# *Caaporangombera*, a new Orthocladiinae genus from Brazil (Diptera, Chironomidae)

TROND ANDERSEN, LUIZ CARLOS PINHO & HUMBERTO FONSECA MENDES

Andersen, T., Pinho, L.C. & Mendes, H.F. 2015. *Caaporangombera*, a new Orthocladiinae genus from Brazil (Diptera, Chironomidae). *Norwegian Journal of Entomology* 62, 69–79.

*Caaporangombera* **n. gen.** is erected based on the males of four new species from Mata Atlântica, the Atlantic Forest: *C. urubici* **n. sp.** from Santa Catarina State, *C. intervales* **n. sp.** and *C. jureia* **n. sp.** from São Paulo State, and *C. sapiranga* **n. sp.** from Bahia State. The combination of bare eyes and wings; antenna without apical seta; short acrostichals starting close to antepronotum; costa strongly extended; $R_{4+5}$ ending opposite to distal of $M_{3+4}$; $Cu_1$ strongly curved to slightly sinuous; anal point sitting high on tergite IX, triangular to nearly parallel-sided with bluntly rounded apex; and broad, spoon-shaped gonostyli will separate the genus from all other orthoclads.

Key words: Diptera, Chironomidae, Orthocladiinae, *Caaporangombera* new genus, *C. urubici* new species, *C. intervales* new species, *C. jureia* new species, *C. sapiranga* new species, Mata Atlântica, Brazil, Neotropical region.

*Trond Andersen, Department of Natural History, University Museum of Bergen, University of Bergen, P.O. Box 7800, NO-5020 Bergen, Norway. E-mail: trond.andersen@uib.no*

*Luiz Carlos Pinho, Universidade Federal de Santa Catarina, Centro de Ciências Biológicas, Departamento de Ecologia e Zoologia, 88040-901, Florianópolis - SC, Brazil.*
*E-mail: luiz.pinho@ufsc.br*

*Humberto Fonseca Mendes, Universidade Federal de Alfenas, Instituto de Ciências da Natureza, Rua Gabriel Monteiro da Silva, 700, 37130-000 Alfenas - MG, Brazil. E-mail: orthocladiinae@gmail.com*

## Introduction

Spies & Reiss (1996) recorded seven Orthocladiinae species from Brazil; one of these, *Ichthyocladius neotropicus* Fittkau, 1974 as uncertain, a species which later proved not to occur in Brazil (Mendes *et al.* 2004). Today the list of Brazilian orthoclads counts 122 species (see Mendes & Pinho 2011). Eighteen new orthoclad genera have been described based on material from Brazil during the last decade, viz. *Gravatamberus* Mendes & Andersen, 2008; *Gynocladius* Mendes, Sæther & Andrade-Morraye, 2005; *Iporangomberus* Mendes & Andersen, 2011; *Jururumberus* Mendes & Andersen, 2013; *Litocladius* Mendes, Andersen & Sæther, 2004; *Lyrocladius* Mendes & Andersen, 2008; *Mariambera* Andersen, Mendes & Pinho, 2015; *Maximberus* Andersen & Mendes, 2012; *Miambera* Andersen & Mendes, 2012; *Oleia* Andersen & Mendes, 2007; *Pebapomberus* Mendes & Andersen, 2012; *Phytotelmatocladius* Epler, 2010; *Saetherocladius* Andersen & Mendes, 2007; *Saetherocryptus* Andersen & Mendes, 2007; *Saetherolabis* Andersen & Mendes, 2007; *Saetherops* Andersen & Mendes, 2007; *Ubatubaneura* Wiedenbrug & Trivinho-Strixino, 2009; and *Uirassubrillia* Mendes, Andersen & Pinho, 2013. Several of these genera are based

on material collected in the Atlantic Forest, Mata Atlântica, in connection with the BIOTA-FAPESP program (Programa de Pesquisas em Caracterização, Conservação e Uso Sustentável da Biodiversidade do Estado de São Paulo), but some are also based on material collected in connection with various projects in the Amazon Rainforest.

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 four of these species showing unique character combinations and placing them in a new genus. The species were all collected in the Atlantic Forest along Brazil's east coast.

## Material and Methods

The specimens were all collected in Malaise traps in the Atlantic Forest along the Brazilian coast and preserved in 75 % alcohol. They were later mounted in Canada Balsam following the procedures outlined by Sæther (1969). The general morphology follows Sæther (1980). Measurements are given as ranges followed by the mean when more than three specimens were measured.

The holotypes will be deposited in the Museu de Zoologia da Universidade de São Paulo (MZUSP), São Paulo, Brazil. Paratypes will be kept in the Department of Natural History (ZMBN), Bergen University Museum, University of Bergen, Norway and at MZUSP.

## *Caaporangombera* n. gen.

**Type species**: *Caaporangombera urubici* n. sp.

**Other included species**: *Caaporangombera intervales* n. sp.; *C. jureia* n. sp., and *C. sapiranga* n. sp.

**Etymology**: Named after Atlantic Forest, as the name *Caaporangombera* means "midge from the beautiful jungle" in Tupi language. Gender of the genus name: feminine.

**Diagnostic characters**: The combination of bare eyes and wings; antenna without apical seta; short acrostichals; costa strongly extended; $R_{4+5}$ ending opposite to distal of $M_{3+4}$; $Cu_1$ strongly curved to slightly sinuous; anal point sitting high on tergite IX, triangular to nearly parallel-sided with bluntly rounded apex; and broad, spoon-shaped gonostyli will separate the genus from all other orthoclads.

**Description**: Small sized species, wing length 0.90–1.45 mm.

*Head.* Eyes bare, reniform, without dorsomedial extension. Male antenna with 13 flagellomeres, plumose, groove beginning at flagellomere 3, sensilla chaetica present on flagellomeres 2, 3 and 13, without strong apical seta. Antennal ratio low (AR = 0.45–0.75). Palp with five segments, short; third palpomere with few sensilla clavata subapically. Temporal setae in single row; consisting of inner verticals, outer verticals and postorbitals. Frontal tubercle absent. Tentorium and stipes normal. Cibarial pump with anterior margin concave to nearly straight. Clypeus with few setae.

*Thorax.* Antepronotum with lobes meeting medially at anterior margin of scutum, without or with few lateral antepronotals. Acrostichals short, starting close to antepronotum; dorsocentrals simple, uniserial; prealars few, uniserial; supraalar absent. Scutellum with few setae in single row.

*Wings.* Wings cuneiform. Membrane without setae, with fine punctation. Costa strongly extended. $R_{2+3}$ ending at ½ of the distance between $R_1$ and $R_{4+5}$; $R_{4+5}$ ending opposite to distal to $M_{3+4}$; FCu far distal to RM; $Cu_1$ strongly curved to weakly sigmoid. Brachiolum with 1 seta, other veins bare. Squama bare or with 1–2 setae. Sensilla campaniformia about 5–7 basally, 7–10 apically, and 3 above seta on brachiolum; 1 on RM; and 1 basally on $R_1$.

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

*Abdomen.* Abdominal setation reduced. Tergite I with few lateral setae, tergites II–III with anterior and posterior rows of few setae, tergites IV–VIII with anterior and posterior rows of few setae to more irregular placed setae. Sternites I–III bare, sternite IV with 0–1 median setae, sternites

V–VIII with few median setae.

*Hypopygium*. Anal point sitting high on tergite IX, triangular to nearly parallel-sided with bluntly rounded apex, with weak, marginal setae and long, curved microtrichia. Laterosternite IX with few setae. Transverse sternapodeme arched, with distinct oral projections. Virga small, horseshoe-shaped. Gonocoxite with triangular to rounded inferior volsella. Gonostylus large, spoon-shaped, dorsal side with rows of setae and long microtrichia; in *C. urubici* n. sp. 5–8 microtrichia are sitting close together in a somewhat leopard pattern (Figure 1), in the other species this pattern is less distinct; megaseta normal.

*Female, pupa and larva.* Unknown.

## Systematic

In the key to the genera of the Holarctic Region (Cranston *et al.* 1989) the new genus will key to couplet 48, where *C. urubici* n. sp. will key to couplet 49 as it has 1–2 setae on squama, while the remaining 3 species will key to couplet 87 as they have no seta on squama.

*Caaporangombera urubici* will then key to *Antillocladius* Sæther, 1981 (couplet 79) if it is considered to lack a strongly elevated longitudinal ridge on tergite IX (couplet 69), if with strongly elevated ridge it will key to *Mesosmittia* Brundin, 1956. However, the new genus is easily separated from both these genera on the shape of the anal point and the spoon-shaped gonostylus. The remaining three species will key to *Thalassosmittia* Strenzke & Remmert, 1957, a predominantly marine genus although a new non-marine species is just described from the Amazon rainforest (Andersen & Pinho 2014). The new genus is rather similar to *Thalassosmittia* in the shape of the anal point and the gonostylus; both have triangular to nearly parallel-sided anal points with bluntly rounded apex and rather large gonostyli.

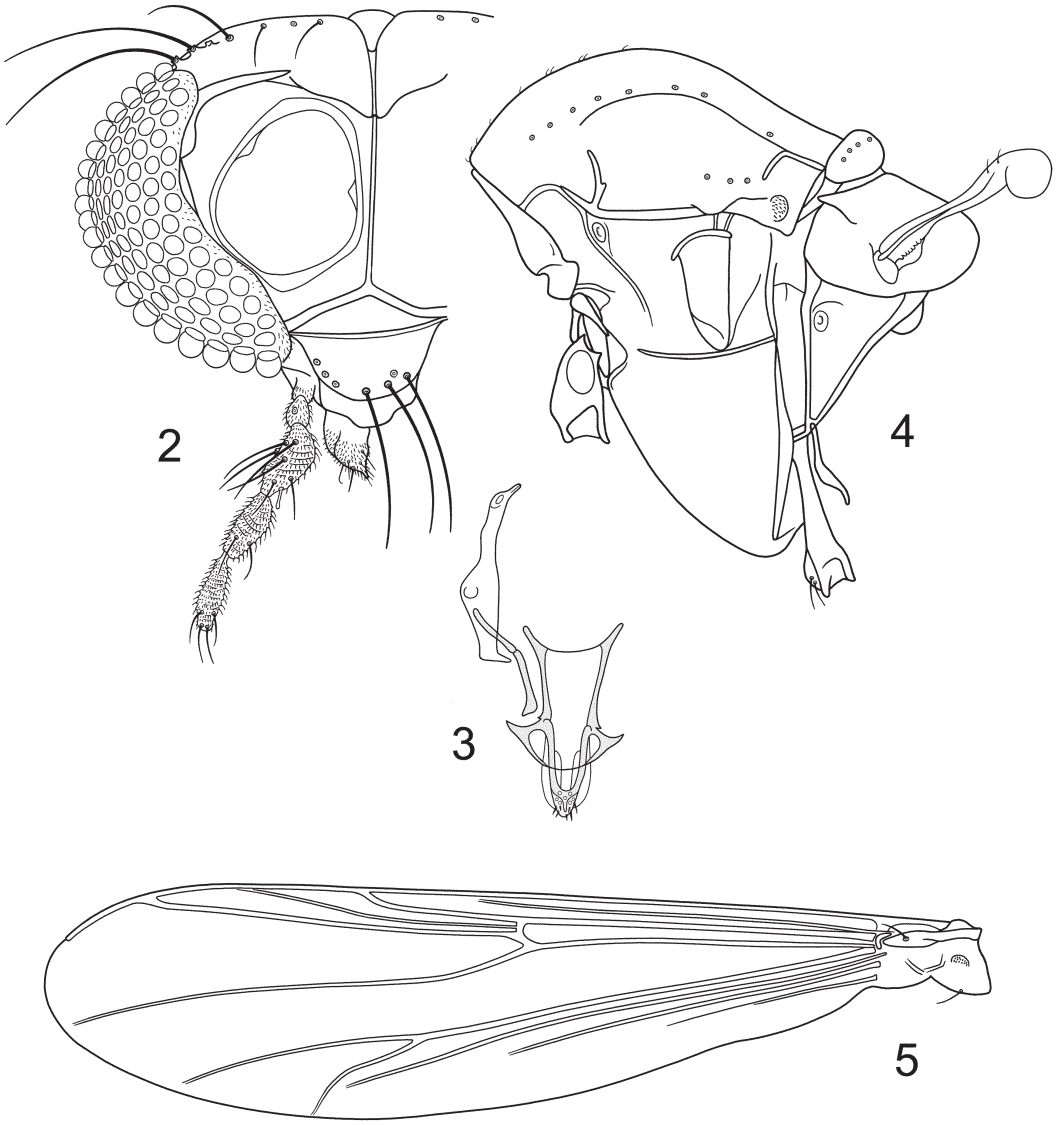
However, the two genera can be separated as $R_{2+3}$ is running close to $R_{4+5}$ in most *Thalassosmittia* except for *T. montana* Wang & Sæther, 1993 from Tibet, while it is running in the middle between $R_1$ and $R_{4+5}$ in the new genus. Except for *T. amazonica* Andersen & Pinho, 2014 all *Thalassosmittia* species also have pubescent or hairy eyes, while the eyes are bare in *Caaporangombera*. In most *Thalassosmittia* species the anal lobe of the wing is moderately to well developed, while the wings in *Caaporangombera* are all cuneiform. Several of the marine *Thalassosmittia* species have a reduced antenna, while the antenna is normal in *Caaporangombera*. Several of the *Thalassosmittia* species also have a weak or lack a megaseta, while the megaseta in *Caaporangombera* is normal. Further, *T. amazonica* has a reduced palp with only a single palpomere, while the palp is five segmented in *Caaporangombera*.

In the key to the Central American Chironomidae (Spies *et al.* 2009) the genus will

**FIGURE 1**. *Caaporangombera urubici* n. gen., n. sp., male. Gonostyli, dorsal view.

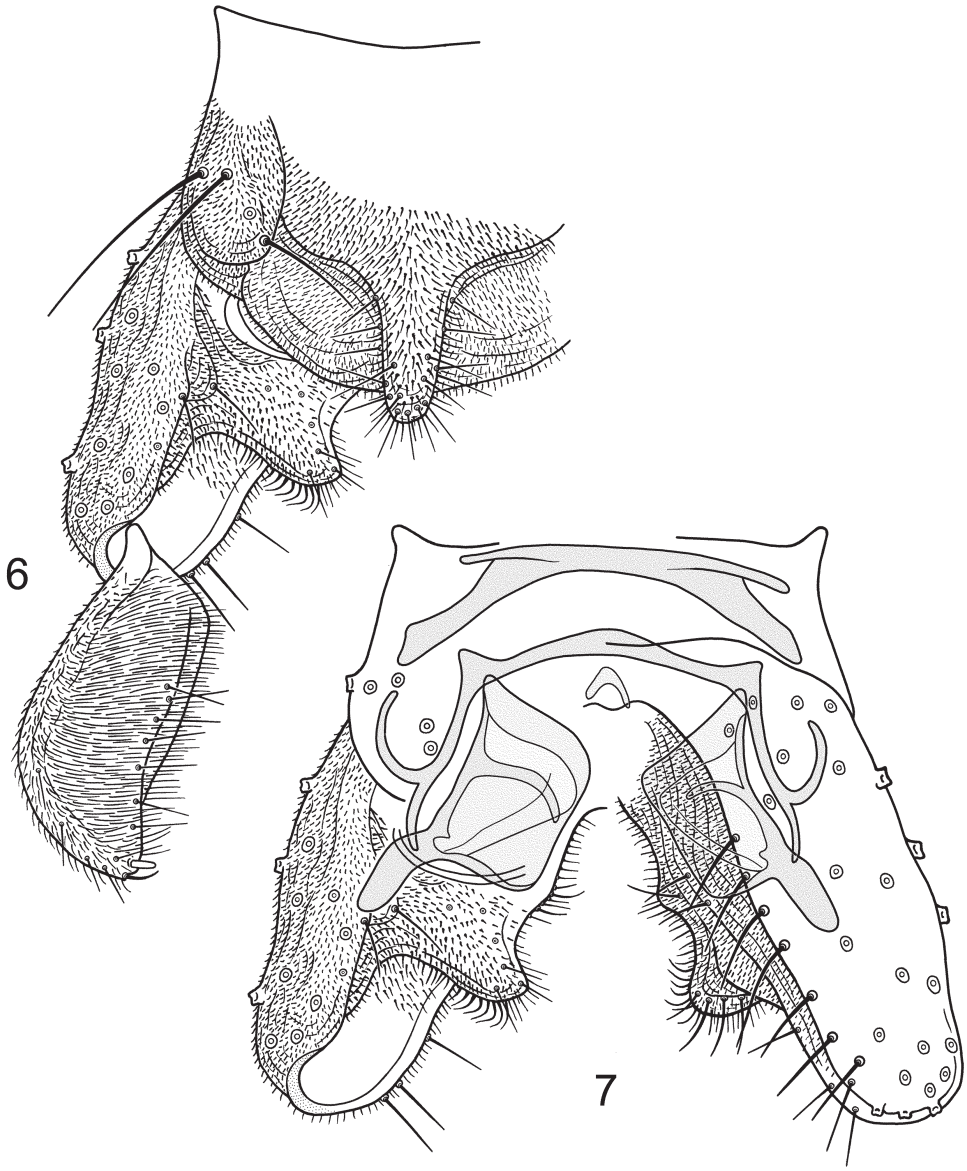
**TABLE 1**. Key to the males of *Caaporangombera* n. gen.

| | | |
|---|---|---|
| **1.** | Wing length about 1.40 mm; squama with 1–2 setae. Santa Catarina State, Brazil | ***C. urubici* n. sp.** |
| - | Wing length < 1 mm; squama without setae | **2** |
| **2.** | Inferior volsella swollen, sitting close to apex of gonocoxite. São Paulo State, Brazil | ***C. jureia* n. sp.** |
| - | Inferior volsella triangular or rounded, sitting some distance from apex of gonocoxite | **3** |
| **3.** | Inferior volsella triangular. São Paulo State, Brazil | ***C. intervales* n. sp.** |
| - | Inferior volsella rounded. Bahia State, Brazil | ***C. sapiranga* n. sp.** |




**FIGURES 2–5**. *Caaporangombera urubici* n. gen., n. sp., male. **2.** Head. **3.** Tentorium, stipes and cibarial pump. **4.** Thorax. **5.** Wing.

key to couplet 131, where *C. urubici* n. sp. will key to couplet 132 as it has 1–2 setae on squama, while the remaining 3 species will key to couplet 137 as they have no seta on squama. *C. urubici* will then key to couplet 136, but no further as the anal point is neither hyaline as in *Bryophaenocladius* Thienemann, 1934, nor strong with lateral setae as in *Orthocladius* van der Wulp, 1874. The remaining species will key to couplet 137, but no further as the acrostichals are neither strong and decumbent as in *Bryophaenocladius* nor weak and restricted to mid scutum as in *Pseudosmittia* Edwards, 1932 and *Diplosmittia* Sæther, 1981.




**FIGURES 6–7**. *Caaporangombera urubici* n. gen., n. sp., male. **6.** Hypopygium, dorsal view. **7.** Hypopygium with anal point and tergite IX removed, dorsal aspect to the left and ventral aspect to the right.

***Caaporangombera urubici* n. sp.**
(Figures 1–7)

**Type material**: Holotype: male, **BRAZIL,** Santa Catarina State: Urubici, Morro da Igreja, Parque Nacional de São Joaquim, Rio Pelotas, 1670 m a.s.l., 28°07’37’’S 49°28’47’’W, 18.IX–05.XII.2004, Malaise trap, cloud forest, leg. L.C. Pinho & L.E.M. Bizzo (MZUSP). Paratypes: 5 males, as holotype (MZUSP, ZMBN).

**Etymology**: The name *urubici* refers to type locality, Urubici, a municipality in Santa Catarina State in southern Brazil.

**Description**

***Male*** (n = 4–6, except when stated otherwise). Total length 2.17–2.32, 2.22 mm. Wing length 1.37–1.45, 1.41 mm. Total length / wing length

**TABLE 2**. Lengths (in µm) and proportions of legs of *Caaporangombera urubici* n. gen., n. sp., male ($p_1$ & $p_2$ n = 2–4, $p_3$ n = 5–6).

| | **fe** | **ti** | **$ta_1$** | **$ta_2$** | **$ta_3$** | **$ta_4$** |
|---|---|---|---|---|---|---|
| $p_1$ | 490–556, 533 | 588–662, 625 | 351–368 | 212–221 | 143–151 | 69–78 |
| $p_2$ | 547–571, 560 | 572–596, 586 | 261–270 | 123–139 | 90–98 | 41–49 |
| $p_3$ | 580–613, 598 | 637–670, 652 | 351–384, 369 | 163–172, 169 | 147–163, 158 | 65–82, 70 |
| | **$ta_5$** | **LR** | **BV** | **SV** | **BR** | |
| $p_1$ | 41–49 | 0.59–0.60 | 2.97–3.17 | 3.07–3.16 | 2.88–3.36 | |
| $p_2$ | 25–29 | 0.44–0.45 | 4.63–5.05 | 4.33–4.38 | 3.33–3.88 | |
| $p_3$ | 37–45, 42 | 0.55–0.60, 0.57 | 3.59–3.81, 3.70 | 3.26–3.51, 3.39 | 3.09–3.50, 3.35 | |

1.52–1.61, 1.57. Wing length / length of profemur 2.43–2.59 (3).

*Coloration.* Head and thorax brown, legs and abdomen lighter brown.

*Antenna.* Antennal ratio (AR) 0.60–0.72, 0.66. Ultimate flagellomere 284–324, 305 µm long.

*Head* (Figure 2). Temporal setae 8–13, 10 including 3–4, 3 inner verticals, 3–7, 4 outer verticals and 1–3, 2 postorbitals. Clypeus with 2–8, 6 setae. Tentorium, stipes, and cibarial pump as in Figure 3. Tentorium 92–108, 102 µm long; 19–22, 21 µm wide; stipes 70–88, 77 µm long. Palp segment lengths / widths (in µm): 13–15, 14 / 12–15, 14; 22–25, 24 / 15–17, 16; 41–50, 46 / 18–19, 18; 46–52, 51 / 14–17, 16; 50–59, 54 / 10–12, 11. Third palpomere with 2–5, 4 sensilla clavata subapically, longest 14–17, 15 µm long.

*Thorax* (Figure 4). Antepronotum with 0–1, 1 setae. Dorsocentrals 8–10, 9; acrostichals about 12 in partly double row; prealars 3–4, 3; supraalar absent. Scutellum with 3–7, 5 setae.

*Wings* (Figure 5). Venarum ratio (VR) 1.29–1.41, 1.35. Costal extension 135–155, 1.46 µm long. Brachiolum with 1 seta, remaining veins and cells bare. Squama with 1–2, 1 seta.

*Legs*. Spur of fore tibia 46–48, 47 µm long, spurs of mid tibia 18–23, 21 µm and 15–21, 18 µm long, spurs of hind tibia 41–48, 45 µm and 18–22, 20 µm long. Width at apex of fore tibia 32–33, 32 µm, of mid tibia 29–35, 32 µm, of hind tibia 35–39, 37 µm. Comb with 12–13, 12 setae, longest 40–47, 43 µm long, shortest 21–23, 22 µm long. Lengths and proportions of legs as in Table 2.

*Hypopygium* (Figures 6–7). Anal point sitting high on tergite IX, weakly tapering to nearly parallel-sided with bluntly rounded apex, 40–52, 45 µm long, 25–34, 30 µm wide at base, 10–16, 13 µm wide at apex, with 12–18, 16 weak, marginal setae and long, curved microtrichia. Laterosternite IX with 3–4, 4 setae. Transverse sternapodeme arched with strong oral projections, 80–92, 87 µm long. Phallapodeme 72–76, 74 µm long. Virga small, horseshoe-shaped, 10–15, 12 µm long. Gonocoxite 144–159, 153 µm long; with 32–35, 33 µm long, 22–31, 26 µm wide inferior volsella, ending 51–65, 55 µm from apex of gonocoxite. Gonostylus 105–113, 109 µm long, 39–47, 43 µm wide medially; megaseta 10–12, 11 µm long. HR 1.35–1.51, 1.41. HV 1.99–2.11, 2.04.

***Female, pupa and larva.*** Unknown.

**Distribution.** Only known from São Joaquim National Park, in the Atlantic Forest in southern Brazil.

### *Caaporangombera intervales* n. sp.

(Figures 8–10)

**Type material**: Holotype: male, **BRAZIL,** São Paulo State: Ribeirão Grande, Parque Estadual Intervales, Barra Grande, 24º15'S 48º10'W, 13–16.XII.2000, Malaise trap (Trilha 1), leg. M.T. Tavares (MZUSP).

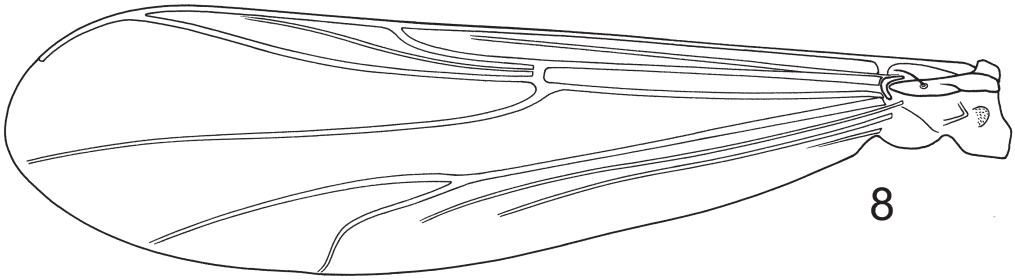
**Etymology**: The name *intervales* refers to type locality, Parque Estadual Intervales, a nature reserve in São Paulo State in southeastern Brazil.

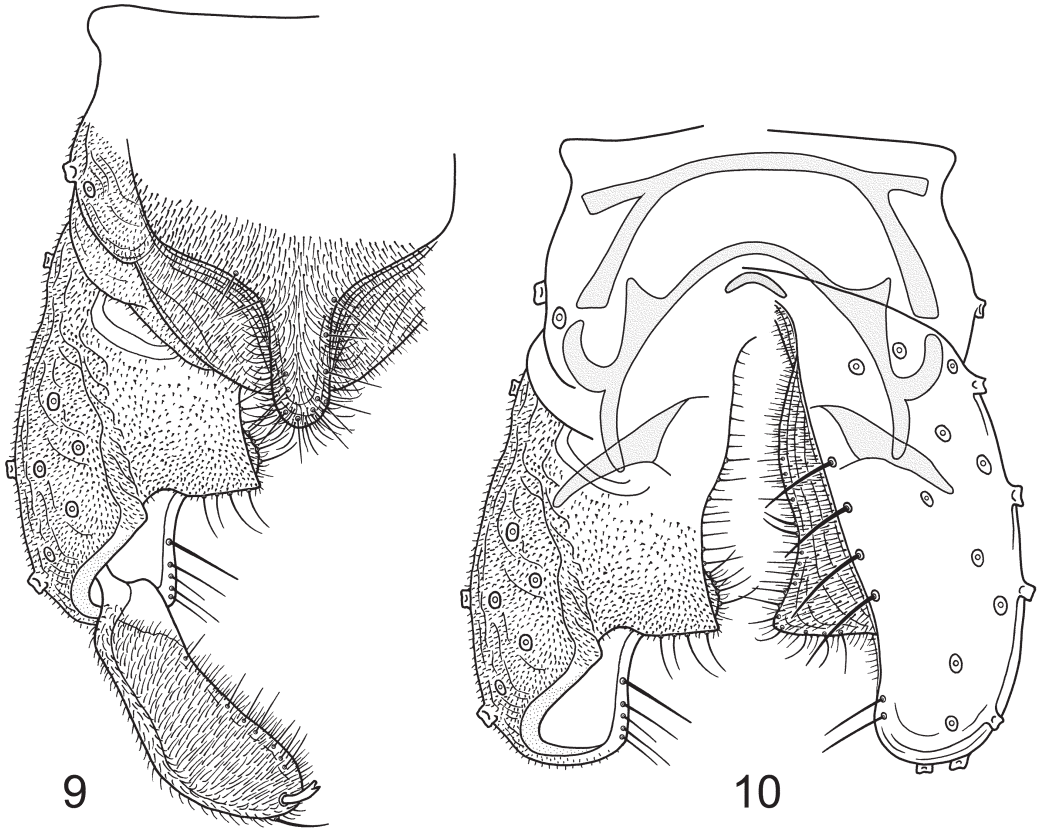
**Description**

***Male*** (n = 1). Total length not measurable. Wing length 964 µm. Wing length / length of profemur 2.81.

*Coloration.* Abdomen and legs brown.

*Antenna.* Antennal ratio (AR) 0.53. Ultimate




**FIGURES 8–10**. *Caaporangombera intervales* n. gen., n. sp., male. **8.** Wing. **9.** Hypopygium, dorsal view. **10.** Hypopygium with anal point and tergite IX removed, dorsal aspect to the left and ventral aspect to the right.

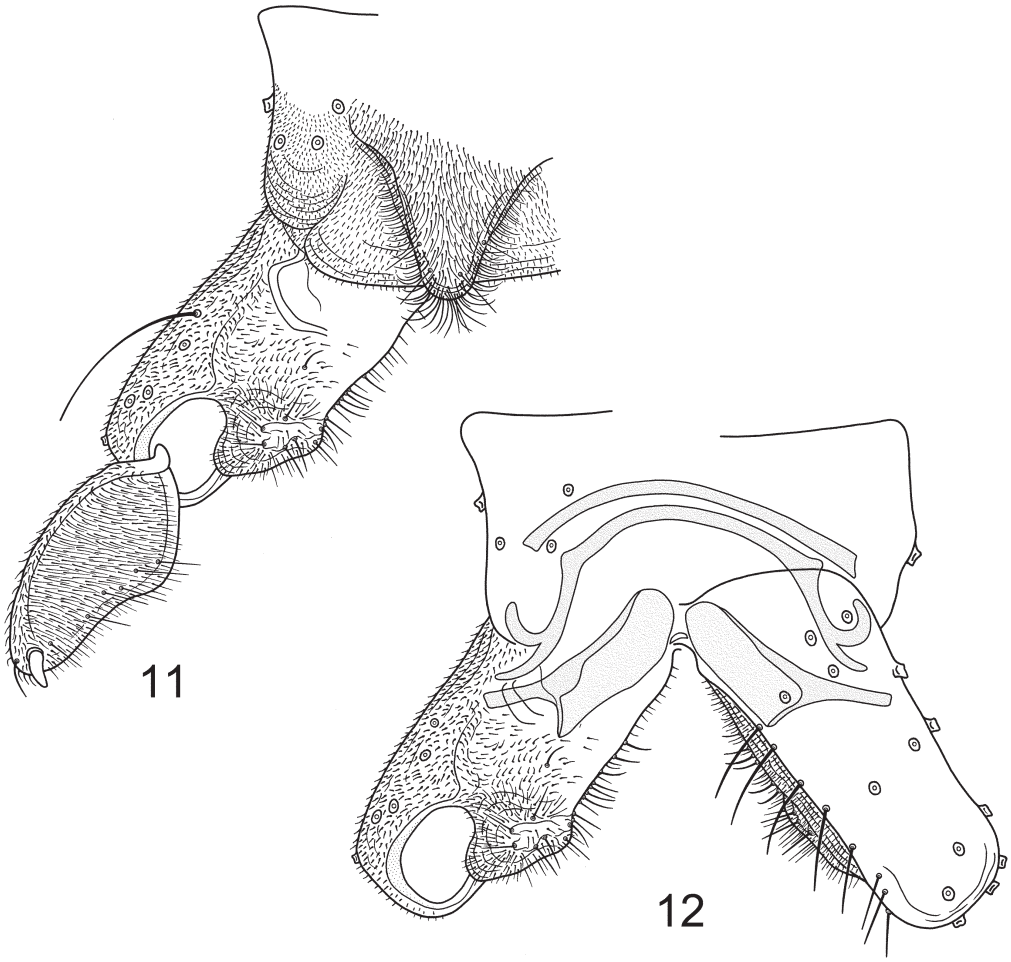
flagellomere 200 µm long.

*Head*. Missing.

*Thorax*. Missing.

*Wings* (Figure 8). Venarum ratio (VR) 1.23. Costal extension 155 µm long. Brachiolum with 1 seta, remaining veins and cells bare. Squama bare.

*Legs*. Spur of fore tibia 34 µm long, spurs of mid tibia 17 µm and 14 µm long, spurs of hind tibia 43 µm and 17 µm long. Width at apex of fore tibia 26 µm, of mid tibia 25 µm, of hind tibia 33 µm. Comb with 12 setae, longest 35 µm long, shortest 23 µm long. Length of fore femur 380 µm, of fore tibia 468 µm; length of mid femur 408 µm, of mid tibia 404 µm; length of hind femur




**FIGURES 11–12**. *Caaporangombera jureia* n. gen., n. sp., male. **11.** Hypopygium, dorsal view. **12.** Hypopygium with anal point and tergite IX removed, dorsal aspect to the left and ventral aspect to the right.

428 µm, of hind tibia 436 µm. All tarsi lost.

*Hypopygium* (Figures 9–10). Anal point sitting high on tergite IX, weakly tapering to nearly parallel-sided with bluntly rounded apex, 33 µm long, 18 µm wide at base, 14 µm wide at apex, with about 11 weak, marginal setae and long, curved microtrichia. Laterosternite IX with 3 setae. Transverse sternapodeme strongly arched with strong oral projections, 61 µm long. Phallapodeme not measurable. Virga small, curved, 7 µm long, 11 µm wide. Gonocoxite 121 µm long; with 23 µm long, 21 µm wide, triangular inferior volsella, ending 33 µm from apex of gonocoxite. Gonostylus 73 µm long, 26 µm wide medially; megaseta 12 µm long. HR 1.66.

***Female, pupa and larva***. Unknown.

**Remarks**. Prior to slide preparation the head and thorax were removed for DNA extraction. However, the extraction was not successful and the head and thorax were lost before they could be mounted on the slide. Even so, the wing and hypopygium are distinct enough to warrant the description of the new species.

**Distribution**. Only known from Parque Estadual Intervales in the Atlantic Forest in southeastern Brazil.

**TABLE 3**. Lengths (in μm) and proportions of legs of *Caaporangombera sapiranga* n. gen., n. sp., male (n = 1–2).

| | fe | ti | $ta_1$ | $ta_2$ | $ta_3$ | $ta_4$ |
|---|---|---|---|---|---|---|
| $p_1$ | 388–400 | 440–480 | 228 | 140 | 100 | 52 |
| $p_2$ | 400–412 | 392–400 | 164–180 | 84–92 | 64–72 | 36–40 |
| $p_3$ | 416–436 | 408–448 | 252 | 120 | 116 | 48 |
| | **$ta_5$** | **LR** | **BV** | **SV** | **BR** | |
| $p_1$ | 36 | 0.475 | 3.378 | 3.860 | 2.8 | |
| $p_2$ | 28–32 | 0.418–0.450 | 4.203–4.509 | 4.511–4.829 | 2.9 | |
| $p_3$ | 32 | 0.563 | 3.595 | 3.508 | 3.0 | |

***Caaporangombera jureia* n. sp.**
(Figures 11–12)

**Type material**: Holotype: male, **BRAZIL,** São Paulo State: Peruíbe, Estação Ecológica Juréia-Itatins, 24º31'06''S 47º12'06''W, 6.V.2002, Malaise trap (Trilha 3), leg. N.W. Perioto (MZUSP).

**Etymology**: The name *jureia* refers to type locality, Estação Ecológica Juréia-Itatins, a nature reserve in São Paulo State in southeasterrn Brazil.

**Description**

***Male*** (n = 1). Total length 1.57 mm. Wing length 940 μm. Total length / wing length 1.67. Wing length / length of profemur 2.58.

*Coloration.* Head, thorax, legs and abdomen pale brown.

*Antenna.* Antennal ratio (AR) 0.53. Ultimate flagellomere 216 μm long.

*Head*. Temporal setae 8 including 3 inner verticals, 2 outer verticals and 3 postorbitals. Clypeus with 5 setae. Tentorium 79 μm long; 11 μm wide; stipes not measurable. Palp segment lengths / widths (in μm): 14 / 11; 22 / 12; 41 / 17; 40 / 12; 46 / 11. Third palpomere with 3 sensilla clavata subapically, longest 15 μm long.

*Thorax*. Antepronotum without setae. Dorsocentrals 5, long; acrostichals about 10; prealars 2. Scutellum with 4 setae.

*Wings*. Venarum ratio (VR) 1.32. Costal extension 127 μm long. Brachiolum with 1 seta, remaining veins and cells bare. Squama without seta.

*Legs*. Spur of fore tibia about 30 μm long, spurs of mid tibia 22 μm and 18 μm long, spurs of hind tibia 33 μm and 19 μm long. Width at apex of fore tibia 21 μm, of mid tibia 23 μm, of hind tibia 29 μm. Comb apparently with 10 setae, longest 28 μm long, shortest 21 μm long. Hind femur 416 μm long, hind tibia 408 μm long; other leg segments not measurable.

*Hypopygium* (Figures 11–12). Anal point sitting high on tergite IX, tapering to bluntly rounded apex, 37 μm long, 35 μm wide at base, 11 μm wide at apex, with about 12 weak, marginal setae and long, curved microtrichia. Laterosternite IX with 4 setae. Transverse sternapodeme arched with strong oral projections, 59 μm long. Phallapodeme 44 μm long. Virga small, horseshoe-shaped, 4 μm long, 6 μm wide. Gonocoxite 104 μm long; with 25 μm long, rounded, swollen inferior volsella, ending 22 μm from apex of gonocoxite. Gonostylus 65 μm long, 30 μm wide medially; megaseta 10 μm long. HR 1.59. HV 2.42.

***Female, pupa and larva.*** Unknown.

**Distribution.** Only known from Juréia-Itatins Ecological Station, in the Atlantic Forest in southeastern Brazil.

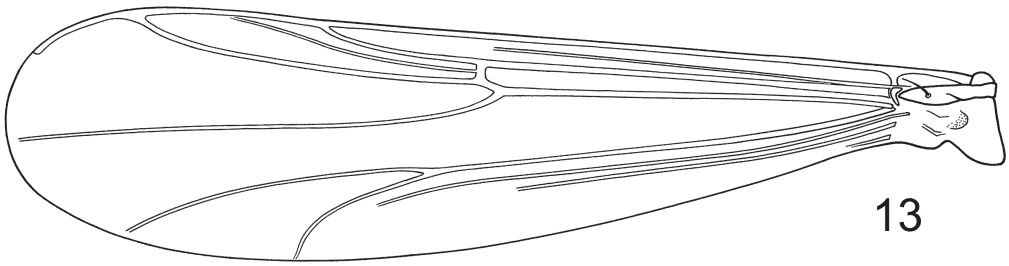
***Caaporangombera sapiranga* n. sp.**
(Figures 13–15)

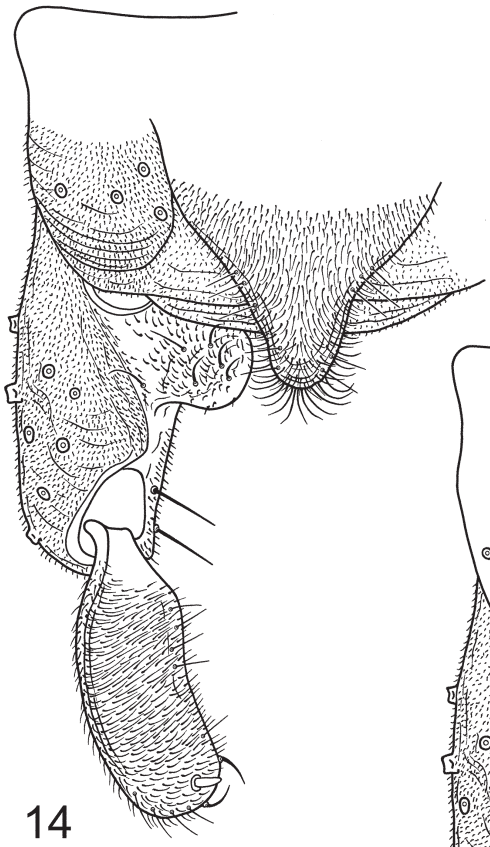
**Type material**: Holotype: male, **BRAZIL,** Bahia State: Mata de São João, Reserva de Sapiranga, 12º33'42''S 38º02'43''W, 22–25. VII.2001, Malaise trap (Bosque 2), leg. M.T. Tavares (MZUSP). Paratype: 1 male, as holotype (ZMBN).

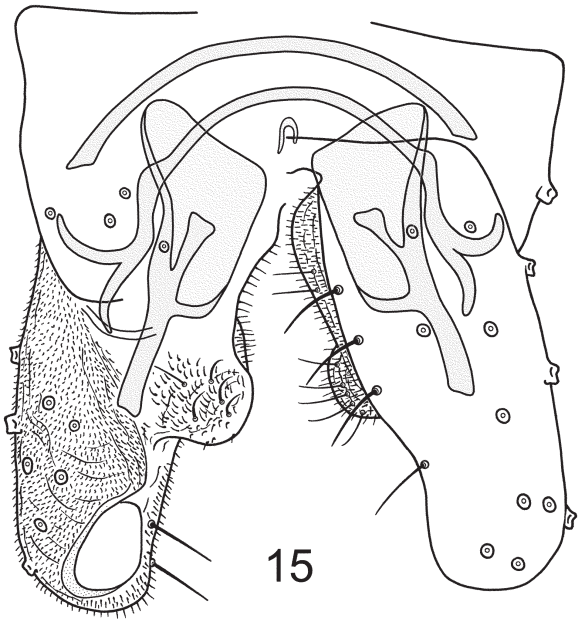
**Etymology**: The name *sapiranga* refers to type locality, Reserva de Sapiranga, a nature reserve in Bahia State in northeastern Brazil.

**Description**

***Male*** (n = 1–2). Total length 1.59–1.60




**FIGURES 13–15**. *Caaporangombera sapiranga* n. gen., n. sp., male. **13.** Wing. **14.** Hypopygium, dorsal view. **15.** Hypopygium with anal point and tergite IX removed, dorsal aspect to the left and ventral aspect to the right.

mm. Wing length 920–996 μm. Total length / wing length 1.60–1.74. Wing length / length of profemur 2.37–2.42.

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

*Antenna.* Antennal ratio (AR) 0.46–0.48. Ultimate flagellomere 208–212 μm long.

*Head*. Temporal setae 10–11 including 4–5

inner verticals, 2–3 outer verticals and 3–4 postorbitals. Clypeus with 5–6 setae. Tentorium 68–76 µm long, 11–12 µm wide; stipes not measurable. Palp segment lengths / widths (in µm): 14–15 / 11–12; 21–22 / 12–13; 40–49 / 15–17; 37–38 / 12–13; 46–47 / 8–9. Third palpomere with 4–5 sensilla clavata subapically, longest 11–12 µm long.

*Thorax*. Antepronotum with 1–2 setae. Dorsocentrals 5–6; acrostichals about 12, in partly double row; prealars 2; supraalar absent. Scutellum with 4 setae.

*Wings* (Figure 13). Venarum ratio (VR) 1.20–1.48. Costal extension 104–117 µm long. Brachiolum with 1 seta, remaining veins and cells bare. Squama without seta.

*Legs*. Spur of fore tibia 28–30 µm long, spurs of mid tibia 21–22 µm and 14–15 µm long, spurs of hind tibia 33–36 µm and 19 µm long. Width at apex of fore tibia 25–29 µm, of mid tibia 23–25 µm, of hind tibia 29–32 µm. Comb with 8–9 setae, longest 33–36 µm long, shortest 21–22 µm long. Lengths and proportions of legs as in Table 3.

*Hypopygium* (Figures 14–15). Anal point sitting high on tergite IX, triangular with bluntly rounded apex, 32 µm long, 39 µm wide at base, 12 µm wide at apex, with about 10 weak, marginal setae and long, curved microtrichia. Laterosternite IX with 4 setae. Transverse sternapodeme arched with distinct oral projections, 66–69 µm long. Phallapodeme 61–66 µm long. Virga small, horseshoe-shaped, about 5 µm long. Gonocoxite 108–116 µm long; with 12–15 µm long, 20–22 µm wide, broadly rounded inferior volsella, ending 37–41 µm from apex of gonocoxite. Gonostylus 66–69 µm long, 25–26 µm wide medially; megaseta 13 µm long. HR 1.62–1.68. HV 2.32–2.40.

***Female, pupa and larva.*** Unknown.

**Distribution.** Only known from Reserva de Sapiranga in the Atlantic Forest in northeastern Brazil.

**Acknowledgements.** We are indebted to Dr. Carlos J. E. Lamas, Museu de Zoologia, Universidade de São Paulo and to Dr. Dalton S. Amorim, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo for the loan of specimens from the BIOTA-FAPESP project ["Limites geográficos e fatores causais de endemismo na Floresta Atlântica em Diptera" proc. 03/12074-9 within The Biodiversity Virtual Institute Program (www.biota.org)]. Gladys Ramirez made the slide preparations.

## References

Andersen, T. & Pinho, L.C. 2014. A new *Thalassosmittia* Strenzke & Remmert, 1957 out of the sea: *T. amazonica* n. sp. from the Amazon Rainforest, Brazil (Diptera: Chironomidae, Orthocladiinae). *Chironomus Newsletter on Chironomidae Research* 27, 25–30.

Cranston, P.S., Oliver, D.R. & Sæther, O.A. 1989. *The adult males of Orthocladiinae (Diptera: Chironomidae) of the Holarctic region. Keys and diagnoses.* In Wiederholm, T. (Ed.), Chironomidae of the Holarctic region. Keys and diagnoses. Part 3. Adult males *Entomologica scandinavica, Supplement* 34, 165–352.

Mendes, H.F. & Pinho, L.C. 2011. Checklist of the Brazilian Chironomidae species. https://sites.google.com/site/brazilianchironomids/list (updated 05/03/2014; accessed 20 May 2015).

Mendes, H.F., Andersen, T. & Sæther, O.A. 2004. New species of *Ichthyocladius* Fittkau, a member of the *Corynoneura*-group (Diptera: Chironomidae: Orthocladiinae), with a review of the genus. *Studies on Neotropical Fauna and Environment* 39, 15–35.

Sæther, O.A. 1969. Some Nearctic Podonominae, Diamesinae and Orthocladiinae (Diptera: Chironomidae). *Bulletin of the Fisheries Research Board of Canada* 107, 1–154.

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

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

Spies, M., Andersen, T., Epler, J.H. & Watson, C.N. Jr. 2009. *Chironomidae (Non-biting midges).* Pp. 437–480 in Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M., Woodley, N.E. & Zumbado, M.A. (Eds.), Manual of Central American Diptera. NRC Research Press, Ottawa, Ontario, Canada.

*Received: 19 December 2014*
*Accepted: 19 May 2015*