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COMPLEMENTARY DESCRIPTION OF *ANACRONEURIA IZAPA* (PLECOPTERA: PERLIDAE) FROM MEXICO

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ABSTRACT

The description of the male of *Anacroneuria izapa* Stark & Kondratieff 2004 is complemented and the female and egg are described from specimens collected in the Lacandona jungle, Chiapas, Mexico.

Keywords: Stoneflies, female description, egg, Chiapas, Lacandona jungle, Reserva de la Biosfera Montes Azules

INTRODUCTION

Chiapas is one of the Mexican states with high biodiversity. 1,408 species of insects are recorded for this state (Aguilar-Sierra 2011), nonetheless, this number may increase 70% (SEMARNAP 2000). The Lacondona jungle located in the east of Chiapas near the border with Guatemala, is an important and protected area called "Reserva de la Biosfera Montes Azules". This region has an altitude of 3,000 ft a.s.l., warm humid (Am) climate with annual average temperature of 25.7°C, and rainfall, averaging 2,119 mm, distributed throughout the year (Köppen 1948).

A minimum of 62 *Anacroneuria* Klapálek species are reported for Mesoamerica from northern Mexico to the Colombian border (Stark 1998, Stark 2014, Fenoglio 2007, Gutiérrez-Fonseca 2015, Gutiérrez-Fonseca et al. 2015). *Anacroneuria* is the only genus of Neotropical Plecoptera known in Mexico with 30 species recorded, and the most biodiverse states in Mexico are Chiapas, Veracruz and Oaxaca with 15, 13 and 9 respective species (Baumann & Kondratieff 1996, Stark & Kondratieff 2004). However, there are many unstudied areas in Mexico and the fauna may be more diverse than current data suggest.

Anacroneuria izapa Stark & Kondratieff was described in 2004 with a male holotype and two male paratypes collected in Chiapas in 1935. Because the condition of the specimens available to Stark and Kondratieff was poor, it was not possible to present a detailed description of the adult habitus. They stated that the pronotal pattern was "obscure" and no female specimens were available to them at that time. Consequently, with the discovery of fresh material we are able to enhance the male description and provide descriptions of the female and egg for this species.

RESULTS AND DISCUSSION

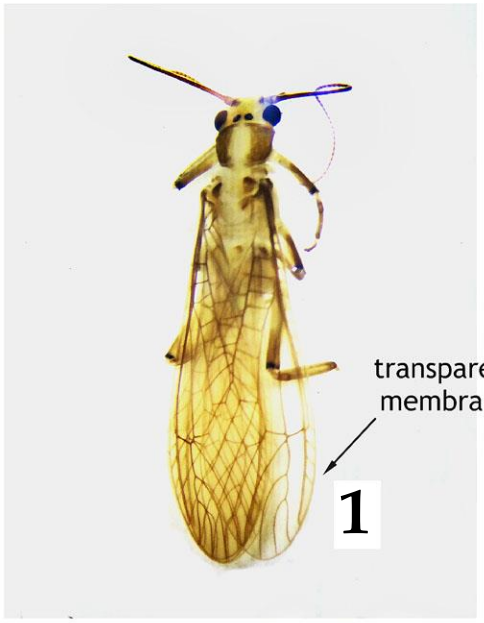
Anacroneuria izapa Stark & Kondratieff 2004

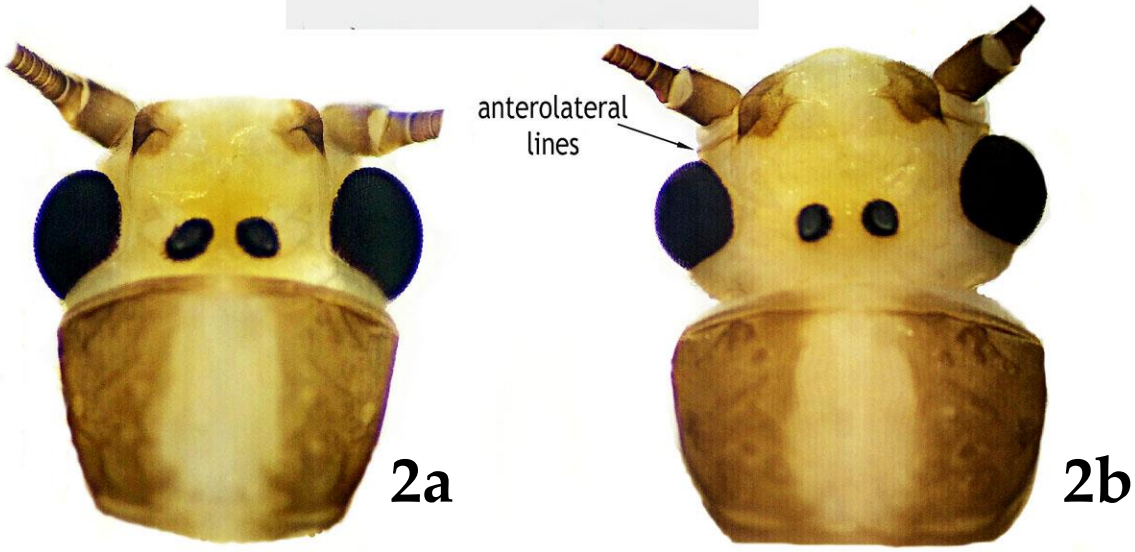
(Figs. 1-6)

http://lsid.speciesfile.org/urn:lsid:Plecoptera.speciesfile.org:TaxonName:2031

Anacroneuria izapa Stark & Kondratieff 2004:26. Holotype ♂ (Illinois Natural History Survey), Jataté River, San Quintin, Chiapas, Mexico

Material examined. Allotype female: MEXICO: Chiapas, Mpio. Marqués de Comillas, Localidad Chajul, Reserva de la Biosfera Montes Azules, Estación Chajul, Rio Lacantún, 16°06' N, 90°56' W, 19 March 2013, R. Barba, col. in 80% ethanol deposited in the CNIN (Colección Nacional de Insectos), Instituto de Biologia, UNAM (IBUNAM), Mexico City. Additional specimens: Same collecting data, 1♂, 5♀, deposited in CNIN.



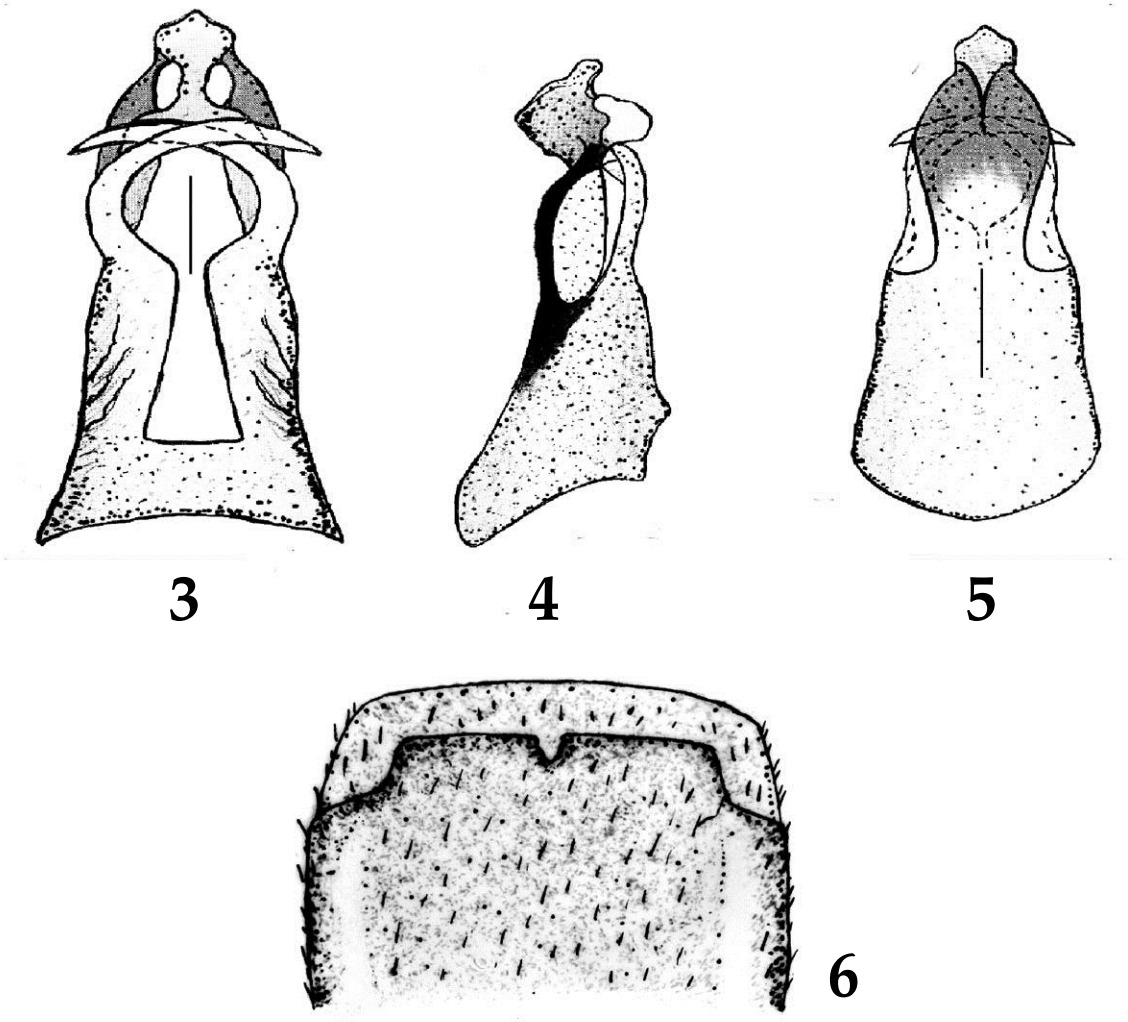


Figs. 1-2. *Anacroneuria izapa*. 1. Adult habitus. 2a. Male head and pronotum. 2b. Female head and pronotum.

Adult habitus. Head entirely pale yellow, without dark pigment between ocelli; M-line indistinct, lappets with an irregular hexagon shape divided and pigmented light brown below and dark brown above (Figs. 1, 2a, 2b); circum-antennal ridges connect lappets to anterior margin of eyes in

female (Fig. 2b). Pronotum with pale, moderately wide mesal stripe; dark brown pigment of discs with scattered small rugose areas. Antennae almost as long as the body length (9-13 mm). Wing membranes transparent, or with a pale amber tint, veins pale brown (Fig. 1).

Fore leg. Surface hairy, covered with fine setae. Trochanter with an asymmetric pale area and a pair of small black spots. Femora generally light brown but with a black basal and a narrow pale distal band. Tibial apex pale, followed by an irregular rectangular black area.



Figs. 3-6. *Anacroneuria izapa*. 3. Aedeagus, ventral. 4. Aedeagus, lateral. 5. Aedeagus, dorsal. 6. Female subgenital plate.

Male. Forewing length 13 mm. Hammer a low thimble with apical diameter subequal to height. Aedeagal apex with a short, fish scale-shaped structure; aedeagus constricted subapically and bearing a small pair of elongate-oval membranous lobes; outer margins of lobes sclerotized and dark (Fig. 3). Hooks slender, typical in appearance; space between hooks forming an antique door lock-shape (Fig. 3); a longitudinal line located on membranous surface between bases of hooks. Dorsal: Aedeagal keel well developed (Figs. 4-5), forming a sclerotized Y-shaped structure (Fig. 5);

arms reach anterolateral margins at subapical constriction point; longitudinal line present at midlength.

Female. Forewing length 20-23 mm. Body coloration as in the male. Subgenital plate simple, bilobed with posterior margins truncate; lateral margins of lobes shorter than their width, notch small, shallow and V-shaped (Fig. 6). Mesal field of sternum 9 with scattered fine setae.

Egg. Shape oval with collar end much narrower than micropylar end. General color dark brown, collar button-like. Length ca. 0.45 mm, width ca. 0.21 mm.

Larva. Unknown.

Distribution. Mexico, Chiapas, Municipalities: Marqués de Comillas, 16°06′ N, 90°56′ W (Lacantún River) and Ocosingo, 16°32′ N, 91°29′ W (Jataté River).

Diagnosis. This species shows a close similarity in pronotal pigment pattern to *Anacroneuria perplexa* Stark 1998, but *A. izapa* is lighter in color and larger (Figs. 1, 2a, 2b). In addition, the subgenital plate of the female *A. perplexa* shows a deeper V-shaped median notch and the posterior margins of the lobes are not as straight as in *A. izapa*.

Comments. The female of this species was associated with the male on the basis of similar body color and adult habitus. The absence of dark pigment between the ocelli may partially account for the difficulty of Stark & Kondratieff (2004) in presenting a complete description of the species from specimens collected in 1935. The specimens used in this study were collected near the type locality in Chiapas. Presently, there are no known records of this species from outside Chiapas.

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