



Contributions to Nearctic *Stupkaiella* Vaillant (Diptera: Psychodidae)

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Abstract

The diagnosis of genus *Stupkaiella* Vaillant (Diptera: Psychodidae) is revised. Three new eastern Nearctic species, *Stupkaiella capricornuata* **sp. nov.**, *S. lasiostyla* **sp. nov.**, and *S. robinsoni* **sp. nov.**, and the 4th or final instar larva of *S. bipunctata* Kincaid are described and a key to adult males of the eastern Nearctic species of *Stupkaiella* is provided.

Key words: Psychodidae, Nematocera, Nearctic, United States

Introduction

The genus *Stupkaiella* (Psychodidae: Psychodinae: Pericomini) was proposed by Vaillant (1973) to include seven species from the Nearctic region. Vaillant considered the distribution of *Stupkaiella* as "North America and eastern Asia", but treated only Nearctic species in the original description. Wagner (1984) described an additional species, *S. mastelleri*, from Pennsylvania whereas Duckhouse (1987) placed *Stupkaiella* as a subgenus of *Thornburghiella* Vaillant and included five Himalayan species. Later, Jezek (2001) regarded *Stupkaiella* as a genus in a comparison with other Pericomine genera, but did not mention the work of Duckhouse (1987). In the current study, the status of this genus is corroborated and the diagnosis is revised, three new species of *Stupkaiella* from North Carolina and the larva of *S. bipunctata* Kincaid from Oregon are described, and a key to the adult males of all eastern Nearctic species of *Stupkaiella* is provided.

Methods and material

Study area. This study focused on adult specimens collected from multiple locations in western North Carolina as well as larval and adult specimens collected from a single location in western Oregon.

Material. This research is based on an examination of adult males and females of *Stupkaiella capricornuata* **sp. nov.**, *S. lasiostyla* **sp. nov.**, and *S. robinsoni* **sp. nov.**, As well as adult males and instar IV larvae of *S. bipunctata*. Adult specimens were collected during 2007, 2008 and 2009 by Malaise trap or emergence trap and/or sweep netting while larvae were collected from 1993–1995 by benthic sampling. Association of adult males and females is based on morphology, phenology and the location(s) where each species was collected (i.e., *S. capricornuata* begins emerging before, but is sympatric with *S. furcata* Vaillant and *S. recurrens* Vaillant; however, none of these three species was collected in the same location as *S. lasiostyla* or *S. robinsoni*, nor were the latter two collected together). Association of larval and adult *S. bipunctata* was based on a comparison of DNA sequence obtained primarily for use in a higher-level phylogenetic study of the family (Curler and Moulton, unpublished).

Specimens are deposited in the following repositories (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