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**A hundredth Neotropical species of the genus *Tanytarsus* van der Wulp  
(Chironomidae, Diptera) from Rio Grande do Norte, Brazil**

**Setny neotropikalny gatunek z rodzaju *Tanytarsus* van der Wulp  
(Chironomidae, Diptera) z Rio Grande do Norte, Brazylia**

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**ABSTRACT.** *Tanytarsus centesimus* **sp. nov.** is the hundredth Neotropical species of the genus *Tanytarsus* van der Wulp, 1874, here described from the easternmost land of South America. The peculiar adult male has its genital apparatus bearing large spinulae, and strongly elongated median volsellae. The new species is compared with members of the *Tanytarsus marauia* group, here defined as close relatives.

**KEY WORDS:** mime midges, Tanytarsini, taxonomy, new species

## INTRODUCTION

*Tanytarsus* van der Wulp, 1874 is one of the most diverse, if not the richest genus of the dipteran family Chironomidae. Nearly 300 species of *Tanytarsus* have been described so far, a third of which are known from the Neotropics. Most of them occur in South and Central America exclusively, although some species are recorded in the tropical and subtropical ecozones of Mexico and the USA. A recent inventory of Neotropical *Tanytarsus* reported 89 species (Dantas *et al.* 2022), and later studies identified further 10 species (Reis *et al.* 2022, Dantas *et al.* 2023, Gilka *et al.* 2024) giving a total of 99 *Tanytarsus*, the majority of which (69 species) were

recorded in Brazil. Here we present a hundredth Neotropical and 70th Brazilian species of the genus collected from the easternmost region of South America. The adult male of the new species shows a peculiar structure of its hypopygium bearing large spinulae, and a strongly elongated median volsella.

## MATERIAL AND METHODS

The specimens were sampled at the site shown in Fig. 1, using a Shannon trap, and preserved in 80% ethanol. Microscope slides were prepared using Euparal as the mounting medium, according to the procedure outlined by Sæther (1969). The general morphological terminology follows Sæther (1980). Measurements were made using the Cell D program, and a digital camera attached to an Olympus BX 51 microscope. The photographs were taken with a Leica DFC295 camera attached to a Leica DM5500B compound light microscope and adjusted using Helicon Focus® ver. 8.2.0 image stacking software. The type material will be deposited at the Invertebrates Collections of the Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (INPA).



**FIG. 1.** Type locality of *Tanytarsus centesimus* sp. nov. on the day of sampling the specimens, before setting the trap.

**RYC. 1.** Miejsce typowe *Tanytarsus centesimus* sp. nov. w dniu zbioru okazów, przed ustawieniem pułapki.

## RESULTS

### *Tanytarsus centesimus* sp. nov.

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(Figs 2–4)

**Type material.** Holotype, adult male: BRAZIL, Rio Grande do Norte, Nísia Floresta, rural area, 06°04'24"S, 35°09'40"W, 29 m a.s.l., 4 January 2022, Shannon trap, leg. G.P.S. Dantas, M.P.G. Pinheiro (INPA). Paratypes: 2 males, same data as holotype.

**Derivatio nominis.** From the Latin numeral *centesimus*, the hundredth.

**Diagnosis.** Frontal tubercles small, ~5 µm. Tergite IX with 3–4 median setae and V-shaped, widely separated short bands. Anal point stout, bearing large bi- or trifold spinulae arranged in double row between well-developed crests, subapical flap distinct. Superior volsella somewhat quadrate or rhomboid, with anterolateral portion convex; digitus slightly curved, extending well beyond posteromedian margin of superior volsella. Median volsella with distinct scale-shaped basal lobe, stem markedly elongated, slender, medially directed, with distal part strongly curved backward, bearing bunch of slender setiform lamellae.

**Description.** Adult male (n = 3)

**Body size and proportions.** Total length 2.53–2.86 mm. Wing length 1.25–1.36 mm. Total length/wing length 2.02–2.11. Wing length/length of profemur 1.60–1.64.

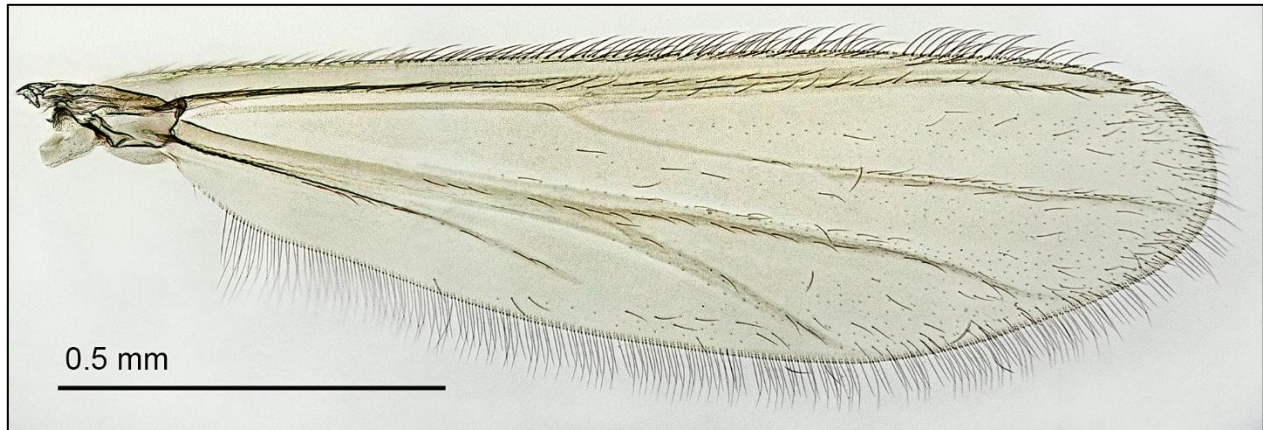
**Colouration.** Eyes black, antenna light brown, head capsule and palps yellow to light brown. Thorax brownish yellow. Legs and abdomen yellow. Wing veins yellowish to light brown, membrane with yellow undertone.

**Head.** Eyes bare, with well-developed dorsomedian extensions. Antenna with 13 flagellomeres; ultimate flagellomere 480–517 µm long; AR 1.05–1.25. Frontal tubercles small (5–6 µm). Tentorium 115–140 µm long. Temporal setae 9–11 on each side. Clypeus with 13–15 setae. Lengths of palpomeres 1–5 (in µm): 28–30, 32–34, 106–110, 116–118, 222–225; third palpomere with 2 sensilla clavata subapically, 14–16 µm long.

**Thorax.** Ac 18–20, restricted to the anterior region of scutum; Dc 8–11 on each side, uniserial; Pa 1 on each side; Scts 4. Scutum projected anteriorly, overreaching antepnotum.

**Wing** (Fig. 2). Obovate, with anal lobe weak. Sc, M, RM, proximal section of  $M_{1+2}$  and Cu bare, other veins and false veins with macrotrichia; membrane covered with macrotrichia in cell  $r_{4+5}$  and distal part of m, with row below proximal half of  $M_{1+2}$  and above distal half of Cu, in  $m_{3+4}$  restricted to distal half, in cu and an restricted to posterior wing margin. Brachiolum with 1 seta.  $VR_{Cu}$  1.17–1.20.





**FIG. 2.** *Tanytarsus centesimus* sp. nov., male. Wing.

**RYC. 2.** *Tanytarsus centesimus* sp. nov., samiec. Skrzydło.

*Legs.* Foreleg tibia with lanceolate spur 22–30  $\mu\text{m}$  long. Tibial combs of mid and hind legs separated; spurs of mid leg unequal: one apically curved, 32–35  $\mu\text{m}$  long, second straight, 18–20  $\mu\text{m}$  long; spurs of hind leg unequal: one apically curved, 38–42  $\mu\text{m}$  long, second straight, 34–36  $\mu\text{m}$  long. Basitarsus of mid leg with 3–4 sensilla chaetica. Lengths and proportions of legs as in Table 1.

**TAB. 1.** Lengths of leg segments ( $\mu\text{m}$ ) and leg ratios of male *Tanytarsus centesimus* sp. nov.

**TAB. 1.** Długości członów nóg (w  $\mu\text{m}$ ) i proporcje nóg samca *Tanytarsus centesimus* sp. nov.

	fe	ti	ta <sub>1</sub>	ta <sub>2</sub>	ta <sub>3</sub>	ta <sub>4</sub>	ta <sub>5</sub>	LR	BV	SV
p <sub>1</sub>	780–830	355–360	1020	490	418	370	160	2.82	1.54	1.17
p <sub>2</sub>	710–755	550–566	360–380	175–180	120–125	65–75	50–62	0.65–0.67	3.89–3.90	3.48–3.50
p <sub>3</sub>	760–805	645–685	518–537	290–313	260–270	155–165	85–92	0.78–0.80	2.41–2.43	2.71–2.77

*Hypopygium* (Figs 3, 4). Tergite IX covered with dense short microtrichia except for small irregular fields lateral to anal point base, 3–4 median setae placed irregularly, 7–9 short setae on each side of anal point; lateral teeth small, single-lobed; tergite bands V-shaped, widely separated, ending well anterior to anal point base before middle of anal tergite (Fig. 3A). Anal point stout, with apex rounded or truncated, crests well-developed, surrounding 11–14 large bi- or trifid spinulae arranged in two rows running to irregular field distally, subapical flap distinct, upturned (Fig. 3A–C). Superior volsella 24–26  $\mu\text{m}$  long, somewhat quadrate or rhomboid, with anterolateral portion convex; 3–4 setae dorsally, 3 setae on median margin, microtrichia on dorsal surface absent; digitus well-developed, 27–28  $\mu\text{m}$  long, finger-like,

slightly curved at mid length, apex blunt, extending well beyond posteromedian margin of superior volsella (Figs 3A, 4A, B, B'). Median volsella with distinct scale-shaped basal lobe, stem markedly elongated, 65–70  $\mu\text{m}$  long, slender, medially directed, with distal part strongly curved backward, bearing bunch of slender setiform lamellae (Fig. 4A). Inferior volsella 70–72  $\mu\text{m}$  long, slightly curved and posteromedially directed (Figs 3A, 4A). Phallapodeme 95–100  $\mu\text{m}$  long; transverse sternapodeme 60–70  $\mu\text{m}$  long, with small oral projections. Gonocoxite 92–110  $\mu\text{m}$  long. Gonostylus 90–100  $\mu\text{m}$  long, slender, slightly swollen near mid length, tapering to narrow tip. HR 1.02–1.10, HV 2.81–2.86.

Female and immature stages unknown.

### Taxonomy

*Tanytarsus centesimus* combines exclusive characters with those known from several other *Tanytarsus*, especially of the *marauia* group proposed by Sanseverino *et al.* (2002) and discussed in detail (Sanseverino 2006). The group includes *Tanytarsus marauia* Sanseverino, Wiedenbrug & Fittkau, 2002, *T. revolta* Sanseverino, Wiedenbrug & Fittkau, 2002, *T. waika* Sanseverino, Wiedenbrug & Fittkau, 2002, and *T. xingu* Sanseverino, Wiedenbrug & Fittkau, 2002. Several crucial diagnostic characters are common for all the species of the *marauia* group and *T. centesimus*: 1) the anal tergite bands are widely separated, short and never reaching the middle of the anal tergite; 2) the stout anal point is armed with well-developed crests, spinulae, and the subapical upturned flap or “raised spine-bearing surface in posterior portion” *sensu* Sanseverino (2006), forming a conspicuous hump in *T. xingu*; 3) the superior volsella is somewhat quadrate/rhomboid (more ovoid in *T. marauia*), and the shape is nearly identical in *T. waika* and *T. centesimus*. However, the species of the *marauia* group differ distinctly from *T. centesimus* in the size and arrangement of spinulae that are small and placed irregularly in the *marauia* group, while large and placed in double row in *T. centesimus*. The median volsella is well-developed in all the species compared, but in the *marauia* group the stem is never as long and curved as in *T. centesimus*; the pectinate lamellae in the *marauia* group are short when compared with the extraordinarily elongated setiform lamellae in *T. centesimus*. Due to these differences, we refrain from including *T. centesimus* in the *marauia* or any species group in *Tanytarsus* defined so far.

### Geographical distribution and bionomics

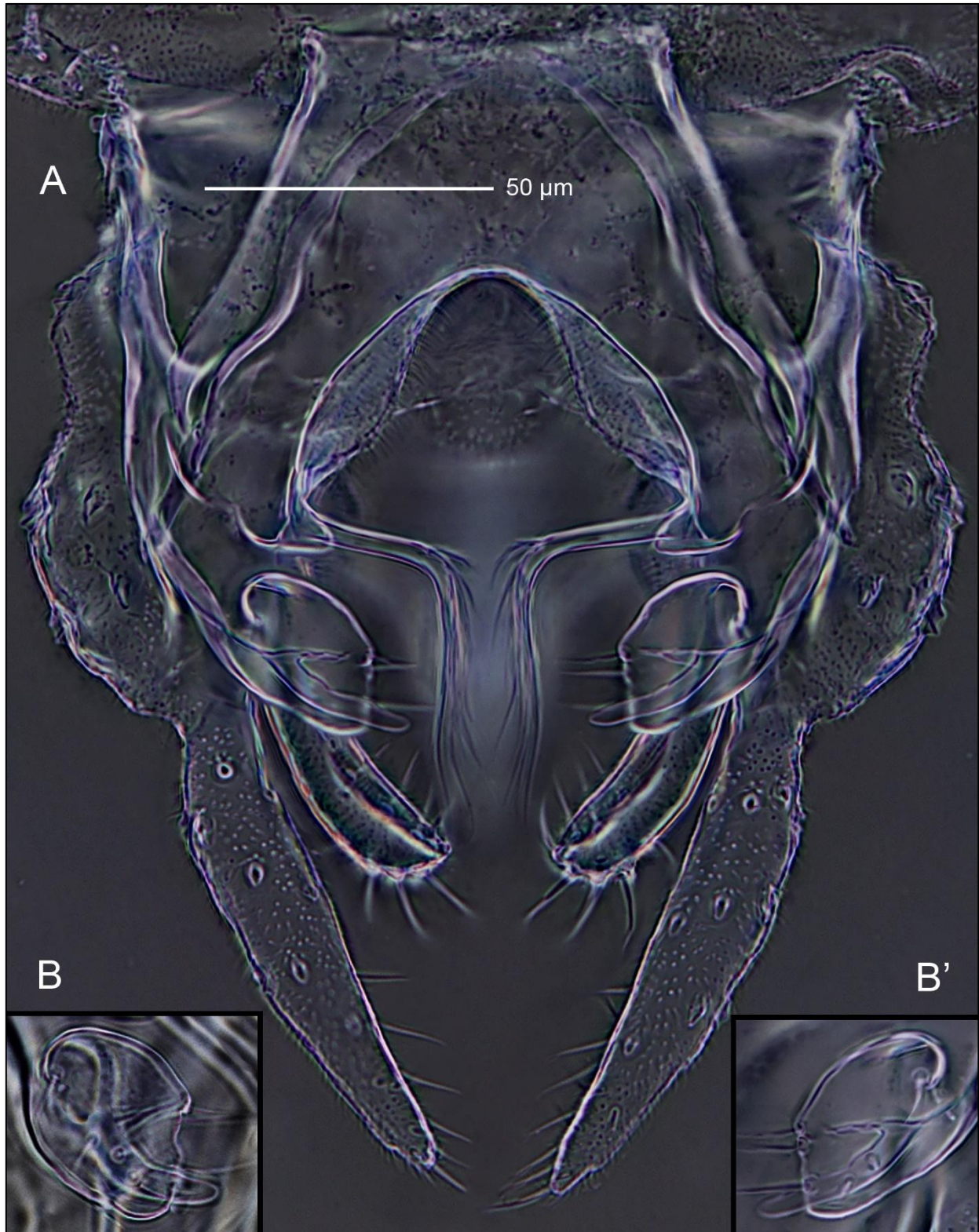
*Tanytarsus centesimus* is known from the state Rio Grande do Norte in Brazil, from the site situated 120 km north and less than half a degree of longitude west of/relative to the easternmost land of South America, Cape Branco (7°09'18"S 34°47'37"W). The examined specimens were sampled over a small sand-bottomed lowland stream surrounded by moderately dense vegetation (Fig. 1).



**FIG. 3.** *Tanytarsus centesimus* sp. nov., male. A: hypopygium in dorsal view. B: anal point, variation. C: anal point spinule (magnified  $\times 3$  relative to A).

**RYC. 3.** *Tanytarsus centesimus* sp. nov., samiec. A: hypopygium od strony grzbietowej. B: wierzchołek tergitu analnego, zmienność. C: spinule wierzchołka (powiększone  $\times 3$  w stosunku do A).





**Fig. 4.** *Tanytarsus centesimus* sp. nov., male. A: hypopygium in ventral view. B & B': superior volsella and digitus, variations.

**Ryc. 4.** *Tanytarsus centesimus* sp. nov., samiec. A: hypopygium od strony brzusznej. B & B': górna wolsella i palec, zmienność.

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## STRESZCZENIE

W niniejszej pracy opisano nowy gatunek muchówki z rodziny Chironomidae Newman, 1834, plemienia Tanytarsini Zavřel, 1917 i rodzaju *Tanytarsus* van der Wulp, 1874: *T. centesimus* sp. nov. Dorosły samiec tego gatunku charakteryzuje się osobliwą budową aparatu kopulacyjnego z dużymi spinulami i silnie wydłużoną środkową wolsellą. Zbadane okazy pochodzą z Brazylii, ze stanowiska położonego w pobliżu Przylądka Branco - najbardziej na wschód wysuniętego lądu Ameryki Południowej. *T. centesimus* to setny neotropikalny przedstawiciel rodzaju i 70ty brazylijski gatunek *Tanytarsus*.



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**Editorial remarks:**

\* Papers of the 40<sup>th</sup> volume of *Dipteron* are dedicated to the late Maria Grzybkowska

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