

## Taxonomy, cladistics and biogeography of the South American genus *Brachygasterina* Macquart (Diptera: Muscidae)

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### Abstract

*Brachygasterina* Macquart, an endemic South American genus, is revised to include *Brachygasterina andina* sp. nov. from Ecuador (Pichincha). All six species are redescribed, including *B. stuebeli* that was recently transferred to this genus. A cladistic analysis was performed including five of the six species of the genus and using *Delia platyura* (Meigen), an anthomyiid fly, and *Palpibracus veneris* (Bigot) as outgroup taxa. Four most parsimonious cladograms were found, all supporting the monophyly of the genus, as previously stated in the literature. According to the selected cladogram, the phylogenetic relationships of *Brachygasterina* species are as follows: (*D. platyura* (*P. veneris* ((*B. andina*, *B. stuebeli*) (*B. major* (*B. valdiviensis*, *B. violaceiventris*))))). A cladistic biogeographic analysis of the genus was conducted and is discussed. The pattern revealed by the species of *Brachygasterina* can be explained by vicariant events involving two lineages of *Brachygasterina* and the evolution of the Andes.

**Key words:** Biogeographic analysis, cladistic analysis, dispersal, vicariance, taxonomy

### Introduction

*Brachygasterina* Macquart, 1851 consists in general of dark metallic blue species. Until recently, the species were known to occur only in the south of the South American continent (Malloch 1934; Pont 1972; Lopes 1981; Carvalho 1989b; Pamplona & Couri 2000; Carvalho & Couri 2002a; Soares & Carvalho 2004).

Until the classic paper on Muscidae in the series “Diptera of Patagonia and South Chile” (Malloch 1934), only the *type species* *B. violaceiventris* Macquart was included in the genus, and Malloch then described *B. major*, a species that also occurs in southern Chile and Argentina. The genus *Euphaonia* Malloch was synonymised with