

inherent in the class from which he is mostly recruited. I do not refer necessarily to alcoholic consumption; but that he imbibes an extraordinary amount of fluid, I think any one who likes to investigate by a few questions will readily discover. Regimentally manufactured aerated waters are very cheap. From personal enquiries I have ascertained that with a very large proportion of the rank and file it is quite a common occurrence to rise once or twice for the purpose of micturating after retiring to bed, and this among young men presenting no symptoms of disease likely to cause such a habit and not reporting sick on this account. So common has been my experience in this respect, that it has ceased to be a matter of surprise, though, at the same time, from enquiries made among other than the rank and file, it has proved quite the exception. With these facts as our data it is not difficult to realise how, in the case of exceptionally lazy or heavily sleeping individuals, this so-called incontinence of urine may occur.

The treatment I have found most successful with these cases was abstinence from all drinking for the two hours preceding bedtime, and the rousing of them at midnight for the purpose of micturition. After a reasonable time, if the patient be willing to do his best to break the habit, this rousing, if the necessity for it still continues, becomes automatic, and the nuisance and damage is obviated.

A RECENT INVASION OF THE "CHIGGER" IN THE ANGLO-EGYPTIAN SUDAN.

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THE "chigger," or sand-flea (*Pulex penetrans*), which has shown itself so energetic a colonist in Africa, having first been introduced from tropical America in the early seventies of the last century, is still rapidly covering more ground, and will probably, before many years have elapsed, gain access to every part of the continent where the climatic conditions are favourable to its existence.

Until lately this pest was unknown in any part of the Anglo-Egyptian Sudan, but it has now firmly established itself in the south of the Bahrel-Ghazal Province along the line of the Anglo-Egyptian and Congo Free State frontier. It has, in all probability, been introduced into the Bahrel-Ghazal from the Congo Free State, where it is very prevalent, having first probably been carried there by this State's native troops, who are, or rather were, recruited in great part from the West Coast of Africa, where "chiggers" first made their entry into Africa, and where they have been abundant ever since.

I have been informed that "chiggers" were first noticed among our Sudanese troops stationed on the frontier about eighteen months ago, and

since then these unpleasant little insects have been steadily on the increase, causing, as a result, numerous admissions to hospital, thereby temporarily incapacitating many men from duty. At present "chiggers" only exist in the southern frontier stations, no cases of admissions to hospital having occurred from stations near the Bahr-el-Ghazal and French Congo frontier, or from the various stations in the interior of the Province.

The "chigger," of course, is described in every work on tropical diseases, but as it is only in tropical Africa that this pest comes under the observation of officers of the Royal Army Medical Corps, perhaps a short description of the flea, together with the treatment we have found most successful here, may be of interest.

"The 'chigger,' both in colour and appearance, is very like the common flea, and like it, lives chiefly in the dust on the floors of dirty houses, stables, &c. The female flea, however, when impregnated, takes the first opportunity of burrowing under the skin of any warm-blooded animal; in man, the position selected is usually the skin between the toes and that over the bases of the nails, but she will, as occasion offers, introduce herself under the skin in any part of the body. When safely established the 'chigger' feeds on the blood of her host, and rapidly increases in size as gestation progresses, and when this is completed a tumour about the size of a small pea can be seen surmounted by an orifice which is blocked by the posterior segment of the 'chigger.' The ova are then expelled, a thirteen-ringed larva being hatched out of each egg. This larva soon encloses itself in a cocoon, from which a perfect insect emerges after from eight to ten days" (Manson). When all the eggs are laid, the skin over the insect breaks down and she emerges potent, when again impregnated, for further mischief. In this way a small ulcer is caused by the breaking down of the skin over the "chigger," and as several such ulcers may co-exist, it is easy to imagine that many men are constantly being incapacitated from duty in a station where "chiggers" abound, unless the men are carefully examined at regular intervals, and the "chiggers" extracted before they have had time to cause ulceration.

The treatment consists in not allowing the insects to proceed to ovulation, and in consequence to cause ulceration, but to extract them by enlarging the points of entrance in the skin by means of a tiny incision, and then removing them with a sharp needle. This should be done as soon as the insect makes its presence known to its host by the irritation excited by its gradual increase in size consequent on the commencement of gestation. The small operation described above can be quite efficiently carried out by any intelligent orderly, provided the importance of doing it antiseptically has been impressed upon him. After the "chiggers" have been extracted boric acid powder should be dusted on the tiny wounds, and the wounds then dressed aseptically. The dressings should not be

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.

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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