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STUDIES ON NEOTROPICAL PROTONEURIDAE. 7. *EPIPLEONEURA WESTFALLI* SPEC. NOV. FROM THE AMAZON REGION (ZYGOPTERA)

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E. westfalli sp. n. (holotype ♂, allotype ♀ and paratypes: Giparana, Rondonia, Brazil) is described and illustrated. The new species is closely related to *E. humeralis* (Selys, 1886) and *E. machadoi* Racenis, 1960.

INTRODUCTION

During our 1961 expedition to the region of the river Giparana in the State of Rondonia, Brazil, we collected a species of *Epipleoneura* which was tentatively determined as *E. humeralis* (Selys, 1886). The determination was based mainly on the presence of a deep V-shaped excavation in the posterior lobe of the female prothorax, a character which according to SELYS (1886), distinguishes *humeralis* from all the other known species of his sub-genus *Protoneura.* However, redescription of the type of *E. humeralis,* represented by a single female in Selys' collection (MACHADO, 1984), revealed that the species from the river Giparana even though very close to *humeralis* is specifically distinct from it.

The new species, now described, is named after my dear friend Professor Dr MINTER WESTFALL in appreciation of his contribution to the knowledge of dragonflies.

DESCRIPTION

EPIPLEONEURA WESTFALLI SP. N.
Figures 1-3

Material. — Brazil, State of Rondonia, Giparana: **Holotype** ♂, **allotype** ♀, 1 ♀ and 9 ♂ **paratypes**, 25-30-I-1961, Machado & Pereira leg. State of Mato Grosso, Reserva Ecológica de Ique-Juruena: 1 paratype, 9-XII-1981, C. Mascarenhas leg. Total 11 males and 2 females. — Holotype, allotype and most paratypes deposited in the author's collection. One paratype deposited at the entomological collection of the Departement of Zoology, University of Minas Gerais and another donated to the collection of the SIO International Odonata Research Institute, IORI, at Gainesville, USA.

Male: Head. — Labium yellowish. Labrum black, inferiorly bordered with yellow. Anteclypeus and genae yellowish green; postclypeus, base of mandible and superior part of frons black; anterior part of frons black with an elongated yellowish green spot on each side and a round spot in front of the base of the antennae. Upper part of head dark metallic green. Rear of the head black.

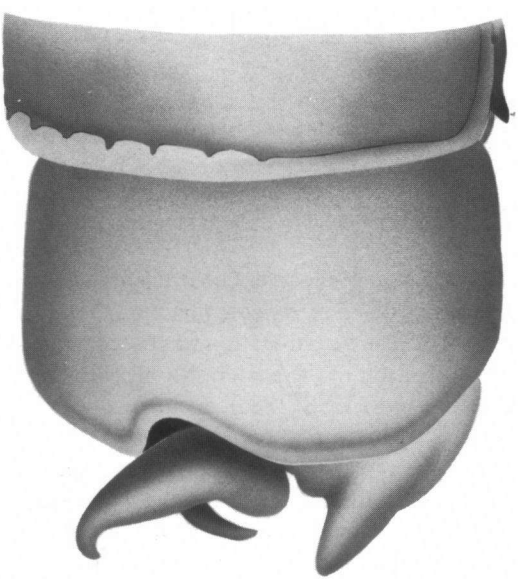

Fig. 1. *Epipleoneura westfalli* sp. n., holotype male. Anal appendages, lateral view.

Prothorax and pterothorax. — Dark metallic green or dark metallic red, in some specimens the two colours intermingled. Postero-inferior part of metaepisternum and posterior part of metaepimerum yellowish. Legs yellowish, except for the femora which are brownish. Wings hyaline. Pterostigma yellowish brown.

Venation. — Postnodals in fore wing, 10 (70%), 11 (30%); in hind wing 8 (30%), 9 (65%), 10 (5%). R3 in fore wing originating at the level of the 4th (100%), in hind wing at the level of the 3rd (100%) postnodal. IR2 in fore wing originating at the level of the 7th (80%) or 8th (20%) postnodal; in hind wing at the level of the 6th (40%) or 7th (60%) postnodal. CuP terminating in fore wing at 1/3 (25%), 2/5 (45%), 1/2 (20%) or 2/3 (10%) in hind wing at 2/5 (20%), 1/2 (60%) or 2/3 (20%)

of the distance between the crossvein descending from the subnodus and that descending from the first postnodal. CuA in fore wing situated at 1/3 (50%) or 2/5 (50%), in hind wing at 1/4 (25%), 1/3 (65%) or 2/5 (10%) of the distance between the 1st and the 2nd antenodal. IR3 in fore wing coinciding (95%) or

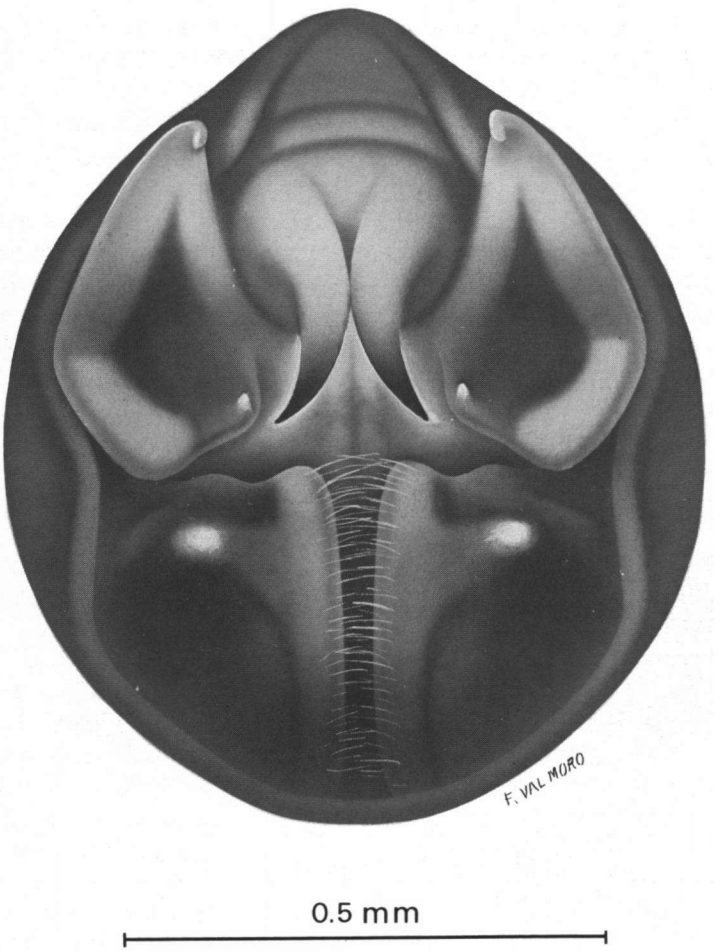

Fig. 2. *Epipleoneura westfalli* sp. n., holotype male. Tenth abdominal segment, posterior view.

slightly distal (5%), in hind wing coinciding (90%) or slightly distal to the subnodus. Pterostigma in fore wing occupying 3/4 (35%), 2/3 (50%) or 4/5 (15%), in hind wing 2/3 (10%), 3/4 (65%) or 4/5 (25%) of a cell.

Abdomen. — Ventrally yellowish brown, dorsally dark, with metallic green hues on segments 1, 2 and proximal part of 3. Appendages dark.

Structural characters. — Posterior lobe of prothorax rectangular with rounded edges. Superior appendages, in lateral view, obliquely directed upwards with the apex terminating in a small hook with well developed inferobasal lobes (Fig. 1). The medial part of each lobe has a small chitinized tubercle (Fig. 2). Supraanal plate formed by two slender processes curved outwards, attached to a conical base, with fine divergent apices directed posteriorly and inferiorly (Fig. 2). The divergence of the two apices is somewhat variable and in some specimens they are less divergent than shown in Figure 2. Inferior appendages conical.

Measurements (mm). — Abdomen 26-28; fore wing 17-18; hind wing 16-17; first antenodal costal space 2.0-2.3; second 1.3-1.5; third 1.8-2.0.

Female: Head. — Labium, labrum, base of mandibles, genae, anteclypeus and anterior part of frons yellowish with the following dark markings: a round spot on the mid-posterior part of the labrum and a dark--brown area on its postero--lateral angle; a round spot on the base of the mandibles and on the genae in front of the eyes, connected to an oblique band in the supero--lateral part of the anterior part of the frons. Post--clypeus black. Upper part of the head metallic green. Rear of the head black.

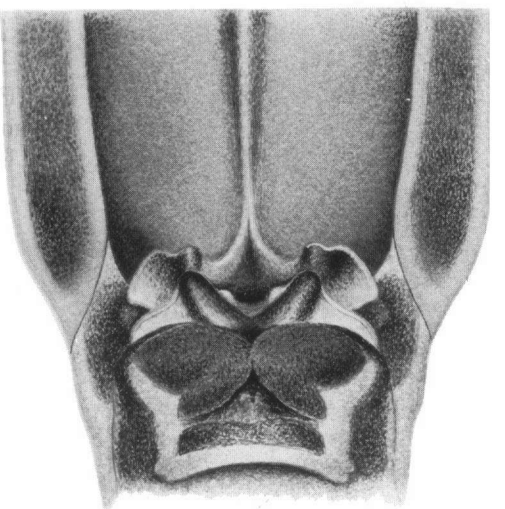

Fig. 3. *Epipleoneura westfalli* sp. n., allotype female. Antero--dorsal view of the prothorax and part of the pterothorax.

Prothorax. — Dorsally metallic green, laterally yellow with a large round dark spot. Posterior lobe with the two diverging dark lobules continuing laterally into a yellow rim.

Pterothorax. — Mesoepisternum metallic green with a dark band adjacent to the humeral suture. Mesostigmal laminae metallic green bordered with yellow laterally. Mesoepimerum and mesoinfraepisternum dark metallic green with a yellowish line adjacent to the humeral suture. Metapleurae yellowish except for a dark metallic green area occupying the upper part of the mesoepisternum, connected with a line of the same colour along the upper half of the second lateral

suture. Legs yellowish except at the distal third of the femora which are brown. Wings hyaline. Pterostigma yellowish brown.

Venation. — Postnodals in fore wings 10 (25%), 11 (75%); in hind wing 9 (100%). R3 in fore wing originating at the level of the 3rd (100%) postnodal. IR2 in fore wing originating at the level of the 6th (25%), 7th (25%) or 8th (50%) postnodal; in hind wing at the level of the 6th (25%) or 7th (50%) postnodal. CuP terminating in fore wing at 2/3 (100%), in the hind wing at 2/5 (75%) or 2/3 (25%) of the distance between the crossvein descending from the subnodus and that descending from the first postnodal. IR3 in fore wing coinciding (75%) or slightly distal (25%), in hind wing coinciding with the subnodus.

Abdomen. — Segments 1-9 laterally yellow, dorsally dark-brown with metallic green hues more evident in the first four segments. Tenth segment yellow. Appendages brown.

Structural characters. — Posterior lobe of prothorax (Fig. 3) with two very prominent lobules which diverge to delimitate a deep V-shaped middle excavation. The lobules are convex anteriorly and continue laterally into a transverse rim. Mesostigmal laminae very prominent (Fig 3). Appendages very small, conical. Ovipositors projecting posteriorly slightly beyond the appendages.

Measurements (mm). — Abdomen 25.5; fore wing 18; hind wing 17.

DISCUSSION

Epipleoneura westfalli is most closely related to *E. machadoi* Racenis and *E. humeralis* Selys, the latter known for the female sex only. The male of *E. westfalli* is very similar to that of *E. machadoi* but the processes of the supra-anal plate are more divergent in *E. westfalli* than in *E. machadoi.* Besides that, the medial part of the infero-basal lobe of the superior appendages of *E. machadoi* has a process terminating in a strong tubercle while in *E. westfalli* it has only a small chitinized tubercle. The female of *E. westfalli* can be easily separated from that of *E. machadoi* by the presence of the two prominent lobules in the posterior lobe of the prothorax, which are barely indicated in *E. machadoi.* On the other hand, the female of *E. westfalli* is close to that of *E. humeralis,* both possessing a very elaborate posterior lobe of prothorax with a middle V-shaped excavation. In *E. westfalli,* however, this excavation is deeper than in *E. humeralis* and limited by lobules which are convex in *E. westfalli* and flat in *E. humeralis.*

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