

The mysterious tachinid

Phyllaristomyia fiebrigi Townsend

and new distribution records



Figure 1. *Phyllaristomyia fiebrigi* Townsend resting on leaves in a jar after capture in the Reserva Natural Rincón de Santa María, Corrientes Province, Argentina.

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Last November, while conducting entomological field work in the Corrientes province of Argentina for the *Rincón Santa María Grassland Restoration Project*, I encountered an unusual tachinid. Its striking coloration was unlike anything I had seen before in a tachinid: the head was yellow, the thorax and abdomen yellow and black, and the wing was reddish-orange at its base and smoky black on the rest. The peculiar antenna, with a leaf-like arista arising from a long and slender postpedicel, was more noticeable later when the specimen was examined in the lab. This fly had landed on my backpack, which I had placed on the ground during my field work. The fly was calm, walking slowly around and not attempting to fly off the way most insects do when approached. On the contrary, even when a jar was placed over it there were no sudden change in behavior and it simply tried to climb the walls, without success. This tranquility allowed us to take pictures of it while it was walking on leaves placed in the jar (Figs. 1–2).

Back at my workplace in the Entomology Division of the Museo Argentino de Ciencias Naturales (MACN), this fly was pinned, labelled and photographed (Fig. 3). It was a male, but identification of it proved challenging. I examined it with my dipterist colleagues, and we noted with surprise the unique antennal morphology. The leaf-like terminal

aristomere of this fly had not been seen before in any tachinid studied at the Museum. The identification key of Wood & Zumbado (2010) for the tachinids of Central America was tried without success. For this reason, specialist Jim O’Hara of the Canadian National Collection of Insects (CNC) in Ottawa was consulted, who said he did not know the genus but thought it might belong to the tribe Goniini (Exoristinae). He reached out to several colleagues for help, sending them my field pictures of the fly (Figs. 1–2). One of them, Norm Woodley, a former dipterist with the National Museum of Natural History (USNM) in Washington, thought he had seen this fly before among the C.H.T. Townsend material in that collection. Norm travelled to Washington a short time later and looked for the fly in the USNM. He found this mysterious fly, as suspected, among the types in the Townsend material. It is a species represented in the collection by a male paratype of *Phyllaristomyia fiebrigi* Townsend, the only species in the genus. A note in the tray written by the late D. Monty Wood, a former CNC tachinid specialist, gave an unpublished assignment of the species to the well-known New World genus *Belvosia* Robineau-Desvoidy (tribe Goniini). Norm’s identification of the species allowed Jim to find archived pictures of the male paratype and its labels that Monty had taken during one of his trips to the USNM (Fig. 4).

Phyllaristomyia fiebrigi is a tachinid for which there are very few records. It was described by Townsend (1931: 467) from four specimens (3♂ 1♀) from two localities in Paraguay, San Bernardino and San Luis. He placed the genus in the tribe Belvosiini, which has since been incorporated into the tribe Goniini of subfamily Exoristinae (e.g., O’Hara et al. 2020). This tribe is considered monophyletic because of an unusual reproductive trait of females: they deposit tiny (“microtype”) eggs on the food plants of prospective hosts (usually caterpillars of Lepidoptera) that hatch in the gut after being accidentally ingested by a feeding host (Herting 1960, Stireman et al. 2006).

What makes this species particularly unusual is its male antenna, with its long and cylindrical postpedicel and bizarrely flattened and leaf-shaped arista. Townsend based the name of the genus on this last peculiarity, combining *phyllon* (Greek for “leaf”) with *arista* (Latin) and *myia* (Greek for “fly”) to



Figure 2. *Phyllaristomyia fiebrigi*, live specimen from the Reserva.



Figure 3. *Phyllaristomyia fiebrigi*, specimen from Reserva after pinning (specimen recorded in MACN as “MACN_En 39349”).

form the name *Phyllaristomyia*. The specific epithet *fiebrigi* was based on “Fiebrig”, the name of the collector of the holotype.

Up to the present day the genus has only been reported from Paraguay (original description) and Brazil (Guimarães 1971). My specimen is a new country record for Argentina, and Rodrigo Dios of the Museum of Zoology, University of São Paulo, Brazil kindly provided me with additional records from Brazil. All these currently known records of *P. fiebrigi* are shown here on the maps in Fig. 5 and in Table 1.

I collected my specimen of *P. fiebrigi* in the Reserva Natural Rincón de Santa María, a provincial reserve with an area of approximately 3000 ha, located in the department of Ituzzaingó in the north of the province of Corrientes. The Reserva was created to compensate for the loss of habitats caused by the creation of the Yacyretá Dam. It is bordered on the north by the Paraná River (separating Argentina from Paraguay), on the west by the reservoir of the Yacyretá Dam, and on the other sides by private properties with different uses such as cattle grazing and exotic tree plantations (Krauczuk & Giacomo 2007, Cockle et al. 2023). The ecoregion of the Campos y Malezales and the Esteros del Iberá converge here, with influences from the Delta and Island regions of Paraná and Chaco Húmedo (Burkart et al. 1999, Morello et al. 2012). The Reserva is characterized by different dominant areas of grasslands, native forest, and areas with exotic trees from old abandoned plantations. Many sectors remain flooded much of the time due to rainfall and the low soil permeability in much of the land (Krauczuk & Giacomo 2007, Cockle et al. 2023). Isolated native trees and some shrubs and vines can be found among the grasslands (Cockle et al. 2023) (Fig. 6). The Reserva belongs to the National State and is managed jointly by Argentina and Paraguay under the Yacyretá Binational Entity (EBY).



Figure 4. *Phyllaristomyia fiebrigi*, male paratype in USNM from San Bernardino, Paraguay, collected by Fiebrig. (Images by D. Monty Wood, Ottawa.)

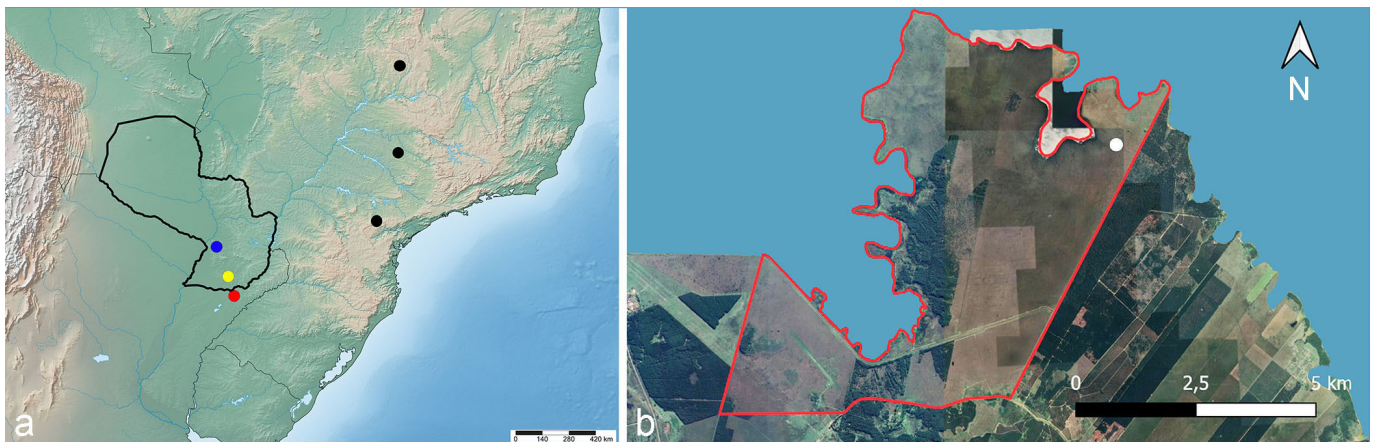


Figure 5. a. Distribution map for *P. fiebrigi*. The blue and yellow dots are the two localities of the type series in Paraguay (black outline), the black dots are localities in Brazil of specimens in MZUSP, and the red dot is the locality in Argentina where the author caught a specimen in the Reserva. **b.** Outlined in red is the Reserva Natural Rincón de Santa María in northern Argentina, and the white dot indicates where *P. fiebrigi* was collected by the author.

The habitat in which this unique tachinid was found is a grassland area near the northern limit of the Reserva, with a greater abundance of shrubs such as “chilcas” (*Baccharis* sp.), some isolated specimens of “curupí” (*Sapium haematospermum*) and other herbaceous plants. The weather at the time of year when the fly was collected (November 20th) was characterized by intense rains and high temperatures, resulting in a large amount of water in the soil. The grassland has irregular terrain, with tall grasses surrounded by puddles of water. The area is not frequently visited except by people who are conducting studies in the area. Thus the human impact is minimal, allowing the flora and fauna to follow their natural course without human interference.



Figure 6. Characteristic grassland of the Reserva Natural Rincón de Santa María in northern Argentina.

Phyllaristomyia fiebrigi is a tachinid about which very little is still known. There is no host data, or information about how other specimens were collected. Whether they were caught in flight, on flowers, in grassland or forest, remains unknown. The appearance of the single specimen in the Reserva has brought this rarely-seen species to the attention of staff rangers and other workers and this may lead to a future opportunity to study this species further. The Reserva is open to other researchers who want to carry out scientific studies and they can be on the watch for this species as well. Collecting and rearing lepidopteran larvae would be a good option too, not only to potentially discover the host of this species but to learn more about the tachinids and hosts in general. Natural Reserves and National Parks are important sources of new knowledge, with repositories of flora and fauna waiting to be discovered, studied and, above all, made known.

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Table 1. *Phyllaristomyia fiebrigi*, bibliographic records and new records. H, Holotype; A, Allotype; P, Paratype.

Country	Department/ Province/State	Locality	Date	Collector	Sex	Source
Paraguay	Cordillera	San Bernardino		Fiebrig	m	Townsend 1931 (H, P)
Paraguay	Cordillera	San Bernardino		Fiebrig	f	Townsend 1931 (A)
Paraguay	Cordillera	San Bernardino		Fiebrig	m	Townsend 1931 (P)
Paraguay	Caazapá	San Luis		Reimoser	m	Townsend 1931 (P)
Brazil	Mato Grosso					Guimarães 1971: 184
Brazil	São Paulo	Batatais	March 1943	Stafuzza A.	m	Present work [MZUSP]
Brazil	Goiás	Viannopolis	March 1930	Spitz R.	m	Present work [MZUSP]
Brazil	Paraná	Jaguariaiva, P.R./P.E. Cerrado	16 Oct. 2001	Barbola L.F.	m	Present work [MZUSP]
Argentina	Corrientes	Ituzaingó, Reserva Natural Rincón de Santa María	20 Nov. 2023	Zubarán, G. & Crebay, M.	m	Present work [MACN]

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