

**NEONEURA MOOREI SPEC. NOV.
FROM THE AMAZONIAN REGION OF BRAZIL
(ZYGOPTERA: PROTONEURIDAE)***

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The new sp. is described and illustrated from 3♂ and 3♀ collected in the state of Rondonia, Brazil (holotype ♂, allotype ♀: Ji-Paraná, II-1961, deposited in the author's collection). By the arrangement of the decumbent process of the dorsal branch of the superior appendages it belongs to the *N. maria*-group whose spp. had never been found in Brazil. It differs from the other spp. of this group by its color pattern, by the structure of the ♂ superior appendages and shape of the ♀ posterior prothoracic lobe.

INTRODUCTION

The species of *Neoneura* usually inhabit medium to large size rivers where they are found hovering close to the water surface near the marginal vegetation or even somewhat far from it. A few species, like *N. sylvatica*, occur also in lentic habitats. The genus has now 24 species that have been recently reviewed by GARRISON (1999), a number that will certainly increase. The Brazilian representatives of *Neoneura* include 16 species, described or registered for this country by SELYS (1860, 1886), WILLIAMSON (1917), MACHADO (1964, 1975, 1989, 2002a, 2002b) and GARRISON (1999). To these we add now *N. moorei* obtained during our 1961 collecting trip to Rondonia.

NEONEURA MOOREI SP. NOV.

Figures 1-4

Material. — **Holotype** ♂: BRAZIL, state of Rondonia, Ji-Paraná (on the Ji-Parana River near the homonymous city) 2-II-1961, A.B.M. Machado & F.S. Pereira leg. **Allotype** ♀, paratypes: 2♂, 2♀, same

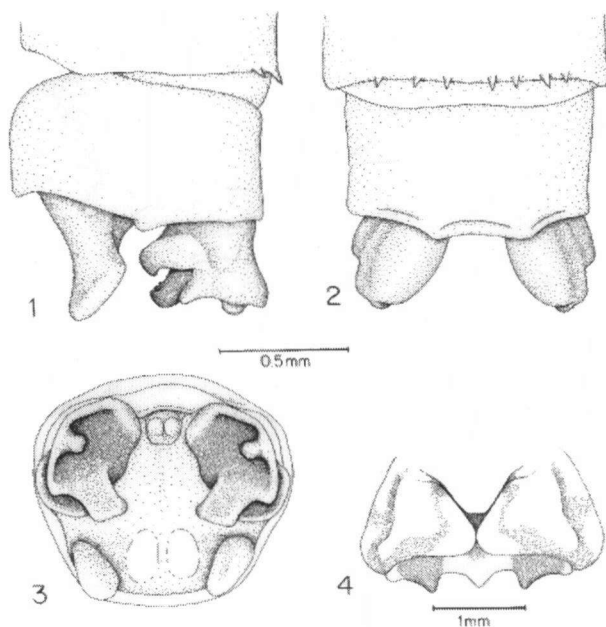
* Studies on neotropical Protoneuridae, 15

locality data and collectors as the holotype. Total: 3 ♂ and 3 ♀. Holotype, allotype and 2 paratypes deposited in the author's collection; one ♂ and one ♀ paratypes deposited in the collection of the Department of Zoology, Federal University of Minas Gerais, Belo Horizonte, MG., Brazil.

Etymology. — This species is named for my friend Norman W. Moore who has contributed so much to the knowledge and conservation of dragonflies throughout the world.

MALE. — **Head.** — Labium yellow. Labrum black, bordered with greyish anteriorly. Anteclypeus and base of mandibles greyish blue. Postclypeus black with two points greyish blue. Genae and anterior part of frons pale blue. Upper part of head largely black except for the following pale blue areas: a small and very narrow stripe at middistance between the antennae scapes and the lateral ocelli; a small triangular spot adjacent to the outer part of each lateral ocellus; a transverse line on the occipital crest with the extremities directed anteriorly; a small dot laterally to this line; an oblong spot adjacent to the posterior part of the eye. Antennae brown with the scape black. Rear of the head black except for a pale stripe bordering the eye.

Thorax. — Prothorax black, with a large light green triangular area on the lateral part of the pronotum and a smaller one, shaped like a tassel, at the dorsolateral angle of the propleuron. Medium and anterior lobes with two narrow anteroposterior pale lines. Posterior lobe with the hind margin light green.



Figs 1-4. *Neoneura moorei* sp. n., holotype ♂ (Figs 1-3) and allotype ♀ (Fig. 4): (1-3) anal appendages: lateral, dorsal and posterior view, resp.; — (4) posterior lobe of the prothorax, dorsal view.

Pterothorax: Mesopleuron black with the following pale blue areas: a line on the dorsal carina; a narrow mesepisternal stripe adjacent to the humeral suture, enlarged at its lower extremity, not reaching to the antealar sinus where there is a small spot. A rod-shaped mesepimeral stripe adjacent to the humeral suture occupying the middle 3/5 of the sclerite. Metapleuron pale blue except for a dark longitudinal stripe at the limit between the metepisternum and metepimeron. Legs: femorae pale blue with the outer parts dark.

Tibiae pale blue, dark anteriorly. Tarsi yellowish blue. Wings hyaline, pterostigma brownish yellow occupying slightly less than one cell, proximately straight, distally oblique.

Venation: Postnodals in forewings 9 (40%) or 10 (60%), in hindwings 7 (30%) or 8 (50%). R3 in fore and hindwings originating at the level of the 3th postnotal (100%). IR2 in forewings originating at the level of the 7 (25%) or 8 (75%) postnodal; in hindwings at the level of the 7 (50%) or 8 (50%) postnodal. CUP in forewings terminating at 1/2 (66.4%) or 2/3 (33.6%) in hindwings at 2/3 (50%), 2/5 (16.6%) or 3/4 (16.6%) of the distance between the crossvein descending from the subnodus and that descending from the first postnodal.

Abdomen. — Segments 1-2 blue with a black band dorsally on 1, and dorsolaterally on 2. Dorsum of segments 3-5 blue, that of 6-8 with the proximal half greyish brown (apparently due to the postmortem discoloration), the distal half blue. Segments 3-8 with a narrow longitudinal lateral black stripe not reaching to the base of each segment, apically or subapically produced dorsally in a triangular spur which almost meets with the one of the opposite side on segments 2-4 and actually meets on 5-8, distally fused with a black apical ring. Segments 9-10 black. Tergal areas bellow the lateral black stripes bluish yellow on segments 2-6 greyish yellow on 7-8. Sternites black. Superior appendages black with a lateral greyish brown spot. Inferior appendages brownish.

Structural characters. — Posterior lobe of prothorax smoothly rounded very slightly elevated in the middle. Superior appendages (Figs 1-3) shorter than segment 10, in lateral view (Fig. 1) broadly quadrangular, the dorsal branch with the distal margin truncate and provided with a glans-like tubercle (Fig. 3), the ventral branch much smaller, with a small apical tubercle (Fig. 1). Decumbent process (GARRISON, 1999; MACHADO, 2002) distal (Fig. 3), broad at base and produced into a quadrangular plate (Fig. 3), visible in lateral view (Fig. 1), the distal border of which provided with three small teeth (Fig. 1).

Measurements (mm). — Abdomen 26.5-27.6 (mean 26.6), hindwing 16.3-16.7 (mean 16.4), pterostigma 0.8.

FEMALE. — **Head.** — Yellowish grey with the following dark marking: a comma-shaped spot on either sides of the postclypeus; a transverse bar in front of the median ocellus forming a trident whose branches do not reach the frontal crest. A dot in front of the antennae scapes; a transverse bar encompassing the median ocellus; an irregular stripe connecting one eye to the other passing behind the lateral ocelli with two anterior spurs medial to each lateral ocellus; a postocular transverse bar not continuous through the occipital crest and a small rectangular spot between it and the interocular stripe. Antennae yellowish grey with the scapes black. Rear of the head black.

Thorax. — Prothorax yellowish grey, with a brown area between the pronotum and the propleura, and a middorsal black line on the medial lobe. Posterior lobe (Fig. 4) with the median and lateral lobes triangular, the median one yellowish green with a broad base the lateral ones black with an acute apex.

Pterothorax yellowish grey with a narrow dark bar on each side of the middorsal

carina with its outer edge irregularly dentated; two elongated spots on the upper and lower parts of the humeral suture; a narrow tapering stripe on the upper parts of the obsolete 2nd and the 3rd lateral sutures. Legs pale yellow, with the posterior part of femorae dark brown. Wings hyaline. Pterostigma pale yellow occupying slightly less than one cell.

Venation: Postnodals in forewings 10 (100%); in hindwings 7 (33.3%) or 8 (66.6%). R3 in forewings originating at the level of the 4th postnodal (100%); in hindwings at the level of the 3 (83.4%) or 4 (16.6%) postnodal. IR2 in forewings originating at the level of the 8th (100%) postnodal; in hindwings at the level of 7 (83.3%) or 8 (16.6%). CUP in all wings terminating at about 1/2 (50%) or 2/3 (50%) of the distance between the crossvein descending from the subnodus and that descending from the first postnodal.

A b d o m e n. — Yellowish grey, with sternites black. Segments 2-6 with a very narrow scarcely discernible black distal ring and an oblique brown dorsal band, not confluent with that of the opposite side and not reaching the distal part of the segments. On segment 7 it is reduced to a dot. Segments 8-9 with lateral poorly defined brownish area. Appendages conical, yellowish grey.

M e a s u r e m e n t s (mm). — Abdomen 23.0-23.4 (mean 23.3); hindwing 16.0-18.3 (mean 17.2); pterostigma 0.7.

DISCUSSION

By its large apically decumbent process, *N. moorei* belongs to the *N. maria* species group as defined by GARRISON (1999). This group contains five species from Middle America and Cuba and one species, *N. esthera* Williamson, 1917, whose range extends to Colombia and Venezuela. The finding of *N. moorei* in the state of Rondonia represents, therefore, the first record of the *N. maria*-group in Brazil. Within this group, *N. moorei* is close to *N. maria* by its blue abdominal color, but differs from it by the head and thoracic color as well as by structure of the appendages. Indeed, by having a quadrangular plate in the decumbent process, *N. maria* is unique in the genus. The female of *N. moorei* keys out to couplet 11 of Garrison's key F-2 which leads to the five species of the *N. maria* group. The female of *N. moorei* differs from all of them by the acute-pointed triangular medial and lateral lobes of the posterior prothoracic lobe.

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