

Introduction

The *Sphecosoma* Butler genus group (*sensu* Hampson 1898) includes some of the most precise wasp mimics in the arctiid tribe Euchromiini. This group currently consists of 14 genera with 89 species (Zerny 1912a; J. Donahue, Natural Museum of Los Angeles County, CA, unpublished checklist). Like many mimetic Lepidoptera (e.g., *Macrocneme* Hübner, *Horama* Hübner), the generic groupings have been based on external features such as wing venation and coloration. In this study, we reexamined the generic limits and phylogenetic relationships of these genera using characters not associated with coloration or wasp mimicry. On the basis of the phylogenetic analyses, we propose a revised classification of these genera.

Biological Attributes

With their wasplike appearance and behaviors (jerky movements, buzzing noises), euchromiines are able to deceive even the most experienced insect collectors (Pliske 1975). Like many other euchromiines, members of the *Sphecosoma* group are excellent mimics of aggressive eusocial polybiine wasps (Vespidae: Polybiini) or *Polistes* wasps (Vespidae: Polistinae) (McCabe 1992) (Fig. 1). Most species within the group can be assigned to one of three mimetic types. One type, the “yellow *Polybia*” mimic, has a narrow “wasp waist” (metasoma-like), hyaline (transparent) wings with reduced, wasplike venation, and a yellow striped and banded body (Fig. 2). The second type, the “black *Polybia*” mimic, has hyaline wings, reduced venation, and either a jet black or an iridescent black body, with a narrow waist (Fig. 3). The “*Parachartergus*” type has a brown–black body (without a dramatic “wasp waist”) and brown–black scaled wings with a distal hyaline or white spot (Fig. 1).

In addition to mimicry, tiger moths are known for complex courtship behaviors. In several arctiid species, males approach stationary females and release short-range pheromones (Krasnoff and Roelofs 1992, Conner et al. 2000) or ultrasound (Sanderford and Conner 1992) to induce the female to mate. Euchromiines, including the *Sphecosoma* group, possess several types of male courtship structures involved in the release of short-range pheromones. Males