



New *Azana* species from Western North America (Diptera: Mycetophilidae)

PETER H. KERR

California Department of Food and Agriculture, Plant Pest Diagnostics Branch, 3294 Meadowview Rd., Sacramento, CA, 95832–1448 USA. E-mail: pkerr@cdfa.ca.gov

Abstract

Two new species of fungus gnats (Diptera: Mycetophilidae), *Azana malinamoena* and *Azana frizzelli*, spp. nov., are described and figured from California. These species represent the first records of *Azana* for western North America. A diagnosis of the genus *Azana* Walker is presented and a provisional key for the New World species of the genus is given. The discovery of *A. malinamoena* and *A. frizzelli* in California and their apparently close relationship to *A. nigricoxa* Strobl from south-western Europe (rather than to the only other *Azana* species known from North America, *A. sinusa* Coher) implies a more complicated biogeographic history of this genus in North America, one that probably includes multiple, independent dispersal events.

Key words: Systematics, fungus gnats, new species, California

Introduction

The Mycetophilidae are a prolific group of dipterans that are both abundant and diverse throughout forests worldwide, particularly in temperate regions. While a number of phylogenetic studies have emerged recently to facilitate a greater appreciation and understanding of the large scale evolutionary patterns within the family (Søli 1997, Rindal & Søli 2006, Rindal *et al.* 2009), much of the group's diversity remains undocumented, even in North America.

The sciophiline genus *Azana* Walker is currently composed of 12 recent species that have been recorded from Europe (four species), tropical Africa (two species), Canary Islands (*A. palmensis* Santos-Abreu), China (two species), Sri Lanka (*A. asiatica* Senior-White), Brazil (*A. atlantica* Oliveira & Balbi), and the United States (*A. sinusa* Coher) (Table 1). It is also recorded from Baltic amber (*A. rarissima* Meunier). *Azana* is readily distinguished from other genera by its heavily reduced wing venation, where M is obsolete at its base, and M and Cu are not clearly branched. A remnant wing vein, CuA₁, is usually present near the wing margin (= M₄ of Matile 1998, Amorim *et al.* 2008a). The biology of *Azana* is unknown.

In North America, Johannsen (1912) and Fisher (1937) first reported *Azana* species from Eastern North America (Maine and Cape Breton I., Nova Scotia, respectively). Laffoon (1965) catalogued *Azana* from Nova Scotia and Minnesota, although the species remained unidentified. Specimen vouchers of these records remain unavailable. However Coher (1995) described *A. sinusa* from Massachusetts, Maine, and New Hampshire, and this species is thought to represent all prior records of the genus in the Nearctic Region. Two closely related species of *Azana* have recently been collected in California, however, that are easily differentiated from *A. sinusa* and others in the genus. These species are described and figured here.

Material and methods

Terminology for wing venation follows Vockeroth (1981) and that for thoracic and genitalic morphology follows Søli (1997). Whole specimens and genitalia were macerated in 10% KOH at approximately 95° C for