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A new species of *Stempellina* Thienemann & Bause from Mato Grosso do Sul, Brazil (Diptera, Chironomidae)

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ABSTRACT. A new species of *Stempellina* Thienemann & Bause from Mato Grosso do Sul, Brazil (Diptera, Chironomidae). The male imago of *Stempellina sofiae* **sp. nov.** is described and illustrated based on material collected in Mato Grosso do Sul, Brazil, during the expeditions of the project SISBIOTA Brazil. One of the core focuses of this project is identifying and describing new species of Diptera from central Brazil. The new species herein presented can be easily segregated by their congeneric by the rounded shape of the superior volsella.

KEYWORDS. Biodiversity; Insecta; Neotropical region; Tanytarsini; taxonomy.

The Tanytarsini genus *Stempellina* was erected by Thienemann & Bause in Bause (1913), with *Tanytarsus* (*Calopsectra*) *bausei* Kieffer, 1911 as the type-species. This is a relatively small, but worldwide distributed genus. There are 22 spe-cific names described in *Stempellina* in the world and 14 in the Holarctic region (Gilka 2005). Still according to Gilka (2005) only 8 species of this genus known in the Holarctic are recognized as valid and five species are recognized for the Palaearctic region. In the Neotropical region only two species are known, *S. cururui* Säwedal, 1984 and *S. tarumai* Säwedal, 1984 from the Amazon region (Spies & Reiss 1996).

During years, the taxonomic status of *Stempellina* underwent a number of changes, from the level of a group of species within a subgenus of that name (Edwards, 1929) to separate subgenus (*e.g*. Tokunaga, 1938; 1939) to genus (Brundin 1947). Originally, *Stempellina* comprised species that are at present classified within other genera, *e.g*., *Stempellinella* Brundin, 1947 and *Neozavrelia* Goetghebuer, 1941. This has so far been an impediment in formulating an unambiguous generic diagnosis.

According of Gilka (2005), in a revision of the European species, the combination of characters which distinguish adult males of *Stempellina* from other genera of the tribe Tanytarsini are the presence of a 12-segmented antennal flagel-lum, presence of at least one spur on mid and hind tibiae, small cylindrical superior volsella and lack of digitus. However, the Brazilian species do not have a cylindrical superior volsella but have an ornamentation on the anal point (splits into 2 or 3 branches), thus characterizing the *cururui*-group (Säwedal 1984). The new species, *Stempellina sofiae* **sp. nov.**, cannot be inserted in this group due the absence of this ornamentation on the anal point, which suggests a closer relationship with the European species. We believe that with increased collections in different biomes in Brazil, as well as throughout the Neotropical region, and descriptions of new species it will be possible to clarify the current gaps in the knowledge of the genus.

In this paper, a new species of *Stempellina*, based on males, is described and illustrated. The specimens were collected as part of the program SISBIOTA Brazil, which has enabled the collecting and description of chironomids from surveys in central Brazil (Wiedenbrug *et al*. 2012).

MATERIAL AND METHODS

Both male specimens were sorted from a Malaise trap sample which had been set on a farm in *Serra da Bodoquena*, Mato Grosso do Sul State, Brazil, and are deposited in the *Museu de Zoologia da Universidade de São Paulo*, São Paulo, Brazil (MZUSP).

Specimens were placed in a coverslip, and mounted into a flat slide using Euparal® following the procedures outlined by Sæther (1969). The terminology follows Sæther (1980). Measurements were made according to the method suggested by Sæther (1968) and Schlee (1966). The measurements are given with the range observed between the two studied specimens.

TAXONOMY

Stempellina sofiae sp. nov.

(Figs. 1–2)

Diagnosis. *Stempellina sofiae* **sp. nov.** differs from other congeneric species by the stem of median volsella long, armed with a bunch of simple setae and long lamellae and the rounded volsella superior.

Description. Male (n = 1–2)

Total length 0.88–0.90 mm. Wing length 0.73–0.76 mm, width 0.19–0.20 mm. Total length/wing length ratio 1.2. Wing

Figs. 1–2. *Stempellina sofiae* **sp. nov.**, male. 1. Hypopygium, dorsal view. 2. Hypopygium with tergite IX and anal point removed; dorsal view to the left, ventral view to the right.

length/profemur length ratio 2.4–2.5. Color (in slide): Thorax with brown mesosternum and scutal stripes. Thorax, abdomen and legs light brown.

Head. Frontal tubercles small. Antenna lost. Clypeus with 7 setae. Lengths of palpomeres 1–5 (in μm): 18; 18–21; 44–48; 50–58; 76.

Thorax. With scutal tubercle. Ac 3; Dc 6; Scts 6. Wing. Squama bare. Anal lobe reduced, cell m_{3+4}, distal part of cells m_{1+2} and r_{4+5} with macrotrichia. Cells r_{4+5} and m_{1+2} with a single row of macro-trichia in distal three-quarters. Legs. Length (in μm) of femur and tibia as in Table I.

Table I. Length (in μm) of femur (Fe) and tibia (Ti) of *Stempellina sofiae* **sp. nov.**, male (n = 2).

	Fe	Ti
L_1	308–309	164–171
L_2	361–368	263–268
L_3	381–392	286–294

Hypopygium. Anal point 18–20 μm long, on tapering part with laterally positioned setae pointing in lateral direction, anal crests absent. Phallapodeme 27–28 μm long, transverse sternapodeme 31–36 μm. Superior volsella rounded, about 22–27 μm long and with 3 setae in anteromedian position. Digitus absent. Stem of median volsella long (17–20 μm) curved and directed caudally, bearing simple setae, lamellae placed latero–apically. Inferior volsella 35–37 μm long, with 5 apical setae. Gonocoxite 52–58 μm long. Gonostylus 31–35 μm long. HR 1.48–1.87. HV 2.52–2.90.

Female and immatures. Unknown.

Etymology. In honor of Dr. Sofia Wiedenbrug for her contribution to knowledge of Chironomidae.

Distribution. Only known from the type locality. The specimens of *Stempellina sofiae* **sp. nov.** were collected in a malaise trap installed on the borders of a small stream with alternate stony bottom and coarse sand of an area covered with semideciduous forest.

Type material: Holotype, 1 male, BRAZIL, Mato Grosso do Sul, *Serra da Bodoquena*, *Fazenda Califórnia*, 20°41'50"S 56°52'54"W, Malaise trap, 22.viii.2011–06.ix.2011, Lamas, C. J. E. *leg*. (MZUSP). Paratype: 1 male, same data as holotype (MZUSP).

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REFERENCES

Brundin, L. 1947. Zur Kenntnis der Swedischen Chironomiden. **Arkiv för Zoologi 39**: 1–95.

Bause, E. 1913. Die Metamorphose der Gattung *Tanytartus* und einiger verwandter Tendipedidenarten. **Archiv für Hydrobiologie 2**: 1–126.

Gilka, W. 2005. A systematic review of European *Stempellina* Thienemann *et* Bause, 1913 (Diptera: Chironomidae) with description of a new species from Fennoscandia. **Annales Zoologici 55**: 413–419.

Schlee, D. 1966. Präparation und Ermittlung von Meßwerten an Chironomidae (Diptera). **Gewässer und Abwässer 41/42**: 169–193.

Sæther, O.A. 1968. Chironomids of the Finse Area, Norway, with special reference to their distribution in a glacier brook. **Archiv für Hydrobiologie 64**: 426–483.

Sæther, O.A. 1969. Some Nearctic Podonominae, Diamesinae, and Orthocladiinae (Diptera: Chironomidae). **Bulletin/Fisheries Research Board of Canada 170**: 1–154.

Sæther, O.A. 1980. Glossary of chironomid morphology terminology (Diptera: Chironomidae). **Entomologica Scandinavica (Supplement) 14**: 1–51.

Säwedal, L. 1984. The cururui-group of the genus *Stempellina* Thienemann & Bause. Amazonian Tanytarsini II. (Diptera: Chironomidae). **Entomologica Scandinavica (Supplement) 15**: 141–149.

Spies, M. & Reiss, F. 1996. Catalog and bibliography of Neotropical and Mexican Chironomidae (Insecta, Diptera). **Spixiana (Supplement) 22**: 61–119.

Tokunaga, M. 1938. Chironomidae from Japan (Diptera) X. New or little–known midges with description of the metamorphosis of several species. **The Philippine Journal of Science 65**: 313–383.

Tokunaga, M. 1939. Chironomidae from Japan (Diptera) XI. New or little–known midges with description of the metamorphosis of tor-rential species. **The Philippine Journal of Science 69**: 297–345.

Wiedenbrug, S., Lamas, C.E. & Trivinho-Strixino, S. 2012. A review of the genus *Corynoneura* Winnertz (Diptera: Chironomidae) from the Neotropical region. **Zootaxa 3574**: 1–61.

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