

**LESTES ALFONSOI SPEC. NOV.,
A NEW DAMSELFLY FROM MEXICO
(ZYGOPTERA: LESTIDAE)**

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The new sp. is described, illustrated and compared with *L. simplex* Hag. Holotype ♂ and allotype ♀: Veracruz, Laguna de Santo Domingo, 4 km NW of Huatusco, alt. 1300 m, 9-VII-2000; deposited at CNIN, UNAM, México.

INTRODUCTION

The genus *Lestes* is represented in Central America and Mexico by 8 species (MAY, 1993). Here we describe a new species, *L. alfonsoi* sp. nov., collected in the state of Veracruz, Mexico. The taxonomic position of the new species is uncertain although it seems to be close to *L. simplex* Hagen. With the discovery of *L. alfonsoi*, the number of species of this genus in Mexico rises to six.

Terminology for thoracic and abdominal maculation and for the caudal appendages follows WESTFALL & MAY (1996).

LESTES ALFONSOI SP. NOV.

Figures 1-5

Material. – **Holotype** ♂: MEXICO: Veracruz state, Laguna de Santo Domingo, 4 km NW Huatusco (19° 09' 550"N, 97° 00' 267"W, alt. 1300 m), 9-VII-2000, E. González leg.; – **allotype** ♀ (in copula with holotype): same data as holotype. – **Additional material** (23 ♂ **paratypes**) same data as holotype E. González, R. Novelo, A. González and Luis E. González leg., 20 ♂; same data but 15-VIII-1986, R. Novelo and V. García leg., 2 ♂; Tenejapa, 9-VIII-1986, R. Novelo leg., 1 ♂. Material is deposited at CNIN-UNAM and IE-Xalapa, Mexico. Paratypes will also be deposited at USNM, IORI, RWG (Azusa, CA) and MLM (New Brunswick, NJ) collections.

Etymology. – The name of this species is dedicated to Alfonso González Figueroa, son of the senior author, for his companionship and help during collecting trips.

MALE (Holotype). – **H e a d.** – Labrum, gena, outer surface of mandible and anteclypeus light blue; gena, outer surface of mandibles and lateral margins of labrum flanked by a narrow ivory line; postclypeus and remainder of epicranium black with slight metallic-reddish reflections; rear of head black, pale around occipital foramen; antennae dark brown on 3 basal segments, remainder of segments lost, labium and maxillae tan, the latter with apexes dark brown.

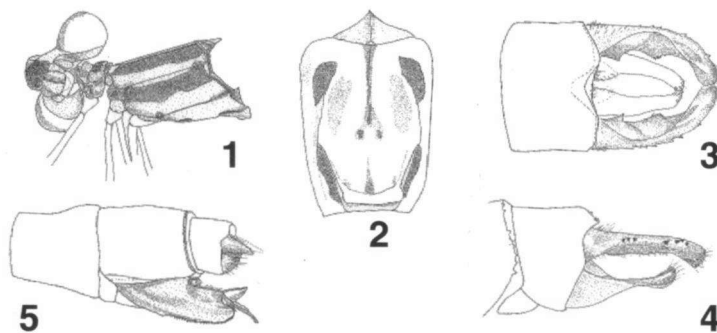
T h o r a x. – Prothorax brown, bluish dorsally with large mediodorsal black spots on middle lobe and small black semicircular spots on hind lobe; pterothorax with bluish narrow line along middorsal carinae, flanked by wide black middorsal stripes occupying more than half width of mesepisternum (Fig. 1), these stripes are slightly widened at upper end, antehumeral stripe, antealar crest and sinus blue; a narrow blue stripe on mesepimeron running for a short distance below mesopleural suture, mesepimeron with a wide, dark stripe, metepisternum blue with brown stripe at level of metapleural fossa; metepimeron blue with a black stripe on anterior end just above ventral margin, a black stripe just below metapleural carina, ventral color pattern as in Figure 2.

Legs: Pale brown with black stripes on external surfaces excepting coxae and trochanters, tarsi black.

A b d o m e n. – Dorsum of segs 1-2 black, yellow laterally and with narrow medial yellow line; segs 3-8 black on dorsum with narrow yellow ventrolateral stripes, on 3-4 these stripes are connected with pale basal annuli, dorsum of 9 pruinose, 10 dark brown; abdominal appendages black with medium brown areas on internal surfaces. Cerci with basal teeth at 0.26 length and angulated denticulated expansion at 0.54 length (Fig. 3); paraprocts long, 0.96 length of cerci, with tips converging and slightly expanded (Figs 3-4). Cerci and paraprocts were measured in lateral view from about mid-height of each to its tip.

M e a s u r e m e n t s (in mm). – Total length (incl. apps) 38.6; abdomen (incl. apps) 31.7, hindwing 20.9, cerci 1.15, paraprocts 1.11.

FEMALE (Allotype). – Coloration of head and prothorax as in holotype. Pterothorax



Figs. 1-5. *Lestes alfonsoi* sp. n.: (1) diagram of thoracic color pattern (holotype); – (2) ventral color pattern (holotype); – (3-4) dorsal and lateral view of male abdominal appendages (holotype); – (5) abdominal appendages and ovipositor of female in lateral view (allotype).

also similarly colored except for mesepimeral dark stripe with metallic reddish-green reflections and metepisternal blue stripe flanked above and at sides by cream yellow coloration, metepimeron cream-yellow. Abdominal segments 1-8 as in male but pale coloration at sides more extensive than male, in 1-7 pale stripes are connected with basal annuli. Pale lateral areas of 1-2 with distinct bluish tint, 9 reddish brown at sides and basally, remainder black, seg. 10 black on dorsum, reddish-brown laterally, ovipositor long (Fig. 5), tips of gonapophysis extending almost to tips of cerci, ventral margin of valves almost straight, basal plate subquadrilateral, cerci black with distinct pale brown dorsobasal spots.

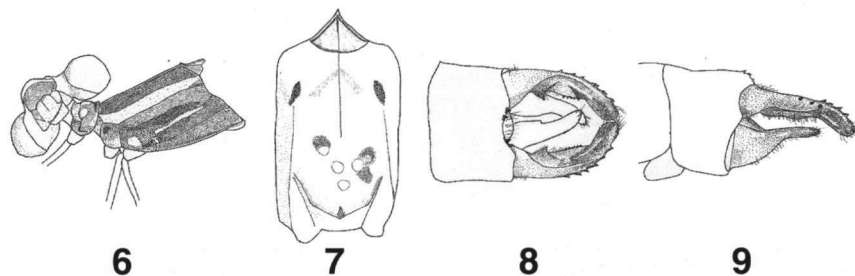
Measurements (in mm). – Total length (incl. apps) 38.2; abdomen (incl. apps) 30.4, hindwing 22.0, cerci 0.64.

VARIATION AMONG PARATYPIC SERIES. – Total length 37.6-43.2 (40.9); abdomen 31.1-35.1 (33.3); hindwing 20.2-23.4 (24.6); cerci 1.11-1.36 (1.22); paraprocts 1.02-1.19 (1.12)

DISCUSSION

The taxonomic position of *Lestes alfonsoi* within the genus is unclear. This species resembles superficially *L. forficula* Rambur in having long paraprocts but seems to be more related to *L. simplex* Hagen by the presence of a well developed dark middorsal stripe (for comparisons see Figs 1 and 6, and in *forficula* the middorsal stripe is narrow, green and not connected with median carina), and by overall similarity of the morphology of cerci. Males of *L. alfonsoi* could easily be separated from *L. simplex* by having longer paraprocts (0.94 vs 0.75 length of cerci respectively), and because medial dilatation is more reduced and more angulated than in the latter species which has medial dilatation wide and rounded (for comparisons see Figs 3-4 and 8-9). Ventral thoracic color pattern is also different in these two species (for comparisons see Figs 2 and 7).

Although the validity of *L. simplex* has been questioned by some authors (e. g. JOHNSON, 1972), CALVERT (1901) concluded that specimens collected in the



Figs. 6-9. *Lestes simplex* Hagen (Morelos: Bordo artificial, 3.2 km SW Jonacatepec. 18°39.660'N-98°48.651'W, 29-June-1985, R. Novelo & V. García leg: (6) diagram of thoracic color pattern (obscured by pruinosity, only visible after alcohol treatment); – (7) ventral color pattern of male (rounded areas seem to be mite damage, including perhaps irregular dark zones associated); – (8-9) dorsal and lateral view of male abdominal appendages.

state of Guerrero, Mexico belong to this taxon. GARCIA (1987) from material collected in the nearby state of Morelos concluded that these specimens correspond to the same taxon identified by Calvert (op. cit.) We carefully examined Garcia's material and agree with her determination. However, to avoid any further controversy it will be necessary to revise the type material on which HAGEN (1861) based his description of *L. simplex*.

To include the new taxon in the key to Mexican and Central American species of *Lestes* in MAY (1993), the following modifications should be done:

- 6(5') Paraprocts long (more than 0.90 length of cerci), extending well beyond posterior limit of medial dilatation of cerci 7
- 6' Paraprocts shorter (barely more than 0.70 length of cerci) extending little beyond posterior limit of medial dilatation of cerci 8
- 7(6) Mesepisterna with a narrow, metallic green stripe, not contiguous with middorsal carina. Medial dilatation of cerci well developed and strongly serrated *forficula*
- 7 Mesepisterna with a wide, dark stripe, contiguous with middorsal carina. Medial dilatation of cerci angulated and very slightly denticulated *alfonsoi*
- 8 Cerci in dorsal view with medial dilatation consisting of a welldeveloped lobe ending posteriorly in a distinct notch, paraprocts not distinctly curved inward *alacer*
- 8' Cerci in dorsal view with medial dilatation less prominent, not ending posteriorly in a distinct notch: paraprocts distinctly curved or slanted inward *simplex*

BIOLOGY. – Specimens were collected at a shady shallow pond surrounded by remnants of cloud forest. Vegetation surrounding the site was mostly *Liquidambar* trees. Most specimens were caught while perching on Juncaceae sedges (*Juncus effusus* L.). The pair in copula was collected in 9-VII-2000 at about 14:30 h (Local Time).

Other odonates collected or seen here were *Ischnura denticollis* (Burmeister, 1839), *Micrathyria* sp. nov., *Erythrodiplax basifusca* (Calvert, 1895), *Aeshna psilus* Calvert, 1947 (sight record) and *Remartinia* sp. [(*luteipennis* ?), sight record].

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REFERENCES

- CALVERT, P.P., 1901. Odonata. *Biología cent.-am.* (Neuroptera), pp. 17-72.
- GARCÍA, C.V., 1987. *Estudio taxonómico del suborden Zygoptera del estado de Morelos (Insecta: Odonata)*. Unpublished B. Sc. thesis.
- HAGEN, H.A., 1861. *Synopsis of the Neuroptera of North America*. Smithsonian Instn, Washington.
- JOHNSON, C., 1972. The damselfies (Zygoptera) of Texas. *Bull. Fla St Mus.* 16: 55-128.
- MAY, M.L., 1993. *Lestes secula*, a new species of damselfly (Odonata: Zygoptera: Lestidae) from Panama. *Jl N.Y. ent. Soc.* 10(3): 410-416.
- WESTFALL, M.J., Jr & M.L. MAY, 1996. *Damselflies of North America*. Scient. Publishers, Gainesville/FL.