In investigations in Kenya on the vectors of visceral leishmaniasis [caused by Leishmania donovani] in West Pokot District, adult phlebotomines were collected at resting sites (including termite hills [see preceding abstract]) and the species frequencies determined. Of 11 species of phlebotomine listed, Sergentomyia bedfordi (Newst.) (Phlebotomus bedfordi), S. affinis (Thdr.) (P. affinis) and S. antennata (Newst.) (P. antennatus) had fed on man. These 3 species and P. martini Parr. comprised 19, less than 1, 19 and 22%, respectively, of the catch. Of 3 species captured on man near the outdoor resting sites, P. martini comprised 94% of the catch of 112 flies; the other species were S. bedfordi and S. adleri (Thdr.) (P. adleri). P. martini comprised 98% of the flies taken on man in dwellings, and evidence is presented that this species is the vector of visceral leishmaniasis in the West Pokot Valley. It is suggested that termite hills act as resting sites for unfed adults, which move into dwellings and that these form resting sites for fed flies.ADDITIONAL ABSTRACT:Sandflies were collected from termite hills, rock crevices and holes in West Pokot district of Kenya. Phlebotomus martini, which is suspected of being a vector of Leishmania donovani, comprised 22% of 5676 flies collected. 409 P. martini were examined and promastigotes were found in the gut of 3; but promastigotes were found much more frequently in the guts of other species of Phlebotomus.