

THE SUBGENUS *FORCIPOMYIA* (*METAFORCIPOMYIA*) IN ARGENTINA (DIPTERA, CERATOPOGONIDAE)

Pablo I. Marino ¹
Gustavo R. Spinelli ¹

ABSTRACT

Two new species of the subgenus *Forcipomyia* (*Metaforcipomyia*), from Argentina, *F. (M.) williamsi* and *F. (M.) galliarii*, are described and illustrated. In addition, *F. (M.) cerifera* Saunders, 1956 is redescribed and first recorded for Argentina.

KEYWORDS. *Forcipomyia*, *Metaforcipomyia*, new species, taxonomy, Argentina.

INTRODUCTION

Forcipomyia Meigen, 1818, is a large and extremely diverse genus of Ceratopogonidae, worldwide in distribution and diverse in morphology and habitat preference (DOW & WIRTH, 1972), including many species which are important pollinators of cocoa (SPINELLI & WIRTH, 1993). BORKENT & WIRTH (1997) mentioned 877 extant species arranged in 28 subgenera; from this large number 155 species and 17 subgenera are known to occur in the Neotropical region. Twenty-eight species assembled in 12 subgenera are recorded for Argentina (SPINELLI & WIRTH, 1993; SPINELLI & MARINO, 1997, 1998).

The subgenus *Metaforcipomyia* Saunders includes 13 species, 12 of them distributed in gondwanian areas (Australia, New Caledonia, Papua New Guinea, South Africa, Brazil), and the remaining one, *Forcipomyia (M.) pluvialis* Malloch, 1923, recorded from east of North America. The only species surely recognized as belonging to the subgenus *Metaforcipomyia* in South America is *Forcipomyia (M.) cerifera* Saunders, 1956, known only from its type locality in the State of Rio de Janeiro, Brazil.

¹ Instituto de Limnología "Dr. Raúl A. Ringuelet", Casilla de Correo 712, 1900 La Plata, Argentina.

SPINELLI & WIRTH (1993), based mainly on the original description treated the patagonian species *F. maculosa* Ingram & Macfie, 1931, as a member of the subgenus *Metaforcipomyia*. BORKENT & WIRTH (1997) placed it in the subgenus *Forcipomyia*. As the type of *F. maculosa* (deposited in the Natural History Museum, London) has not been carefully checked, we are considering its subgeneric status as uncertain.

The purpose is to describe two new species of the subgenus *Metaforcipomyia* from Argentina, and to record *F. (M.) cerifera* from the northeastern area of the country, based on the material recently collected and deposited in the collection of the Museo de la Plata, Argentina (MLP).

For terminology on *Forcipomyia* and key to subgenera see DEBENHAM (1987a); for diagnosis of subgenus *Metaforcipomyia* and morphological characters of australasian species see DEBENHAM (1987b).

Forcipomyia (Metaforcipomyia) cerifera Saunders

(Figs. 1-5)

Forcipomyia (Metaforcipomyia) cerifera SAUNDERS, 1956: 685 (all stages, Brazil); WIRTH, 1974: 7 (cat.); BORKENT & WIRTH, 1997: 42 (cat.).

Diagnosis. Recognized by: basal flagellomeres of female antenna flask-shaped, segments 11-14 not elongated; palpal segments 4 and 5 fused, third segment slightly swollen with shallow sensory pit; scutum brown, scutellum dark brown; spermathecae pyriform, slightly unequal.

Female. Wing length 0.82 mm; breadth 0.38 mm.

Head. Pale brown, vertex clothed with pectinate and lanceolate scales. Antenna (fig. 1) brown, lengths of flagellomeres in proportion of 17-18-18-19-19-19-19-19-18-18-18-17-28; AR 0.66. Palpus (fig. 2) with lengths of segments in proportion of 8-10-23-21 (4+5); third segment slightly swollen, with shallow sensory pit; fourth and fifth segments completely fused, with abundant setae and pectinate scales; PR 2.09.

Thorax. Scutum brown with pectinate scales, scutellum dark brown with eight strong setae. Legs uniformly pale brown, pilose, with abundant pectinate and lanceolate scales. Prothoracic and mesothoracic TR 2.75, metathoracic TR 2.30. Wing (fig. 3) with abundant pectinate scales; CR 0.46. Halter knob brown.

Abdomen. Tergites and sternites brown, pleuron paler covered with narrow pectinate scales and long hairs, cerci brown. Two pyriform spermathecae (fig. 4), moderately sclerotized, slightly unequal, measuring 0.048 by 0.030 mm and 0.045 by 0.026 mm. Genital sclerotization (fig. 5) U-shaped.

Male. According to SAUNDERS (1956) parameres extend to back to tip of aedeagus, and the distal tip of aedeagus is bilobated, serrate, membranous.

Distribution. Argentina (Misiones). Brazil (Rio de Janeiro).

Holotype♀, Brazil, Rio de Janeiro, VIII.1923, in the Canadian National Collection, Ottawa, not examined.

Material examined. ARGENTINA, Misiones: Campo Viera, 1♀, 7/9.X.1982. G.R. Spinelli, at light (MLP).

Discussion. The female here studied agrees with the original description of

Forcipomyia (*M.*) *cerifera* by SAUNDERS (1956), except for the coloration of the halter, which is "...white, not chalky". However, we consider that this difference itself is not enough to recognize it as another species.

***Forcipomyia* (*Metaforcipomyia*) *galliarii* sp.n.**

(Figs. 6 - 9)

Diagnosis. Recognized by: basal flagellomeres short, vasiform; third segment palpal elongated, with short, shallow sensory pit; fourth and fifth segments almost completely fused; scutum brown, humeral area and scutellum pale brown; two pyriform spermathecae with short necks open toward ducts.

Female. Wing length 1.06 (1.04-1.10, n=5) mm; breadth 0.46 (0.44-0.48, n=5) mm.

Head. Brown. Vertex with numerous insertions of setae and scales. Eyes bare, contiguous by a distance equal of the diameter of four ommatidial facets. Antenna (fig. 6) uniformly brown, lengths of flagellomeres in proportion of 13-14-15-16-16-16-17-18-22-23-24-24-32; flagellomeres short 3-5 globose, 6-10 vasiform, 11-14 cylindrical, 15 subconical with rounded apical papilla; AR 0.99 (0.97-1.00, n=3). Palpus (fig. 7) with lengths of segments of proportion of 16-16-43-38 (4+5); third segment slightly swollen at midportion, with shallow, small, sensory pit open by a small pore; fourth and fifth segments almost completely fused. PR 3.97 (3.28- 4.30, n=5).

Thorax. Scutum brown, humeral and posterolateral areas paler; scutellum pale brown with eight strong setae, and several minor setae; post-scutellum brown. Legs uniformly pale brown with pectinate scales (only evident in one of the paratypes). Hastate spine on tibiae of fore and hind legs. Prothoracic TR 2.12 (2.00-2.20, n=5), mesothoracic TR 1.79 (1.72-1.90, n=5), metathoracic TR 1.87 (1.83-1.92, n=4). Wing (fig. 8) with abundant lanceolate scales, much more concentrated on and beyond costa; CR 0.48 (0.47-0.48, n=5). Halter pale brown.

Abdomen. Tergites and sternites darker than pleuron. Two pyriform spermathecae (fig. 9), necks short, open toward ducts, measuring 0.088 by 0.056 mm and 0.076 by 0.056 mm. Genital sclerotization not visible in the studied material.

Distribution. Argentina (Misiones).

Types. Argentina, Misiones, Aristobulo del Valle, holotype ♀ and 4 ♀ paratypes, 17/26.VII.1996, J. Williams & C. Galliari, malaise trap.

Etymology. The specific name is a patronym in honor of Carlos A. Galliari in recognition of his important help collecting ceratopogonids in Argentina.

***Forcipomyia* (*Metaforcipomyia*) *williamsi* sp. n.**

(Figs. 10 - 17)

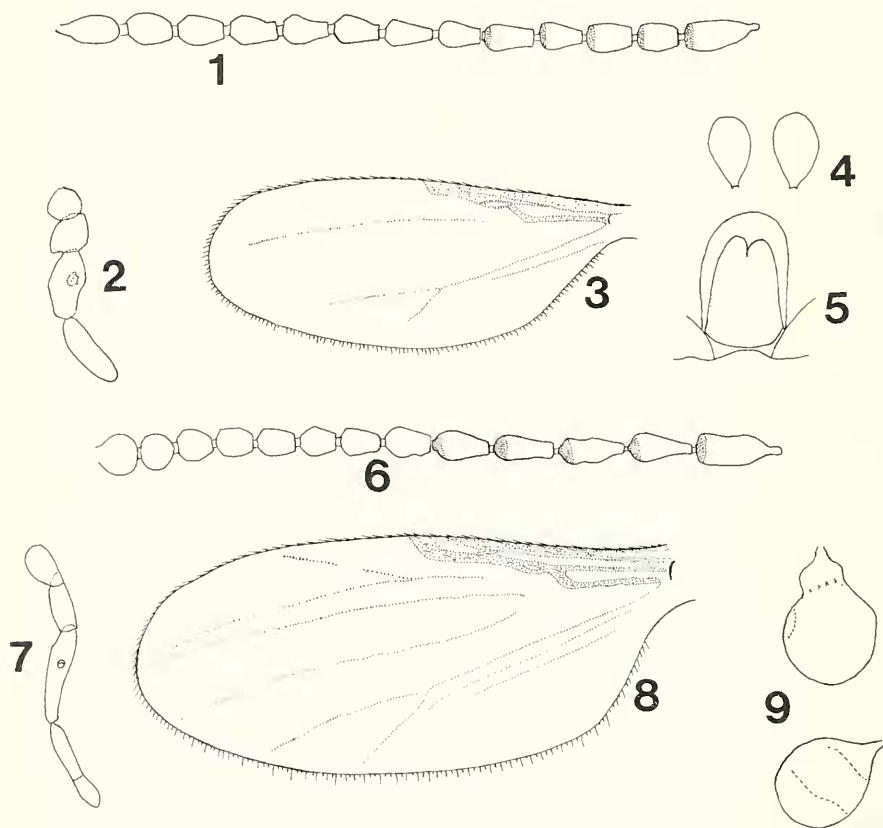
Diagnosis. Species recognized by the following combination of characters: flagellomeres elongate, vasiform; palpus 4-segmented, third segment moderately swollen at midportion without sensory pit; scutum yellowish; two pyriform spermathecae with short and slender necks; ninth male sternum 2.12 times broader than long, without caudomedian excavation; basistylar apodeme strong, curving forward to join in flat-

topped arch basal; aedeagus T-shaped.

Female. Wing length 1.06 (0.98-1.12, n=6) mm; breadth 0.37 (0.34-0.40, n=6) mm.

Head. Pale brown. Vertex, fronto-clypeus and pedicel with pectinate scales. Antenna (fig. 10) with flagellomeres pale brown, narrow bases darker; flagellomeres elongate, vasiform, lengths in proportion of 21-23-27-28-30-30-30-30-33-33-32-30-35; AR 0.75 (0.72-0.80, n=6). Palpus (fig. 11) densely covered with pectinate scales, lengths of segments in proportion of 12-15-34-31 (4+5); third segment without sensory pit, with a few scattered sensillae on surface; fourth and fifth segments completely fused, tapering. PR 3.38 (3.20-3.68, n=6).

Thorax. Scutum yellowish brown; scutellum and postscutellum dark brown, the

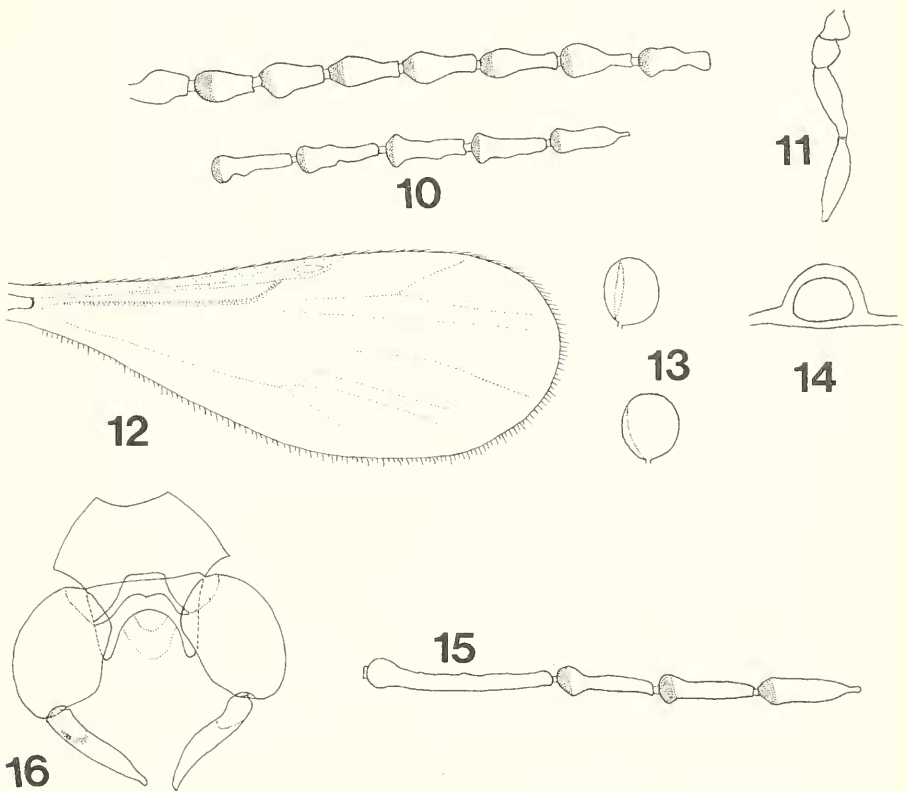


Figs. 1-9. *Forcipomyia cerifera* Saunders, ♀; 6-9, *Forcipomyia galliaris* sp. n., ♀, holotype: 1-6 flagellum; 2, 7, palpus; 3, 8, wing; 4, 9, spermathecae; 5, genital sclerotization. Bars=0,05mm.

former with two rows of ten strong setae (arranged in 2 anterior and 8 posterior), and several minor setae. Legs uniformly pale brown, pilose with abundant pectinate scales. Hind tibial comb with five dark bristles. Prothoracic TR 2.04 (1.90-2.16, n=6), mesothoracic TR 1.21 (1.14-1.34, n=6), metathoracic TR 1.14 (1.04-1.27, n=6). Wing with abundant pectinate scales, mostly concentrate along veins giving a pattern of dark and pale spots (fig. 12); CR 0.39 (0.37-0.42, n=6). Halter pale.

Abdomen. Brown, with pectinate scales; cerci short. Two rounded spermathecae (fig. 13), slightly unequal, with short and slender necks, measuring 0.048 by 0.038 mm and 0.044 by 0.040 mm. Genital sclerotization (fig. 14) ring-shaped.

Male. Wing length 1.03 (1.02-1.05, n=3) mm; breadth 0.31 (0.30-0.33, n=4) mm. Similar to the female with usual sexual differences. Flagellomeres 12-15 with



Figs. 10-17. *Forcipomyia williamsi* sp. n., 10-14, ♀; 15-17, ♂ (allotype): 10, flagellum; 11, palpus; 12, left wing; 13, spermathecae; 14, genital sclerotization; 15, flagellomeres XI-XV; 16, genitalia (aedeagus removed); 17, aedeagus, ventral view. Bars = 0,05 mm

lengths in proportion of 73-40-39-41 (fig. 15), but the wing hyaline with abundant scales on costal area; CR 0.39 (0.38-0.41, n=3). Prothoracic TR 2.00, mesothoracic TR 1.26 (1.18-1.30, n=4), metathoracic TR 1.23 (1.18-1.31, n=4). Abdomen whitish, with light brown apicolateral spots on each tergite.

Terminalia (fig. 16): ninth sternum 2.12 times broader than long, without caudomedian excavation. Ninth tergum short with conspicuous apicolateral processes. Gonocoxite 1.54 times longer than broad; gonostylus straight, slender, 0.85 times as long as gonocoxite with bluntly pointed-tip. Aedeagus (fig. 17) T-shaped, 1.4 times broader than long, 0.57 shorter than gonocoxite. Basistylar apodeme strong, curving forward to join in flat-topped arch basal. Parameres without distinct backward-directed processes.

Distribution. Argentina (northeastern of the Buenos Aires Province, and Martin García Island).

Types. Argentina, Buenos Aires, Berisso, Los Talas, holotype ♀, 29.XII.1987, G.R. Spinelli col., CDC light trap (MLP). Martin García Island, allotype ♂, 18/20.XI.1996, M. Coscarón col. (MLP). Paratypes 3♂ and 5♀ as follows: same data as holotype, 4♀; same data as allotype, 3♂; Punta Lara, ♀, 7.IV.1986, G.R. Spinelli col., CDC light trap (MLP).

Etymology. The specific name is a patronym in honor of Jorge D. Williams in recognition of his important help collecting ceratopogonids in Argentina.

Discussion. *Forcipomyia (M.) williamsi* is very similar to *F. (M.) furculae* Debenham, 1987, from Papua New Guinea. However, it can be distinguished from the latter by the conspicuous apicolateral processes of the ninth tergum, apices of gonostylus not forked, and tip of the aedeagus pointed.

REFERENCES

- BORKENT, A. & WIRTH, W. W. 1997. World species of biting midges (Diptera: Ceratopogonidae). **Bull. Am. Mus. nat. Hist.**, New York, **233**: 1-257.
- DEBENHAM, M. L. 1987a. The biting midge genus *Forcipomyia* (Diptera: Ceratopogonidae) in the Australasian Region (Exclusive of New Zealand). I. Introduction, key to subgenera, and *Thyridomyia* and *Trichohelea* groups of subgenera. **Invertebr. Taxon.**, Sydney, **1**: 35-119.
- . 1987b. The biting midge genus *Forcipomyia* (Diptera: Ceratopogonidae) in the Australasian Region (Exclusive of New Zealand). II. *Warmkea* and the subgenera *Thyridomyia* *Caloformipomyia* group of subgenera. **Invertebr. Taxon.**, Sydney, **1**: 167-199.
- DOW, M. I. & WIRTH, W. W. 1972. Studies on the genus *Forcipomyia*. 2. The Nearctic species of the and *Synthyridomyia* (Diptera: Ceratopogonidae). **Ann. ent. Soc. Am.**, Lanham, **65**: 177-201.
- SAUNDERS, L. G. 1956. Revision of the genus *Forcipomyia* based on characters of all stages (Diptera: Ceratopogonidae). **Can. J. Zool.**, Ottawa, **34**: 657-705.
- SPINELLI, G. R. & MARINO, P. I. 1997. Two new species of the subgenus *Thyridomyia* of *Forcipomyia* from Argentina and new records of *F. (Synthyridomyia) sanctaeclarae* (Diptera: Ceratopogonidae). **Trans. Am. ent. Soc.**, Philadelphia, **123** (3): 187-190.
- . 1998. First records for Argentina of three species of *Forcipomyia* (Diptera: Ceratopogonidae). **Revta Soc. ent. argent.**, La Plata, **57** (1-4): 39-40.
- SPINELLI, G. R. & WIRTH, W. W. 1993. Los Ceratopogonidae de la Argentina (Insecta: Diptera). In: DE CASTELLANOS, Z. A. ed. **Fauna de Agua Dulce de la República Argentina**. Buenos Aires, v. 38, fasc. 3, p. 1-124.
- WIRTH, W. W. 1974. Family Ceratopogonidae. In: **A catalogue of the Diptera of the Americas South of the United States**. São Paulo, Museu de Zoologia, Universidade de São Paulo, fasc. 14, p. 1-89.