



Studies on *Anopheles (Kerteszia) homunculus* Komp (Diptera: Culicidae)

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Abstract

The present findings suggest that *Anopheles (Kerteszia) homunculus* may comprise more than one species. The rDNA ITS2 sequence data corroborate the presence of *An. homunculus* *l.s.* in Mata Atlântica, southern Brazil, and suggest that specimens from Trinidad may belong to an unnamed morphologically similar species. There is a need for additional studies to establish the geographical distribution of *An. homunculus* *l.s.* in continental South America and in Trinidad, especially in southern Mata Atlântica, Brazil.

Key words: *Anopheles homunculus*, species complex, morphology, ITS2, malaria

Introduction

The geographical distribution and involvement of *Anopheles (Kerteszia) homunculus* Komp in human malaria transmission are poorly known. Published literature records show that this species occurs on the eastern slopes of the Andes in Colombia and Bolivia, in Trinidad, Venezuela, the Guianas, Peru and southeastern Brazil (Forattini 1962, 2002; Zavortink 1973; Guimarães 1997). In Brazil, the species was reported in Santa Catarina (Coutinho 1947; Lima 1952; Martins 1958; Rachou 1958; Calado and Navarro-Silva 2005), Paraná (Forattini et al. 1970), São Paulo (Aragão 1964; Ferreira 1964) and Espírito Santo (Sallum et al. 2008).

Anopheles homunculus was described and named by Komp (1937) based on one adult male and three females collected as larvae taken from leaf axils of bromeliads in Restrepo (4° 10' 1.20"S 73° 25' 1.20"W), Department of Meta, Colombia, in September 1935. In the same year Komp named and validated *An. (Kerteszia) anoplus* from an adult male captured in December 1936 from the same locality as *An. homunculus*. Later, Lane (1953) synonymized *An. anoplus* with *An. homunculus*, and Stone and Knight (1956) designated a lectotype for *An. homunculus*.

Based on morphological characteristics of the adult female, *An. homunculus* is more similar to *An. cruzii* Dyar & Knab than to other species of the subgenus *Kerteszia*. Therefore, separation of these two species using adult female morphological traits can be difficult, especially if the specimens are poorly preserved. In contrast, characters of the male genitalia and the purple color of the immature stages of *An. homunculus* easily separate it from *An. cruzii* (Forattini 1962, 2002). Zavortink (1973) observed morphological variation in specimens of *An. homunculus* from Colombia in comparison with samples from Trinidad. These included wing spot characters, extent of white scaling on midtarsomere 3 and the scale pattern on the maxillary palpomeres. He judged that for an adequate evaluation of the taxonomic importance of those characters more specimens from Colombia were needed. We hypothesize that the morphological variation observed by Zavortink (1973) may be due to the fact that *An. homunculus* represents a species complex.