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The Afrotropical genera of Psychodini: Redefinition of the tribe, first Afrotropical record of *Perithreticus* Vaillant, 1973 and description of *Soeliella* gen. nov. (Diptera: Psychodidae: Psychodinae)

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Abstract

Psychodini is redefined based on morphological characters and newly recognized homologies in the male genitalia. It is hypothesised that the ground-plan aedeagus of Psychodini consists of a symmetrical bipartite aedeagus flanked by paired, symmetrical parameres; which in many lineages have become asymmetrical via the differentiation of phallomeres and parameres and/or via reduction of one paramere. The Afrotropical genera of Psychodini are reviewed and a key for their identification is provided.

Perithreticus Vaillant, 1973 is recorded from Tanzania based on the new species *Perithreticus anderseni* sp. nov. The genus is redefined, characterised by an elongate symmetrical aedeagus with paired subtriangular parameres, and a broad M-shaped epiproct with a concave anterior margin. *Soeliella* gen. nov. is described to include *Soeliella platypenis* sp. nov.; characterised by the presence of paired subtriangular parameres and the distiphallal elements broadly fused into a spatulate plate. *Rhipidopsychoda* Vaillant, 1991 is raised from synonymy based on novel character interpretations. *Rhipidopsychoda boettgeri* (Wagner, 1979) comb. nov. is redescribed and a key to the world species is presented. The species *Psychoda bilobata* Quate, 1957 and *Psychoda trilobata* Quate, 1957, *Psychoda morogorica* Wagner & Andersen, 2007 and *Philosepedon triangularis* Eaton, 1913 are of dubious generic placement and need revision.

Key words: taxonomy, systematics, moth flies, Tanzania

Introduction

Moth flies (Diptera: Psychodidae) are a species-rich group of small and usually hairy gnats distributed in all biogeographical regions. Although normally considered aquatic or semiaquatic in their larval stage, the family exhibits a large and still poorly explored ecological diversity. Around 3000 species are described worldwide, but this is clearly an underestimate as many areas of the world remain poorly sampled for psychodids (Curler & Moulton 2012). Wagner & Ibañez-Bernal (2009) suggest that there may be as many as 20 000 species of Psychodidae in the world.

The family is divided into six subfamilies, of which Psychodinae contains the highest number of species and exploits the broadest range of ecological niches (Wagner *et al.* 2008). Many of these flies are decomposers in fresh water; where they can be locally important in nutrient recycling (Duckhouse 1998). The group, however, comprises a wide range of larval feeding ecologies, which, apart from the Holarctic fauna, remain poorly studied (Vaillant 1971, Duckhouse 1998).

Despite several recent phylogenetic studies (Curler & Moulton 2012; Espindola *et al.* 2012), the systematics of Psychodidae remain poorly understood. As a result, different authors continue to follow widely different generic and tribal concepts (see e.g. Vaillant 1971, 1990; Duckhouse 1987; Ježek & van Harten 2005). Few of these tribes have been adequately defined based on phylogenetic criteria. Although some efforts have been made, these are only partial and leave many species and genera unplaced (Ježek 1983; Duckhouse 1985, 1987; Quate & Brown 2004).