Clinical and other Notes

A CASE OF SPIRILLUM FEVER IN (GERMAN) EAST AFRICA.

By MAJOR J. H. REFORD, U.M.S., M.D., B.A.O., H.Ch., D.T.M.
Officer commanding Advanced Base Hospital, Mwanza,

AND

CAPTAIN H. L. DUKE, U.M.S., M.D., B.C., D.T.M. & H.
Bacteriologist, Uganda Protectorate.

History.—The patient, Captain M., a strong built, good constitutioned man of 28 years, was taken ill towards the end of July, while on "safari," a few days out of Mwanza, German East Africa, and compelled to return. He was admitted to hospital on August 2, under the diagnosis of measles. The attack was typical and somewhat severe, koplík spots, fever, coryza, and rash being all in evidence. The day before reaching Mwanza he was badly bitten during the night by spirillum ticks (Ornithodorus moubata), a large number of which were found in his bedding on the following morning. He was bitten a number of times during this night (August 1—2), probably by a considerable number of ticks.

Progress of Case.—On his admission to hospital the fever and other symptoms of the measles soon subsided, as is shown in the attached temperature chart. On the 11th the temperature began to rise again, and on the 12th spirochetes were found in the peripheral blood. No malaria could be demonstrated. The first spell of fever lasted four days, the temperature reaching 105-8° F. On August 14 quinine was started in doses of twenty grains daily, reduced on August 18 eight to ten grains a day, which was continued until his transfer to Entebbe Base Hospital on August 22.

Isolated rises of temperature occurred on August 18, 23, and 27, reaching respectively 101-4°, 102-5°, and 103-9° F., the temperature in the intervals being generally subnormal. It may be remarked here that patient says his temperature during health in Uganda is generally subnormal. On August 30, the twenty-ninth day after admission to hospital, another spell of fever commenced with at first daily and then alternate daily intermissions to subnormal levels, and on September 5 a blood examination revealed subterian malaria—a condition suggested by the diurnal periodicity of the fever. Quinine was recommenced in doses of twenty grains daily, dropping to ten grains daily on September 12, and an immediate fall of temperature ensued. No spirilla were seen on this occasion.

The next spirillum relapse began on September 18, the forty-eighth day after admission, and on the following day the temperature rose to 105-2° F., falling to subnormal the next day. Spirochetes were again found in the peripheral blood.

In the eleven days' interval between the elimination of the malaria and this last relapse of the spirillum fever, the patient felt in excellent health and spirits, though he was easily tired; he ate and slept well, and took mild exercise in the cool of the evenings. On September 23 he was discharged from hospital, but was kept under observation for three weeks, at the end of which time it was deemed safe to return him to duty. He remained in excellent health until November 5, when he was re-admitted to Mwanza hospital with pyrexia ninety-six days after his first admission. On the following day spirochetes were found, and no malaria, though the blood was taken and examined on two occasions. The spirochetes were scarce in these slides. On November 18 he was discharged from hospital, but kept under observation for fourteen days.
No further fever troubled him until December 12 when he was re-admitted to hospital, and spirochætes were again found on December 14, the one hundred and thirty-fifth day after his first admission. diarrhoea appeared for the first time during this relapse.

On January 2, 1917, while on tour in the neighbourhood of Mwanza, he was attacked with diarrhoea, his companion, Captain W., showing the same symptoms simultaneously. Both officers had drunk some doubtful water on the previous evening. One of us, who had not seen Captain M. since diagnosing the relapse of November 5, and was ignorant of the intervening medical history, was with the expedition and, at first, as the temperature of both officers remained normal, treatment was commenced on purgative and antiseptic lines. Captain W. recovered in a day or so, but on January 15 Captain M.’s temperature rose above normal and on the 6th reached 101.5° F., the diarrhoea persisting. Two different blood examinations on January 7, 1917, proved negative to both malaria and spirochætes, though a slight relative large mononuclear leucocytosis was observed. Quinine was administered in doses of twenty grains daily, and the diarrhoea subsided together with the temperature. The patient was much weakened by the attack and was sent back to Mwanza. Again ensued a spell of apyrexia, which lasted until January 28; during this period the patient was under medical observation and doing light duty. Then on January 28 he was re-admitted to Mwanza Hospital, and that night the temperature rose to 103.3°, reaching 105.6° F. on January 31. On the 28th spirochætes were again found in the blood. Yet another relapse occurred on February 10, the one hundred and ninety-fourth day after his first admission, when spirochætes were once again found. A search for malaria parasites on February 12, proved negative. The patient was then invalided to Europe.

Remarks.—The onset of the spirochæte fever commenced on August 11, ten days after the infection by the ticks. The high temperature on September 1 may certainly be ascribed to the spirochætes and constitutes the first definite relapse, complicated by malaria.

The rise occurring during the interval between these two spirochæte manifestations are curiously irregular. Only subtertian malaria was found, but it is possible that another type was also present, as the tertian parasite is common in the Mwanza district and the quartan organism is also reported in the German records.

It is probable, however, that a partially suppressed relapse of the spirochæte fever was represented by the pyrexia of August 23. This date corresponded to the period at which the first relapse was expected, and it is not uncommon in our experience to find one or other of the relapses partially or completely suppressed, or to fail in finding spirochætes in the peripheral blood even in some of the well defined relapses.

The second relapse was well defined and occurred after an interval of eleven days of subnormal temperature.

The real interest of the case now commences. Between the second and third definite relapses there was a period of forty-six days apyrexia, during which time the patient was in excellent form and experienced neither subjective nor objective symptoms. Then came the third relapse, of a slightly irregular character, terminating we will say on November 16, and followed, after a twenty-five days interval, by the fourth relapse of a milder nature than its predecessors. After
another interval of nineteen days, the sixth pyrexial period commenced, accompanied by diarrhoea. On this occasion blood examination failed to reveal spirochaetes, but it is highly probable that this attack represents the fifth definite relapse. Except for the diarrhoea this was the mildest of all the manifestations. Seventeen days later spirochaetes were again found in the blood, the temperature during this sixth relapse reaching 105.5° F. Spirochaetes were once again found after a further interval of nine days, this constituting the seventh definite relapse, occurring one hundred and ninety-three days after the patient’s first admission and some one hundred and ninety-five days from the date of his actual infection by the ticks. After his admission into hospital on August 8, 1916, the patient was not exposed to any chance of re-infection by ticks.

The exigencies of active service precluded any consultation of the current literature of spirillum fever, but the case is undoubtedly a remarkable one. The long period of apyrexia between relapses two and three during the greater part of which the patient was going about his duties unconscious of any inconvenience whatever; the absence throughout of any signs of iritis or facial paralysis which are such common complications in European spirillum cases in Uganda; the relative absence of headache during the fever spells: the coincident infections, first measles and then malaria; the diarrhoea, present only during relapses four and five; the regularity and relative ease with which the spirilla were found, even in the later relapses; the number of relapses and the exceptionally prolonged duration of the infection—all these features will, we hope, justify the publication of the case.

It is possible that the lowering of general resistance produced by the initial attack of measles enabled the spirochaetes to establish themselves unusually firmly in the system, a similar effect being produced by the superimposed malarial attack during the first relapse. Considering the number of ticks seen at the original infection, the patient may well have received several strains of spirochaetes. The bad water drunk a few days before the fifth relapse may have caused the diarrhoea, with consequent lowering of resistance and recrudescence of the spirilla, or, the diarrhoea itself may have been a manifestation of the disease.

In each case where spirochaetes were found in the blood, stained slides were examined, and, except in the single instance of the first relapse, malaria organisms were absent on each occasion. The administration of quinine, even when no malaria parasites were found, was carried out as shown on the chart, as it was at times impossible, owing to pressure of work, to undertake the prolonged examination of the slides necessary to finally exclude all malarial elements.

The treatment for the spirillum fever itself was mainly symptomatic, with protection of the eyes, and maintaining the resistance as far as possible against relapses. The use of salvarsan was not resorted to in this case, as the results of our recent experience of this drug in several cases of spirillum fever at Mwanza Hospital have been so unsatisfactory that we have discontinued its use in relapsing fever.