

# A new species of *Kloosia* Kruseman, 1933 from Brazil (Diptera, Chironomidae, Chironominae)

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*Kloosia triangulata* sp. n. is described and figured based on a single male from Pará State in Brazil. The species is easily recognized on the large, subtriangular apical part of the inferior volsella. It is tentatively placed in the genus *Kloosia* Kruseman, 1933, and is thus the first species of the genus to be described from South America.

Key words: Diptera, Chironomidae, Chironominae, *Kloosia*, new species, Neotropical region.

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## Introduction

The genus *Kloosia* Kruseman, 1933 was erected by Kruseman (1933: 152) based on *Tipula pusilla* Linnaeus, 1767. The genus is a member of the *Harnischia* Kieffer, 1921 complex, a group of genera with reduced superior and/or inferior volsella. So far, named species of four genera of the group, namely *Cladopelma* Kieffer, 1921; *Cryptochironomus* Kieffer, 1918; *Cryptotendipes* Beck & Beck, 1969; and *Parachironomus* Lenz, 1921 have been recorded or described from South America.

*Kloosia* is distributed in the Palaearctic, Nearctic, Oriental, and Afrotropical regions. Reiss (1988) included four species in *Kloosia*, namely *K. pusilla* (Linnaeus, 1767) from Europe, *K. dorsenna* (Sæther, 1983) from North America, *K. koreana* Reiss, 1988 from Eastern Asia, and

*K. africana* Reiss, 1988 from tropical Africa. Kobayashi (2007) recorded *K. koreana* from Japan. Recently, Mukherjee & Hazra (2023) described *K. incurva* Mukherjee & Hazra, 2023 from India.

The larvae are found in sandy sediments not only in relatively clean, fast flowing rivers and streams, but also in most unstable benthic conditions of large rivers such as the Rhine (Epler *et al.* 2013, Mabee *et al.* 2020).

## Material and methods

Prior to examination the specimen was mounted in Canada balsam following the procedure outlined by Sæther (1969). Morphological terminology follows Sæther (1980). Coloration is based on the slide mounted specimen.

The holotype is kept in the Invertebrate collection at the Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil.

***Kloosia triangulata* sp. n.** (Figures 1–4).

**Type material:** Holotype ♂ adult (slide mounted). BRAZIL: Pará State, Rurópolis, Cachoeira do Grin, 04°05'S 55°00'W, 24 October 2007, leg. N. Hamada *et al.* (INPA).

**Diagnostic characters.** The new species can easily be separated from its congeners on the large, subtriangular apical part of the inferior volsella. It also has two spurs on both mid- and hind tibia, while other species in the genus have only one.

**Etymology.** From Latin *triangulus*, meaning having three angles, referring to the subtriangular apical part of the inferior volsella.

**Description.** Adult male (n = 1). Total length

3.71 mm. Wing length 1.73 mm. Total length / wing length 2.14. Wing length / length of profemur 2.55.

**Coloration.** Head, thorax, and legs light brown, abdomen pale brown. Wing hyaline.

**Antenna.** With 11 segments. Antennal ratio (AR) = 1.81. Terminal flagellomere 768 µm long.

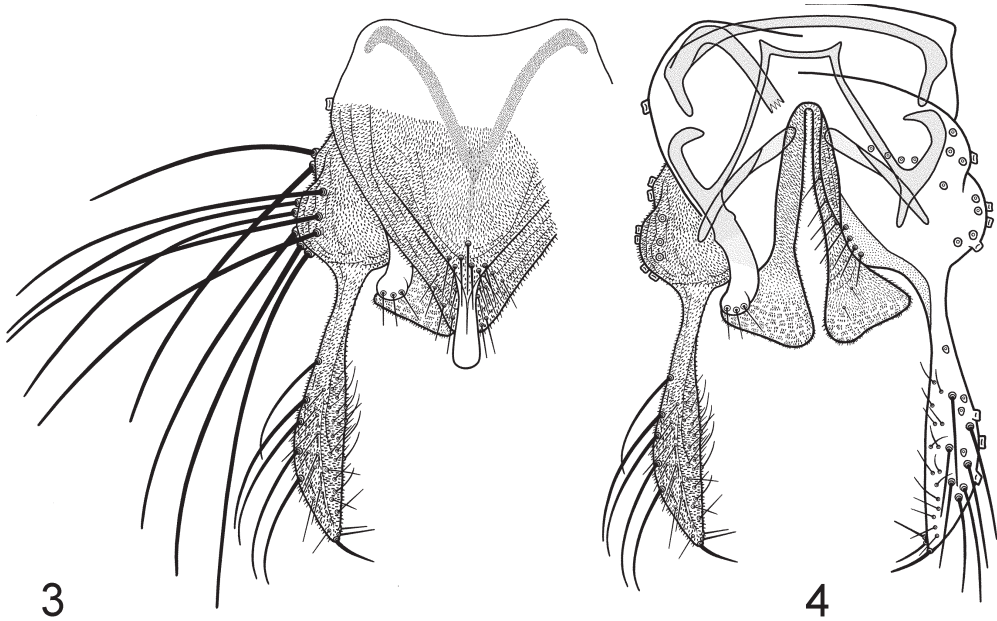
**Head.** Without frontal tubercle. Temporal setae 9 in single row. Clypeus with 16 setae. Tentorium 135 µm long, 32 µm wide. Stipes 113 µm long. Palpomere lengths (in µm): 35, 41, 74, 100, 121. Third palpomere with 4 sensilla clavata subapically, longest about 22 µm long.

**Thorax.** Antepronotum without setae. Acrostichals 15 in double row starting close to antepronotum; dorsocentrals 9, uniserial; prealars 4; supraalar 1. Scutellum with 16 setae in two rows.

**Wing** (Figure 1). Venarum ratio (VR) = 1.15.



FIGURES 1–2. *Kloosia triangulata* sp. n., male. 1. Wing. 2. Abdomen.



**FIGURES 3–4.** *Kloosia triangulata* sp. n., male. **3.** Hypopygium, dorsal view. **4.** Hypopygium with tergite IX removed, dorsal aspect to the left, ventral aspect to the right.

**TABLE 1.** Lengths (in  $\mu\text{m}$ ) and proportions of legs of *Kloosia triangulata* sp. n., male (n = 1).

LR = Leg Ratio, BV = “Bein-Verhältnisse”, SV = “Schenkel-Scheine-Verhältnisse”, BR = Bristle Ratio.

	fe	ti	ta <sub>1</sub>	ta <sub>2</sub>	ta <sub>3</sub>	ta <sub>4</sub>
<b>p<sub>1</sub></b>	776	556	–	–	–	–
<b>p<sub>2</sub></b>	768	629	–	–	–	–
<b>p<sub>3</sub></b>	874	858	596	310	270	147
	ta <sub>5</sub>	LR	BV	SV	BR	
<b>p<sub>1</sub></b>	–	–	–	–	–	
<b>p<sub>2</sub></b>	–	–	–	–	–	
<b>p<sub>3</sub></b>	82	0.695	2.908	2.904	5.59	

Brachiolum with 3 setae, R with 21, R<sub>1</sub> with 11, R<sub>4+5</sub> with 12 setae, other veins and membrane bare. Squama bare.

**Legs.** Fore tibia with 27  $\mu\text{m}$  long, bluntly rounded scale. Mid tibia with 21 and 26  $\mu\text{m}$  wide combs with 41 and 48  $\mu\text{m}$  long spurs, respectively. Hind tibia with 21 and 27  $\mu\text{m}$  wide combs with 41 and 49  $\mu\text{m}$  long spurs, respectively. Width at apex of fore tibia 47  $\mu\text{m}$ , of mid tibia 62  $\mu\text{m}$ , of hind tibia 70  $\mu\text{m}$ . Lengths and proportions of legs as in Table 1.

**Abdomen** (Figure 2). Tergites pale brown,

densely coated with darker setae.

**Hypopygium** (Figures 3–4). Anal tergite bands V- to faintly Y shaped. Anal point spatulate, bare, 65  $\mu\text{m}$  long, 21  $\mu\text{m}$  wide subapically, 14  $\mu\text{m}$  wide near base. Tergite IX with 7 setae above anal point and 8 setae to each side of anal point. Laterosternite IX with 1 seta. Phallapodeme 101  $\mu\text{m}$  long. Transverse sternapodeme straight, 48  $\mu\text{m}$  long. Gonocoxite 164  $\mu\text{m}$  long. Superior volsella digitiform, curved, 46  $\mu\text{m}$  long, 21  $\mu\text{m}$  wide, without microtrichia, with 3 setae in apical pits, setae about 25  $\mu\text{m}$  long. Inferior volsella with

apical, free part subtriangular, widest apically, 37 µm long, 57 µm wide apically, with microtrichia and 2 weak setae ventrally, subapical microtrichia short, arranged in a chequered pattern. Gonostylus 180 µm long. Hypopygium Ratio (HR) = 0.911; Hypopygium Value (HV) = 2.06.

*Immatures and female.* Larva, pupa, and females are unknown.

**Distribution.** The species is known only from the type locality in Pará State, Brazil, where it was collected in a Pennsylvania trap close to a large waterfall.

## Discussion

According to Cranston *et al.* (1989) *Kloosia* is differentiated from all other members of the *Harnischia* complex by having a non-shortened inferior volsella, bearing only very short setae. The inferior volsella in *K. triangulata* is comparatively short, but apart from two very weak ventral setae is only covered with microtrichia. In other aspects the new species fits the diagnosis of *Kloosia* well, except for having two spurs on mid- and hind leg; other species of *Kloosia* have only one spur on both mid- and hind leg. It is therefore tentatively placed in *Kloosia*. However, the *Harnischia* complex is not well understood, and when the larvae and pupa of *K. triangulata* are discovered, they might prove that it deserves a separate genus.

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