A NOTE ON DYSENTERIC ARTHRITIS.

BY

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JUDGING from the scanty literature at my disposal, the occurrence of arthritis, single or multiple, as a complication or sequel of amoebic dysentery has received very little attention, though some writers, such as Phillips, briefly refer to it, and Manson states that a condition resembling gonorrhoeal rheumatism has frequently been noted as a sequel, and that at least one epidemic has been recorded in which a large proportion of the cases became affected in this way. Osler also briefly refers to the possibility of its occurrence.

As, however, its practical importance seems to have been overlooked, I write this note with the object of pointing out that in all cases of arthritis occurring in our troops a history of dysentery should be inquired for, and, if such a history is obtained, a course of emetine should at once be ordered. In my experience of six recent cases emetine clears up the arthritis most rapidly after other treatment has failed.

In four out of the six cases there was definite proof that amoebic dysentery had been present, either by the finding of amoebae in the stools at the time the arthritis was present, or owing to the fact that the patient had been previously treated in this hospital for amoebic dysentery, and that amoebae had been found at the time of this treatment.

In two cases the history of dysentery while at the peninsula was quite definite, but I had no means of determining whether the dysentery had been of the amoebic or bacillary variety. One of these cases—a bad one—was given both serum and emetine; the other was treated by emetine alone, and both rapidly recovered.

The case that first called my attention to the subject was that of a man who was admitted on December 4th, 1915, suffering from well-marked amoebic dysentery, confirmed by examination of the motions. He was given a course of 5 grains of emetine, and rapidly improved as far as the dysentery was concerned, but remained weak and very much pulled down.

On December 29th, 1915, our bacteriologist (Lieutenant Willmore) reported the stools as containing no amoebae.

On January 7th, 1916, he complained of severe pain in the right knee, and on the next day the joint was found to be much swollen, due to the presence of fluid and general thickening of the periarticular tissues. The condition, in fact, as Manson states, exactly resembled that of gonorrhoeal rheumatism. The patient was put on large doses of sodium salicylate and alkalis, but on January 9th the right knee was worse, the left knee was also involved, and the right elbow and both wrist-joints were also painful and swollen. By January 14th there was no improvement; the patient could not move in bed owing to the pain, and the slightest attempted movement of any of the affected joints caused acute agony. On this date it was decided to stop the salicylates, and to start a course of emetine injections.

By January 18th the wrist and elbow had practically completely cleared up, and the knees, while still swollen, were enormously improved, and could be moved freely without pain. A week later there was still further improvement, and in the first week of February the patient was able to get out of bed for a short time daily.

The other cases resembled this as far as the appearance of the affected joints were concerned, except that in none of the others were the joints of the arms involved, the knees being the joints to suffer most, as they were affected in all of the cases, while in two the ankles also, and in one the right hip-joint, were involved.

The complete proof that these cases of arthritis were amoebic in origin is wanting, as I did not feel justified in aspirating the joints, but if we may rely on the therapeutic test of rapid recovery under the use of emetine, there is little doubt as to the nature of the condition.

It is possible that the severe strain put on the joints by the life of a soldier renders them unusually liable to suffer, and if there should be any extensive appearance of the condition it is important that medical officers should be on the look-out for it, and should at any rate give anti-dysenteric treatment a trial.

THE King has granted Dr. Gordon O'Neill, Professor of Obstetrics in the Peiyang Medical Council, Tientsin, permission to wear the Seventh Class of the Order of the Excellent Crop, conferred upon him by the President of the Chinese Republic.

PRELIMINARY NOTE ON A DISEASE CALLED
"BUNGPAKKA,"FOUND IN THE NORTHERN TERRITORIES
OF THE GOLD COAST.

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THIS curious disease has been known to the natives of West Africa for some time, as the Chief of Tansia told me that he had had it at the time when the slave raider Samori overran the Northern Territories about twenty years ago. It goes by many names, according to the severity of the outbreak, to the locality and tribe in which it manifests itself. The various natives of the Gold Coast, the Northern Territories, the Nigerias, and the Senegal are said to recognize it readily, and it is probably even more widely spread, but information on the subject is scanty. In the Wa district, at any rate, certain low-lying villages in the swamps seem to be more adapted to the incidence and spread of "bungpakka" than others.

Names.

The multiplicity of names will probably give one an idea of its prevalence; thus, in the following languages its synonyms are:

Hausa: *Chewan daji* (?). In Robinson's Hausa dictionary is mentioned "a fever which breaks out when the guinea-corn is ripe (*Chiero na sabon dawa*). To prevent being attacked by it the Hausas give presents of dawa to the poor."

Dagarti: *Bunyura, Bunyuri, Bungura.*

Walla: *Eunggura.*

Lobi: *Bungpakka, Bungpwakka, Bungpwakka, Bungworra.*

Season.

It occurs both sporadically and epidemically at the time when the guinea-corn and rice (*hakki*) are ripe and ready for harvesting—that is to say, just after the rainy season in the Northern Territories.

Sex and Age.

It attacks both sexes, and it occurs at all ages in those who are able to eat grain. Adults appear to be more prone to it than children.

Etiology.

The natives regard it as infectious. Some ascribe it to the sun's activity at this time of the year. It appears to me to be due to a micro-organismal infection which produces a neuro-toxic effect as well as a local reaction. In every one of the pus slides I examined I found a heavy infection of *saccharomyces*. Every precaution was taken to prevent contamination, and yet the fields showed yeast cells in all stages of gemmation. The slides were made, fixed, and stained as soon as the pus was taken from the abscess. The cultures showed a true fungus growth. No experiments were tried owing to lack of material. Personally, I am inclined to think that the disease is caused and perpetuated by a yeast fungus; the yeast spores probably remain in the mud bins in which the grain is stored awaiting a favourable opportunity to grow, they get their chance after the rains, when the interior of the bins becomes a hot moist chamber. The grain becomes infected in the bin, the people eat the grain raw, and being usually constipated, their intestines are secondary incubators. The yeast cells are probably absorbed from the intestine somewhat in the same way as fat is by migratory leucocytes, and thence into the general circulation.

Incubation Period.

The definite incubation period appears to be three days, during which there is *malaise*, headache, a sense of fatigue, anorexia, intense thirst, and constipation.

Symptoms.

The onset is sudden; one or more rigors may usher in the attack. The temperature rises rapidly to 103° or so. There is extreme tenderness in the muscles which are to be the seats of inflammation. Within twelve hours painful tumours make their appearance in the affected muscles; only the voluntary muscles are affected, and the abscesses seem always to occur near their insertions. There may be only one nodule, or a crop. In some

cases the distribution is bilaterally symmetrical. The tumours are deep-seated; they are hard, non-fluctuating, very painful, with their long axes either in or parallel to the long axes of the muscles affected. They do not correspond to lymphatic glands. Each tumour is about the size of an English hen's egg. They are at first hard and firm, and are easily visible and palpable; later on, if the patient survives, they become slightly soft, but never flabby. Usually, in mild cases, the abscesses point after some weeks, and burst if unopened. As a rule, the fewer the nodules the better the prognosis.

The natives often incise the nodules to relieve the symptoms; if white fluid exudes, the case is labelled fatal; if the fluid is yellow, the patient will recover. Sometimes there is no fluid, and then the Ju-ju man gives the patient a delphic reply. Some of the natives carry the scars of former "bungpaga" abscesses.

The patient is alert and sleepless on account of the great pain in the affected muscles. Sedatives have to be used in large doses before any relief is obtained; salicylates are of no avail.

If the patient survives the acute stage he stands a good chance of recovery. The deaths usually occur within the first week, the third and sixth days seeming to be the most critical. Even during convalescence (for two months or more) the patient exhibits an occasional febrile reaction

Mortality.

"When it is called Bungpaga it is very fatal, nearly all die; but when we call it Bungyura most of the people recover." This is the typically oracular answer one gets from the natives. Some of the people consider the disease to be as fatal as sleeping sickness.

General Remarks.

From the investigations of Drs. Corson, Ryan, and myself we are inclined to believe that this is a special disease. The Hausas say that they have seen it occur among the other tribes, but not among themselves. Perhaps they wish strangers to be impressed with the efficacy of the *dawa* offerings. One could not discover whether the fortunate poor contracted the disease after eating these oblations.

The natives also readily recognize such infections as actinomycosis, anthrax, bubonic plague, guinea-worm, and malaria, syphilis, etc. Their knowledge of disease seems to be exact, but they are so superstitious and suspicious that they make one wade through a quagmire of falsehood and general information to get to the tiny islets of truth bearing on one's quest.

An epidemic of this disease broke out recently among the labourers employed on the Yeji-Mcongo road. The officer in charge of the construction work said that by far the largest number of fatalities were due to this disease. He had made arrangements for the provisioning of his workmen; large quantities of maize, millet, guinea-corn, etc., were bought and stored in mud huts so as to meet requirements. Some of this grain may have been infected, and may have given rise to this outbreak. Preventive measures should be adopted in good time so as to prevent an outbreak among troops who live on such food. Millet is often eaten in the raw state. Our men should be warned of their danger and should be ordered to cook their grain.

Investigations into the cause and spread of this disease are being taken in hand in West Africa, but it would help matters considerably if all cases of this disease were reported on.

AN interesting experiment in school hygiene at Winchester, Massachusetts, is described in the *Boston Medical and Surgical Journal*. Two seventh-grade classes, consisting of children of the same kind, were compared after one class had been for four months taught in a room so altered that a full supply of fresh air could be admitted. The temperature was kept at about 45° F., and the children were clothed in blanket coats and bloomers, with lined canvas boots. At the end of the period the children were compared with those of another seventh-grade class in the same building who worked in an ordinary room. It was found that whereas the average gain in weight of the open-air class was 3.61, that of the other class was 1.69. In height the open-air class gained 0.49, the other 0.24. In the haemoglobin test the open-air class gained 4.55, while the other lost 3.07 per cent.

AN OBSERVATION IN PERNICIOUS ANAEMIA.

BY

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SOME years ago, after careful examination of the literature, I published a paper* embodying an original idea, and ventured to express the view that, although original, I doubted whether it was novel. A few weeks later, whilst buried in journals in search of data on quite a different subject, I found that my idea had been anticipated some years previously, and on looking up that paper I found yet an earlier reference to a journal published in 1886 embodying the treatment suggested.

The vastness of the literature must be my excuse for absence of any references to experiments of a similar nature to the one I am about to describe.

In March, 1915, I had under my care a very severe case of pernicious anaemia, also one of well-marked erythraemia (polycythaemia).

The consensus of opinion as to the process leading to anaemia in pernicious anaemia is that an excessive destruction of red cells is occurring. The cause of this destruction has been a subject of considerable work, more speculation, and no satisfaction. It would ill become me to add to the speculation.

Erythraemia must be due to one or a combination of the following: abnormally rapid development of red cells, an abnormally slow destruction of red cells, an insufficient quantity of plasma.

On an attempt to determine which of these takes the most prominent part, I am engaged at present.

It seemed to me that it would be of interest to note what would happen if I were to transfer some quantity of blood from the patient suffering from erythraemia to the patient who had pernicious anaemia, and at the same time inject into the erythraemic patient some blood from the case of pernicious anaemia.

Courtesy to my colleague, Dr. F. J. Smith, makes me digress for a moment: the case of pernicious anaemia under my care wished to return home, and therefore left the hospital, and I am indebted to Dr. F. J. Smith for transferring to me one of his patients.

The patients had the circumstances explained to them in detail; that there were certain risks, and that as far as I knew, no similar observation had been recorded. The two men said that they were quite willing to undergo any treatment which might in any way benefit them, and that they did not mind any risk, because for several years their lives had been spent in hospitals and were of no advantage to them or any one else.

Details of the method of transferring the blood are unnecessary. All that is essential is to state that the apparatus was washed out with sterile olive oil and drained, so that there should be no excess, and that coagulation was prevented by the addition of a minute quantity of sodium citrate. Every precaution was taken to prevent any air being injected, and a window quite close to the point of injection allowed me to be certain that not a bubble entered.

After a small quantity—that is to say, 2 oz.—of blood had been injected into the man suffering from pernicious anaemia, he went paler; he complained of nausea and faintness, and the injection was immediately stopped. He then became slightly flushed in the face, and made grimaces as if he were undergoing pain. On being asked, he stated that he had pain all over him, something like cramp, quite severe; this lasted for a minute, and then disappeared, and he was soon quite comfortable.

I was very disappointed that only so small a quantity of blood had been introduced, but nevertheless thought that if the blood contained some material which stimulated production of red cells this might lead to improvement in the condition of the patient. Examination of the blood a week later showed that the red cells had risen from 600,000 to 1,050,000, and the haemoglobin percentage from 10 to 20.

As the result was so promising it made me almost regret that it was not my custom to publish any observation on treatment within a year of having made it; this resolution

* A Contribution to the Treatment of Chronic Empyema. BRITISH MEDICAL JOURNAL, April 15th, 1905.