Redescription of *Pseudopomyzella flava* Hennig (Diptera: Cypselosomatidae) and the first record from Brazil

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Abstract: Cypselosomatidae is composed of Cypselosomatinae and Pseudopomyzinae, including 11 extant genera. Only the genus *Rhinopomyzella* Hennig (Pseudopomyzinae) has been previously recorded from Brazil, represented by two species from Santa Catarina. The genus *Pseudopomyzella* Hennig is comprised of a single species, *Pseudopomyzella flava* Hennig, previously found only in Peru and Ecuador. Here, we report *P. flava* for the first time from Brazil (Pará) and redescribe the species based on the specimens collected.
Keywords: *Acalyptratae, Schizophora, Nerioidea, Neotropical region.*

CARVALHO-FILHO, F.S. & ESPOSITO, M.C. **Redescrição de *Pseudopomyzella flava* Hennig, 1969 (Diptera: Cypselosomatidae) e o primeiro registro para o Brasil**. Biota Neotrop. 11(1): http://www.biotaneotropica.org.br/v11n1/pt/abstract?article+bn02911012011.

Resumo: Cypselosomatidae é composta por Cypselosomatinae e Pseudopomyzinae, incluindo 11 gêneros atuais. O gênero *Rhinopomyzella* Hennig (Pseudopomyzinae) é o único registrado para o Brasil, representado por duas espécies de Santa Catarina. O gênero *Pseudopomyzella* Hennig compreende uma única espécie, *Pseudopomyzella flava* Hennig, encontrada no Peru e Equador. Neste estudo, *P. flava* é registrada pela primeira vez para o Brasil (Pará) e a espécie é redescrita a partir dos espécimes coletados.
Palavras-chave: *Acalyptratae, Schizophora, Nerioidea, região Neotropical.*

Introduction

Cypselosomatidae is a little known family of minute to medium-sized (2.0–3.7 mm), brown to black and yellow flies, distributed in all biogeographic regions (McAlpine 1966, McAlpine 1987). These flies are rare in Brazil and only a few specimens have been deposited in local collections (see Carvalho et al. 2002). The family is placed basally within the Nerioidea, that also includes Neriidae and Micropezidae (McAlpine 1966, Hennig 1971a, b, Griffiths 1972), which are characterized by elongated terminalia in both males and females (Yeates et al. 2007).

The cypselosomatids are composed of two subfamilies, Cypselosomatinae, with three extant genera restricted to the Indo-Australian region, and Pseudopomyzinae, with eight extant genera from the Neotropical, Neartic, Paleartic, and Oriental (Philippine Islands) regions (McAlpine 1987, Thompson 2009). Seven species in four genera have been formally described from the Neotropical region (two species of *Latheticomyia* Wheeler 1956, remain undescribed) (Prado 1984). So far the Brazilian fauna has been restricted to one genus and two species, *Rhinopomyzella albimana* Hennig, 1969 and *Rhinopomyzella nigrimana* Hennig, 1969 (Prado 1984). The genus *Pseudopomyzella* Hennig, 1969, is comprised of a single species, *Pseudopomyzella flava* Hennig, 1969, that was previously known to occur only in Peru and Ecuador (Hennig 1969, Prado 1984).

The immature stages and larval habits of the Neotropical Cypselosomatidae are unknown (Prado 1984). The larvae of the Australian *Clisa australis* (McAlpine, 1966) have been reared from maggots found in piles of bat dung in caves (McAlpine 1966), while adults of the Palaearctic species *Polypathomyia stackelbergi* Krivosheina, 1979 were reared from larvae found under bark of amur oak and *Aralia* sp. (McAlpine 1987).

The purpose of this study is to redescribe the species *Pseudopomyzella flava*, new record from Brazil, in order to provide better grounds for the collection of additional specimens, their identification, and encourage the eventual discovery of new species of Cypselosomatidae and *Pseudopomyzella*, as well as the study of their natural history. Therefore, illustration of male terminalia and colorful pictures are provided.

Material and Methods

The specimens examined in this study are housed in the entomological collection of the Museu Paraense Emílio Goeldi (MPEG) in Belém, Pará, Brazil. The types of *P. flava* were not analyzed and the examined material was identified by comparison with original description of Hennig (1969).

The male genitalia was prepared by removing the abdomen from the specimen, and soaked in 10% KOH for 24 hours at room temperature. Cleared abdomens were then washed in distilled water, neutralized with acetic acid, and mounted for study in non-permanent slides with glycerin. Following analysis, the dissected structure was transferred to a micro-vial containing glycerin and pinned beneath the source specimen. The female genitalia was not prepared due to the fragility of the single specimen. General terminology follows that of McAlpine (1981), while that of McAlpine (1987) was applied to the male terminalia.

Results

1. Pseudopomyzella flava Hennig

Pseudopomyzella flava Hennig, 1969: 595, figs. 5–6, 9, 11, 20, 22. Type-locality: Peru, Madre de Díos, Avispas; Prado, 1984: 1 (catalog).

Male – total length: 2.6 mm (n = 1).

Head: Higher than long. Eyes slightly higher than long, placed obliquely in the head. Ocellar triangle black. Ocellar seta proclinate and divergent. Postocellar setae convergent. Inner and outer vertical setae strong and subequal. Fronto-orbital and parafacial plates orange, with dense grayish pruinosity; fronto-orbital plate with many scattered setae and four lateroinclinate orbital setae. Frontal vitta reddish orange, with light brown bands at lateral margin, beginning at the lateral margin of ocellar triangle and reaching the lunule, with a row of setae subequal to the ocellar seta (Figure 1). Gena yellow, silvery pruinose, with many scattered black setulae; oral vibrissae thick and long. Antennae short, yellow; scape very small, with strong setulae; pedicel short, weakly notched apicodorsally, with short black setulae along posterior edge; first flagellomere rounded in lateral view, with silvery pruinosity; arista brown, very long (about 1.5 × head height), short-haired (Figure 1). Palpus yellow with silvery microtomentum and black setulae. Proboscis yellow.

Thorax: Dull yellow, two dark brown stripes in dorsal view, extending posteriorly from the anterior margin of the scutum to the scutellar apex (Figure 2). Pleura yellow, except for a dark spot on the superior margin of the anepisternum. Chaetotaxy: 0+1 acrostichals, 1+4 dorsocentrals, 1 postpronotal, 2 notopleurals, 1 presutural intra-alar (in anterior part of scutum), 1+3 supra-alars, 1 basal scutellar, 1 subapical scutelars, 1 strong laterally flattened apical scutellar; 1 proepimeral, 1 anepisternal; 1 katepisternal; anepisternum and katepisternum covered with setulae. Legs: Femora yellow, hind

Figures 1. *Pseudopomyzella flava* Hennig 1969, female. Head (dorsal view), scale bar 0.2 mm.

Figuras 1. *Pseudopomyzella flava* Hennig 1969, fêmea. Cabeça (vista dorsal), escala 0,2 mm.

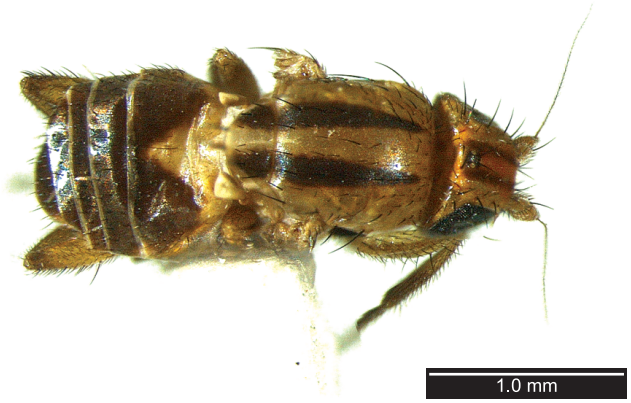

Figure 2. *Pseudopomyzella flava* Hennig 1969, female. Habitus (dorsal view), scale bar 1.0 mm.

Figura 2. *Pseudopomyzella flava* Hennig 1969, fêmea. *Habitus* (vista dorsal), escala 1,0 mm.

femur with an anterodorsal preapical brown spot; fore and hind tibia brown, except for yellow basal 1/4 of hind tibia; mid tibia yellow; fore and hind tarsomeres brown; mid tarsomeres yellow. Fore femur with two anteroventral setae; hind femur with two anterodorsal setae. Wing: Membrane hyaline, with a brown macula between the R_{2+3} and C, and tip of r_{2+3}. Halter yellow.

Abdomen: Tergites covered with small black setulae. Tergites 3–5 brown, tergite 1 yellow, with two faint brown spots laterally in posterior margin, tergite 2 brown with a large median yellow spot in the shape of an inverted triangle at anterior margin, tergite 6 brown, with yellow stripes laterally; ventral surface of tergites and sternites yellow.

Terminalia: Syntergosternites 7+8 yellow, shorter than the epandrium, with a row of four long, slender setae on the posterior half, and few sparsely scattered setulae. Epandrium elongate, yellow, covered with many setae and setulae, and with a long thick bristle dorsally, near base. Cercus short, Surstylus composed of two parts, one elongate, covered with long and slender setae on the dorsal surface and pin-like setae on the ventral surface, attached to posterior margin of epandrium; the other broader than longer, with ventral margin bearing strong setae, located ventrally in the distal portion of epandrium. Paramere small, weakly sclerotized, claviform, with a tiny setula and small pointed projections at the apex. Hypandrium elongated, narrowed apically. Aedegal apodeme rod-like. Aedeagus very long and slender, with apical section coiled (Figure 3).

Female: Like the male in general appearance but differing by: hind tibia brown; apical scutellar bristle like the other bristles of the scutellum, not laterally flattened; syntergosternite 7 yellow with a median black stripe.

Total length: 2.6 mm (n = 1).

Distribution: Neotropical - Brazil (Pará), Ecuador (Napo Pastaza Prov.), Peru (Madre de Díos).

Material examined: BRAZIL, Pará, Tucuruí, Rio Tocantins, Chiqueirão, 13.VI.1984, Armadilha suspensa [= canopy trap] 1,6 m (1 male and 1 female, MPEG).

Discussion

Although we did not examined the type material of *P. flava*, the description and illustrations provided by Henning (1969) agree unanimously with the characters observed in the specimens analyzed in this study. The male analyzed in this study differs from the female in having laterally flattened apical scutellar bristles while the female does not have differentiated apical scutellar bristles. In the original description of *P. flava*, Henning (1969) did not find significant differences between male and female scuttelar bristles. In addition, tergite 6 in specimens analyzed by Henning (1969) showed posterior margin yellow, while in specimens analyzed in this study tergite 6 show lateral yellow stripes.

The monotypic genus *Pseudopomyzella* was described by Henning (1969) based on males and females specimens from Peru and Ecuador. This is the first record of the genus from Brazil, and the first record of a cypselosomatid from Brazilian Amazonia, given that the other two species recorded from Brazil – *Rhinopomyzella albimana* and *R. nigrimana* – were collected in Santa Catarina state, southern Brazil (Prado 1984).

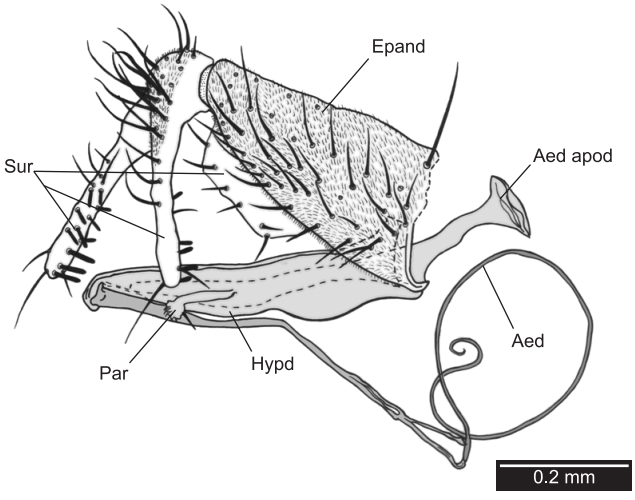

Figure 3. Male terminalia of *Pseudopomyzella flava* Hennig 1969, scale bar 0.2 mm. (aed = aedeagus; aed apod = aedeagal apodeme; epand = epandrium; hypd = hypandrium; par = paramere, sur = surstylus).

Figura 3. Terminália do macho de *Pseudopomyzella flava* Hennig 1969, escala 0,2 mm. (aed = edeago; aed apod = apódema do edeago; epand = epândrio; hypd = hipândrio; par = parâmero, sur = surstilo).

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