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Descriptions of three new species of Odonata from Brazil

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Abstract

Three new species are described here: *Oxyagrion zielmae* **sp. nov.** (Coenagrionidae) from one male collected at Costa Rica, Mato Grosso do Sul state; *Lestes fernandoi* **sp.nov.** (Lestidae) from a pair from Imperatriz, Maranhão state and *Perithemis capixaba* **sp. nov.** (Libellulidae) from one male from Mutum Preto, Espírito Santo state, all deposited at Museu Nacional, Rio de Janeiro, Brazil. *Oxyagrion zielmae* is similar to *O. pavidum* Selys, 1876 but differs by having cerci and paraprocts the same size, pterostigma long and narrow and terminal segment of genital ligula with the two lobes larger than in *O. pavidum*. *Lestes fernandoi* is compared with *L. auritus* Hagen in Selys, 1862; *L. bipupillatus* Calvert, 1909; *L. dichrostigma* Calvert, 1909; *Lestes falcifer* Sjöstedt, 1918; *L. forficula* Rambur, 1842; *L. minutus* Selys, 1862 and *L. paulistus* Calvert, 1909. The new species is most similar to *Lestes falcifer* and *L. paulistus*, but differ by the peculiar color of pterothorax, caudal appendages and genital ligula. *Perithemis capixaba* is similar to *P. mooma* Kirby, 1889 but differs by having the first segment of vesica spermalis slowly rounded, in *P. mooma* this structure is trapezoidal. Illustrated keys to new species are included.

Key words: Odonata, *Lestes*, *Oxyagrion*, *Perithemis*, taxonomy, identification key, Brazil

Introduction

The new species here described as *Oxyagrion zielmae* brings the total number of *Oxyagrion* species to 21 and those known from Brazil to 19 and indicates that *Oxyagrion* is more speciose than was previously (Costa, 1978) supposed. Since 1978 four new species, including the this one, have been described and we believe that still more will be discovered. We assign our species to *Oxyagrion* because its all red color pattern, and genital ligula with double fold.

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The larvae of 14 species of *Oxyagrion* have been described (Needham and Bullock, 1943; Bulla, 1973; Costa, 1988; Costa *et al* 2000).

The genus *Lestes* was established by Leach (1815) and Selys (1862) included 25 New World species of which, 13 were recorded from Brazil (Muzón, 1994; Lencioni, 2005). Selys (1862) included the following species from South American: *L. minutus* Selys, 1862 (Brazil), *L. alacer* Hagen, 1861 (Surinam), *L. forficula* (Brazil), *L. undulatus* Say, 1839 (Chile), *L. auritus* (Brazil), *L. tricolor* Erichson, 1848 (South America), and *L. pictus* Hagen in Selys, 1862 (Brazil). He separated these species using the color of rear of head and the size of male paraprocts. He considered the paraprocts of *L. minutus* and *L. forficula* long and those of *L. auritus*, *L. tenuatus*, *L. tricolor*, *L. pictus* and *L. undulatus* short. Calvert (1909) slightly modified Selys' arrangements. Selys considered the paraprocts of *L. bipupillatus*, *L. forficula* and *L. paulistus* as long and those of *L. pictus*, *L. tricolor*, *L. dichrostigma*, *L. undulatus* and *L. quadristriatus* as small and the color of rear of the head as characters to separate these species. In this paper we do not use the color of the rear of the head because it isn´t a consistent character for us.

The larvae of five species of *Lestes* have been described (Costa & Carneiro, 1994; Calvert, 1928; Santos, 1972; Muzón, 1997).

The genus *Perithemis* Hagen, 1861, is widespread in the neotropical region and contains 13 species (Ris, 1930; Dunkle, 1982; Hoffmann, 1990; von Ellenrieder & Muzon, 1999. Seven are recorded from Brazil: *P. bella* Kirby, 1930, *P. cornelia* Ris, 1910, *P. electra* Ris, 1930, *P. icteroptera* Selys, 1857, *P. lais* Perty, 1934, *P. mooma* Kirby, 1889 and *P. thais* Kirby, 1889 (Carvalho, 1991; Carvalho & Pujol-Luz, 1992; Carvalho & Nessimian, 1998; Costa & Santos, 1999; von Ellenrieder & Muzon, 1999; Costa, Machado, Lencioni & Santos, 2000)). *Perithemis rubita* Dunkle, 1982 is recorded here by the first time from Acre States based on three specimens identified by Angelo Machado. Several authors have cited *P. domitia* (Drury, 1773) from different localities of Brazil: Santos (1944) from São Paulo and Navás (1916) from Rio Grande do Sul and Ceará States. The specimens cited by Santos (1944) correspond to *P. mooma*. We examined one specimen of *P. domitia* from Puerto Rico given to us by R.W. Garrison and one other from Cuba loaned by Angelo Machado. These specimens have the pterothorax with three dark strips on lateral sutures, so we believe that all records of *P. domitia* from Brazil should be assigned to *P. mooma*.

The larvae of seven species of *Perithemis* have been described (Santos, 1970; von Ellenrieder & Muzón, 1999; Santos, 1973; Needham *et al*., 2000; Dunkle, 1982; De Almeida Spindola *et al.* 2001; Costa & Régis, 2005).

Methodology

We have been examined five males of *Oxyagrion* lacking blue spots and with dorsal of abdominal segment ten without horns from different localities: ***O. rubidum*** (Rambur,

1842) (1)—Argentina (Cordoba); ***O. miniopsis*** Selys, 1876 (1)—Bolívia (Yungas de La Paz) and ***O. pavidum*** Selys, 1876 (3)—Brazil (Espírito Santo, Rio de Janeiro, Mato Grosso), nine specimens of *Lestes*: ***L. auritus*** (Hagen *in* Selys, 1862) (1)—Brazil (Minas Gerais); ***L. bipupillatus*** Calvert, 1909 (2)—Brazil (Rio de Janeiro, Mato Grosso); ***L. dichrostigma*** Calvert, 1909 (1)—Brazil (São Paulo); ***L. falcifer*** Sjöstedt, 1918 (1)—Brazil (Amazonas); ***L. forficula*** Rambur, 1842 (1)—Brazil (Mato Grosso); ***L. minutus*** Selys, 1862 (1)—Brazil (Mato Grosso), ***L. paulistus*** Calvert, 1909 (1)—Brazil (São Paulo) and ***L. tricolor*** Erichson, 1848 (1)—Brazil (Espírito Santo) and of the genus *Perithemis* we studied 1201 specimens: ***P. bella*** **Kirby,**1889 (6)—Brazil (Amazonas); ***P. cornelia*** Ris, 1910 (50)—(Amazonas, Roraima); ***P. domitia*** Kirby, 1890 (02)—Puerto Rico (Município de Manati), Cuba (Las Villas Province); ***P. icteroptera*** Selys, 1857 (12)—Brazil (E. Santos, Rio de Janeiro, São Paulo, Santa Catarina, Rio Grande do Sul, Goiás), Argentina (Buenos Aires); ***P. lais*** Perty, 1834 (200)—Brazil (Amazonas, Pará, Amapá, Maranhão, Roraima, Rondonia, Pernambuco, E. Santos, Rio de Janeiro, São Paulo, Minas Gerais, Mato Grosso), Paraguai (Assunción), Guiana Francesa (Sablance); ***P. mooma*** Kirby, 1889 (800)—Brazil (Amazonas, Amapá, Maranhão, Piauí, Ceará, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, E. Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul, Minas Gerais, Goiás, Mato Grosso), Argentina (Conceição do Uruguai), Panamá, Paraguai (Assunción), Uruguai (Rio Branco); ***P. rubita*** (1)—Brazil (Acre); ***P. thais*** Kirby, 1889 (130)—Brazil (Amazonas, Amapá, E. Santo, Rio de Janeiro, São Paulo, Mato Grosso).

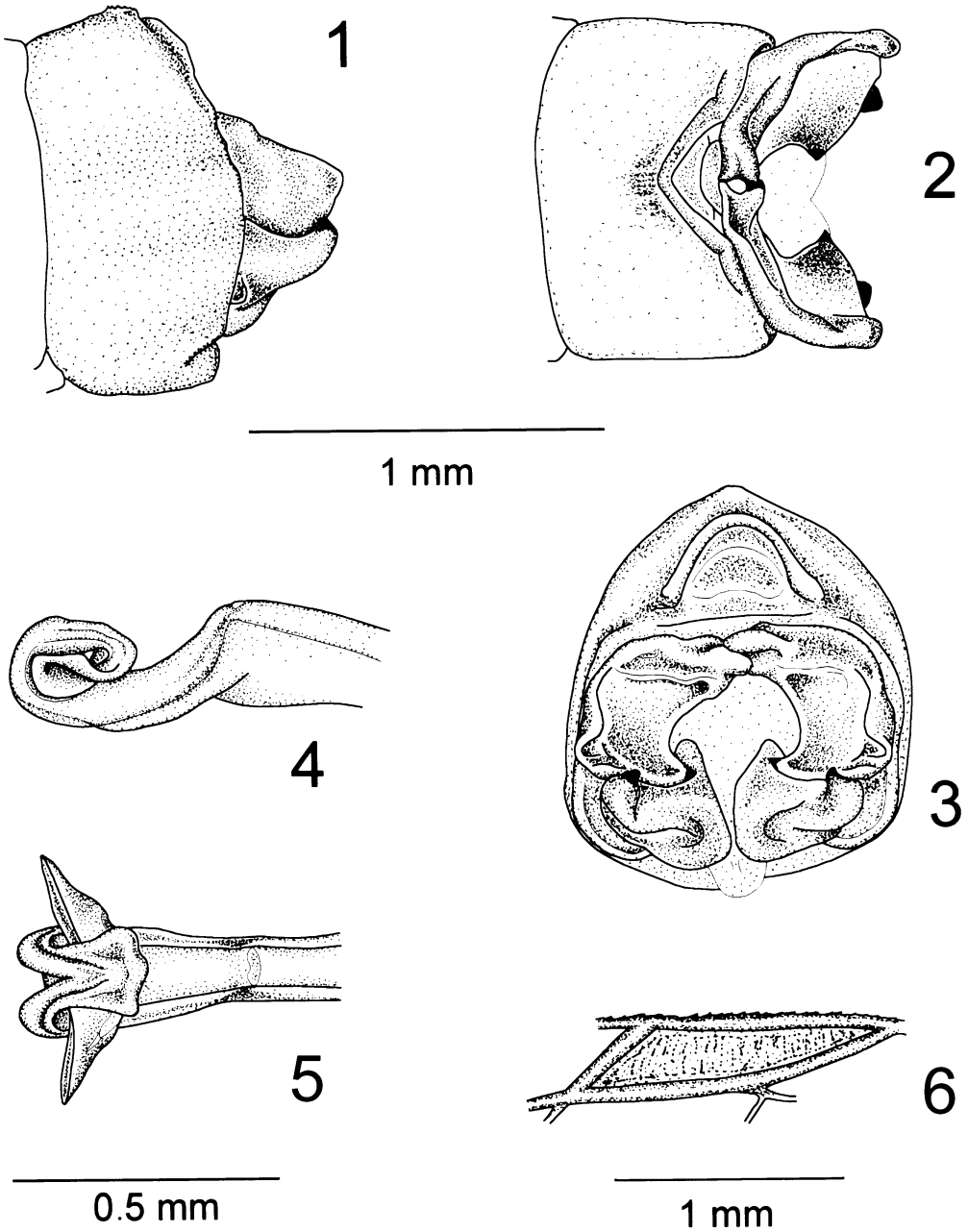
Examined material is deposited at following collections: Departamento de Entomologia, Museu Nacional, Rio de Janeiro, Rio de Janeiro Brazil (MNRJ); Departamento de Zoologia, Universidade Federal de Mato Grosso do Sul, Brazil (UFMS); Instituto de Limnologia “Dr. Raúl A. Ringuelet”, La Plata, Argentina (MLP). Wing terminology follows Riek and Kukalová-Peck. All structures were illustrated with the aid of a camera lucida. Measurements are in mm, and total length and abdominal length include appendages; the figures of the wings of *P. capixaba* without scale. Abbreviations for structures used throughout the text are as follows: FW: forewing; HW: hindwing; anx (antenodal(s); pnx (postnodal(s) crossveins

Oxyagrion zielmae **sp. nov. (Figs. 1–7, 9)**

Holotype male: BRASIL, MATO GROSSO DO SUL, Costa Rica, Córrego Ribeirão da Laje (S18º31’21,6”/W53º00’45,7”—Datum WGS 84), 29.X.2004, Elidiene Priscila Seleme leg.

Etmology. We dedicate this new species to the wife of L.O.I. de Souza.

Male (holotype). Head reddish; postocular spots dark brown; all antennal segments black. Labium yellow; labial cleft large with intense white pruinosity; dorsum of labrum without black spots.



FIGURES 1–6. *Oxyagrion zielmae* **sp. nov.** (holotype male). 1, abdominal segment 10 and anal appendages, lateral view; 2, abdominal segment 10 and anal appendages, dorsal view; 3, abdominal segment 10 and anal appendages, posterior view; 4, genital ligula, lateral view; 5, genital ligula, ventral view; 6, pterostigma, left forewing.

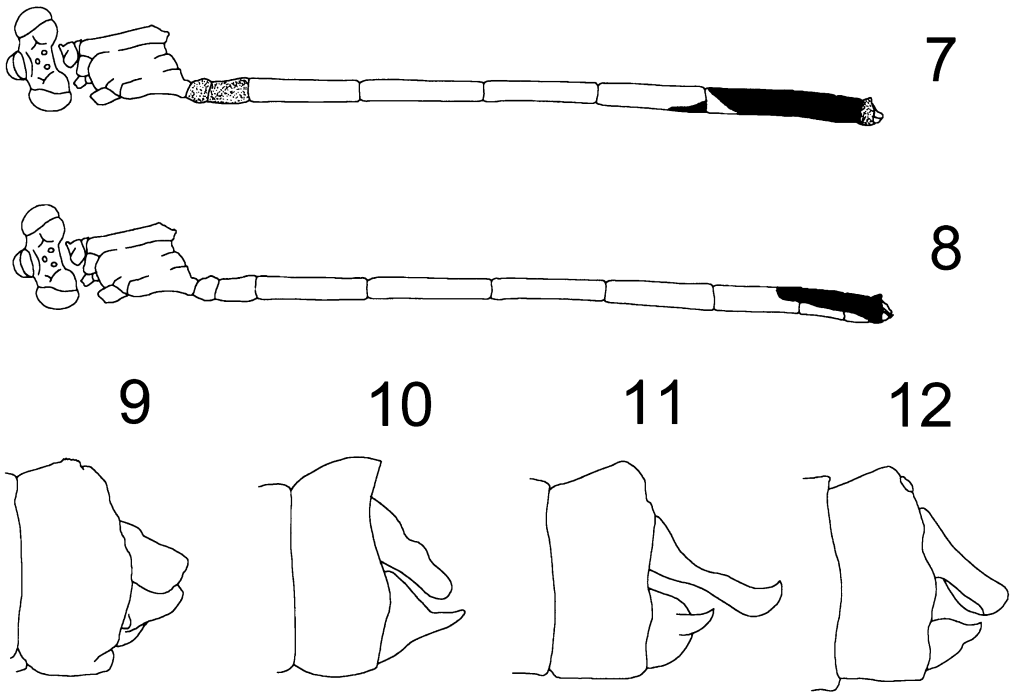
Thorax. Prothorax reddish but pale laterally, marked with black spots on sutures. Synthorax reddish, with black dots. Legs black; coxae and trochanters yellowish; femora with pale rings on the base; tibial spines strong and black, as long as spaces between them.

Tarsi black, claws reddish and black on distal end.

Wings. Hyaline, petiolated before Ac in both wings; Arculus slightly distal to Ac; CuA near first ax; 11 pnx in left FW and 10 in right; 10 pnx in left HW and 9 in right; RP2 in FW arise near 5th pnx crossvein, in HW near 4th pnx crossvein; IRP2 in FW at 8th pnx and 7th pnx in HW. Pterostigma red, similarly shaped in all wings, strongly oblique, covering one cell in left FW and less than one cell in the other wings (Fig. 6).

Abdomen. Abdominal segments 1–2 black dorsally; dorsum of segments 3–6 red; dorsum of 7–9 black, segment 10 reddish (Fig. 7). Anal appendages: cerci (Figs. 1–3) reddish, rounded at distal end and shorter than abdominal segment 10; paraprocts (Figs. 1–3) pale, almost equal in length to the cerci. Genital ligula as in figures 4 and 5.

Measurements. Total length (incl. anal appendages) 32.0; length of FW 20.0; length of HW 18.0; anterior and posterior pterostigma 1.2 on the costal side and 1.5 on the greater diagonal; abdomen 28.0.



FIGURES 7–8. Abdominal segments, showing the pattern of black marks. 7, *Oxyagrion zielmae*, **sp. nov.**; 8, O*xyagrion miniopsis S*elys, 1876.

FIGURES 9–12. Abdominal segment 10 and anal appendages, lateral view. 9, *Oxyagrion zielmae* **sp. nov**.; 10, *Oxyagrion miniopsis* Selys, 1876; 11, *Oxyagrion rubidum* (Rambur, 1842); 12, *Oxyagrion pavidum* Hagen in Selys, 1876

Discussion. *Oxyagrion zielmae* belongs to the group that includes *O. miniopsis* Selys, 1876, *O. rubidum* (Rambur, 1842) and *O. pavidum* Hagen in Selys, 1876. All lack blue spots on the dorsum of abdomen. In *Oxyagrion miniopsis* also lack spots on the

epicranium and synthorax, the cerci are shorter than the paraprocts and the distal segment of the genital ligula has two short lobes as in *O. zilmae*. In *O. rubidum* the paraprocts are shorter than 1/2 the length of cerci and the distal segment of the genital ligula with long lobes, short in *O. zielmae*. *O. pavidum* has black dots on dorsum of head, paraprocts are longer than 1/2 the cerci and the distal segment of the genital ligula with short lobes as *O. zielmae*.

Key to adult male *Oxyagrion* lacking blue spots and with dorsum of abdominal segment ten without horns

1. Dorsum of abdominal segments 8–9 black 4
1'. Dorsum of abdominal segments 8–9 red 5
2. Dorsum of abdominal segments 7–9 black; cerci, in lateral view equal in length to paraprocts (Fig. 7, 9)..... *O. zielmae*
2'. Dorsum of abdominal segment 7 red, segments 8–10 black; cerci, in lateral view, shorter than paraproct (Fig. 8, 10)..... *O. miniopsis*
3. Paraprocts shorter than 1/2 length of cerci (Fig. 11); apical segment of genital ligula with long lobes on segment III ..... *O. rubidum*
3'. Paraprocts longer than 1/2 length of cerci (Fig. 12); apical segment of genital ligula with short lobes on segment III..... *O. pavidum*

***Lestes fernandoi* sp.nov. (Figures 13–20, 36)**

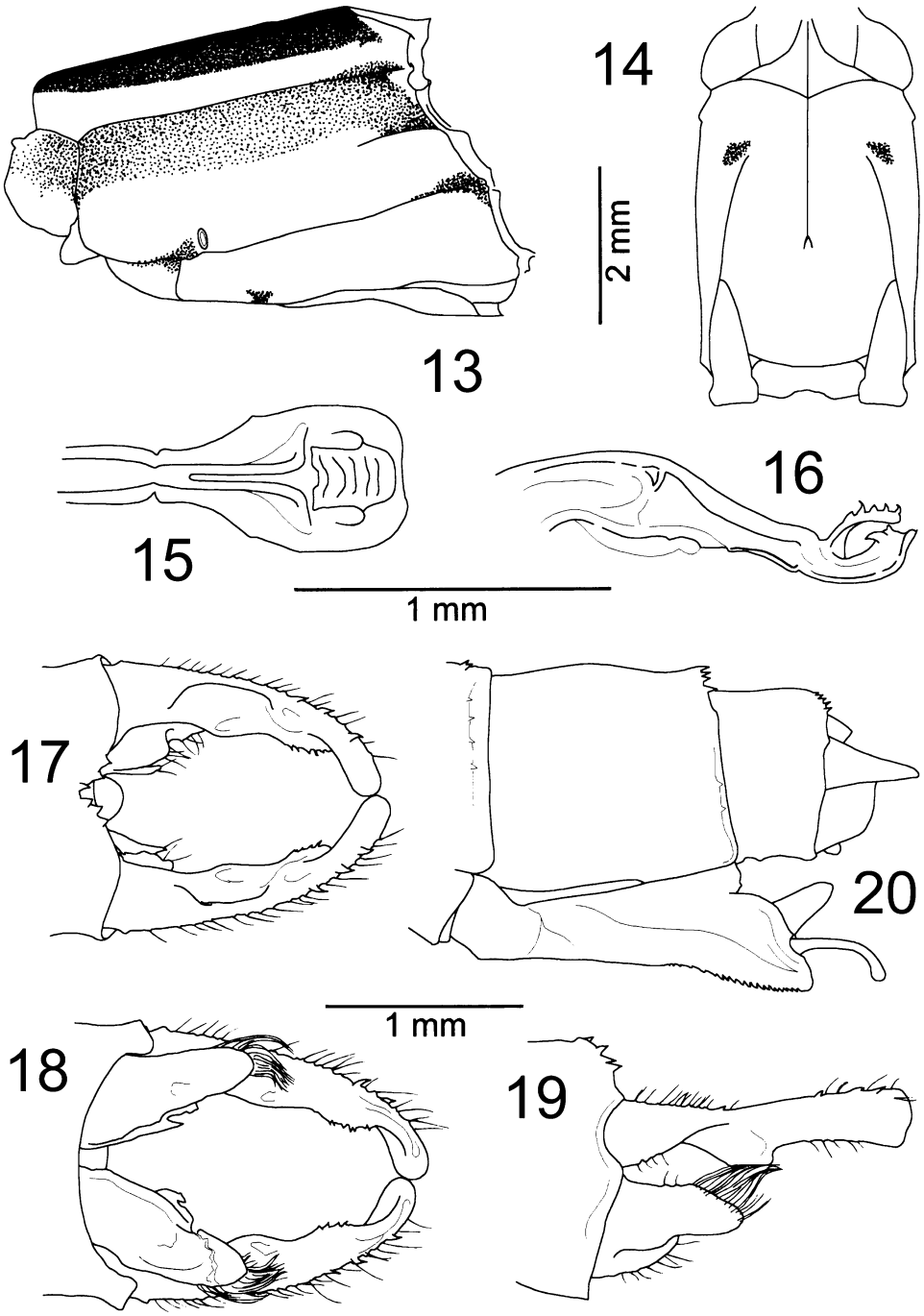
Holotype and allotype: BRASIL, MARANHÃO, Imperatriz (5º31'60" S/47º28'60"W), 05–06-VII-2005, L.F.Reys Netto leg.

Etmology. The species epithet, "*fernandoi*", refers to the collector's name.

Male (holotype). Head. Dorsal surface of head white brown; labrum greenish; labium pale; palpal tooth black; lateral surface of mandibles and genae light green. Anteclypeus green; posteclypeus brown, posterior angles greenish; epicranium brown, with two black spots lateroposteriorly to posterior ocellus. Rear of read brown overlain with white pruinosity.

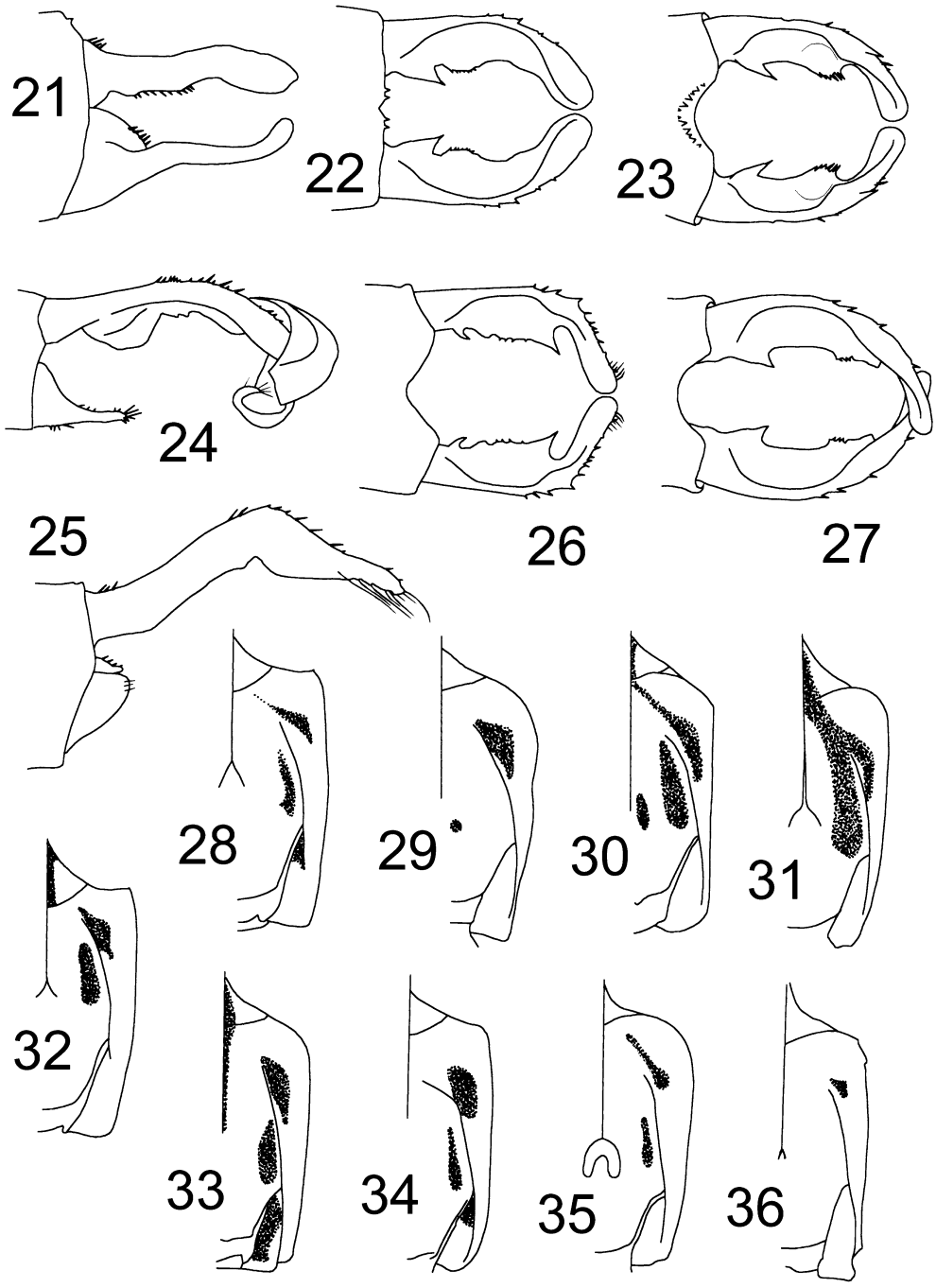
Thorax (Fig. 13–14). Prothorax light brown. Pterothorax light green. Mesepisternal stripe iridescent black. Antealar sinus dark brown. Dorsal carina light brown. Mesepisternum stripe iridescent dark brown becoming black directionally, its upper end straight. Antealar crest brown. Mesinfraepisternum with a light brown spot. Mesepimeron with a light brown stripe. Interpleural suture black. Venter of thorax pale; metepimeron with anterior subtriangular black spot. Legs light brown; coxae and trochanters pale.

Femora pale with a broad black stripe and a narrower black ventral stripe. Tarsi and claws black.



FIGURES 13–19. *Lestes fernandoi* **sp. nov.** (holotype male). 13, pterothorax colour pattern, lateral view; 14, pterothorax colour pattern, ventral view; 15, genital ligula, ventral view; 16, genital ligula, lateral view; 17, anal appendages, dorsal view; 18, anal appendages, ventral view; 19, anal appendages, lateral view.

FIGURE 20. *Lestes fernandoi* **sp. nov.** (Allotype female), abdominal appendages.



FIGURES 21–27. *Lestes*, male anal appendages. 21, *L.bipupillatus*, lateral view; 22, *L. bipupillatus*, dorsal view; 23, *L. forficula*, dorsal view; 24, *L. helix*, lateral view; 25, *L. undulatus*, lateral view; 26, *L. minutus*, dorsal view; 27, *L. jurzitzai*, dorsal view.

FIGURES 28–36. *Lestes*, pterothorax colour pattern, ventral view. 28, *L. jurzitzai*; 29, *L. paulistus*; 30, *L. dichrostigma*; 31, *L. tricolor*; 32, *L. auritus*; 33, *L. falcifer*; 34, *L. pictus*; 35, *L. quadristriatus*; 36, *L. fernandoi* .**sp. nov.**

Wings. Hyaline, pterostigma brown, venation black. RP2 arising from RP1 at fifth pnx crossvein in right FW and at fourth in left FW. IRP2 arising at seventh pnx crossvein, between sixth and seven in left FW. Pterostigma surmounting two or three cells on both wings.

Abdomen. Tergite 1 light brown; tergite 2 light blue, bearing two black wide stripe; tergites 3 to 7 iridescent black, anterior margin light blue; tergites 8–10 black, anterior margin light blue. Sternites 1–8 pale, carina black. Genital and postgenital plates dark brown. Sternite 10 light brown. Genital ligula as in Figures 15 and 16. Anal appendages: cerci (Figs. 17–19), dark brown, slightly planar in lateral view; in dorsal view curved medially, in their apical halves; internal margin slightly concave; tip blunt. Paraproct (Fig. 1819), dark brown with tip black; larger than 10th segment, globose basally; dorsally with a medial basal carina bordering an internal concavity; apex rounded, slightly divergent, bearing a tuft of setae.

Measurements. Total length (including anal appendages) 47, length of FW and HW 25; length of FW pterostigma 1.9; total length of abdomen 39; length of cerci 1.4.

Female (Allotype). Color pattern similar to male, but differs as follows: labrum dark brown; anteclypeus and postclypeus light brown.

Thorax. Prothorax light dorsally and greenish laterally; brown pattern as in male. Pterothorax similar to male. Legs yellowish in all extensive.

Wings. Hyaline, pterostigma dark brown, venation black; RP2 arising from RP1 at fourth in HW. Pterostigma surmounting two cells.

Abdomen. Tergite 1 light brown, laterally greenish; tergites 2–10 dorsally iridescent black, except anterior margin light greenish; segment ten entirely black. Sternite light with ventral carina black. Cerci and paraprocts dark brown. Genitalia (Fig. 20): Ovipositor: anterior and posterior gonopophyses light brown, ovipositor valves dark brown; stylus of ovipositor light brown and curving ventrally in lateral view.

Measurements. Total length (incl. anal appendages) 42.5; length of FW and HW 24.5; length of FW pterostigma 1.8; total length abdomen (with anal appendages) 34; length of 0.6; length of valve of 8th sternite (valve 1) 1.7; length of valve of 9th sternite (valve 2) 1.8; stylus 0.6.

Discussion. This large species, is distinguished from its nearest congeners by the morphology of the anal appendages and by the peculiar color pattern of the pterothorax. *Lestes fernandoi* is nearest *L. falcifer* Sjöstedt in morphology of the cerci. The medial margin of the cerci of *L. fernando*i has a well developed internal lobe. In *L. falcifer* this lobe is vestigial. In *L. falcifer* the paraprocts are thin, in *L. fernandoi* they are stout.

Key to adult males of *Lestes* known from Brazil

1. Paraprocts long, reaching end of cerci or slightly shorter (Fig. 21) 2
1'. Paraprocts short, 2/3 or less than the length of cerci 3

2. Internal lamina of cerci, in dorsal view lacking teeth or with teeth small and poorly developed (Fig. 22) ..... *L. bipupillatus*
2'. Internal lamina of cerci, in dorsal view with well-developed teeth (Fig. 23)..... ..... *L. forficula*
3. Distal end of cerci in spiral form (Fig. 24) ..... *L. helix*
3'. Distal end of cerci not in spiral form 4
4. Cerci in lateral view, undulate (Fig. 25) ..... *L. undulatus*
4'. Cerci in lateral view, not undulate 5
5. Internal lamina of cerci with basal spine 6
5'. Internal lamina of cerci without basal spine 8
6. Distal end of internal lamina with a larger spine (Fig. 26) ..... *L. minutus*
6'. Distal end of internal lamina without spine (Fig. 27) 7
7. Latero-ventral carina with a median ventral spot (Fig. 28) ..... *L. jurzitzai*
7'. Latero-ventral carina without a median ventral spot (Fig. 29) ..... *L. paulistus*
8. Medium-ventral groove on venter of thorax with two small black spots (Fig. 30) .... *L. dichrostigma*
8'. Medium-ventral groove on venter of thorax without black spots 9
9. Latero-ventral carina with a long, forked anterior spot (Fig. 31)..... *L. tricolor*
9'. Latero-ventral carina with a short, linear anterior spot 10
10. Medium-ventral groove on venter of thorax with a blackish stripe 11
10'. Medium-ventral groove on venter of thorax without a blackish stripe 12
11. Blackish stripe of medium-ventral groove not exceeding level of basal portion of latero-ventral carina (Fig. 32) ..... *L. auritus*
11'. Blackish stripe of medium-ventral groove reaching distal end of the groove (Fig. 33). ..... *L. falcifer*
12. Latero-ventral carina with triangular black spot at posteriodistal end (Fig 34) *L. pictus*
12'. Latero-ventral carina without triangular black spot at posteriodistal end 13
13. Latero-ventral carina with a median ventral black spot (Fig.35) ..... *L. quadristriatus*
13'. Latero-ventral carina without a median ventral spot (Fig. 36) ..... *L. fernandoi*

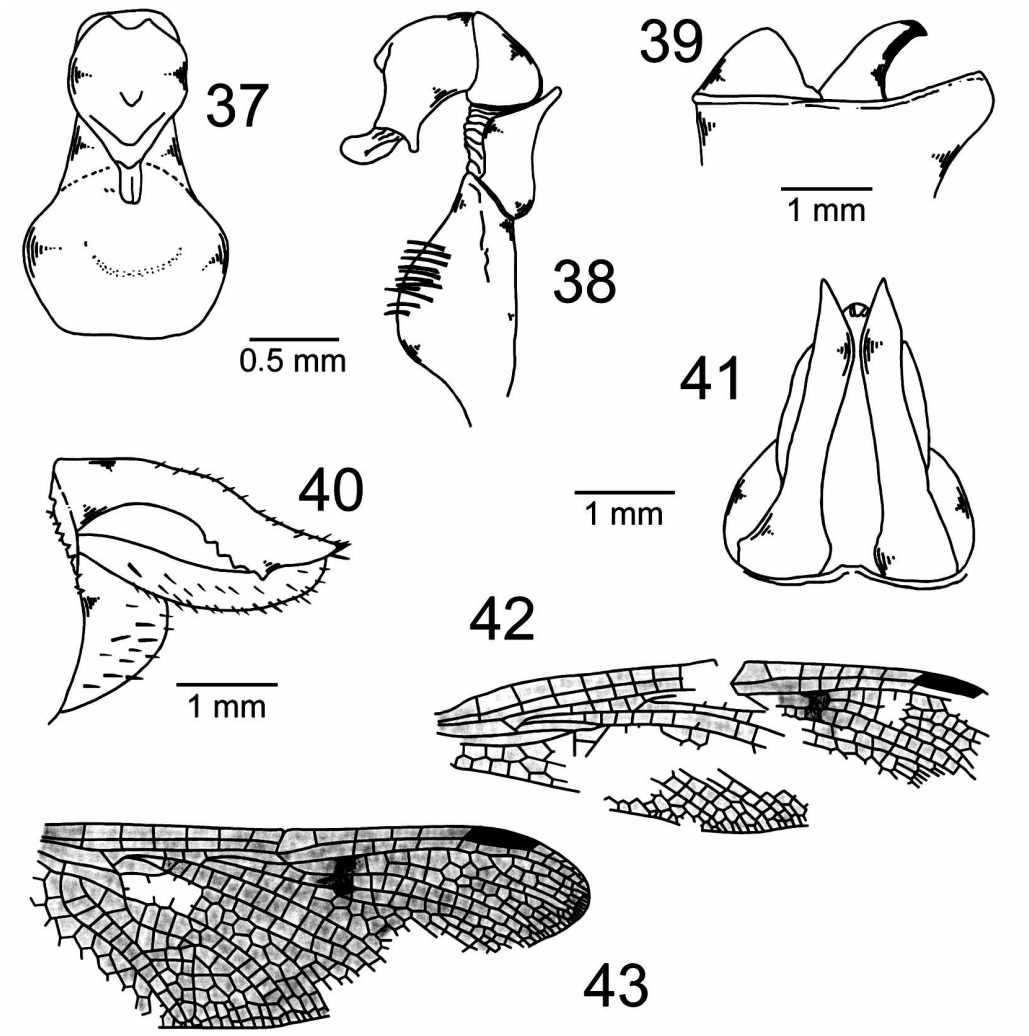
***Perithemis capixaba* sp. nov. (Figures 37–43)**

Holotype male: BRAZIL, ESPIRITO SANTO, Mutum Preto, Km. 11, swamp near to forest (20º 45' 00'' S – 41º 13' 60'' W), 1.IX.1971, N.D. Santos leg.

Etymology. The species name "*capixaba*" refers to the type locality, the first Brazilian state where the species was collected.

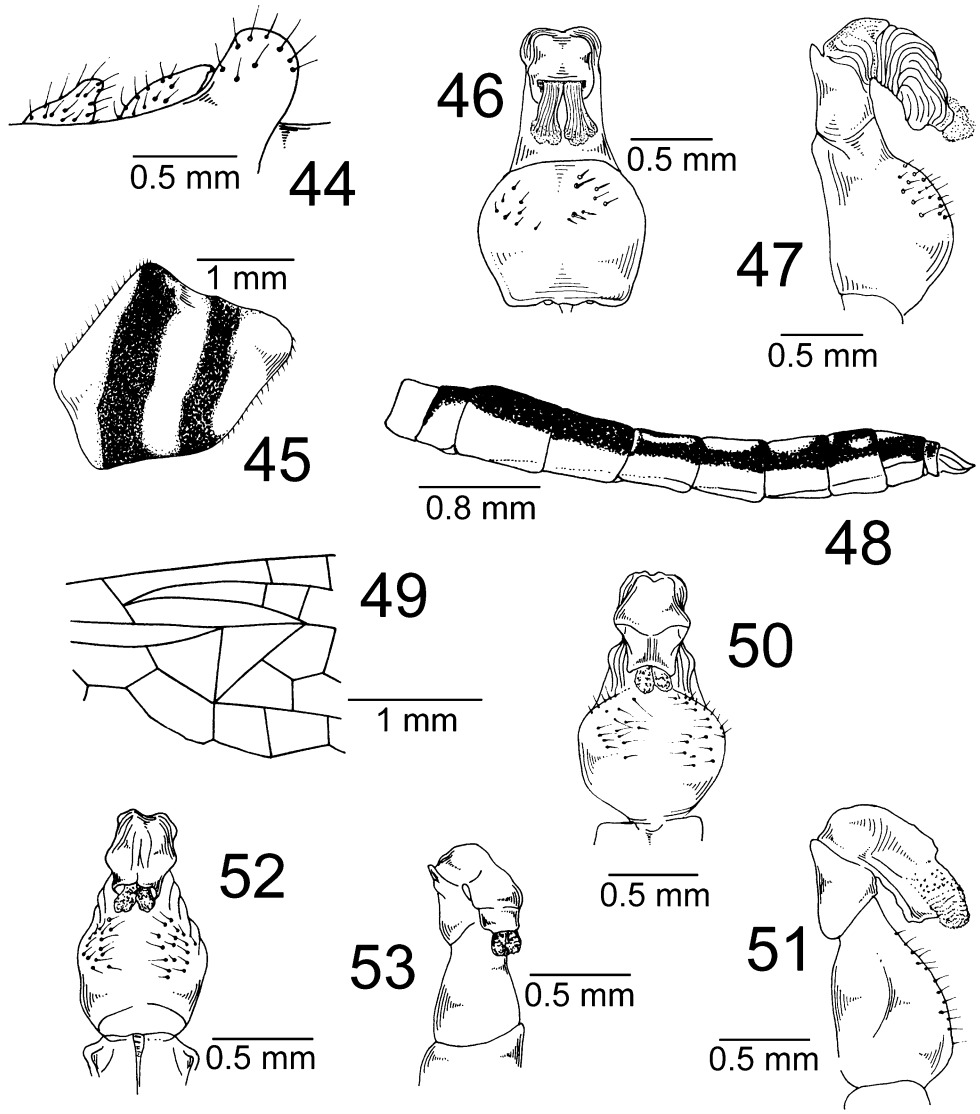
Male (holotype). Head. Labrum yellowish with dark brown setae; anteclypeous olive-yellow; postclypeous and frons yellow, laterally greenish; vertex brownish; occiput brownish, medially diffuse black; rear of the occiput brownish with a black diffuse central stripe; postgenae brownish, 0.5 ventral black. Antennae dark brown. Labium pale. Thorax.

Prothorax, anterior lobe black, except for pale anterior margin; middle lobe brownish with two transverse black stripes not reaching middorsal line; posterior lobe brownish. Pterothorax olive-yellow without dark stripes; antealar sinus and carina olive-yellow. Venter of thorax and coxae I–III pale yellowish. Femora and tibiae I–III pale brown.



FIGURES 37–43. *Perithemis capixaba* **sp. nov.** (Holotype male). 37, genital ligula, ventral view; 38, penis, lateral view; 39, hamuli, lateral view; 40, anal appendages, lateral view; 41, anal appendages, dorsal view; 42, forewing; 43, hindwing.

Wings (Figs. 42–43): membranes orange, with a diffuse dark stripe from RP1 to RP3 at level of 1st and 2nd pnx crossvein. HW with a small diffuse dark spot between the triangle distal margin and RP. Pterostigma yellowish brown, anterior and posterior margins black. FW triangles 2/3 celled, HW 3-celled. Subtriangles 3-celled. Anx crossveins 8½–7½ in the FW, 6 in HW. Pnx crossveins 6–5 in FW and 4–6 in HW. CuA crossveins in FW 2/1, HW ½. Bridge crossveins in FW 2/4, HW 3.



FIGURES 44–45. *Perithemis lais*. 44, hamuli, lateral view; 45, pterothorax, lateral view.
FIGURES 46–47. *Perithemis icteroptera*. 46, genital ligula, ventral view; 47, genital ligula, lateral view.
FIGURE 48. *Perithemis thais*. abdomen, lateral view.
FIGURES 49–51. *Perithemis mooma*. 49, forewing, triangles and subtriangles; 50, genital ligula, ventral view; 51, genital ligula, lateral view.
FIGURES 52–53. *Perithemis electra*. 52, genital ligula, ventral view; 53, genital ligula, lateral view.

Abdomen. Brown with dark brown pattern as follows: tergite I with two central spots; II carinae, two circular spots on anterior margin and two semicircular spots on posterior margin; III carinae and two semicircular spots on the posterior margin extending anteriorly

as dark brown irregular spots; IV anterior margin, carinae and two longitudinal dark brown stripes (except at black posterior margin,); V–VII anterior margin, middorsal carina and two longitudinal stripes as on V; VIII anterior and posterior margins, middorsal carina and two longitudinal stripes as on V, dark brown between longitudinal stripes at 0.3 posterior; IX anterior and posterior margins, middorsal carina, two longitudinal stripes confluent at anterior and posterior margins; X posterior margin and a triangular spot directed posteriorly from entire anterior margin and reaching posterior margin; first segment of vesica spermalis rounded (Figs. 37–38); tip of hamuli nearly 0.50 from ventral margin (Fig. 39). Anal appendages: cerci dark brown, tips black. Epiproct dark brown, slightly shorter than cerci (Figs. 40–41). Genital plates and eusternites pale brown.

Measurements. Total length (incl. anal appendages) 22.5; Abdomen 15.4, cerci 1.0, epiproct 0.9. FW broken, length from base to nodus 10.8/11.0, HW 20.5/21.0, maximum width of HW 8.7. FW pterostigma 2.2/2.3, HW 2.5/2.6+

Discussion. *Perithemis capixaba* is most similar in coloration and size to *P. mooma* a species known from **Argentina**–**Belize**–**Bolivia**–**Brazil** (Amazonas, Amapá, Maranhão, Piauí, Pernambuco, Sergipe, Alagoas, Espirito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul, Minas Gerais, Goiás, Mato Grosso states) –**Ecuador**–**Honduras**, **Guatemala**–**Mexico**–**Panama**–**Paraguay**–**Trinidad**–**Venezuela.** The new species differs from *P. mooma* by a diffuse dark stripe from RP1 to RP2 at level of 1st and 2nd post nodal (Figs. 42–43) (absent in *P. mooma*); first segment of vesica spermalis gently rounded (trapezoidal in *P. mooma*); basal portion of fourth segment of vesica spermalis triangular (subquadrate in *P. mooma*); pterothorax without lateral dark stripes (two difuses in *P. mooma*).

Key to adult males of the species of *Perithemis* known from Brazil

(Modified and updated version of keys from Needhan *at al*. (2000) and von Ellenrieder and Muzón (1999))

1. Tip of hamuli almost at level of ventral margin (Fig. 44) 2
1'. Tip of hamuli at nearly 0.40 from ventral margin 6
2. Pterothorax with two lateral dark strips well defined (Fig. 45); genital ligula with length of sclerotized distal portion of fourth segment less than half the length of the segment, margins parallel basal portion subquatrate ..... *P. lais*
2'. Pterothorax with one well defined lateral dark stripe, the second lateral stripe poorly defined. Vesica spermalis with length of sclerotized distal portion of fourth segment half the length of that segment, margins not parallel basal portion subquatrate or trapezoidal 3
3. Posterior region of head black; first segment of vesica spermalis rounded or trapezoidal 4

3'. Posterior region of head dark brown or reddish; first segment of vesica spermalis subquadrate (Figs. 46–47) ..... *P. icteroptera*
4. Abdomen without narrow oblique dark stripes on segments 4–9 5
4'. Abdomen with complete blackish longitudinal bands (Fig. 48) ..... *P. thais*
5. Wings rich golden yellow ..... *P. cornelia*
5'. Wings red-orange ..... *P. rubita*
6. All triangles and subtriangles free (Fig. 49); first segment of vesica spermalis trapezoidal (Figs. 50–51) ..... *P. mooma*
6'. At least one of triangles and subtriangles crossed. First segment of vesica spermalis ovoid or rounded 7
7. Legs dark brown; subtriangles in forewing with two or three cells; abdomen robust .... *P. bella*
7'. Legs ochraceous yellow. Abdomen slender 8
8. Triangles in both wings free, subtriangles in forewing with two cells; wings broad (*sensu* Ris, 1930); first segment of vesica spermalis ovoid (Figs. 52–53)..... *P. electra*
8'. Triangles in both wings crossed with three cells; wing narrow (*sensu* Ris, 1930); first segment of vesica spermalis rounded (Figs. 37–38) ..... *P. capixaba*

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