

of the Congo natives, partly from its presence in three cases of the disease, which he has seen in England, and the fact that the geographical distribution of the parasite and the disease are somewhat similar.

Against this is the epidemic character of the disease, and the fact that *F. perstans* is present in a large percentage of the population in districts—*e. g.*, the Niger Delta and the Oil Rivers—where the sleeping sickness is unknown.

*F. Ozzardi*.—This is the name given provisionally by Manson to a filaria occurring in the aboriginal Carib Indians of the hinterland of British Guiana, it is often associated with *F. perstans*. The embryos are similar to *F. perstans* in size and movement, but possess a pointed tail.

The adult worms in size and structure closely resemble *F. Bancrofti* except as regards the tail which is bulbous.

*F. diurna*.—The parental form of this species has not as yet been described. The embryos to which this name has been given are not to be distinguished morphologically either in fresh or permanent preparations from *F. nocturna*.

The distinction is in their periodicity. Instead of at night, it is during the day with a maximum about eleven to one o'clock that they are found in the peripheral blood. Their distribution is limited to certain parts of the West Coast of Africa.

Whether they are identical with *F. nocturna*, and the variation in periodicity is due to some influence acting on the embryo, can only be satisfactorily settled by the discovery of the parent worm. We know from the experiments of Stephen Mackenzie that the periodicity of *F. nocturna* may be changed by causing the patient to be up at night, and to sleep in the day time. The average West African native is so prone to sleep during the hot part of the day, and to be up doing his canoeing during the night or to be dancing until the morning, especially at the full of the moon, that it would be very easy to reconcile the facts and explain them on this basis.

The observations made by "The Liverpool Malaria Expedition to Nigeria" upon an extensive series of cases will soon be published. As a member of that expedition I had the opportunity of seeing a great many cases of *F. nocturna*, *F. diurna* and *F. perstans*. In many of the natives there was double infection, and in a few cases the three forms were present.

The table of periodicity of *F. nocturna* and *F. diurna* does not show the restriction to the fixed hours which is usually supposed to exist. In some cases it was difficult to say whether the embryos found should be called *diurna* or *nocturna*. From clinical observation we were much inclined to regard them as identical but on attempting to study their metamorphosis in *Anopheles claviger* we were unable on two different occasions to find any of the *F. diurna* within the body of the mosquito; all were apparently excreted with the undigested food, while *F. nocturna* underwent the usual changes, and was found in the proboscis on the 15th day. On account of our work on malaria we were compelled to drop the subject at this interesting point and were unable to return to it.

Unfortunately we had no opportunity of a post mortem examination