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Philogenia nemesioi, a new damselfly from Peru (Odonata, Megapodagrionidae)

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ABSTRACT. *Philogenia nemesioi*, a new damselfly from Peru (Odonata, Megapodagrionidae). *Philogenia nemesioi* **sp. nov.** is described and illustrated based on one male specimen collected on forests of the eastern slope of the Peruvian Andes at 900 m. It belongs to the *cristalina* group, but differs from other species of the group by the structure of the anal appendage.

KEYWORDS. Andes, *cristalina* group; damselflies; Insecta; taxonomy

Philogenia Selys, 1862 is a neotropical genus that occurs from Central America to Bolivia and has 35 species (Garrison *et al.* 2010). This number does not include *Philogenia marinasilva* Machado, 2010 that, according to Garrison (in litt.), is a junior synonym of *P. mangosina* Bick & Bick 1988. Eight species of the genus were recorded from Peru (Tsuda 2000), as described by Selys (1862), Ris (1918), Calvert (1924), Bick & Bick (1988), and Dunkle (1990a, 1990b). I describe herein another Peruvian species collected along a forest stream at 900 m on the eastern slope of the Andes.

MATERIAL AND METHODS

The holotype will be deposited at *Museo de Historia Natural de la Universidad Mayor de San Marcos*, Lima, Peru. All measurements are given in mm; abdomen measurements includes appendages. Abbreviations as follows: S1-S10: abdominal segments 1 to 10, FW: forewings, HW: hindwings.

TAXONOMY

Philogenia nemesioi sp. nov.

(Figs. 1–3)

Description. *Coloration*. Head: Labium black. Labrum, base of mandibles and genae yellow. Clypeus, frons, and upper part of head black with poorly defined brownish area between vertex and antennae. Back of head brown. Prothorax: pronotum laterally orangish-yellow, dorsally gray with metallic green luster. Propleuron black. Pterothorax: mesepisternum brownish orange with black middorsal carina and a faint black stripe adjacent to upper half of humeral suture. Mesepimeron black with metallic green luster and narrow orange yellow stripe adjacent to medial third of humeral suture. Metepisternum black with anterodorsal orange yellow marking. Metepimeron dominantly black with orange yellow marking at lower quarter, hind border, and anterodorsal part of sclerite. Legs orange yellow except for dark extensor surfaces of fore legs and femora of mid- and hind legs. Wings faint orangish-yellow, more intense adjacent to veins. Venation black, pterostigma dark brown. Abdomen: S1-S2 black with dorsolateral orange yellow stripe. S3-S7 black with proximal orange yellow rings. S8-S10 black with grayish-white dorsal band on S9-S10 and distal part of S8. Appendages black.

Structural characters. Hind prothoracic lobe rounded with a slight lateral concavity (Fig. 1). Cercus in lateral view (Fig. 2) about twice longer than S10, obliquely directed ventroposteriorly at distal two-thirds, with no mesoventral process, in dorsal view (Fig. 3) dilated at distal one-third, in ventral view with apex directed medially (Fig. 4). Paraprocts in lateral view smooth, tapering into a fine tip, with a basodorsal bulb-shaped structure (Fig. 2), in ventral view as in Fig. 4.

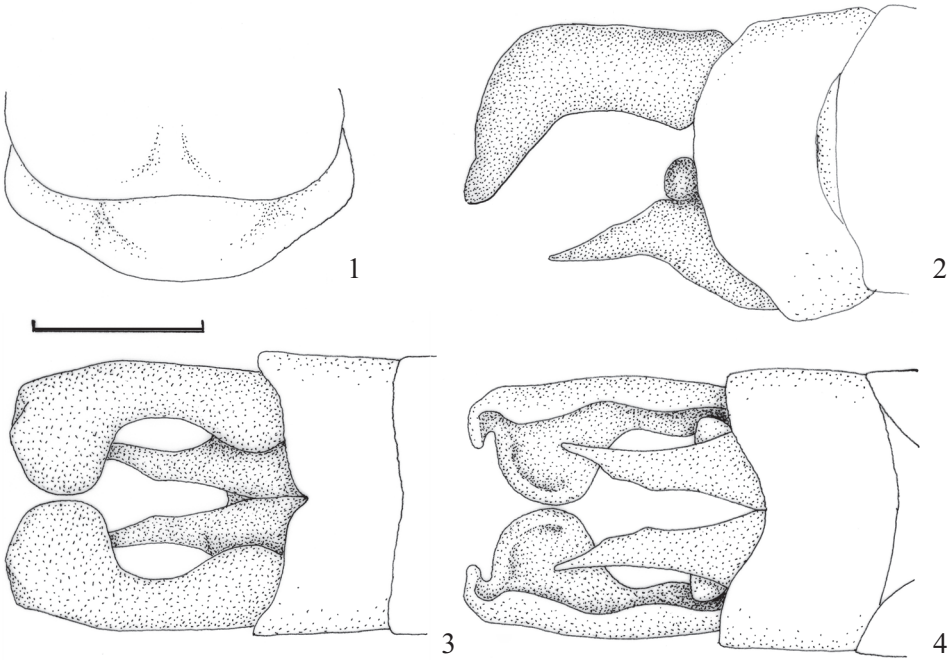
Measurements. Total length 59.0; FW length 33.0; HW length 34.0; pterostigma 2.7; abdomen 4.9.

Etymology. Named *nemesioi* in honor of my good friend Prof. André Nemésio who collected the holotype in Peru.

Type material. Holotype male: PERU – Department of San Martín, municipality of Tarapoto, 'Biodiversidad' Park (06°27'42"S; 76°17'19"W; ca. 900 m a.s.l.). 25-VII-2012. A. Nemésio leg.

DISCUSSION

Because it lacks the mesoventral process, *P. nemesioi* **sp. nov.** belongs to the *cristalina* group of Bick & Bick (1988) together with *P. cristalina* Calvert 1909; *P. ferox* Racenis, 1959, *P. sucra* Dunkle, 1980, and *P. tinalandia* Bick & Bick, 1988. It keys out to *P. sucra* in Heckman's key (2008) but differs from it mainly by the tapering paraproct with no tooth (not tapering and with a tooth in *P. sucra*). It differs from *P. ferox* by having paraprocts entire (bifid in *P. ferox*), from *P.*



Figs. 1–4. *Philogenia nemesioi* **sp. nov**., holotype male. 1. Hind prothoracic lobe in anterodorsal view. 2–4. Abdominal segment 10 and appendages in lateral (2), dorsal (3) and ventral (4) views. Scale bar: 1 mm.

cristalina and *P. tinalandia* by the paraproct without tooth (with tooth in *P. tinalandia* and *P. cristalina*).

Philogenia nemesioi is part of a small collection of 23 Odonata species made by Prof. André Nemésio in the region of Tarapoto in northeastern Peru. According to Dasmaharapatra *et al*. (2010) this region is a well-defined 'suture zone' between two areas of endemism in the lowland rainforest: the Río Mayo/upper Río Huallaga valley systems on one side, and the lower Río Huallaga and Río Ucayali regions on the other side. This suture zone is considered by these authors to form the meeting place for separate biotas recently expanded from the putative 'Huallaga' (Western) and 'Ucayali' (Eastern) Pleistocene refuges. This very special biogeographical situation explains the enormous biodiversity of the region as revealed for birds (Davis 1986), butterflies (Dasmahapatra *et al*. 2010) and orchid bees (Nemésio *et al*. in press). The small number of Odonata species (23) obtained in a field trip aimed at collecting bees does not reflect this biodiversity and intense collecting efforts specifically directed towards odonates will most probably considerably increase this number. It is worth mentioning that although containing only 23 species, the collection of Odonata made at Tarapoto included three new species and a new genus, suggesting that the Odonata fauna of this region is poorly known prompting further collecting in the area.

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