thing dead in the middle, and we know nothing about it since. (Shame!)

It was just in the middle of this statistical juggling business that the National Anti-Vaccination League sent a letter down to the Metropolitan Asylums Board. We claimed the right of the Act of Parliament, which said that anyone, by the payment of a certain sum, should be permitted

TO SEARCH THE BOOKS

of the Sanitary Authority and see who had small-pox, and their alleged vaccinated condition. Well, we sent down our messenger with the requisite amount of money for the purpose of examining the books. "You cannot come," said the doctor to the messenger; "before you can examine these books you must be vaccinated." (Oh and laughter.) They thought that would put a dead stopper to the emissary of the National Anti-Vaccination League. And the funny part of it is this. In the report of the proceedings of the Metropolitan Asylums Board on January 25th, 1902, we read as follows: "Dealing with the question of proposed compulsory vaccination of all visitors to small-pox patients, the Hospital Committee reported that although every visitor to a patient was strongly pressed to be vaccinated, they did not think it possible to make vaccination a condition of their being allowed to enter the hospital." (Laughter.) So that the visitors to the Small-pox Hospital might go in and see their relatives without being vaccinated, but the messenger from the National Anti-Vaccination League! not a bit of it!

"YOU SHALL NOT SEE OUR REGISTERS

unless you allow us to vaccinate you." (Laughter.)

But we claimed the right of the Act of Parliament that a Sanitary Authority must show their books. "Oh," replied the Medical Officer of the Metropolitan Asylums Board, "we are not a Sanitary Authority." (Laughter). And then, being afraid lest particular pressure might be brought to bear upon them, and he would get into a mess after all, he said: "But it is no use your looking at the books, even if you did, because the register kept by the Registrar, and the statement kept by myself do not tally." He "never made up his books until the patient—well, until the case—was completed." (Laughter). And this is the kind of thing we have had to submit to. This is the way the statistics are worked. "When the cases are completed," if you please. Dead men tell no tales. (Applause).

And how are the statistics worked according to their own showing? The person who was vaccinated was only called vaccinated if they could see the marks. If, however, he was *said* to have been vaccinated, but there was not a clear and visible sign of the operation, he was put down in the "doubtful" list.

Now there are three kinds of small-pox. There is the discrete small-pox, confluent small-pox, and malignant small-pox. And statistics show this: That the *discrete* small-pox patients practically always recover. It does not matter if they are vaccinated or not, they almost invariably recover if they are treated properly. In the case of *malignant* small-pox, vaccinated or unvaccinated, the vast majority die. It is very rarely they recover. The battle of life and death wages in the confluent class. Now, *confluent* small-pox is where the pustules run together, and the consequence is that the vaccination marks are often covered so that you cannot see them. They are the cases which would probably prove fatal unless very

GREAT CARE AND PROPER TREATMENT

are resorted to. If, therefore, the doctor cannot see the marks he will "wait until the case is completed." If the patient gets well and the marks begin to appear, he may perhaps put it down as a vaccinated case. But if the patient does not get well and dies, then, of course, he dies "unvaccinated." (Laughter). Not because he had not been vaccinated, but because he had had confluent small-pox. And hence it is that the "unvaccinated" list is swollen by the worst cases, and the death-rate of the unvaccinated is raised abnormally high. (Applause.) Even a greater scandal has been exposed by Mr. Bernard Shaw, member of St. Pancras Borough Council, in the *Times* of August 10th. "Case after case," he says, "of a disease diagnosed as small-pox has been sent to the hospital ships during the late epidemic; but whenever the authorities at the wharf found marks of recent re-vaccination on the patient the case was promptly sent back as one of general vaccinia." (Shame).

But just a word or two more about the great bogey of the present day, viz., that you must be re-vaccinated. Vaccination is no use. You must be *re*-vaccinated. Now let me put this before you. I want to look at the science of this thing. They tell us that vaccination is a scientific creed, and they have been trying for over a hundred years to

find a scientific basis for vaccination, and they have never found it yet. It began as a superstition of the Gloucestershire dairy-maids, and there is about as much science in it as there is in the heads of the old women of Gloucestershire who first thought of it. (Laughter). The theory in regard to it is this: That cow-pox is small-pox of the cow. Nobody has ever proved it. But never mind; that theory is good enough. "Cow-pox is small-pox of the cow!" When a person has had small-pox once he is protected against small-pox a second time. So runs the argument. And therefore, as cow-pox is small-pox, and when you have had small-pox once you cannot have small-pox again, so when you have been cow-poxed you cannot take small-pox. (Laughter.) That is the theory. Now this is

HOW IT WORKS OUT IN PRACTICE.

"When you have been cow-poxed once you are never safe," says the doctor, "until you have been cow-poxed over again." (Laughter.) But seeing that, having been cow-poxed once—that is, small-poxed—you cannot have small-pox again (because you have had it already), it is a most extraordinary thing that you can go on cow-poxing a person almost as often as ever you like; and as cow-pox—which is small-pox—cannot protect you against a second inoculation of cow-pox, it passes my comprehension how on earth it is going to protect you against small-pox at all. (Laughter and applause.) Dr. Leonard Dobson, at the Royal Medical and Chirurgical Society, on December 10th, said:—"He knew of one child who had been successfully vaccinated three times in four months. He himself after being successfully vaccinated with Government lymph, accidentally inoculated his finger with lymph from another source and a good vesicle resulted." What about protection? and what about the scientific theory after that?

And the funny part is this: Although cow-pox had been declared for a century to be small-pox of the cow, and although we had been repeatedly told that when you put, so to speak, small-pox into the cow at one end, it came out cow-pox at the other, yet it had never yet been supported by an atom of scientific proof. So the Royal Commission, after seven years of careful debating upon the subject, decided to put the whole thing upon a scientific basis, and show once for all that cow-pox really was small-pox. And this is how they did it: This Royal commission, mind you, was composed of great and learned men of the same calibre as you find signing the marvellous manifesto of the Imperial Vaccination League, the leading medical men of the day, and this is how they settled the scientific aspect—the

SCIENTIFIC BASIS OF VACCINATION.

They say, "Taking all the various facts into consideration, we *seem led*"—it is a beautiful and most reassuring way of putting it—"to the *provisional* conclusion"—not an absolute one, of course—"that *under certain conditions* the tissues of the cow are able to transform small-pox into vaccine, that these conditions *may be* such"—how very cautious these Royal Commissioners are—"as to lead to the transformation

being sudden and complete. But *under certain other conditions*"—they do not tell us what they are, they are quite above that sort of thing—"the transformation may be gradual and incomplete, and that under *certain other conditions*, and these" they say "seem most commonly to obtain, transformation into vaccine does not take place at all. (Laughter). But what the above conditions are *has not as yet been clearly made out*. (Continued laughter). It has been *suggested*"—mark you, this is a suggestion—"that one condition favourable to the transformation is the extreme youth of the subject. To effect the change the animal should be a calf of not more than three or four months, but *this is not definitely proved*." (Great laughter). That is the scientific basis of vaccination after seven years' consideration by the great leaders of the medical profession appointed by a British Parliament. And if you do not feel thoroughly ashamed of the whole business, all I can say is, that I, as a medical man, do. (Loud applause).

But with regard to this re-vaccination, what are its practical results? You all know the arguments with regard to the army. You know how Brigadier-Surgeon Nash appeared before the Royal Commission, and there presented 3,971 cases of re-vaccinated soldiers who had taken small-pox, and 391 of them died—yes, "mitigated deaths." (Laughter). We had an

OLD SOLDIER IN GLOUCESTER

who had been vaccinated no less than seven times, and even then he had the impudence to catch small-pox during the epidemic of 1896. (Laughter). Your dear old friend here, Dr. Hill, says: "I have been vaccinated six times." (Laughter). And yet Jenner declared being vaccinated once was enough to last you a lifetime. He said, in regard to re-vaccination, "You have no right to press it." He wrote to one of his medical friends, "Re-vaccination will rob my discovery of half its virtues." (Laughter). Remember this my friends, this Vaccination Act, that has tyrannised over the fathers, that has worried the mothers, that has killed the children for the last half century, was based upon that bare-faced statement that one vaccination would protect a person for a lifetime, and for which statement £30,000 was paid to the impudent charlatan who claimed it as his discovery, and now, according to your own Medical Officer of Health, according to these very people, these signatories of the Imperial Vaccination League whose manifesto I hold in my hand, it is declared that the whole of Jenner's assumption has turned out to be a deception and a lie. I say to the law makers and their dupes, "Confess that that Act has been based upon a fraud, and give us back the liberties that you have filched away from us." (Applause).

But now another word or two more. They say here, "The League will also consider why the entire supply of glycerinated calf lymph should not be

GUARANTEED AND REGULATED

by some public authority." Most decidedly. (Hear, hear). I thoroughly agree with it. Let us have a guarantee by all means.

(Laughter). We have been trying to get that for the last 25 years, but they have never given it yet.

I remember when I first took up this question—it is now 21 years ago—I had never thought of the question before, but when my first little baby was born to me, a chubby little darling, and I held in my hand the blue paper from the Registrar to have it vaccinated, I thought to myself, “Well, what does this mean?” I had been accustomed to look at things straight in the face before accepting them, but I had never before entered into the question of vaccination. When, however, I had a child of my own, then it was it began to come home to me, and I asked myself the question, “Shall I have this done or shall I not?” My wife, who was as anxious about it as I was, went round to some friends who had had their children vaccinated, and some terrible stories were heard in our village home. I then began to ask some medical friends about the matter. To my intense amazement there was not a solitary medical man I came across who knew anything about it, or could give me any rational or scientific reason for the practice. It was simply the law, and it had to be done. I wrote to the Public Vaccinator and I said, “Will you give me a guarantee in accordance with the spirit of the Act of Parliament, first of all, that if my child be vaccinated it shall never have small-pox, and in the second place that it shall be vaccinated with lymph from which no injurious results will accrue.” He wrote back and told me—“I am sorry to say I

CANNOT GIVE A GUARANTEE

on either point,” and I said, “Then I will not have it done.” (Loud applause). I was the first man in the county of Somerset who had ever stood against these Acts, and they summoned me to the Axbridge Police Court, and the Chairman of the Bench, a military man, said, “I am amazed at a man of your intelligence standing out against the Vaccination Act.” I said, “You may be, but it is my very intelligence that refuses to allow me to submit to it. I stand out against these Acts upon the ground of principle. It is to protect my child, and I mean to protect it.” “But,” he said, “you are setting yourself against the whole of the medical profession. Do you mean to say that you are right, and everybody else is wrong?” I said, “Yes, sir, I do.” (Laughter and cheers). And I should be a fool if I said anything else. He held up his hands in sheer amazement. He continued to talk to me, and I continued to talk to him. (Laughter). He said, “Well, you are the cheekiest fellow I ever met in all my life—20/- and costs.” (Cries of shame). And I paid it. They summoned me for that little girl four times—(shame)—and for my two other children I was summoned, and I paid fines three times each, and then they thought they would let me alone, for they found it began to create a sensation and stir throughout the county, and large numbers were beginning to follow my example. In fact a few years ago I noticed a Medical Officer of Health in the principal town in the county wrote to the Guardians and begged them to give him a higher fee because he said he had only had two people to vaccinate throughout the whole of the year. (Applause).

We have been asking for this guarantee, and they have been professing to give us the guarantee which the Imperial Vaccination League asks for all this time. Why, they had a special man at the Local Government Board, paid him several hundreds a year

TO EXAMINE EVERY SAMPLE OF LYMPH

that came before them. The lymph was passed under a microscope by this gentleman, and was supposed to be guaranteed pure. When he came before the Royal Commission, that smart friend of ours, Sir William Collins, asked, "As a matter of fact, have you ever guaranteed any lymph as pure?" and he had to answer "No." Dr. Collins further asked, "Can you, by the finest microscopic test, discover pure from impure lymph?" and he had to say "No." Yet this lymph had been passing to the public as pure for all these long years, professedly guaranteed by a man paid a handsome salary to pass the slides under a microscope, and make nothing but downright fools of the public and of himself. (Laughter and cheers.) And at last, after swearing, as the Local Government Board did, that this lymph could be implicitly relied upon, they had to invent another article which would be pure, and so brought out a glycerinated calf lymph, which was simply the same filth diluted with glycerine and water. The introduction of glycerinated calf lymph as something you *could* depend upon was clear evidence that all the lymph that they had previously guaranteed was stuff that could *not* be depended upon. (Applause.) And yet all these long years before, men and women had been summoned, had been persecuted, fined, distrained upon and imprisoned, because they stood for their rights against the inoculation of a filthy disease, and the terrible risks that they had to run. All that time the Local Government Board were telling them there were no risks whatever, and at last they had to wake up and acknowledge there were risks; and these risks were acknowledged by the fact that they had to introduce something fresh, which they declared would possess no risks at all. The other day our Parliamentary leader, Mr. Thomas Bayley, rose in the House of Commons and asked Mr. Walter Long a straight question—

"CAN YOU GUARANTEE

this glycerinated calf lymph now?" and he had to answer, "No." (Shame!) And still you are fined, and still your goods are distrained upon, and still you are imprisoned, unless you submit to this foul process.

It is true you can have your exemption certificate, you can go like a felon to a Police Court—a respectable man or woman, who perhaps has never entered such a place before—to a couple of magistrates, in order to inform those magistrates that you have a conscience, and perhaps be insulted in the most degrading manner. (Applause.) This is the kind of thing that respectable men, respectable women, aye, the very salt of the earth, have to submit to. It is not the drunkards, it is not the degraded people of Society, it is not the low, outcast classes, who care for neither wife nor child, that are in the anti-vaccination ranks. No; the anti-vacci-

nationists are thinking men and thinking women; they are men who love their homes, who love their children, and take a pride in their surroundings. They are those who recognise health as a priceless virtue, and shudder at the thought of inoculating a foul cattle disease into the life-blood of the offspring that they love. (Applause.) And I say it is a foul and wicked thing to bring men like this into the Police Court and to insult them as they are insulted, and treated as they have been treated, from the magisterial bench. (Loud applause.)

But this Imperial Vaccination League says that they wish in future to see that the Vaccination Act is carried out according to its spirit and letter. They do not wish the conscientious objector clause to be done away with. They know they dare not try it on, but they wish to see the clause worked in strict conformity with the spirit and the letter of the law. And so do we. (Hear, hear.) Their idea, however, of the spirit and the letter of the law no doubt is one thing; what we mean about it is another. When this comes up in the House of Commons next year, and it will come, then we shall want to know whether these men, these jackanapes, are to sit on the bench and insult respectable people, as they have been insulted, and we will see whether they will not obey, not only the letter, but the spirit of the law, and that such

MAGISTERIAL PRIGS

are taught—aye, taught—to behave as gentlemen. (Cheers.)

Lastly, they tell us that the League desires to see efficient vaccination defined under the Act of 1903, and that all certificates of vaccination should show if the vaccination has been efficient or not. We want the same thing. (Hear, hear.) It is wonderful how much we are in accord with the Imperial Vaccination League. (Laughter.) Oh! if only we could get it; if only we could get that guarantee, and a good hundred pounds at the back of it for compensation when the guarantee was broken! That is the thing. We have had 50 children every year registered by medical men as having died as the result of vaccination, and there has never been a doctor brought up for manslaughter. Let's have a guarantee; let's have a guarantee, and then we will see whether the medical men who are robbing us of our children in this way shall pay for it or not. (Applause.)

We are also agreed that we shall have a definition of what efficient vaccination is. Oh, yes, most decidedly! "You understand," wrote a medical writer recently, "successful vaccination does not mean efficient vaccination." Certainly, we are quite aware of that (laughter), and the funny part of it is you can never tell whether successful vaccination is efficient until the person gets small-pox; then you discover it. (Renewed laughter.) "Efficient vaccination!" Well, what is it to be? Here is a doctor who recently wrote in the *Hospital*, "What is efficient vaccination?" The *Hospital* says, "The Government four-mark standard is no answer." We have been told for years and years that that is just what efficient vaccination consisted of, namely, four good marks; even if they took small-pox afterwards, it was nevertheless "efficient vaccination." (Laughter.) Now one of the leading

medical papers comes forward and says it is not efficient vaccination at all, and we are to have this

EFFICIENT VACCINATION DEFINED.

And I suppose they won't be happy till they get it. (Laughter.) It only shows the sweet innocence of this Imperial Vaccination League. They really don't know what they are talking about. "Efficient vaccination—four marks." "No," says the Government. Whenever a well marked vaccinated person takes small-pox, they say, "But those marks were not good." Dr. Gayton, for instance, told the Royal Commission he did not consider any person properly vaccinated unless he had got four good marks of a very definite character. Each individual scar must answer his dramatic description; but when he came to be cross-examined, although he had asserted that a good "area" was a quality of value, yet he *thought* you *might* have a good scar which was "exceedingly minute." But if he had one good mark and three imperfect ones, he actually admitted he should be inclined to lump them together and call them two good ones; but yet when he had one good one and three imperfect ones, he generally in his statistics ignored the three and only registered the one. Now what are you to do with a scientific man and a scientific system like that? (Laughter.) "But," says the Local Government Board, "four good marks represent efficient vaccination, and we will allow no bonus unless this rule is complied with." Well, now, here is the strange part. We had 756 men in connection with the Metropolitan Asylums Board vaccinated the other day. Seven hundred and fifty-six men all vaccinated by the Medical Officer of the Department. All vaccinated "properly"; so properly that actually 28 per cent. of them were laid up with illness, and they had to compensate the employers, to compensate the men, and give every man-jack of them a five shilling bonus to be done at all. And it has cost at the end of it over £1000 for this handful of men—35/- a head. And it turned out that, after all said and done, they have only been vaccinated in two places! (Laughter.) Why this is, one does not know. You cannot get efficient vaccination unless you have been marked in four places, and yet the medical official of the Metropolitan Asylums Board itself vaccinated 756 men at the public expense with

ONLY TWO MARKS!

The Imperial Vaccination League might well ask that efficient vaccination should be defined. Will they ever get it? We have had one mark, two, three, and four. In Germany they had had twenty marks for thirty-seven years; and then had the biggest pandemic ever known in the history of mankind. The *Hospital* for December 20th last significantly remarks: "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." If such is the crass ignorance in high quarters after 100 years' experience, is it not time, I ask, that all the abominable tyranny in connection with this "very unsatisfactory" question was put a stop to? (Cheers.) And yet there is your friend, your Medical Officer of Health for Birmingham,

saying that he has been vaccinated six times, and now he says, "I am immune." (Laughter.) Well, let's hope he may be, but he can't tell until he gets into the midst of a small-pox outbreak—and perhaps get it after all.

And now in conclusion I will only mention one thing more, and that is that the League say they are going to have lectures, literature, parish lectures and meetings, &c., for the instruction of the public. When the Jenner Society was started, Dr. Bond said the same thing. He said the Jenner Society was formed specially for the instruction and the education of working men. And we waited, and waited, and waited to get these working men educated and instructed; we were all going in a body to learn ourselves. (Laughter.) I waited so anxiously for that opportunity, but through all these long years he has never attempted to get a public meeting. One day we twitted him with it, and we asked him why it was he did not have a public meeting. He wrote a letter to the press in reply, and said he knew too well the tactics of the anti-vaccinators at such meetings. (Laughter.) I asked him in reply how he could possibly tell what the tactics of the anti-vaccinators would be at a pro-vaccinators' meeting, seeing that a pro-vaccinators' meeting had never yet been held. (More laughter.) He was evidently afraid of these "tactics," and now what do we find? Again once more,

LITERATURE WILL BE CIRCULATED,

parish meetings will be held, lectures will be delivered. (A voice, "No dates.") No, you must not expect scientific men to be too precise as to details. (Cheers.)

Mr. Swann, of Liverpool, wrote to the Secretary the other day and said, "Will you be prepared to have a debate upon this subject? If the Imperial Vaccination League will have a public debate, we will provide either lay or medical men to debate it." A letter came back from the Secretary to say he had forwarded it to the Honorary Secretary. And then the Honorary Secretary, Mrs. Garrett Anderson, wrote in due course and said, "No, the Imperial Vaccination League do not intend to have debates, and if you will notice," she said, "in the manifesto" (signed by all these men who ought not to be afraid of their opinions) "not a word is stated about debates." (Much laughter.)

And the circular winds up with the usual appeal for funds, because they say an office is to be kept, and a Secretary is to be provided, and they must have the needful for the purpose. But surely the public will want to know what they are paying for? For if that is all they can produce for their office and their Secretary the sooner they shut up shop the better. We have heard nothing about them since. (Laughter.) Like the Jenner Society, the Imperial Vaccination League seems to be snuffed out already. Ever since that circular was issued they appear to have carefully kept in the background; probably they are only getting enough to pay the Secretary's salary, and I have no doubt it will stop there. The manifesto has been exploited in a quiet sort of way to bring pressure to bear upon the Government to compel children to be re-vaccinated at school age, and to get a re-

vaccination Bill passed through Parliament. Well, my friends, it is for you to say whether this shall be done or not; it is for you to say whether you are going to stand together hand-in-hand and heart with heart, upon this matter, and whether you will fight for

LIBERTY OF THE SCIENTIFIC CONSCIENCE

as your forefathers fought for liberty of the religious conscience. They fought, they won. You have suffered enough; many of us have suffered. It is a filthy rite; it is a vile and miserable superstition. Looking at it historically, looking at it scientifically, looking at it from the Christian standpoint, looking at it from the highest ideal of manhood, I say it is an insult to the proud spirit of English liberty, of English justice, of English manliness, of English right, and for God's sake let me urge you, one and all, to-night to be determined to stand firm against this iniquitous practice, until the vile, miserable, superstitious Act is wiped from the British Statute Book. (Loud applause).

The Resolution was then put to the meeting, and carried unanimously.



THE CASE AGAINST VACCINATION.



AN ADDRESS

BY

WALTER R. HADWEN, Esq.,

J.P., M.D., L.R.C.P., M.R.C.S., L.S.A., Etc.

(Gold Medallist in Medicine and in Surgery),

AT

GODDARD'S ASSEMBLY ROOMS,
GLOUCESTER,

On Saturday, January 25th, 1896.



PRICE - - ONE PENNY.



PUBLISHED BY

THE BRITISH UNION FOR THE ABOLITION OF VIVISECTION,

32 CHARING CROSS, LONDON, S.W.

THE CASE
AGAINST VACCINATION

AN ADDRESS

WALTER R. HADWY, ESQ.

OF THE BAR AT NEW YORK

DELIVERED AT THE ANNUAL MEETING OF THE
NEW YORK SOCIETY OF MEDICAL JURISTS

ROBERTSON'S ASSEMBLY ROOMS

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PUBLISHED BY

ROBERTSON, 15 NASSAU ST., N.Y.

AND S. S. KNEELAND, 100 N. 3RD ST., PHILA.

The Case Against Vaccination.

ADDRESS BY DR. HADWEN

AT

GODDARD'S ROOMS, GLOUCESTER,

JANUARY 25th, 1896.

A large and enthusiastic meeting of citizens was held in the Northgate Assembly Rooms, Gloucester, on Saturday evening, January 25th. The hall was crowded, and many failed to gain admittance. Mr. S. BLAND, J.P., presided.

The CHAIRMAN, in opening the proceedings, said: Ladies and Gentlemen,—The issue of the Doctors' Manifesto on the present outbreak of small-pox in Gloucester has opened the flood-gates of discussion and denunciation upon the vaccination question. The anti-vaccinators, firm in their convictions, remain unmoved by the stale sophistries, bogus statistics, and stupid taunts thrown at them. (Cheers.) The spectacle of a few individuals opposing the unanimous dictum of the local doctors is a fair butt for the small jokes of those superior persons who, to save themselves the trouble of study and thought, give their bodies to the doctor and their souls to the priest, relying on the necromancy of the one, and on the other for their physical and spiritual salvation. I yield to no one in proper respect for both of those professions—(hear, hear)—but knowing as I do, and as you do, the discarded fallacies and tremendous blunders which have received their unanimous support in the past, I maintain the God-given right of liberty of conscience and the use of my reasoning powers to accept or reject any of their present dogmas. (Cheers.) We read the truism in an older Book than any of their treatises, "that whatsoever a man soweth, that shall he also reap." That eminent physician, Sir Andrew Clarke, said—"Nature never forgets and never forgives." And until it is an indisputably proven fact, which it is not at present, and I do not think ever will be, that you can preserve health by the inoculation of disease, I will have none of it. (Cheers.)

Many years ago my attention was directed to the subject of vaccination by an extraordinary event. The Guardians of Keighley Union were sent in a body to prison for refusing to

enforce the Compulsory Vaccination Acts. That led me to study the whole question, with the result that I became an anti-vaccinator by conviction. In the course of events I was forced to the front in a public discussion of the subject, in which Dr. Bond was our chief opponent. Neither of us convinced the other, but the result showed that the public were convinced, for shortly afterwards our Board of Guardians, yielding to the pleadings of our good friend Councillor Karn and others, stopped prosecutions, and very few people have voluntarily adopted vaccination for their children since. At that time only a solitary medical man here and there was found on our side. But since then we have been joined, amongst others, by two of the foremost scientists in our country—Drs. Creighton and Crookshank—in denouncing vaccination as a superstition and a fraud. (Cheers). The disputes as to obscure scientific theories are therefore no longer in the hands of non-scientific laymen. We can leave it to the doctors to fight them out. They have never refuted Crookshank and Creighton, and until they do so we are abundantly justified in our attitude of opposition and unbelief. Into the merits or demerits of the question I am not going to enter particularly to-night.

I have by my side in the person of Dr. Hadwen—(cheers)—a duly certified medical practitioner, who, by the examinations he has passed and the diplomas he has obtained in the medical schools, is thoroughly well qualified to deal with any subject pertaining to the laws of health and the treatment of disease. You have had a taste of his advocacy in the admirable letters which he has contributed to the "Citizen," and as I venture to think you are more anxious to hear him than me, I will not debar you from that pleasure any longer. Mr. Bland explained in conclusion that Dr. Hadwen was not a paid advocate of the Anti-Vaccination Society, which was really poor in funds, though rich in the allegiance of its supporters and in the intelligence of those who adopted its principles, but he came at the sacrifice of his time and his practice in furtherance of the cause to which he had committed himself after studying it exhaustively in all its bearings. (Cheers.)

Dr. HADWEN, whose reception was most cordial, said: Mr. Chairman, Ladies and Gentlemen,—It certainly does one's heart good to see such a splendid and enthusiastic audience here to-night. It shows that one thing is very certain: that whether you are united upon the question under discussion or not you are deeply interested in the subject. (Hear, hear.) Upon coming into the room I had placed in my hands a paper, written, I see, by Dr. Bond, in which he gives "Fifteen reasons why we should believe in the efficacy of vaccination as a preventive of small-pox." I do not know whether Dr. Bond is here himself, but should he be here I will invite him to come on the platform and discuss those points with me after I have finished what I have to say. I have cast my eyes over them; I shall take up most of those arguments in the course of my address, and I have only now to say that every statement made in that paper has been smashed and pulverised thousands of times before. (Cheers.)

I had better, at the outset, state to you distinctly the position I occupy on the subject. I stand here not only as a medical man, but also as a father and a citizen. As a medical man I look upon vaccination as an insult to common sense,

as superstitious in its origin, unscientific in theory and practice, and useless and dangerous in its character; whilst as a father and a citizen I view the Compulsory Vaccination Acts as demoralising in their tendencies, degrading in their character, cruel and unjust in their enactments, and an unwarrantable interference with parental responsibility and liberty—(cheers)—such as ought not to be tolerated in a country like England, which has boasted of her civil and religious freedom for generations past. (Renewed cheers).

Not Purely a Medical Question.

One is constantly told that this is purely a medical question, and that if I want to air it I should discuss it before a medical audience or by letters in the medical papers. Those who say that know what is the treatment medical anti-vaccinists receive in the journals in question. But it is not a purely medical question. It is one of observation, of history and of statistics, and any intelligent layman can understand it as well as a medical man. It is a mere superstitious creed, and needs no professional knowledge to grasp it. And what is more I can say from what I have learned in experience that intelligent, thoughtful and studious anti-vaccinators know more about this subject than the majority of the medical men of to-day. (Cheers.) And, furthermore, I say that the very moment you take a medical prescription and you incorporate it in an Act of Parliament, and you enforce it against the wills and consciences of intelligent people by fines, distrains and imprisonments, it passes beyond the confines of a purely medical question and becomes essentially a social and political one. (Cheers.)

The medical profession of to-day is divided into two great sections. On the one hand we have a section, who form, I am bound to say, the majority, who believe that the only remedy for small-pox is vaccination with all its risks. On the other hand there is another section, the minority to which I have the honour to belong, which believes that the remedy for small-pox is not vaccination but sanitation—(cheers)—which is accompanied by no risk at all. We protest against the

DISEASING OF CHILDREN BY ACT OF PARLIAMENT.

We say that small-pox is a filth disease, and that if we get rid of the filth we shall get rid of the disease. We also declare that when a person is ill the doctor is justified in doing all he possibly can for his patient; but when a person is well he has no right whatever to interfere with the normal functions of the human body as he does when he introduces disease, especially the disease of an inferior animal, unless he can give a distinct and absolute guarantee that not only will the operation effect the purpose avowed but also that it will produce no injurious results. (Cheers.) And with all the fifteen reasons Dr. Bond can produce I will defy him to give such a guarantee. It is a serious blot upon the medical profession that it has encouraged and that it has helped to enforce, and that the Gloucester doctors even to-day are urging the Guardians to prosecute in order to enforce a measure, when they cannot guarantee that it will

effect the purpose professed, nor yet that it will produce no injurious results. The public vaccinators are told in their Orders that they must hold themselves responsible for the quality of the lymph they use. But where is there one who would think of doing so when he can but know that the operation is accompanied with risk? Therefore what right have they to interfere with healthy children? (Cheers.) Remember, the Order is most distinct to public vaccinators that it is only healthy children that are to be diseased. ("Shame.")

History of the Movement.

Thomas Carlyle has told us "that no error is fully confuted until you have seen not only that it is an error, but also how it became one." It will, therefore, be as well for me to take you over something of the history of the movement, and give an idea how this gigantic superstition and this monstrous fraud of vaccination came to be enforced, and came to be adopted by the profession and the public. The "discoverer" so-called was, as you all know, a man by the name of Edward Jenner, who lived at Berkeley, in your own county. He was not, however, the discoverer. The whole thing was a superstition of the Gloucestershire dairymaids years before Jenner was born—(laughter)—and the very experiment, so-called, that he performed had been performed by an old farmer named Benjamin Jesty twenty years previously. Now this man Jenner had never passed a medical examination in his life. He belonged to the good old times when George III. was King—(laughter)—when medical examinations were not compulsory. Jenner looked upon the whole thing as a superfluity, and he hung up "Surgeon, apothecary," over his door without any of the qualifications that warranted the assumption. It was not until twenty years after he was in practice that he thought it advisable to get a few letters after his name. Consequently he then communicated with a Scotch University and obtained the degree of Doctor of Medicine for the sum of £15 and nothing more. (Laughter.) It is true that a little while before he had obtained a Fellowship of the Royal Society, but his latest biographer and apologist, Dr. Norman Moore, had to confess that it was

OBTAINED BY LITTLE LESS THAN A FRAUD.

It was obtained by writing a most extraordinary paper about a fabulous cuckoo, for the most part composed of arrant absurdities and imaginative freaks such as no ornithologist of the present day would pay the slightest heed to. A few years after this, rather dissatisfied with the only medical qualification he had obtained, Jenner communicated with the University of Oxford and asked them to grant him their honorary degree of M.D., and after a good many fruitless attempts he got it. Then he sent to the Royal College of Physicians in London to get their diploma, and even presented his Oxford degree as an argument in his favour. But they considered he had had quite enough on the cheap already, and told him distinctly that until he passed the usual examinations they were not going to give him any more. This was a sufficient check in Jenner's case, and he settled down quietly without any diploma of physician.

The period in which he lived was undoubtedly a very filthy period. It was a time when, to take London for instance, the streets were nothing but a mass of cobble stones, the roads were so narrow that the people could almost shake hands across the street, and as for fresh air they scarcely knew anything about it, for locomotion such as we have to-day was unknown. Sanitary arrangements were altogether absent. They obtained their water from conduits and wells in the neighbourhood. Water closets there were none, and no drainage system existed. It was in London especially that small-pox abounded, where bodies were buried in Old St. Paul's Churchyard in Covent Garden only a foot below the soil, and people had to get up in the middle of the night and burn frankincense to keep off the stench; and where those who could afford it had houses on each side of the Fleet river, so that when the wind blew towards the east they lived in the west, and when it blew towards the west they lived in the east. This was the condition of old London, and you cannot be surprised if small-pox was then what Dr. Bond calls a scourge; you cannot be surprised if small-pox has declined since, even *after* this wonderful discovery of vaccination—(laughter and cheers)—and let us not forget that sanitary improvements began in London as early as 1766, and small-pox began to decline as a consequence before vaccination was invented.

I won't go now into

THE PERSONAL CHARACTER OF JENNER,

but Dr. Creighton has well described him when he tells us that he was vain and petulant, crafty and greedy, a man with more grandiloquence and bounce than solid attainment, unscrupulous to a degree, a man who in all his writings was never precise when he could possibly be vague, and never straightforward when he could be secretive. This is the character that Dr. Creighton gives him; and as for the statement, which we constantly hear, that Jenner received such wonderful homage in the later years of his life, we well know that his closing years were years of misery as the failures of his fetish began to crowd upon him. It was on January 23rd, 1823, that he wrote his last letter to his confidential friend, Gardner, when he told him he was never surrounded by so many perplexities. Two days later Jenner breathed his last.

This practice of vaccination was simply a legend. The idea of charming away disease has been common in all countries and at all times, not only amongst the ignorant but amongst the educated. In old herb books we find how much the remedies for certain diseases depended on the jingle of the names; and there is no doubt that the way in which the idea got amongst the dairymaids that a person who had had cow-pox never had small-pox depended upon the jingle of cow-pox and small-pox, and it was this which had such an extraordinary effect upon the mass of the people at that time. In the old herb books, for instance, we find that if you want to prevent suffering from the bite of a mad dog you must carry a herb called hound's tongue, and again, to prevent the ill-consequence of a dog bite you must take a portion of the root of a dog rose. This kind of thing was common at that time; it was

A MOST SUPERSTITIOUS PERIOD

in which Jenner lived, when live frogs were swallowed for the cure of worms; when cow dung and human excreta were mixed with milk and butter for diphtheria; when the brains of a man who died a violent death were given in teaspoonful doses for the cure of small-pox. Even Jenner had invented, not merely a cure for small-pox, but also one for hydrophobia, which quite takes the steam out of Pasteur's treatment. All you had to do was to duck the man who had been bitten three times in a stream of running water, only taking care that each time you ducked him life became almost extinct. (Laughter.) He said he never knew that to fail under any circumstances. (Renewed laughter.) He evidently had an idea that persons bitten by a mad dog became possessed of an evil spirit, and should be treated as they used to treat the witches. So much for Jenner.

When he first of all heard the story of the cow-pox legend that the dairymaids talked about, that if you only had cow-pox you can't have small-pox, he began to mention it at the meetings of the Medico-convivial Society, where the old doctors of the day met together to smoke their pipes, drink their glasses of grog, and talk over their cases. But he no sooner mentioned it than they laughed at it. The cow doctors could have told him of hundreds of cases where small-pox had followed cow-pox, and Jenner found he would have to drop it. In 1796, however, he performed

HIS FIRST EXPERIMENT

as it is called. He took a boy named James Phipps and inoculated him with some lymph which he took from a cow-pox vesicle. A short time afterwards he inoculated this boy with small-pox, and for very solid reasons which could be explained, the small-pox did not take. "Now," said Jenner, "is the grand discovery. This will answer my purpose, and I shall soon be able to get another paper for the Royal Society," to follow in the wake of the glorious cuckoo, which has been wittily termed "the bird that layed the vaccination egg." (Laughter.) That was in 1796, and we are close upon the century since that wonderful experiment. Russia is preparing to celebrate it, and the Bristol medical men are sending round for subscriptions for £1,000 in order to purchase the relics of this wonderful man—such as his snuff box, his lancets, and the chair the great man sat in—to put in the museum of the Bristol University. I have noticed that the doctors have omitted one important article which appeared in the Bristol Exhibition—

A HAIR FROM THE TAIL OF THE FIRST COW

that supplied the vaccine lymph. (Loud laughter.) I am sorry they have left that out. I am sure nothing would so stir the hearts of the coming race of medical men as an evidence of belief in the principle contained in the old herb book by which a person had to carry a hair of the tail of the dog that bit him. (Laughter.) I do not know whether

the sensation from Russia is going to filter through to England, but unless you people in Gloucester are going to be swayed by the manifesto issued by the medical men my advice to you is to keep your rejoicings for the 5th of November, and then if you happen to be hard up for a companion for Guy Fawkes I would advise you to have an effigy of Edward Jenner to help feed the flames of your bonfire. (Laughter and cheers.)

Jenner inoculated this boy James Phipps in 1796. Then, as soon as he had done that, he wrote it down—(laughter)—and went round the neighbourhood collecting desultory information with regard to cow-pox and cow-poxed milkers. He got cases of those who had had cow-pox years before and had never had small-pox, as if everybody was bound to have the small-pox. Then he took some worn-out paupers, over 60 years of age, who had had the cow-pox years and years before and inoculated them with small-pox to see if they would take. He found they did not take, because as people get advanced in life they are more or less proof against it. "This," said Jenner, is the grand proof of the value of inoculation of cow-pox as a preventive of small-pox." These were the materials which he got together in order to present his paper to the Royal Society. It was not to be surprised at that, with miserable material such as this, the Royal Society, though at that time at so low an ebb scientifically, should, nevertheless, immediately reject his paper as unsatisfactory and unsuited to a scientific society or a healthy public. (Cheers.) Jenner took care in that paper never to mention the cases of people who had cow-pox and

HAD SMALL-POX AFTERWARDS.

He mentioned the cases of a dozen old men who had cow-pox and did not take small-pox afterwards, but he could have had hundreds of cases of people who had had both. These he took good care never to say anything about. As soon, however, as he came back with his paper the cow doctors were at him. They said this was all rubbish and began to pour on him hundreds of cases, just as we pelt the provaccinists with figures showing that ninety percent. of those who have had small-pox have already been vaccinated. (Cheers.)

So Dr. Jenner soon found he would have to change his whistle, and invented a novel idea. The idea he started was this. He said there are two kinds of pox. One is the genuine kind and the other spurious, and those who have had cow-pox and yet had small-pox afterwards have had the spurious variety. Those who had cow-pox and did not have small-pox afterwards were those who have had the genuine disease. This was a very clever and specious kind of argument, and the next thing that Jenner had to do was to find out where the genuine cow-pox could be found. Accordingly, on going into a stable one day he found that a cow had been affected with a very peculiar kind of disease that was produced in this way. It seems that a man had been seeing to the grease upon a horse's heels, and had gone to milk the cows without washing his hands. The result was that it produced that peculiar kind of disease known by the name of

HORSE-GREASE COW-POX.

"This," said Jenner, "is the life-preserving fluid," and he went home to write about the wonderful virtues of horse-grease cow-pox. However, it was necessary to perform an experiment, and he inoculated a boy named John Baker with horse-grease, direct from the horse's heels. He intended later to inoculate him with small-pox in order to see whether it would take, but it was something like the case of the man, you remember, who had an idea that if he only gave his horse a gradually diminishing diet he would at last be able to keep it on nothing. You remember that the horse died before the experiment could be completed, and it was the same with John Baker, for the poor boy died in the workhouse directly afterwards from a contagious fever contracted from the inoculation. ("Shame.")

He then took some of the horse-grease cow-pox and inoculated six children, and without waiting to see the result or to prove whether it would take or not he rushed to London to get his paper printed. And in that paper he had the audacity to assert that it was not necessary to wait to see the result because the proofs he already had were so conclusive, and the experiments had told such an extraordinary tale—although he had completed but one experiment in his life, and that did not prove it at all. That boy James Phipps was hawked about the country as a proof of vaccination, but he had not been inoculated with horse-grease cow-pox at all, but with spontaneous cow-pox, which Jenner now declared in his second paper was absolutely useless and unprotective against the disease. But as soon as the paper was published the outcry was tremendous. "What," said the people, "take horse-grease, filthy grease from horses' heels, take that and put it into the blood of a child!" No, they would have nothing to do with it. They did not mind having cow-pox without the horse, but they could not think of having the cow-pox with the horse in it. Dr. Pearson wrote Jenner telling him he must take the horse out, or "it would damn the whole thing." Consequently—there is no accounting for taste—they denounced horse-grease cow-pox, but were prepared to accept spontaneous cow-pox. What did Jenner do? Did he attempt to stick up for his creed or to prove that he was right? No;

HE WANTED MONEY.

He said he was looking forward "in the fond hope of enjoying independence," declaring he was in an impecunious condition. He accepted the verdict of the people. They wanted cow-pox; they should have it. And accordingly he wrote a third paper and tried to wipe out what he had written before. With the exception of a solitary footnote in that paper horse-grease cow-pox was not mentioned at all, and he fell back on the spontaneous cow-pox theory which he had previously denounced as useless and unprotective. This spontaneous cow-pox is what we are recommended to have by Dr. Bond in almost his last clause, *i.e.*, having lymph direct from the cow which is denounced by the discoverer himself as absolutely unprotective against the disease in question.

Why Vaccination was foisted on the People.

Well, having told you briefly the history of the matter, you may ask, "However was it that this thing was foisted on the people? How came the medical men of the country to accept it?" In the first place science was then at a very low ebb. It was about that time Joanna Stephens lived. She had a wonderful remedy for stone, which gained great notoriety. There was great anxiety to obtain it, and at last a subscription list was opened. It was headed by the Archbishop of Canterbury, and all the leading doctors subscribed. Joanna wanted £5,000 for her recipe. The money was obtained and the recipe came to light. It ran as follows: "My medicines are a powder, a decoction and a pill. The powder consists of egg-shells and snails, both calcined. The decoction is made by boiling some herbs (together with a ball, which consists of soap, swine's cresses burnt to a blackness, and honey) in water. The pills consist of snails calcined, wild carrot seeds, burdock seeds, ashen keys, hips and haws, all burnt to a blackness, soap and honey." She got her £5,000 and the doctors got their recipe; they say that fools and their money are soon parted. (Laughter.) I don't begrudge either Joanna Stephens the money or the doctors her recipe, but I don't think any more of the doctors in consequence, and we can't be surprised at their accepting with so little opposition the wonderful recipe of Jenner for small-pox.

There was another reason why they accepted it, and that was this, the majority of the doctors of that time had never heard of or seen cow-pox. Dr. Denham, writing at that time, said the majority had never heard of it. However, when Jenner came forward with the letters F.R.S., M.D., after his name, with all the impudence of a charlatan, saying, "Such is the singular character of my discovery that a person who is once inoculated with cow-pox is for ever afterwards secure against small-pox," the whole of the profession was arrested by the deliberate statement made, and they all bowed down before the golden calf which Nebuchadnezzar the king had set up. (Laughter and cheers.)

THE STORY OF INOCULATION.

Another reason was that inoculation had turned out a failure. What was inoculation? It consisted in this: It was supposed at that time that small-pox was a permanent evil influence amongst us, and that everybody was obliged to have it some time or other before they died. Consequently it was thought if they could only have the small-pox in a mild form and at a convenient season it would be nice to have it over, just as mothers now think that their little ones must have measles, scarlatina, whooping cough, chicken-pox, etc., and are glad to get it over. It was consequently said, what is more simple? Let us give the people a mild case of small-pox when they are well and able to resist it. This idea, which became very popular, first of all originated in India. They had there a small-pox goddess whose name was Matah, and the Hindoos used to inoculate themselves with small-pox in order to appease the goddess, fancying that if they did so and if small-pox came along they would then have it in a very mild form, or, perhaps, that her Majesty would look kindly upon them and they

might not have it at all. This filtered through to the Ottoman Court, and in 1721 Lady Wortley Montagu, wife of the then Ambassador, was so struck with it that in her letters to London she told them that everybody in Turkey was being inoculated with small-pox. Coming from such a person and from the very cream of Society the people were taken with it, and it became the fashion through the length and breadth of England to inoculate with small-pox. But they soon found that it spread the disease tremendously. It was between 1700 and 1800 that small-pox was so rife. You don't see so much now. Why? They were then giving people small-pox right through the country by inoculation. Dr. Bond talks about the unanimity of the profession. Why, the whole profession were unanimous about that then! They said inoculation was the thing and that it must be done. Talk about the unanimity of the profession! That goes for nothing; we have

PRINCIPLES TO DEAL WITH,

not the unanimity or otherwise of the profession. (Cheers.) Majorities are never a proof of truth. The consequence was that small-pox spread, for though a person inoculated might have it mildly he was able to give it to others much more severely. Dr. Lettsom, writing in 1806, tells us that whereas small-pox deaths for 42 years before inoculation were only 72 per thousand, they were 89 per thousand in the 42 years after. Consequently the doctors were getting staggered, though they carried this out unanimously for 80 years, and when Jenner came forward and said, "Here's a mild kind of small-pox; it's not infectious; it is certain to stop the small-pox;" why the doctors at once fell in with it and received it with open arms. The people craved for it, and instead of wanting to get the small-pox over as before everyone began to cry for the cow-pox which Jenner brought before their notice. In the first twelve months the King had accepted it, the Queen and her courtiers had fallen in with it, and the illegitimate sons of the Duke of Clarence were vaccinated with it. (Laughter.) And when they saw this done honest mothers knew their doom. And depend upon it, my friends, such was the terror of small-pox inoculation at that time that if you and I had been living then I am quite sure we should have joined the "genteel mob." Two years after that the whole of the London doctors signed a testimonial and declared that this discovery was such that persons once vaccinated were for ever protected against small-pox. We have found out since then by experience that doctors are as liable to make mistakes as other people. It would have been just as well, before putting their pens to a testimonial like that, to have remembered the old proverb, "Never prophesy until you know."

They very soon

BEGAN TO TALK ABOUT COMPULSION.

In 1840 vaccination was paid for out of the public rates, and the doctors said inoculation must be put down. The vaccinators and inoculators—there were two sets of doctors then, as now—fought against one another like the pro-vaccinists and the anti-vaccinists at the present time. The vaccinists were in a majority, and could not rest until they had the inoculators put down. Consequently in 1840 an Act was passed

that anybody who tried to inoculate another with small-pox would be liable to a month's imprisonment. In 1853 they managed to pass that Compulsory Vaccination Act which we are here to protest against to-night. (Cheers.) I think one of the most serious complaints against the whole system is this: They dare not trust it to its own merits. Do people want small-pox? If the system is any good it will speak for itself; if it is bad they have no right to enforce it.

You may ask, "Why was compulsion necessary?" The reason was simply this—the people were beginning to find out it was no good; they were beginning to clamour again for inoculation, and the working classes, who reason more by the hard facts of experience than by medical dogmas, found that it was not the slightest use for protecting people against small-pox. In 1811 there had occurred a notable instance of failure. Lord Robert Grosvenor, ten years of age, who had been vaccinated by Jenner himself, was now taken with small-pox, and lay hovering between life and death. Jenner sat by the bedside of his illustrious patient, and when at last the boy began to turn and get better Jenner turned to the father with "What a lucky job he was vaccinated. If he had not he would surely have died." Thus Jenner started the glorious doctrine of mitigation, which has been handed down as the heirloom of the medical vaccinists ever since.

SMALL-POX OF THE COW.

Another reason why the doctors accepted it was this: Jenner gave a brand new name to cow-pox that had not been heard of before. He called cow-pox small-pox of the cow, or *Variolæ Vaccinæ*, but you may search in vain for any attempt upon his part to prove it. He might as well have called it diphtheria of the cow, for all the analogy it bore. It gave a scientific air to the whole thing, although there was just as much science in it as in the heads of the old women of Gloucestershire. (Laughter). The theory was this: Cow-pox is small-pox of the cow; therefore if you give a person this cow-pox it is the same as small-pox, only in a very mild form, and it is not infectious. Sir John Simon, the great high priest of the vaccine cult in England for many years, said that the reason cow-pox prevents small-pox is because it is small-pox, and that a person who has had cow-pox has really passed through small-pox. And Jenner himself absolutely declared that it is not that cow-pox is a preventive of small-pox but it is small-pox itself. Look at the incongruity of the whole thing. Someone has remarked that "the law's a hass," and I am sure it is in the present instance. By the Act of 1840 anyone who gave another small-pox was liable to a month's imprisonment; by the Act of 1853 if you don't give another small-pox—which is what cow-pox is supposed to be—you are liable to a fine of £1 and costs. So that between the two things, as Mr. Alfred Milnes has said, "a man is about as happy as a Jew in Russia." (Laughter.)

COMPARE THE TWO THINGS.

What is cow-pox? It is a disease which occurs on the teats of cows; it only occurs when they are in milk; only in one part of the body, and naturally only in the female animal; it results in an ugly chancre;

and is not infectious. Small-pox, on the other hand, is not limited to the female sex as in cow-pox, nor to one portion of the body: it presents different physical signs, and, furthermore, is tremendously infectious, and the course and symptoms of the two diseases are totally different. Therefore there is no analogy between the two. Badcock, of Brighton, accepting this theory, however, inoculated a number of cows with small-pox, and fancied that it should have come cow-pox. But instead it never produced anything but small-pox. So much had this question obscured the minds of the medical profession that the French savants formed the Lyons Commission to go thoroughly into the whole thing, and Mons. Chauveau, the eminent French scientist, after experimenting, told his Government that it was totally impossible to convert small-pox into cow-pox. The fact is, as Dr. Creighton said, to try and turn small-pox into cow-pox you may as well try to convert a horse chestnut into a chestnut horse. If they can turn cow-pox into small-pox I say let them do the conjuring trick backwards, and then I'll believe them. (Cheers.)

Look at the absurdity of the whole thing! For the sake of argument take it for granted that cow-pox is small-pox, and that to vaccinate is to give small-pox. Then, according to Jenner's theory, after inoculating with small-pox the person should not take it, like his case of James Phipps. But is it not a fact that you can be successfully re-vaccinated frequently? If, therefore, vaccination is a form of small-pox, it does not prevent you having "small-pox" again. If once vaccinating does not prevent your being re-vaccinated, how can it protect against the genuine article? (Cheers.) If it can't protect you against the bite of a cat, how can it against the scrunch of a tiger? Why, these Gloucester doctors, in boasting of their re-vaccination, are absolutely

DAMNING THEIR WHOLE CREED,

for if their theory were correct they have no business to be able to be re-vaccinated at all! But I may be told, this may be true enough. There may be no science in it—and I have no hesitation in saying that the gentlemen alluded to by the Chairman, Dr. Crookshank and Dr. Creighton, have knocked the bottom out of this grotesque superstition and shown that vaccination has no scientific leg to stand on—but there are some remedies, which, though you can't prove the physiological effect they have or see the science that belongs to them, yet you know by experience will produce certain results. Now let us test vaccination by this law,

The teaching of Experience.

I have clearly proved that there is no science in vaccination; now we will see what experience has to say upon the subject. Since the passing of the Act in 1853 we have had no less than three distinct epidemics. In 1857-9 we had more than 14,000 deaths from small-pox; in the 1863-5 epidemic the deaths had increased to 20,000; and in 1871-2 they totalled up to the tune of 44,800. It might be asked: Did not the population increase? Between the first and second epidemics

the population did increase by 7 per cent., but the small-pox deaths increased by 41 per cent. Between the second and third epidemics the population went up by 9 per cent., and the small-pox by 120 per cent. Small-pox is an epidemic disease, and if cow-pox is to do anything as a preventive of small-pox it should prevent an epidemic. It is all very well to say what a splendid protection it is when there is no epidemic about, but the question is: How will it stand when small-pox comes? But, as Dr. Druitt has well remarked: "You may just as well try to stop small-pox epidemics by vaccination as to

PREVENT A THUNDERSTORM WITH AN UMBRELLA."

In 1880 the Registrar-General reported that although typhus fever and other zymotics had gone down, the only one to show a rise was small-pox; *i.e.*, after thirty years of compulsory vaccination it was 50 per cent. above the average of the previous 10 years. We got rid of the black death and of gaol fever entirely. What did it? Good water, good drainage, and the whitewash brush. (Cheers.) Yet the only zymotic which shows a notable increase is the only one against which a special prophylactic has been used, and so remarkable was this that the Registrar-General had to draw attention to it. Undoubtedly small-pox would have gone too if the inoculators had not taken such pains for nearly 100 years to establish it in this country.

I constantly find that when the pro-vaccinists are driven into a corner as to the failures occurring in this country they always adopt the plan of Jenner, and invite us to look at the brilliant successes in other countries. As soon as ever they are asked to remember the number of vaccinated people who get small-pox they say, "Oh, look at Ceylon," "come with me to the plains of India," they ask you to look into Central Africa and "see what vaccination does there." Yes, it is all very well to be carried away to those countries where no Registrar-General is kept and no official statistics have ever been published. (Cheers.) They say,

"LOOK AT PRUSSIA,

and the way vaccination has stamped out small-pox there." Very well, we will look at Prussia, which, I may say, has kept better vaccination records than any other country in Europe, except, perhaps, Sweden. In 1834, which is twenty years before England adopted the Compulsory Vaccination Act, so severe was the Act in Prussia that, in addition to primary vaccination, every child had to be vaccinated over again when he started upon his school life; he had to be re-vaccinated on going from college to college; and re-vaccinated over again when he entered the Army, which meant every healthy male out of the whole of Prussia. And so severe was the Act that if any man refused to be vaccinated it was ordered that he was to be held down and vaccinated by force; and so thoroughly was it done that he was to have ten insertions in each arm. That was stiff enough for anybody, I should think. (Laughter). In 1871-2—thirty-five years after this Compulsory Vaccination Act—came the terrible epidemic which swept all over Europe. It came to Prussia, and what was the result? In that year small-pox carried off no less than 124,978 of her vaccinated and re-

vaccinated citizens ; and yet thirty-five years of compulsory vaccination of the description which I have referred to ! This roused Prussia, and she began to look about her ; she saw the cause, and she was determined to remedy it. She brought good water into her cities, purified her river Spree, introduced a complete drainage system throughout the country—(loud cheers)—she got rid of her “rookeries,” and ordered model barracks to be built for the soldiers ; and

AWAY FLED THE SMALL-POX,

like the Philistines before the Children of Israel. Sanitation did for Prussia what 35 years of compulsory vaccination was unable to accomplish. At the present time in Prussia small-pox is almost extinct. (Cheers.) It is not that people are being vaccinated more ; they are vaccinated less. (Hear, hear.) They hate it in Germany as we English people do ; and you can now get out of vaccination there by the payment of a shilling fine. Even the very children in Germany know well enough how it is hated, and in proof of this I may relate to you an amusing incident. A school inspector went to one of the schools the other day and asked the question of the class, “Why was Moses hidden by his mother in the bulrushes ?” Very soon a little fellow put up his hand and replied, “Please sir, she did not want him to be vaccinated.” (Loud laughter.)

We will now come nearer home and take the Metropolitan Asylums Board and their statistics. From 1870 to 1886 there were 53,579 cases of small-pox, and out of that number there were 43,919 who had undergone the process spoken of by Sir John Simon as “removing every taint of susceptibility to infection.” But you may say, perhaps, “Will it protect for a time ?” Well, I should like to know for how long ? (Hear, hear.) Dr. Bond says fourteen ; some people say ten ; in Birmingham they were rejoicing the other day that they had had nobody take small-pox, no vaccinated child, under three ; so that it has got down rather low. (Laughter.) Jenner said that to talk about re-vaccination was to rob his “discovery” of half of its virtues ; he was dead against it by the statement he made that one vaccination was protection for a life-time. On that he got £30,000. (Laughter.) Dr. Bond tells us that that was altered afterwards, and that it was not the expression of Jenner’s matured vision. No, Jenner altered it afterwards, but he got his £30,000 first, though. (Renewed laughter.) He never yielded up the £30,000 when he found he had made a mistake.

HOW LONG WILL IT PROTECT ?

Dr. Bond talks about the Sheffield epidemic in his letter two or three days ago, and I have no doubt Mr. French Hensley, to whom he replies, will very soon put the matter straight. He tells us that the Sheffield statistics show a wonderful immunity of vaccinated children. Dr. Bond bases that upon the marvellous statistics of Dr. Barry. Dr. Bond has evidently never read the Royal Commission reports at all. (Laughter and cheers.) It looks as though Dr. Bond has never seen the cross-examination of Dr. Barry. Dr. Bond has no idea of the fatal fallacy underlying that Sheffield epidemic report, which came to an utter collapse when Dr. Barry was cross-examined upon it. He has no idea of all that ; he is evidently something like the old lady Sydney

Smith talked about, who never read anything on the opposite side of the question in case she should be prejudiced. (Laughter). If it had not been for the Sheffield report—I am very pleased it was brought forward, although it is a perfectly hollow thing so far as facts go—we should not have had the Royal Commission. The vaccinators thought when it fell into Government quarters that they had such a tremendously strong case that the anti-vaccinators would have been wiped off the scene. But when it came before the Royal Commission, Dr. Collins, one of the Commissioners, took Dr. Barry in hand and very soon spoilt the whole game; and it turned out that the whole of the report, from beginning to end, was nothing but

A STATISTICAL TRICK,

being based upon evidence collected by census collectors towards the close of the epidemic instead of at the beginning, when many of the unvaccinated had passed over to the vaccinated class. (Cheers.) I will give you some statistics with regard to Sheffield as far as one can gather them, which I take out of this very report. There were ten cases of small-pox under one year old, 87 cases under five years of age—vaccinated all of them—and 241 cases of vaccinated small-pox between the ages of five and ten. In spite of what is said about vaccination protecting up to 14 years of age, this splendid report, that Dr. Bond speaks of with such admiration, declares that Dr. Bond's theory is as false as anything can be, for it gives no less than 338 cases of vaccinated small-pox under ten years of age. (Cheers.) Well now, let us see what vaccination did for Sheffield. This Sheffield epidemic occurred in 1887 in the very worst quarter of the town, on 135 acres of the most horribly insanitary part of the town, which was condemned years ago by the Government Inspector, and it has never been put right yet. That is where small-pox has always broken out, that is where small-pox has flourished: and when this tremendous epidemic took place on they went, vaccinating and re-vaccinating; and still the small-pox epidemic spread. There were no less than 7,000 cases of small-pox, and, alas! 600 deaths, and still the small-pox went on; until at last God in His mercy opened the floodgates of heaven and down came the rain, which washed the sewers and the drains, cleared away the filth from the gutters, washed the dirt from the streets and the filth from the dens and away went the small-pox.

PURE WATER ACCOMPLISHED FOR SHEFFIELD

what 56,000 vaccinations had been unable to effect. (Loud cheers).

Again, take Gayton, a great authority with the pro-vaccinists, who in his book entitled "The Value of Vaccination," shows that of 10,403 cases of vaccinated small-pox 20 cases were under one year old, 341 between one and five, and 945 between five and ten; *i.e.*, 1,306 cases of small-pox in vaccinated children, in order to prove the efficacy of vaccination! "But," we are told, "the children don't die." Well, that may be all very well; we will see whether they die or not. Turn to Germany, for instance. During that epidemic I spoke of just now there were 2,140 cases of children under ten who had small-pox, and 736 of them died; there were 1,503 cases vaccinated under five, and

there were 573 deaths. You may say, "Then why is it they don't die in this country?" Turn to Muller's Orphanage in Bristol. In 1872 there were 740 children, all vaccinated, and 292 cases of small-pox amongst them, and there were 17 deaths. But I can give you the reason, perhaps, why the children don't die—why vaccinated children don't die from small-pox so much as we should expect. In 1886, for instance, there were 275 cases of small-pox deaths altogether throughout England and Wales; there was only one vaccinated child that died from small-pox under ten years of age, but there were 93 children who died from "chicken-pox." (Laughter.) And the Registrar-General, in commenting upon the fact, declared that nearly, if not all, those cases should have been registered as small-pox, because chicken-pox "never kills"; and Dr. Ogle, the Chief in the Registrar-General's Department, told the Royal Commission as a witness before it, that he had never known chicken-pox kill a child in his life. (Cheers.) Why were not they registered as small-pox? In 1893, the last published returns we have, there were 127 children who were reported to have died from "chicken-pox"; so perhaps that will explain "why the children don't die." (Laughter and cheers.)

Re-Vaccination.

Then they say if it will only protect for a time re-vaccination is the thing. I want to know how often are we to be re-vaccinated? Jenner said once was enough; Dr. Thorpe Porter, Superintendent of the Dublin Small-pox Hospital Sheds, says he has no faith in re-vaccination; Dr. Pringle, the great Indian vaccinator, says re-vaccination is an unpathological and unphysiological blunder; whereas Dr. Seaton says that to be vaccinated once at puberty is quite enough; Sir William Jenner says you ought to be vaccinated once in infancy, again at seven years, and again every time an epidemic comes along (laughter): Dr. Oakes says you ought to be vaccinated every ten years; and a great German vaccinator, whose name I won't attempt to pronounce, says you ought to be vaccinated every four months until you cannot be re-vaccinated any longer. (Laughter.) What, to be kept in a constant state of cow-pox in order to prevent small-pox? Why I would sooner have the small-pox, it would be a thousand times better, and have done with it. (Cheers.)

THE SMALL-POX NURSE FABLE.

Then people say, "What about the nurses; why, don't you know that for 50 years there has not been known a single nurse in any small-pox hospital who has taken the small-pox, because they have been re-vaccinated?" Dr. Cory was responsible for the card which has been handed for years to mothers who brought their children to the vaccination station, and which served to stamp this delusion upon the country; and when Dr. Cory was before the Royal Commission this card was brought to his notice. "How is it that it has been published; is it a fact?" he was asked, and the answer was "No." "Is it not a fact that nurses who have taken small-pox had been re-vaccinated?"

"Yes." "How is it that you printed this?" "Oh," said Dr. Cory, "originally the card was simply concerning Highgate Small-pox Hospital and it was the printer"—oh, that naughty printer—(laughter) "who deleted the definite article when it ought to have been there, who put an 's' after the 'l' who dropped out two capital letters instead of leaving three, who scattered the word Highgate, and left it as a matter for generalisation!" (Renewed laughter.) In Highgate Small-pox Hospital we know that whenever it was possible they got the nurses from the small-pox patients, and the reason these did not have it was because they had had small-pox beforehand. Now take the nurses in the fever hospital. Dr. Hopwood lately declared that no nurse had died in the Fever Hospital of London for ten years. But they were never vaccinated against fever, and why did not they die? The fact of the matter is this, the small-pox nurse fable is a very absurd one. We know well enough that small-pox has the faculty of taking hold of the weakest; that is the reason why children, whether vaccinated or not, naturally fall the easiest prey. In Gloucester you have practically no vaccinated children to suffer. It

DEPENDS UPON THE CONSTITUTION

and the amount of resisting power to the disease. The nurse is a selected person—she would never think of being taken on as such unless she were perfectly healthy. As I said, she is frequently taken from the ranks of the small-pox patients, but otherwise is perfectly healthy; she has good food, regular exercise; she works in a well-ventilated ward; and, what is more, she has no fear—which I believe is one of the greatest protectives under the sun. (Cheers.) She is in a far better position than her patients who, as a rule, come from insanitary places, from the slums and dens of our cities; and it is not, therefore, to be wondered at that the nurses should be able to resist the small-pox. Even in the time of the plague, when vaccination was not dreamed of, it was remarked in all the old writings that the doctors and nurses rarely if ever caught the disease. But it is not that the nurses do not take it. Dr. Colin, of the Paris small-pox hospital, said that in the hospital he had no less than 200 nurses re-vaccinated under his own eyes, and yet out of that number 15 took small-pox and one of them died. Furthermore, he tells us that at the Bicetre Hospital there were 40 medical attendants and apothecaries who never contracted small-pox at all, although they had neglected to be re-vaccinated; and he mentions, moreover, 40 sisters of mercy who were right in the very centre of the hospital, who refused to be re-vaccinated, and not one of them had small-pox. (Cheers.)

RE-VACCINATION IN THE ARMY.

Then look at our re-vaccinated Army. From 1860 to 1888 we had no less than 3,953 cases of small-pox in the British Army, and 391 of them died. If re-vaccination won't protect the soldier, how is it going to protect the nurse? (Hear, hear.) In Egypt in 1889 they died at the rate of 1,750 per million from small-pox. But, as a matter of fact, the Government do not believe in re-

vaccination. The other day, when the epidemic broke out in London, a regiment of soldiers was stationed at St. John's Wood, near, and so terrified were the Government with regard to the matter that an urgent order came down from the Horse Guards sending the regiment right away to the other end of England, lest the re-vaccinated soldiers should catch small-pox. (Laughter.) I heard an amusing incident the other day about a magistrate who had some of those "ignorant fanatics," like some of you—(laughter)—before him. He told the defendants that they ought to be ashamed of themselves letting their children go unvaccinated, and added, "Why, I would not let my children go unprotected from this dire disease on any account." A short time afterwards illness came into his house, and the doctor told him that a servant had the small-pox; and no sooner did the old gentleman hear that than his courage oozed out at his finger tips, and he sent for the nearest fire-escape in order that the children might be taken away through the window, so as to avoid passing the door of the infected chamber. (Laughter.) Then there are those doctors who tell us that not only have they been re-vaccinated, but that if a small-pox epidemic occurred they would be done again, which shows that they have

NOT MUCH FAITH IN RE-VACCINATION.

(Hear, hear.) At Berkhamstead, Sir Astley Cooper, who has been sitting on the Bench, declared in a speech on the subject that he had been vaccinated no less than seven times, and such was his wonderful faith in the operation that he declared, with all the courage of a Roman gladiator, "If an epidemic occurred, I would go and be vaccinated again." (Laughter.) Why, if they had tattooed the old gentleman from head to foot he would still be crying, "Do, pray, give me more vaccination." (Renewed laughter.)

Mitigation.

Then they tell us that vaccination will mitigate the disease; that it will make it milder. I should like to have it proved. (Hear, hear.) How are we to know how severe a person is going to have small-pox? If everybody who had been vaccinated had it milder and every person who was unvaccinated had the small-pox more severely, there would certainly be some ground for the argument. But we know well enough that long before vaccination was dreamed of the usual kind of small-pox was the mild; and, as Dr. Wagstaffe wrote to Dr. Freind in 1721: "There is one kind of small-pox which the doctor cannot cure, and another kind which the nurse cannot kill." That is quite enough to show there were very mild cases of small-pox at the time; and Dr. Plot in 1677, in speaking of an epidemic at Oxford, tells us that the whole of the cases were extremely mild, and that with proper care they all recovered. So that before ever there was vaccination there was plenty of mild small-pox. (Cheers.)

HOSPITAL STATISTICS.

Look at the hospital statistics, and see what they have to say. I find

from the last published statistics, which are for 1893—I am now speaking from memory—that there were 150 unvaccinated cases and 253 vaccinated, but 1,054 cases were never stated at all. When out of a total of 1,457 cases over 1,000 are left undescribed, and we are not told whether they were vaccinated or not, what confidence can you have in such statistics? I say that such statistics as those, upon which vaccinators base their case, are nothing more nor less than a fraud. (Cheers.)

Now, you test the mitigation theory by malignant cases. Mr. Alexander Wheeler proved before the Royal Commission that of those said to be vaccinated 82 per cent. died, and of those with good marks 85 per cent. died; so that the well marked patients come worse off when vaccination is mostly needed. The argument we generally get is this: If a person happens to have been vaccinated and he goes through life without catching small-pox they say, "What a splendid thing it is that he was vaccinated"; if he has a mild attack they say, "How very fortunate he was vaccinated, or he would have had the small-pox very severely"; if he happens to have a severe attack we are told, "It was a lucky job he was vaccinated, or he would have died"; and if a person who has been vaccinated should have the impudence to go and die, then we are coolly told, "Oh, he had not been vaccinated properly." (Laughter.)

In the hospital statistics of to-day you generally find that the unvaccinated people die at the rate of from 30 to 60 and even 80 per cent. or higher; and yet when we come to look at the fatality of the last century and the horrible condition of things which I have mentioned to you, we find that the fatality was only 18 per cent. If, therefore, the fatality of unvaccinated people last century was only 18 per cent., and the average fatality of the present day amongst the unvaccinated runs from 30 to 80 per cent., I want to know, like Trelawney's Cornishmen, "the reason why." (Hear, hear.) I do not believe the doctors of the present day are less competent than those of a hundred years ago; and therefore why double and treble the number of unvaccinated patients who are slipping through their fingers as compared with a century before? It is not for me to explain this. Let them explain it themselves. Mitigation is therefore a sham. I remember that the Duke of Connaught, although vaccinated with the very finest and the most *recherché* lymph, had the small-pox afterwards, and they could not understand it. (Laughter). A great deal of interest was aroused upon the point, and the doctors came to the conclusion that his Royal Highness could not have been vaccinated properly. Why, if a Royal Vaccinator cannot do his work properly what must you poor wretches expect from the rank and file of the profession? (Loud laughter and cheers.)

THE NUMBER OF MARKS.

Then we are told it goes by the marks: that you must have a certain area, a certain shape, and a certain number. In fact, there are any amount of shuffles: as Cobbett used to say, "Quackery has always one shuffle left." (Renewed laughter.) When you come to remember that you can have no less

than 70 different kinds of marks from the same lymph, it shows the utter absurdity of the whole thing. (Hear, hear.) Mr. Marson, who was the surgeon at the Highgate Small-pox Hospital, produced a number of statistics showing that the unvaccinated patients died at the rate of 35 per cent., and then according to the marks they had, one to three or four marks, so they died less and less until with four marks it almost came down to a vanishing point. Mr. Marson was submitted to cross-examination before the Committee of 1871, and then it turned out that a good many of those patients had died from what he was pleased to call "super-added disease." That is, although they went in suffering from small-pox, yet there was some other disease they had got, and they were put down not as dying from small-pox, but from this other disease. It is a most extraordinary coincidence that the more marks the patients had the more they died from something else than small-pox. (Laughter.) And when you come to the four-mark patients, of whom there were only eleven, absolutely ten died of "super-added disease," and there was only one left for the record of small-pox, and that one was made to record a fatality of three-quarter per cent. This has been the sheet-anchor of the medical profession for years; these are the statistics dinned into the ears of the medical students to prejudice their future career in the medical profession; these are the statistics which present, I have no hesitation in saying, the most glaring specimen of "cookery" ever penned by mortal man. (Cheers.) I think I have shown pretty clearly that vaccination is no protection, that mitigation is false, and that re-vaccination is a fallacy.

The Dangers of Vaccination.

Another most important point is this: You may say, "Never mind, rather than have the bother of being summoned and the rest of it, I will let my children undergo the operation." What about the danger? (Cheers.) Upon this subject I will dare to say this: There is not a medical man in the kingdom but will admit there is a risk. Before the Royal Commission 6,000 cases of injury from vaccination were presented, with 800 deaths. This is the condition which we have upon the most reliable statistics, and that represents a very sorry fact. We are told by Dr. Bond that we should have calf lymph; but we must not forget that some of the most disastrous results which have ever occurred, and which have been recorded only recently, have been the result of the use of calf lymph, and so terrified is the Government about it that it will not sanction its use by the public vaccinators. Therefore it is no use going to cow-pox direct from the calf. You may say, "What is this calf lymph?" There are three kinds. Supposing you have the spontaneous cow-pox taken from the vesicle of the cow's teat, the calf is strapped to a table and its abdomen having been shaved, about 100 punctures are made in it; the calf is then tied up for eight days when it is strapped down to the table again and this lymph, by means of clamps, is squeezed out of the various sores raised and put into capillary tubes. Then the calf is let loose and sold to the butcher for prime veal. (Laughter.) That is the spontaneous cow-pox, which Jenner himself said was practically useless.

With regard to the other kind of cow-pox, which is commonly used, you put the matter from a child's arm into the calf's abdomen ; and you stand a chance of getting some human diseases of the worst kind as well as cattle disease into the bargain. The third kind is small-pox virus itself with which Badcock inoculated no less than 20,000 people under the name of vaccination. Even Sir James Watson said he could sympathise with, and even applaud a father who would pay multiple fines and even undergo imprisonment rather than submit his child to

SUCH A GHASTLY RISK.

(Cheers.) He (Sir J. Watson) was then speaking about syphilis.

What about syphilis? (Hear, hear.) It is a very strange thing that up to 1853, when the Compulsory Vaccination Act was passed, the annual deaths from syphilis of children under one year old did not exceed 380 ; the very next year the number had jumped up nearly double, to 591 ; and syphilis in infants under one year of age has gone on increasing every year since until 1883, when the number of deaths reached 1,813. It has increased four-fold in infants since the passing of the Compulsory Vaccination Act, and yet in adults it has remained almost stationary. Surely this speaks for itself. (Hear, hear.) These deaths have only begun to decline since, in proportion as the number of vaccinations to births have declined. Therefore we have not merely children dying primarily from vaccination, but from a concurrent disease. The question is asked, "Cannot you get any pure lymph which will really answer the purpose?" Well, they have tried all sorts. They have tried cow-pox, horse-pox, horse-grease cow-pox, also goat-pox and that from the sheep ; they even went to the buffalo, but the buffalo-pox stank so horribly that they had to give it up. (Laughter.) Surgeon O'Hara even advises that we should get some lymph from the donkey. (Renewed laughter.) One would have thought that the donkey was low enough, but someone has gone further. Dr. Monckton has suggested in the "British Medical Journal" that some small-pox scabs should be powdered as fine as possible in a mortar, placed in an egg, stirred up into a kind of

SMALL-POX OMELETTE,

and after being put by for a certain time it is ready to be placed in the babies' arms. ("Shame.") That is what I may call a "fowl" concoction. (Laughter.) We have had almost as many animals suggested for the purpose of supplying lymph as there were in Noah's Ark—a regular menagerie of them ; the vaccinators are in as big a muddle about it as ever, and yet they say "You must have the genuine variety or you will be sure to catch the small-pox." (More Laughter.) "Pure lymph from the cow!" It reminds me of the notice one sometimes sees, "Pure milk from the cow ; animals milked on the premises." (Laughter.) "Pure lymph" calls to mind the green fields and pastures of the country ! Can it be had, you ask ? Well, Government Microscopist Farn, who examined the lymph sent out, was asked by Dr. Collins, "As a matter of fact have you ever guaranteed the purity of lymph in your life?" and he had to acknowledge "No."

And yet members of the medical profession are saying this kind of thing: Dr. Hind wrote to the Devises Board of Guardians some time ago saying that he should be very happy indeed to supply them with calf lymph "which would be undoubtedly pure." He is another gentleman who does not appear to have read the other side of the question. (Laughter.) Mr. Microscopist Farn was further asked by Dr. Collins, "Can you recognise under a microscope of the highest power the germs of syphilis?" and the answer was "No." And yet they talk about "pure lymph!" From 1881 to 1892 we have had no less than 620 deaths recorded, 620 English homes which have been one little occupant the less, 620 mothers' hearts which have been bleeding as a result of this Compulsory Vaccination Act; and yet they say "there are no bad results with proper care." How is it, then, that this mischief occurs? If they cannot happen with proper care, then these results, according to that theory, must be due to carelessness, and if so

IT IS MANSLAUGHTER ;

and have you ever heard of a medical man being charged with manslaughter in such a case? (Cheers.) The Grocers' Company a few years ago offered £1,000 to anybody who would discover an artificial nutritive media by which the germ *vaccinia* could be cultivated without any foreign elements or risk of disease. No one has claimed the £1,000 yet, and still they talk about "pure lymph." I will give you one or two statistics with regard to Leicester. In 1868-72 the mortality of children under one year was 107 per thousand, when 98 per cent. were vaccinated; from 1888-9 only two per cent. were vaccinated, and, in spite of what Dr. Bond says, the general mortality of children had declined from 107 to 63 per thousand. Furthermore, from 1874-89 the number of children under one year who died of erysipelas had declined from 19.3 to 4.7 per 10,000 deaths. The Guardians of Gloucester are being urged to re-commence prosecutions, and I appeal to them to make a firm stand against it. (Loud cheers.) There is one thing about this Vaccination Act which I don't like: it's an unequal law—it presses hardly upon the poor. The rich man can pay his sovereign fine and feel none the worse for it; but the poor man has to either submit or have his goods seized, or go to the prison cell in default of paying his fine. I say that the

POOR WOMAN'S CHILD IS AS DEAR TO HER

as the child of a prince is to its parents, and that she has no right to be put in a harder position for its protection than those who are wealthy. (Cheers.)

But there is another thing that I must mention to you, and that is the case of Emily Maud Child, of Leeds. That child who was vaccinated, died, and a coroner's jury having held an inquest, it was brought in conclusively that she died from syphilis, as the result of vaccination. A certificate to that effect went up to the Government, who sent an inspector down to investigate the case; he took photographs of the teeth of the other children, declared they were syphilitic, and reported that it was not vaccine lymph which produced

the syphilis, but that the fault lay with the mother herself. (Cries of "Shame.") At last the Royal Commission heard of the case and sent down independent investigators, who found that there was not a vestige of syphilis in the remaining children, and that the charge against the mother was false. (Cheers.) It is a terrible thing, I say, that not only have you to stand the chance of losing the child who is dear to you, but you have to stand the chance of the powerful machinery of Government being turned on in order to take away the character of your wife. They tell me I have no right to pick out these hard cases; but I tell my friends I will stop picking them out when they stop putting them in. (Cheers.) Then, when you go before the Bench, the magistrates tell you they are

"ONLY ADMINISTRATORS OF THE LAW,"

which has been the plea of the greatest persecutors of every age. Remember that the Vaccination Act does not deal with the drunkard; it is the best classes of the country, the earnest, honest people, the Sunday school teachers, who love their children and their homes. The Scotch Covenantors, Ann Askew, John Wyecliffe, and the Apostles of old were told that their persecutors were "only the administrators of the law," but they defied the law, and the proudest privileges and blessings we possess have been won for us by the law-breakers of this country. It is not a question merely of the health but of the very lives of the children which are at stake in this matter; and I believe that the present century shall not close until we have placed our foot upon the dragon's neck, and plunged the sword of liberty through its heart. (Cheers.) They tell us we are trying to rouse the country with a "crazy cry"—

THE CRY OF LIBERTY OF CONSCIENCE—

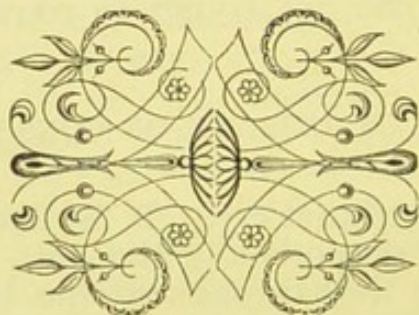
and we are not ashamed of that cry. It is that "crazy cry" which snapped the shackles of despotism in the past. That "crazy cry" is spreading at the present time throughout the length and breadth of the country. We are told that the intelligent portion of the population is against us; it's false. That "crazy cry" is ascending higher and higher, into a raging and tremendous storm; that liberty which has been won by the blood of our forefathers, for the theological conscience, is the liberty we demand for the scientific conscience. (Loud cheers.) Already it is thundering at the door of the House of Commons, and it shall be heard. Yes, we are going forward with the "crazy cry" of liberty of conscience upon our unfurled banner, and we never intend to rest until we get it. (Loud and prolonged cheering.)

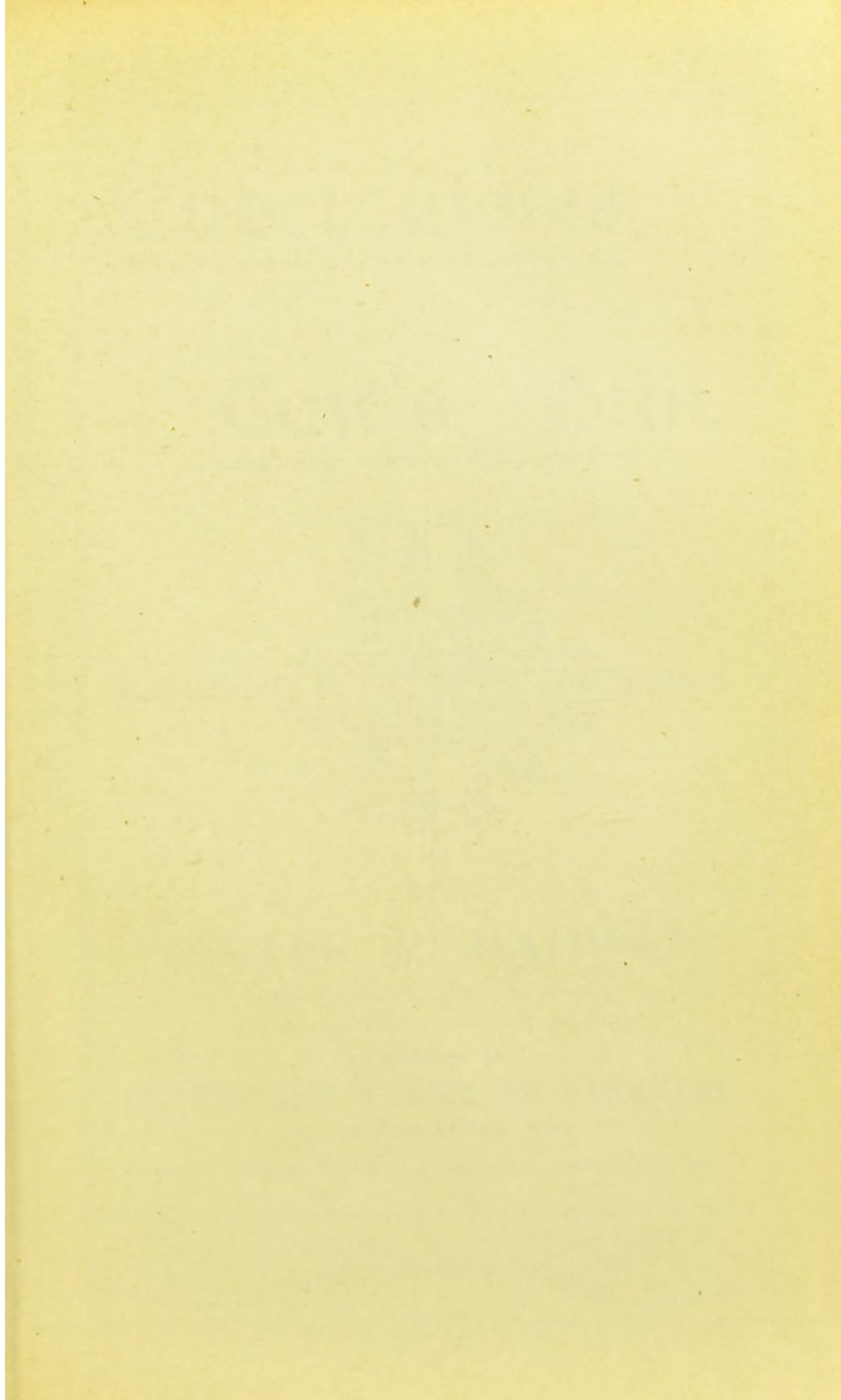
Mr. D. C. JONES proposed the following resolution, which was seconded by Mr. A. RICE, and carried unanimously, amidst great enthusiasm:—

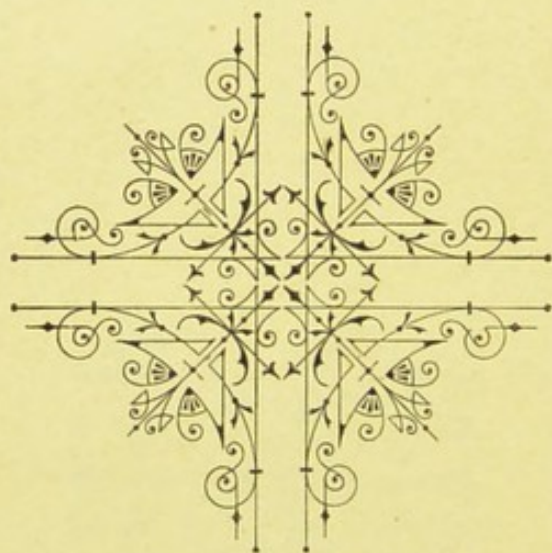
"That this meeting of the inhabitants of Gloucester views the Compulsory Vaccination Act as a serious infringement of the liberty of the subject, and earnestly desires its repeal, believing that the practice of vaccination has not only not fulfilled its promise of protection from small-pox, but that it is also accompanied with very serious risks."

Mr. GEORGE NEWMAN proposed, and Mr. H. WHILEY seconded, "that a hearty vote of thanks be accorded Dr. Hadwen for his eloquent and interesting address." This was carried unanimously, the audience spontaneously rising to their feet and singing "For he's a jolly good fellow."

A vote of thanks to the Chairman, proposed by Mr. CARTER and seconded by Mr. T. CLIFFORD, terminated a most enthusiastic meeting.







Tuberculosis

. . and . .

Cow's Milk.



A Criticism of the Royal Commission
Report.



...BY...

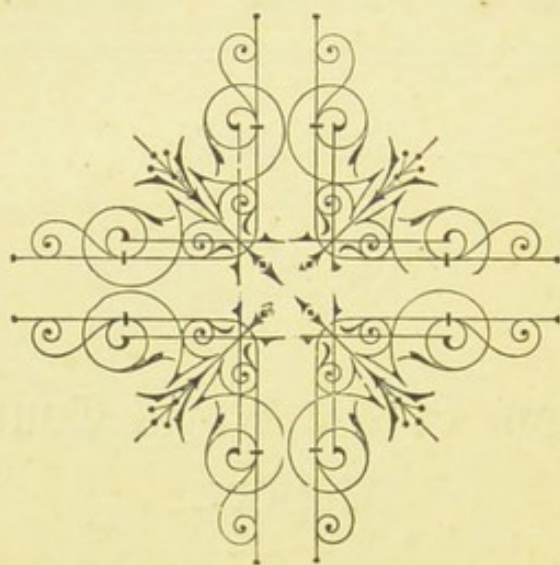
WALTER R. HADWEN,

M.D., L.R.C.P., M.R.C.S., Etc.

PUBLISHED BY

THE BRITISH UNION for the ABOLITION of VIVISECTION,
32 CHARING CROSS, S.W.

Secretary: Miss B. E. KIDD, to whom all orders may be sent.



Tuberculosis and Cow's Milk.

A Criticism of the Royal Commission Report.

BY WALTER R. HADWEN,

M.D., L.R.C.P., M.R.C.S., ETC.

THERE is supposed to be an art in "making books." There is a decided art in "making reports." The science connected with these accomplishments is not so apparent as the art ; and the more "scientific" the subject is supposed to be, the less science, as a rule, is manifested in the manner in which the official report of it is drawn up. The latest example is no exception to the rule. The Second Interim Report of the Royal Commission on Tuberculosis presents one of the most remarkable specimens of sheer padding that has ever been laid before the public. There is practically nothing in it, and the £48,000 which this precious Commission has cost might as well have been thrown into the sea. It would have been better, in fact, that the money should have been got rid of in that way, for the

gentlemen who have wasted their time in this absurd "research work" could have been better occupied, and the menagerie of sensitive creatures which have been submitted to their ghastly "pin-pricks" would have been saved the subsequent torture to which they were victimised.

And what is it all about? The Commissioners put it thus :—

The bacillus of human tuberculosis was considered as identical with the bacillus of bovine tuberculosis. At the International Medical Congress held in London in 1900, Koch brought forward the view that bovine and human tuberculosis were quite distinct. He asserted, as the result of his experiments and inquiries, that the bacillus of human tuberculosis was unable to give rise to tuberculosis in the ox, and maintained that bovine tuberculosis could not be the cause of tuberculosis in man.

So, like all up-to-date scientists whose very existence seems to depend upon contradicting one another, the English confreres of the German savant determined to show that Koch was all wrong. And they seem to think they have so far succeeded, although statistics of tuberculosis in human subjects have yet to be furnished in a further report, and a few more thousands will probably have to be squandered before the matter is finally settled to everyone's satisfaction. The English savants will, no doubt, by that time have succeeded, as usual, in quarrelling among themselves.

THE FALLACY OF THE TUBERCLE BACILLUS.

The opening sentence of the Report proclaims the fallacy upon which the whole superstructure is built :—

The term tuberculosis means the changes taking place in the animal body when it is invaded by the organism called the "tubercle bacillus."

Hence, the chief point, they consider, they are called upon to settle is :—

Whether the tubercle bacillus which causes tuberculosis in man is one and the same as the tubercle bacillus which causes tuberculosis in animals other than man.

But the Commissioners do not appear to have been asked to proceed upon these lines at all. Their inquiry was to be :—

1. Whether the *disease* in animals and man is one and the same.
2. Whether animals and man can be reciprocally infected with it.
3. Under what condition, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favourable or unfavourable to such transmission.

These questions have not been answered.

If, however, the Commissioners' own idea as to what was required of them was the correct one, it was surely incumbent upon them to prove, in the first place, that the tubercle bacillus really *did* cause "tuberculosis." It has certainly never been proved yet. All are prepared to admit that tubercle bacilli may be found in certain stages of the disease, but Koch himself has never yet proved to demonstration that these micro-organisms "caused" it. And many of us are of opinion, on physiological and pathological grounds, that the tubercle bacillus is far more likely to be a result of the disease than its cause, and that instead of being a foe to the morbid tissue, it is more than probable a friend.

The Report, then, is based and built up upon a generally accepted and unproved theory, and the

fallacy of this runs through the whole of the 97 pages of the Blue-book.

If the tubercle bacilli could have been separated from the morbid material upon which they thrive (an utter impossibility), there might be some ground for the dogmatic assertions which are indulged in. But this is not attempted, and when we read of the tubercle bacillus being "introduced into the animal used for experiment in the form of an *emulsion of tuberculous lesions*," the utter absurdity of the position becomes apparent. Even in the case of "a culture grown on an artificial medium and suspended in an innocuous fluid" it is still the transference of the bacillus *plus* its morbid environment. We are not surprised to read that "as a rule, emulsions are much more effective than cultures"—simply because they contain more diseased matter. It is a significant fact, which the Commissioners acknowledge on page 8, that emulsions containing a smaller quantity of bacilli produced as a rule worse results than cultures containing a much larger quantity. The morbid material is evidently much more potent in its effects than the bacilli.

Even in feeding experiments, where calves were allowed to suck the teats of cows, it was in cases where the udders had been actually made tuberculous first of all by being injected with tuberculous matter. Thus, throughout the experiments, there is no evidence that the tubercle bacillus *per se* was the *fons et origo* of the induced disease.

THE FALLACY OF TUBERCULIN.

Another fallacy consisted in the use of tuberculin with which all the animals were first of all tested in order to make sure that they were not tuberculous. Although the absolute unreliability of this test has been proved again and again, its diagnostic infallibility is taken for granted by the Commissioners, just for all the world as if its imaginary virtues had never been called in question. The Report first gives a description of the results of inoculating bovine tuberculosis into bovines, and very horrible reading it is, the details of suffering undergone by the poor creatures deliberately diseased is sickening. Then follows a description of the effects of introducing bovine tuberculosis into guinea-pigs, rabbits, pigs, goats, dogs, cats and kittens, rats, monkeys, hedgehogs and anthropoid apes, and the number of "bacilli" which were supposed to be introduced in some cases is carefully reported. In certain instances the number reaches, on "rough calculation," to 10 millions, 20 to 25 millions, 50 millions, and even 250,000 million bacilli! All this is very funny!

And the Commissioners came to the solemn conclusion that if they pumped enough bovine tuberculous matter into almost any animal, tuberculosis of some sort was practically certain to result! What a discovery! It takes fourteen pages of closely printed matter, and any number of revolting experiments, in order to record this simple fact. A man who does this sort of thing is "a scientific man," and the stuff

that he retails is called "science."

The next series of recorded experiments was with tuberculous matter taken from human subjects. Similar processes were gone through with emulsions and cultures, and we are seriously told, for instance, "that material passed through the body of a guinea-pig has been injected into the udder of a cow, and the result has always been tuberculosis of the udder"! And so on, on all sorts of animals for four more pages.

Heifers and calves were fed with the sputum of cases of phthisis, obtained from a hospital, for 200 and 300 days at a stretch, and they "must have received into the alimentary canal a very large number of bacilli"; and the effects of the human tubercle bacillus were found to be identical with those of the bovine, although in some instances "less virulent"; all of which is put down to the respective powers of the bacilli. Small differences in the action upon rats and mice assist the authors in padding their report, and at the conclusion of twenty-two pages of similar worthless verbiage they pass on to consider the tubercle bacillus itself.

Five pages are occupied with detailing the well-known methods of cultivating the bacilli on different media, and after the mountain has laboured with evident pain and anxiety, this curiously original conclusion is arrived at :

The bacillus of tuberculosis is a simple organism with scanty microscopical features, growing with varying ease or difficulty on various media.

This would do for "Alice in Wonderland" !

Then follows a dreary repetition of all this balderdash under the heading of "Bovine and Human Tuberculosis Compared," and by the time this is concluded, three-fourths of the official report has been written up.

SCIENCE AND CAUTION.

Brief accounts follow of specific cases where scrapings from lupus, mesenteric glands, knee joints, &c., were passed into different animals, and then from animal to animal, and explanations are vouchsafed as to why some cases differed from the other in virulence, about which the man-in-the-street could give a satisfactory and decided answer in five minutes for nothing, although it takes a scientist more than six years at the price of £48,000 to say: "On account of the far-reaching bearings of the conclusion we are unwilling to make any statement at all premature." That manifests a certain amount of wisdom at all events. The man-in-the-street would have said: "The more disease material is pumped into an animal's body, and the less that animal is able to resist it, the worse will be the result, and *vice versa*."

We reach the last page. The fatal dogmatism and ready acceptance of popular theories by men who reason only from laboratory experiments, and who practically disregard clinical data, is seen in paragraph 64:—

It is well-known [*sic*] that in the case of many diseases caused, like tuberculosis, by a micro-organism, immunity against the disease may be secured by introducing into the body the micro-organism causing the disease.

. . . Hence, if the bacillus of human tuberculosis can be used to confer immunity against bovine tuberculosis, or *vice versa*, we are supplied with a further proof [*sic*] of the identity of the two diseases.

This is how scientific men argue! One begins to feel ashamed of the very name of science, when one finds that any theory, however shallow, however proofless, if only advertised with sufficient audacity, finds ready acceptance in the highest ranks; such

theory is sufficient to form a basis for the building up of endless conjectures. "Positive results," we read, "have already been obtained by various observers" as to the theory propounded in above extract, but the Commissioners go on to say: "We are not yet in a position to state the results which we have obtained." But if "positive results" have already been secured, why should the experimenters be allowed to go on dipping their hands into the public purse and torturing innocent animals to still "further prove" the ridiculous theory which, after six years of child's play, they have left in the same chaotic condition as before they began?

THE DOGMATIC CONCLUSION.

The "conclusion" arrived at is as follows:—

There can be no doubt but that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there can also be no doubt that in the majority, at least, of these cases the bacillus is introduced through cow's milk.

I search in vain throughout the whole report and all the forty pages of "Memorandum" which follow, to find a single proof of this dogmatic statement. It continues:—

A very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli.

Again, I say, the Commissioners have vouchsafed no proof whatever of their statement, and to base such a conclusion upon the absurdities which crowd these dreary pages is an insult to the intelligence of the public which has to pay heavily for the compilation of such monstrosities as this report of the Tuberculosis Commission.

If the Commissioners could have given definite instances of undoubted tuberculosis commencing

primarily in the intestinal canal of children who had been fed upon milk which could be definitely traced to cows which were proved to be tuberculous, we should have had some scientific data to go upon. But no attempt is made in this direction. It is true the Commissioners inform us that they are going to deal in a future report with a large number of records they have received from hospitals concerning the "apparent primary seat of the disease in patients who died from tuberculosis, or in whom evidence of this disease was found after death," but they admit that—

The value of the information thus obtained has not been so great as had been hoped, owing to the fact that in the majority of hospitals the post-mortem records do not appear to have been made in such detail as would enable an opinion to be formed as to the age of the tuberculous lesions.

Hence, even the forthcoming final report is likely to be as valueless as its predecessors, and will fail to provide the only satisfactory evidence upon which a scientific conclusion could possibly be based.

So fixed is the mind of the Commissioners upon the bacteriological method of investigation that they can find no space for discussing the "conditions" and "circumstances favourable or unfavourable to the transmission" of tuberculous disease.

A fallacy underlies the whole report, in that the Commissioners start with a pre-conceived idea, and every experiment is conducted with a view to substantiate the correctness of that idea. This is not science. If the premises are wrong, the conclusions, however elaborate in detail, or however complicated and painstaking in their presentation, must be wrong too.

HOW INFECTION IS CARRIED.

The alleged practical issue of all this torture of living animals is as to the question of the purity of the milk supply and its bearing upon public health.

Now, the disease known in these days by the name of "tuberculosis," called in old-fashioned times "consumption," is supposed to be, as already pointed out, due to an organism termed the tubercle bacillus. Without discussing further this unproved assumption, it is enough to say that the poison, whatever it may be, must be conveyed into the system in one of two ways : either by means of air during the process of breathing, or by means of food through the mouth. If the infection be conveyed by the air, the lungs may be affected ; if by means of food, the alimentary canal may suffer.

In either of these cases the poison is taken up by the lymphatic vessels and conveyed to the nearest glands, which temporarily arrest its progress ; they become swollen and diseased, and as the disease advances, the poison is carried into the surrounding portions of the system. Supposing the poison were conveyed by the air tubes into the lungs, the glands in the chest would become affected ; but if the poison were received by food into the stomach, then the glands of the abdomen become affected ; so by means of vitiated air one might get consumption of the lungs, and by means of vitiated food one might get consumption of the bowels.

Now it is a common thing for a person who has reached the third stage of tuberculosis of the lungs to swallow the poisonous expectoration into the stomach, and thus set up a secondary disease in the alimentary canal. Without careful thought it might be hastily declared that such patient died from consumption of the bowels, and the cause would be put down to the food he had taken, and the blame concentrated upon diseased meat or milk ; whereas the true cause was consumption of the lungs, consequent upon the impure air which the sufferer had in the

first place breathed. How, then, is this to be proved?

RIGHT METHOD OF INVESTIGATION.

There is but one way, namely, by *post mortem* examination. The point would be to ascertain which part of the body was first attacked. If the glands of the abdomen were first attacked, they would prove to be much more advanced in disease than those in the chest; if the chest glands were the primary cause of the mischief, they would be much more advanced than those in the abdomen. The Commissioners confess that the hospital records in their possession have been so inefficiently kept that this, the only satisfactory method of solving the problem of origin in each particular case of disease, cannot provide them with definite proof upon the subject; and it strikes me that even if the pathological condition of these cases had been carefully noted, the evidence would still have been incomplete, for it is questionable whether the details of the environment of the patient, and of the food which had been partaken of and the source of the milk supply would have been carefully noted beforehand.

Some nine years ago when a tremendous tuberculosis scare was created, and when newspapers, birds, cats, mice, flies, were all charged with being purveyors of the dreaded tubercle bacillus—probably a very harmless creature after all—Sir William Broadbent made the alarming statement that 70,000 persons died annually in Great Britain from tuberculous complaints contracted either from infected meat or infected milk. His conclusion rested upon the basis of statistics, which, if not carefully handled, may prove quite as misleading as experiments on living animals. Sir William Broadbent's statistics were culled *en bloc* from the Registrar General's reports without any attempt to prove by *post mortem*

examination whether the alarming conclusions he had come to were borne out by scientific facts. The figures were probably, for the most part, the results of an incorrect diagnosis by medical men concerning children who had been killed, not by impure milk, but by not having enough milk, and who had been fed, like scores that I have seen, from earliest infancy upon potatoes, fat bacon, bits of sausages, white bread pap, and a host of other unsuitable foods, besides being surrounded by an atmosphere which only the hardiest could survive. In such cases a doctor would be called in probably at the last moment; he would see a poor little emaciated creature in front of him suffering from diarrhoea, (which is nature's way of getting rid of the indigestible messes,) and straightway the case would be certified as *Tabes Mesenterica*, or consumption of the bowels. It has been a common remark in children's hospitals long before the fashionable fad of "sterilized milk" was thought of, that such children, who, had they died, would have been certified as dying from consumption of the bowels, while milk would have been credited with the cause of death, begin to thrive directly they are taken from their parents and homes and fed upon plenty of cow's milk in the purer atmosphere of a hospital ward.

AIR, NOT FOOD, RESPONSIBLE.

Now this very subject formed the ground of most careful independent investigation years before the Royal Commissioners began their unsatisfactory operations, from which they do not appear to have profited. As long ago as 1894 Dr. Walter Carr, Physician to the Victoria Hospital for Children, a most painstaking observer, published a report of a large number of *post mortem* examinations he had conducted on the bodies of children who had died of

tuberculosis, and he found in the vast majority of cases that the disease commenced in the chest glands and not in the abdomen, showing that air, not food, was responsible for the mischief, and, further, he found that consumption of the bowels was very rare in children under two years old, and that it was practically unknown in children under one year; an age when, if at all, the effects of tuberculous milk should be apparent, seeing that, apart from the maternal supply, children of such tender months are largely dependent upon cow's milk. He said he had notes of a hundred cases of *post mortem* examination which were supposed to be consumption of the bowels, and in only one instance was any tuberculosis present.

Dr. Coleman, of the Children's Hospital, Great Ormond Street, London, has also added his testimony arrived at by similar means, that as a rule the chest glands were much more advanced in disease than those of the abdomen. Dr. Guthrie, Physician and Physiologist to the Children's Hospital, Paddington Green, has also placed upon record that he had no faith in the popular tuberculous cow's milk theory, and his records of *post mortems* did not bear out the results pointed to in the Registrar General's returns. Kempner, a German scientist, has also declared that tuberculosis in children invariably commences in the bronchial glands; and Comby has stated, as the result of numerous *post mortem* examinations, that the breathing tract was always the starting point of tuberculosis, and not the bowels. Dr. Emmett Holt has published statistics of no less than 240 cases, and in only one case out of the whole did disease appear to have started in the intestinal glands; and there was no proof even in that one case that milk had caused it. In a careful examination of statistics of *post mortem* investigations conducted at the Bristol

Royal Infirmary during a period of five years, it was found that there had only been one case of consumption where infection appeared to have taken place through the alimentary canal.

MILK OF TUBERCULOUS COWS.

It is a fact that a cow may suffer seriously from tuberculosis and yet no tubercle bacilli be found in its milk. They only appear to be found when there are tuberculous glands upon the cow's udder. As an instance of the harmlessness of milk even from tuberculous cows I may quote an interesting story given by Dr. Holt in *The Medical News* some few years ago. Near a large American city was a stock farm of Jersey cows, which supplied milk to a large number of the wealthiest families in the city for a period of ten years. It was suspected that many were tuberculous, and 45 per cent. were killed and submitted to a post mortem examination, and in every case the cattle so examined were found to be diseased. And yet of the many hundreds of children who had taken the milk during the ten years, in only one had tuberculosis developed; and in that case it was not clear that milk was responsible. The employees about the farm had also for several years drunk skimmed milk in large quantities as a beverage in the place of water, but not one developed tuberculosis.

To deliberately feed animals with food mixed up with the sputum of tuberculous patients or with the results of ground-up tuberculous glands, or to inject similar tuberculous messes into the bodies, the lungs, or the udders of cows, can provide no correct guide as to comparative results obtaining in human beings under the quite different conditions of natural infection. Of course it stands to reason that animals from whom milk is derived for human consumption

should be as far as possible healthy. Absolute health in cows can no more be insured than absolute health in human beings, unless they come of a good stock and the conditions of living are such as to ensure the highest order of well-being. To test animals for consumption by the injection of tuberculin, which no physician with a reputation to lose would now dare to carry out on a human subject, and to "sterilize" the milk under the supposition that tubercle bacilli are most probably present, are fallacious methods which begin at the wrong end.

THE REAL REMEDY.

The true remedy for the mischief is to have a periodical examination of the dairies and of the cow's udders, from which milk is supplied to a community. Cows are affected by similar unhealthy conditions to those which affect the human race. A register should be kept of all dairies supplying milk to the city, and sufficient breathing space and proper ventilation demanded ; a plentiful supply of clean water instead of the filthy, muddy pools from which cattle are so frequently forced to draw their supply, should be insisted upon by every municipal authority. Clean and well drained floors and healthy, well-ventilated byres should be provided, and there should be compulsory living in the green fields instead of in pent-up, unsuitable town sheds, whenever climatic conditions are suitable.

But equally if not more important even than the condition of the cows supplying milk and their environment is the condition and the environment of those who drink it. In studying statistics of deaths from consumption it will be found that the cases occur for the most part among the working class population, whose cramped dwellings and surroundings, and possibly occupations, are sufficient to indicate

the cause. But the better class population, who enjoy better ventilated homes and have larger air-space lead comparatively charmed lives so far as consumption is concerned. And the moral is this : Bacteriologists would do well to walk outside their laboratories, and leave their syringes, and the filthy emulsions and cultures behind them, and cease for awhile the conversion of innocent living animals into chemical test tubes, and just visit some of the farms where tuberculous cows are bred and the slums where tuberculous children are reared, they would learn more in six hours of solid fact as to the origin and transmission of tuberculous disease than they will ever learn from six or even sixty years of their present methods of research. We must let more sunshine and more fresh air into the homes of the working population. We must improve the conditions under which they live, and must carry on the work of better sanitation and hygiene. Let us get rid of back to back houses; advocate wider streets; abolish blind alleys and stuffy courts; prevent over-crowding; advise open windows and bodily and household cleanliness; prove to the people that the simplest and cheapest food is the most nutritious, and show them how to cook it. When we have done this we shall have gone a long way towards banishing consumption from our midst, a good deal less nonsense will be talked about the tubercle bacillus, and much less public money wasted upon a handful of scientists who ought to be spending their time elsewhere in investigating the conditions which cause the disease. The methods above suggested are certainly saner than that of spending £48,000 without the return of a single coin of scientific fact or useful knowledge; and infinitely superior to that of wasting years of valuable time in torturing innocent creatures without even the prospect of the remission of a single day of suffering for the human species in the future.

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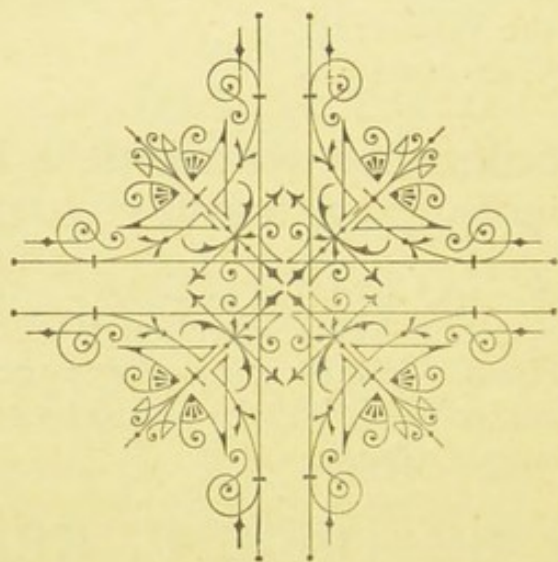
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THE ANTI-TOXIN TREATMENT OF DIPHTHERIA:

IN THEORY AND PRACTICE.

BY W. R. HADWEN, M.D., L.R.C.P., M.R.C.S., &c.

THE ETHICS OF THE QUESTION.

THE Anti-Vivisectional interest attaching to the question of the use of Diphtheria Anti-Toxin serum lies in the fact that cruelty of a grave character is practised, mainly upon horses, in order to obtain this particular nostrum. From this standpoint of morality, even were the presumed remedy effectual in alleviating or curing diphtheria, we should be justified in condemning its use. Man has no right to do evil that good may come, neither are we justified in promoting the benefit of creatures belonging to a higher order in the scale of animal life by means of the infliction of enforced suffering upon equally sensitive creatures of an inferior type.

But if, upon the other hand, the supposed remedy is proved to be highly dangerous in its operation (as has been shown in many recent fatal instances); and if, at the same time, experience shows it to be ineffective in reducing the mortality of the disease it professes to cure, then its use becomes almost criminal, and its permission a grave reflection upon the legislature of this country.

Not merely is its morality, its utility, its innocence, in question, but even its scientific claims are of doubtful value. Those scientific claims rest upon the unproved theory that a certain bacillus discovered by Löffler is the active origin of diphtheria.

PROCESS OF MANUFACTURE.

A cultivated portion of diphtheritic membrane is injected into the blood stream of an animal, and when, as the result of the circulation of this morbid material, a condition of fever, with rapid breathing, shivering, probably sweating and diarrhoea, swellings, etc.—in fact, all the symptoms of blood poisoning are set up—the animal is supposed to be in a diphtheritic condition, a blood vessel is opened and a certain quantity of blood collected, and after coagulation has taken place, the clear supernatant fluid termed *serum* is drawn off, for injection into human bodies.

ITS COMMERCIAL ASPECT.

The manufacture and sale of this strange invention has become a source of gigantic commercial enterprise. A poor worn-out horse costing £3 or £4 if bled every ten days would yield about two quarts of serum on each occasion, which can be sold at £12 per quart—an income of £800 per annum before the poor creature dies from bleeding or infection.

THE THEORY OF IT.

When a portion of the wash-leather exudation which is thrown out upon the back of the throat in cases of diphtheria is transferred to a cultivating medium, it is taken for granted that the microscopic organisms contained therein and which rapidly multiply when transferred with the morbid material upon which they feed, are the real and true source of all the mischief. The resulting filtered product is deemed to be a pure culture of the *diphtheritic bacillus*. This is repeatedly injected into the body of an animal until, after a time, the wretched creature is said to be “immune,” that is, insusceptible, partially or wholly, to the action of the diphtheria bacillus or its poisons. Then, if the serum of this animal's blood be injected into the human blood, it is supposed to confer a corresponding “immunity” upon the individual who is subjected to this remarkable operation.

THE DIPHTHERITIC BACILLUS.

If, however, there are grave doubts as to Löffler's bacillus being the origin of the disease in question, it stands to reason

that its cultivation must be also a very questionable proceeding ; the injection of its " culture " a very grave undertaking ; and the much lauded results of a somewhat problematical nature.

Now the behaviour of this microscopic organism does not fulfil any of the conditions which have been laid down by leading scientists as essential to the character of a specific bacillus. In the first place, it is not uncommonly absent altogether from the disease of which it is supposed to be the sole originator. Löffler himself found it absent in 25 per cent. of the cases which had been diagnosed as diphtheria, but it is always easy to shuffle out of that difficulty when a scientist has a theory to maintain, by saying, despite of the signs and symptoms and results, " It could not have been diphtheria " ! Other observers besides Löffler have failed in a much larger percentage of cases to discover this bacillus in well authenticated instances of diphtheria.

There is another difficulty ; this same bacillus has been found in hundreds of well authenticated instances by numerous scientific observers in healthy and even unhealthy throats (such as in patients recovering from scarlet fever) without any diphtheria resulting, and yet it is claimed as one of the conditions of a specific bacillus that it must never be found apart from the disease it originates, much less in a healthy individual.

Moreover, if a bacillus be a specific organism, it is laid down as an axiom that when a pure culture is injected into an animal's body it must reproduce in that animal an identical disease to that which had obtained in man ; but, alas for this " scientific " theory, the diphtheria experimentally produced in guinea-pigs and other animals is found to bear no resemblance to the diphtheria in the human species.

Looking at it then from every point of view the claim of " Löffler's bacillus " to be the origin of diphtheria is, to say the least of it, unproved, for it fails to satisfy any of the conditions which its advocates have themselves laid down as the absolute essentials of a specific germ. This being the case sero-therapy which stands or falls with the specificity or otherwise of the bacillus, must itself be viewed with suspicion, and unless ex-

perience, as manifested in statistics, can save it from humiliation, Diphtheria Anti-Toxin must be looked upon as a fraud.

THE STATISTICS.

It is this aspect of the question that Dr. De Maurans, the Editor of a leading French journal, *La Semaine Médicale*, has recently set himself to solve in the columns of his professional organ.

The article he has written presents no less than 33 statistical charts showing graphically the course which diphtheria mortality has taken during 11 years prior to the introduction of anti-toxin, and for 7 years subsequent to that period, in leading towns scattered over Europe.

The writer prefaces his investigation by drawing attention to the *furore* created by the introduction of diphtheritic serum seven years ago, not only in the medical world but among the general public, and the brilliant statistics which heralded the discovery, and apparently justified the extraordinary enthusiasm.

In spite of all this excitement, however, Dr. De Maurans observes that the general mortality of diphtheria continued very high, and in some towns presented a very disquieting ascent; and he instances the fact that the Minister of the Interior of France had recently circularised the Medical Sanitary Officials, pointing out the high mortality—more than half of those attacked, and in cases, too, where the serum was used, urging them to use their influence with general practitioners to see that only *fresh* serum was injected, the failure to protect from the disease being apparently attributed to stale anti-toxin.

The steady progress of the mortality from diphtheria in Paris year by year, in spite of anti-toxin, at last led him as an independent and painstaking investigator (though an orthodox believer in the serum) to request the Boards of Health in the principal European towns to furnish him with the official statistics of deaths from diphtheria from 1883 to 1900 (a period of eighteen years), as well as the number of cases notified. He received 32 answers in all, and he has added the

tables of Paris and Buenos Ayres. The tables present in a most interesting fashion the peculiarities of each, illustrating different phases of the subject.

RELATION OF DEATHS TO CASES.

Dr. De Maurans found it very difficult to obtain the actual case mortality from his various correspondents, owing to the irregularity of the notifications in many towns. But he shows by graphic illustrations of Buda Pesth and Prague that this is not of the importance which might appear at first sight, as the absolute mortality of diphtheria may be considered a very faithful mirror of case mortality—that is, the number of deaths to cases. Were it otherwise we should have to admit from the disproportionate number of cases to that of deaths, that diphtheria had considerably increased, a circumstance unlikely in a period of marked hygienic progress, both public and private.

A glance at the charts for the town of Buda Pesth shows an absolute parallel in the up and down curves during the whole 18 years, corresponding the one to the number of deaths and the other to the percentage of deaths to cases. The latter reached its culminating point in 1887 (61.4 per cent.); it commenced to descend the following year and reached its minimum ten years later (12 per cent. in 1897). It had already fallen to 32.9 per cent. in 1894, the year of the introduction of diphtheritic serum.

The Prague chart is none the less demonstrative.

Seeing, then, the impossibility of obtaining exact data as to the total number of cases, and the comparison of the latter with the number of deaths, the investigations are confined to a consideration of mortality alone.

DIFFERENCES BETWEEN THE YEARS 1894 AND 1895.

In order to test the effect of sero-therapy upon the mortality of diphtheria the investigator in the first place deals with the curve representing the mortality which took place between the years 1894 and 1895. It was only during the last months of 1894 that diphtheritic serum came into general use, and one must admit that the figures of that same year are but

slightly modified. Some of the charts appear to plead in favour of the sero-therapy. For instance:—

Glasgow—deaths in 1894—200.	In 1895—137
Zurich " 87	" 25
Lille " 106	" 42
Cologne " 421	" 173

The above figures, considered by themselves, appear to show that the advent of sero-therapy was marked by a marvellous and sudden decline.

But on looking more closely at the chart, one sees that there are other points to be considered.

At Lille, for instance, the deaths from diphtheria increased steadily from 1886 to 1889, and then went down spontaneously from 1889 to 1891; then up again in 1892 to assume in 1893 and 1894 a descending wave, which was greatly accentuated in 1894 to 1895.

Cologne shows the same phenomena. The ascent began in 1889, reached its highest point in 1893. Descent began again in 1894, and was still further accelerated in 1895.

Hence, from the statistics of these towns (which are the most favourable of any to anti-toxin) it is clear that *the mortality was already on the decline when the new method of sero-therapy was introduced*. But, seeing that in several towns the fall of diphtheritic mortality was coincident with the introduction of anti-toxin, the question naturally arises: Was it due to the serum, or was it merely a coincidence? The examination of other charts throws some light upon this point.

SUDDEN DECREASES PRIOR TO 1894.

If it can be shown that prior to the year 1894, when the serum was introduced, there had been any other equally sudden declines in diphtheritic mortality besides those given for the years 1894 and 1895, declines unaccompanied by the boom of any particular therapeutic agent, we shall be saved from too hasty a conclusion. Let us look at:—

Rome.—There were 77 deaths from diphtheria in 1884. The mortality rose by continued progression (with the excep-

tion of light exacerbations) until the year 1891, when they reached 302; then the deaths fell with no less regularity to 47 in 1894. In 1897 the number was but 19.

Berne.—Here it is the year 1894 itself which corresponds to the minimum of deaths from diphtheria, at which point a rise begins.

Christiania.—The ascent occupies the whole period between 1883 and 1887, namely from 50 deaths to 445; then comes a rapid decline which was completed in 1892 by 90 deaths.

Berlin.—The mortality fell spontaneously from 2,651 in 1883 to only 860 in 1888. Then it went up to 1,492 in 1890, but dropped to 1,009 in 1891. There was another maximum in 1893 1,581, then a spontaneous fall in the following year to 1,361. This descent continued until 1897.

Lyons.—In 1883 to 1890 the deaths ran up from 93 to 341, and then rapidly fell again to 83 in 1894.

Brussels.—These peculiarities are almost identical.

Leipzig.—The mortality went down from 383 in 1884 to 168 in 1888, then mounted up again to 409 in 1893, and from that time continued to decline. But the difference is *less considerable* between 1894 and 1895 (namely, 339 to 316) than between 1893 and 1894 (namely, 409 to 339).

Edinburgh.—This provides a most instructive example. An epidemic of diphtheria commenced in 1883 and attained its acme in 1889, and returned to the usual figures in 1892. It made a second start from 1892 to 1894, its decrease coinciding with the introduction of sero-therapy. The decline ended in 1899. It made another start upwards in 1900, the curve rising from 28 to 53.

Is it not clear that if we only considered for this city the curve between 1892 and 1898 we should be disposed to cry: "What a triumph for diphtheritic serum!" *But when we examine the periods before and after, a very different explanation is afforded.*

MAXIMUMS ATTAINED LONG BEFORE 1894.

A great many towns are included in our next survey, namely, where the maximum of mortality was reached long

before 1894, so that at the time sero-therapy was introduced, the curve had accomplished the greater part of its evolution. Here again we see the fallacy of magnifying the fall which may have taken place in diphtheria deaths from 1894 to 1895, and attributing it to the serum, without taking into consideration the decline which had already set in, and had been going on for some years previously.

For example, take

Paris.—It is true that the tale of death, which was 1,009 in 1894, was not more than 435 in 1895, but the statistics show that the descending movement had commenced as *far back as 1888* (from 1,730 deaths), and had gone on regularly declining from that time with the exception of a slight rise in 1892.

Geneva.—The mortality fell between 1891 and 1895 from 107 to 9. It had not fallen to more than 34 in 1894.

Buda Pesth.—The number of deaths rose by almost continuous progression from 246 in 1883 to 927 in 1892. It had already fallen by an almost vertical decline to 529 in 1894. The minimum of 108 was reached in 1897.

Copenhagen.—There was a very rapid increase between 1883 and 1891 (from 104 to 518 deaths). Then a fall equally sudden to 320 in 1894 and 78 in 1896.

Havre.—The fall commenced in 1883 (112 deaths) and was continued without interruption for 7 years (39 deaths in 1890); a slight rise brings the mortality up to 59 in 1894. From then the decrease has continued.

Nantes.—This town records 104 deaths in 1884; 67 in 1893; not more than 31 in 1894.

Toulouse.—Although the figures are too feeble to admit of any very definite conclusions, nevertheless, the chart shows that after several oscillations from 1887 to 1893, the deaths suddenly fell from 22 in 1893 to 13 in 1894, then to 11 in 1895. It has gone up for the last three years.

Turin.—From 184 deaths in 1886, after several variations, fell to 118 in 1894.

Amsterdam.—This is particularly instructive. The deaths

reached 935 in 1883 and went down to 142 in 1894, whereas 168 fatal cases were recorded in 1896.

Stuttgart records 220 deaths from diphtheria in 1890; 282 in 1892; and only 159 in 1894.

Munich shows a mortality of 401 in 1889; reduced to 284 in 1894; a further fall to 260 in 1895.

Hamburg.—After an ascent from 366 to 653 between 1883 and 1887, a minimum of 249 was reached in 1891 without any sero-therapy; it rose again for three years until it reached 425 in 1894, then a fall went on to 1896 (99 deaths). The mortality then again went up, reaching 119 deaths in 1900.

Prague.—From 77 deaths in 1885 the record reaches to 197 in 1888. Then it falls considerably, to 66 deaths in 1891. There is a re-ascent until 1893, reaching 121 deaths, scoring a minimum of 26 deaths three years later.

Beunos Ayres.—Here the deaths fall from 1,385 in 1888 to 445 in 1894, a minimum of 151 deaths being reached three years later. Since then the curve has gone up.

London.—This deserves particular notice. The mortality between 1886 and 1893 went up from 846 to 3,196, and commenced to go down from 1894. This movement continued in 1895, the first rise occurring in 1896, when there is an almost vertical fall until 1898, then a second rise in 1899, with a descent again in 1900.

The preceding statistics have shown that *the fall in the mortality of diphtheria was an accomplished fact before the introduction of the much-vaunted serum.*

TOWNS WHERE DEATHS HAVE RISEN SINCE 1894.

The following figures will prove even more demonstrative than the foregoing, since they will present towns where the deaths from diphtheria have continued to rise since the year, 1894, when sero-therapy commenced. Anti-toxin was introduced into England in 1895, a little later than on the Continent.

Birmingham.—The curve began to rise in 1892; in 1894 there were 91 deaths; in 1895, **214**; in 1896, **293**, when the maximum was reached and the curve redescends rapidly to 77 deaths in 1900.

Liverpool.—After considerable oscillation the deaths reached their lowest point of 47 in 1892 and 1893, 65 in 1894, 120 in 1896, 192 in 1899; the fall began in 1900.

Dublin.—There were 14 deaths in 1894; 18 in 1896; 70 in 1897; then the deaths decreased from 1897 to 1900.

Bucharest.—There was a very slight fall in 1895 (from 71 to 58); since that date there has been a *continuous and progressive rise* in the mortality, which reached, in 1899, the highest point which had been observed from 1883-1900 (253 deaths). The descent commenced in 1900.

Stockholm.—The last fall which commenced in 1894 continued to rapidly decline until 1896. Then, from 1897 to 1899 the number of deaths went up from 43 to 323; here again, in 1900, a marked diminution began.

IS DIPHTHERIA AN EPIDEMIC DISEASE?

There is but one conclusion which can be drawn from this collection of facts, namely, that diphtheria comes in epidemics. After a period of variable length during which the number of deaths is fairly constant and fluctuations are but of secondary importance, there comes a sudden jump of almost vertical ascent, reaching its maximum in the course of two or three years. The decline, however, never appears to be so rapid as the ascent; the secondary increases are generally one, or two, or sometimes three, until the minimum is reached, and the situation remains stationary with a few feeble oscillations for a certain number of years until the ascent begins again.

These epidemics pay no attention to sero-therapy; they laugh these modern methods of bacteriologists to scorn. Sometimes, as we see, the evolution of one of these epidemics concludes before the introduction of sero-therapy; sometimes its acme was coincident with it; sometimes after it. And this is proved to be the case by the figures Dr. De Maurans supplies for the City of Paris, according to the weekly bulletins issued by the statistical department. The mortality shows a continuous upward curve representing more than double the number of deaths in 1901 to that of 1900. In the latter year diphtheria killed 294, that for 1901 is some 700, no such total having been reached since 1894. A clear proof that diphtheria is absolutely independent of therapeutic methods.

IS SERO-THERAPY OF NO AVAIL?

In spite of the crushing evidence against the therapeutic value of anti-toxin which is supplied by the statistics Dr. De Maurans himself has collected, he is, strange to say, disinclined to discard its value entirely. He believes it to have a certain beneficial local effect upon the disease (an opinion very difficult, if not impossible, to prove), but he candidly confesses it cannot be a specific remedy, as, if it were, the mortality

ought to remain proportionately the same, that is, the fatality would be practically uniform. Instancing Paris, he shows:—

For the first 11 months of 1901 there were 4,347 cases, 630 deaths, a fatality of 14.49 per cent.

In the first 11 months of 1895, the year most favourable to sero-therapy, there were 3,842 cases, 362 deaths, a fatality of only 9.42 per cent.

Thus from 1st January to November 30th, 1901, for only 505 more cases than in the corresponding period of 1895, there were actually 268 more deaths! The writer, therefore, argues in view of this extraordinary difference of fatality between 9.42 in 1895 and 14.49 in 1901, that either the power of the anti-toxin varies, or else it is not possessed of the specificity which has been attributed to it.

Paris, however, is not an isolated example, for, from the official statistics obtained from Berlin as to the fatality from diphtheria, the following interesting data are obtained:—

In 1895 5,972 cases, 939 deaths, a fatality of 15.7 per cent.

1896	4,178	„	515	„	„	12.3	„
1897	3,646	„	507	„	„	13.9	„
1898	4,278	„	608	„	„	14.2	„
1899	3,817	„	608	„	„	15.9	„
1900	3,096	„	534	„	„	17.2	„

That is, for the five years since anti-toxin came into general use, there has been a regular and constant progression in the death rate. A fact which places the diphtheritic serum in a most unenviable light.

Whichever way one looks at this question; in whatever light it may be viewed, it is, to my mind, impossible to disguise the fact that the boasted results of anti-toxin are illusory. There may be periods when, for the moment, the statistics may appear favourable to sero-therapy. A decline sets in, perhaps, coincidently with its use; or an epidemic may be of a milder form, and the serum gets all the credit, but by patiently waiting, and bearing in mind the oscillations which have taken place previously, the same facts which have been already adduced from the statistics so painstakingly collected by the Editor of *La Semaine Médicale* will become apparent.

There is still another question worthy of consideration, as to how far anti-toxin may itself have increased the fatality, which in the cases quoted above, has been marked since its introduction.

In other cases there may be an apparent temporary decline

in the fatality of anti-toxined cases, owing to the number of ordinary ulcerated sore throats which have been swept into the count, and the practically moribund cases of diphtheria which have swelled the death rate of the class not subjected to this treatment.

The rapid increase of cases after the introduction of anti-toxin is markedly shown by Coakley in American statistics. In Boston, for the three years prior to 1894, the notified cases only averaged about 1,000 annually, but in 1894 and 1895—the serum years—they jumped up to 3,000 and 4,000. In New York for the same period before, the average number of cases was about 5,000, but in 1894 and 1895 they reached 9,000 and 10,000. In Brooklyn, again, the notifications were trebled. The cases were, of course, diagnosed as diphtheria on the basis of the presence of the Löffler bacillus, and owing to the numerous fictitious additions, the diphtheritic death rate was lowered, and the anti-toxin got the credit of this bacteriological and statistical blunder.

STATISTICS OF ENGLAND AND WALES.

In the year 1885 there were 4,471 deaths from diphtheria throughout England and Wales. With slight variations the mortality gradually increased until it reached the enormous total of 9,466 in 1893. A decline set in in the year 1894, that is, 12 months before anti-toxin was introduced into this country, the total mortality of that year being 8,774. In the next year (during the latter part of which anti-toxin was introduced into this country) the total number of deaths was reduced to 7,895, but in the following year—1896—(when anti-toxin was in almost universal use) the mortality again rose to 8,993, and although in the two following years a slight reduction occurred, yet it again rose in 1899 to the heavy total of 9,205; and in 1900, that is five years after the introduction of anti-toxin, the mortality had reached 9,345—the highest year but one upon record. Following the usual course of ascent and decline, in the year 1901 a decreased mortality set in, and it has shown a continued reduction down to the year of the last published Returns, 1904, when the deaths reach a total of 5,763.

Allowing for increase of population it will be found that the rates per million bear a remarkable correspondence to the number of deaths alone. In 1885 the mortality was 164 per million. In 1893 it had reached a total of 318 per million. In 1895 it was reduced to 259, but in 1896 the mortality

had again risen to 291 per million, and in the year 1900, in spite of five years' anti-toxin treatment, the mortality per million was still 290. From that date to 1904 there has been a gradual reduction, standing in this latter year at 170 per million, which, as will be seen, is considerably higher than in the year 1885—ten years before the anti-toxin period.

According to the Registrar-General's Returns, throughout the whole decennium from 1871-80, the average mortality per million persons living from diphtheria did not rise above 121. No such low mortality is seen throughout the whole anti-toxin period from the date of its introduction 10 years ago, until the present time.

Taking the mortality returns for the 10 years antecedent to the introduction of anti-toxin (1885-1894) and comparing them with the 10 years subsequent thereto (1895-1904) we find that the former period shows a mortality of only 200 per million persons living against 235 in the latter. Such figures are a far more satisfactory guide than hospital fatality statistics, for the latter are full of fallacies and are quite unreliable as a scientific guide. In the first place, a diagnosis which for the most part discards clinical appearances and rests its case upon bacteriological examination, must of necessity mark down as diphtheria numerous cases which are not diphtheria at all; and in the second place, will exclude numerous cases of well authenticated diphtheria in which the anti-toxin has been refused upon the plea that the disease has existed too long, or is of too severe a type. This entirely vitiates the statistics; not only can no fair comparison be drawn with other periods or cases, but the great reduction in the death rate which results from this fallacious method is out of all proportion to the actual facts. Moreover, the value of any professed prophylactic as a specific must be considerably reduced when we are told it is useless to try it in cases where it is most needed, or that it must only be used in cases where the patients would in all probability get well without it. There can be no mistake, however, about the Registrar-General's mortality returns, and if a specific remedy for a certain disease, which has come into general use fails to reduce the death rate from that disease, its reputed value as a prophylactic must rest upon a very shadowy foundation.

LONDON AND THE PROVINCES.

The diphtheria mortality returns per million for London bear a most remarkable corresponding ratio to the above

quoted returns for England and Wales. This is a further instance of the waves of epidemicity, which follow one general course, but which are aggravated in certain areas in consequence, possibly, of local conditions, such as greater overcrowding and lack of sanitary and hygienic precautions. This suggestion is supported somewhat by the statistics which show that diphtheria is much more severe in urban than in rural districts. In the case of children under 5 years of age the diphtheria mortality from 1899-1903 is as follows:—

England and Wales ...	...	...	1.52
Urban Counties ...	...	...	1.83
Rural Counties ...	...	...	0.94
In 1904 we see a similar result.			
England and Wales ...	...	...	1.00
Urban Counties ...	...	...	1.16
Rural Counties ...	...	...	0.68

That is, the mortality in Urban Counties is double that of the rural districts, and yet I think we may safely conclude it is in the urban districts where anti-toxin would be the more largely used.

It is noteworthy, too, that certain parts of England have been more seriously affected than others. In the county of Durham diphtheria mortality, which had risen rapidly throughout the five years ended 1903, further rose in 1904 to 285 per million, although the mortality of England and Wales was only 170, and that of London 159. In Darlington the mortality rate rose as high as 426 per million; in Hartlepool 449, and in Stockton 572.

In Glamorganshire the rates rise from 202 per million in Cardiff to the tremendous figure of 877 per million in Pontardawe. Again, in the Wolstanton and Stoke-upon-Trent districts of Staffordshire the mortality rate was equal to 504 per million; in the districts of Basford and Nottingham the rate averaged 315, although that of the remainder of the county did not exceed 90.

One of the most interesting cases for consideration is that of the East Riding of York, where the high death rate from diphtheria is due to the excessive fatality in Hull; the remainder of the County as a whole being below the average of Extra-Metropolitan England. The Hull diphtheritic mortality from 1891-1894 ranged between .05 and .09 per 1,000 persons living. In 1895 (the year when anti-toxin was intro-

duced into this country) it rose to $\cdot 11$, and the year following to $\cdot 17$. There was a slight reduction during the next four years (which at no time went below the rate preceding the anti-toxin period) and in 1901 the mortality stood at $\cdot 15$.

Apparently, to check this death toll, the Hull Corporation decided in 1901 to supply anti-toxin free to the medical practitioners in the City. The result was that in 1902 the diphtheritic death rate was more than doubled, viz. : $\cdot 34$ per 1,000 ; and in 1903 it stood at $\cdot 30$ per 1,000. In spite of a slight lull to $\cdot 24$ per 1,000 in 1904, it rose again last year (1905) to $\cdot 27$. That is, the average death rate from diphtheria in Hull for the four years during which anti-toxin has been supplied from the public rates is more than four times greater than during the four years immediately preceding its introduction, when anti-toxin was unknown. The Hull statistics appear to show that the death rate has increased in corresponding ratio to the increased use of anti-toxin serum. It is possible, when the "susceptible material" has been used up, that, following the law of rise and fall governing all zymotic outbreaks, there will shortly be a temporary lull in the death rate, thus showing once again that therapeutics and zymotics bear practically no relation to one another.

Such figures, with their irregular diphtheritic mortality, point to factors in certain districts which do not exist in other districts. To say in the face of these figures that anti-toxin has rendered diphtheria "a harmless disease," as has been repeatedly asserted by medical apologists, is to blind the eyes of the profession and public to the true causes of the disease. Until those causes are fairly faced and investigated, and the medical mind diverted from the hallucination of the anti-toxin fetish to the contemplation of the more solid and rational methods of prevention, we must go bungling on with ever recurring epidemics oblivious of the lessons which they emphatically teach.

The scientific seeker after truth must begin his labours and seek his remedies elsewhere than among the archives of inhuman cruelty belonging to the bacteriological laboratory. It is not by adding disease to disease that the evil of diphtheria will be combated, but it is by the removal of the dark, dank, ill-ventilated slums which infest our towns and cities ; by letting light and air into the overcrowded and insanitary dwellings of the poor ; and by the inculcation of lessons of cleanliness and hygiene among the people.

APPENDIX.

THE following arguments for and against the use of anti-toxin have been selected from a correspondence on Vivisection which appeared in the *Hertfordshire Mercury* during the autumn of 1906. Those portions of the letters which deal with other aspects of the vivisection controversy are omitted.

To the Editor of the *Hertfordshire Mercury*.

Sir,—Will you allow me once more to reply in your columns to the anti-vivisectionists who wrote in your last issue?

I still maintain that the Registrar-General's Returns are *nihil ad rem*, for this reason: that they do not give us the total number of cases treated. Diphtheria is on the increase, but since the introduction of the anti-toxin treatment the case mortality has decreased. Here are the figures from the Metropolitan Hospitals' statistics:—

<i>Diphtheria.</i>			
Year.	Cases.	Deaths.	Mortality.
1894	9,641	2,870	29·7
*1896	11,399	1,763	15·4

The death-rate per 10,000 for fifteen years before the discovery of anti-toxins was 15 to 18; since then it is 7.—Yours faithfully,

MEDICO.

Aug. 6th, 1906.

To the Editor of the *Hertfordshire Mercury*.

Sir,—“Medico” declares “diphtheria is on the increase, but,” he adds, “since the introduction of the anti-toxin treatment the case mortality has decreased.” Now, if the mortality from a disease for which an alleged specific has been found is increasing, whilst at the same time the fatality is decreasing, does it not occur to “Medico” that there must be some fallacy which needs investigation? He, however, airily dismisses the subject by quoting the Metropolitan Hospital figures for 1894 and 1896, and then lumping together the death-rate for fifteen years prior and subsequent to the discovery of anti-toxin.

Now, let us take these figures. During the two years 1894

* After the introduction of anti-toxin.

to 1896, whilst the death-rate had decreased from 29·7 to 15·4 ("Medico" is mistaken here; the correct figure is 21·2, not 15·4), the number of cases had jumped up, he says, from 9,641 to 11,399. Why was this? There are only two possible causes; either that diphtheria, in spite of improved sanitary conditions, had displayed an increased activity; or (2) that a number of cases had been counted in which were not diphtheria at all. I am loth to accept the first contention for reasons I will give presently, but I am inclined to accept the second, and if the latter be the true solution the decreased fatality is abundantly accounted for without any intervention of anti-toxin.

I will ask "Medico" to turn to page 58 of the 1896 report from which he quotes, where he will find the Medical Superintendent of the Fountain Hospital saying that the reason diphtheria has become a less fatal complication of scarlet fever "is to some extent attributable to the inclusion of mild cases." Dr. Turner himself admits, on page 172 of the 1898 report, that "improved means of diagnosis and isolation should share with anti-toxin the diminution in the death-rate"; and the Committee admit that the admissions have been "exceptionally great and rapid." What are these improved means of diagnosis which have helped to reduce the death-rate? Simply this; that every sore throat in which the Klebs-Löffler bacillus is found is now declared to be "diphtheria," although possibly only an ordinary ulcerative sore throat that our grandmothers would have cured in forty-eight hours. By adding these sore throats in "exceptionally great and rapid" quantity to the true diphtheritic cases, the death-rate of the whole is pulled down proportionately. Considering that every condition necessary to the identification of a specific organism has failed in the case of the Klebs-Löffler bacillus, the absurdity of diagnosing every case in which it is found as diphtheria is abundantly proved, for it is now well known that this micro-organism is often absent in true diphtheria, and is frequently found in throats where no suspicion of diphtheria is present.

Now let us revert to "Medico's" figures and ask if the quotation of the isolated reduction in diphtheria fatality between the years 1894 and 1896 is consistent with a fair and scientific examination of the subject? If your correspondent will go back another five years, to 1889, he will see that the mortality per cent. was 40·74 compared with his 29·7 in 1894. During those five years there had been a steady decline in the death-rate year by year without any anti-toxin intervention. What brought about this reduction? This reduction has steadily continued, but because anti-toxin drops in the middle of a great downward statistical curve, "Medico" coolly selects 1894

in the centre of the drop and then quotes 1896—which merely continues the decline—as evidence of the value of anti-toxin serum! Is this an honest way of dealing with statistics? Even the most ordinary tyro in statistics must admit that such a method of weighing evidence is worthless and misleading.

We will, however, look at it in another way. The later returns of the Metropolitan Asylums Board show that the statistics have been concocted by means of selected cases. Therefore, the whole of the official statistics are vitiated at the fountain head. Referring to the very report which “Medico” quotes from, no less an authority than Dr. Lennox Browne said that when the error of refusing to administer anti-toxin to all severe cases, and so eliminating them from the statistics “is rectified, the improvement due to anti-toxin as practised in the Metropolitan Infectious Fever Hospitals for 1895 and 1896 is entirely dissipated.” If anti-toxin is useless where it is most needed, and only valuable in cases which would probably get well without it, the man in the street is likely to look upon the whole serum business with suspicion.

But perhaps “Medico” will explain how it happens that in spite of these fictitious statistical methods of reducing the death-rate from diphtheria, the Metropolitan Asylums Board Report for 1904 provides the following revelation: Of 530 cases of diphtheria admitted to the North-Western Hospital, 172 were treated without anti-toxin and they all recovered, while of the remaining 358 treated with anti-toxin 42 died. And of the entire 5,422 diphtheria cases treated in the Board’s Hospitals, 4,839 were treated with anti-toxin, of whom 10·18 per cent. died, whereas of the 583 cases treated without anti-toxin, only 1·88 per cent. ended fatally. The latter included, too, all the most severe cases which the officials declined to administer anti-toxin at all. When “Medico” will prove the assertions he has made, and explain the facts I have adduced, your readers will be more satisfied as to his competency to deal with statistical problems than, I am sure, they are at present. There are still further fallacies of time, place, variableness of severity, and other factors which a scientific investigator should consider before incontinently rushing to a definite conclusion as “Medico” has done upon such slender evidence.

I may add I do not agree with “Medico’s” method of pooh-poohing the Registrar-General’s mortality returns. It is a startling fact that in spite of the rapid accession of mild cases, and of the use of anti-toxin serum, the London mortality has never been so low as in 1888, 1890, and in 1891, when no serum was used, and with one exception diphtheria mortality has never been so high as it has been since anti-toxin was intro-

duced. My own opinion is that anti-toxin serum is not only an absolutely useless but a very dangerous remedy.—I am, Sir, Your obedient servant,

WALTER R. HADWEN, M.D.

Gloucester, August 14th, 1906.

To the Editor of the *Hertfordshire Mercury*.

Sir,—In your last issue Dr. Hadwen quarrels with the figures I quoted about diphtheria. They are the result of Dr. Bosanquet's work on the subject in his exhaustive treatise on "Serum Therapy," so possibly Dr. Hadwen would like to think twice before criticising them in such a superior manner. I quote the following words of Stephen Paget in support of them: "The lowering of the case mortality since 1894 cannot be explained away by any theory that the disease suddenly became mild. First, because the general mortality has gone up, not down. Next, because anti-toxin results were the same everywhere, all at once, and all over the world; and the clinical aspect of the disease under the new treatment was changed alike in mild cases and in bad cases." Compare two opinions: Dr. Hadwen says anti-toxin serum is "not only absolutely useless, but a very dangerous treatment." Mr. Muirhead Little—a well-known surgeon—says: "I owe my life to the prompt use of anti-toxin." "Experto crede."

Appended is the total list of case mortality per 100 from the Metropolitan Hospitals statistics:—

1889	40·74	1895*	22·55
1890	33·55	1896	20·80
1891	30·63	1897	17·30
1892	29·35	1898	15·50
1893	30·42	1899	14·05
1894	29·64	1900	12·01

I fail to see the downward curve Dr. Hadwen mentions, and in reading these figures one must remember that diphtheria is on the increase, as the successful preventive treatment by the prophylactic use of anti-toxin has yet to be accomplished.—Yours faithfully,

MEDICO.

P.S.—In 1895 during a diphtheria epidemic in Berlin the supply of anti-toxin ran short, and the mortality at once rose from 15·6 to 48·4 per cent.

Sir,—I am afraid "Medico" is getting somewhat "mixed."

* First anti-toxin year.

He warns me that the figures he quoted about diphtheria "are the result of Dr. Bosanquet's work on the subject in his exhaustive treatise on Serum Therapy," and he advises me to "think twice before criticising them in a superior manner"! But in "Medico's" former letter he says: "Here are the figures from the Metropolitan Hospital statistics." He repeats these figures, again giving the latter as his source of information; only on this occasion he is fortunate in quoting them more correctly.

Now, the fact is "Medico" has shown abundantly that he knows little of the subject upon which he has posed with such authority. The little he has vouchsafed he has taken second-hand from Mr. Stephen Paget, whom I have fully answered elsewhere, and whose recklessness of statement upon the subject of vivisection is proverbial. It is not surprising under these circumstances that "Medico" has carefully refrained from facing any one of the arguments I brought forward in my letter of the 18th showing the fallacy of the statistics he quoted, and until he is prepared to comply with my request to "prove the assertions he has made and explain the facts I have adduced," he must allow your readers to form their own judgment as to his ability to do so.

The capability of "Medico" to deal with statistics is evidenced in the concluding paragraph of his letter. He gives *seriatim* the case mortality of the Metropolitan Hospitals Board from 1889 to 1900; and although the death-rate in the lists he himself provides is shown to diminish year by year from 40·74 in 1889 down to 12·01 in 1900, "Medico" innocently remarks: "I fail to see the downward curve Dr. Hadwen mentions."

I will try to help him to see the force of his own figures. He has faithfully copied out two lists. They are divided equally. The first presents the figures of diphtheria mortality for the six years preceding the introduction of anti-toxin; and the second those for the six years following its introduction. In the first list, the death-rate begins in 1889 with 40·74 and ends in 1894 with 29·64; that is, a reduction of 11·10 per cent. In the second list the decline continues at a proportionate ratio. It starts in 1895 with 22·55 and ends in 1900 with 12·01; that is, a reduction of 10·54. So that, according to "Medico's" own showing, during the six years when there was no anti-toxin the net gain in the death-rate was 11·10; and in the six years when there was anti-toxin, when cases were selected and common sore throats were added by the thousand, the net gain was only 10·54; thus leaving the anti-toxin years 0·56 to the bad. Does it not strike "Medico" that if the great strides in sanitary improvements which did so much to reduce diphtheria

in the non-anti-toxin and following years had been still relied upon, a far greater success would most probably have been achieved?

But "Medico's" comment upon the total result is worth re-publication: "In reading these figures," he says, "one must remember that diphtheria is on the increase, as the successful preventive treatment by the prophylactic use of anti-toxin has yet to be accomplished"! I agree with him. But will he be good enough to explain what he means by "preventive treatment"? Is everybody to be anti-toxined in order to prevent a problematical attack of diphtheria in the future? And now, having explained to "Medico" his own figures, which he tacitly confessed he did not understand, would it not be well for him to ask himself whether the increased mortality from diphtheria (for that is, I suppose, what he means) is likely to possess any corresponding relationship to the increased use of the dangerous and repulsive treatment he advocates?

In his postscript "Medico" says: "In 1895, during the diphtheria epidemic in Berlin, the supply of anti-toxin ran short, and the mortality at once rose from 15.6 to 48.4 per cent." This, again, he copies from Mr. Stephen Paget on page 91 of his "Experiments on Animals." But is there no other explanation of this almost miraculous jump? Is it possible that when the death-rate stood at 15.6 all the severe and moribund cases had been denied the blessing of this heaven-sent "prophylactic," and were therefore taken out of the count; but that when the anti-toxin ran short they all got counted in together, and thus the total was lumped up at 48.4?

"Medico" may assert that this suggestion is a libel on the hospital officials. But it is noteworthy that at the Hospital for Sick Children in Paris, when Roux, the bacteriologist of the Pasteur Institute, compiled the statistics of the year 1894 (subsequent to introduction of anti-toxin), and startled the profession by the announcement of a sudden decline in the death-rate, he had to admit when taxed upon the subject that he had suppressed 20 cases which had died before treatment could be resorted to. His glowing statistics at once lost their brilliant complexion. And supposing the same "accidental circumstance" occurred in Germany! Perhaps "Medico" can help us?—I am, Sir, Yours obediently,

WALTER R. HADWEN, M.D.

Gloucester, August 28.

Sir,—Dr. Hadwen, in your last issue, had recourse to a very typical ruse with regard to the figures I quoted on the 18th ult. Because the figures were in columns he imagines your

readers will be satisfied if he subtracts the bottom from the top on each side to get a comparison of results. . . .

He carefully subtracts 12.01 from 22.55, which was an anti-toxin year, whereas if he had been fair he should have subtracted it from 29.64, which was the year before anti-toxin treatment came in ; this would have given him 17.63, not 10.54. This was artifice number one.

His next is equally futile. In his previous letter he says : "Anti-toxin drops in in the middle of a great downward statistical curve." In reply, I said from the figures quoted I failed to see that curve, so he kindly assists me by *quoting the anti-toxin year figures to support his pre-anti-toxin year's assertion*. If Dr. Hadwen will plot a curve from 1891 till 1894 he will find there is no downward movement, whereas from 1895 onwards there is a continuous drop, but let him remember that it is due to anti-toxin treatment, or, at least, let him be fair and not "juggle" with the figures.

My reply to his attempts to explain away the sudden rise in death-rate in Berlin, when anti-toxin ran short, by the various possibilities he suggests is : "Pigs might fly, but they are rather unlikely birds."—Yours faithfully,

MEDICO.

September 1, 1906.

Sir,—“Medico” still avoids compliance with my repeated request to “prove the assertions he has made, and explain the facts I have adduced.”

He now accuses me of having “had recourse to a very typical ruse”; and forthwith professes “to fully show up my methods.” I can quite believe your correspondent to be perfectly honest in supposing that I have “juggled the figures,” owing to the fact that he has copied his statistics from the work of another writer and does not himself understand their purport.

In the first place, let me point out that statistics are valueless unless they are built upon a reliable basis. The real force of my arguments has been to show that the basis of the Metropolitan Asylums Board's figures is unreliable, and any deductions therefrom are, in consequence, misleading. My arguments in support of my contention “Medico” declines to face, but yet wants to draw his own conclusions in his own way from the figures themselves, before he has substantiated their claim to recognition.

Whilst, however, declining for the reasons vouchsafed to admit the tables supplied by “Medico” to be fair ground for discussion, I nevertheless have accepted them for argument's

sake, in order to point out that the only prop which your correspondent has to lean upon fails to support the weight of his own credulity.

The real question is, not as "Medico" supposes, how far the death-rate for the six anti-toxin years is below the death-rate of the six pre-anti-toxin years (although the point is not without interest), but how does he account for the fact that the death-rate declined at a greater ratio during the latter period than during the former?

But "Medico" naïvely suggests the elimination of the years 1891 to 1894 from his list of pre-anti-toxin years because, he says, "there is no downward movement"—an inexcusable error, as your readers can perceive for themselves, for the slight exacerbation in 1893 does not nullify the obvious progressive decline. But to oblige him we will strike out those years altogether. And now he is faced with a worse difficulty than ever. There is left standing alone in the opposite table the years 1889 and 1890 thus:—

Case Mortality per 100.

1889 40·74

1890 33·55

Here we see that long years before anti-toxin was boomed there was in one short twelve months a decrease in the death-rate of diphtheria three times greater than the highest recorded decrease in any one year throughout the whole anti-toxin period! How does he account for that? This decrease in one year without the use of anti-toxin is equal to about 75 per cent. of the total decrease of all the anti-toxin years put together! Will he explain this?

"Medico," however, says I ought to have deducted the death-rate of the year 1900 from 1894 and not from 1895, which would have given a bigger percentage to anti-toxin. It would have proved nothing if I had done so, and if he wished this he should have rearranged the tables. But it would have landed him in this difficulty. Seeing that the decrease in the six pre-anti-toxin years shows a *natural* decline of 11·10 on the whole, how much is he going to allow for similar decline between 1894 and 1895? He will at once say: "But the decline between 1894 and 1895 was the big one of 7·09, and that must have been due to anti-toxin." My answer is: "But the decline between 1889 and 1890 was bigger, namely 7·19, and without any anti-toxin at all!" How does he explain that?

Further, "Medico" must remember that anti-toxin was not introduced on the Continent till toward the close of 1894, and it was well on into 1895 before it came to this country, and considerably later before it was generally adopted, so that the

figures would have to be corrected for this fallacy as well as for a general decline ; and when, in addition to this, allowance was made for all the severe and moribund cases not anti-toxined at all, but which were made to swell the list of victims who were supposed to die from the lack of its administration, I am afraid, even with 1894 thrown in, "Medico's" pet list would make a very poor show, especially when natural decline must be allowed for all the way through, unless he can show some sound reason to the contrary.

As a control experiment, however, I will ask "Medico" to glance at the official statistics from Berlin for the same period. Perhaps he can explain them :—

In 1895 5,972 cases ; 939 deaths ; fatality 15·7 per cent.

1896	4,178	„	575	„	„	12·3	„
1897	3,646	„	507	„	„	13·9	„
1898	4,278	„	608	„	„	14·2	„
1899	3,817	„	608	„	„	15·9	„
1900	3,096	„	534	„	„	17·2	„

Here is a regular and constant progression in the death-rate during the period when anti-toxin came into general use.

In Paris, during the same period, the death-rate increased about 50 per cent. No wonder it is beginning to be felt that diphtheria anti-toxin needs "perfecting"; and until it is "perfected" I think the less "Medico" says about it the better.

But these are not the only control experiments. Neumeyer gives statistics of 1,000 cases of diphtheria patients treated without anti-toxin during fifteen years with only six deaths ; that is, 0·6 per cent. And Neumann, of Potsdam, shows that whilst the hospitals were recording an average death-rate of 13 to 15 per cent. with the use of serum during 1894 to 1898, he, in his own practice, had an average death-rate of only 1·6 per cent. without any serum at all. These facts need no comment.

"Medico" answers my suggestion as to how the temporary increase in the death-rate of diphtheria occurred in Berlin in 1895, by the elegant retort, "Pigs might fly," etc. Would it surprise him to know that the method I suggested was that adopted by the Metropolitan Asylums Board, upon whose statistics he fondly relies to bolster up his fatuous creed?—I am, Sir, your obedient servant,

WALTER R. HADWEN, M.D.

Gloucester, September 10, 1906.

SMALLPOX AT GLOUCESTER.

A REPLY

TO

Dr. COUPLAND'S REPORT

(REPRINTED FROM "THE REFORMER", DECEMBER, 1897,
AND JANUARY AND FEBRUARY, 1898.)

BY

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GLOUCESTER.

PRICE ONE PENNY.

GLOUCESTER

PRINTED FOR THE GLOUCESTER AND DISTRICT BRANCH OF THE
NATIONAL ANTI-VACCINATION LEAGUE.

G. NEWMAN, Hon. Sec., SUTTON HOUSE, HOWARD STREET.

LONDON :

THE NATIONAL ANTI-VACCINATION LEAGUE, 50 PARLIAMENT ST., S.W.

LONDON:
PRINTED BY A. BONNER, 1 & 2, TOOK'S COURT,
CHANCERY LANE, E.C.

SMALLPOX IN GLOUCESTER.

THE long-looked-for report of Dr. Coupland respecting the Gloucester epidemic of smallpox 1895-6 was only published in the latter part of November, 1897, that is, seventeen months since the official enquiry closed, and more than twelve months since the Royal Commission on Vaccination issued their final report.

NO CRITICISM ALLOWED.

Beyond half-a-dozen paragraphs quoted by the Royal Commissioners, no information appears to have been supplied to them by Dr. Coupland concerning one of the most remarkable epidemics of modern times and the most fatal in English history. The report goes forth to the public uncriticised, and its author has been liberated from the wholesome safeguard of cross-examination which so effectually emasculated the report of the Sheffield outbreak presented by Dr. Barry. Judging by the breakdown of one official witness after another when their evidence came to be submitted to the searching scrutiny of certain members of the Royal Commission, one is inclined to view everything vaccinal hailing from the hallowed realms of officialdom with some degree of reserve, and it is to be regretted that Dr. Coupland's conclusions, as well as his statements and arrangement of facts, should have been allowed to be delayed until long after the Royal Commission rose for the last time.

This fact is the more remarkable seeing that Dr. Coupland states in the opening paragraph of his report that he proceeded to Gloucester on March 30, 1896, "to make enquiry into an epidemic of smallpox which was then in progress there at the request of the Chairman of the Royal Commission on Vaccination." We may well wonder then how it is, if the Royal Commission considered the Gloucester epidemic of sufficient importance to send a special Commissioner at great public expense to "make enquiry" concerning it, and to authorise him to spend five months in prosecuting that enquiry, that they should have declared four months after their official investigator had returned from his labors: "We have not received as yet the report of Dr. Coupland from Gloucester," and deliberately close their own report without apparently troubling themselves about such an important document.

DR. COUPLAND'S INSTRUCTIONS.

And what was to be the nature of Dr. Coupland's enquiries?

His "instructions" appear to have been of the most precise and limited character:—"Primarily, to what extent the epidemic had prevailed, what classes of the community had been attacked, and especially to determine the incidence and fatality of the disease as regards the ages of those attacked, and their condition as to Vaccination, ascertaining also as far as possible the facts as to the rate of attacks in each class amongst those exposed to infection, and the type of the attack amongst the sufferers." And this, forsooth, is the utmost range of a professedly Epidemiological enquiry conducted on behalf of a presumably scientific Royal Commission on Vaccination at the close of the nineteenth century!

Practically, the range of enquiry was to be strictly limited to the question: Are the subjects of smallpox vaccinated or not; at what rate are the respective classes attacked, and at what rate did they die? It is more than probable, judging by a rough glance I have taken at the facts, that had the enquiry been confined to a distinction as between Protestants and Roman Catholics instead of between vaccinated and unvaccinated persons, similar tables could have been drawn up, similar percentages could have been worked out, and the Catholics would have scored heavily in the result. I am confident, so far as Gloucester is concerned, that the Catholics can, if they desire, claim their form of religion to be a far better protection against smallpox than Protestantism. Or the Royal Commission might have adopted another plan, namely, that of Dr. Murchison with regard to typhus fever. The patients admitted into the London Fever Hospital were classified by him according to their station in life; those who could pay; those who were paupers; and those not paupers but unable to pay. And the range of mortality was most striking. The better the social position the greater were the chances of recovery.

A GRAVE FALLACY.

Thus there is a fallacy, and a grave fallacy underlying the whole of Dr. Coupland's Report; it takes only one set of facts, namely, those of Vaccination, into consideration, and deliberately ignores or skims over those other facts, which, in the opinion of the foremost epidemiologists of our time, are really vital to the issue concerning smallpox and its prevention. In no other disease but that of smallpox would such playing with statistics be allowed; one can only suppose that the pet child of medical orthodoxy of the present day is of too delicate a nature to permit of any other treatment. We may well ask why the conditions of health of individual smallpox sufferers were not enquired into; why we have no remarks as to their social positions; why the sanitary conditions of the patients' surroundings are so carefully avoided; why the treatments of the disease are not carefully and fairly dealt with; why the sanitary arrangements of the elementary schools, so largely concerned in the outbreak, do not receive even a passing notice; and why the most recent official acknowledgments of in-

sanitary conditions in sewerage and house-drains in the infected area are not even alluded to.

Dr. Coupland has been faithful to his "instructions." The Report, consisting of 180 pages, gives tabulated lists of initials of names, and addresses of sufferers, with their ages, type of attack, and vaccinal condition. The lists are then done up again in various small parcels and scattered through the book, and numerous paragraphs are interspersed explanatory of selected cases where the vaccinated or unvaccinated condition of the patients is duly enlarged upon; but just that information which would have served to finally settle the question as to the value or not of vaccination, a question which was ostensibly the primary object of the enquiry, is not vouchsafed. From beginning to end Hamlet is played without the Prince of Denmark. As a scientific exposition of an important subject it is valueless; as a solution of the vaccine problem, or as a genuine, unbiased enquiry into the true causes of the fearful epidemic, it is a dreary and barren waste—an undisguised disappointment to everybody concerned.

OFFICIAL WHITEWASHING.

It is true there is an attempt in the first few pages to whittle away certain ugly facts which some of us have again and again exposed, and to apologise for and whitewash a series of official blunders which constitute one of the most serious blots upon municipal administration of which we have any record in this century; but seeing that these excuses are qualified by the confession that it was not within the province of the Commissioner's "instructions" to enquire into allegations of municipal mis-management, the effort resolves itself into a retailing of official apologetics which have already been sufficiently answered.

Dr. Coupland tells us he has "viewed the subject with as impartial a mind as he could." This I do not doubt. As, however, one notices the intense bias which marks the Report throughout, one can only regret that an official who must have found the desire for impartiality conflict strangely with his prejudices and "instructions" should have been appointed to the post of investigator. It is also a matter of regret that apparently the persons to whom he looked mainly for assistance were officials who have been impugned at the bar of public opinion, and that he can find no other names to whom to tender his thanks but those mentioned on page 13, although information of value could have been obtained and was offered from other and presumably less prejudiced sources.

VACCINATION A FAILURE.

The broad fact remains that of 1,979 persons attacked in the city of Gloucester with smallpox during the epidemic no less than 1,211—nearly two-thirds—had undergone that operation which the so-called "discoverer" declared, in his petition for money which he presented to the House of Commons in 1802, was "attended with the singularly beneficial effect of rendering through life the

persons so inoculated perfectly secure from the infection of smallpox." In his evidence before a Committee of the House of Commons Jenner again maintained: "It now becomes too manifest to admit of controversy that the annihilation of smallpox, the most dreadful scourge of the human species, must be the final result of this practice." Gloucester, ninety-five years after the utterance of this proud boast, has given the answer, and has proved, upon the unimpeachable evidence of a Government official, that the basis upon which the tyrannical Compulsory Vaccination Act was passed, and under which thousands of England's sterling sons and daughters have suffered, was a fraud of the worst type. Of these 1,211 "protected" persons no less than 120 died. This is how the close of a century's experience illustrates the "modifying" effects of vaccination!

RE-VACCINATION WILL NOT PROTECT.

Nor does re-vaccination, according to Dr. Coupland, fare much better, for he records 190 cases of smallpox in this class. It is true he tells us that in 62 out of this total, the operation was "unsuccessful"; but, then, we have always been led to believe that, if the vaccination would not "take," the subject could not take smallpox. Here, however, are 62 distinct and separate proofs of the way in which we have been deceived by one of the many strange shuffles which have bristled over this question like quills upon a porcupine's back. There are several in the list who are recorded as having been vaccinated no less than three times, and who yet contracted smallpox. Fourteen had been re-vaccinated twice. One soldier avers that he was successfully vaccinated no less than seven times, viz., in infancy, twice at Horfield Barracks, Bristol, once each at Aldershot, Dover, Malta, and Bombay, and yet fell a prey to the disease in the late epidemic; but I do not find this fact recorded in Dr. Coupland's list—he simply supplies us with the bare statement, "re-vaccinated eight years ago"!

The mortality in this class was less than among the unvaccinated, or the once vaccinated; but then it must be remembered that the attacks occurred among those who were for the most part in the prime of life, and in whom the disease-resisting powers would be greater than in the much younger persons who formed the greater proportion of the other two classes. With the exception of four persons, the whole of the 190 were under 60 years of age. There were seven cases in which Dr. Coupland acknowledges successful re-vaccination had taken place in from fourteen days to three months, when, according to the very latest medical theory (for which, by-the-by, there is not the slightest scientific ground) vaccination is in its most perfect condition of protective power. In 86 cases there had been successful re-vaccination from fourteen days and under before contracting the disease, when, according to analogy with all other diseases, the cowpox virus in its effects upon the system should have been at its strongest, and if ever it was to resist smallpox at

all, it ought to have resisted it then. If cowpox cannot prevent smallpox when it is most active in the system, how in the world can it do so when its virulent effects are at an end and the vaccine vesicle has become a scar? Of those 86 cases no less than seventeen had confluent attacks of smallpox; all but seven were over sixteen years of age. Had Dr. Coupland troubled to consider other factors in these results the solution would have been simple.

RECENT VACCINATION NO GOOD.

There is a further list of eighty-nine cases given by Dr. Coupland of persons vaccinated for the first time within a fortnight of their falling ill with smallpox. The remarks at the close of the previous paragraph apply here also. But there is a striking admission by the official enquirer concerning these cases on page 151, namely, that "it is not possible to assert" from the history of these cases that "vaccination had exerted a distinctly modifying influence upon the disease." In fact, the table shows just the opposite. Such an unexpectedly frank confession must be very disquieting to the army of pro-vaccinists who, for two generations, have indulged in and sedulously published dogmatic assertions of an opposite type. There were only fourteen cases of "discrete" smallpox (the mildest kind) in the whole list, and with the exception of thirteen very indefinitely labelled "mild" (whatever that may mean), every case was either "confluent" or "coherent" smallpox, the type around which the battle of life and death concentrates. Two of these were "malignant," both died, and one of the latter had been successfully vaccinated a full fourteen days before contracting the disease. And yet this case, as with the whole eighty-nine among which were no less than twenty-seven deaths, are, at the behest of a whimsical medical fad, made to swell the lists of the "unvaccinated" sufferers of the Gloucester epidemic!

The incidents of vaccine failure here recorded are precisely similar to those recorded by Dr. Woodville in the old London Smallpox Hospital nearly a hundred years ago, viz., that recently vaccinated persons caught the infection of smallpox just as readily and just as severely as if they had not been vaccinated, or had been vaccinated some time previously. Woodville said, he at first expected that cowpox inoculation would have "anticipated" the action of smallpox contagion, but, he adds: "Numerous facts have, however, proved this opinion to have been unfounded, and that the variolous effluvia, even after the vaccine inoculation has made a considerable progress, have in several instances [he might have said 'many' according to his own appended table] occasioned an eruption resembling that of smallpox." Consequently, in his dilemma, he invented for the first time the excuse so readily resorted to subsequently by the medical profession, that some time must elapse after the operation before vaccination could be deemed protective. But the only conclusion which can, in my estimation,

possibly be drawn from such experience is that there can be no connection whatever between the two diseases. If cowpox and smallpox can mature side by side without the one being in the least degree affected by the other—which was the experience of Woodville in 1800 and the more recent experience of Gloucester in 1895-6—where is the pathological or the practical evidence that cowpox protects against or modifies smallpox?

A STRIKING INCIDENT.

So anxious is Dr. Coupland to minimise vaccinated fatalities that, in one notable instance (which appears so to trouble him that he refers to it twice over, viz., on pp. 55 and 144), he actually says that a case vaccinated three weeks and three days prior to taking smallpox "approximates closely to those in the group 'under Vaccination'." After Woodville's dire experiences the fanciful limit of an eight days' start was allowed the cowpox virus, in the hope that by a sort of neck-to-neck race with smallpox incubation, it might drive its antagonist out of the field. The theory was doomed to disappointment. Then the time was extended to twelve days. Even the Medical Officer of Health for Bristol in his report on the smallpox epidemic in that city in 1893-4, p. 19, goes to considerable pains to prove (by theory, of course) that "effectual protection" against smallpox could be attained by giving vaccination twelve days' start of the smallpox fever. That is, allowing twelve days for incubation, vaccination must take place on the day of infection. But, alas, for "science" and theories, this too has proved to be a "hum." Then the prophetic period was advanced to fourteen days. Now, as failure still dogs the footsteps of the cowpox operator, Dr. Coupland would evidently make it three weeks, and one medical stalwart in the City of Gloucester, anxious to "go one better," has even ventured upon the suggestion of twenty-eight days as a convenient demarcating period by which to escape inconvenient possibilities and circumvent ugly catastrophes.

But the unquestionable fact still remains that Dr. Gayton, a pronounced official pro-vaccinist and late superintendent of the Homerton Smallpox Hospital, informed the Royal Commission that after an experience of 12,000 cases his tables showed "that primary vaccination was not protective up to any age." Anyhow, here is the striking illustration referred to above, namely, that of Daisy Sabin, aged four years, living at 5, Linden Road, Gloucester, who contracted smallpox in the confluent form after being successfully vaccinated in six places (not three as stated by Dr. Coupland), by a specially appointed vaccine operator three weeks and three days previously, and died. On the other hand, her sister, aged only sixteen months, unvaccinated, had a "severe attack" (which is an exaggerated description) and—recovered. Why did Dr. Coupland omit that last word in his Report? Would it have made the contrast too striking? This unvaccinated child was not even pitted.

WILL VACCINATION MITIGATE SMALLPOX?

Ever since the cunning Jennerian shuffle originated by the apostle of vaccination at the bedside of Lord Robert Grosvenor, who narrowly escaped with his life from a confluent attack of smallpox after being vaccinated by Jenner but a few months previously, we have been taught that even if cowpox will not protect from smallpox, it will certainly mitigate the disease and ward off all fear of mortality. Now, how do Dr. Coupland's own figures meet this plausible assertion?

He tells us that of the sufferers that have been vaccinated, 29 had malignant smallpox, and every one died; 223 had confluent smallpox, of whom no less than 70 died. Here is a total of 252 successfully vaccinated persons attacked with the worst types of smallpox, scoring a fatality of 39.3 per cent.!

Besides these, there were the cases of "Alleged Vaccination"; that is, cases where the patients themselves declared they had been vaccinated, but owing for the most part to the vaccine scars being covered by the eruption, and therefore said not to be recognisable by the medical man in attendance, Dr. Coupland cautiously places them in a separate list. There were 40 of such cases, with 16 deaths, a fatality of 40 per cent. They included 7 malignant cases, all of whom died; 21 confluent cases with 9 deaths. That is, 28 cases of the worst types of smallpox is alleged vaccinated persons and 16 deaths—the enormous fatality of 57.1 per cent! They might well be placed in a separate list under the heading of "*Alleged Vaccination.*" Why did not Dr. Coupland search the vaccination registers and make sure about their vaccinal condition? What about the "Unvaccinated" death-rate after this? In the pre-vaccination days of last century, the death-rate in the old London Smallpox Hospital, to which only the worst cases were admitted, was only 30 per cent.!

Of the 89 persons vaccinated within a fortnight of taking smallpox, no less than 27 died. A fatality of 30.3 per cent.! Where, I ask, does the doctrine of "mitigation" come in? Is this the sort of thing that conscientious men and women are being persecuted and imprisoned for? Is this what we are paying hundreds of thousands of pounds annually out of the public rates to maintain?

THE INCUBATION PERIOD.

This question as to when vaccination becomes "protective" is argued upon the generally received statement that smallpox takes twelve days to incubate. Now, nothing is more difficult than to arrive at a definite conclusion upon such a point, and all time limits in this and allied diseases must be more or less arbitrary. If the incubation period were proved to be shorter than the generally accepted period of twelve days, it would make all the difference to the orthodox theorisings of Dr. Coupland and Co., and the number of vaccinated cases which he relegates to the "unvaccinated" list would have to be taken out and added to the already extensive number of 1,211 admitted vaccination failures.

Now, there is a very remarkable case bearing upon this subject, namely, that of A. J. M., 7, Bedford Street, Gloucester, male, aged 20; No. 109 in Dr. Coupland's list. The patient, a sculptor, had been residing in Newmarket, and came direct from there on Saturday night, February 8th, 1896. He was in good health. There was not at that time, not at any time previously, any smallpox in the town or neighbourhood whence he came, nor has there been any case since. The house in which he took up his residence in Gloucester had three bedrooms, and a front and back sitting room, besides underground kitchen. There were living in it already nine persons, viz., his father, 2 elder sisters, a brother-in-law, and five children, aged 1, 4, 7, 10, and 15 years. The mother was suckling the babe. With the exception of the father, vaccinated in infancy, all were unvaccinated. There was no smallpox in the house nor in the street. The young man started work on Monday morning, the 10th. To reach his work he had to pass through the centre of the smallpox district. On Wednesday night, the 12th, he was taken with a shivering fit. On Thursday night, the 13th, he vomited. On Friday, the 14th, smallpox appeared upon the skin, and on Sunday, the 16th, he was removed to the hospital. Within a week he was dead.

Now, here is an absolutely clear case where the incubation period could not possibly have been more than five days at the outside, more probably three, and it destroys all faith in the generally accepted notion that smallpox takes twelve days to incubate, and consequently knocks the bottom out of the whimsical theory in regard to the period to be allowed for "effectual protection." One would have thought this would have been a most suitable and important subject for a scientific Government investigator to inquire into. But what will the public think of official investigations when they learn that the only comment Dr. Coupland has to offer is: "Mother prevented successful vaccination immediately after it was attempted in infancy"? Where Dr. Coupland picked up this bit of gossip I do not know. Every living relative denies the statement. He would, I suppose, wish the public to infer that had not the mother thus emulated the example of the wife of King Edward I., the dose of cowpox filth inoculated 20 years ago (which by the by, is supposed not to "protect" longer than seven years!) would have saved him. But what about Daisy Sabin? Why did she die? Why did her little unvaccinated sister live? And how is it that of all the unvaccinated people crowded in the same house with A. J. M.—four of them under ten years of age—not one contracted the disease? These are questions which Dr. Coupland in his wisdom leaves unanswered.

THE PERSONAL CONTACT THEORY.

On page 34 of his Report, Dr. Coupland deals with the "Early history of the outbreak." Like many other historians, he arranges his facts upon the basis of a preconceived idea. It is not a

question with him of gleaning every fact that bears upon the history, and of allowing those facts to speak for themselves. He has a theory to establish, and he proceeds to establish it in his own way.

That theory may be best expressed by quoting the words of Dr. Campbell, the Medical Officer of Health for the City of Gloucester, to whom Dr. Coupland declares he "is indebted for this information." On page 6 of his Annual Report to the Gloucester Urban Sanitary Authority for 1896, he says:—"A great deal has been said about the alleged insanitary condition of the City, and statements have been made to the effect that this was really the cause of the epidemic. I have no hesitation in characterising these statements as perfectly untrue. . . . It is well known to all experts on this subject that the Exanthemata, e.g., smallpox, scarlet fever, and the others are not produced *prima facie* by any of these causes, but are communicated by persons to others, and that in this way alone the disease is spread." That is, the disease cannot arise *de novo*, but must be imported by some individual into a neighbourhood, and, given the importation, all that remains for its propagation is continued infection from person to person. Hence, it follows as a natural sequence of the argument: Protect the individual by a "typical," "foveated," "circumscribed" vaccine scar possessing a "diameter" measured according to the whim of the operator, and of "recency" which depends for its value upon whether the individual subsequently takes smallpox or not, and he may confront even the insanitary horrors of the eighteenth century so graphically described by Macaulay.

Thus it is Dr. Coupland's "History" contains no note of insanitary or other conditions, and, as in the instances I have already drawn attention to, even certain vaccination details which decidedly came within the scope of his "instructions," and which would have thrown a very different light upon the medical theory he seeks to establish, are passed by unnoticed.

"THE BEGGAR'S DISEASE."

Less dogmatic seekers after truth might with some reason argue that that which arose *de novo* at some time in the history of mankind may not improbably arise *de novo* again. That that which is known as the "Beggar's Disease" in Austria may be equally the "Beggar's Disease" in other countries of the world.

That that which has followed in the wake of the sword and bloodshed in all ages, which accompanied the "glories" of the American War of Independence, and which claimed more victims than the battle-field in the ravages of the Crimea; which formed the dark background to the triumphant marches of the German Army in 1870, increased tenfold the horrors of the Siege of Paris, and plagued our warriors at Tel-el-Kebir, might after all be a disease having some connection with an atmosphere charged with foul decomposing gases and putrescent matter, and which pointed

to a lack of wholesome conditions of life with the added evils of panic and terror.

The history of the Sheffield epidemic of 1887 might have provided Dr. Coupland with food for reflection, for in that town—the best vaccinated of modern times—no less than 7,000 persons were struck down with smallpox. The disease played its havoc over a midden ridden area of 135 acres, where no individual above the social position of a railway servant was attacked by the disease.

But Dr. Coupland has his “instructions,” and armed with a theory he proceeds to its elucidation. It never appears to have occurred to Dr. Coupland that it might have been as well, during his five months’ stay in the neighbourhood, to have verified the following information with which he had been supplied by the above-named city official.

THE FIRST CASE OF SMALLPOX.

“The early history” begins:—“Although during the past few years smallpox has prevailed in various parts of the country in more or less direct communication with Gloucester, and especially in places so nearly related to it as Birmingham, Bristol, and Stroud, it was not till the autumn of 1895 that the city became markedly infected. In the month of June there had been notified a case of a Midland Railway official, who was believed to have contracted the disease at Burton-on-Trent. He was promptly isolated, and no further case arose in connection with his attack.”

Now, on making enquiries I found there was no case of smallpox at Burton-on-Trent either at that time, before, or since. The official (who, by the way, was vaccinated) had not come in contact with any case of smallpox on the occasion of his brief visits to that town two and six days respectively prior to his attack, nor at any other place. Besides, the limit of only six days before the attack would hardly suit Dr. Coupland’s theory of twelve days’ incubation. There was, however, an offensive sewage manhole right opposite his front door, which had been most objectionable to him for a considerable time. He had three unvaccinated children, age two, four, and six years. One of them—the youngest—slept in bed with him the night before he was taken to the hospital, the rash being then upon him; but none of the unvaccinated children contracted the disease. So the first case, when Dr. Coupland’s omissions are supplied, does not go very favourably for the “personal contact” theory, nor yet for vaccination.

THE SECOND CASE.

Dr. Coupland continues:—“The next case (in August) which became known, was of a lad employed on the premises of a Mr. B., living in the Midland Road. Mr. B. was a commercial traveller, and although he does not appear to have contracted smallpox himself, it is highly probable he was the medium of its importation into the City, and of the infection of one or more members of his

family whose cases were not notified. The lad referred to lived in Goodyere Street, and was not known to have infected others."

As in the case of the Midland Railway official, Mr. B., it will be seen, is supposed in some mysterious manner to have "imported" smallpox into the city, although he had not suffered from smallpox himself. Dr. Coupland has not the remotest idea as to the locality from whence Mr. B. "imported" the disease, but—"he was a commercial traveller." This appears to be the key to the situation, and to have opened up infinite possibilities to the medical scientific mind. Mr. B. is charged with "infecting one or more members of his family." To be exact, only one was "infected"—his daughter. One other case "infected," supposedly from the same source, was the lad who worked by day upon the premises. Dr. Coupland does not stay to discuss why, if smallpox can be conveyed in this subtle manner, only these two subjects were "infected," or why the lad, who slept every night at his own house, where neither father nor mother had been vaccinated since infancy, and where two unvaccinated children under ten resided, did not in his turn "infect" any of this "inflammable material." From first to last no other case occurred either in the house or the street.

PRE-EPIDEMIC SMALLPOX.

Moreover, it may be argued, if smallpox can be conveyed so mysteriously from person to person, how is it that Gloucester had no epidemic in 1890? Six cases were known to the authorities in that year. They had no connection with one another. There was no evidence of any "importation." Each case came in contact with others, and yet there was no "conflagration." The Medical Officer of Health in his Annual Report, says:—"The first two cases happened in a small house occupied by a large family." Is it possible that over-crowding in this and other instances had anything to do with the result? For does he not admit on p. 7 of his Report, 1896: "Overcrowding is always an important fact in dissemination of smallpox"?

In 1893 three more cases occurred; the Medical Officer of Health wrote in his Annual Report, page 14:—"A severe epidemic of the disease has been raging in Birmingham on one side of us, a good few cases in Stroud near us, and I believe that there are a great many cases at Bristol, so that we are in a circle with many cases around us." But yet in spite of constant communication with this city—in spite of cases of sporadic smallpox in the city itself—in spite of its "unprotected" condition, smallpox declined to "catch on." Why then should a problematical importation by "a commercial traveller" in 1895 start an epidemic of smallpox, and yet fail to do so in 1890 and 1893? It never seems to occur to Dr. Coupland that some other theory than personal contact is necessary in order to create such a result; and moreover, as the railway official, and Mr. B., and Miss B., and the lad were all vaccinated, it is hardly fair to charge so much at the door of the unvaccinated in Gloucester, especially when all the

unvaccinated who were, as I have shown, brought in contact with these early cases, declined to contract the disease.

In 1894 smallpox still cropped up within the confines of the city. Seven cases were notified. The Medical Officer of Health states in his Annual Report:—"None of the cases seemed connected with each other, but arose now and again without any communication." This is a flat contradiction of the whimsical theory he propounds two years later, as quoted on p. 11. No definite proofs of "importation" could be discovered. Gloucester was as unvaccinated then as a year later. Still there was no epidemic.

A SUGGESTIVE FACT.

Now I ventured a suggestion in the case of the Midland Railway official of a foul-smelling street ventilator immediately opposite his front door as a possible guide to the starting-point of smallpox somewhat nearer home than Burton-on-Trent. I will now suggest a solution in the case of Mr. B. Some considerable time after Mr. B. and his family had vacated their house, it became necessary in view of alterations to inspect the drains. And what was the discovery? The drain-pipes were riddled in every direction and lay, on an average, only eighteen inches below the soil. There were but three sound drain-pipes out of the whole number. The inmates had been living in an atmosphere of sewer-gas, and the susceptible ones, I take it, suffered from blood poisoning in consequence, which manifested itself upon the body in the form of smallpox. But the possibility of the existence of such conditions or their probable connection with a zymotic disease does not appear to have entered into Dr. Coupland's calculations. The country must be searched for an "importation," whilst a not improbable cause is lying unheeded under the very nose of the Medical Officer of Health.

Dr. Coupland gives his readers a diagram in order to graphically illustrate this "personal contact" theory. The third case is traced to "B." in this way: he was "a fellow shopman" of the young man who was courting the sister of the "infected" daughter of Mr. B. Quite a sort of "House that Jack built." Dr. Coupland admits that he does not know "whether she actually visited the shop while still infectious." But the "singular coincidence in this indirect relationship" (he might have said *very* "indirect") is quite sufficient evidence, apparently, for a scientific man with a theory to establish. Accordingly, W. S., who never visited B.'s house, but had been ailing for several weeks, and was living at the time within the area of foul-smelling manholes, is diagrammed as "No. 3."

UNFORTUNATE "LINKS."

No. 3 is next credited with infecting three more whose initials and addresses are given. Dr. Coupland calls one of the three "the next link," which consisted in "the probable infection of a young girl [called "No. 5."] the friend of No. 3, who was employed in

the K. family in Derby Road the infant she nursed being attacked a few days later."

The unfortunate part of this "link" is No. 3 denies absolutely that No. 5 was a "friend" at all. He did not know her, had never come in contact with her; had never spoken to her in his life. The girl not only corroborates this statement of No. 3, but declares in addition she was never "nursemaid in the K. family"; had nothing to do with the baby; and although she had called at the K.'s on a few occasions, she had not visited their house for more than three weeks prior to her attack; she therefore cannot be held responsible for "infecting" Mrs. K.'s baby. In fact, as I have discovered since, Mrs. K.'s baby, contrary to Dr. Coupland's statement, had the disease at least one day before No. 5, although not notified until afterwards. Still more extraordinary is the fact that of the two other cases which No. 3 is charged with "infecting," viz.: No. 4 and No. 6, the first he had never known or come in contact with until admitted into the smallpox hospital within two days after being admitted himself; and the second person he has never seen or heard of in his life. In fact, it is absurd to suppose that No. 3 could have infected the latter, for he had already been in the hospital twenty-six days before she was attacked!

Here again surrounding and personal conditions are unheeded by the historian. In the case of the girl No. 5, for instance, she was a subject highly susceptible to zymotic influence. Her age was 16. She was already scarred by chicken-pox, had had measles three times, and scarlet fever once. She lived in an insanitary district, in a tiny house of four rooms, containing father, mother (neither revaccinated), and six children besides herself. At the time of her attack five occupied one bedroom ten feet square. Two of the children under 13 years of age, unvaccinated, slept with her up to the day she was removed to the hospital, yet neither of the latter, nor anyone else in the house took smallpox. Moreover, No. 5 had been vaccinated in infancy, she had four large and distinct marks which could be seen clearly at a distance of ten feet, and yet Dr. Coupland actually credits her in his Official List with being "Unvaccinated"!

MORE UNFORTUNATE LINKS.

Dr. Coupland continues his "History":—"In October there died at a neighbour of the K.'s the child E. M., eight years of age, from what was certified as 'malignant measles.' She was unvaccinated, and had been taken ill on October 21st." As this instance of mistaken medical diagnosis was the first unvaccinated case (excepting the baby) since June, Dr. Coupland carefully records it, although he had equally carefully omitted the not unimportant information that the previous sufferers had been vaccinated! He goes on:—"In the first week in November two of the children, and subsequently the father, were attacked with smallpox and removed to the hospital (Nos. 9, 10, and 12)." The "infection"

of all these is placed to the credit of No. 5. Now comes a difficulty in the interesting "link." Dr. Coupland says:—"It is hardly consistent with the ordinary ideas of the incubation period of smallpox to believe that the child E. M. was directly infected by No. 5, although it is certain by the fact that this girl [No. 5] did come into the house before her illness was declared. She was removed to hospital on September 28, *i.e.*, twenty-three days before the child was taken ill in the M. family." So that in spite of the appallingly long period to which Dr. Coupland is obliged to stretch the time of incubation in order to make it fit in with his theory and complete his list of "singular coincidences," he is "*certain*" No. 5 "infected" the child because "the girl came into the house before her illness was declared." But here again Dr. Coupland is at sea, the parents of the child declare they never knew the girl, and that she never at any time came into their house. Nor did his children ever visit the girl's house, or even K.'s house, and this is corroborated by the girl herself.

Now, how does vaccination come off here? There were ten in the M. Family. Four of them took smallpox. Two out of the four were vaccinated. The father was revaccinated on November 7th, and yet was attacked with smallpox upon the day after the ideal perfection period of protection—twelve days—had concluded, *viz.*, November 20th. Dr. Coupland says nothing about this, and on turning to his official list, I simply find recorded—"vaccinated in infancy"!

"THE EARLY HISTORY" A HOAX.

This concludes his "Early History of the Outbreak," from which, he says, "it is possible other cases may have arisen," and, may we not add, could doubtless have been manufactured with equal facility, although Dr. Coupland modestly remarks: "It is not possible to trace the connections between the cases that now began to increase in number"!

Thus it will be seen that Dr. Coupland has been completely hoaxed, and the whole of his "Early History of the Epidemic," with its "connecting links" and illustrating diagram, is a pure illusion from beginning to end. Are we not justified in concluding that the publication of such an invention, issued by Government authority at public expense upon the pages of a Government Blue-book, for no other purpose apparently than to advocate a generally accepted whimsical medical theory, is little short of a public scandal? What confidence, I ask, can the public have in the dogmatically asserted "Conclusions" attached to the so-called "investigation" when they emanate from the pen of an official who has allowed himself to be hoodwinked in so flagrant a manner, and who apparently has never taken the least trouble to test the truth of his statements?

For the next four months after the "singular coincidences" above mentioned, the disease dragged on its weary way; isolated cases sprang up here and there, mainly confined to the south half

of the city, but so distinctly unconnected as to supply scarcely a hook to hang the "personal contact" theory on. They favoured the impression that there was present in the city a certain atmospheric influence which, aided by insanitary conditions more or less associated with the infected houses, produced their combined result upon susceptible inmates.

Out of 1,979 total cases of smallpox, about 1,750 occurred in the south half of Gloucester, although the child population north and south was equally unvaccinated. It is a striking fact which Dr. Coupland is forced to admit, but which he does not attempt to explain. It proves conclusively that there must have been conditions other than vaccination existing in the smallpox-stricken area to account for such a localised disaster.

WIDDEN STREET INFANT SCHOOL.

By the 12th February the outbreak appeared to be subsiding; during the previous week there had been but seven fresh cases, making a total of 104 from the commencement of the outbreak. Suddenly the whole city was plunged into a state of terror and panic by the outbreak of smallpox in the Widden Street Infant School, forty-one infants being struck down in the course of six days, making a total of forty-seven in the fortnight. During the remaining four months 1,708 cases occurred, between six and seven hundred of that number being public elementary school-children of 14 years of age and under. Until this school outbreak only 35 children had been attacked, although smallpox had been in the city for nine months.

Dr. Coupland states on page 39:—"To this cause must undoubtedly be attributed the great dissemination of the disease in the city and particularly in the quarters whence the children came." To make matters worse the Widden Street infants were taken from their homes to the smallpox hospital and packed two, three, and four in a bed, with an allowance of but 500 cubic feet of air space each. Only about half of them returned from this death-trap alive.

Dr. Coupland devotes some dozen lines to this catastrophe on page 39, promising "to enter into a fuller detail later on." When we reach the pages of "fuller detail" we find, after the ordinary particulars of name, age, date, etc., are noted, nothing further to solve the mystery of this sudden scourge beyond the wearying reiteration of "vaccinated" and "unvaccinated."

He suggests one solution of the mystery surrounding the Widden Street outbreak on page 119, viz.: That a child "who last attended the school on January 31, the day on which her mother was declared to be suffering from smallpox, quite possibly introduced smallpox into the school." He suggests in addition, on page 127, that perhaps "the contagion was introduced" either by pupil teachers who met there in the evenings or by members of the Sunday school. Dr. Coupland further refers to this subject on page 5 of the "introduction" to his Report, where he says:—"For

my own part, and viewing the subject with as impartial a mind as I can, the conviction is forced upon me that Gloucester would not have suffered as it did had its child population been vaccinated. To my mind it seems a wilful shutting the eyes to this patent fact to assume as has been done that insanitary conditions were responsible for the outbreak in general and for the school invasion in particular."

SMALLPOX PICKS OUT THE VACCINATED.

The first point, namely, insanitary conditions generally, I shall deal with presently; the second point I will deal with now. But first let me express my surprise that Dr. Coupland should charge the unvaccinated condition of the child population with the responsibility of the Gloucester epidemic, seeing that of the first cases in 1,086 houses infected with smallpox, no less than 69.8 per cent. of them were vaccinated persons; the unvaccinated, on the contrary, having introduced the disease in only 31.2 per cent. of the houses. Needless to say, this is a calculation which Dr. Coupland does not publish in his Report.

The three public elementary schools under the management of the Gloucester School Board are all situated in the south of Gloucester; in addition there are three large Voluntary Schools in this district. Until the opening of the Linden Road Board School in September, 1895, all the public schools were greatly overcrowded, and further, the Sanitary Inspectors have officially reported that, with two exceptions, every public elementary school in the city had other sanitary defects. The new school relieved to some extent the congestion in one portion of the district, but the remaining schools were still markedly overcrowded, and the building of still another Board School was then being demanded by the Education Department.

INFANT SCHOOL OVERCROWDING.

The Widden Street Schools are the oldest of the City Board Schools, and are situated in the midst of a thickly populated neighbourhood. The only department in these schools not acknowledged officially to have been overcrowded at the time of the epidemic, was the infant school in which the smallpox broke out. It was officially stated there were nearly 100 vacant places. The calculation was arrived at in this way: The infant school consists of a long room measuring 98 feet by 20 feet; 32 feet of which are partitioned off for the "Babies," that is, children from three to five years old. There are, in addition, two side class-rooms, measuring 22 feet by 18 feet each. "The Babies' Room" is nearly empty during the winter months; nevertheless, it is not used by the older scholars. Its space, however, is calculated in with the rest of the school space at the end of the year, and the scholars are arithmetically distributed over the whole area. So that, as I proved to the Gloucester School Board (of which I am a member) at a meeting on October 12th last, although by this statistical trick the infant

school as a whole is correctly certified officially to have had an average attendance considerably less than the allowed accommodation, the school registers show that every room but the "Babies' Room" was overcrowded.

A similar condition of things, it is reported, existed in St. Luke's Infant School, where 34 children were equally suddenly struck down with smallpox directly after the outbreak in Widden Street. These, too, were crammed into the smallpox pest house, and 55.8 per cent. of them died. Being a Voluntary School, I cannot test the registers. But a similar explanation and denial of overcrowding, as was publicly given by the Board School authorities, was vouchsafed by the managers of this school; only, in the latter instance, it was stated that the average attendance for the year was but seven below the certified accommodation, which, arguing by the rule I applied to Widden Street, would signify even worse overcrowding than in the latter school. Moreover, the water-closets and urinals were without flushing arrangements, and the drainage was defective.

WHY THE INFANTS SUFFERED.

Now on November 1st, 1895, 65 boys of the Widden Street Infant School were certified for promotion to the boys' department, but the Boys' School was already so congested that they had to be accommodated in one of the class-rooms of the Infant School, where, for four months prior to the outbreak, the average attendance mustered over 50 per cent. above the maximum number permitted by the code of the Education Department on that amount of floor space—a space per child which is considered by all leading sanitarians to be insufficient. Infants belonging to the east end of the large schoolroom entered the class-room adjoining that of the boys' in relays for an hour at a time. During the winter months the windows, in consequence of the faulty method of ventilation, were constantly closed. The only remaining "ventilation" being from a swing window communicating with the greatly crowded boys' classroom. The door of the latter room opened into the lobby, the draught of which served to drive the foul polluted air from the overcrowded boys' room into the already polluted atmosphere of the infants' classroom. All the children in turn belonging to the east end of the large schoolroom breathed this atmosphere. The teacher was constantly there, and in spite of the fact of her being vaccinated, she was the first to be taken ill, on February 12th. Within the next fortnight forty-seven of the children who went in and out of that class-room were also struck down, but not another child either in the west end of the large school-room or in any other portion of the infants' department was attacked prior to the schools being closed, though all were equally unvaccinated.

Since my comments upon this reprehensible state of things the Government Inspector from the Education Department has made the following statement in his official report to the Gloucester School Board relative to this infants' school:—"The ventilating

board between the two class-rooms and then into the lobby can scarcely be recognised as a satisfactory method of keeping the atmosphere pure." The Building Committee were also authorised by the Board to investigate the matter, and they delivered their Report on December 13th last, when they made the following statement:—"There is practically no egress for foul air in any of the rooms except that supplied by the fire-stoves," and they advised that the architect shall be requested to suggest structural alterations in order to secure efficient ventilation. Added to this, the drains of this department were blocked, and when examined after the closing of the schools, it became clear they must have been in this condition for a long time. Then, for the first time, an automatic flushing apparatus was introduced.

These serious conditions, combined with the additional stress of certain atmospheric influences, can alone, in my opinion, explain the disastrous outburst of smallpox in this school, which so suddenly converted the general outbreak into an epidemic by spreading panic and terror all over the city. But these matters did not come within the scope of the "instructions" of Dr. Coupland, and therefore, apparently, were not enquired into; consequently with his unswerving faithfulness to his commission, he credits this terrible disaster to the account of the unvaccinated population of Gloucester.

As already quoted, Dr. Coupland says:—"It seems a wilful shutting of the eyes to this patent fact [viz.: that the outbreak *must* have been due to the unvaccinated state of the children] to assume that insanitary conditions were responsible for the school invasion." But now that I have furnished details to which it would seem Dr. Coupland has "wilfully shut" his own "eyes," I leave the public to form their judgment upon the issue which lies between us.

WHY THE EPIDEMIC ABRUPTLY CEASED.

Dr. Coupland "proceeded to Gloucester on March 30th, 1896." He "found the epidemic had already attained considerable proportions, that the hospital accommodation had proved inadequate, and that measures for quarantining infected households in their homes had been in a great measure abandoned, owing to the strain on the resources of the Sanitary Department."

As a matter of fact, the epidemic had by that time reached its height, the high-water mark being the week ending April 9th, so that within ten days after his arrival it began a rapid decline; this decline being coincident with the lack of further hospital accommodation, which was packed to overflowing when Dr. Coupland visited the wards on April 3rd; the practical abandonment of "quarantining" regulations which could have only served to increase the epidemic; and the cleansing of sewers and house drains by mechanical flushing and copious showers of rain. The flushing was carried out by pumping water from the River Severn, the city supply being inadequate to give effect to the cry I raised

of "Turn on the tap." During January and February the rainfall had only been .652 and .110 inches respectively; in March, *i.e.*, directly prior to the abrupt decline, it increased to 2.175. With the exception of a corresponding rainfall in June, when smallpox disappeared, there was no further heavy rainfall until September. In July and August it was only 1.215 and 1.630 inches.

Dr. Coupland expresses, on page 5, his amazement at the sudden decline of the epidemic: "It is certainly remarkable," he says, "that it ceased so abruptly." And it must be rather disquieting to those extreme enthusiasts who loudly and recklessly boast in newspaper columns up and down the Kingdom that wholesale re-vaccination from house to house stamped out the disease, to find the Assistant-Commissioner candidly confessing: "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 successful re-vaccination." As a matter of fact, the epidemic reached its height on April 9th, and the "Vaccination Committee" did not commence its work till April 27th, when the number of notifications had been reduced to nearly half, and the epidemic was practically over.

The Sheffield epidemic in 1888 came to an equally abrupt termination following upon floods of rain after the long-continued drought of the previous year.

Dr. Coupland remained in Gloucester but a few days when, after visiting the hospital, he departed, leaving a young medical man from Middlesex Hospital in his place. Upon returning three weeks later the epidemic was rapidly dying away. So that when Dr. Coupland says: "For the first six months the cases which arose were traceably connected with one another"; and "the system now generally adopted of quarantining the infected households was carried out with efficiency," we must not assume such assertions to be the result of personal observation, nor could they have been the fruit of personal enquiry from independent sources.

QUARANTINING IN LEICESTER AND GLOUCESTER.

The "quarantining" method adopted by enlightened towns in recent years is that known by the name of "The Leicester Method." In November, 1895, the Gloucester Sanitary Authority applied for and received from the Leicester Medical Officer of Health a copy of his quarantine regulations. The circular being "mislaidd," two more copies were supplied in January, 1896. They were again "lost or mislaidd," and in March, 1896, Leicester by request sent "more copies," but it was then too late for adoption.

Briefly, the "Leicester Method" consists in: Removing the patient to hospital if necessary; disinfecting house, clothes and bedding; providing fresh articles if the latter are destroyed; quarantining the inmates of the house, but allowing some of them, under certain conditions, to continue at work during the whole or part of their quarantine period; and urging all the inmates to have disinfectant baths daily at their own homes, or at the hospital.

They are allowed to go about, are encouraged to take walks in the country, and are granted sufficient money to cover rent and maintenance.

Now, what was the "Gloucester Method," which, according to Dr. Coupland, was carried out with such "efficiency"? The quarantined inmates received peremptory orders not to move outside their houses. Policemen were instructed to enforce this regulation. Many were detained in small insanitary dwellings for nine and ten weeks, until one by one they succumbed to the disease. In one instance, a man (whose wife had been compulsorily removed to the Smallpox Hospital two days after her confinement, with death in four days as the only possible issue of such mad officialism) was taken for an early morning walk by a friend in order to rouse him from the melancholia resulting from several weeks' incarceration, when, the merciful act being discovered and reported, the man's quarantine allowance—a miserable pittance of ten shillings per week per family, irrespective of its size—was stopped! He had sent his boy of sixteen to his grandmother's in the country in order to escape infection. The authorities ordered him to return, and shut him up as a prisoner with the others, until he, too, succumbed to the disease.

"Infected" rooms were locked up and the bedding taken away, and the inmates often left huddled together for days in one or two downstairs rooms, in the midst of winter sleeping on floors with what coverings they could obtain before any bedding could be procured. I know of one case where they were left in this condition for a fortnight. Many had difficulty in getting food, and had to beseech neighbours over the walls of their back yards to procure it for them, or a member of the family would have to run the gauntlet of nocturnal spies and venture into the street "when no one was looking," in order to obtain the necessities of life.

SOME NOTABLE ANTI-VACCINATORS.

It was not until March 28, when the epidemic was on the point of declining, that Poor Law Relief was granted, and food taken from house to house; but every man who was starved into accepting it had his name removed from the voters' list.

A quaint incident in connection with this distribution was, that the man appointed to execute the work declined to be re-vaccinated. So upset were the authorities at his moving among smallpox patients without taking the disease, that the Town Clerk wrote the Board of Guardians, and members urged his discharge unless he submitted to the orthodox rite! The man refused, and as no re-vaccinated person had pluck enough to take his place, the Town Clerk's hint was unheeded. Not only this man but the one who drove the patients from their homes to the hospital, as well as the man who carried the infected bedding to the disinfecting apparatus, and even the nurse who attended the patients in the hospital during its early and worst period, all declined to be re-vaccinated, yet none contracted the disease. On the other hand,

at least one of the recently re-vaccinated hospital nurses took smallpox. These were little matters which gravely troubled officialism. A few score unvaccinated children's deaths were but "paying the penalty of the parents' folly," and so far as the "glorious cause of vaccination" was concerned—

"It was a famous victory."

"Obstinate, ignorant fanatics" like the above were a plague to the official bosom, for did not officialdom declare, "Gloucester nurses were saved from 'decimation' because they were re-vaccinated"? And would not the "man in the street" enquire: "Why then did not 'decimation' pursue those unregenerated Philistines?" Several of the hydropathic nurses who were in the thick of the smallpox from first to last, and who were not vaccinated, did not contract the disease; on the other hand, three or four of them who were re-vaccinated prior to undertaking the work fell preys to it. Dr. Coupland condemns this system which resulted in a death-rate of only 10 per cent., and in speaking of the nurses on p. 54 he says contemptuously: "Their devotion was in many (*sic*) instances rewarded by themselves being attacked with smallpox," but he omits to say that with two exceptions the sufferers were all recently re-vaccinated!

THE STROUD ROAD HOSPITAL.

On April 3rd Dr. Coupland paid his first visit to the Smallpox Hospital in Stroud Road. He writes (page 25):

"The primary object of my visit being to see the patients, I did not think it incumbent upon me to inspect the hospital or enquire into its administration."

And on page 5 he says:

"It was no part of my mission to enquire into methods of treatment."

We may well ask: What *did* Dr. Coupland come to Gloucester for? The Gloucester Medical Officer of Health could surely have stated who was vaccinated and who was not. This was part of his duty. And the anti-vaccinators could have checked his statistics as they have been obliged to check Dr. Coupland's. Three parts of the smallpox cases had already been notified and tabulated before Dr. Coupland left London, and judging by the inaccuracies already pointed out, the result in the hands of local officials could scarcely have been worse, whilst many hundreds of pounds would have been saved.

On page 129 Dr. Coupland says he was "Much assisted by a list of the cases compiled by Mr. Pitt, the medical officer in charge"—a gentleman qualified the year before, and who had had no previous experience of smallpox. "There had been no register kept (!) but brief records were taken by him of the cases." Considering "the overwhelming amount of work which fell to his lot," and the fact of "no register being kept," the public are not likely to be inspired with much confidence in Dr. Coupland's authoritative "Government Report of at least 500 out of the total 700 hospital

cases, which appears to be a collation of the "brief records" of an inexperienced and overworked medical official.

On page 25 is a list of the hospital blocks (which were recklessly built in the centre of a populous neighbourhood) and "the number of beds for which each block was intended." Even here Dr. Coupland's *penchant* for making fatal mistakes attends him. After correctly stating that Blocks 1, 2, and 3 were built for sixteen beds each, he declares that Blocks 4, 5, 6, and 7, of precisely the same size, were built for twenty beds each. If his own personal inspection was not to be trusted, an enquiry at the surveyor's office would have saved him such a serious blunder.

AIR SPACE—AN OFFICIAL OPINION.

The air-space allowed for each bed in the original three blocks was 1,250 cubic feet; by adding four extra beds to each block, the air-space would be reduced to 1,000 cubic feet. The very least which should be allowed in smallpox disease is from 2,000 to 3,000 cubic feet.

But this is not all. On page 130 is recorded the actual number of beds in each block on the day Dr. Coupland visited the hospital. No. 1 had been turned into an administrative department; block 2 contained twenty-three beds; blocks 3, 4, and 5 contained as many as twenty-five beds each; and block 6 was actually packed with no less than thirty-two beds. Dr. Coupland naïvely remarks:

"Thus there were 158 patients to 130 beds; but it is right to say that there were two, three, or even four children occupied one bed . . . and the capacity of the beds was of a size admitting of their accommodation."

Surely the Royal Commission were not so dense as to require to be told in this confidential way that a surplus of twenty-eight patients indicated more than one occupant of a bed! Nor need the capacity of the beds to hold the number be doubted. The Black Hole of Calcutta was sufficiently capacious to "accommodate" its 146 victims. But why does Dr. Coupland thus disingenuously seek to lead his readers to suppose there was only a total surplus of twenty-eight patients, and altogether ignore the startling fact, which a sanitarian might have been expected to notice at a glance, that 130 beds were packed into wards intended only for 80, and that upon the space intended for only 80 patients—but which should have held no more than 40—no less than 158 living souls were concentrated?

Although the amount of air space was reduced to but 500 cubic feet per patient, we find our Government investigator, without taking the trouble to be accurate, coolly declaring on p. 25:—"The wards struck me as being provided with ample cubic space"!

THE HEMPSTEAD HOSPITAL.

The Hempstead Hospital—an old disused cholera hospital just outside the city—was even in a worse condition: 55 patients occupied a space intended only for 24. Block A, intended for eight

beds, Dr. Coupland inaccurately states was "intended for" 16; and Block B, built for 16 beds, he actually states "was intended" for 38! Surely he can never have been near the place! Water was with difficulty conveyed in carts to this inferno. There was no drainage, and the excreta had to be burned on a piece of ground within a few yards of the hospital doors. But it was not consistent with Dr. Coupland's "instructions" to draw attention to these small matters.

Such was the terrible condition of things at last, and so high was the hospital death-rate, that crowded and excited public meetings were held and a riot seemed imminent, when the City Council, in a state of panic and bewilderment, applied to the Local Government Board for instructions, and Dr. Brooke, of the Thames Ambulance Service, was hastily summoned to take charge of the hospitals.

DR. BROOKE'S ARRIVAL AND REPORT.

He entered upon his duties on April 28th (three weeks after Dr. Coupland's visit), and reported to the Sanitary Committee on May 1st. Every effort was made by the City Council to suppress this Report; its very existence was officially denied; and it was not until the citizens contemptuously rejected the old members of the Council who again sought their suffrages at the Municipal Elections in November, 1896, and sent an entirely new set of men to the Guildhall, with the Hon. Sec. of the Anti-Vaccination League at the head of the poll with an unparalleled majority, as the representative of the ward which had borne the brunt of the smallpox, and where one in every eleven of the inhabitants had suffered from the disease, that this Report was dragged from its hiding place and brought into the light of day. Of the Stroud Road Hospital the Report declared:—

"The site was absolutely unsuitable . . . the structural arrangement was devoid of any plan, system, or method, and rendered the satisfactory working of the hospital a practical impossibility . . . the sexes could not be separated in separate buildings. . . . From a sanitary point of view the whole administration of the Hospital had been shockingly neglected. . . . The laundry accommodation was deficient. . . . It was impossible to obtain a sufficient supply of clean linen, and they were a month behind with the washing. . . . There was a total absence of fire extinguishing apparatus and no fire buckets In the various nooks and corners about the place there was a great accumulation of rubbish. . . . The Ambulance Shed was foul and dirty, and smelt most offensively, and round many of the Wards heaps of decaying animal and vegetable matter—bones, bread, vegetables, etc.—and sometimes a heap of foul linen and soiled dressings soaked in discharges. . . . In one of the Wards neither kitchen, scullery, nor pantry, and in the bath-room a miscellaneous collection of dirty dinner things, patients' clothing, and soiled linen."

In regard to the Hempstead Hospital he warned the Sanitary Authority that they were "incurring a great and serious responsibility in keeping it open. . . . Both patients and staff were detained there at a grave risk." In conclusion he advised, "In the interests of the inhabitants and the welfare of the patients that

both hospitals should be closed as soon as possible, and tents erected elsewhere."

HOW PATIENTS WERE TREATED.

The condition of the patients was not mentioned in this brief Report. The second Report giving these details is not yet forthcoming. The City Council begrudge paying for it, and the Local Government Board having declined to investigate the scandal, also refuse to unearth the dark record of a period which has burnt itself into the very souls of the people of Gloucester. Until the end of April the wards were under-manned, the nurses were mostly untrained, the earliest cases were not visited by a medical man for days and even weeks together; the whole time the patients lay in bed (prior to Dr. Brooke's arrival) not a drop of water was allowed for their fevered skins, not even for their hands; the patients must have been simply caked with filth. But nothing of this sort came within the scope of Dr. Coupland's "instructions." "It was not incumbent upon him to enquire into administration." If he does mention "abscesses" upon the body, or eyesight destroyed, or other horrible complications, presumably largely due to neglect, they have no voice for his official ears, beyond the fact that the sufferers were either "unvaccinated" or "no trace of the alleged infantile vaccination could be detected upon the arms."

On p. 5 he states, "Certainly I myself saw nothing in any of my visits which could be ascribed to negligence of treatment." But it must be remembered it "did not strike him" that four patients in one bed, nor sixteen beds packed in a ward too small for eight, indicated a deficiency of air-space. And moreover, he only visited the wards on April 3rd; when he again visited the hospital in May, he admits (p. 5) "The staff had been re-organised and the whole arrangements improved." If the character of treatment prior to Dr. Brooke's arrival was such as to merit the high eulogium which Dr. Coupland pronounces upon those in charge (although not "instructed" to do so) it would be very interesting to read a manual on "smallpox nursing" from his pen.

INSIDE AND OUTSIDE HOSPITAL.

The total hospital fatality was 50 per cent. greater than that which obtained among patients treated at their own homes. Dr. Coupland tries to escape this damning fact by declaring that the "worst cases [malignant and confluent] were sent away to the hospital by preference." The statement is untrue. There were 88 more of these cases outside than inside the hospital according to his own figures. I have made a careful calculation, 1st, of the period prior to Mr. Pitt's appointment on January 24th, 1896, when 59 cases admitted up to that time had only a caretaker and his wife and an occasional odd woman or two to look after them; 2nd, of the period during Mr. Pitt's charge until Dr. Brooke's appointment on April 28th; 3rd, from the latter date until the end.

In each period the malignant cases record an equal percentage inside and outside the hospital. The percentage of confluent cases is also practically the same in every period but one, and that period was during Mr. Pitt's *régime*, when there was no selection whatever of cases, but every case that could be taken to the hospital was removed there until it became so crowded that no more could be admitted.

Although it was "not incumbent upon him" to enquire into "administration," Dr. Coupland enters into a specious argument on p. 135, which ends in a flagrant contradiction of the common-sense fact that the overcrowding and mismanagement of the hospital increased the malignancy or fatality of the epidemic. His argument is that "mild or discrete smallpox can never become converted into one of confluent or malignant, whatever the environment or mode of treatment." As, therefore, the percentage of confluent cases (around which the battle of life and death wages) was higher in the hospital than outside, the death-rate was likewise higher; the type of disease was not created in the hospital, but was settled before the patient entered the hospital at all.

A HISTORICAL ANSWER.

With all due deference to Dr. Coupland, I beg to say, without fear of contradiction by any smallpox authority in the kingdom, that smallpox can nearly always be diagnosed, *in genere*, at a stage when it is not easy to say whether it will eventually be discrete, confluent, or hæmorrhagic or otherwise malignant. The eventuality depends upon two things: the patient's constitution and the management of the disease. His hasty and dogmatic assertion is directly contradicted by the historical case of Queen Mary,* which was distinctly one of discrete smallpox, subsequently turning to the hæmorrhagic form, doubtless as the result of ignorant treatment. We have another case in that of her uncle, the Duke of Gloucester, in Sept., 1660. The "brief details" of the medical officer in charge of the hospital during the three months these cases were in the ascendancy—nearly 50 per cent. higher than the corresponding cases outside—are utterly valueless in forming any scientific judgment upon the question. Even Dr. Coupland's own tabulation of cases seen by himself is worthless, and affords no basis such as would enable an instructed student in epidemiology to handle the data independently. The one solid fact remains which Dr. Coupland is compelled to acknowledge—that vaccinated or unvaccinated, young, old, or middle-aged, in every period, stage, and type of the disease, the death-rate was higher in the hospital than it was outside.

But dreadful as was the percentage of severe or "confluent" cases—53.8 per cent.—in the hospital during the period named,

* See "History of Epidemics in Britain," by Dr. Charles Creighton, vol. ii, pp. 459-60.

yet the average percentage of such cases outside was also terribly high. It reached the enormous rate of 37 per cent., nearly 50 per cent. higher than the proportion of such cases in the outbreaks of Warrington, Dewsbury, or London, and about 120 per cent. in excess of unvaccinated Leicester!

LOCALISATION OF THE EPIDEMIC.

It stands to reason then that there must have been conditions in Gloucester outside the question of vaccination to account for such an awful state of things. The fact, too, that only about 200 cases of smallpox occurred beyond the south half of Gloucester points to a similar conclusion. There is but one answer, namely, the insanitary state of the district to which the smallpox was limited, and the aggravation of the disease by irrational quarantining and mismanagement.

Now on p. 12 Dr. Coupland says:—"There is not sufficient evidence to support the contention that defective drainage or other insanitary condition was responsible for the development of the disease, and for its disproportionate incidence in the South Hamlet. But the conditions which favour contagion were abundantly present, especially the retention of a large number of cases within their homes, and in many instances also the impossibility of isolating the attacked within the house."

Excepting a reference to "the position of the hospital" in this district, Dr. Coupland advances no other argument besides those mentioned above to account for the limited range of the outbreak. But on p. 129 he unwittingly provides his own answer to such a specious contention. He shows that: "There were 425 households from which the *initial* cases of smallpox were sent to hospital. In 164 of these houses 352 additional cases occurred. Hence there were in the houses from whence the earliest cases were removed:—

Single Cases	...	...	...	261 or 61.4 per cent.
Multiple Cases	...	...	...	164 or 38.6 " "

Contrasting these figures with those of the attacks in houses where the *initial* cases were *not* removed to hospital . . . there were 673 households; in 268 of which additional cases occurred:—

Single Cases	...	...	...	405 or 60 per cent.
Multiple Cases	...	...	...	268 or 40 " "

The difference between the two series in the number of houses infected is barely 2 per cent."

If, therefore, the result was practically the same whether the initial cases were removed to hospital or not, how on earth can "the retention of a large number of cases within their homes" have spread the disease in the South Hamlet? It is clear we must look for some other causes which the official writer refrains from recognising.

An eighth part of the whole epidemic occurred in three streets,

New Street, Alma Place, and Alma Terrace. The last terrace consists of eight tiny houses with four rooms. From one house the inmates escaped disease by fleeing to another part of the city. They were supplied with water declared by the Medical Officer of Health to be "contaminated by sewerage and other pollutions from its source to its delivery." There were no flush-boxes to the closets, their contents had usually to be emptied on to the gardens, owing to blockage of drains. There were twenty-five cases of smallpox in these seven houses. In Alma Place, consisting of 114 houses, there were 132 cases. The houses were similar in size and most of them in the same condition. In all similarly long narrow streets with rows of small, poor houses, the drains were on the whole defective and smallpoxrife. The drainage of three or four houses passed beneath the floors of one; the joints of the pipes were not cemented, nor were they laid upon a cemented base. In George's Row, Morton Street, also houses of four small, low-roofed rooms, which had a case of smallpox in every house but one, the w.c.'s are built up in a corner of the downstairs back-room, they "ventilate" into the room itself in which the family cooking is performed, these rooms possessing one small window which does not even open. In miserable hovels such as I have described there were instances of as many as five, six, seven, eight, nine, eleven, and even twelve cases of smallpox respectively in a single house; but the consideration of all this came not within the scope of Dr. Coupland's "instructions." Space will not permit of further detail upon this point; we will turn from the house drains to the sewers.

LACK OF FLUSHING POWER.

For years Gloucester has suffered from a short water supply; this deficiency was rendered critical in 1895-6 (the epidemic years) owing to the rainfall being less than it had been for thirty years. The sewers and house drains were not flushed and the man-holes in the streets were belching sewer-gas. Dr. Coupland departs from his "instructions" in order to discredit patent facts. To upset the charges of bad drainage, he quotes a long Report of the City Surveyor concerning the course of the sewers and the doing away with old culverts in 1885, which has no bearing upon the point at issue. He allows himself to be "put up" to fight Lieut.-Gen. Phelps over a trumpery point as to re-flux of sewage through a certain main, although his "instructions" did not render this "incumbent." To controvert the statement as to stinking manholes he declares that he never "observed any mal-odorous emanations" himself, although he "traversed the streets very many times," for which he has earned a large share of well-merited public ridicule, seeing that the stinking man-holes were plugged by order of the Sanitary Authority prior to the commencement of his perambulations!

The best answer to Dr. Coupland's vague apologetics is the fact that many thousands of sanitary defects have been officially

reported and remedied since the epidemic. According to a statement by the Medical Officer of Health there was greater sanitary activity in 1897 than for ten years past. A new supply of good water has been obtained; and the main sewer, which extends throughout the entire length of the principal portion of the smallpox district, has been taken up and re-laid at a lower level, so as to allow a better fall for the side streets, which, with other sewer improvements, has cost thousands of pounds. Thus is proved the utter worthlessness of Dr. Coupland's white-washings and laboured excuses on behalf of Gloucester Officialdom.

WHY GLOUCESTER SUFFERED.

I cannot better conclude my criticism than by quoting the unexpectedly frank statement of Dr. Coupland on page 9, where he says:—

"In almost all respects [unvaccinated] Leicester suffered much less than either Dewsbury or Gloucester; the disease in that town hardly ever assumed the true proportions of an epidemic, its mortality scarcely affected the death-rate for the year, and the attack rates of every period of life, and amongst the vaccinated and unvaccinated alike, were below the mean of the three places taken together. Now, in one particular, without a doubt, Leicester does enjoy an advantage over either Dewsbury or Gloucester, and that is in respect to its sanitary government."

Thus Dr. Coupland himself answers the question why unvaccinated Gloucester had a smallpox death-rate of over 21 per cent., while still more unvaccinated Leicester had a death-rate of only 5. It will take more than all the sophistry of Dr. Coupland to explain away this pregnant fact, or to get rid of the moral it conveys. In less than another fifty years, his "Report on the Outbreak of Smallpox in the City of Gloucester" will have been placed among the curiosities of exploded fallacies, to rank with the literature on "The Touch for the King's Evil" and Joanna Stephen's "Cure for Stone." Gloucester provided material for the settlement for ever of the vaccination question, and for the exposure of the folly of the superstitious cowpox rite, which Jenner adapted a century ago from the folk-lore of the dairymaids of its county. With the inexhaustible resources of the Royal Commission at his command, Dr. Coupland might have done a service on behalf of the children of this country, and on behalf of long-suffering conscientious men and women the world over, which would have brought honour to his name, and have yielded him from the hearts of his countrymen and women a far richer reward than any he may have gleaned from the coffers of the State. He has lost his opportunity. In the service of an empirical creed, and under the plea of obeying "instructions," he has compiled a tissue of absurdities and contradictions which degrade the name of Science, and cover his conclusions with ridicule and reproach.

APPENDIX TO SECOND EDITION.

THE UNVACCINATED CHILDREN.

Perhaps the most specious argument recently made use of by the apologists for Vaccination is the following table of figures extracted from Dr. Coupland's Report:—

SMALLPOX IN CHILDREN TO 10 YEARS OLD.

Vaccinated.			Unvaccinated.		
Attacks.	Deaths.	Fatality. per cent.	Attacks.	Deaths.	Fatality. per cent.
26	1	3.8	680	279	41.0

It is at the same time declared that the one vaccinated death was a case of very doubtful vaccination. I give particulars on page 8. The reader may judge.

At first sight the comparison of the figures looks startling, until it is remembered that Gloucester contained practically an unvaccinated child population, and that there were but few vaccinated to suffer.

Now, I have already shown in the preceding pages the untrustworthiness of Dr. Coupland's statistics and statements, nor are the above any exception. The figures are all wrong. I have the names and addresses of 116 vaccinated children up to 10 years of age who were attacked with smallpox in the epidemic, of whom 27 died, a fatality of 23.2 per cent. Whereas, I make the unvaccinated fatality even higher than that of Dr. Coupland, namely, 50 per cent.

Seeing that for the seven years prior to the epidemic only four per cent. of the child population of Gloucester was vaccinated, it will be seen that the vaccinated attack rate bears a very high proportion to the vaccinated population; and as far as one can judge in such a case, the attack rate was as high as, if not higher, than that of the unvaccinated.

The death-rate of the unvaccinated was higher than that of the vaccinated, but the ages of the latter class were of a higher average. The "unvaccinated" deaths included a great many babies in arms; sickly ones that no vaccinator would dare to touch with his lancet; and even infants only a few hours old born in the pestilential atmosphere of the smallpox hospital. All such anomalies were made to swell the "unvaccinated" list, and to pile up its death-rate. Official vaccination statisticians can find no room for a third class! Eliminate these and the death-rate of vaccinated and unvaccinated would more nearly approximate.

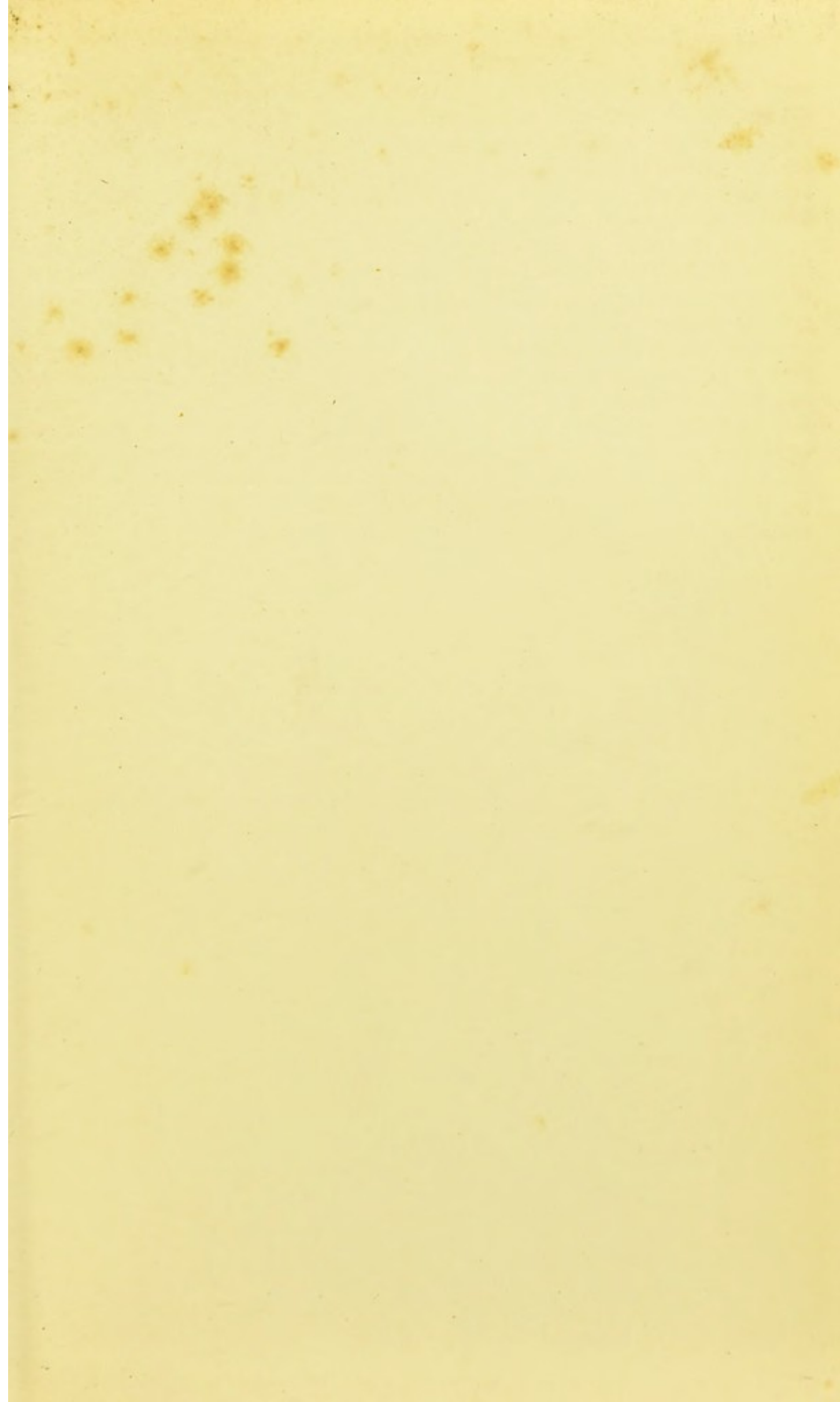
The death-rate in both classes was excessive, forming a combined

total of 39 per cent., which is largely attributable to the introduction of the disease into the over-crowded elementary schools, and the terrible hospital conditions described on pages 23-26. In the eighteenth century when everybody was unvaccinated, the statistics of outbreaks among children show death-rates of only 14.6 per cent., and even as low as 6 per cent.

That vaccination is no protection in a well-vaccinated population is proved by the Berlin epidemic of 1871-2, when 2,240 successfully vaccinated children under 10 years of age were attacked with smallpox, of whom 736 died, *i.e.*, a fatality of nearly 33 per cent.

Whereas it is equally conclusively shown that the lack of vaccination does not predispose to the disease, seeing that in unvaccinated, but well sanitated Leicester, during the smallpox outbreak of 1893-4, there were only 13 deaths in unvaccinated children under 10, and that 50,000 unvaccinated children passed through the epidemic unscathed.

The localised condition of the Gloucester epidemic, as mentioned on p. 17, is conclusive evidence that neither vaccination nor non-vaccination had anything whatever to do with the subject.



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