Review Article

The Phlebotomine sandfly fauna (Diptera: Psychodidae) of Kenya

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ABSTRACT

Visceral and cutaneous leishmaniases are endemic in some parts of Kenya, where they are transmitted by phlebotomine sandflies of genus Phlebotomus. This review is a compilation of the currently known distribution of phlebotomine sandflies in the parts of Kenya that have been studied, from the time sandflies were first reported in the country. So far 48 species of sandflies have been identified falling in the genera Phlebotomus and Sergentomyia. Genus Phlebotomus in Kenya is represented in five subgenera, namely Phlebotomus, Larroussius, Synphlebotomus, Paraphlebotomus and Anaphlebotomus. Genus Sergentomyia has the largest number of sandflies, and is represented in four subgenera, namely Sergentomyia, Sintonius, Grassomyia and Parvidens.

Key words Distribution; Kenya; Leishmania; Phlebotomus; Sergentomyia

Phlebotomine sandflies were first reported in Mombasa on the Kenya Coast in 1912¹. Later in 1930 and 1932, Sinton² identified and reported the presence of Sergentomyia schwetzi Adler, Theodor & Parrot, S. africana Newstead, S. yusafi Sinton and S. bedfordi congolensis Bequaert & Walravens²³. During the succeeding years, knowledge of the sandfly fauna of Kenya has widened as a result of sporadic collections of sandflies through attempts to find vectors of both cutaneous and visceral leishmaniases⁴–¹⁹.

Until 1982, 40 species of sandflies and subspecies had been reported to occur in Kenya²⁰. Following continuous collections in different parts of the country, so far 48 species of sandflies have been identified, belonging to the genera Phlebotomus Rondani & Berte and Sergentomyia Franca & Parrot. Sandflies of the genus Phlebotomus are important vectors of the leishmaniases whereas those in Sergentomyia are not known to transmit any disease but can be a biting nuisance²¹. Genus Phlebotomus in Kenya is represented in five subgenera, namely Phlebotomus, Larroussius, Synphlebotomus, Paraphlebotomus and Anaphlebotomus. Genus Sergentomyia has the largest number of sandflies, and is represented in four subgenera, namely Sergentomyia, Sintonius, Grassomyia and Parvidens. The sandfly species presented here are not exhaustive and it is possible to have more species reported from Kenya.

The genus Phlebotomus Rondani & Berte

The genus Phlebotomus can be easily identified when sandflies are mounted using Chloral hydrate gum on a slide. The ciborium usually has no teeth (also known as armatures) and can have only tiny spicules. The pigment patch is always absent. Hind ends of abdominal tergites 2–6 always have erect hair. Pleural setae are absent.

Subgenus Phlebotomus Rondani

In Kenya, this genus is represented by only one species, Phlebotomus (Phlebotomus) duboscqi Neveu-Lemaire. The male of this sandfly usually has 2 terminal and 3 subterminal spines, and 3 of which are arranged in a row. The paramere is trilobed. Females have spermathecae with 8 segments and a pharynx with a network of scales. It is the only known vector for human cutaneous leishmaniasis caused by Leishmania (Leishmania) major Yarkimoff & Schokhor²².

Phlebotomus duboscqi has a limited distribution and it is found in a small focus in Baringo district, Rift Valley province. It is closely related to P. (Phlebotomus) papatasi Scopoli which is found in the neighbouring Republic of Sudan. Phlebotomus duboscqi is known to rest, breed and feed in rodent burrows²³. Rodents such as Arvicanthis niloticus Geoffrey, Aethomys kaiser Noak, Taterillus