

***Iporangomberus pei* n. gen., n. sp. from southeastern Brazil
(Diptera: Chironomidae, Orthocladiinae)**

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Abstract: *Iporangomberus pei* n. gen., n. sp. is described and illustrated based on an adult male from Mata Atlântica in southeastern Brazil. This genus can be separated from other Orthocladiinae based on the combination of hairy eyes; decumbent acrostichals starting close to anteprepronotum; bare wing; squama with few setae; R₄₊₅ ending distal to M₃₊₄; curved, apically spoon-shaped phallapodeme; and simple, subquadrangular gonostylus with well developed heel.

Keywords: Chironomidae, Orthocladiinae, *Iporangomberus*, new genus, new species, Brazil, Neotropical region, Mata Atlântica.

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Resumo: *Iporangomberus pei* n. gen., n. sp. é descrito e ilustrado com base em um macho adulto coletado numa área de Mata Atlântica no sudeste do Brasil. Este gênero pode ser separado dos demais Orthocladiinae com base na combinação de olhos com pelos entre os omatídeos; acrosticais decumbentes começando próximo ao anteprepronoto; asa sem setas; squama com poucas setas; R₄₊₅ terminando distalmente em relação ao ápice de M₃₊₄; falapódema curvo com ápice em forma de colher; gonóstilo simples, subquadrangular, com uma projeção bem desenvolvida.

Palavras-chave: Chironomidae, Orthocladiinae, *Iporangomberus*, gênero novo, espécie nova, Brasil, região Neotropical, Mata Atlântica.

Introduction

In their catalog of the Neotropical and Mexican chironomids Spies & Reiss (1996) recorded seven Orthoclaadiinae species from Brazil; one of these, *Ichthyocladia neotropicus* Fittkau, as uncertain, a species which later has proved not to occur in Brazil (Mendes et al. 2004). Today the list of Brazilian orthoclad counts 95 species (Mendes & Pinho 2011). Since the publication of the catalog (Spies & Reiss 1996), 12 new orthoclad genera have been described based on material from Brazil: *Gravatamberus* Mendes et Andersen, *Gynocladus* Mendes, Sæther et Andrade-Morrays, *Litocladus* Mendes, Andersen et Sæther, *Lyrocladius* Mendes et Andersen, *Oleia* Andersen et Mendes, *Oliveiriella* Wiedenbrug et Fittkau, *Phytotelmatocladus* Epler, *Saetherocladus* Andersen et Mendes, *Saetherocryptus* Andersen et Mendes, *Saetherolabis* Andersen et Mendes, *Saetherops* Andersen et Mendes, and *Ubatubaneura* Wiedenbrug et Trivinho-Strixino.

Many new Brazilian Orthoclaadiinae species still await description. However, when collecting in Brazil many of the orthoclads encountered do not readily fit into any described genus. Several of these might be terrestrial or semiterrestrial and the larvae and pupae might be difficult to find. Below we describe one of these species showing unique character combinations and placing it in a new genus. The species was taken in a Malaise trap in the Atlantic rainforest in southeastern Brazil during the BIOTA-FAPESP project "Limites geográficos e fatores causais de endemismo na Floresta Atlântica em Diptera".

Material and Methods

The specimen was mounted in Canada Balsam following the procedures outlined by Sæther (1969). The general morphology follows Sæther (1980).

The type will be deposited in Museu de Zoologia da Universidade de São Paulo (MZUSP).

IPORANGOMBERUS NEW GENUS

Type species: *Iporangoberus pei* new species

Etymology: From Tupi *yporang*, meaning beautiful river, in the Portuguese version *iporanga*; and *mberui*, midge, mosquito; meaning "the midge from the beautiful river". This is an allusion to Iporanga, one of the cities in which Parque Estadual Intervales is located. Gender of the genus name: masculine.

Diagnostic characters: The combination of hairy eyes; decumbent acrostichals starting close to antepnotum; bare wing membrane; squama with few setae; R_{4+5} ending distal to M_{3+4} ; phallapodeme curved, apically spoon-shaped; and gonostylus simple, subquadrangular, with well developed heel will separate the genus from all other Orthoclaadiinae.

1. Description

Small sized species, wing length 0.98 mm.

Head. Eye hairy, reniform, without dorsomedian extension. Antenna lost. Palpomeres normal, third palpomere with few sensilla clavata subapically. Temporal setae in single row, inner verticals weak, outer verticals and postorbitals strong. Frontal tubercle absent. Tentorium and stipes normal. Cibarial pump with anterior margin weakly concave. Clypeus with few setae.

Thorax. Antepnotum well developed with lobes meeting medially at anterior margin of scutum. Acrostichals decumbent, biserial, starting close to antepnotum; dorsocentrals simple, uni-to biserial; prealars uniserial, grouped in posterior and anterior prealars; supraalar present. Scutellum with few setae in single row.

Wing. Membrane without setae, with comparatively coarse punctuation, microtrichia visible at 100 times magnification. Anal lobe normal. Costa slightly extended; R_{2+3} ending at 1/3 of the distance between R_1 and R_{4+5} ; R_{4+5} ending distal to M_{3+4} ; FCu distal to RM; Cu_1 curved. Brachiolum with 1 seta, R with few setae, other veins bare. Squama with few setae. Sensilla campaniformia about 9 basally, 7 apically, and 3 above seta on brachiolum; 1 on RM; and 1 basally on R_1 .

Leg. Tibial spurs and comb normal. Tarsal pseudospurs and sensilla chaetica absent. Pulvilli vestigial.

Abdomen. Abdominal setation reduced. Tergite I with few median setae, tergites II-VI with anterior and posterior row of few setae, tergites VII-VIII with few more scattered setae. Sternite I-III bare, sternite IV-VII with single to few median setae, sternite VIII with few scattered setae in apical half.

Hypopygium. Anal point short, parallel-sided with rounded apex, with microtrichia at base only. Tergite IX with few setae to each side of anal point, laterosternite IX with several setae. Apodemes strongly sclerotized. Phallapodeme curved; aedeagal lobe spoon-shaped. Transverse sternapodeme straight, with strongly developed oral projections; coxapodeme strong, stretching orally beyond transverse sternapodeme. Penis cavity with horse-shoe shaped basal sclerite; virga consisting of two separate sclerites. Penis lobe suspended between the phallapodemes, with fine spines in apical half, with ventral channel in basal half. Gonocoxite with narrowly triangular, pointed inferior volsella with few strong marginal setae. Gonostylus broad, subquadrangular with distinct heel, covered with long, thin macrotrichia and setae; megaseta normal.

Female, pupa and larva. Unknown.

2. Systematics

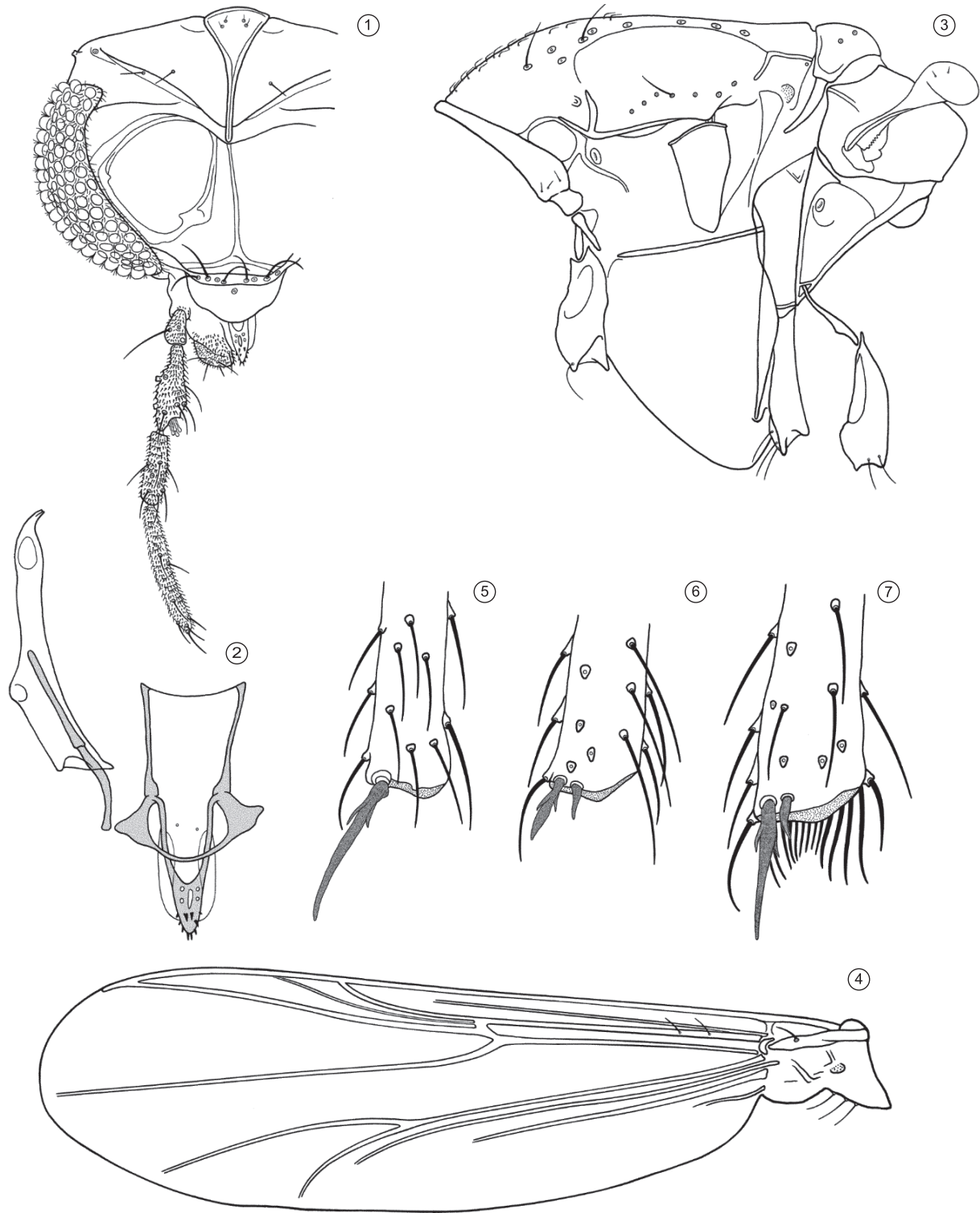
This genus will key to *Paracladius* Hirvenoja in Cranston et al. (1989) and to *Rheocricotopus* Thienemann et Harnisch in Spies et al. (2009). If the character hairy eyes is ignored and the eyes considered as bare, it will key to *Bryophaenocladus* Thienemann in Cranston et al. (1989), and to dichotomy 135 in Spies et al. (2009) where it will not key further.

The genus shows several similarities with *Bryophaenocladus*, especially the decumbent acrostichals starting close to antepnotum, bare wing membrane with coarse punctuation, squama with setae, and tibial spurs with lateral spines; it can easily be separated from *Bryophaenocladus* based on the hairy eyes. However, a position in the branch that includes the genera *Antillocladius* Sæther, *Bryophaenocladus*, *Gymnometriocnemus* Goetghebuer, *Litocladus* Mendes, Andersen et Sæther, *Parasmittia* Strenzke, and *Smittia* Holmgren as explored by Mendes & Andersen (2008) does not seem unlikely.

IPORANGOMBERUS PEI NEW SPECIES (FIGURES 1-13)

Type material: Holotype male: Brazil, São Paulo State, Parque Estadual Intervales, Ribeirão Grande, Barra Grande, 10-13.xii.2000, Malaise trap (Trilha 5), M.T. Tavares et al. *leg.* (PEIN05 BIOTA-FAPESP) (MZUSP).

Etymology: The name *pei* is the abbreviation used for 'Parque Estadual Intervales'. The name is to be treated as a noun in apposition.

Iporangomberus pei new genus, new species

Figures 1-7. *Iporangomberus pei* n. gen., n. sp., male. 1) Head; 2) Tentorium, stipes and cibarial pump; 3) Thorax; 4) Wing; 5) Apex of fore tibia; 6) Apex of mid tibia; 7) Apex of hind tibia.

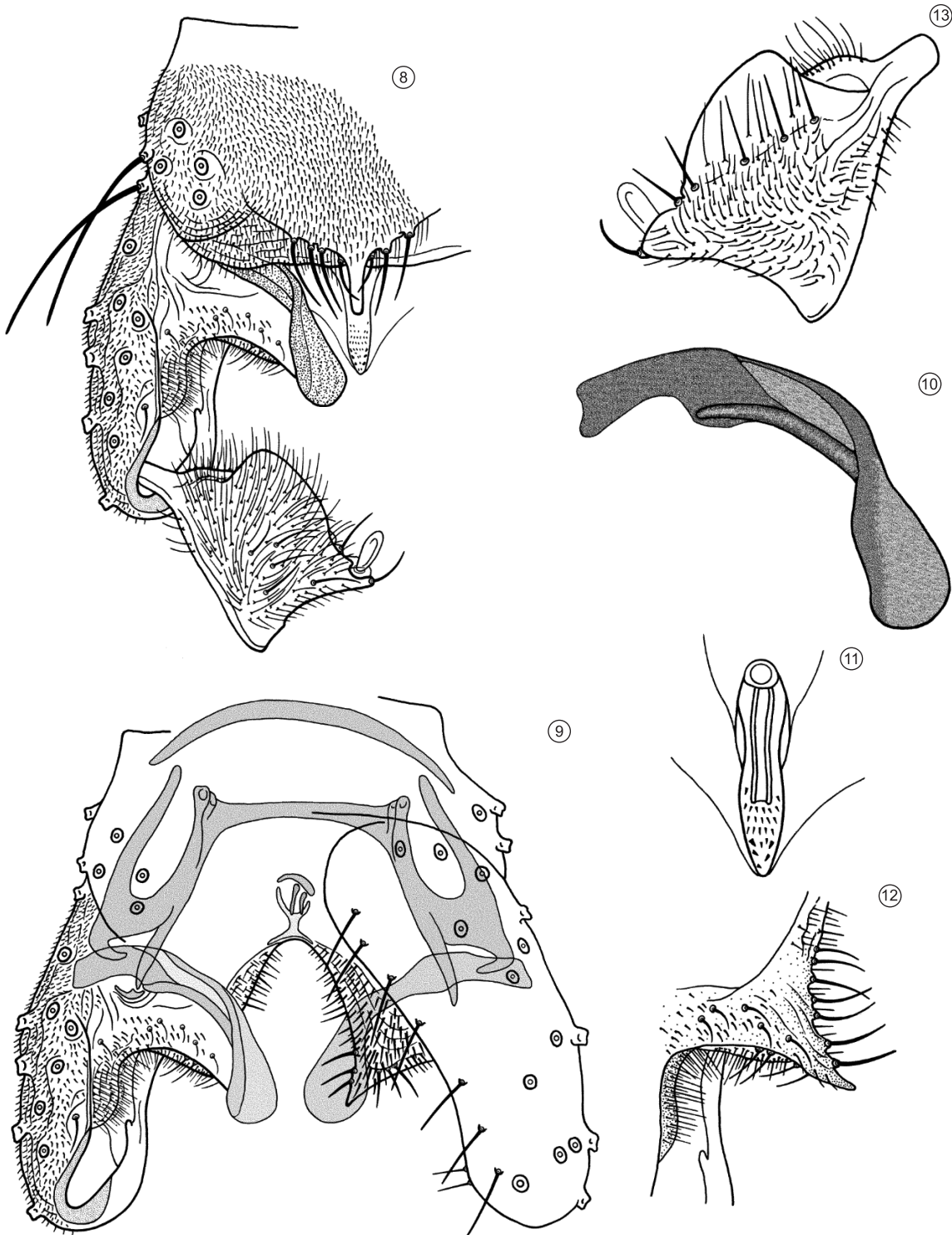
Diagnostic characters: see generic description

1. Description

Male (n = 1). Total length 1.53 mm. Wing length 983 μ m. Total length/wing length 1.71. Wing length/length of profemur 2.42.

Coloration. Brown, without darker markings; legs slightly lighter than body; wing translucent.

Head (Figure 1). Antennae lost. Temporal setae 8 including 2 inner verticals, 4 outer verticals, and 2 postorbitals. Clypeus with 9 setae. Tentorium, stipes, and cibarial pump as in Figure 2. Tentorium 107 μ m



Figures 8-13. *Iporangomerus pei* n. gen., n. sp., male. 8) Hypopygium, dorsal view; 9) Hypopygium with anal point and tergite IX removed, dorsal aspect to the left and ventral aspect to the right; 10) Phallapodeme, dorsal view; 11) Penis lobe, ventral view; 12) Inferior volsella, dorsal view; 13) Gonostylus, ventral view.

long, 16 μm wide; stipes 82 μm long. Palp segment lengths/widths (in μm): 14/13, 23/13, 60/19, 52/14, 91/11. Third palpomere with 4 sensilla clavata subapically, 10 μm long.

Thorax (Figure 3). Anteprenotum with 3 setae. Dorsocentrals 9; acrostichals 16, all decumbent starting close to anteprenotum; prealars composed of 3 posterior and 4 anterior setae; supraalar 1. Scutellum with 4 setae.

Wing (Figure 4). VR 1.40. Costal extension 14 μm long. Brachiolum with 1 seta, R with 2 setae, remaining veins and cells bare. Squama with 3 setae.

Legs (Figures 5-7). Spur of fore tibia 39 μm long, spurs of mid tibia 18 μm and 9 μm long, spurs of hind tibia 36 μm and 9 μm long. Width at apex of fore tibia 22 μm , of mid tibia 23 μm , of hind tibia 32 μm .

Table 1. Lengths (in μm) and proportions of legs of *Iporangomberus pei* n. gen., n. sp. (n = 1).

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV	BR
p ₁	356	407	169	97	56	34	25	0.42	4.39	4.51	-
p ₂	364	346	130	75	47	26	24	0.37	4.90	5.47	2.4
p ₃	385	405	-	-	-	-	-	-	-	-	-

Comb with 13 setae, longest 27 μm long, shortest 18 μm long. Lengths and proportions of legs as in Table 1.

Hypopygium (Figures 8-13). Tergite IX with 7 strong setae along posterior margin. Anal point hyaline with microtrichia at base only, 16 μm long, 6 μm wide at base, 4 μm wide at apex. Laterosternite IX with 7 setae. Transverse sternapodeme straight, 54 μm long. Phallapodeme 64 μm long. Virga with 2 spines, 9 μm long. Penis lobe 35 μm long, 8 μm wide medially, with 17 μm long ventral channel. Gonocoxite 111 μm long. Gonostylus 69 μm long, with 59 μm long heel (measured from the base of gonostylus); megaseta 11 μm long. HR 1.61. HV 2.21.

2. Distribution and habitat

The species is known only from its type locality, Parque Estadual Intervales in São Paulo, southeastern Brazil, where it was collected in a Malaise trap. The park is covered with primary and secondary forests with lots of epiphytes and mosses growing both on tree trunks and on the ground. Numerous small rivers are found in the area.

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