



North American species of *Agrostocynips* Diaz (Hymenoptera: Figitidae: Eucoilinae), parasitoids of Agromyzidae (Diptera): bionomics and taxonomy

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Abstract

The genus *Agrostocynips* Diaz is redescribed, as well as two species endemic to the Nearctic: *Agrostocynips diastrophii* (Ashmead) and *A. robusta* (Ashmead). Previous to this study, only Neotropical species of *Agrostocynips* were well diagnosed both taxonomically and biologically. *Agrostocynips* belongs to the *Zaeucoila* group of genera, which are Neotropical eucoilines that principally parasitize Agromyzidae (Diptera); among these genera, species of *Agrostocynips* are some of the few representatives that are found in the Nearctic. Detailed host records and biological notes are provided for the Nearctic species.

Key words: *Agrostocynips*, *Phytomyza*, *Liriomyza*, *Agromyza*, Agromyzidae, Eucoilinae, Figitidae, redescription

Introduction

Eucoiline wasps (Hymenoptera: Figitidae) are primary koinobiont endoparasitoids of cyclorrhaphan Diptera inhabiting a variety of habitats. Eucoilinae contains 85 genera and nearly 1000 species, and is by far the most diverse of all figitid subfamilies (Ronquist 1999). Prior to the revisionary work of Nordlander (Nordlander, 1976, 1978, 1980, 1981, 1982a, 1982b), no stable classification of Eucoilinae existed; Nordlander (1982b) summarized his findings by proposing informal genus groups defined by explicit morphological criteria, a first step towards a more logical and natural classification scheme.

The *Zaeucoila* group, as a whole, are mostly parasitoids of agromyzid Diptera (Buffington, 2002, 2004; Fontal-Cazalla *et al.* 2002; Buffington *et al.* 2007). *Agrostocynips* spp. have been reared from various *Liriomyza* Mik and *Phytomyza* Fallén hosts (Salvo *et al.* 2005; this study). The two chief genera of agromyzids that are of economic concern are *Liriomyza* and *Melangromyza* Hendel. Considerable work has been done looking at parasitoids of *Liriomyza* spp. in Texas (Wene 1955, Harding 1965, Chandler & Gilstrap 1989), Hawaii (Hara 1986, Johnson & Mau 1986, Johnson 1987, Lynch & Johnson 1987, Mason & Johnson 1988, Petcharat & Johnson 1988, Hara & Matayoshi 1990, Rathman *et al.* 1991, Rathman *et al.* 1995), Venezuela (Issa & Marcano 1994) and Japan (Saito *et al.* 1996).

The aim of this paper is to re-describe two common species of Eucoilinae reared from *Agromyza* Fallén spp., *Liriomyza* spp. and *Phytomyza* spp. along the southern and eastern United States, and provide detailed host data for these species. Understanding the co-evolution between parasitoids, agromyzids, and their host plants will help shape our understanding this species-rich community as a whole (Lewis *et al.* 2002). Further, since agromyzids in general can be of agricultural concern (as cited above), we feel these re-descriptions and diagnoses should prove valuable in the search for natural enemies of pestiferous agromyzids.