

ORIGINAL ARTICLE

## Description of the final instar larva of *Lestes dichrostigma* Calvert (Zygoptera: Lestidae)

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### Abstract

The final instar larva of *Lestes dichrostigma* is here described and illustrated for the first time based on specimens collected in Corrientes province, Argentina, and compared with all known Argentinean *Lestes* larvae.

### Resumen

Se describe e ilustra el último estadio larval de *Lestes dichrostigma* sobre la base de especímenes coleccionados en la provincia de Corrientes, Argentina y se lo compara con el resto de las larvas del género *Lestes* conocidas para la Argentina

**Keywords:** Argentina, final instar larva, *Lestes dichrostigma*, Odonata

### Introduction

*Lestes* Leach is a cosmopolitan genus, represented in the Neotropical region by about 24 species (Belle, 1997). The final larval instar of 11 species is known: *L. alacer* Hagen, *L. bipupillatus* Calv, *L. forficula* Ramb, *L. pictus* Sel, *L. scalaris* Gundlach, *L. sigma* Calv, *L. spatula* Fraser, *L. spumarius* Hagen, *L. tenuatus* Ramb, *L. tricolor* Erich and *L. undulatus* Say (Calvert, 1927; Klots, 1932; Santos, 1972; Muzón, 1993a, 1993b, 1997; Costa & Carneiro, 1994; Westfall & May, 1996). *Lestes dichrostigma* Calvert is recorded from Argentina (Jujuy, Salta and Misiones provinces), Brazil (São Pablo) and Trinidad (Calvert, 1909; Muzón, 1993b; Muzón & von Ellenrieder, 1998). In this contribution the final larval instar of *L. dichrostigma* is described based on reared specimens of both sexes collected in Corrientes province, Argentina, and compared with all known Argentinean *Lestes* larvae.

### Results

*Lestes dichrostigma* Calvert (Figures 1–8)

### Material examined

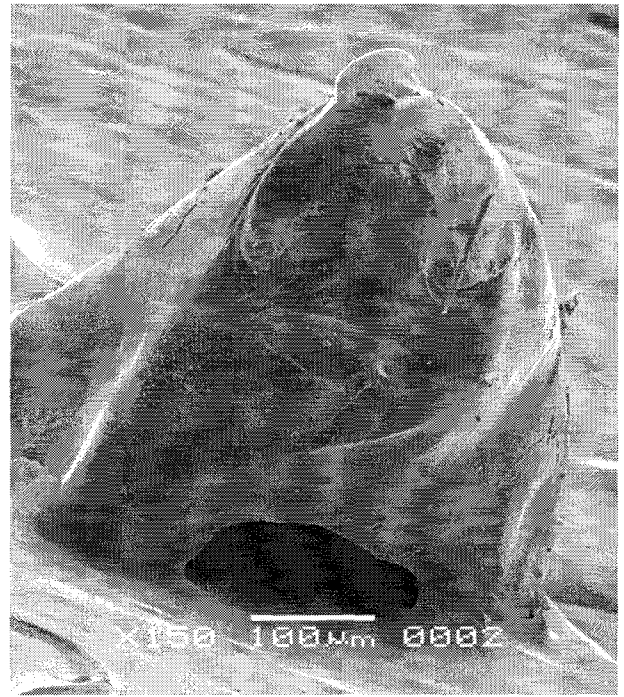
Argentina, Corrientes province, arroyo Itá Cuá, Ruta provincial 94, approximately 2 km N to Santo Tomé, 28°31'52"S, 56°03'10"W, 21 September 2005, 1♂ and 4♀♀ (reared) final instar larvae, leg. Lambruschini, Lozano, Ramos & Weigel Muñoz. All specimens deposited in the collection of the Departamento Entomología, Museo de La Plata.

### Measurements

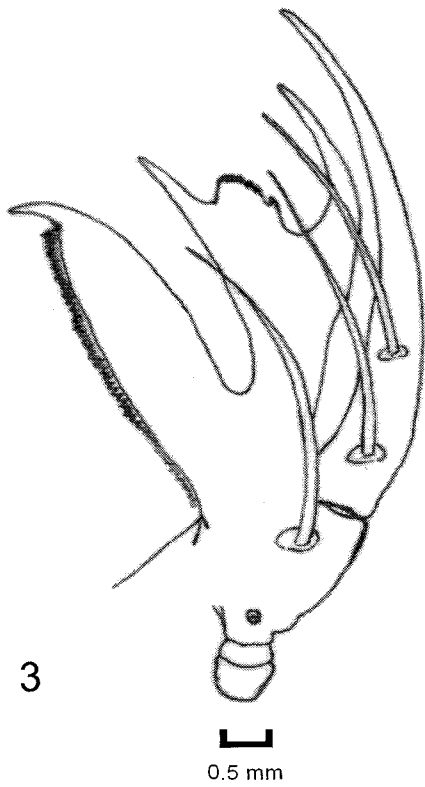
All measurements are in mm ( $n=5$ ). Total body length (without caudal lamella):  $27.07 \pm 1.6$ . Head: max. width  $3.65 \pm 0.31$ , max. length  $1.32 \pm 0.15$ . Antenna: total length  $3.40 \pm 0.16$ , the third antennomere the longest. Prementum: max. width  $1.62 \pm 0.16$ , max. length  $3.26 \pm 0.15$ . Movable hook: 0.9. Femur: (1)  $2.24 \pm 0.13$ , (2)  $3.38 \pm 0.13$ , (3)  $4.26 \pm 0.19$ . Tibia: (1)  $2.48 \pm 0.19$ , (2)  $3.46 \pm 0.23$ , (3)  $4.50 \pm 0.29$ . Wing pads: internal  $4.88 \pm 0.30$ , external  $4.74 \pm 0.22$ . Abdominal max. length:  $12.30 \pm 1.49$ , segment X length:  $0.78 \pm 0.04$ . Caudal lamella: max width: lateral  $1.57 \pm 0.12$ ,



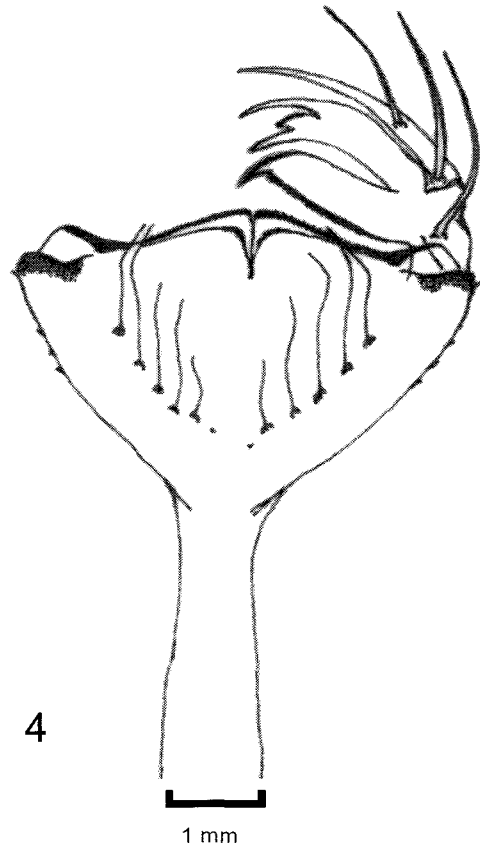
1



2

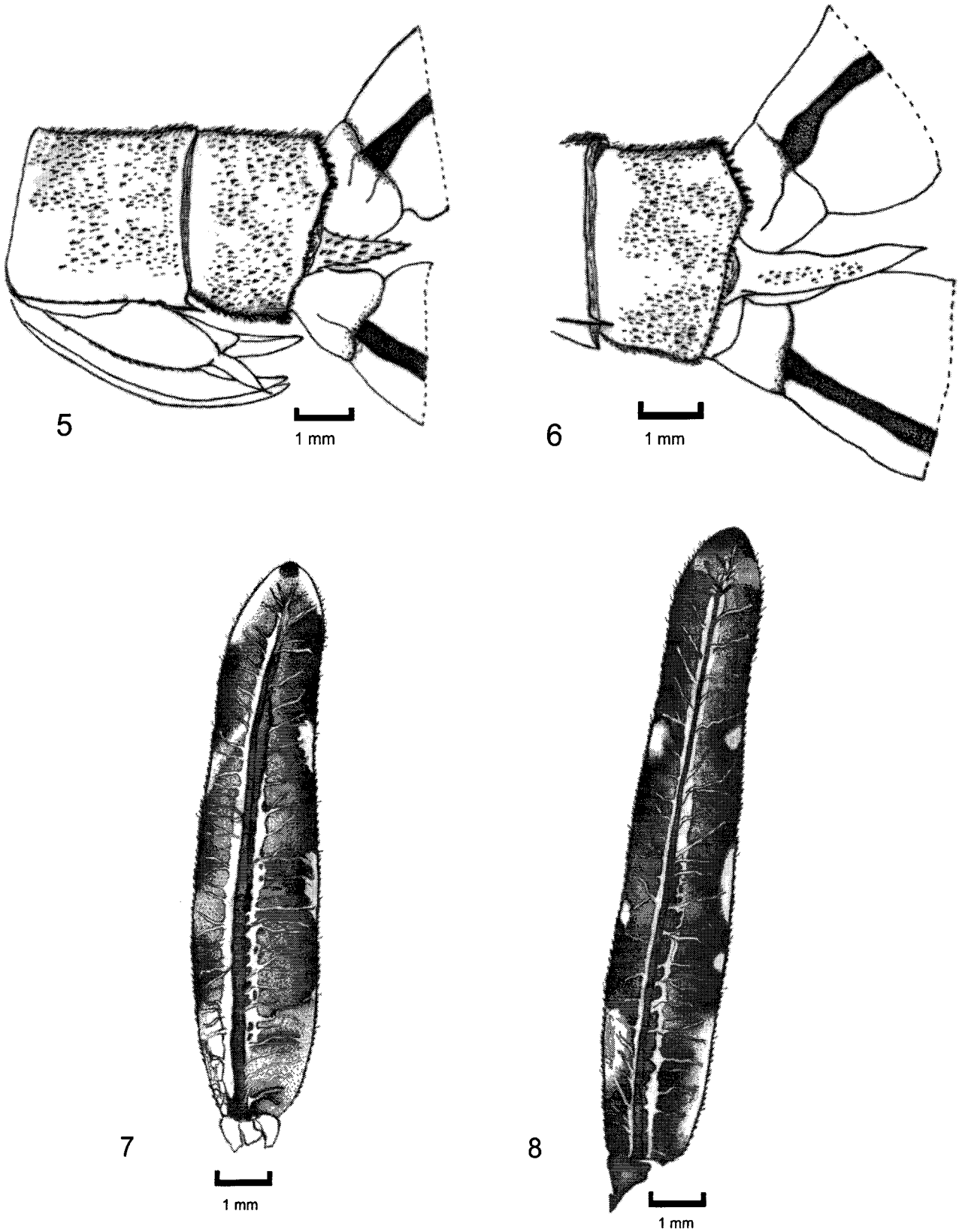


3



4

Figures 1-4. *Lestes dichrostigma*, last larval instar. (1). Left mandible, inner view. (2) Right mandible, inner view. (3) Labial palp, dorsal view. (4) Prementon, dorsal view.



Figures 5–8. *Lestes dichrostigma*, last larval instar. (5) Female abdominal segments 9–10, lateral view. (6) Male abdominal segments 9–10, lateral view. (7) Median caudal lamella, lateral view. (8) Lateral caudal lamellae, lateral view.

medial  $1.72 \pm 0.15$ , max. length: lateral  $8.33 \pm 0.58$ , medial  $7.66 \pm 0.52$ . Cercus length: male  $1.10$ , female  $0.65 \pm 0.05$ . Ovipositor length:  $1.97 \pm 0.09$ .

#### Description

Last stadium larva. Head: almost 2.75 times as wide as long. Antennae seven-segmented, the third antennomere the longest. Labrum anterior margin concave. Mandibles (Figures 1, 2) with molar crest, left molar crest minutely serrated between teeth a and b, right molar crest with a row of tubercles; all incisors with a row of rounded tubercles present on each side, incisor 1 in both mandibles small and fused with 2. Mandibular formula (*sensu* Watson, 1956): L 1+2 3 4 5 0 a(m)b, R 1+2 3 4 5 y a(m). Labium (Figures 3, 4) reaching third coxa, prementum almost twice as long as wide, with 5+5 long setae and one spine at articulation with palp; anterior margin bilobated, slightly convex and serrate, with one spine on each concavity; lateral margins with 9–10 setae at widest portion. Labial palp (Figure 3) with three long setae, two of them on movable's hook dorsal surface; distal margin with two hooks, the external one longer and curved, and a wide medial serrate process of seven small teeth, inner margin serrate with a distal hook. Head dark pattern as follows: clypeus anterior margin, basal maxillae except a pale basal spot, central spot on external face of mandibles, labial palp and two black spots lateral to foramen. Prothorax dorsally pale, ventral half of pleurae and sterna black; in fully coloured specimens pterothorax sterna and infraepisterna black. Legs pale with a subapical dark band in all femora and a dorsal dark spot on apical 0.5 of tarsi. Wing pads reaching abdominal segment IV. Abdomen ventrally black; segments II–VIII dorsally brownish with pairs of small dark spots at medial 0.5 and at apical margin; segment IX without apical spots; segment X brownish with an irregular pale pattern; lateral carinae on segments II–IX pale with a sub-basal and an apical (including lateral spines) black spot. Lateral spines on segments V–IX; those of V minute, no longer than 0.5 of those of VI; those of VII–IX of equal length, as long as twice those of VI. Valves of ovipositor (Figure 5) black at basal 0.5, extending only to apex of segment X. Male cercus 1.5 times as long as abdominal segment X length (Figure 6), pale; female cercus 0.83 times as long as abdominal segment X length, pale (Figure 5). Caudal lamellae black, pale pattern as in Figures 7, 8.

#### Biology

The specimens were collected in shallow intermittent pools (approximately 30 cm depth) with abundant palustrine vegetation. Other odonate larvae were

*Acanthagrion aepiolum* Tenn, *A. leonardi* Jurz, *Homeoura ambigua* (Ris), *Ischnura fluvialis* Sel (Coenagrionidae) and *Erythrodiplax* sp. (Libellulidae). The area, typically used for cattle grazing, corresponds to the flood plain of the Itá Cuá stream, tributary of the Uruguay river. This area belongs biogeographically to the Pampa province of the Chacoan subregion (*sensu* Morrone, 2000) and to the Campos y Malezales ecoregion (Burkart *et al.*, 1999).

#### Discussion

Many neotropical *Lestes* larvae have been described; nevertheless, several of their descriptions do not include all the information required to make a reliable key. For this reason only a brief diagnosis is given here, referred mainly to the species recorded from Argentina, from which only *L. auritus* and *L. paulistus* remain unknown (Muzón, 1997; Muzón & von Ellenrieder, 1998). The last stadium larva of *Lestes dichrostigma* shares mandible morphology with those of *L. spatula* and *L. undulatus*, especially the presence of a molar crest and the small size of incisor 1; with *L. bipupillatus*, *L. pictus*, *L. spatula* and *L. tricolor* the presence of 5+5 premental setae, and with all known Argentinean *Lestes* larvae the presence of two long setae on movable hook of labial palp. The last stadium larva of *L. dichrostigma* (characters of *L. dichrostigma* in parentheses) can be distinguished from those of *L. bipupillatus*, *L. pictus* and *L. tricolor* by the presence of two molar teeth in the right mandible (a molar crest); from *L. undulatus* by the presence of six to seven premental setae (five), from *L. forficula* by the narrow medial serrate process of labial palp (wide) and unequal length of lateral spines of abdominal segments VIII and IX (equal), from *L. pictus*, *L. spatula*, *L. tricolor* and *L. undulatus* by their banded caudal lamellae (black with small pale areas).

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