

disturbed for three days, at the end of which period the wounds will, in the vast majority of cases, be found to be entirely healed. There is no necessity to admit such cases to hospital, and they can perform all ordinary duties. Neglected cases, however, which have gone on to ulceration, must be admitted and dressed daily until the ulcers are soundly healed.

With regard to the prevention of the attacks of "chiggers," all that can be done is to instruct the men as to the cause, and to insist, as far as possible, on their wearing their boots, always a matter of difficulty, however, with black troops, who all, as a rule, prefer to go about barefoot when off duty. Orders as above have been issued to all medical officers in charge of stations which are infected with "chiggers," and it is hoped that as a result the number of admissions from this cause will diminish. In order, if possible, to prevent "chiggers" being carried to stations so far free from them, all troops, carriers, &c., are examined before proceeding from an infected station, and only those who are quite free from "chiggers" are allowed to proceed. It is to be feared, however, that it will only be a question of time before "chiggers" become common everywhere in the Bahr-el-Ghazal, and will eventually extend northwards to Khartoum and Omdurman, and from thence to Egypt, having first extended throughout the whole of the Anglo-Egyptian Sudan, the climatic and telluric conditions of which are especially adapted for the extension of these pests. It will, I fear, be impossible to effectually guard against such an invasion, as, although troops can be kept under observation and cleanliness enforced, it is obviously impossible to prevent "chiggers" being carried, and being allowed to multiply, by the native population.

A CASE OF MALARIAL FEVER.

BY CAPTAIN HOWARD ENSOR, D.S.O.

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PRIVATE M. D., a soldier of the 9th Sudanese Regiment, was admitted to the Station Hospital at Wau, Bahr-el-Ghazal District, from the hospital detention room, on July 21st, 1906, suffering from what appeared to be an ordinary attack of malarial fever.

On admission his temperature was normal, but as his morning and evening temperatures during the previous day in the detention room had registered 103° F., he was admitted to hospital for treatment. It is our practice, owing to the prevalence of malarial fevers in this district, to give a purgative followed by 10 grains of quinine morning and evening to all cases of fever detained in hospital, unless, of course, it is obvious that the fever is due to other causes besides malarial fever. This practice is not very scientific, but its results are excellent among Sudanese troops, as a single dose of quinine is very often all the treatment that is required

in a very large percentage of cases. In this particular case, however, as the man's evening temperature had registered 103° F., although next morning his temperature was normal, he was admitted to hospital for further treatment.

On the evening of July 21st, the day he was admitted to hospital, his temperature rose to 101° F., in spite of two further doses of 10 grains of quinine, but on the morning of July 22nd his temperature was again normal, and to all appearance the man seemed to be quite recovered, and he asked to be put on full diet, which request was refused. At 8.30 a.m. he told one of the orderlies on duty that he felt very ill, and complained of severe headache. In about fifteen minutes afterwards he became comatose. I saw him at 9 a.m., and he was quite unconscious, with stertorous breathing, and could not be roused; his pupils were dilated and reacted very slowly to light; his pulse was 120, and his temperature in the axilla was shown to be 100.8° F. Blood films were taken and stained with Leishman's stain, and on microscopic examination the parasites of malignant tertian were found in abundance, double infection of several of the corpuscles being particularly noticeable. Quin. hydrochlor., gr. x., was at once injected into the gluteal muscles of the left buttock, and orders were given for his temperature to be taken every hour, and the usual arrangements were made for the well-being of an unconscious patient. At 1 p.m. his temperature had reached 103° F., but soon after began to fall, the decline being accompanied by very profuse sweating. At 6 p.m. his temperature was 101° F., his pulse 108, and his general condition was much improved. He could be roused with a little difficulty, and seemed to recognise his name, but did not speak. He was, however, able to drink milk and brandy. Another intramuscular injection of quinine was given him at 8 p.m., and a special orderly put on duty. At 6 a.m. the next morning (July 23rd) his temperature was 97° F., and he was quite conscious, but his pulse was rather feeble, and his extremities were cold; he was, in fact, in a mild condition of collapse. The report of the non-commissioned officer in charge of the night duty party was that the patient had slept naturally all night. Hot bottles were packed round him, and hot milk and brandy given him to drink; this he took with every sign of appetite, and in about an hour he was quite lively and receiving the congratulations of his friends on his recovery. His case presented no further symptoms of interest, and he was discharged from hospital in a few days.

Cases of this gravity are, perhaps, very seldom met with among the negro races from uncomplicated malaria, at least, in the course of some years spent in tropical Africa, such a case has never before come under my observation. At a station like Wau it is, of course, impossible, under the present conditions, to examine the blood of all cases of malaria, but, from the large number I have had time to examine, it is my opinion that the benign tertian parasite is not commonly found in the blood of negro

soldiers, the usual parasite found when they are attacked with malarial fever being that of malignant tertian. Among the Egyptians, who are so often miscalled Arabs by the tourists in Cairo, both parasites are found, mixed infections being quite common, but the number of cases showing the benign tertian parasite alone preponderate. Another point of interest with regard to Sudanese troops is that, when they are moved to a malarious district after having been stationed for many months in a healthy station such as Khartoum, where malarial fever is now almost extinct, owing to the extermination of mosquitoes, they frequently suffer from attacks of fever, which are in some cases very severe, but after a few weeks they appear to become partially immune, and the admissions to hospital for malarial fevers diminish in consequence. This is of practical importance from a military point of view when it is intended to bring Sudanese troops for use in expeditions into malarious districts when they have been previously stationed in non-malarious ones; such troops should, if possible, be sent up at least two months before it is intended to begin operations, so that they may have time to become acclimatised.

NIGHT URINALS: A SUGGESTION.

BY CAPTAIN ROBERT J. BLACKHAM.

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THE question of night urinals for soldiers is a sanitary matter of interest to every officer of our Corps, and as I believe I am right in saying that the methods now in use in India find little favour with most of us, I think no apologies are necessary for submitting the following remarks on this important subject.

Captain W. S. Harrison, Assistant Professor of Pathology in the Royal Army Medical College, writing on the subject of "Our Present Position with Regard to Enteric Fever in India," says: "The question of night urinals is a more difficult one [than that of day urinals]. If one leaves the men with only the present day urinals they will not use them and the ground will continue to be soiled; if one provides occasional urine tubs or other receptacles for night use the same result will follow, *plus* a slop round the tubs. Urinals off the barrack-rooms would be objectionable on account of smell, and moreover, unless sufficient were provided, say four to a company, the soiling of the ground would continue little abated. The simplest plan of all would be to provide each man with a chamber pot for night use; it is the best arrangement for preventing droppings on the floor, for the men would hold them close up when using them. If they had a quantity of disinfectant put in them the urine would be rendered harmless as soon as passed, they could be emptied and cleansed each morning and a fresh supply of disinfectant could be put into them. The presence of non-commissioned officers in