



Descriptions of three new species of Psychodidae (Diptera) from the southeastern United States

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Abstract

Adult males and females of *Trichomyia styloryncha* **sp. nov.** and *Australopericoma delta* **sp. nov.**, and all life stages of *Threticus thelyceratus* **sp. nov.** were collected during various biodiversity surveys in the southeastern United States. Descriptions of these three new species are given.

Key words: Psychodidae, new species, Nearctic, United States

Introduction

Quate and Vockeroth (1981) suggested that, although 91 species of Psychodidae were recorded in the Nearctic region, many species await discovery. Since then, 10 species of Nearctic Psychodidae have been described (Wagner 1984, Young & Perkins 1984, Ibáñez-Bernal 1992, Quate 2000, Wagner & Hribar 2004, Curler & Moulton 2008) and many undescribed species have been collected (Curler, unpublished). In the current paper, three new species of Psychodidae from the southeastern United States are described.

Material and methods

Study area. This study focused on specimens collected from multiple locations in eastern Tennessee, southern Alabama and western North Carolina.

Material. This research is based on an examination of adult males and females of *Trichomyia styloryncha* **sp. nov.**, *Australopericoma delta* **sp. nov.**, and *Threticus thelyceratus* **sp. nov.**, as well as fourth instar larvae and a single pupa of *T. thelyceratus*. Adult specimens were collected during 2006, 2007 and 2008 by Malaise trap and sweep netting and/or CDC trap (the latter for *Trichomyia* only) while larvae were collected from 2007–2008 by benthic sampling. Association of adult males and females is based on morphological similarity. Larva-pupa-adult association for *T. thelyceratus* was made using the ontogenetic method (Hogue & Bedoya-Ortiz 1989). A single larva was reared to pupation, but the pupa died before complete development of the imago. Nonetheless, the imago was developed well enough that its identity could be determined.

Specimens are deposited with the following (acronyms used throughout the text): LACM, Natural History Museum of Los Angeles County, Los Angeles, CA.; USNM, National Museum of Natural History, Smithsonian Institution, Washington, D.C.; GSMNP, Great Smoky Mountains National Park Insect Collection, Gatlinburg, TN.; CUAC, Clemson University Arthropod Collection, Clemson University, Clemson, SC; UTK, Department of Entomology and Plant Pathology, University of Tennessee, Knoxville, TN.

Specimen preparation. Specimens were fixed in 70 or 95% EtOH. Morphological studies were based on slide-mounted specimens for the pupa and adults, and scanning electron microscopy (SEM) for larvae. Slides