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✓      ~~o~~      NOTES ON TROPICAL DISEASES.

By Major D. G. MARSHALL, I.M.S., *Lecturer on Tropical Diseases in the School of Medicine of the Royal Colleges, Edinburgh.*

*Blackwater fever.*—Medical men practising in Africa frequently ask where they can obtain a good treatise on this disease, giving not only theories but the clinical experiences of those who have had opportunities of studying and treating large numbers of cases.

Such a work has just been published.<sup>1</sup> The author, who has spent many years in Central Africa, and has had very extensive experience of the disease, carefully considers the different theories, and then advances his own opinions, supported by the detailed history of numerous cases. The various theories are summarised under four headings, the disease being considered as—(1) A form of malaria; (2) an idiosyncrasy provoked by a diathesis; (3) the result of toxic medication; (4) a distinct disease due to a specific element. After quoting the experiences of Karamitzas, Antoniadis, and Tsakyroglou in Europe to show that the disease frequently occurs in people who have never suffered from malaria, the author quotes a series of cases to support his view, *e.g.*, that the disease is *not* a form of malaria, and that quinine, methylene-blue, and other

<sup>1</sup> “La fièvre bilieuse hémoglobininurique dans le bassin du Congo,” Dr. Louis Védý, Paris, A. Maloine.

drugs only act as occasional factors in determining the onset of the symptoms, in the same manner as chill or excessive fatigue; the conclusion finally reached being that "*blackwater fever is due to a toxin probably elaborated by a special micro-organism.*" Breaudat and Yersin have described such an organism, but their results have not been confirmed. There is a valuable chapter on treatment which opens with a few simple directions for the guidance of travellers and others in cases where medical aid is not available.

Regarding the much vexed question "to give or not to give quinine," the following rules are laid down:—

1. If, twenty-four hours after the onset, malarial parasites are present in the blood, give a small dose (12 grs.) of quinine.

2. Never give quinine if malarial parasites are not found in the blood.

3. If in doubt (if an examination of the blood is not practicable), do not give quinine.

The routine treatment recommended is directed to the elimination of the supposed toxin, and consists of free purgation followed by frequent enemata, and in serious cases saline infusion; with diluents (warm water, weak tea) freely by the mouth. Symptoms are treated as they arise, tendency to heart failure by caffeine and champagne, vomiting, after the first day, by morphia and counter-irritation; the use of antipyretics and digitalis is contra-indicated, while a case in which death rapidly followed the administration of a small dose is quoted to show the danger of using pilocarpine in this disease.

From a letter recently received, it appears that British practitioners in Africa have been following the same line of treatment with satisfactory results.

Should a man who has suffered from the disease continue to serve in Africa? is a question which would be generally answered in the negative, but Dr. Védý considers there is little risk provided there is no persistent affection of the liver or kidneys; in fact, he holds that after three or four attacks the patient becomes immune.

*Ankylostomiasis.*—Attention has before been directed in these notes (October 1905) to the possibility of Scottish miners becoming infected with this disease, and the matter is brought nearer home by the fact that there are at present under treatment in the Royal Infirmary two cases in miners returned from abroad.

Many of the coalpits in Scotland present all the requisite conditions (great depth, excessive heat and moisture) for the spread of the disease should it be introduced, and as much sickness, trouble, and expense may be avoided by immediate recognition of early cases, it is absolutely essential that medical officers connected with the mining industry should, for purposes of diagnosis, avail themselves of every opportunity of seeing cases under treatment in order that they may become acquainted not only

with the symptoms of the disease, but also with the microscopic appearances found in the blood and stools.

*Plague.*—Two reports have recently been published which throw much light on the etiology of this disease.<sup>1</sup>

Practically the same conclusion is reached in each report, namely, that the rat flea, *Pulex cheopis* (Rothschild), which is common in India and Australia and occasionally found in European seaports, is the means of carrying infection, and the very exhaustive experiments conducted by the Indian Commission would appear to prove that it is the only channel of infection.

It is noteworthy that while the plague bacillus was very seldom found in the stomach of the human flea, it was found in 30 per cent. of the rat fleas.

While in New South Wales such extensive experimental work was not practicable, the fact that the patients were white men living under fairly good social conditions rendered the following up of the cases less difficult, and hence the etiology could be carefully studied. The chief medical officer has been able to make the following definite statements:—

1. Plague owes nothing of its epidemic forms to communication with the sick.
2. Plague in rats is a necessary factor in epidemic plague.
3. A living intermediary is necessary to communicate the infection from rat to man.
4. That intermediary must be the flea.

These reports bring the etiology of plague closely in line with that of yellow fever, and give grounds for hoping that the measures of precaution which have been so successfully adopted in the latter disease may be found equally efficacious in combating plague.

*Sleeping sickness.*—The search for a cure for this disease is being actively prosecuted by numerous workers both in this country and on the Continent. Though the success claimed to have been achieved in Belgium, which has formed the subject of sensational paragraphs in the lay press, has not yet been corroborated, there is ground for hoping that the remedy will eventually be found in some preparation of arsenic.

It is satisfactory to learn that in the case of a European at present under such treatment in this country there has been a very distinct improvement. The trypanosomes have disappeared from the peripheral circulation, and remained absent for a considerable time, and, what is even more satisfactory, experimental inoculation with blood of the patient into various animals has been attended, so far, with negative results.

It is, however, well known that trypanosomes are often absent

<sup>1</sup> "Preliminary Report of the Indian Commission," *Journ. Hyg.*, Cambridge, 1906, September; "Report of the Board of Health on Plague in New South Wales during 1905," Sydney, 1906, July.

from the blood for months and suddenly reappear. A definite conclusion cannot therefore be reached, and will wisely be withheld, until the patient has been under treatment for a protracted period.

To those particularly interested in the subject the records of recent experimental work by Mesnil and Nicolle<sup>1</sup> and by Thomas<sup>2</sup> may be recommended.

*The trypanosomes of tsetse flies.*—In the "Sixth Report of the Sleeping Sickness Commission," Gray and Tulloch described the multiplication of the *T. Gambiense* in the alimentary canal of the *Glossina palpalis*. Shortly after the issue of this report Koch published two articles in which he described a similar process in other species of *Glossina*, and it was somewhat hastily assumed that Bruce's original idea—that the tsetse acted simply as a carrier—was incorrect.

Novy<sup>3</sup> and Minchin<sup>4</sup> have separately been making further investigations, by which it is shown that Bruce's opinion was after all the correct one.

Novy, working with slides sent to him by Gray, and reasoning from the analogous growth of herpetomona and crithidia in the mosquito, is of opinion that "wholly erroneous conclusions have been drawn from the seen facts, and that the trypanosomes met with in the tsetse are cultural forms of harmless non-pathogenic flagellates." He describes and figures four types with male and female forms, and suggests the name *T. Grayi* for the type which occurred in greatest numbers.

Minchin's work, in which he was assisted by Gray and the late Lieut. Tulloch, yields much the same results, but he goes a step further, and bestows names (*T. Grayi* and *T. Tullochii*) on two types.

While such painstaking work is worthy of all admiration, the authors themselves would probably admit that, as they have been working with somewhat scanty material, their present opinions can by no means be regarded as final.

"Tropical" blood parasites in British birds.—Recently was published a short article<sup>5</sup> by Symmers, describing the appearances of a filaria he had found in the blood of a bird in Ireland; the discovery was commented upon in another journal as though it was unique, but Coles, in a letter,<sup>6</sup> points out that such an occurrence is by no means uncommon.

Members of the recent post-graduate course in Edinburgh were afforded an opportunity of seeing filaria in the blood of thrushes

<sup>1</sup> *Ann. de l'Inst. Pasteur*, Paris, 1906, July.

<sup>2</sup> "Report on Trypanosomes, Trypanosomiasis, and Sleeping Sickness, Liverpool School of Tropical Medicine, Memoir xvi."

<sup>3</sup> *Journ. Infect. Dis.*, Chicago, 1906, May 18.

<sup>4</sup> *Proc. Roy. Soc. London*, 1906, October, B. 525.

<sup>5</sup> *Brit. Med. Journ.*, London, 1906, October 20.

<sup>6</sup> *Ibid.*, 1906, November 3.

obtained both in the south of England (Coles) and in the vicinity of Edinburgh.

In this connection it is interesting to note that in the Second Report of the Wellcome Research Laboratories, Khartoum, just to hand (a most valuable record of careful scientific work), Neave gives a coloured drawing (Plate xxi.) of an "object" which he found occurring plentifully in the blood of a guinea-fowl. He presumes it is a parasite, but is unable to determine its nature, and states he has been informed that a similar "object" had previously been found in the blood of a corncrake in England. This refers to a corncrake which was shot for me by a keeper near Dunbar. The blood of this bird contained numerous bodies exactly resembling those figured by Neave, and during the last week exactly similar bodies have been found in the blood of a water-hen shot near North Berwick. Slides have been sent to Laveran with a view of obtaining his opinion on the nature of the bodies, and further reference will be made to the matter in these notes at an early date.

Recent work has shown that the occurrence of other parasites (trypanosomes, halteridia, pyrosoma, etc.), usually supposed to be confined to tropical regions, is not at all uncommon in the blood of animals, birds, and fishes in this country. The work is highly interesting, but whether the results will prove of any practical value, time alone will show.

"The Effects of Metazoan Parasites on their Hosts" is the title of a paper by Shipley and Fearnside<sup>1</sup> in which the different means by which these effects are produced, as situation, size, migration, absorption of juices of the host, and the development of toxins, are very fully discussed, and there are very numerous references to the literature of the subject.

<sup>1</sup> *Journ. Econ. Biol.*, 1906, vol. i. pt. 2.