

## A new species of *Ischnura* (Odonata: Coenagrionidae) from high altitude eastern Andes, of Colombia

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**ABSTRACT.** *Ischnura mahechai* sp. nov. is described and illustrated based on specimens collected at the Eastern Andean mountain range of Colômbia. The species is close to *Ischnura cruzi* De Marmels, 1987 but differs from it by the structure of male anal appendages and female hind prothoracic lobe. The specimens were collected on a small Andine lake at 3,600 m, the 4<sup>th</sup> altitudinal record for a resident odonate.

**KEY WORDS.** Andes; altitudinal record; damselflies.

*Ischnura* is a cosmopolitan genus of damselflies with 65 species, out of which 20 are recorded in the New World and distributed from Canada to central Chile and Argentina (GARLSON *et al.* 2010). The Colombian fauna has eight species (PEREZ-GUTIERREZ & PALACINO-RODRIGUEZ 2011) five of which inhabiting in the high altitude mountains of the Eastern Andes near Bogota, namely *I. capreolus* (Hagen, 1861), *I. chingaza* Realpe, 2010; *I. cruzi* De Marmels, 1987, *I. cyane* Realpe, 2010 & *I. ramburii* (Selys, 1850). We describe herein a new species from the same region, collected at an elevation of 3,600 m.

### MATERIAL AND METHODS

The type specimens are in collection A.B.M. Machado, deposited in the Taxonomic Collections of the Universidade Federal de Minas Gerais, UFMG, registered as I.OD-2012-0058 (holotype) and I-OD-0059 (allotype). Venation system according to TILLYARD & FRASER (1938). Abbreviations: S1-S10, abdominal segments 1 to 10; FW, forewings; HW, hindwings; PX, postnodals.

### TAXONOMY

#### *Ischnura mahechai* sp nov.

Figs 1-9

**Description.** Holotype male. Head: missing Prothorax black except for a distolateral pilose projection of median lobe that is whitish green. Pterothorax: mesopleurum black with a narrow antehumeral stripe whitish green, metapleurum whitish green with a dark brown stripe on the metepisternum and a black line at the second lateral suture. In all legs extensor parts of femora and tibiae black, flexural parts yellowish, tarsi yellowish. Wings hyaline, FW pterostigma dark brown (Fig. 1). HW pterostigma light brown (Fig. 2), surrounded by yellow,

smaller than that of FW. PX in FW 8-9, in HW 7-8; R3 arising in FW near PX4 in HW near PX3. Abdomen S1-S10 dorsally black, ventrolaterally yellowish blue with narrow bluish yellow incomplete basal rings.

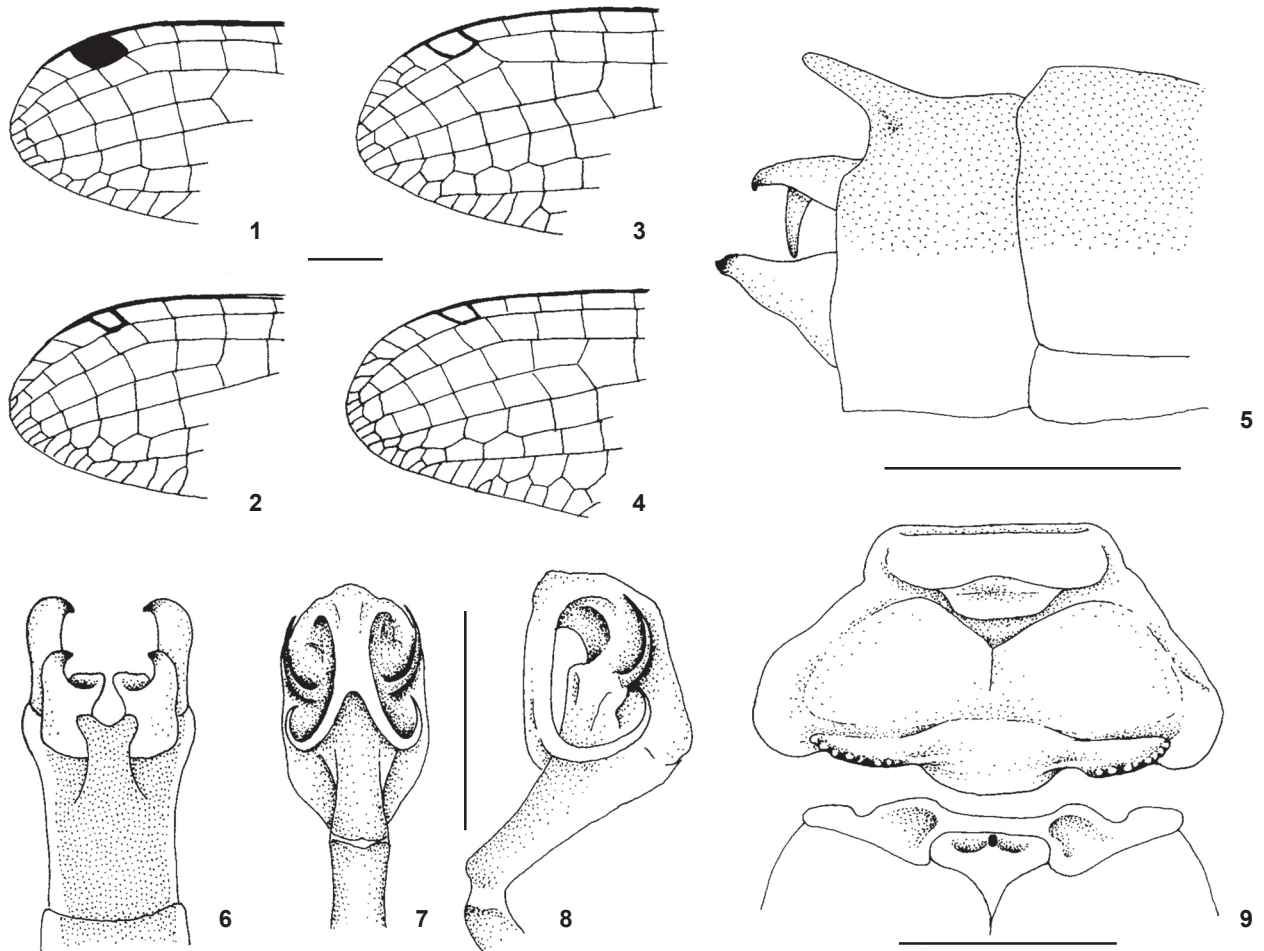
**Structural characters:** hind prothoracic lobe straight with median lobe poorly developed. Penis with distal segment deeply bifid (Figs 7 and 8) forming two long curved processes. Second segment with a pair of posteriorly directed strongly curved spine proximal to flexure, not overpassing the lateral border of the segment. Hind border of S10 with a robust projection directed dorsoposteriorly (Fig. 5) with the apex bifid (Fig. 6). Cercus directed posteriorly (Fig. 5) tapering into a sclerotized tip provided with a medially directed tooth (Fig. 6), a with a slightly curved decumbent process at about midlength (Fig. 5). Paraproct in lateral view (Fig. 5) subtriangular with a distal spine, 1/3 shorter than S10.

**Measurements (mm)** HW 13.6, Abdomen 20.0. Cercus 3.1.

**Allotype female.** Head: labium whitish yellow, face olive with a black line on the frontoclypeal suture. Upper part of head black with olive black rounded poorly defined postocular spots. Postocular area and occipital ridge brown. Prothorax black. Pterothorax, mesepisternum black with a midcentral narrow yellow stripe. Mesepimerum olive, metapleurum black. Legs: femora dorsally black, ventrally olive. Tibiae and tarsi yellow. Wings hyaline, pterostigma in both wings yellow, slightly smaller in HW, (Figs 1 and 2). PX in FW 9-10 in HW 7.8. R3 arising near PX4 in FW and near PX3 in HW. Abdomen ventrally olive yellow, dorsally black with slightly pruinose areas on S1-S6. Cerci brownish red.

**Structural characters:** hind prothoracic lobe (Fig. 9) with medial and lateral lobes well developed, the latter with crenulated border. No ventral spine on S8. Cerci digitiform.

**Measurements (mm)** HW 15.3, abdomen: 19.0.



Figures 1-9. *Ischnura mahechai* sp. nov.: (1-2) holotype male: (1) forewings; (2) hindwings; (3-4) female allotype: (3) forewings ; (4) hindwings; (5-7) male holotype abdominal segments: abdominal segments 1 to 10 in lateral (5) and dorsal (6) views; penis in dorsal (7) and lateral (8) views; (9) female allotype, phothorax and mesostigmal plates in dorsal view. Scale bars: 1-4 = 1.0 mm, 5 = 5.0 mm, 6-8 = 0.5 mm, 9 = 1.0 mm.

Type material. Holotype male and allotype female, COLOMBIA, *Department of Cundinamarca*: municipality of Guatavita, (4°55'50"S, 73°49'59"W, 3,600 m). Handpicked on a small shallow lake situated at about 5 km east of Guatavita, 16-XI-1989 (paramo vegetation), G.A.B. Mahecha leg.

Etymology. Named mahechai, in honor of my good friend Prof. Germán Arturo Bohorquez Mahecha who collected the type specimens in Colombia.

Remarks. By the morphology of S10 and appendages *I. mahechai* sp. nov. is much different from the 15 North and Central America *Ischnura* redescribed and illustrated by WESTFALL & MAY (2006). In the key of HECKMAN (2008) for South American species it keys out to *I. ultima* Ris, 1908 but differs from it by having the abdomen totally black in both sexes (with blue markings in *I. ultima*); the male projection of S10 directed

dorsoposteriorly (Fig. 5) (dorsally in *I. ultima*) and the decumbent process only slightly curved (strongly curved in *I. ultima*). *I. mahechai* sp. nov. fits none of the species in REALPE's key for the *Ischnura* of Colombian Eastern Cordillera. Taking in consideration the appendages *I. mahechai* sp. nov. is closer to *I. cruzi*, sharing with it the decumbent process originating at about midlength of cercus. It differs however from it by having the paraprocts 1/3 shorter than S10 (subequal in *I. cruzi*), in lateral view subtriangular (subcylindrical in *I. cruzi*), the internal spine of penis segment 2 strongly curved and not overpassing the border (Figs 7 and 8) (slightly curved and overpassing the border in *I. cruzi*). Besides, in *I. mahechai* sp. nov. the abdomen is totally black (In *I. cruzi* S1, S2, dominantly yellow, S8 pale blue, S9 anteriorly pale blue). The female of *I. mahechai* sp. nov. has the border of the lateral lobes of the hind prothorax lobe crenu-

lated (smooth in *I. cruzi*). REALPE (2010) studied the occurrence of *Ischnura* across a vertical gradient in the high mountains of Eastern Andean Cordillera near Bogota. At lower altitudes (1,300 m and 2,000 m) *I. cyane* shared habitat with *I. capreolus* and *I. ramburi*; at 2,600 m *I. cruzi* and *I. chingaza* occurred and at higher altitudes (3,200 m) only *I. chingaza* was found. *I. mahechai* sp. nov. that occurs in the same mountain region, was found at 3,600 m altitude that is 1,000 m above its closer species *I. cruzi*. According to the collector Prof. Germán A.B. Mahecha, the species was extremely abundant on the margin of the small lake where the two type specimens have been collected. This fact indicates that it was resident there and not simply carried by air currents. The record of *I. mahechai* sp. nov. at 3,600 m is the fourth highest record registered for resident odonata being overpassed only by *Neallogaster latifrons* Selys, 1878 in Nepal (4,505 m), *Protallagma titicacae* (Calvert, 1908) (4,720 m) and *Rhionaeschna peralta* (Ris, 1918) at 5,050 m both in the Peruvian Andes (CORBET 2004).

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