

Lauromacromia bedei sp. nov. from the State of Minas Gerais, Brazil (Odonata, Corduliidae)

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ABSTRACT. *Lauromacromia bedei* sp. nov. from the State of Minas Gerais, Brazil (Odonata, Corduliidae). *Lauromacromia bedei* is described and illustrated from a single male specimen collected in a river at the “cerrado” region of the State of Minas Gerais, Brazil.

KEYWORDS. Anisoptera, cerrado, neotropical, Odonata.

RESUMO. *Lauromacromia bedei* sp. nov. do Estado de Minas Gerais, Brasil (Odonata, Corduliidae). *Lauromacromia bedei* é descrita e ilustrada com base em um exemplar macho coletado em um rio da região de cerrado do estado de Minas Gerais, Brasil.

PALAVRAS-CHAVE. Anisoptera, cerrado, neotropical, Odonata.

Erected by Geijskes (1970) the genus *Lauromacromia* has now 4 species: *L. dubitalis* (Fraser, 1939) from the French Guiana and Venezuela, *L. luismoojeni* (Santos, 1967), *L. flaviae* Machado, 2002 and *L. picinguaba* Carvalho *et al.*, 2004 from Brazil. These four species are known by relatively few specimens, *L. dubitalis* by the four male specimens reported by Fraser (1939), Machet (1991), and De Marmels (1985); *L. picinguaba* by one male and four females obtained from reared larvae reported by Carvalho *et al.* (2004), *L. luismoojeni* and *L. flaviae* only by the male holotypes reported by Santos (1967) and Machado (2002) respectively. This situation confirms the fact that, with few exceptions (Machado & Costa, 1995), the neotropical Corduliidae and specially the lauromacromias are rare and poorly represented in collections. A fifth species of *Lauromacromia* collected on the Rio Preto (Black River) in a region within the cerrado (a sort of savana) in the State of Minas Gerais is now described under the name of *L. bedei*.

Lauromacromia bedei sp.n.

(Figs. 1-6)

Male holotype. Head. – Olive brown except for the labrum and top of frons that are yellow. Frons with a deep furrow, the median ocellus lying deeply sunk in its posterior part. Anterior part of frons flat. Rear of the head black.

Thorax. – Prothorax yellow. Pterothorax brown with metallic green reflection. An oblique yellow stripe with straight margins, width at midheight 0.7 mm situated at the anterior part of the metepisternum (Fig. 1). A small yellow oblique stripe starting at the hind part of the metepimeron (Fig. 1) and directed forward and medially to the ventral part of this sclerite. Legs femura brown tibiae and tarsi black. Tibial keels occupying the

following percentages of the tibial length: fore tibiae 47,8%; mid tibiae 47,2%; hind tibiae 85,1%. Wings hyaline with a very slight yellowish tinge throughout. Venation including the costal vein brown. Pterostigma dark brown. Membranula light brown, ending above the apex of the anal triangle.

Venation. – Antenodals in forewing (FW) 10, in hindwings (HW) 6. Postnodals in FW 6-7; in HW 8-9. Triangles and supratrangles in FW and HW free. Anal triangle with 2 cells. Anal loop with 10-11 cells. Cubito-anal crossveins in FW 1; in HW 2. One cell row in the discoidal field of FW for a distance of 11-12 cells followed by two rows for a distance of 3 cells, reaching 4 rows at the margin. Discoidal field in the HW with two rows of cells for a distance of 4-5 cells followed by three rows for a distance of 1-3 cells, increasing to 9 rows at the margin. Rsp1 with 6 cells in FW and HW, in HW poorly defined. Arc in FW and HW at the distal fourth of the distance between 1st and 2nd antenodal. Base of triangle distal from the arculus.

Abdomen. – In dorsal view wide at segments 1-2 (2.1 mm), uniformly wide (1.3 mm) at segments 3-6 until the transverse carina of 7, then abruptly enlarged (Fig. 2) reaching maximum width on segments 8-9 (3.6 mm). Segments 1-2, anterior half of 3 and 10 brown; posterior half of 3 to anterior two thirds of 10 brownish black. Pale markings as follows: an annulate marking at the hind border of segment 1. A spot around the genital fossa and at the base of the genital lobe. A coarsely triangular spot adjoining the anterior part of the transverse carinae on 3-5 (Fig. 2) becoming elongated spots touching each other dorsally on 6-7 (Fig. 2). An elongated spot adjoining the posterior part of the transverse carina on 5 (Fig. 2), becoming large subquadrangular dorsally fused spots on 6-7. Segment 8 with two very small round spots at each side anteriorly (Fig.

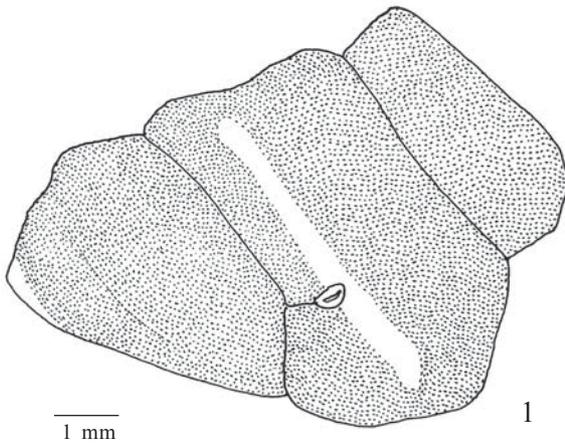


Fig. 1 -*Lauromacromia bedei* sp.n., holotype male: pterothorax, lateral view.

2). A pale spot on the anteroventral part of tergite 7-9. A pale line at the ventral border of tergites 3-9. Sternites black at segments 3-7 and brown at 8-9. An yellowish pubescence on the ventral lateral part of segments 7-9 and dorsal part of 9-10. Superior appendages brown. Inferior appendage yellowish brown.

Structural characters. – Hamulus (Fig.3) much less prominent than genital lobe with the two branches indistinct. Genital lobe (Fig. 3) triangular. Anterior third of sternite 8 with a conic tubercle tapering into a posteriorly curved spine. Superior appendages: in dorsal view (Fig. 4) slightly diverging, widest at base tapering into an acute tip. Ventral surface (Fig. 5) bordered by a lateral carina limiting externally a depressed area. A tubercle visible in lateral view (Fig. 6) divides the appendage into a proximal and a distal part. Inferior appendage (Figs. 4-6) triangular with a narrow tip provided with two tubercles. Dorsum of abdominal segment 10 elevated in a robust triangular crest on a rectangular base (Fig. 6). Inferior appendage (Figs. 4-6) attaining about $\frac{3}{4}$ of the superior appendage length.

Measurements (mm). – Total length 53.0; Abdomen without appendages 36.4; FW length 3.4; FW base to nodus length 18.0; HW length 32.0; HW base to nodus length with 14.0; HW maximum with 11.0; FW pterostigma 2.2; Length of superior appendages 3.6, and its proximal (1.9) and distal (1.7) parts; Length of inferior appendage 2.2; eye sheam 0.6.

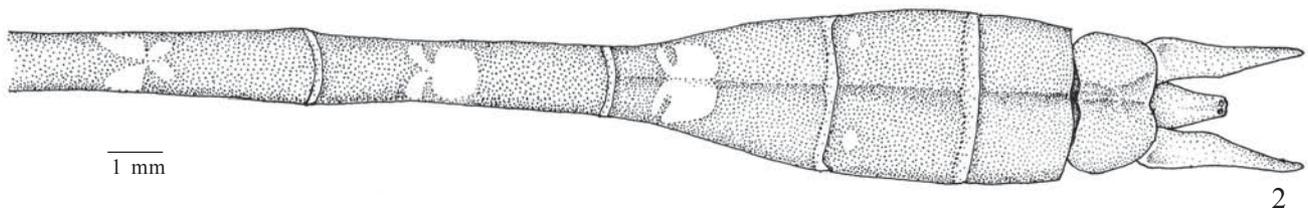


Fig. 2 - *Lauromacromia bedei* sp.n., holotype male: Abdominal segments 5-10, dorsal view.

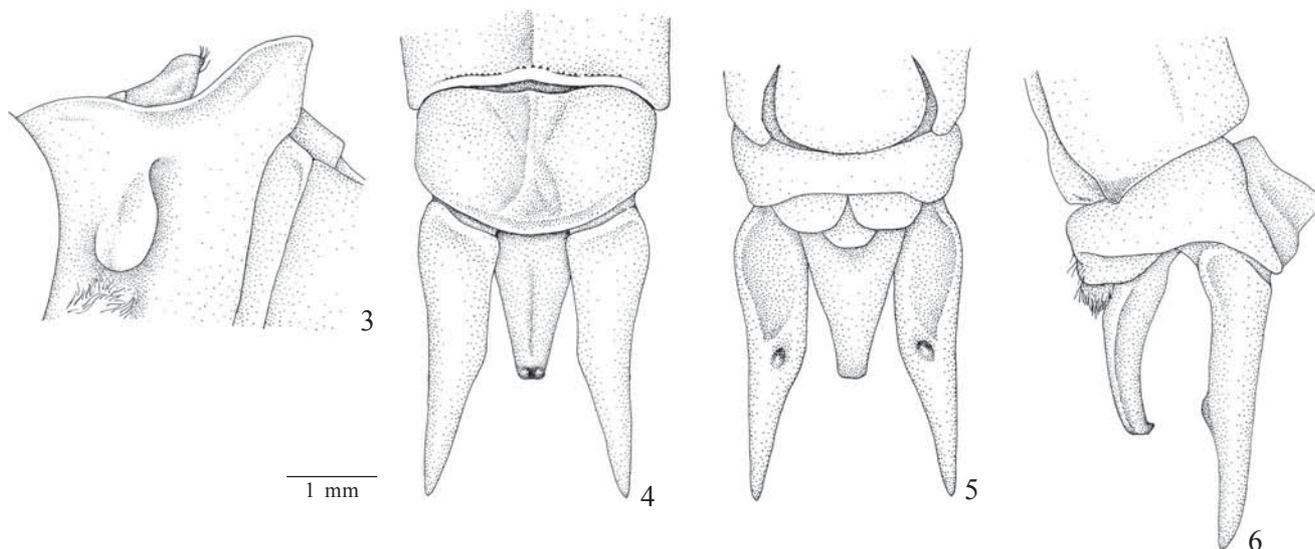
Material examined: Male holotype. Brazil, Minas Gerais, São Gonçalo do Rio Preto (18° 00'S, 43°23'W), IV-2004, L.C.Bedê leg. collected at about 5:00 PM flying along the margins of the Rio Preto (Black River) within the Rio Preto State Park.

Etymology: I dedicate this species to my friend biologist Lúcio Cadaval Bedê who collected the specimen herein described.

DISCUSSION

The main characters separating *L. bedei* from the other three Brazilian species of *Lauromacromia* are shown in Table I, which is a modification of the tables of Machado (2002) and Carvalho *et al.* (2004). It is worth mentioning that the French Guiana and Venezuelan species, *L. dubitalis* described by Fraser (1939) and redescribed by Geijskes (1970) is structurally very different from the four Brazilian species.

According to the biologist Lúcio Bedê the male holotype of *L. bedei* was captured in the Rio Preto State Park flying over the margin of the Rio Preto (Black River) at a place called Prainha (Little Beach). In its course within the Park, the Rio Preto is about 10 m wide, has acidic and well oxygenated black water, with alternation of rocky fast-flowing and sandy slow-flowing stretches, surrounded by thin gallery forests. It is worth mentioning that both *L. luismoojeni* and *L. flaviae* are also known by single males collected in rivers flowing in the “cerrado” as pointed out by Santos (1967) and Machado (2002) respectively. Thus, it is most likely that these three *Lauromacromia* are “cerrado” species unlike *L. pinguaba* that is an Atlantic Forest species. According to Machado & Costa (1995) two other *Corduliidae* are also “cerrado” species, *Navicordulia longistyla* Machado & Costa (1995) and *N. leptostyla* Machado & Costa (1995) collected near Brasilia. These two species however, are very abundant whereas the “cerrado” *Lauromacromia* are known by the holotypes only. The possible significance of abundance and rarity in Neotropical Corduliidae is discussed by Machado (2005). On the standpoint of conservation and taking into consideration the rarity and the apparently small extent of occurrence of the three Brazilian *Lauromacromia* they could at first be regarded as threatened under IUCN criterium B (IUCN 2001). However, until more data become available, specially about the geographic distribution of these species, I suggest they could be placed in IUCN Data Deficient category (DD) as proposed by IUCN (2003) for species known only from their type locality, with poor collecting effort to find it elsewhere.



Figs. 3-6 - *Lauromacromia bedei* sp.n., holotype male: (3) genitalia of 2nd abdomen segment, lateral view; Anal appendages in dorsal (4), ventral (5) and lateral (6) views.

Table I. Main characters separating the Brazilian male species of *Lauromacromia*.

Character	<i>L. bedei</i>	<i>L. flaviae</i>	<i>L. luismoojeni</i>	<i>L. pinguaba</i>
Color pattern of the genital lobe	A pale spot at the base	A pale spot at the base	Almost entirely yellow	With a pale spot at the posterior base
Lateral thoracic pale stripe	Sright	With na anterior and a posterior shallow concavity	Straight	Straight
Costal vein	Brown	Brown	Yellow	Brown/Black
Shape of process on sternite 8	a conical tubercle tapering into a curved spine	a conical tubercle tapering into a curved spine	A conical tubercle tapering into a curved spine	Keel-shaped posteriorly truncate
Relative position of the ventral tubercle of superior anal appendage	On the second third	On the second third	On the second third	On the first third
Middorsal crest on abdominal segment 10 in lateral view	Triangular on a rectangular base	Triangular	Trapeze-shaped	Subrectangular
Length of superior anal appendages in relation to abdominal segment 10	About 2.5 times longer	About 1.5 times longer	About 1.5 times longer	About 2.5 times longer
Apex of superior anal appendages in dorsal view	Tapering into an acute tip	Tapering into a blunt tip	Tapering into a blunt tip	Tapering into an acute tip
Tubercle on the ventral surface of the superior appendages	Present and visible in lateral view	Present and visible in lateral view	Present and visible in lateral view	Replaced by na oblique granulose crest
Width of abdominal segment 8 (mm)	3.6	2.8	2.8	—
Superior appendages length (mm)	3.6	3.0	2.8	3.2
Abdominal segments with spots anterior to transverse carinae	3-7	3-4*	3-7	3-6
Abdominal segments with spots posterior to transverse carina	5-7	4-7*	5-7	7
Dorsolateral spots on segment 8	Present	Absent	Present	Present

* Data obtained from the holotype, correcting a mistake on Machado (2002).

Acknowledgements. I thank the biologist Lucio C. Bedê for giving to me the specimen and Myrian Morato Duarte for the drawing illustrating this paper.

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Recebido em 04.II.2005; aceito em 23.VIII.2005