

Taxonomy and Systematic / Taxonomia e Sistemática

A new species of *Ianthorntonia* García Aldrete, from Bolivia, and description of the female *Ianthorntonia marshalli* García Aldrete (Psocodea: Psocomorpha: Epipsocetae: Epipsocidae)

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Abstract. A species of *Ianthorntonia* García Aldrete from the Department of La Paz, Bolivia, is here described and illustrated. It is based on a male, and differs from the other five species in the genus on hypandrium and phallosome characters. Also, the female *Ianthorntonia marshalli* García Aldrete, 2004, collected at the type locality of the species, is described and illustrated. It is the first female known in the genus; as expected, it is similar to the females of *Goja* Navás and *Gojaoides* García Aldrete.

Keywords: Bark-Lice; Book-lice; Psocids; South America.

Uma nova espécie de *Ianthorntonia* García Aldrete, para a Bolívia, e descrição da fêmea de *Ianthorntonia marshalli* García Aldrete (Psocodea: Psocomorpha: Epipsocetae: Epipsocidae)

Resumo. Uma espécie de *Ianthorntonia* García Aldrete, proveniente do departamento de La Paz, Bolívia, é aqui descrita e ilustrada. Esta espécie é baseada em um macho e difere das outras cinco espécies deste gênero pelas características do hipândrio e do falossomo. Além disso, a fêmea de *Ianthorntonia marshalli* García Aldrete, 2004, coletada na localidade tipo desta espécie, é descrita e ilustrada. Esta é a primeira fêmea conhecida para este gênero; como previsto, ela é similar as fêmeas de *Goja* Navás e *Gojaoides* García Aldrete.

Palavras-chave: América do Sul; Piolhos de cascas de árvores; Piolhos de livros; Psocídeos.

The epipsocid genus *Ianthorntonia* GARCÍA ALDRETE (2004), is so far only known from the Bolivian Andes; it includes five species, all described on basis of males, three species from the Department of Cochabamba, and two species from the Department of La Paz. CASASOLA GONZÁLEZ (2006) studied the phylogenetic relationships of the genera of Epipsocetae; he found that *Phallofractus* García Aldrete (as sp. 4 THAI), *Goja* Navás (including *Gojaoides* García Aldrete), *Ianthorntonia* García Aldrete and *Rogojiella* García Aldrete, constitute a subclade of related genera in his clade B (see Figure 124 in that paper). On wing venation characters and phallosome structure, *Ianthorntonia* is closest to *Goja*. The females of *Goja* Navás, and *Gojaoides* García Aldrete are micropterous, showing associated neotenic characters, as small numbers of trichobothria in the sensory fields of the paraprocts, and lack of ctenidobothria on the first tarsomeres of the legs. It could then be expected that the females of *Ianthorntonia* would be similar to those of *Goja* and *Gojaoides*.

On April 9, 2004, I visited the type localities of *Ianthorntonia annae* García Aldrete, 2004, *Ianthorntonia loisae* García Aldrete, 2004, and *Ianthorntonia marshalli* García Aldrete, 2004, and was able to find the male-female association of the latter species. That female is here described and illustrated, as well as a species of *Ianthorntonia*, represented by a male, collected in the Department of La Paz, on April 6, 2004.

MATERIAL AND METHODS

One male and one female were available for study. The male is mutilated, missing the tibiae and tarsomeres of all legs, as well as the antennae and maxillary palpomeres. The two specimens were dissected in ethanol 80%, and their parts were mounted on slides in Canada balsam following standard procedures. Parts on the slides were measured with a filar micrometer. Abbreviations of parts measured are as follows: FW, HW: lengths of fore- and hind-wings, F, T, t1 and t2: lengths of femur,

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tibiae and tarsomeres 1 and 2 of right hind leg, Mx4: length of fourth palpomere of right maxillary palpus, f1...fn: lengths of flagellomeres 1...n of right antenna, IO, D and d: minimum distance between compound eyes, antero-posterior diameter, and transverse diameter of right compound eye, respectively, all in dorsal view of head, PO: d/D.

The specimens studied are deposited in the National Insect Collection (CNIN; Instituto de Biología, UNAM, México City).

RESULTS AND DISCUSSION

Ianthorntonia dorbignyi n. sp. (Male)

(Figures 1-5)

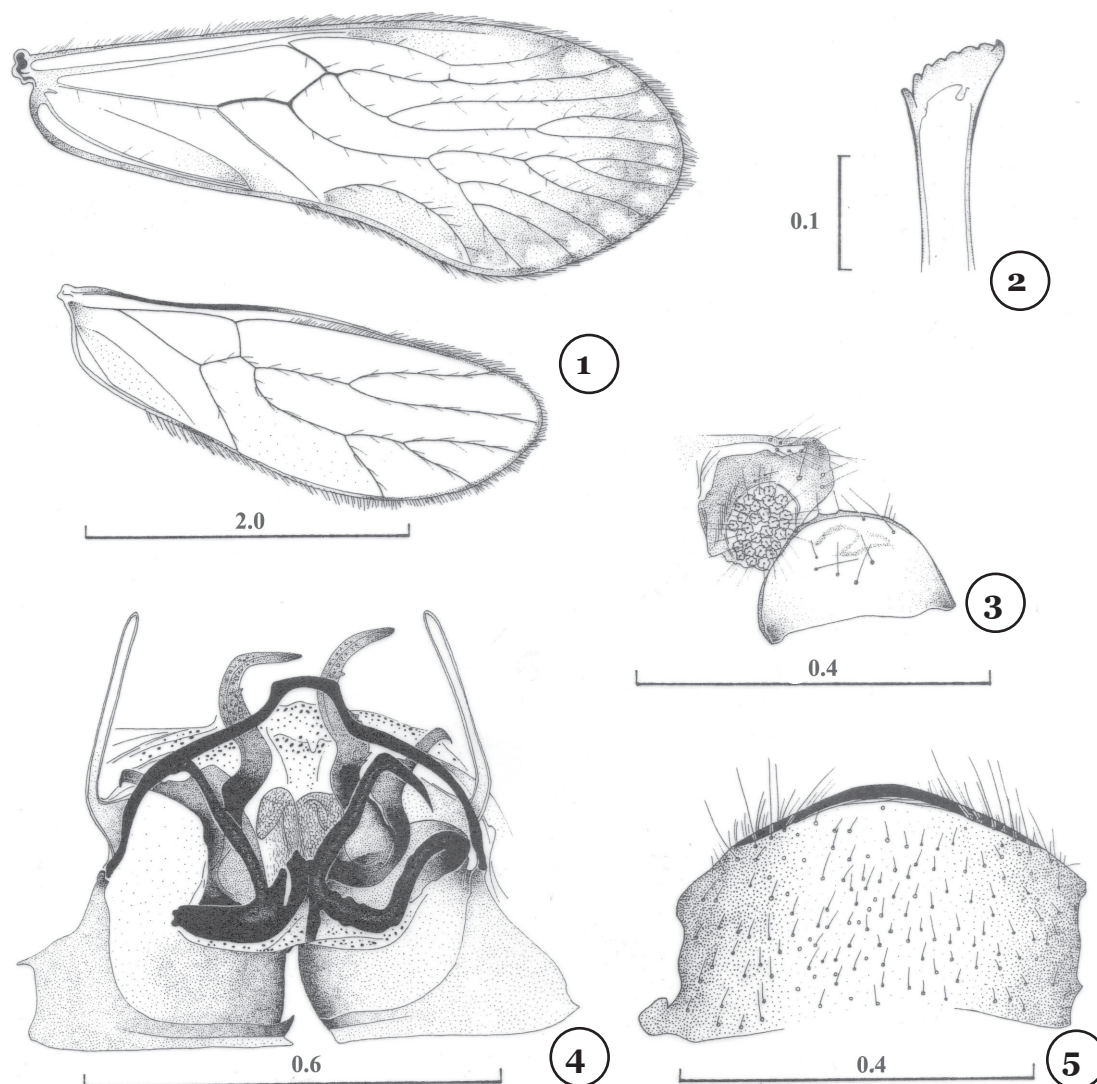
Color (in 80% ethanol). Ground color reddish brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Head pattern not discernible, due to the state of the specimen. Tergal lobes of meso- and metathorax dark brown. Coxae, trochanters and femora pale brown. Forewings washed with pale brown, with hyaline fenestrae distally between veins, from R1 to Cu1b. Pterostigma with brown proximal and distal bands. Hindwings with a pale brown hue.

Morphology. Outer cusp of lacinial tip broad, with seven denticles. Forewing (Figure 1): pterostigma elongate, wider in the middle. R2+3 unbranched, right forewing with a crossvein to the pterostigma, left forewing without such crossvein. R4+5 branched twice, as illustrated, resulting in three branches. M

with six branches, as illustrated. Areola postica long, shallow, rounded apically. Hindwing (Figure 1), Rs two branched, Rs-M fused for a distance, M three branched. Hypandrium (Figure 5) wide, setose, posteriorly convex, with border strongly sclerotized; a field of macrosetae on each postero-lateral angle. Paraprocts (Figure 3) rounded, setae as illustrated, sensory fields oval, with 30-32 trichobothria on basal rosettes. Epiproct (Figure 3) wide, straight anteriorly, rounded posteriorly, with a group of three mesal macrosetae, and a row of setae along posterior border; other setae as illustrated. Phallosome (Figure 4) broad, closed anteriorly; external parameres long, slender, straight, directed posteriorly, distally rounded; aedeagal arch with a broad posterior projection in the middle. Two pairs of endophallic sclerites, anterior pair transverse, strongly sclerotized, elongate, each arm bearing a long, slender, distally curved outwards acuminate process. Posterior pair stout, each arm with a wide based process directed outwards, distally hooked, and an inner process directed posteriorly and curved outwards, distally acuminate, bearing a row of teeth mesally on outer border, a tooth further ahead on the outer border, and a field of granules anteapically.

Measurements (in μm). FW: 3600, HW: 3100, IO: 341, D: 287, d: 236, IO/d: 1.44, PO: 0.82.

Type locality. BOLIVIA. La Paz. 28 Km SE Chulumani, South Yungas, 16°23.669'S: 67°29.936'W, 1437 m., 6.IV.2004, beating ferns and dead leaves on rock wall, near waterfall. Holotype male. A. N. García Aldrete.



Figures 1-5. *Ianthorntonia dorbignyi* n. sp. (Holotype male). 1. Forewing and hindwing. 2. Right lacinial tip. 3. Left paraproct and epiproct. 4. Phallosome. 5. Hypandrium. Scales in mm.

Ianthorntonia marshalli García Aldrete (Female)

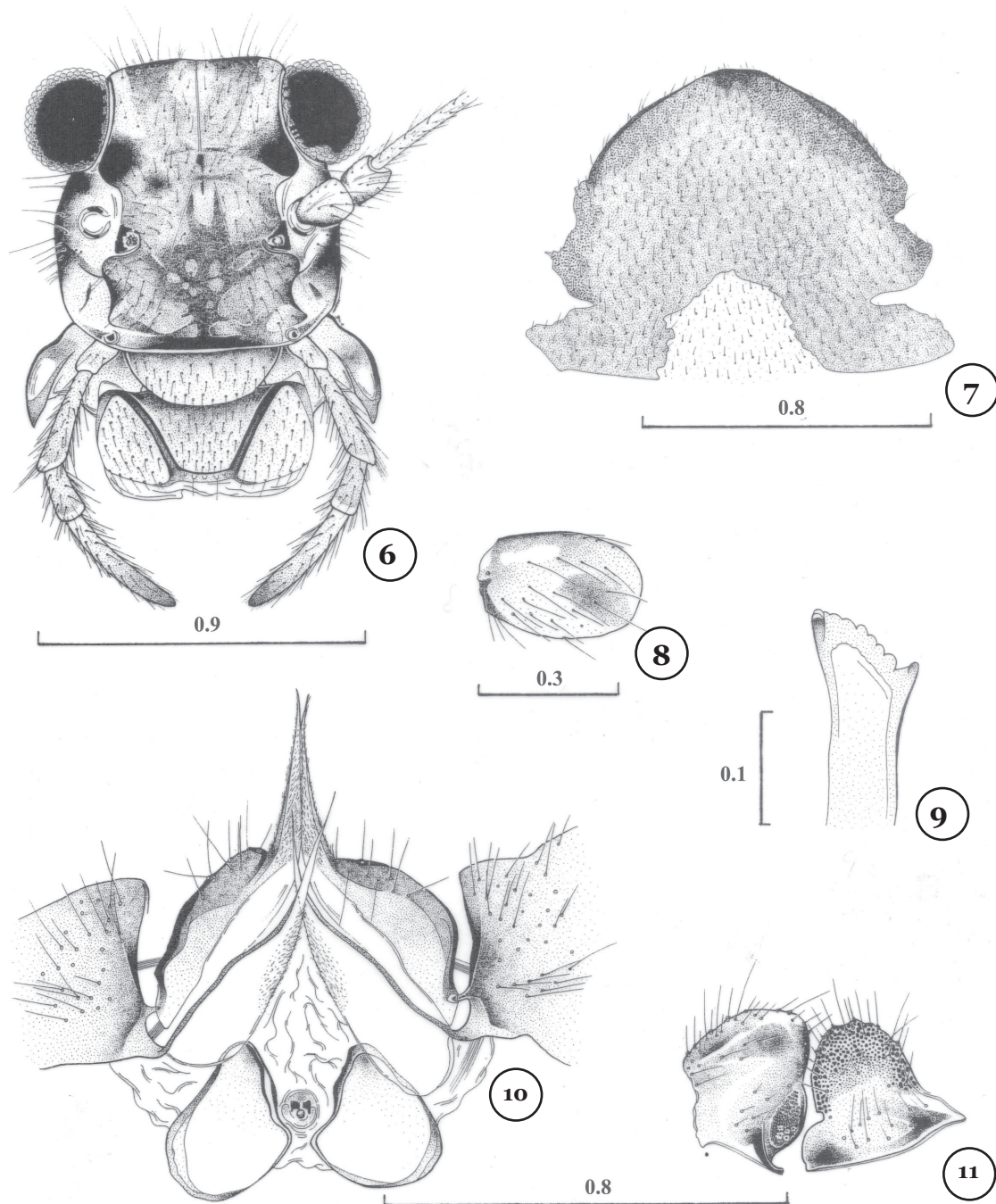
(Figures 6-11)

Color (in 80% ethanol). Body dark brown. Compound eyes black. Mx4 slightly more pigmented than the other palpomeres. Antennae and legs brown. Tibiae brown, with apices and a mesal band pale brown. Winglets brown.

Morphology. Neotenic (i.e. without ocelli, t1 of legs without ctenidobothria, micropterous, sensory fields of paraprocts with four trichobothria in basal rosettes). Abdomen globose. Outer cusp of lacinial tip broad, with eight denticles (Figure 9). Winglets with sides parallel (Figure 8), distally rounded, with macrosetae sparsed on the surface, without traces of venation. Subgenital plate (Figure 7) wide, densely setose, posteriorly rounded, pigmented area anteriorly concave in the middle. Gonapophyses (Figure 10): v1 long, slender, v2+3

Etymology. This species honors the memory of Alcide Dessalines d'Orbigny, French naturalist (1802-1857), author of the monumental "Voyage dans l'Amérique Méridionale", a foundational work for the knowledge of the natural history of Argentina, Bolivia, Brasil, Chile, Peru and Uruguay, and who most contributed to the scientific knowledge on Bolivia.

Remarks. *I. dorbigny* differs from the other five species in the genus, mainly on phallosome characters; it is the only species having the external parameres rod-shaped, slender and without spines, it is also the only species in which the aedeagal arch is broadly projected posteriorly in the middle. Besides, the endophallic sclerites are distinct, and the hypandrium is strongly sclerotized posteriorly. All the above characters place this species apart from the other species in the genus. It is the third species in the genus to be recorded in the Bolivian department of La Paz.



Figures 6-11. *Ianthorntonia marshalli* García Aldrete. (Female). 6. Front view of head. 7. Subgenital plate. 8. Winglets with sides parallel. 9. Right lacinial tip. 10. Gonapophyses and ninth sternum. 11. Left paraproct and epipect. Scales in mm.

with 7-9 macrosetae on v2, distal process straight, acuminate, with microsetae. Ninth sternum (Fig. 10) with a broadly tear-shaped area on each side of spermapore. Paraprocts (Figure 11) broad, with setae as illustrated, sensory fields small, with four trichobothria on basal rosettes. Epiproct (Figure 11) bell shaped, with setae as illustrated.

Measurements (in μm). FW: 339, F: 1183, T: 1768, t1: 855, t2: 281, f1: 961, f2: 865, f3: 650, f4: 454, Mx4: 362, IO: 433, D: 267, d: 206, IO/d: 2.1, PO: 0.77.

Specimen studied. BOLIVIA. Cochabamba. 70 Km NE Cochabamba, 17°10.513'S: 65°54.026'W, 2,950 m. (type locality of *I. marshalli* García Aldrete). 9.IV.2004, beating ferns and vegetation on rock wall, 1 female, taken together with three males of the same species. A. N. García Aldrete.

Remarks. The finding of the female of *I. marshalli*, confirms the prediction on its phenotype, close to the females of *Goja* and *Gojaoides*. Both the macropterous males, and the micropterous

females, are found in the same biotope. To date, no species of *Ianthorntonia* have been found outside of the Bolivian Andes.

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