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The Chief of the Malaria Section
has the honour to communicate hereunder the
following note

MONKEY MALARIA IN AFRICA

by

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In this short note on monkey malaria in Africa South of the Sahara, the term malaria is used in the wide sense to cover all infections presenting pigmented parasites in the red blood cells. Today such parasites are known to belong to two genera - Plasmodium and Hepatocystis. In Plasmodium, the species exhibit both sexual and asexual forms in the blood stream; in Hepatocystis, there are sexual forms only in the blood. The latter are included because the commonest parasite of monkeys in Africa is Hepatocystis kochi, which until recently was known as Plasmodium kochi.

Malaria parasites are found in the higher and lower monkeys, three species in the former and two in the latter.

MALARIA PARASITES OF THE HIGHER MONKEYS

The chimpanzee is commonly infected with three species of parasites; reports of infection in gorillas require confirmation. The three parasites bear the closest resemblance to the three common human parasites, and Rodhain has proved the actual identity of the quartan form. The parasites are P. schwetzi (resembling P. vivax), P. reichenowi (resembling P. falciparum) and P. malariae (= rodhaini). The distribution of these infections is widespread in West Africa (Lower Congo, Cameroons, Sierra Leone and Liberia) but appears to peter out on the eastern borders of the Congo and Uganda.

While the quartan parasites of man and chimpanzee appear to be identical, there are minor biological differences in the other two species which prevent them from multiplying to any extent in each other's blood stream. The chimpanzee can act therefore as a reservoir of quartan malaria though the zoonotic importance must be limited to special areas in the forest. Rodhain has recently shown that P. schwetzi can be adapted to man by repeated blood passage, giving rise to a moderate parasitaemia and several paroxysms of fever.

Chimpanzee malaria offers great possibilities for research, though so far no really good mosquito host has been found, and the natural vectors are unknown.

MALARIA PARASITES OF THE LOWER MONKEYS

Up to the present, the sole representative of the genus Plasmodium to be found in African lower monkeys is P. gonderi, a vivax-like parasite of the mangabeys of West Africa. Its distribution is very limited, and infected animals so far have only been found in the Lower Congo.

This species is the African form of simian benign tertian malaria; the Asian form being P. cynomolgi and the South American, P. simiae. P. gonderi is not easily transmitted by the usual laboratory bred species of Anopheles; strains vary and Rodhain succeeded in effecting transmission of one strain with A. maculipennis. The natural vector is unknown.

The second "malaria parasite" of the lower monkeys is the well-known and widely distributed Hepatocystis (= Plasmodium) kochi. Practically all species of monkeys may carry this parasite, though it is commonest in Cercopithecus aethiops. The distribution is throughout tropical Africa and extends into the Union of South Africa. The species is of interest because it was the one in which exo-erythrocytic schizogony was first demonstrated to take place in the parenchyma cells of the liver; later macroscopic merocysts develop, which are easily visible on the surface of the organ. Even today, the true nature of this parasite is sometimes not recognized, and some workers refer to "schizonts" in the peripheral blood of what they still call Plasmodium kochi. Such forms are all sexual in character and develop into typical gametocytes. The vector of H. kochi remains undiscovered, and may well not be a mosquito; this is perhaps one of the most interesting research problems confronting workers in Africa, and its elucidation would help considerably in our understanding