

A new species of *Fissimentum* Cranston & Nolte, 1996 from the state of São Paulo, Brazil (Diptera: Chironomidae, Chironominae)

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Resumo

Uma nova espécie de *Fissimentum* Cranston & Nolte, 1996 do estado de São Paulo, Brasil (Diptera: Chironomidae, Chironominae). *Fissimentum mendesi* n. sp. é descrita e ilustrada com base em machos coletados com armadilhas luminosas em duas localidades no estado de São Paulo, Brasil. A nova espécie é aparentemente relacionada a *F. desiccatum* Cranston & Nolte, 1996 e *F. guairense* Pinho & Froehlich, 2011 por apresentar uma projeção posterior no tergito IX, mas pode ser facilmente separada de seus congêneres pela combinação de uma volsela superior curta, robusta, uniformemente curva, e AR em torno de 1,5. Uma chave revisada para os machos do gênero é fornecida.

Palavras-chave: Chave; Descrição; Região Neotropical; Taxonomia

Abstract

Fissimentum mendesi n. sp. is described and figured on the basis of males collected in light traps in two localities in the state of São Paulo, Brazil. The new species is apparently closely related to *F. desiccatum* Cranston & Nolte, 1996 and *F. guairense* Pinho & Froehlich, 2011 by having a posterior projection of tergite IX, but can easily be distinguished from its congeners on the combination of a short, stout, evenly curved superior volsella and an antennal ratio of about 1.5. A revised key to the males of the genus is provided.

Key words: Description; Key; Neotropical region; Taxonomy

Introduction

The genus *Fissimentum* was erected by Cranston and Nolte (1996) on the basis of the larvae, pupae and adults of *F. desiccatum* Cranston & Nolte, 1996 from

the state of Mato Grosso, Brazil. Larvae of *Fissimentum* were described by Roback (1966) as “Tendipedini genus A”, but the larvae were not reared and thus not associated with the pupa and adults. Larvae of this taxon have been recorded in the southern USA, throughout Central



and South America, ranging from the Peruvian Andes to tropical and subtropical lowland areas in Brazil, and Australia as well (CRANSTON; NOLTE, 1996; ROBACK, 1966; EPLER, 2009).

More recently, Pinho and Froehlich (2011) described three additional *Fissimentum* species from Brazil and provided a key to the species. Below, we describe a fifth species from Brazil and revise the previous key (PINHO; FROEHLICH, 2011). The new species is apparently closely related to *F. desiccatum* and *F. guairense* Pinho & Froehlich, 2011 by having a posterior projection of tergite IX. It was collected in light traps at two localities in Furnas do Bom Jesus State Park in the state of São Paulo.

Material and Methods

The specimens examined were mounted on slides in Canada balsam or Euparal following the procedure outlined by SÆTHER (1969). Morphological terminology follows Sæther (1980), and measurements are given as ranges. Coloration is based on slide-mounted specimens.

The holotype will be housed in the Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil (MZUSP), and one paratype will be kept in the entomological collection at Departamento de Ecologia e Zoologia, Universidade Federal de Santa Catarina (UFSC) and one in the Department of Natural History, University Museum of Bergen, Bergen, Norway (ZMBN).

Results

Fissimentum Cranston & Nolte

Fissimentum Cranston & Nolte, 1996: 1.

Type species: *Fissimentum desiccatum* Cranston & Nolte, 1996: 9.

Other included species: *F. fordlandense* Pinho & Froehlich, 2011; *F. guairense* Pinho & Froehlich, 2011; *F. mateusi* Pinho & Froehlich, 2011; *F. mendesi* n. sp.

The genus was described in detail by Cranston and Nolte (1996) on the basis of males, females, pupae and larvae of *F. desiccatum* from Mato Grosso State, Brazil.

Key to the males of *Fissimentum* Cranston & Nolte

1. Tergite IX with posterior projection. ... **2**
 - Tergite IX without posterior projection. ... **4**
 2. Squama with 17–25 setae; R₁ with 0–5 setae, R₄₊₅ with 1–2 apical setae. ... **3**
 - Squama with 12–13 setae; R₁ with 8–13 setae, R₄₊₅ with 12–13 apical setae (CRANSTON; NOLTE, 1996, Figures 3 and 6). ... ***Fissimentum desiccatum* Cranston & Nolte**
 3. Gonocoxite with well-developed, flap-like, posteriorly bent ventromedial projection. AR 1.91–2.11 (PINHO; FROEHLICH, 2011, Figures 2 and 3). ... ***Fissimentum guairense* Pinho & Froehlich**
 - Gonocoxite without flap-like, posteriorly bent ventromedial projection. AR 1.52–1.57 (Figures 1-4). ... ***Fissimentum mendesi* n. sp.**
 4. Gonocoxite with well-developed ventromedial projection. R₄₊₅ with setae only at apex (PINHO; FROEHLICH, 2011, Figure 1). ... ***Fissimentum fordlandense* Pinho & Froehlich**
 - Gonocoxite without ventromedial projection. R₄₊₅ with setae distributed all over the vein (PINHO; FROEHLICH, 2011, Figure 4). ... ***Fissimentum mateusi* Pinho & Froehlich**
- Fissimentum mendesi* n. sp.**
(Figures 1-4)

Type material

Holotype male, Brazil, São Paulo, Pedregulho, Furnas do Bom Jesus State Park, Córrego Bom Jesus, 20°14'38"S 47°27'48"W, 930 m a.s.l., 14 September 2007, light trap, leg. L. C. Pinho et al. (MZSP). Paratypes: 1 male, same as holotype except (UFSC); 1 male, same as holotype except: Furna São Pedro, 20°09'10"S 47°30'38"W, 573 m a.s.l., 16 October 2000, light trap, leg. T. Andersen & H. F. Mendes (ZMBN).

Diagnostic characters

Fissimentum mendesi n. sp. Can be easily distinguished from its congeners on the following combination: a short, stout, evenly curved superior volsella; tergite IX with posterior, subquadrangular extension; and AR of about 1.5.

Description

Male (n = 3). Total length 4.52-5.12 mm. Wing length 1.98-2.12 mm. Total length/wing length 2.28-2.42. Wing length/length of profemur 2.31-2.34.

Coloration. Head, thorax and abdomen brown; legs brown with all tarsi light brown, wings light brown with slightly darker shades along veins.

Antenna. Antennal ratio (AR) 1.52-1.57. Ultimate flagellomere 709-780 μm long.

Head (Figure 1). Temporal setae 18-20; including 2 inner verticals, 10-13 outer verticals bi- to triserial, and 3-4 postorbitals. Clypeus with 18-21 setae. Tentorium 157-187 μm long, 49-57 μm wide. Stipes 157-182 μm long, 13-21 μm wide. Palp segment lengths (in μm): 37-49, 47-49, 157-180, 132-137, 195-198. Third palpomere with 2 sensilla apically, longest 15-21 μm long.

Thorax. Anteprepronotum without seta. Dorsocentrals 8-9; acrostichals 11-13, biserial, starting some distance from anteprepronotum; prealars 3; supraalar 1. Scutellum with 7-8 setae.

Wing (Figure 2). Venarum ratio (VR) 1.10-1.12. Brachiolum with 2 setae, R with 11-14, R_1 with 2-5, R_{4+5} with 1-2, and other veins and cells bare. Squama with 17-20 setae.

Legs. Scale of fore tibia 20-28 μm long, spur of mid tibia 35-39 μm long, spur of hind tibia 39-44 μm long. Combs on mid tibia 20-23 and 19-20 μm long, combs on hind tibia 25-28 and 21-25 μm long. Width at apex of fore tibia 52-57 μm , of mid tibia 55-59 μm , of hind tibia 63-65 μm . Lengths and proportions of legs shown in Table 1.

FIGURE 1: *Fissimentum mendesi* n. sp., male. Head.

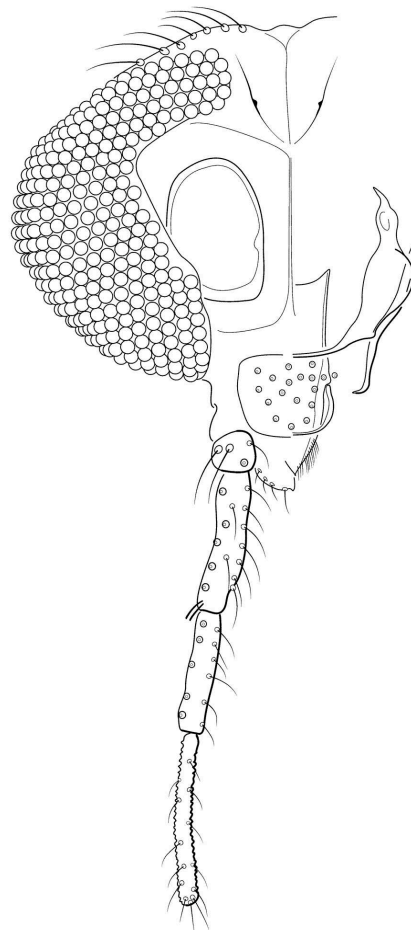


FIGURE 2: *Fissimentum mendesi* n. sp., male. Wing (Photograph, Hege Avsnes Dale).



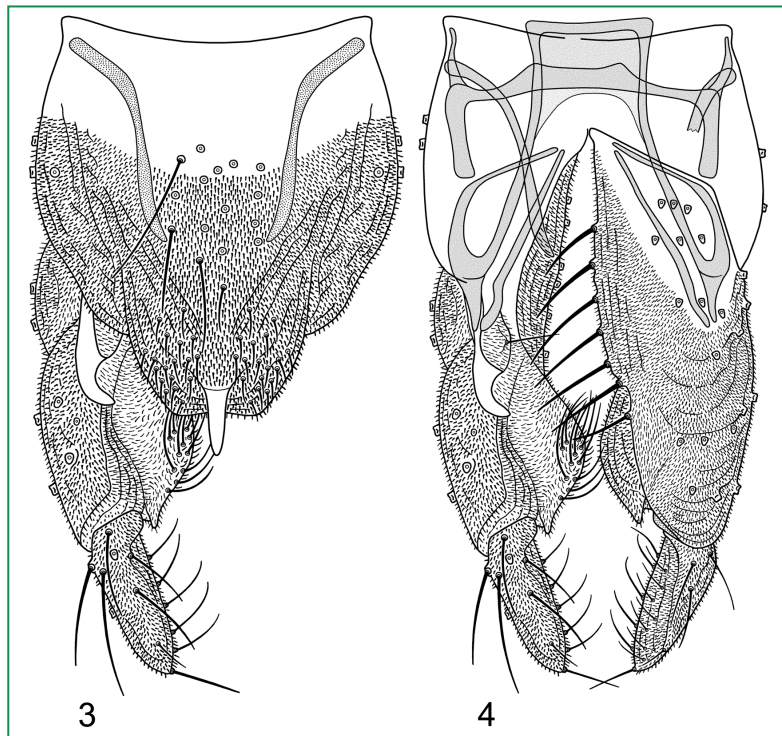
TABLE 1: Lengths (in μm) and proportions of legs of *Fissimentum mendesi* sp. n., male (n = 3). LR = Leg ratio, BV = “Bein-Verhältnisse”, SV = “Schenkel-Schiene-Verhältnis”, BR = Bristle ratio.

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄
p₁	857-874	512-531	1182-1283	808-899	512-564	433-441
p₂	847-899	758-857	480-498	207-221	148-155	95-98
p₃	837-858	857-907	729-735	364-392	284-294	167-172
	ta ₅	LR	BV	SV	BR	
p₁	188-197	2.31-2.42	1.28-1.31	1.10-1.15	1.67-2.33	
p₂	75-80	0.62-0.63	3.97-4.03	3.34-3.43	2.20-3.47	
p₃	84-98	0.81-0.85	2.62-2.70	2.32-2.40	3.40-4.24	

Hypopygium (Figures 3-4). Tergite IX with 16-18 strong median setae and 25-37 weaker setae on posterior subquadrangular extension; anal tergite bands covering about half of the tergite length. Laterosternite IX with 3-4 setae. Anal point bluntly triangular, 40-47 μm long, 13-15 μm wide at base. Transverse sternapodeme 75-109 μm long, straight. Phallapodeme 76-120 μm long. Gonocoxite 237-248 μm long. Superior volsella

stout, evenly curved, 55-59 μm long, 19-25 μm wide medially, 6-7 μm wide subapically, with rounded base with microtrichia and 1-2 inner setae. Inferior volsella 80-102 μm long, with 7-8 μm long, bluntly triangular free tip, with 9-11 dorsal setae. Gonostylus 85-110 μm long. Hypopygium ratio (HR) 2.19-2.79. Hypopygium value (HV) 5.19-5.32.

FIGURES 3-4: *Fissimentum mendesi* n. sp., male; 3. Hypopygium, dorsal view; 4. Hypopygium with anal point and tergite IX removed dorsal aspect to the left and ventral aspect to the right.



Female and immatures: Unknown.

Distribution and ecology

The specimens were collected in light traps in large and shallow streams with substrate of stones and gravel at altitudes between 570 and 930 m. Furnas do Bom Jesus State Park comprises an area of 2,069.06 ha of Cerrado and Atlantic Forest vegetation, including part of the drainage basin of the “Pedregulho” Brook, and it is a representative area of the regional ecosystem called “Furnas do Rio Grande” (BRANCO et al., 2001).

Etymology

Named after Dr. Humberto Fonseca Mendes, for his friendship and contribution to Neotropical chironomidology.

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