Review of the Neotropical blackfly subgenus *Inaequalium* Coscarón & Wygodzinsky (Diptera: Simuliidae) based on adults and pupal morphology

LUIS MIGUEL HERNÁNDEZ, ANTHONY JOHN SHELLEY, ANTONIO PAULINO ANDRADE DE LUNA DIAS & MARILZA MAIA-HERZOG
Review of the Neotropical blackfly subgenus *Inaequalium* Coscarón & Wygodzinsky (Diptera: Simuliidae) based on adults and pupal morphology

LUIS MIGUEL HERNÁNDEZ 1, ANTHONY JOHN SHELLEY 1, ANTONIO PAULINO ANDRADE DE LUNA DIAS 2 & MARILZA MAIA-HERZOG 2

1 Diptera Division, Simuliidae and Onchocerciasis Research Programme, Department of Entomology, The Natural History Museum, Cromwell Road, SW7 5BD, London, UK; luih@nhm.ac.uk
2 Laboratório de Simulídeos e Oncocercose (LSO), Instituto Oswaldo Cruz, Rio de Janeiro, Brasil

Table of contents

Introduction .................................................................................................................. 3
Materials & Methods ................................................................................................. 4
The subgenus *Inaequalium* ....................................................................................... 6
   Diagnosis of the subgenus *Inaequalium* ................................................................ 12
   Key to species of *Inaequalium* .............................................................................. 13
   Species descriptions, distribution and biology ....................................................... 15
   *Species inquirendae* ............................................................................................... 51
   Unavailable names ................................................................................................... 54
Acknowledgements ..................................................................................................... 55
References .................................................................................................................... 55
Material Examined ....................................................................................................... 80
Appendix 1. Diagnosis of the subgenus *Inaequalium* by various authors ................. 95

Abstract

The species of the subgenus *Inaequalium* are reviewed based on adult and pupal morphology. All main taxonomic characters are fully illustrated together with a key to pupae for species identification. Discussions on the species’ taxonomy and brief summaries of their distribution and biology are also provided. As a result of this study, 14 species are now included in the subgenus *Inaequalium*. They are placed into two species groups, the *botulibranchium* species group with three species and the *inaequal* species group with 11 species, including two that are treated as *species inquirendae*: *S. lurybayae* Smart and *S. parimaense* Ramírez-Pérez, Yarzábal, Takaoka, Tada & Ramírez, *Simulium lurybayae* Smart, *S. margaritatum* Pepinelli, Hamada & Luz and *S. maranguapense* (Pessoa, Ríos-Velásquez & Py-Daniel) are now placed in the *inaequal* species group. Two lectotypes are designated for the following species: *S. clavibranchium* Lutz and *S. diversibranchium* Lutz. *Simulium hauseri* (Coscarón & Coscarón-Arias) is regarded as an unavailable name.

Key words: Simuliidae, black flies, Neotropical region, taxonomy, genus *Simulium*, subgenus *Inaequalium*

Introduction

Species of the subgenus *Inaequalium* Coscarón & Wygodzinsky are widely distributed in the Neotropical Region, extending from Central America (Panama) to northeast Argentina (Coscarón 1987, 1991; Juñent & Coscarón, 2001). At present this subgenus includes 14 valid species (present paper), with the vast majority of