Current considerations on a \textit{Loa loa} simian reservoir in the Congo

F. Noireau and J.P. Gouteux

\textit{Laboratoire d'Entomologie Médicale et de Parasitologie, ORSTOM, Brazzaville, Congo}

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Human filariasis due to \textit{Loa loa} is confined to the tropical rain-forest of Africa. In the same area, simian populations are infected with parasites which have no clear-cut morphological differences with human \textit{Loa} and exhibit a nocturnal microfilarial periodicity (Duke and Wijers, 1958). \textit{Chrysops langi} and \textit{C. centurionis} are probably responsible for their transmission among monkeys (Duke, 1955). Although it appears that human and simian strains of \textit{Loa} have evolved in two separate host-vector complexes (Duke and Wijers, 1958), the possibility of a transmission of simian \textit{Loa} to man cannot be ruled out. Fain et al. (1974) did observe in Zaïrian patients from the Mayumbe area \textit{Loa} microfilariae with a nocturnal periodicity. On the other hand, simian loiasis observations showing a marked diurnal periodicity were reported by Wanson and Rodhain (1953) and Fain (1978). It is most unlikely that \textit{C. langi} and \textit{C. centurionis}, which are strictly zoophilic, would be responsible for the transmission from monkey to man. Anthropophilic \textit{Chrysops} species (\textit{C. silacea} and \textit{C. dimidiata}) are the only potential vectors (Duke, 1955).

In our study area in the Congo, the Chaillu mountains, 5189 anthropophilic flies have been examined in one year. Of these, 3848 were \textit{C. silacea} (74.2%) and 1341 were \textit{C. dimidiata} (25.8%). Host preferences of anthropophilic \textit{Chrysops} were investigated with a view to identifying possibilities of transmission of \textit{Loa} between simian and human hosts. To this end a total of 408 blood-meal samples from \textit{C. silacea} (262 flies) and \textit{C. dimidiata} (146 flies) were analysed according to a procedure described by Staak et al. (1981). 88.9% and 90.4% of the samples from \textit{C. silacea} and \textit{C. dimidiata}, respectively, originated from man, and the rest from hippopotamus, rodents, wild pigs, wild ruminants and monitor lizards. No blood-meal from monkey was identified. Despite their propensity for coming into contact with monkeys at canopy level (Duke, 1955), our results show that \textit{C. silacea} and \textit{C. dimidiata} feed mainly on man and cannot be responsible for the transmission of parasites between simian and human hosts in that part of the Congo.

\textit{Correspondence address:} Dr. F. Noireau, Laboratoire d'Entomologie Médicale et de Parasitologie, ORSTOM, BP 181, Brazzaville, Congo.

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References