A PRELIMINARY CONTRIBUTION ON "P.U.O. (TRENCH FEVER)."

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Almost the only real contribution to our knowledge of this disease, somewhat unfortunately termed trench fever, which has been published, is contained in the report of the very careful and valuable work carried out under the guidance of Colonel Sir Wilmot Herringham, R.A.M.C., by Captains McNee, Arundel, Renshaw and Brunt, R.A.M.C. Stated briefly, they have told us that the disease is almost certainly due to an organism which is probably contained in the red corpuscles of the infected persons and that the corpuscular elements of the blood alone are capable of containing and transmitting the disease.

This valuable discovery is quite in accordance with what one would expect, judging by the clinical characters so markedly shown in typical cases, and which in certain respects are not unlike attacks of malaria. In the main, one would outline these as follows: Sudden onset, occasionally with chill. Onset, with indefinite, but well marked weakness and malaise, frequently indescribable so far as the patient is concerned, who when pressed to an extremity in so many instances says "Well, my legs would not hold me." Pyrexia, severe or slight, irregular, tending to intermit and with a well-marked suggestion of periodicity of from two or three, to five days. Pains, characteristically lumbar, head or legs, all or any, at onset. "Shins" later and with extraordinary consistency; vomiting may occur. In character the pains are best exemplified in these so-called "shin pains," and are, of a severe boring character and neuralgic in type, being very frequently associated with marked tenderness of the nerves of the calf, including the external popliteal where it passes round the neck of the fibula, where it is frequently exquisitely tender to pressure. The pains are not necessarily confined to the shins, but may extend above the knees as far as the thighs, missing the joints.

Certain negative signs and symptoms of great value when differentiating from the minor maladies are: freedom from catarrhal conditions of the upper and lower respiratory tracts, absence of dryness or furring of the tongue even with a temperature of 102° or 103° F. The pulse is remarkably stable, and the general feeling of the patient whilst in bed is summed up best in the words they frequently use: "If it were not for this headache I should be all right," or "If it were not for these pains in my back I should be all right." A mental attitude which is, in the opinion of the authors, unheard of in the typhoid and paratyphoid infections. The spleen is not usually appreciably enlarged either to palpation or percussion. Bowel symptoms we believe not to be characteristic of
the condition, though frequently amongst troops, as one would expect, one sees it associated with slight attacks of diarrhoea.

On the course of the disease we cannot speak with confidence, but it would appear that in the majority of cases at least three exacerbations of fever take place extending over an interval of not less than two weeks. The pains are, unquestionably, frequently severe and persistent, though not disabling. The blood shows an absence of any ascertainable growth on ordinary media. A count showing moderate leucocytosis only, with some increase of the large lymphocytes, and an absence of eosinophilia, and no recognizable haematozoa. One feels it necessary in describing what, to most of us, is a new disease, to emphasize the importance of taking into consideration all the aspects of the case, and not to rely upon the presentation of a typical temperature chart or the presence of typical "shin pains" or any other single characteristic, a mistake which is frequently made. With this reminder we are convinced that we have in this condition a disease of undoubted individuality quite distinct from, and in the vast majority of cases easily differentiated from influenza, common cold, bilious attack and myalgia, on the one hand, and the enteric group, malaria and rheumatic fever on the other, and, in its typical instances, as easily diagnosed as any better-known disease, and in its atypical cases well recognized by those who have studied such numbers of cases as the medical division of any large base hospital must provide.

With regard to treatment, it would not appear that any remedies yet tried have materially modified the course of the disease, and this fact combined with the leakage of men which the wide prevalence of the disease appeared to us to cause, led us to a belief in the extreme importance of prophylaxis.

Our attention was thus drawn to the mode of transmission, and with the data provided by the workers already mentioned in our possession, and also the clinical fact that direct transmission in hospital appeared not to exist, it seemed to us that the direct transmission of red corpuscles must be brought about by blood-sucking parasites. The wide prevalence of the "louse," as has been so thoroughly investigated by Lance-serjeant A. D. Peacock, R.A.M.C., led us to the belief that these pests were the guilty agents.

An experiment was, therefore, carried out with a view of testing the accuracy of this belief. Some score of lice were collected and starved in captivity for three days; a number of them died. Two pairs of the survivors were taken and allowed to bite, under a watch-glass, two patients suffering from "trench fever" in an acute stage. After allowing them to feed for about fifteen minutes their meal was interrupted, and each of us then allowed a pair to feed upon himself, strictly confining their sphere of operations by means of a securely-fixed watch-glass. The one of us whose duties did not bring him into the wards, subsequently, twenty-four hours later, allowed his pair to have a further meal on himself. Twelve days later very startling developments took place. The characteristic symptoms manifested themselves, and he passed through a most typical attack of the condition, of average severity, with the pains and other features all present.

It may be further noted that the victim had not at any time been nearer to the front than the base, nor had he been subject to any previous similar condition.
Clinical and other Notes

The demonstration of this mode of transmission appears to be so striking in its success, and of such immediate importance, and the probability of a vigorous impulse to the anti-louse campaign being given by its recognition, amply justifies us in giving what is an academically incomplete research on the etiology of this important disease.

OBSERVATIONS ON A SEVERE CASE OF TETANUS TREATED WITH REPEATED INTRATHECAL INJECTIONS OF ANTITOXIN.—RECOVERY.

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As the problem of a moderately successful method of treatment in cases of severe tetanus still awaits a definite solution, the record of the following case with observations thereon may be of some interest at the present time. As far as I am aware, the gross amount of antitoxic serum administered was considerably in excess of that mentioned in hitherto published records; this fact may serve as an additional excuse for the publication of this case.

Private M., aged 24, while in the trenches, was wounded by shrapnel in the left ankle on the morning of July 1, 1916. He lay where he was hit for about half an hour before being removed to the dressing-station, but a field-dressing was put on within a few minutes of the infliction of the wound. He was then transferred to the base and finally arrived at hospital in England on July 4. From July 1 to 4, the wound was dressed twice daily.

I am indebted to Captain Craster for the notes of his progress from arrival until July 8. On admission there was a penetrating circular wound at the junction of the lower and middle thirds of the left ankle. The entry, 2½ inches in diameter, was at the external border of the tibia; the exit, of about the same size and at the same level, being just over the fibula. The wound was very septic with considerable swelling and oedema of the surrounding tissues; it was irrigated and a eusol dressing applied. Radiographic examination showed the bones to be quite intact. A label attached to the patient stated that a prophylactic dose of antitoxin (500 units) had been given on July 1. Two days after admission (July 6), the wound was explored, irrigated, and drained under general anaesthesia. No metal fragments were found, but some pieces of cloth (puttee) were removed. Next day the wound was looking better, draining well, and the surrounding parts were not so inflamed. During the evening of the day following (July 8), at about 10 p.m., the patient complained of some slight stiffness in the neck; there were no other symptoms and he slept well that night.

On the following morning (July 9), when visited, he showed well-marked rigidity of both the anterior and posterior muscles of the neck, some degree of trismus, and complained of cramp-like pains in the back. The expression was anxious, swallowing was a little difficult, and on observation he was seen to be having slight spasms of the head, retraction about every ten to fifteen minutes. The pupils were normal and there was no nystagmus; the knee and ankle jerks were equal and not exaggerated. The right plantar reflex was flexor; and that