NOTES ON TETANUS.

By J. KNOX DENHAM, L.R.C.P. ;

Medical Officer, Donnybrook Dispensary.

[Read in the Section of Surgery, December 10, 1897.]

VERY reasonably it was hoped that the discovery of tetanic antitoxin would be followed by as brilliant results as those that have been obtained by diphtheritic antitoxin serum.

That these hopes have been disappointed must be admitted. I do not propose to weary you with the statistics of recorded cases to prove this, but will shortly refer to a case in my own practice, and lay before you my views as to the reason in this case, as in so many other cases, tetanic antitoxin serum must cease to be regarded as a specific cure in tetanus.

My patient was a gentleman from the North of Ireland, thirty-six years of age, very muscular and healthy, but of decidedly intemperate habits. Ten days after a fall on the back of the head, which caused a small wound, the first symptoms of tetanus developed. Within twelve hours of the first tightness of the jaws I commenced injections of anti-tetanic serum. He grew gradually worse for the next four days, the convulsions being terrible to witness, and almost incessant. There was complete rigidity of the jaws ; the act of swallowing always produced a spasm. On the fifth day a distinct improvement was noticed, the convulsions becoming less frequent and less severe ; the jaws became relaxed. On the seventh day of the disease the symptoms of tetanus had practically ceased to exist, he was able to fully open the mouth and take food, and, for the first time since his illness, was able to pass water without a catheter. All appeared to be going well, but, unfortunately, his heart now began to fail, and he died very peacefully on the eighth day from the first manifestation of the disease. From the commencement till the seventh day he received a hypodermic injection of the specific serum every sixth hour, and large doses of chloral to

overcome the persistent sleeplessness. The patient all through asserted that the injections gave him great relief, and although I am prepared to admit that the antitoxin serum had in this case a modifying effect on the disease, I cannot regard it as a reliable curative agent in any way comparable to anti-diphtheritic serum.

The reasons are as follow :—

The presence of diphtheria is betrayed at the very commencement of the infection by the constitutional symptoms, and, above all, by the appearance of the false membrane on the fauces, &c. The success of the antitoxin treatment in the disease depends largely on the fact that we are enabled to commence specific treatment almost *pari passu* with the absorption of the specific virus.

In tetanus the circumstances are totally different. The presence of the specific virus does not betray itself until it has already reached the central nervous system, and, therefore, until, so to speak, the system is saturated with the virulent microbic product.

In fact, the stage of the disease at which tetanus is first observed corresponds with what is known as post-diphtheritic paralysis. And what would we think if specific anti-diphtheritic treatment were deferred until the paralytic stage is reached?

One may say that in tetanus a suppurating wound is present. No doubt; but how are we to tell that the specific product lurks in the recesses of the wound. The true *rôle* to be played by anti-tetanic serum is immunising and preventative rather than curative, should the surgeon have to deal with lacerated wounds or compound and comminuted fractures which have been soiled with earth, manure, or the like, or with such punctured wounds as are occasioned by rusty nails or splinters of wood—cases which, perhaps, only come under observation some days after the infliction of the injury, and which, perhaps, are in an intensely suppurating condition.

These are the cases in which antitoxin serum receives its legitimate and most suitable application, and in such cases one may confidently assert that while the injection of the immunising serum will do no harm, it may ward off a great disaster. True, we cannot say in any individual case that the tetanus microbes are present, but I think it may, nevertheless, be asserted that the surgeon who has treated a large number of cases of this kind with anti-tetanic serum, and has not seen tetanus develop, may attribute this satisfactory result to the use of the specific serum.

In conclusion I would point out that the greatest scope for the usefulness of anti-tetanic serum is on the field of battle; and were it my duty to attend wounded men who had fallen in a cavalry charge, I would consider the use of the serum as an essential and necessary part of the treatment of such cases.