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**A revision of the genera *Acrosathe* Irwin and Lyneborg,
Arenigena Irwin and Lyneborg, and *Litolinga* Irwin and
Lyneborg (Diptera: Therevidae: Therevinae)
from the Nearctic Region**

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Abstract

The genus *Acrosathe* Irwin and Lyneborg is revised and includes six species from the Nearctic Region. *Acrosathe falcata* **spec. nov.** is new to science. *Thereva novella* Coquillett is found to be a junior synonym of *Acrosathe vialis* (Osten Sacken). The genus *Arenigena* Irwin and Lyneborg is revised and includes five species from the Nearctic Region. *Arenigena albiseta* **spec. nov.**, *Arenigena bajaensis* **spec. nov.**, and *Arenigena floridensis* **spec. nov.** are new to science. *Psilocephala brunnea* Kröber is found to be a junior synonym of *Arenigena marcida* (Coquillett). The genus *Litolinga* Irwin and Lyneborg is revised and includes two species from the Nearctic Region. Each species is described or redescribed with illustrations of their genitalia, a key to their identification, and a map of their distribution.

Key words: *Acrosathe*, *Arenigena*, *Litolinga*, Diptera, Asiloidea, Therevidae, Therevinae, stiletto fly, morphology, New World

Introduction

Over the past twenty years, I have attempted to update the systematics of the New World Therevidae. The following revisions of *Acrosathe* (New World species), *Arenigena*, and *Litolinga* are a continuation of this scientific endeavor to update the descriptions, nomenclature, and description of new species of New World therevids. These three genera are placed in the higher Therevidae and can be keyed out in Irwin and Lyneborg (1981a:201).

Irwin and Lyneborg (1981a:223) described the genus *Acrosathe* for six species, from the Nearctic Region, but indicated that there were a number of undescribed species from the inland parts of western North America. They characterized the genus as possessing setae on the posterior surface of the midcoxa; having setae in and around the central depression of the prosternum; the male and female frons covered with pubescence; the parafacial possessing setae; the macrosetae on the mesonotum dark reddish brown to black; the male epandrium subequal to or longer in midline than wide; and the male aedeagus with accessory aedeagal processes (AAP) adjoining the distiphallus ventrally. *Acrosathe* is a Holarctic and Oriental genus with 15 species (8 in the Holarctic, 6 in the Nearctic, and one species in the Oriental Region) (Lyneborg 1989; Yang 2000, Yang *et al.* 2003). Yang *et al.* (2000:Fig. 2) constructed a hypothesis of the phylogenetic relationships within Therevidae from combined 28S rDNA and EF-1 α gene sequences using 34 genera of therevids. Their hypothesis showed *Acrosathe* nested in a clade with *Pandivirilia* Irwin and Lyneborg and *Tabudamima* Irwin and Lyneborg. In this revision of the Nearctic species of *Acrosathe*, one new species is described.

Irwin and Lyneborg (1981a:238) described the genus *Arenigena* for three species from the Nearctic Region, but indicated that there were a number of undescribed species. They characterized the genus as possessing setae on the posterior surface of the midcoxa; having setae in and around the central depression of the prosternum; the male and female frons covered with pubescence; the parafacial lacking setae; the cervical sclerite lacking macrosetae; the male distiphallus lacking a deep apical cleft; and the macrosetae on the mesonotum pale yellow. Hauser and Irwin (2003:742 Fig. 2) considered *Arenigena* a sister genus to *Ammonaios* although the two described species of *Arenigena* used in that analysis did not produce a monophyletic clade for *Arenigena*. In this revision, three new species of *Arenigena* are described.

Irwin and Lyneborg (1981a:234) described the genus *Litolinga* for three species from the Nearctic Region, although Webb and Irwin (1991:916 nom.) combined *Litolinga bolbocera* (Osten Sacken) with *Megalinga* Irwin and Lyneborg. They characterized the genus as possessing setae on the posterior surface of the midcoxa; having setae in and around the central depression of the prosternum; the male and female frons covered with pubescence; the parafacial lacking setae; the cervical sclerite lacking macrosetae; the male distiphallus lacking a deep apical cleft; macrosetae on mesonotum dark reddish brown; cell m_3 widely open; scape narrower or subequal to width of flagellum; male ocellar tubercle distinctly raised above level of occiput; one pair of scutellar macrosetae; and the gena projecting ventrally as a dark brown wedge.