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## *BITHORACOAETA* STEIN: DESCRIPTIONS AND FIRST RECORDS FROM COLOMBIA (DIPTERA, MUSCIDAE, COENOSIINAE)

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### ABSTRACT

*Bithoracochaeta Stein is a Neotropical genus of Muscidae, Coenosiinae, known from ten species recorded from Argentina, Brazil, Costa Rica, Cuba, Ecuador, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, Surinam, Uruguay and Venezuela. The genus is recorded for the first time from Colombia, with the occurrence of the following species: B. annulata Stein, 1911; B. calopus (Bigot, 1885); B. flavicoxa Malloch, 1934; B. leucoprocta (Wiedemann, 1830); B. maricaensis Couri & Motta, 1995 and B. varicornis (Coquilett, 1900). B. nigricoxa, spec. nov. is described from Mexico and Brazil. A brief diagnosis of the known species and a complete description of the new species are given.*

KEYWORDS. Morphology, Descriptions, Terminalia, Taxonomy

### INTRODUCTION

*Bithoracochaeta* Stein is a Neotropical genus of Muscidae, Coenosiinae, known from 10 species: *B. annulata* Stein, 1911; *B. calopus* (Bigot, 1885); *B. equatorialis* Couri & Marques, 2001; *B. flavicoxa* Malloch, 1934; *B. leucoprocta* (Wiedemann, 1830); *B. maricaensis* Couri & Motta, 1995; *B. nigricornis* Malloch, 1934; *B. pacifera* (Giglio-Tos, 1893); *B. plumata* Albuquerque, 1955 and *B. varicornis* (Coquilett, 1900). They are recorded from many of the Latin American countries as follows: Argentina, Brazil, Costa Rica, Cuba, Ecuador, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, Surinam, Uruguay and Venezuela (Carvalho *et al.*, 2005).

The genus is easily distinguished from the other Coenosiinae, Coenosiini, by the presence of only two

dorsocentral postsutural setae, basal scutellar pair of setae shorter than the apical one and by the presence of three long median setae on hind tibia, on anteroventral, anterodorsal, and posterodorsal surfaces and in most of the species a fourth long median posteroventral one.

In the identification key to the Neotropical genera of the Muscidae (Carvalho & Couri, 2002), *Bithoracochaeta* is close to *Schoenomyzina* Malloch, which also has only two dorsocentral postsutural setae and from which it can be distinguished by the other characters mentioned above.

*Bithoracochaeta* is placed in the tribe Coenosiini and, according to Couri & Pont (2000), forms a monophyletic clade together with *Insulamylia* Couri, as the loss of the postsutural intralar seta is a synapomorphy for them.

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This paper aims to describe a new one from Mexico and Brazil and to record the presence of the genus *Bitboracochaeta* from Colombia for the first time, on the basis of five known species. A brief diagnosis of the known species and a full description of the new one are given.

#### MATERIAL AND METHODS

The majority of the material studied in this paper was collected in Colombia in 1955 by E.I. Schlinger and E.S. Ross and is deposited at California Academy of Sciences (CAS, San Francisco, California) collection. Most of the specimens are not in good conditions.

The dissected terminalia were clarified in a solution of 10% potassium hydroxide for 24 hours. They were then dissected in glycerol, drawn, stored in a microtube with glycerol, and attached to the pin bearing the specimen.

All studied material is deposited at CAS, unless otherwise indicated in the examined material.

#### RESULTS AND DISCUSSION

New records of *Bitboracochaeta* from Colombia are: *B. annulata*; *B. calopus*; *B. flavicoxa*; *B. leucoprocta*; *B. maricaensis* and *B. varicornis*, which can be easily segregated in the keys given by Malloch (1934) and Couri & Carvalho (2002).

##### *B. annulata* Stein

*Bitboracochaeta annulata* Stein, 1911:178.

*Diagnosis:* General color brown, with grey pollinosity; flagellomere yellow; arista with longer cilia on basal two-thirds; katapisternum with many ground cilia; fore coxa brown with yellow apex; mid and hind femora mainly yellow, except for the extreme brown apices; hind tibia with four median long setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; hypandrium with spines.

Previously recorded from Brazil, Guyana, Peru and Surinam.

*Examined material:* Colombia: 6 mi. W. Cali. Valle, 1630 m., 20/III/1955, EI Schlinger and ES Ross coll., 4 males (1 MNRJ); 32 mi. N. Pasto Narino, 1550 m., 4/III/1955, EI Schlinger and ES Ross coll., 1 male.

##### *B. calopus* (Bigot)

? *Hydrophoria calopus* Bigot, 1885:275.

*Diagnosis:* General color brown, with grey pollinosity; antenna and palpus entirely dark brown; arista with very short hairs; mesonotum with five vittae, the median one not reaching the disk of scutellum; katapisternum with 1-3 extra setae besides the usual ones; fore femur more or less extensively brown; mid and hind femora brown at least in middle and extreme apices; hind tibia with four long median setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; tubular hypandrium short.

Previously recorded from Argentina, Brazil and Mexico

*Examined material:* Colombia: 40 mi. s. Cali. Valle, 1140 m., 6/III/1955, EI Schlinger and ES Ross coll., 1 male.

##### *B. flavicoxa* Malloch

*Bitboracochaeta flavicoxa* Malloch, 1934:228.

*Diagnosis:* Parafacial hardly visible in lateral view; mesonotum with no traces of vitta; fore coxa entirely yellow in male and female; male with all femora and tibia yellow, female with mid and hind femora with apices somewhat brown; hind tibia with three long median setae on anteroventral, anterodorsal and posterodorsal surfaces, the posteroventral lacking; abdomen glossy black, tergites 3-5 with a transverse mark of grey dust on each side near base.

Previously recorded from Brazil and Costa Rica

*Examined material:* Colombia: 3 mi. W. Villavicencio, Meta, 920 m., 11/III/1955; EI Schlinger and ES Ross coll., 1 male and one female.

##### *B. leucoprocta* (Wiedemann)

*Bitboracochaeta leucoprocta* Wiedemann, 1830:433.

*Diagnosis:* Flagellomere fuscous; mid and hind femora mainly yellow, brown at extreme apices at least on dorsal surface; inferior calypter slightly widened from base to near middle; hind tibia with four long median setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; hypandrium long, without spines.

According to Malloch (1934); in some males the fore femur is swollen at base and has a long and strong posterior seta near the base in the central series, below which there is another series of much shorter, stout upcurved setae that decreases in length and strength as they approach middle.

Previously recorded from Argentina, Brazil, Costa Rica, Cuba, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, Uruguay and Venezuela

*Examined material:* Colombia: 6 mi. W. Cali. Valle, 1630 m, 20/III/1955, EI Schlinger and ES Ross coll., 2 females (1 MNRJ); 3 mi. W. Villavicencio, Meta, 920 m., 11/III/1955; EI Schlinger and ES Ross coll., 1 female; Peru: Monson Valley, Tingo Maria; 10/XI/1954; EI Schlinger and ES Ross coll., 1 female.

#### ***B. maricaensis* Couri & Motta, 1995**

*Bithoracochaeta maricaensis* Couri & Motta, 1995:211.

*Diagnosis:* General color dark brown; antenna dark brown with silver pruinescence; palpus brown; mesonotum with the median vitta hardly visible; katepisternum with very few ground setulae; legs dark brown, fore coxa brown with yellow apex; hind tibia with four median long setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; hypandrium with spines.

Previously recorded only from Brazil.

*Examined material:* Colombia: 6 mi. W. Cali. Valle, 1630 m, 20/III/1955, EI Schlinger and ES Ross coll., 4 males; 32 mi. N. Pasto Narino, 1550 m, 4/III/1955, EI Schlinger and ES Ross coll., 1 male.

#### ***B. nigricoxa* spec. nov.**

(Figs. 1-6)

*Type:* Male holotype, deposited at CAS, labeled: Mexico: Jalisco, 21 mi., NE, Tepatitlan, 18/VIII/1960, PH Arnaud Jr., ES Ross and DC Rentz.

*Diagnosis:* Antenna brown, apex of pedicel yellow; mesonotum with five vittae, the median one not reaching the disk of scutellum; all coxae brown with grey pollinosity; legs yellow, fore femur dark brown on basal two thirds; hind tibia with four long median setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; hypandrium with spines.

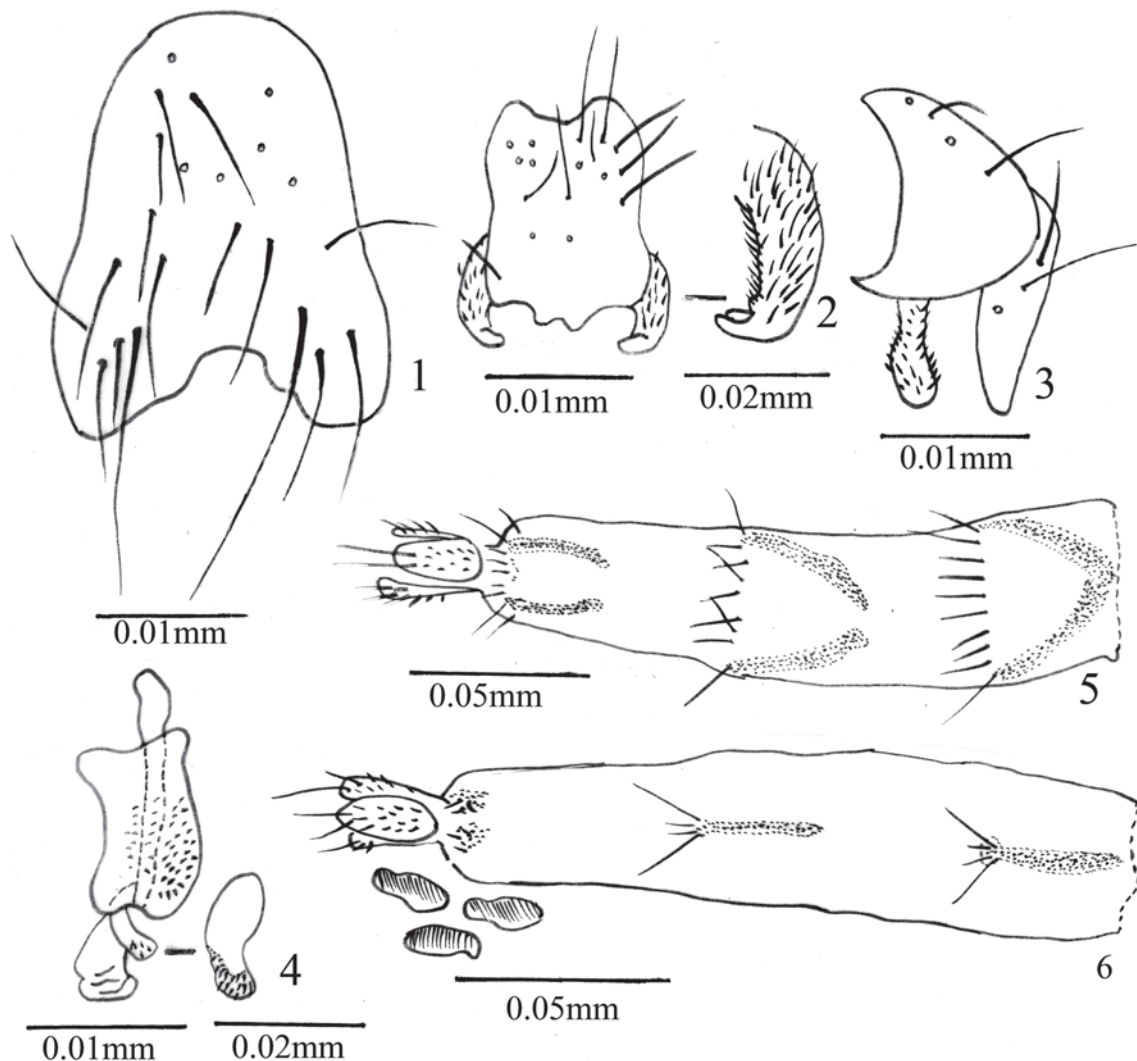
*Male:* Body length: 4.2 mm; wing: 4.5 mm

*General coloration:* Ground color brown with grey pollinosity; frons dark brown with few grey pollinosity; parafacial, fronto-orbital plate and gena brown, silver pollinose. Palpus light brown; antenna brown, apex of pedicellum lighter. Dorsum of mesonotum with 5 brown vittae, the median one well marked and broader than the others, almost reaching base of scutellum. Calypters and halter whitish yellow. Wing clear. All coxae dark brown with grey pollinosity; rest of legs yellow, except for the fore femur, which is brown on basal two-thirds. Abdominal tergites 1+2-5 with median and lateral brown marks, very faint marked in some specimens.

*Head:* Distance of eyes at vertex about one third of head width. Frontal row with 4 pairs of setae. Inner and outer vertical setae developed and similar in length. Ocular setae long. Antenna short, inserted a little above the medium level of eyes; with flagellomere measuring about 1.5 times the pedicel length. Palpi falciform.

*Thorax:* Dorsocentrals 1:2; acrostichals short, in two series; 1 postpronotal; 1 presutural; 1 intralar; 2 supralars; 2 postsupralars. Notopleuron with two setae, similar in size. Scutellum with one short pair of basal setae and one strong apical. Anepisternum with 2 long setae, each one of them preceded by a fine one. Katepisternals 1:1:1, with an extra anteroinferior seta. Anepimeron bare. Lower calypter about 1.8 the length of the upper. Wing veins  $R_{4+5}$  and  $M_{1+2}$  parallel at apex. Legs with fore femur with a posterior, posterodorsal and posteroventral row of sparse setae, the last one longer; fore tibia with a long median posterior seta and another one preapical; dorsal surface with two preapical setae; claws and pulvilli well developed; mid femur with three long and sparse anteroventral setae on middle third; posterior surface with two preapical setae; hind femur with an anteroventral and an anterodorsal row of setae on basal two thirds followed by a preapical one; hind tibia with the four characteristic median setae, on anterodorsal, anteroventral, posterodorsal and posteroventral surfaces; preapical dorsal and anterodorsal setae and one long anteroventral apical.

*Abdomen:* Lateral pair of setae on tergites 1+2 and 3; tergites 4-5 with four sparse setae on disc and tergite 5 also on apex. Sternite 5 a little longer than wider, with two long setae on posterior margin (Fig. 1).



FIGURAS 1-6. *Bithoracochaeta nigricoxa*, spec. nov. 1. Male, sternite 5; 2. Male, cercal plate and surstylus, dorsal view; 3. Male, cercal plate and surstylus, lateral view; 4. Male, aedeagus, lateral view; 5. Female, ovipositor, dorsal view; 6. Female, ovipositor, ventral view and spermathecae.

**Terminalia:** Cercal plate without incisions on anterior and posterior margins, surstylus with short setae in its all extension (Figs. 2-3). Hypandrium tubular, long, with spines; gonopod with spines at apex (Fig. 4).

**Female:** Length. 4.8 mm, wing: 4.8 mm

Similar to male.

**Ovipositor:** Long, with thin tergites and sternites, as in Figs. 5-6. Spermatheca relatively large as in Fig. 6.

**Other examined material:** Paratypes labeled as holotype, 1 male and 1 female (MNRJ).

BRAZIL: São Paulo: Estação Biológica Boracéia, 850 meters 27/II/1967, ME Irwin, 1 male; Santa Catarina, Nova Teutonia, IX/1977, Fritz Plaumann, 1 male.

## DISCUSSION

Chaetotaxy among *Bithoracochaeta* species is very homogeneous and most of the species are segregate or by color or by male terminalia characters. *B. nigricoxa*, spec. nov. differs from the other species with four long median setae on hind tibia by the dark brown coxae, the vittae on dorsum of mesonotum and the dark marks on abdominal tergites. The male terminalia show

some peculiar characters as surstylus with short and fine setae in its all extension and gonopod with short spines at apex (holotype and paratype male dissected). In Couri & Carvalho (2002) key, the new species approaches couplet 3, where it can be distinguished by the totally yellow mid and hind femora.

### *B. varicornis* (Coquillet)

*Coenosia varicornis* Coquillet, 1900:256.

*Diagnosis:* Antenna with escape, pedicel and base of flagellomere dark brown, rest of flagellomere yellow; mesonotum with a broad dark brown median vitta, almost reaching apex of scutellum; femora almost all brown; fore femur more extensively brown; mid and hind femora brown at least on dorsal surface; hind tibia with fourth long median setae on anteroventral, anterodorsal, posteroventral and posterodorsal surfaces; hypandrium with spines.

Previously recorded from Brazil and Puerto Rico.

*Examined material:* Colombia: 6 mi. W. Cali. Valle, 1630 m, 20/III/1955, EI Schlinger and ES Ross coll., 2 females (1 MNRJ) and two specimens without abdomen; 40 mi. S. Cali Valle, 1140 m, 6/III/1955, EI Schlinger and ES Ross coll, 1 male.

### RESUMO

*Bithoracochoeta Stein é um gênero Neotropical de Muscidae, Coenosiinae, com 10 espécies descritas da Argentina, Brasil, Costa Rica, Cuba, Equador, Guiana, Jamaica, México, Panamá, Paraguai, Peru, Porto Rico, Suriname, Uruguai e Venezuela. O gênero é registrado pela primeira vez na Colômbia, com a ocorrência das seguintes espécies: B. annulata Stein, 1911; B. calopus (Bigot, 1885); B. flavicoxa Malloch, 1934; B. leucoprocta (Wiedemann, 1830); B. maricaensis Couri & Motta, 1995 e B. varicornis (Coquillet, 1900). B. nigricoxa spec. nov. é descrita do México e do Brasil. Uma breve diagnose das espécies conhecidas e a descrição completa da nova espécie são apresentadas.*

PALAVRAS-CHAVE. Morphologia, Descrições, Terminalia, Taxonomia.

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### REFERENCES

- Bigot, J.M.F. 1885. Diptères nouveaux ou peu connus. 25e partie. XXXIII. Anthomyzides nouvelles. *Annales de la Societe Entomologique de France*, 4:263-304.
- Carvalho, C.J.B. de & Couri, M.S. 2002. Basal groups. Part I. In: Carvalho, C.J.B. de (Ed), *Muscidae (Diptera) of the Neotropical Region: taxonomy*. Editora Universidade Federal do Paraná, Curitiba, p. 17-132.
- Carvalho, C.J.B. de; Couri M.S.; Pont A.C.; Pamplona D. & Lopes S.M. 2005. A Catalogue of the Muscidae (Diptera) of the Neotropical Region. *Zootaxa*, 860:1-282.
- Coquillet, D.W. 1900. Report on a collection of dipterous insects from Puerto Rico. *Proceedings of the United States National Museum*, 22:249-270.
- Couri, M.S. & Carvalho, C.J.B. de. 2002. Apical Groups. Part II. In: Carvalho, C.J.B. de (Ed), *Muscidae (Diptera) of the Neotropical Region: taxonomy*. Editora Universidade Federal do Paraná, Curitiba, p. 133-257.
- Couri, M.S. & Motta, H.C.G. 1995. Uma nova espécie de *Bithoracochoeta* Stein, 1911 (Diptera, Muscidae, Coenosiinae). *Revista Brasileira de Zoologia*, 12:123-125.
- Couri, M.S. & Pont, A.C. 2000. Cladistic analysis of Coenosiini (Diptera, Muscidae, Coenosiinae). *Systematic Entomology*, 25:373-392.
- Malloch, J.R. 1934. Muscidae. In: *Diptera of the Patagonia and South Chile*: based mainly on material in the British Museum (Natural History). Trustees of the British Museum, London, Part VII, Fascicle 2, p. 171-346.
- Stein, P. 1911. Die von Schnuse in Südamerika gefangenen Anthomyiden. *Archiv für Naturgeschichte*, 77:61-189.
- Wiedemann, C.R.W. 1830. *Aussereuropäische zweiflügelige Insekten*. Part II. Schultzischen Buchhandlung, Hamm.

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