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A new species of *Steleops* Enderlein, and a Colombian record of *S. pulcher* New (Psocodea: 'Psocoptera': Psocidae)

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Abstract

Steleops buitrerensis **n. sp.** is here described and illustrated; it constitutes the 14th species known in the genus, the 12th known in the neotropics, and the first in the genus to be recorded in Colombia. The forewings and antennae are sexually dimorphic, and the head pattern of coloration, as well as the genital structure, separates it from the other described species. The location of the types is indicated in the description, and a key is included to separate it from the other South American species. *S. pulcher* New, previously known only in Mato Grosso, Brazil, is here recorded in Colombia.

Key words: Psocidae, Ptyctini, taxonomy, neotropics

Introduction

Steleops was erected by Enderlein (1910), who defined it as having pedunculate eyes, other features being as in *Psocus*. The type species is *S. punctipennis*, from San Bernardino, Paraguay. This species was redescribed by García Aldrete (1995) from a female specimen taken in the Río Tambopata Reserved Zone, Department of Madre de Dios, in the Peruvian Amazonia. This redescription made available genital information that was absent in the original description. Currently, and including the new species described below, 14 species are known in the genus, of which 12 occur in the neotropics, in Bolivia, Brazil, Colombia, Mexico, Paraguay, Peru, and Venezuela. Not all the species have distinctly pedunculate eyes, and forewing venation and genital structure seem to relate this genus to *Trichadenotecnum*, with great variation in *Steleops* in the forewing pigmentation pattern (García Aldrete 1995). The purpose of this paper is to describe a species of *Steleops*, collected in the periphery of Cali, that constitutes the first species of this genus known in Colombia, and to provide a Colombian record of *S. pulcher* New, known only from the type locality in Mato Grosso, Brazil.

Two males and two females, of the 16 specimens available for study, were dissected in 80% ethyl alcohol, and the head, right wings and legs, and genitalia, were mounted on slides in Canada Balsam. Measurements (in microns) were taken utilizing an ocular micrometer mounted in a Nikon Eclipse microscope. Abbreviations, for lengths of parts measured on the slides, are the following: FW: forewing, HW: hind wing, F: femur, T: tibia, t1 and t2: tarsomeres 1 and 2 of hind leg, Mx4: fourth segment of maxillary palpus, f1…fn: flagellomers 1…n, ctt1: number of ctenidobothria on t1, IO: minimum distance between compound eyes, D: antero-posterior diameter of right compound eye, d: transverse diameter of right compound eye. The types are deposited in the Entomological Museum of the Universidad del Valle, Cali, Colombia (coden: 23267-23270 MUSENUV).

Steleops buitrerensis n. sp.

(Figs. 1–17)

Diagnosis. Female forewing with well defined dark brown pigmented transverse band, from area anterior to pterostigma to end of veins Cu2 and 1A; along posterior margin, an irregular pigmented band from R4+5 to cell Cu1a, leaving clear windows at margin; pterostigma with a dark brown band along posterior end, other brown spots as illustrated (Fig. 1). Male forewing hyaline, pterostigma as in the female (Fig. 9). Head with compound eyes dis-

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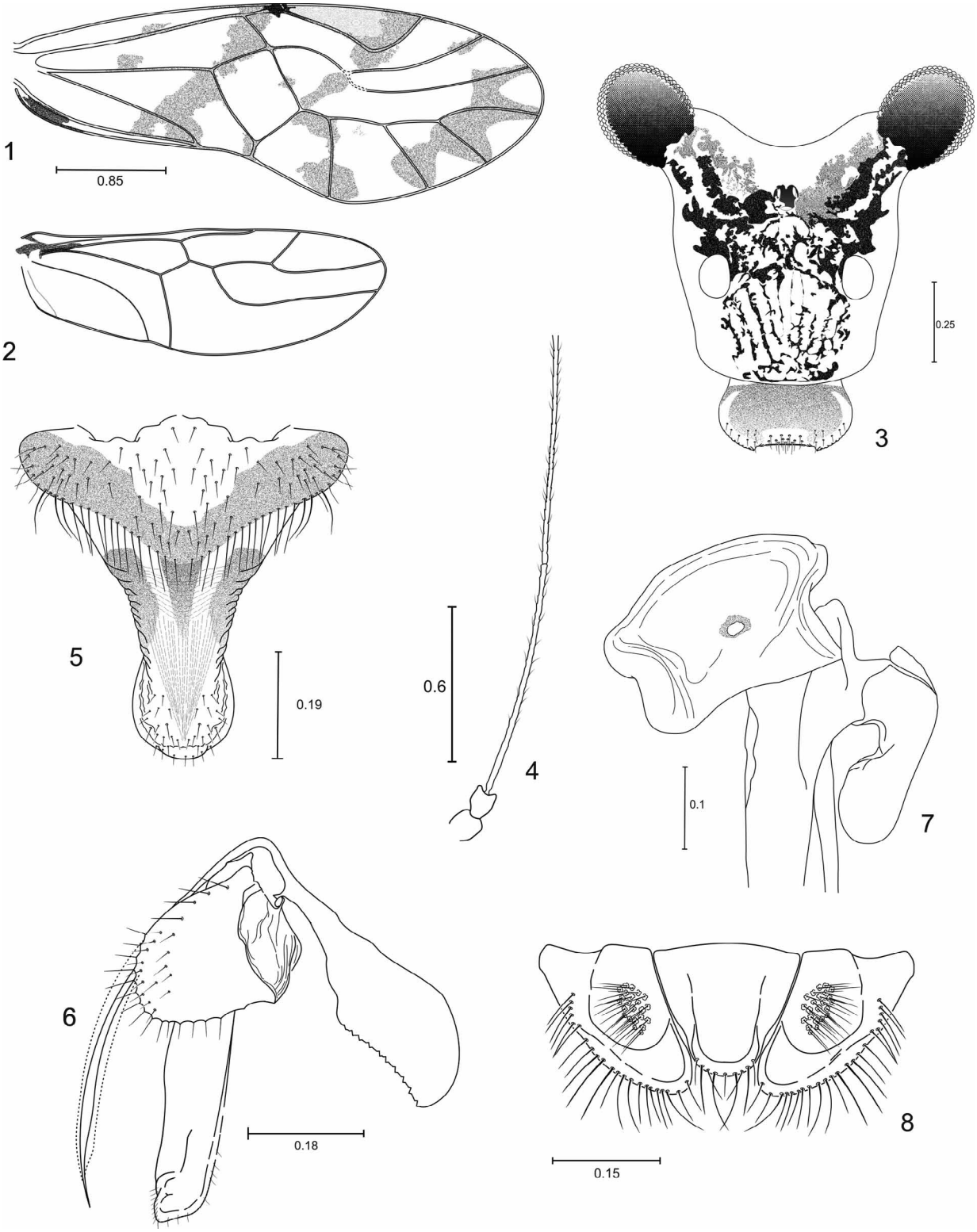
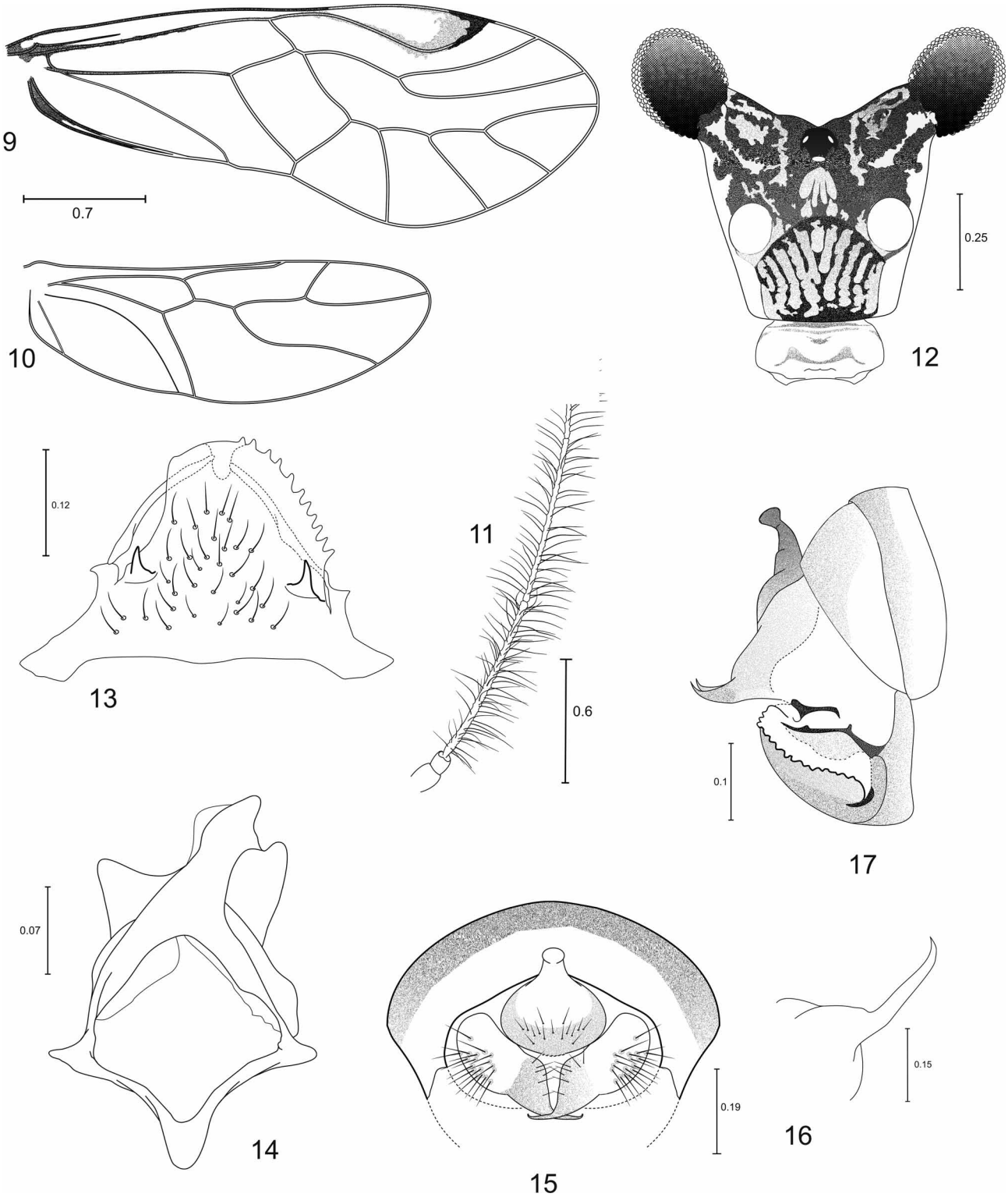
tinctly pedunculate in both sexes, more in the male (Figs. 3, 12). Both sexes with a distinct head pattern, broader in the male (Figs. 3, 12). Female subgenital plate with lateral arms anteriorly, pigmented area broadly triangular, pointed in the middle; posterior projection long, stout, with brown pigmented bands on each side (Fig. 5). Male hypandrium broad, with a row of denticles along left margin (Fig.13). Phallosome broadly rhomboid, with a well-defined "wing" on each side, posteriorly (Fig. 14).



FIGURES 1–8. *Steleops buitrerensis* **n. sp.** Female. 1. Forewing. 2. Hindwing. 3. Front view of head. 4. Right antenna. 5. Subgenital plate. 6. Left gonapophyses. 7. Ninth sternum and spermapore. 8. Paraprocts and epiproct. Scales in mm.



FIGURES 9–17. *Steleops buitrerensis* **n. sp.** Male. 9. Forewing. 10. Hindwing. 11. Right antenna. 12. Front view of head. 13. Hypandrium 14. Phallosome. 15. Clunium, paraprocts and epiproct. 16. Prong of paraproct. 17. Side view of genitalia. Scales in mm.

Female. ***Color.*** Body pale brown, with dark brown areas as indicated below. Compound eyes black, ocellar field dark brown. Head pattern complex, dark brown clypeal striations and well marked two dark brown bands, from each compound eye, the upper one to the ocellar field, and the lower one forming an arch from eye to eye, and with two small side projections, the lower one enclosing the antennal fossae; a clear narrow area between upper and

lower bands, the lower band much slender than the upper one (Fig. 3). Maxillary palps pale yellowish, with Mx4 pale brown distally. Antennae pale yellow (Fig. 4). Legs cream yellowish, hind coxae dark brown. Forewing as in diagnosis. Hindwing hyaline. Tergal lobes of meso and metathorax more pigmented than rest of the thorax. Abdomen pale brown, with irregular brown spots dorsally.

Morphology. Antennal flagellomeres with short, sparse setae (Fig. 4). Forewing (Fig. 1) with pterostigma narrow anteriorly, wide posteriorly; Rs-M diverging from a point, R2+3 about twice as long as fork stem; cell Cu1a trapeziform, about as wide as tall. Subgenital plate (Fig. 5) broad, setose, with anterior pigmented area as illustrated, posterior projection long, stout, distally broad, setose in distal third. Ninth sternum broad, semi-membranous, almost straight posteriorly, rounded anteriorly, with the sides straight in posterior half, then curved towards anterior border; spermapore circular, surrounded by a pigmented rim (Fig. 7). Gonapophyses (Fig. 6): v1 long, slender, distally pointed, v2 long, stout, sides almost parallel, distally rounded, v3 oval shaped, with strong marginal setae. Paraprocts (Fig. 8) almost triangular, apically rounded, setose as illustrated, sensory fields with 28–30 trichobothria issuing from basal rosettes. Epiproct basally wide, almost trapeziform, with field of setae mesally and row of setae along posterior border (Fig. 8).

Measurements. FW: 4125, HW: 2881, F: 925, T: 1950, t1: 785, t2: 185, ctt1: 35, Mx4: 252, f1: 940, f2: 960, IO: 594, D: 289, d: 380, IO/d: 1.56 .

Male. *Color*. Same as the female, head pattern with upper bands almost reaching the compound eyes and lower band much broader than in the female. Forewings hyaline, unpigmented, pterostigma as in the female.

Morphology. Antennal flagellomeres with long setae (Fig. 11). Forewing as in the female, with Rs fork slightly longer (Fig. 9). Hypandrium assymetrical (Fig. 13). Phallosome as in diagnosis (Fig. 14). Paraprocts (Fig. 15) elongate, with slender, acuminate distal process; sensory fields with 22–24 trichobothria in basal rosettes. Epiproct broadly pear shaped, projected posteriorly in the middle, apex of projection rounded (Fig. 15).

Measurements. FW: 3412, HW: 2344, F: 787, T: 1637, t1: 710 , t2: 160, ctt1: 35, Mx4: 160, f1: 810, f2: 820, IO: 487, D: 243, d: 315, IO/d: 1.55.

Specimens studied. Holotype male, **COLOMBIA**. Valle del Cauca. Santiago de Cali, La Buitrera (03º 22' 19.8''N: 76º 34' 12.2''W), 1150 m., xi.2008, on *Acacia* sp. tree trunks. MUSENUV slide cod. 23267. Paratypes: 12 females (11 MUSENUV cod. 23269, 1 slide MUSENUV cod. 23268), 4 males (MUSENUV cod. 23270). R. González. On *Ficus* sp., *Acacia* sp., and *Swietenia* sp., tree trunks.

Etymology. The specific name, a noun in apposition, refers to the type locality.

Key to the South American species of *Steleops*
(Modified partially from Mockford, 1996).

1.	Forewing entirely hyaline (male), at most with a spot on cell Cu2 (male and female)	2
-.	Forewing pigmented throughout, with large hyaline areas, or with pigment spots in basal and distal cells (male and female)	3
2.	Forewing hyaline (male)	*S. buitrerensis* **n. sp.**
-.	Forewing with a spot on cell Cu2	*S. pedunculatus* (Enderlein)
3.	Forewing with a distinct, transverse, irregular pigmented band from anterior end of pterostigma to distal end of 1A	4
-.	Forewing not as above	6
4.	Areola postica deeply pigmented distally	5
-.	Areola postica with a pale brown spot along vein M, and a pale brown spot at distal end of Cu_{1a}	*S. buitrerensis* **n. sp.**
5.	Head with a brown band from each compound eye to ocellar group, a brown band from each compound eye to epistomal sulcus, above antennal fossae, and a brown triangle from ocellae group to epistomal sulcus	*S. conipata* García Aldrete
-.	Head not as above, a brown band from each compound eye to epistomal sulcus, enclosing antennal fossae, and a single, slender brown band from each compound eye to epistomal sulcus	*S. pulcher* New
6.	Forewing pterostigma entirely pigmented, at most with an upper and lower row of four small clear lacunae	7
-.	Forewing pterostigma pigmented only posteriorly	9
7.	Areola postica unpigmented, cell M3 unpigmented or almost unpigmented	8
-.	Areola postica deeply pigmented along Cu_{1a}, cell M3 entirely pigmented, with small, clear lacunae	*S. tambopata* García Aldrete
8.	Posterior half of forewing without pigment spots, pale brown spots basally in cells R, D, Cu_{1b} and at nodulus	*S. purus* Mockford
-.	Pigment spots basally and on posterior half of forewing	*S. wygodzynskyi* Mockford
9.	Distal veins of forewing lacking spots at their junctions to wing margin, forewing~ 3.0 mm long	*S. maculates* New
-.	Distal veins of forewing each with a spot at junctions to wing margin, forewing >3.5 mm long	*S. punctipennis* Enderlein

Comments. *Steleops* currently includes two nearctic species from the United States, *S. elegans* (Banks) and *S. lichenatus* (Walsh), all the other species being Neotropical. *S. barrerai* García Aldrete, *S. monticola* García Aldrete, and *S. ortegae* García Aldrete, are endemic to Mexico, each with a very restricted distribution, limited almost to their respective type localities. The other nine species are South American and it has seemed sensible to us, to present the key above to separate only these species.

The species described here is the first one known in Colombia. It increases to 12 the number of neotropical species in the genus, plus the two nearctic ones (García Aldrete 1995 b; Lienhard & Smithers 2002; Mockford 1996), and increases to nine the number of South American species of *Steleops*. The antennae and the forewings are sexually dimorphic. The male has long setae in the flagella, and the wing membrane hyaline; the female has very short setae in the flagella, and the wing membrane with a pigmented pattern. A somewhat similar, although not identical forewing pigmentation pattern is seen in the nearctic *S. elegans* (Banks), in the Bolivian *S. conipata* García Aldrete, and in *S. pulcher* New, from Brazil and Colombia. These insects live in crevices of tree trunks, and it could be that the sexually dimorphic characters are important in visual recognition of the sexes. In the non-sexually dimorphic species, other features (*e. g.*, contact, pheromones), may be more important than visual clues in sex recognition. The forewing pattern of females, also the head pattern and genital details, separate this species from others described in the genus. Forewing cell Cu1a is somewhat similar to that in *S. punctipennis* Enderlein, and the phallosome is reminiscent of that in *S. barrerai* García Aldrete, from Mexico. It is likely that more collecting in South America will reveal the presence of additional species, and this will facilitate future assessment of relationships within the genus and within the tribe Ptyctini.

Steleops pulcher New

S. pulcher New, 1972: 226

This species was described from one female from Mato Grosso, Brazil, and the following Colombian specimens constitute the only other known specimens of this species: **COLOMBIA**. Valle del Cauca. Tuluá. Botanical Garden Juan María Céspedes (04º 01’ 38.2’’N: 76º 09’ 59.9’’W) 1125 m. 21.viii.2010. R. González, 1 ♀. 29.viii.2010. N. Carrejo & R. González, 5 females.

Acknowledgments

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