

Phlebotomus and Leishmaniasis

Outline of informal discussion at meeting of
Centro de Estudios Médicos "Ricardo Moreno Cañas"
San José, Costa Rica.

Marshall Hertig
Gorgas Memorial Laboratory, Panamá.

- i. *Phlebotomus* (sandflies, aliblanco) a numerous and widespread genus of bloodsucking midges in tropical and temperate zones.
 - a. Over 200 species in the New World, occurring from southern United States to Paraguay and northern Argentina. Over 60 species known from Panamá; 29 species from Costa Rica (work of Ricardo Rosabal).
 - b. Disease transmission: Papataci fever in Old World; bartonellosis (verruca peruana) in Peru, Ecuador and Colombia; leishmaniasis (visceral, cutaneous, muco-cutaneous) in Old and New Worlds.

2. The Leishmaniasis transmission problem.

The vast accumulation of epidemiological and experimental evidence, including series of transmissions to human volunteers of kala azar in India and oriental sore in Palestine, amply justifies the working hypothesis that *Phlebotomus* is the vector of the American leishmaniasis, although there has been no definite proof.

The reservoir of leishmaniasis is one of the most important unsolved phases of the whole problem. There is general agreement, with regard to American leishmaniasis, which is mostly associated with forests, that some animal other than man must be the reservoir. Attempts to find such naturally infected animals have thus far failed.

A number of rodents have been shown to be highly susceptible to *Leishmania* infection in experimental work. In Turkmenistan, Russian investigators have shown that a rodent, the gerbil, is the reservoir of oriental sore and that *Phlebotomus* breeds and lives in the burrows of these rodents, and also exhibits a high rate of *Leishmania* infection. Rodents, therefore, are among the

most likely suspects as reservoirs of leishmaniasis, and should receive first attention in future work.

3. Control of *Phlebotomus* and leishmaniasis.

Residual DDT applied to the inner walls and ceilings of houses and stables has been shown to give complete protection to the occupants. In closely built-up communities, house spraying also gives satisfactory control outdoors as well as indoors within the treated area. Corresponding decrease of disease transmission has also been demonstrated.

The problem of controlling leishmaniasis in the vast forested, and often sparsely inhabited, endemic areas of the New World, remains still to be investigated.
