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Revision of the subgenus *Diphaomyia* Vargas of *Culicoides* Latreille from India with description of a new species (Diptera: Ceratopogonidae)

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Abstract

Indian species of *Culicoides* Latreille, subgenus *Diphaomyia* Vargas are revised. The *Clavipalpis* group sensu Wirth & Hubert is transferred to the subgenus *Diphaomyia* with revised diagnoses of the subgenus and species groups. One species, *C. peculiaris* has been removed from the subgenus *Diphaomyia*, the remaining species are freshly reviewed with description of a new one, *Culicoides (Diphaomyia) soleamaculatus* sp. n. A key to the Indian species of *Diphaomyia* is presented here.

Key words: Diptera, Ceratopogonidae, *Culicoides*, *Diphaomyia*, *Clavipalpis* group, India

Introduction

Culicoides Latreille, a worldwide haematophagous biting midges comprises 29 subgenera and 39 unplaced species groups (Borkent, 2013). The subgenus *Diphaomyia* was established by Vargas (1960) to accommodate the ‘*iriartei*’ group of Wirth & Blanton (1959) and *Culicoides baueri* Hoffman was designated as its type. Atchley & Wirth (1979) divided the subgenus into the *Haematopotus* and *Baueri* species groups of the North American species after the wing pattern and male genitalic characters. Yu *et al.* (2005) placed *C. clavipalpis* in the subgenus *Avaritia* and *C. similis* in the *Pictipennis* group of the subgenus *Oecacta* while Dyce *et al.* (2007) opined for keeping out the *Clavipalpis* group from *Diphaomyia*. The subgenus at present contains 22 species, most of which are from the Nearctic (11), Neotropical (9), *C. mukerjii* Majumdar & Das Gupta and *C. peculiaris* Majumdar & Das Gupta from India (Borkent, 2013).

The paper is aimed to transfer the *Clavipalpis* species group to subgenus *Diphaomyia* and to provide updated diagnosis of these two taxa. In addition, this paper also includes the species *C. causeyi*, removes *C. peculiaris* from the subgenus and revises the Indian species of *Diphaomyia* with the description of *C. soleamaculatus* sp. n.

A comparative study of morphometric data (TABLE 1) and number & distribution of SCo (TABLE 2) are presented in tabular form.

Material and methods

Adult midges were collected in CDC light traps with the use of a trace amount of glacial acetic acid as attracting agent. Specimens were mounted on slides following phenol-balsam technique of Wirth & Marston (1968) and were identified following the keys and descriptions of Wirth & Hubert (1989) and Gangopadhyay & Das Gupta (1998). Morphology and terminology used here are after Dyce & Meiswinkel (1995) and with wing venation proposed by Spinelli & Borkent (2004). Measurements are expressed in millimeters (mm) with minimum and maximum suffixed by “n” denoting the number of specimens encountered. Photographs were taken under a Magnüs MLX-TR compound microscope with Instavision MVV3000 digital camera.

All specimens, including the types presently retained with the Collection of Diptera at the Department of

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