

## Taxonomic status of three acalyptrate dipterous species (Diptera: Milichiidae, Chiropteromyzidae)

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### Abstract

The taxonomic status of three acalyptrate dipterous species, namely *Leptometoa niveipennis fascifrons* (Becker), *Leptometoa broerseii* de Meijere and *Milichia speciosa canariensis* Becker, is revised. After the study of their type material, the following results have been obtained: (a) *Leptometoa fascifrons* (Becker) is a valid species, not a subspecies of *Leptometoa niveipennis* (Strobl); (b) *Leptometoa broerseii* de Meijere belongs to the species *Chiropteromyza wegelii* Frey, this last species being a junior synonym of *Leptometoa broerseii*; consequently its correct name is *Chiropteromyza broerseii* (de Meijere) and it belongs to the family Chiropteromyzidae, not Milichiidae; and (c) *Milichia canariensis* Becker is a valid species and not a subspecies of *Milichia speciosa* Meigen.

**Key words:** Diptera, Milichiidae, Chiropteromyzidae, taxonomic status.

### Resumen

#### **Posición taxonómica de tres especies de dípteros acalípteros (Diptera: Milichiidae, Chiropteromyzidae)**

Se revisa la posición taxonómica de tres dípteros acalípteros, a saber *Leptometoa niveipennis fascifrons* (Becker), *Leptometoa broerseii* de Meijere y *Milichia speciosa canariensis* Becker. Tras el estudio de su material tipo se han obtenido los siguientes resultados: (a) *Leptometoa fascifrons* (Becker) es una especie válida, no una subespecie de *Leptometoa niveipennis* (Strobl); (b) *Leptometoa broerseii* de Meijere pertenece a la especie *Chiropteromyza wegelii* Frey, siendo esta última especie una sinonimia de *Leptometoa broerseii*; consecuentemente su nombre correcto es *Chiropteromyza broerseii* (de Meijere) y pertenece a la familia Chiropteromyzidae, no a los Milichiidae; y (c) *Milichia canariensis* Becker es una especie válida y no una subespecie de *Milichia speciosa* Meigen.

**Palabras clave:** Diptera, Milichiidae, Chiropteromyzidae, posición taxonómica.

### Laburpena

#### **Diptero akalipteroen hiru espezieren kokapen taxonomikoa (Diptera: Milichiidae, Chiropteromyzidae)**

Hurrengo hiru diptero akalipteroen kokapen taxonomikoa berraztertzen da: *Leptometoa niveipennis fascifrons* (Becker), *Leptometoa broerseii* de Meijere eta *Milichia speciosa canariensis* Becker. Beren tipo-materiala aztertzeak ondorengo emaitzetara iristea ahalbidetu du: (a) *Leptometoa fascifrons* (Becker) espezie bat da, eta ez *Leptometoa niveipennis* (Strobl) subespezia; (b) *Leptometoa broerseii* de Meijere, *Chiropteromyza wegelii* Frey espezieari dagokio, azken hau *Leptometoa broerseii*en sinonimoa delarik; hori dela eta, haren izen zuzena *Chiropteromyza broerseii* (de Meijere) da eta Chiropteromyzidae familiakoa da, ez Milichiidae-koa; eta (c) *Milichia canariensis* Becker espezie bat da, eta ez *Milichia speciosa*ren Meigen subespezia.

**Gako-hitzak:** Diptera, Milichiidae, Chiropteromyzidae, kokapen taxonomikoa.

## Introduction

Some years ago the author received dipterological material collected in Spain, concretely in the province of Salamanca. It had been collected by H.-P. Tschorsnig and after its study, three papers about it were published (Carles-Tolrá, 2004, 2006, 2008). Nevertheless, some specimens belonging to the genus *Leptometopa* Becker, 1903 (Milichiiidae) were not included as they could not be identified.

According to Papp (1984) and Carles-Tolrá (2007), five species/subspecies of this genus have been recorded from Europe. Following Hennig's (1937) paper, the specimens from Salamanca keyed out to the subspecies *L. niveipennis fascifrons* (Becker). To confirm completely the identification, the type material of this subspecies was studied.

Furthermore, it was compared with the types of *L. broerseii* (de Meijere), firstly to discard it (it was described after Hennig's paper) and secondly to resolve the taxonomic status of this species, as Papp (1984: 116) considered it as «A doubtful species».

Finally, the taxonomic status of *Milichia speciosa canariensis* Becker, 1907 was also revised to resolve Papp's (1984: 112) remark, as he considered this subspecies as «Probably a separate species».

## Systematics

### *Leptometopa fascifrons* (Becker, 1907) stat. n.

- = *Desmometopa niveipennis fascifrons* Becker, 1907: 548.  
 = *Leptometopa niveipennis fascifrons* (Becker, 1907): Hennig, 1937: 52.

Becker (1907) described *fascifrons* based on one male and two females and as a subspecies of *niveipennis* (deposited in the ZMHB: Zoologisches Museum an der Humboldt-Universität, Berlin, Germany). The abundant material collected in Spain was compared with one female type specimen of *fascifrons* and it was checked that it belonged to this subspecies. Likewise, the Spanish material has been compared with specimens of *Leptometopa niveipennis* (Strobl, 1900) present in my private collection, and this has allowed to find several morphological differences between *niveipennis* and *fascifrons*, as shown in Table 1. Consequently, *fascifrons* is a valid species and not a subspecies of *niveipennis*. Having found so many dif-

ferences, it is strange that Becker considered *fascifrons* as a subspecies and not as a species.

Male genitalia brown. Epandrium small, short haired, with a row of longer hairs along posterior and ventral margins. Surstylus fused with epandrium, small, round, with a row of minute, black inner teeth. Aedeagus short, slightly brownish, apex dilated and translucent.

Female: cerci narrow, long, with long hairs.

Total body length: 2.0–2.6 mm (males), 2.3–2.8 mm (females).

### Material examined:

Type material: 1 syntype (1 ♀) (each label in inverted commas and each line separated by a slash) deposited in ZMHB:

1 ♀ (= Lectotype, designated here, not dissected): «Korsika / 55 316. VI.» (handwritten Becker); «Typus»; «*fascifrons*/Beck.» (handwritten); «Zool. Mus. / Berlin»; «*Leptometopa nivei- / pennis fascifrons* Beck. / det. I. Brake 1997».

### Spanish material (14 ♂♂ 5 ♀♀):

Spain: Salamanca: Aldea del Obispo, Prado Caño, 30.6.1995 1 ♂; Puerto Seguro (2-3 km SO), Rivera de dos Casas, 26.5.1999 2 ♂♂ (sweeping on white flowers of Umbelliferae); Villar de Ciervo (6-8 km N), 26.5.1999 1 ♂ (sweeping on flowers of *Thapsia villosa*), 28.5.1999 5 ♂♂ 2 ♀♀ (sweeping on flowers of *Thapsia villosa*), 30.5.1999 4 ♂♂ 3 ♀♀ (sweeping on flowers of *Thapsia villosa*); Villar de la Yegua, Vado de la Viña, 24.6.1995 1 ♂ (sweeping on Umbelliferae). All H.-P. Tschorsnig leg.

Material preserved in alcohol (70°). 9 males and 3 females are deposited in the author's collection and 5 males and 2 females are deposited in the Staatliches Museum für Naturkunde (Stuttgart).

*Leptometopa fascifrons* was hitherto only known from the isle of Corsica. Therefore the material collected in Salamanca extends its geographical distribution to the Iberian Peninsula in peninsular Spain.

### *Chiropteromyza broerseii* (de Meijere, 1946) comb. n.

- = *Leptometopa broerseii* de Meijere, 1946.  
 = *Chiropteromyza wegeli* Frey, 1952 syn. n.

The next step was to compare Tschorsnig's specimens

Characters	<i>fascifrons</i>	<i>niveipennis</i>
Head	vertical	oblique
Frons	1/2–2/3 orangish	1/4–1/3 orangish
Gena	not protruding	protruding
Antenna	yellow-orangish	brown
Labellum	short, thick, fleshy, yellow	long, thin, sclerotized, brown
Taster	short, tubby, oval	long, slim, thin
Mid and hind tibia	2 rings	brown
Size (mm, average)	2.4	1.5

TABLE 1. Morphological differences between *Leptomtopa fascifrons* and *L. niveipennis*.

with *Leptomtopa broerse* de Meijere, «A doubtful species» according to Papp (1984), as it was described after Hennig's (1937) paper. This way, it would be discarded that the Spanish specimens did not belong to this species and Papp's doubt would be resolved.

De Meijere (1946) described *Leptomtopa broerse* based on two specimens (1 male and 1 female) (deposited in ZMAN: Zoölogische Museum, Instituut voor Taxonomische Zoölogie, Amsterdam, The Netherlands) <sup>(1)</sup>. Their study has revealed not only that they do not belong to *Leptomtopa* Becker, but also that they are not even Milichiidae, but Chiropteromyzidae (!). They belong to the only known species of this genus: *Chiropteromyza wegelii* Frey, 1952 (see Papp, 1998). Consequently, *wegeli* becomes a synonym of *broerse* and belongs to genus *Chiropteromyza* Frey, 1952, that is *Chiropteromyza broerse* (de Meijere, 1946) = *Chiropteromyza wegelii* Frey, 1952 **syn. n.**

Up to now, this family (and species) was only known from three European countries: Finland, Suisse and Hungary. Consequently, the family Chiropteromyzidae with the species *Chiropteromyza broerse* (de Meijere, 1946) is recorded from The Netherlands for the first time.

#### Material examined:

Type material: 2 syntypes (1 ♂ and 1 ♀) (each label in inverted commas and each line separated by a slash) deposited in ZMAN:

1 ♂ (= Lectotype, designated here): «Oude Ooster- / begraafplaats»; «BROERSE / Amsterdam / e. l. IV. 1937»; «Uit Vogelnest / Spreeuw / (Sturnus)»; «*Leptomtopa* / *Broerse* / Type.» (handwritten, de Meijere);

«*Leptomtopa* / *broerse* / de Meijere, 1946 / ZMAN type DIPT.0718.1».

1 ♀ (= Paralectotype): «Oude Ooster- / begraafplaats»; «BROERSE / Amsterdam / e. l. IV. 1937»; «Uit Vogelnest / Spreeuw / (Sturnus)»; «*Leptomtopa* / *broerse* / de Meijere, 1946 / ZMAN type DIPT.0718.2».

Abdomens of both exemplars detached, cleared with KOH, stored in two microvials with glycerine, and pinned under their respective exemplars. Right wing of the lectotype broken and stored together with the male abdomen.

#### *Milichia canariensis* Becker, 1907 stat. n.

= *Milichia speciosa canariensis* Becker, 1907.

Papp (1984) in his Catalogue of Palearctic Diptera included *canariensis* as a subspecies of *speciosa*, but adding the following comment: «Probably a separate species». The following year, Deeming and Báez (1985), in a study on the Milichiidae of the Canary Islands, wrote: «Comparison of the male genitalia of this form with a Turkish example of the typical form reveals no appreciable differences».

Becker, based on two males and two females (deposited in ZMHB), distinguished the subspecies *canariensis* from the typical form mainly because the male had a lateral and posterior silvery stripe on the scutum. The female, on the other hand, had the silvery spots of the second tergite smaller and more oblique than in the typical form.

Reviewing the specimens identified as *Milichia speciosa* Meigen, 1830 present in my private collection and previous papers (Carles-Tolrà, 1992, 1997, 2001, 2004; Carles-Tolrà and Pujade-Villar, 2003), all collected in

<sup>(1)</sup> The location where the material was collected is now in the backyard of the main building of the Museum (ZMAN) (B. Brugge, pers. comm.).

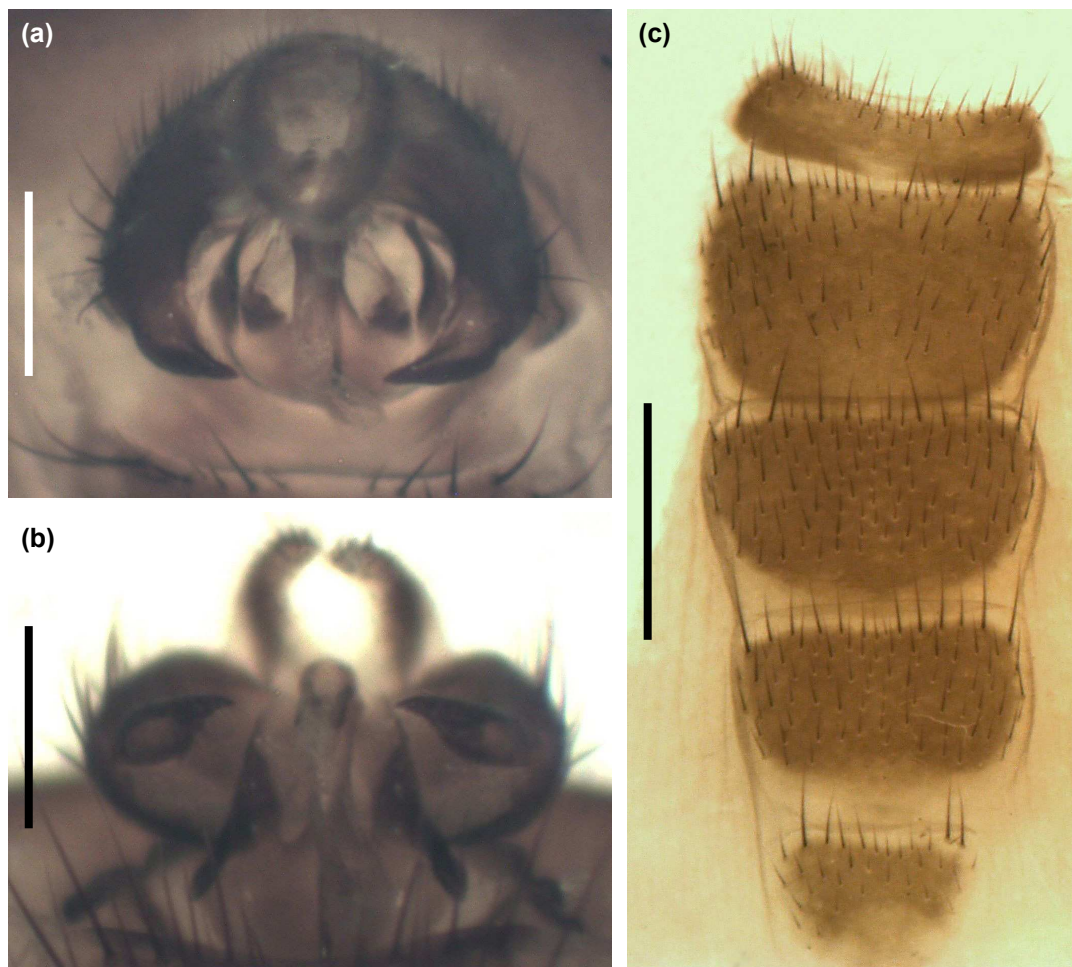


FIGURE 1. *Milobbia canariensis* Becker: (a) Male genitalia in posteroventral view; (b) Male genitalia in ventral view; (c) Female sternites 2-6 (Scale bars: (a)-(b) = 0.2 mm; (c) = 0.5 mm).

the Iberian Peninsula, it was observed that all male specimens included in Carles-Tolrá (1992) and Carles-Tolrá and Pujade-Villar (2003) have the silvery band on the scutum. Likewise, some variability in the size of the silvery spots on the female second tergite was found.

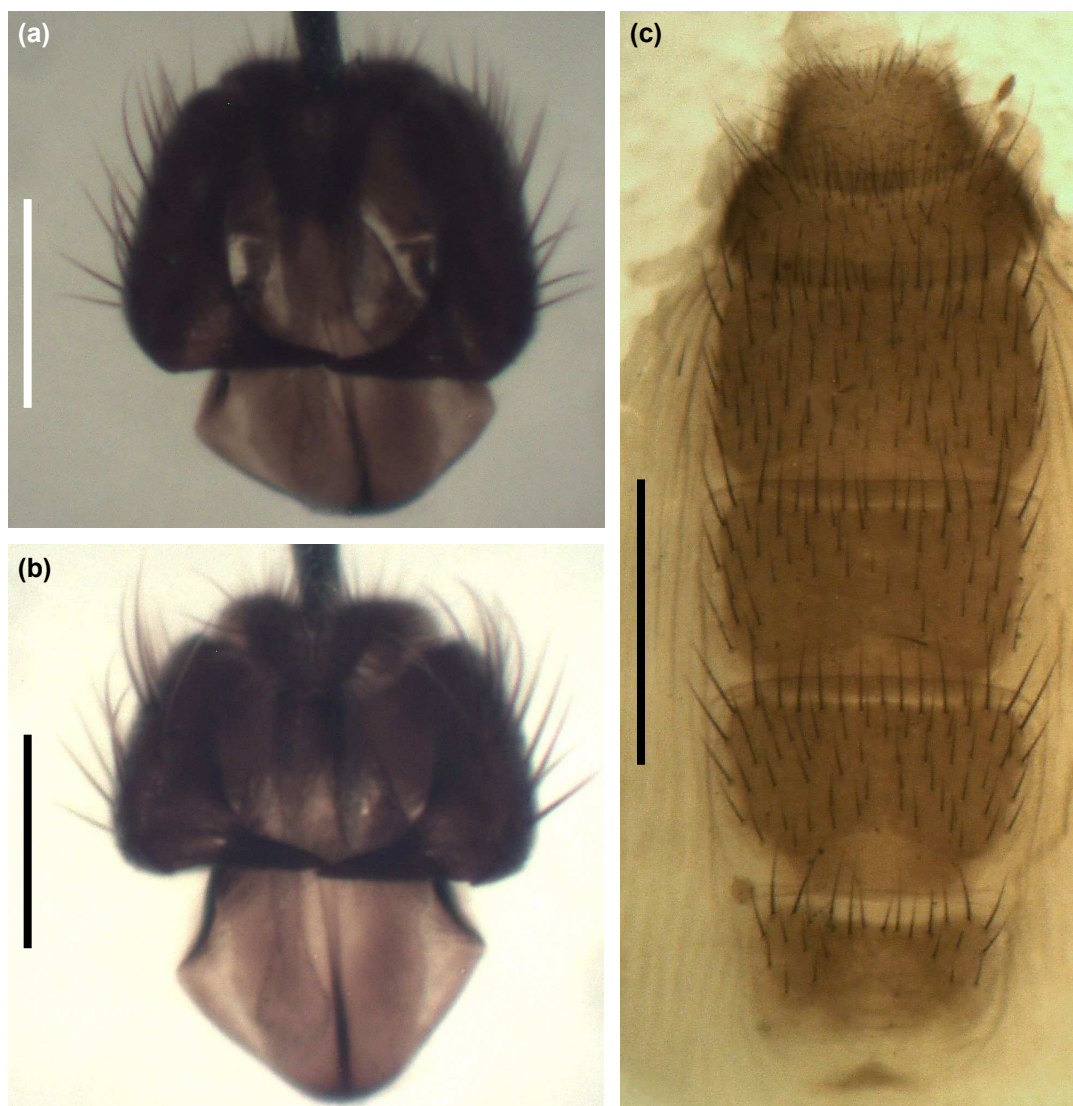
Nevertheless, reviewing the genitalia of all the males of these papers it was checked that there were no differences between those that presented the silvery stripe and those that did not. Likewise, outstanding differences among the females were not found. Therefore, both taxa belong to the same species: *M. speciosa*. Consequently, the differences mentioned by Becker are not useful to separate these two taxons.

Finally, the specimens from the Canary Islands had to be checked. Therefore, it was decided to review the type material of *canariensis*. After the study and

comparison of this material with that collected in the Iberian Peninsula a distinct difference among the surstyli, as well as among the sternites of the females, was observed. The male surstyli of *canariensis* are claw-shaped (Figs. 1a-b), whereas those of *speciosa* are triangular (Figs. 2a-b). In the females, in *canariensis* sternites 3-5 are gradually, distinctly increasing, so sternite 5 is distinctly bigger than sternite 3 (Fig. 1c); on the other hand, in *speciosa* sternites 3-5 are subequal (Fig. 2c). Consequently, *canariensis* is a valid, separate species, as supposed by Papp, and not a subspecies of *speciosa*.

#### Material examined:

Type material: 4 syntypes (2 ♂♂ and 2 ♀♀) (each label in inverted commas and each line separated by



**FIGURE 2.** *Milichia speciosa* Meigen: (a) Male genitalia in posteroventral view; (b) Male genitalia in ventral view; (c) Female sternites 2-7 (Scale bars: (a)-(b) = 0.2 mm; (c) = 0.5 mm).

a slash) deposited in ZMHB:

1 ♂ (= Lectotype, designated here): «Gr. Canaria / 47720 V» (handwritten Becker); «Sammlung / Dr.Th.Becker»; «Type»; «Zool. Mus. / Berlin».

1 ♂ (= Paralectotype): «Gr. Canaria / 47720 V» (handwritten Becker); «Sammlung / Dr.Th.Becker»; «Type»; «Zool. Mus. / Berlin».

1 ♀ (= Paralectotype): «Gr. Canaria / 47720 V» (handwritten Becker); «Sammlung / Dr.Th.Becker»; «Type»; «Zool. Mus. / Berlin».

1 ♀ (= Paralectotype): «Laguna / 51470 VI»; «Sammlung / Dr.Th.Becker»; «Type»; «Zool. Mus. / Berlin».

Abdomen of the lectotype and of one female paralectotype (no. 51470) detached, cleared with KOH and stored in microvials with glycerine pinned under their respective exemplars.

*Milichia canariensis* is hitherto only known from the Canary Islands and, according to Deeming and Báez's (1985) remark, also from Turkey.

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