Although supplies of our curative serum were requested from several countries of Europe and Australia, we have been obliged to stop the preparation of it on account of obstacles put in our way by the sanitary authorities, who feared the preparation of plague cultures on a large scale. Of course, we cannot but desire to put our serum to another comparative test (particularly in the fairer conditions of milder epidemics like the recent ones in Europe) with Yersin's serum, as such an experiment would have a decisive interest for science and humanity. For the present, as far as our four years' experiments have gone, it must be acknowledged, that our serum was the only one which gave satisfactory results, as it is practically demonstrated by the fact that the sanitary authorities of Bombay recommended its use so strongly that it is the only serum manufactured in a specially-arranged laboratory in Bombay and largely used in the hospitals, whilst the other serums were soon put aside.

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DYSENTERY IN SOUTH AFRICA.

By JAMES JOHN DAY, M.R.C.S., L.R.C.P.LOND.,
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MUCH of the "dysentery" which the private soldier in South Africa believes he suffers from is not dysentery. It usually resolves itself on questioning the patient into diarrhoea accompanied by griping pain. Men really suffering from dysentery describe the motions as consisting of "blood and slime," "white of egg," "jelly," and once I heard of "phlegm" being passed.

At Wynberg, where the cases were usually of some duration when admitted, the various methods of treatment met with about equal success. The *post-mortem* appearance varied greatly. I saw two cases in which the lower part of the ileum was involved. As a rule the upper part of the colon was more affected than the lower part and the rectum.

In the advance through the Free State one saw many cases of acute diarrhoea, in a large percentage of which blood and mucus were passed. Very few of these ended as acute dysentery. They yielded readily to treatment by *ol. ricini* c. tr. *opii*, followed by pil. plumbi c. *opio*. The few cases of real dysentery occurring in the Division (Colville's) to which I was attached all improved rapidly under treatment with magnesium sulphate given in hourly doses of 1 drachm and dieting. But I noticed in cases sent for treatment from other bodies of troops that the longer the duration of the case the less readily it yielded to this treatment. Out of some hundreds of cases of acute diarrhoea and dysentery treated I only saw one death occur actually in the field, and that was in a case of long duration brought from another division.

At Johannesburg, in the Victoria Hotel Hospital, there were not many cases of acute dysentery, and such as there were yielded more or less readily, according to the duration of the attack, to the treatment. One patient recovered from a primary attack, but relapsed, developed enteric, and rapidly succumbed.

At Welverdiend such acute cases as occurred recovered under sulphate of magnesia, but of 5 chronic cases I have notes of only 1 recovered under a combined course of this salt with quinine. The others were transferred for treatment to standing hospitals, and in no way improved.

At Pretoria, where for some weeks I had charge of the majority of the dysentery patients in No. 2 General Hospital under Lieutenant-Colonel Keogh, many of the cases were typical. The method of treatment adopted was as follows:

On admission the patient was immediately given *ol. ricini*, ʒj; tr. *opii*, ℥xv—xxv; aq. menth. pip., ʒj; and a diet of arrowroot, Oj; milk; Oij; soda water, Oij; brandy or port

wine. As soon as the bowels had been thoroughly cleared, mag. sulph., ʒj; ac. sulph. dil., ℥xv; aq. menth. pip., ʒj, was given every hour until the stools became feculent.

I found the concentrated doses of sulphate of magnesia more quickly efficacious than more dilute doses. As the tenesmus was relieved and the evacuation of blood and mucus ceased, the sulphate of magnesia was administered correspondingly less frequently, but was always continued for at least forty-eight hours after the dysenteric symptoms had ceased. I found frequently that it seemed to produce a marked astringent effect, the stools becoming formed during its administration. In cases where the bowels were still relaxed a simple astringent mixture of catechu, tr. *opii*, and ac. sulph. dil., in all cases proved efficient. As the symptoms abated the diet was increased through eggs and chicken to ordinary rations, after four or five days of which a patient was transferred to the convalescent division.

Several cases were encountered presenting complications.

Scurvy.—In this case the dysenteric symptoms persisted for some time. The gums were swollen and spongy, bleeding freely, and his teeth were very loose. He had severe neuralgic pains in the face and head (bilateral). Also on several occasions he had slight epileptiform seizures. Lime juice, fruit, and vegetables, combined with astringent mouth washes, rapidly cured both dysentery and scurvy.

Malaria.—Various cases, in which the temperature was typical of malaria, although the prominent trouble was the dysentery, occurred. These were readily and completely cured by adding quinine v grs. 4 tis. horis to the mag. sulph. treatment. I regret that no microscopical examination of the blood was made in these cases.

Synovitis.—I saw two cases of this, in one of which the knee and ankle joints were enlarged, but not painful, and there was but slight exacerbation of temperature. The other was rather peculiar in that the onset of the synovitis was accompanied by a slight relapse of the dysenteric symptoms. The joint first affected was the metatarsophalangeal joint of the great toe. It presented all the features of an attack of acute gout, and was treated as such without any benefit. In rapid succession both ankles and knees were attacked. There was a good deal of pain, and the temperature ranged from 99° to 102.6°. Salicylates pushed to salicysm did not produce any effect, nor did various other treatments. The only benefit obtained was from local anodynes. The attack gradually abated, and the patient was convalescent when I left Pretoria.

There is a great tendency to relapse should the patient be allowed to get about in the sun too soon during convalescence. In No. 2 General Hospital at Pretoria the dysentery cases were placed in wards separate from the enteric cases. This should certainly be done wherever possible. As much care should be taken to either disinfect or destroy the stools as in enteric.

NOTE ON THE LESIONS PRODUCED BY
OXYURIS VERMICULARIS.

By MARC ARMAND RUFFER, M.D.,

President of the Sanitary, Maritime, and Quarantine Board of Egypt.

At the *post-mortem* examination of an adult male (an Egyptian workman) aged about 35, who had died from chronic cirrhotic disease of the liver and kidneys, many small worms (*oxyuris vermicularis*) were noticed by Dr. Taha and myself in the contents of the large intestine, more especially in its lower portion. In the rectum, about 6 inches from the anus, a small hard tumour was found, which lay within the walls of the intestine, and was of the size of a small nut. Two other tumours of nearly the same size were discovered 2½ inches from the first, while here and there throughout the length of the large intestine small elevations were also noticed. These varied from the size of a pin's head to that of a small pea. The mucous membrane covering these tumours and the elevations above noticed was quite intact, and there was no sign of congestion, inflammation, or ulceration around the tumours. The peritoneal wall of the intestine showed no special adhesions.

The larger tumours and several of the smaller ones were re-

moved without further examination, and plunged into a saturated watery solution of sublimate. I regret to say that a more careful examination was neglected at that time, because all those present, including myself, mistook these growths for the ordinary tumours caused by the bilharzia hæmatobia, a parasite which I find in quite 50 per cent. of all necropsies on natives of Egypt.

The tumours were kept in a saturated solution of sublimate for twenty-four hours, washed in water for the same period, and gradually hardened in alcohol. It was then discovered that each of these tumours contained a calculus; it shelled out quite easily from the surrounding connective tissue, which formed a capsule around it. The mucous membrane and the submucosa formed the anterior wall of the cyst, the posterior wall consisting of the muscular layer and peritoneum, a thick capsule of connective tissue surrounding the calculi. These calculi were rough, uneven, but not so hard that they could not be cut with a strong scalpel. They were mainly of a yellowish-black colour, but almost white in parts. The addition of a small drop of mineral acid to a fragment at once produced a strong evolution of gas.

Microscopical examination of any one of these calculi showed that they consisted of an amorphous yellowish-brown substance, which contained numberless typical eggs of oxyuris vermicularis. No traces of the worms themselves could be found inside the cyst. Many of the eggs of the smaller calculi were quite normal, and contained embryos showing no signs of degeneration whatever. In the larger calculi, however, very few of the eggs contained any embryos, perfectly transparent shells being all that was left of the eggs. Some of these shells were studded with small yellow crystals, which dissolved with formation of gas on the addition of a mineral acid.

The only possible explanation of these facts is that the oxyuris penetrated through the mucous membrane into the wall of the intestine, and there laid its eggs. These acting as an irritant produced a certain amount of inflammation followed by calcification. The female either found her way back into the intestine, or died and was absorbed.

It is quite possible that this process takes place frequently. Small tumours of the rectum resembling the cysts above described are of frequent occurrence here, but others as well as myself attributed them to the bilharzia hæmatobia, as is undoubtedly the case in the majority of patients. Nevertheless I have noticed that these swellings are not infrequently found in patients who have no bilharzia in any of the other organs of the body.

From the therapeutic point of view the presence of these cysts is important, for many of the ova contained embryos having all the appearances of life. Possible these might at some future time have found their way into the intestine and given rise to further symptoms.

I have carefully read the literature at my disposal, and have not found any account of similar encysted calculi in the walls of the intestine, due to the presence of the eggs of oxyuris vermicularis.

A FILARIA FOUND IN SIERRA LEONE ? FILARIA VOLVULUS (LEUCKHART).

By W. T. PROUT, M.B. EDIN.,
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I AM indebted for the opportunity of describing the following specimen to Dr. Hood, District Surgeon, Sierra Leone. He observed a rounded tumour, about the size of a pigeon's egg, on the buttock of a frontier policeman, who had reported sick, complaining of vague rheumatic pains. In appearance and consistency it resembled a fatty tumour, but, on excising it, it was found to be a cyst containing what seemed to be a mass of filariæ bathed in a semipurulent fluid. Unfortunately the incision, which had been made to open the tumour, had cut across the worms, but I was able to dissect out with difficulty a complete adult male, and numerous fragments of an adult female packed with embryos.

Some time afterwards Dr. Hood was fortunate enough to come across another specimen of the same kind, again in a frontier policeman. The clinical history of the case showed

nothing remarkable. The man complained of weakness, vague pains, and an inability to do his duty, which consisted of going on patrol in the district. A gleet was found, with swollen inguinal glands, and the case was supposed to be of a syphilitic nature. On further examination a tumour was discovered, again in the gluteal region. This was excised, and the man sent down to Freetown, where he was admitted to hospital, and kept under observation for a considerable time. During this period the clinical features were not marked. He still complained of vague aches and pains, which gradually disappeared, and there were occasionally slight irregular rises of temperature. He was put on general tonic treatment, and at the end of a couple of months expressed himself as fit to resume duty, and was discharged. I examined the blood on one or two occasions, but was unable to detect any filarial embryos. I also punctured the inguinal glands with a hypodermic syringe, and examined the fluid which I obtained, also with a negative result. I may state, however, that at that time, owing to pressure of other work, I was unable to devote as much time to the examination of the blood as I should like to have done; and it is possible that a more frequent examination, more especially late at night, would have revealed the presence of embryos.

So far, then, apart from the presence of the filaria which I am about to describe, there does not appear to have been any distinctive features in the case.

The tumour was about 1 in. in length by about $\frac{3}{4}$ in. in breadth. On making an incision, a greenish, semipurulent-looking fluid about the consistence of cream escaped from the cyst. This, on microscopic examination, was found to contain numerous filarial embryos. The capsule of the cyst consisted of dense fibrous tissue, lined internally by a layer of soft, caseous-looking material, which could be easily scraped off. This was composed of granular material, flat nucleated epithelial cells, and contained free embryos. The interior of the cyst was filled with the adult filariæ, lying in loops twisted up in the most confusing fashion, entering the

Fig. 1.—Head of male filaria.

cyst wall, running along shallow tunnels, and re-entering the cyst. Owing to this and the softness and brittleness of the worm it was a matter of the greatest difficulty to dissect it out, and I found it impossible to do so without breaking it.

Eventually, however, I succeeded in isolating a complete unbroken adult male, and the head, tail, and intermediate fragments of a female. These two worms formed the whole contents of the cyst.

The male worm is much smaller and narrower than the female. Length of one specimen 3.025 cm. (about 1.2 in.), of the other 3.35 cm. (about 1.3 in.). It is of a white colour and somewhat flattened in shape, which is, however, probably due to shrivelling from immersion in the preserva-