

SYSTEMATICS, MORPHOLOGY AND PHYSIOLOGY

A New Species of *Brachygasterina* Macquart from Chile (Diptera: Muscidae)MARCIA S. COURI¹, CLAUDIO J.B. CARVALHO² AND ADRIAN C. PONT³¹*Museu Nacional, Univ. Federal do Rio de Janeiro, Quinta da Boa Vista, 20940-040, Rio de Janeiro, RJ, Brazil*²*Depto. de Zoologia, Univ. Federal do Paraná, C. postal 19020, 81531-980, Curitiba, PR, Brazil*³*Oxford University Museum of Natural History, Parks Road, Oxford OX1 3PW, UK**Neotropical Entomology 36(2):229-232 (2007)*Uma Nova Espécie de *Brachygasterina* Macquart do Chile (Diptera: Muscidae)

RESUMO - O gênero *Brachygasterina* Macquart é Neotropical, com seis espécies registradas da Argentina, Chile, Equador e Colômbia. Uma nova espécie foi encontrada em numeroso material de múscidas não identificados, proveniente da América do Sul e pertencente à coleção do "California Academy of Sciences" (San Francisco, Califórnia, U.S.A.). *Brachygasterina maculata*, nova espécie, de Santiago, Chile, é aqui descrita e ilustrada e sua posição no gênero *Brachygasterina* é discutida.

PALAVRAS-CHAVE: Inseto, mosca, taxonomia, América do Sul, Ocidental, Andes

ABSTRACT - The genus *Brachygasterina* Macquart is Neotropical, with six species recorded from Argentina, Chile, Ecuador and Colombia. A new species was found among an extensive unidentified muscid material from South America in the collection of the California Academy of Sciences collection (San Francisco, California, U.S.A.). *Brachygasterina maculata*, new species, from Santiago, Chile, is here described and illustrated, and its position in the genus *Brachygasterina* is discussed.

KEY WORDS: Insect, fly, taxonomy, Western South America, Andes

Brachygasterina Macquart is a Neotropical muscid genus and for many years after its original description it was known only from Argentina and Chile. The genus is classified in the Subfamily Azeliinae, Tribe Reinwardtiini (Carvalho 1989, Carvalho & Couri 2002, Carvalho *et al.* 2005, Carvalho & Pont 2006).

According to the recent Neotropical muscid catalogue (Carvalho *et al.* 2005), the genus includes four species as follows: *B. fulvohumeralis* (Malloch); *B. major* Malloch; *B. stuebeli* (Röder) and *B. violaceiventris* Macquart. *B. valdiviensis* (Pamplona & Couri 2000), recently transferred from *Palpibracus* by Soares & Carvalho (2004), should be added to this list. Recently, the genus was also recorded from Colombia and Ecuador, through the assignment of *Hydrotaea stuebeli* Röder, 1886 to this genus (Carvalho *et al.* 2005) and the description of a new species (Carvalho & Pont 2006).

Malloch (1934) gave a key to *B. violaceiventris* and *B. major*, and Carvalho & Couri (2002) provided a key that also included *B. fulvohumeralis*. The most recent contribution to *Brachygasterina* was made by Carvalho & Pont (2006), who gave a cladistic and biogeographical analysis, as well as a redescription of all five previously known species, together with the description of a new species from Ecuador.

The main aim of this contribution is to describe a new *Brachygasterina* species from Chile and to discuss its position within this genus.

Material and Methods

The new species described here was found in the extensive unidentified muscid material from South America belonging to the Diptera collection of the California Academy of Sciences (CAS, San Francisco, California, U.S.A.).

The female holotype and the paratypes are deposited in the CAS collection, except for one paratype each in the Museu Nacional, Rio de Janeiro, Brazil (MNRJ), and the Natural History Museum, London, UK (BMNH), as indicated in the list of material examined.

The dissected terminalia were placed in a microvial with glycerin, pinned together with the respective specimens.

The colour photos were made using Auto-Montage Syncorscopy/JVC through an optical stereomicroscope Leica M 420, and the drawings were made with the optical compound microscope Olympus CH-2 with a camera lucida attachment.

The terminology follows McAlpine (1981).

***Brachygasterina maculata*, Couri, Carvalho et Pont, new species**

Type. Female holotype, deposited in the CAS, labelled:

“Chile: Santiago: Quebrada de la Plata, Near Maipu, 510 m, 33° 30'S 70° 55'W, Malaise, M. E. Irwin, 10 November 1966”.

Diagnosis. First flagellomere strongly dilated (Fig. 1); palpus brown; frons dark brown; female without interfrontal setae; katepimeron bare; dorsum of mesonotum shining blackish-brown with three grey pollinose vittae along acrostichal and dorsocentral rows of setae; postpronotum and scutellum concolorous with rest of mesonotum (Fig. 2); pleura shining blackish-brown (Fig. 3); abdomen blackish-brown with light grey dust, with yellow marks at sides of tergites 1+2 and 3, and most of tergite 5 yellow; sternite 5 with a heart-shaped yellow area on basal two-thirds (Fig. 4); abdomen yellowish on ventral surface.

Etymology. The name of this species comes from the Latin word *macula*, spot, in reference to the very characteristic yellow marks on the abdomen.

Female. Length. Body: 7-8 mm, wing: 7.5-8 mm

General colour. Ground-colour dark brown; fronto-orbital plate (thinly), parafacial, gena and occiput silvery-white pruinose; with a matt patch at level of profrons. Palpus brown. Antenna dark brown. Dorsum of mesonotum shining blackish-brown with three grey pollinose vittae along acrostichal and dorsocentral rows of setae; postpronotum and scutellum concolorous with rest of mesonotum (Fig. 2); pleura shining blackish-brown (Fig. 3); calypters dirty white, with margins brown, lower one more intensely so; haltere brown. Wing clear. Legs brown. Abdomen blackish-brown, light grey dusted, with yellow marks on sides of tergites 1+2 and 3; tergite 5 mostly yellow; abdomen with yellow lateral marks and yellowish on ventral surface, sternite 1 black, tergite 5 with a heart-shaped yellow area on basal two-thirds (Fig. 4).

Head. Distance between eyes about one-third of head-width. Eyes with short hairs. Frontal row with six pairs of setae. Inner and outer vertical setae developed, similar in length. Facial ridge without setulae. Antenna inserted at middle level of eye; first flagellomere strongly dilated (Fig. 1), about 1.6 the length of pedicel. Parafacialia wide, about 1.2 of the first flagellomere. Arista bare. Palpus falciform.

Thorax. Dorsocentrals 2:4; acrostichals 2:2-3, postsutural, placed in posterior half of mesonotum; three postpronotals; one presutural and two postsutural intra-alars; one strong prealar, subequal to anterior notopleural seta; one presutural and two postsutural supra-alars. Notopleuron with two setae, similar in size and with some setulae close to the posterior one. Scutellum laterally bare and with one pair of strong basal to sub-basal setae, one preapical lateral, one apical, both long and one preapical discal short. Katepisternals 2:2. Lower calypter about 1.6 the length of upper one. Wing veins bare, except costa; R4+5 and M1+2 running parallel up to wing margin. Fore femur with posteroventral, posterodorsal and dorsal rows of setae; fore tibia with two anterodorsal setae on apical third, one preapical anterodorsal seta and one apical

ventral seta. Mid femur with an anterodorsal row of setae on basal two-thirds; one complete posteroventral row, shorter on apical third; one anterodorsal and two posterior preapical setae; mid tibia with two posterior setae on middle third; one apical seta on each of anteroventral, ventral, posteroventral surfaces. Hind femur with a complete row of anterodorsal setae; anteroventral surface with 3-5 short setae on basal third and 3-5 on apical third, without posteroventrals. Hind tibia with 2-3 anteroventral and two anterodorsal setae on middle third; one posterodorsal (“calcar”) on apical third, and one dorsal and one anterodorsal preapical seta.

Abdomen. Tergite 5 with a discal and a preapical row of fine setae. Sternite 1 bare.

Ovipositor. Long, tergite 7 enlarged basally, sternite 8 with three setae; cerci long (Figs 5, 6). Three spermathecae.

Male. Unknown.

Other material examined. Paratypes labelled the same as holotype, 550m, 12 March 1966 (one female, CAS), 3 October 1966 (one female, CAS), 550 m, 12 March 1966 (one female, BMNH); Rinconada, Maipu, 330 31'S 700 47'W, Malaise, M. E. Irwin, 775 m, 29 August 1966 (two females, 1 MNRJ, 1 CAS); 510 m, 24 August 1966 (one female, CAS).

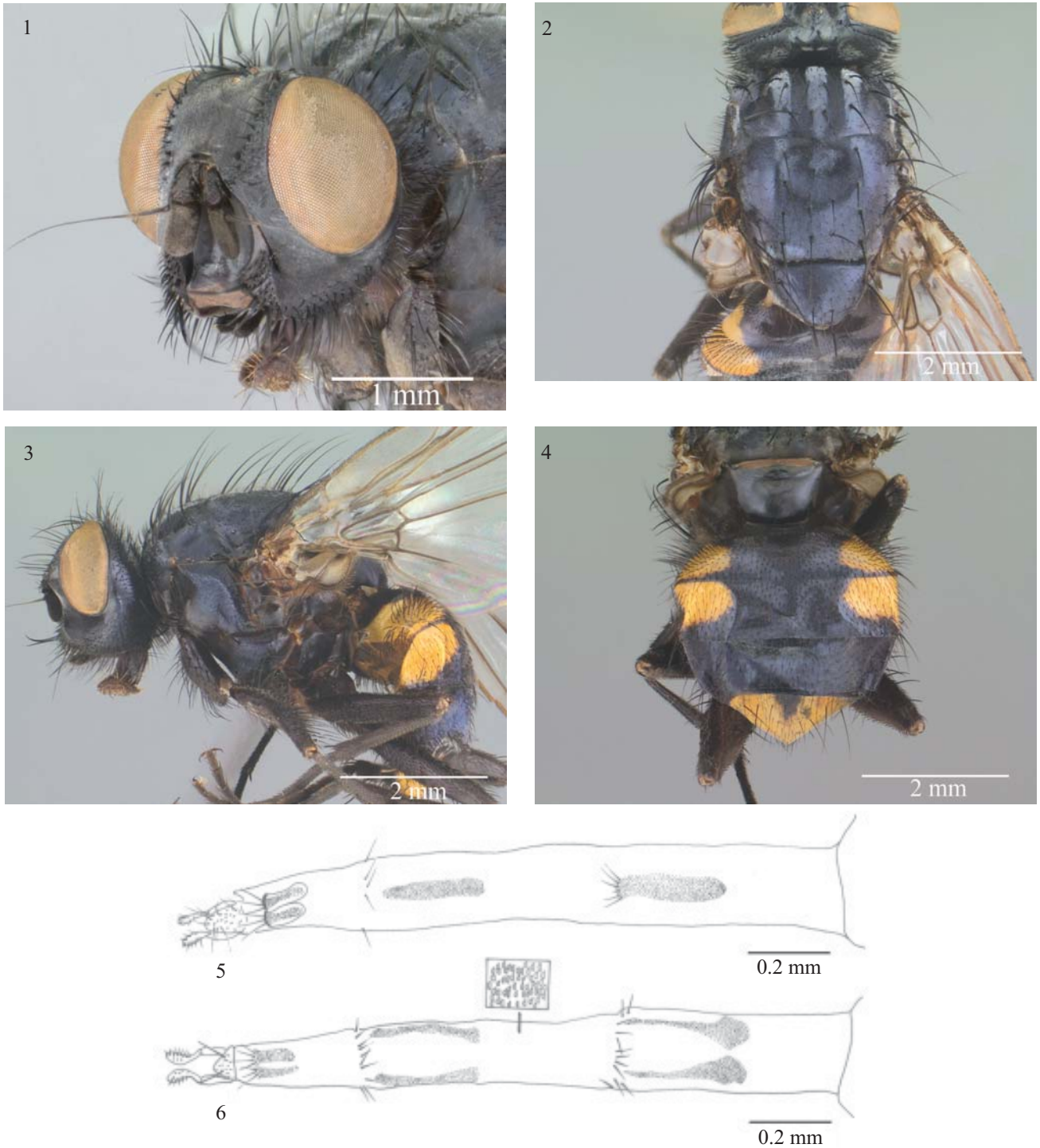
Discussion

B. maculata, new species can be easily distinguished by its colour pattern and also by characters that are not found among its congeners such as katepisternals 2:2, palpus not dilated and female frons without interfrontal setae.

In the generic key given by Carvalho & Couri (2002), it runs to couplet 58 where it fits the group of muscids with a dilated flagellomere and then to *Brachygasterina*, because of the strongly enlarged and short flagellomere, which is a synapomorphy of this genus (Carvalho 1989).

However, the scope of *Brachygasterina* has to be enlarged to include the new species, as it shows some characters which do not agree with this genus: the palpus of the new species is not dilated, katepisternals are 2:2, and the frons lacks interfrontal setae. Some of these characters are actually present in the type-species of *Euphaonia* Malloch (*Euphaonia fulvohumeralis* Malloch), which was synonymized by Carvalho (1989) with *Brachygasterina*.

The colour pattern of *B. maculata* also resembles that of some species of *Palpibracus* Rondani, but the new species does not have a posteroventral seta on mid tibia, both notopleural setae are of the same size and the notopleuron has sparse setulae. In the cladistic analysis of the species of *Palpibracus* performed by Soares & Carvalho (2005), species of seven genera, including species of *Brachygasterina*, *Psilochaeta* and *Dalcycella* Carvalho were used as outgroups. This analysis suggested that *Brachygasterina*, *Palpibracus*, *Psilochaeta* and *Dalcycella* should be treated as a monophyletic unit and possibly as a single genus.



Figs. 1-6. *B. maculata* Couri, Carvalho et Pont, new species, female. 1. Head, fronto-lateral view; 2. Mesonotum, dorsal view; 3. Body, lateral view; 4. Abdomen, dorsal view; 5. Ovipositor, dorsal view; 6. Ovipositor, ventral view.

A cladistic analysis was performed with *B. maculata* included in the same data matrix used by Soares & Carvalho (2005) for *Palpibracus* species, where seven genera were used as outgroups. The new species was not positioned in the *Brachygasterina* clade, but rather among an array of the outgroups species, suggesting that the concept of

Brachygasterina should be enlarged to include *Palpibracus*, *Psilochaeta* and *Dalcycella* as a monophyletic unit.

B. maculata was also included in the data matrix of Carvalho & Pont (2006) for five species of *Brachygasterina*. Not unexpectedly, *B. maculata* nested outside the clade of *Brachygasterina* species.

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