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LESTES JURZITZAI SPEC. NOV., A NEW DAMSELFLY FROM RONDONIA, BRAZIL (ZYGOPTERA: LESTIDAE)*

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The new sp. is described and illustrated from 15 ♂ and 1 ♀ (holotype ♂: Fazenda Rancho Grande, 62 km SW of Arquimedes, 10°50'S, 63°07'W, alt. 187 m, deposited at MNRJ, Rio de Janeiro; allotype ♀: ponds near Fernandez Trail, Linea C-16, alt. 500 ft, 1 km N of Cacaulandia on B-65, deposited at FSCA, Gainesville/FL). It is compared with *L. spatula* Fr. and *L. paulistus* Calv. SEM of caudal appendages and penis are provided.

INTRODUCTION

About 25 *Lestes* species are currently recognized from the neotropical region. Taxonomic literature pertaining to the genus includes CALVERT (1901-1908, 1909) and KENNEDY (1942), but there is no comprehensive revision of the group. Here, I describe a new species, *L. jurzitzai* sp.n., from Rondonia state, Brazil, which was collected by Drs R.W. Garrison and M.J. Westfall, Jr. The new species is related to *L. spatula* Fraser and *L. paulistus* Calvert, but differs from these in the structure of the male caudal appendages, penis, and metasternal colour pattern.

The scanning electron micrographs were taken at the Servicio de Microscopía Electrónica de Barrido of the Museo de La Plata, with a Jeol JSM-T100.

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LESTES JURZITZAI SPEC. NOV.

Figures 1-2

Material. – **Holotype** ♂: Brazil, Rondonia State, Fazenda Rancho Grande, 62 km SW of Arquimedes, 10°50'S, 63°07'W, alt. 187 m, 2/11-XI-1989, R.W. Garrison leg. (MNRJ). – **Allotype** ♀: Brazil, Rondonia State, ponds near Fernandez Trail, Linea C-16, alt. 500 ft, 1 km N of Cacaulandia on B-65, 16-XI-1991, M.J. Westfall leg. (collected in tandem with paratype ♂) (FSCA). – **Paratypes**: same data as holotype 10 ♂, deposited as follows: 1 at Museo de La Plata, Buenos Aires, Argentina; 1 at Instituto Miguel Lillo, Tucumán, Argentina; 1 at USNM, Washington D.C.; 7 at R.W. Garrison private coll., Asuza, California; same data as allotype 4 ♂ (FSCA).

Etymology. – The species is named in honor of Professor Dr Gerhard Jurzitza, Karlsruhe, Germany, in recognition of his friendship and for his outstanding contributions to the study of the neotropical Odonata.

MALE (**holotype**). – Head. – Labrum cerulean blue, with median posterior black spot; labium ivory white; palpal tooth black; lateral surface of mandibles and genae light blue. Anteclypeus blue; postclypeus black, posterior angles blue; epicranium dark brown to black. Antenna brown. Occiput brown, with two light blue spots lateroposteriorly to posterior ocelli. Ocular suture black, each with two subtriangular, lateral, black spots on the inner margin: the anterior spot extending from clypeus to level of posterior ocelli and confluent with lateral spots of median ocellus; the remaining spot 0.2 mm posterior from the anterior one. Rear of head brown, ivory white around occipital foramen.

Thorax (Fig. 1). – Prothorax light blue, with two subparallel brown stripes laterally expanded at posterior 0.50 of middle lobe, central brown spot on anterior 0.50 of middle lobe almost touching the stripes, posterior lobe light blue middorsally, darkish brown laterally, with two inferior cerulean blue spots. Pterothorax light blue

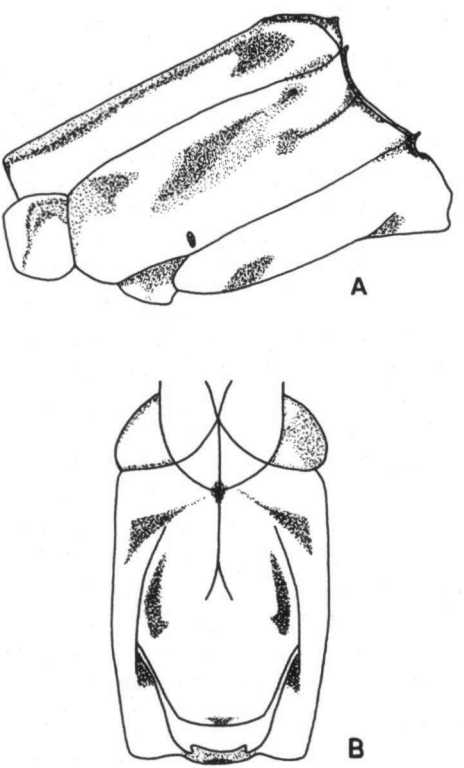

Fig. 1. *Lestes jurzitzai* sp.n., male pterothorax colour pattern: (A) lateral view; – (B) pectus.

(Fig. 1a). Mesepisternal stripe iridescent black superimposed on brown, its upper end with a lateroventrally directed arm. Antealar sinus black, light blue medially. Dorsal carina light blue, superior 0.25 brown. Mesinfraepisternum with a brown spot on superior 0.50. Mesepimeron with two black spots, inferior one surrounded by brown, the other iridescent, subtriangular, oblique; superior 0.50 of metinfraepisternum darkish brown. Meso-metathoracic suture black, with inferior circular spot. Metasternum whitish (Fig. 1b), metepimeron with anterior (inferior) subtriangular black spot; poststernum with two external black stripes slightly expanded posteriorly (superiorly); metapostepimeron with anterior (inferior) black spot.

Legs. – Coxae and trochanters whitish, irregular dark markings distally. Femora ivory blue, with a broad black external line, and a narrower black ventral line. Tibiae ivory blue, inner surface black. Tarsi and claws black.

Wings. – Hyaline, pterostigma and venation black; R3 arising from R2 between third and fourth postnodal crossveins; IR2 arising at sixth postnodal crossvein (except in right fore wing, at seventh). Pterostigma surmounting two cells.

A b d o m e n. – Tergite 1 light blue, black spot on anterior 0.50, ventral margin black; tergite 2 light blue, bearing two posterior irregular black spots; tergite 3 iridescent black, anterior and posterior margins light blue, laterally light blue except posterior portion brown; tergites 4-10 darkish brown to black, anterior margin of 4 blue. Annuli black, except on segment 1 light blue dorsally. Sternite 1 whitish, with a medial diffuse black stripe; sternites 3-9 brown, carinae black. Genital and postgenital plates black; sternum 10 darkish brown.

Genitalia (Fig. 2a-c). – Internal lobe of penis as wide as 1/3 terminal segment, divided in two portions; tip of terminal segment with two lobes: the anterior one hook-shaped in lateral view, the posterior one expanded, its ventral margin rounded. Posterior hamule expanded, non constricted basally, without external carina.

Cerci (Fig. 2d-f). – Black, 1.5 x as long as 10th segment, largely planar in lateral view, distal 0.50 gently arcuate in dorsal view; internal margin (0.75 of appendage) slightly concave, with a well developed basal tooth and 8-9 spines on 0.30 distal; dorsal subapical concavity present; tip blunt, digit-shaped.

Paraprocts (Fig. 2d-f): darkish brown, tip black; as long as 10th segment; globose basally; dorsally with a medial basal carina bordering an internal concavity; apex rounded, slightly divergent.

Pruinescence on metasternum and abdominal segments 8 and 9.

M e a s u r e m e n t s (in mm). – Holotype in brackets: fore wings 21.06 ± 0.5 [21.3], postnodals 11 (50%), 12 (39%), 13 (5.5%), 14 (5.5%), [12/11], poststigmals 4 (44%), 5 (56%), [5/5]; hind wings 20.59 ± 0.5 [21.0], postnodals 10 (28%), 11 (39%), 12 (22%), 13 (11%), [11/11], poststigmals 3 (11%), 4 (50%), 5 (39%), [4/5]; abdomen, except appendages, 30.18 ± 0.90 [30.05]; cerci 1.12 ± 0.07 [1.1]; paraprocts 0.82 ± 0.05 [0.8].

V a r i a t i o n s. – Minor variation in the development of the dark spots on the head and thorax exist among the paratype males. Venational variability is as

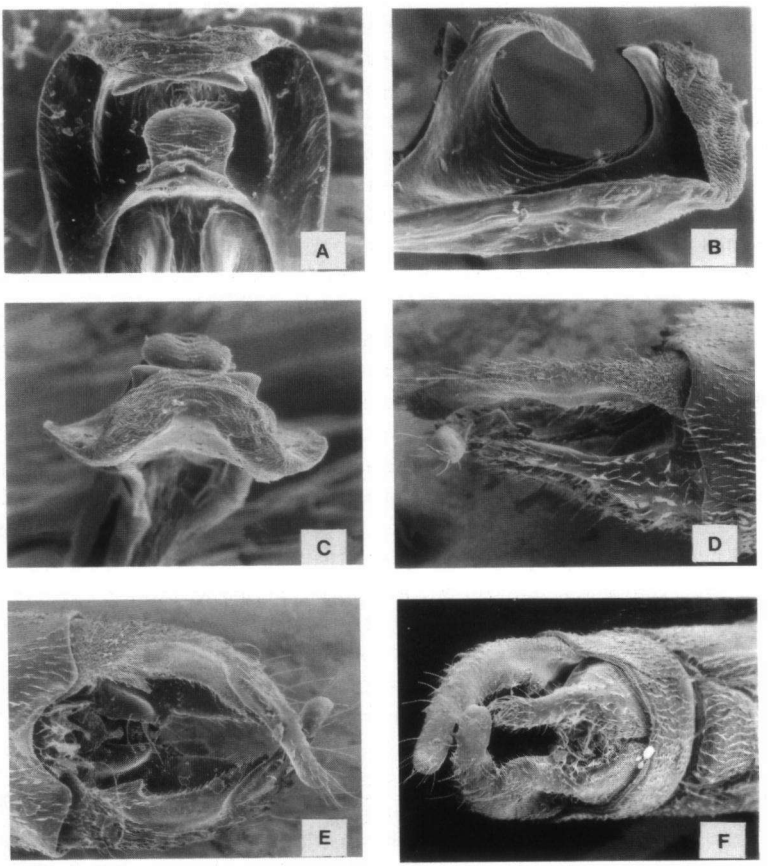

Fig. 2. *Lestes jurzitzai* sp.n., penis, cerci and paraprocts: (A) terminal segment of penis, ventral view; – (B) idem, lateral view; – (C) idem, posterior view; – (D) cerci and paraprocts, lateral view; – (E) idem, dorsal view; – (F) idem, ventral view. – [Scale in a-c: 100 µm, in d-f: 1000 µm].

follows: vein R3 arising from R2 between second and third postnodal crossveins (11%), at third (3%), between third and fourth (58%), at fourth (14%), between fourth and fifth (14%); IR2 arising at fifth postnodal crossvein (6%), between fifth and sixth (19%), at sixth (33%), between sixth and seventh (22%), at seventh (14%), between seventh and eighth (6%).

FEMALE (**allotype**). – Colour pattern similar to male, but differs as follows: brown spots of labrum poorly defined; anteclypeus brown, centrally cerulean blue; epicranium and occiput black; diffuse greenish blue lateroposterior to posterior ocelli; rear of the head yellowish, ocular suture black. Prothorax greenish blue, brown pattern as in male; pterothorax with greenish blue confined to inferior

area of mesepisternum and with more diffuse dark markings; external black stripes of poststernum almost absent; anterior (inferior) black spot of metapoststernum poorly defined.

Legs: ivory white, with black pattern as in male.

Wings: hyaline, pterostigma and venation black; R3 arising from R2 before fourth postnodal crossvein in fore wings, before third in hind wings; IR2 arising at or behind seventh postnodal crossvein in fore wings, at sixth in hind wings. Pterostigma surmounting two cells.

Abdomen: tergite 1 light blue; 2 light blue, with two iridiscent black stripes expanded posteriorly; 3-7 dorsally iridescent black, except anterior margin light blue, laterally light blue, except pale brown posterior area, which extends progressively caudad; 8 pale blue, with two dorsal black stripes becoming diffuse latero-ventrally; 9 darkish brown, with an irregular black pattern; 10 black dorsally, darkish brown ventrally. Annuli black, except on segment 1 light blue dorsally, and 8 light blue. Sternite 1 whitish, transverse black stripe on posterior 0.30; 2 greenish blue, ventral carina black, anterior margin black laterally; 3-7 black; 8 pale brown, with T-shaped black spot.

Cerci: black; paraprocts darkish brown.

Genitalia: ovipositor: 1st valvifer pale blue, with a posterior apophysis, as long as 1/3 1st valvifer; sternite 9 pale blue; 2nd valvifer black, except superior 0.50 yellowish, with 20-25 minute ventral spines; gonostyle lost.

Pruinescence on pectus, ventral side of prothorax and abdominal segment 9.

Measurements (in mm). – Fore wings 21.8 (left) and 21.7 (right), postnodals 12 and 13, poststigmals 5; hind wings 21.8, postnodals 12 and 11, poststigmals 5; abdomen 28.9; cerci 0.6; 1st valvifer length 0.6; 2nd valvifer length 2.5.

AFFINITIES. – Diagnosis: A medium-size species (♂ abdomen 30.18 ± 0.9 mm, fore wings 21.06 ± 0.5 mm; ♀ abdomen 28.9 mm, fore wings 21.8 mm), distinguished from its congeners by the morphology of the caudal appendages and penis, and by the peculiar colour pattern of the pterothorax. *L. jurzitzai* sp.n. is nearest to *L. spatula* Fraser in morphology of the cerci. The medial margin of the cercus of *L. spatula* has a well developed basal tooth followed by a concave ridge becoming gradually serrate and terminating in the distal 0.75 in a second well developed tooth. In *L. jurzitzai*, a similar basal tooth is present, but the concave ridge, which is also serrate apically, gradually joins the medial margin in the distal 0.25 of the cercus; no well developed second tooth is present. The thoracic pattern in *L. spatula* consists of a definite, dark, linear, antehumeral stripe and, usually, a mesepimeral stripe, not the irregular markings associated with *L. jurzitzai*. The thoracic pattern of *L. jurzitzai* is similar to that of *L. paulistus* Calvert, but males of both species are distinct. Furthermore, in *L. paulistus*, the basal tooth of the cercus is more prominent than in *L. jurzitzai* and is followed by a serrate and convex ridge. The paraprocts of *L. paulistus* are angled basally so that their tips converge; in *L. jurzitzai* they are slightly divergent

at the tips. The penis of *L. jurzitzai* is very similar to that of *L. paulistus*. The size of the anterior portion of the internal lobe (less prominent in *L. paulistus* than in *L. jurzitzai*) and the shape of the ventral margin of the anterior lobe of the terminal segment (concave in *L. jurzitzai* and trilobed in *L. paulistus*) are the only differences found between the penis structures of the two species.

The female of *L. jurzitzai* is similar to that of *L. paulistus* in the mesepisternal and mesepimeral black pattern and in the morphology of the ovipositor. However, it differs in size (*L. jurzitzai* is slightly larger than *L. paulistus*), by the absence of black stripes on the poststernum of *L. paulistus* and by the different shape of the black spot on the metepimeron of both species.

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REFERENCES

CALVERT, P.P., 1901-1908. Odonata. *Biologia cent.-am.* 50: 45-51.

CALVERT, P.P., 1909. Contributions to a knowledge of the Odonata of the neotropical region, exclusive of Mexico and Central America. *Ann. Carneg. Mus.* 6: 73-281, pls 1-9 excl.

KENNEDY, C.H., 1942. Lestes henshawi, Ecuador, L. urubamba, Perú, and notes on other South American Lestes (Lestidae: Odonata). *Revta Ent., Rio de J.* 13(3): 273-290.