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SHORT COMMUNICATIONS

STUDIES ON NEOTROPICAL PROTONEURIDAE. 3. REDESCRIPTION OF THE HOLOTYPE OF *EPIPLEONEURA HUMERALIS* (SELYS, 1886) (ZYGOPTERA)*

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The type "*Protoneura humeralis*", a female from the Amazon region of Brazil, is redescribed and illustrated. The generic position of the sp. is discussed, and it is shown that it is referable to the genus *Epipleoneura*.

INTRODUCTION

Epipleoneura humeralis was described by Selys under *Protoneura* based on a single female from Coari, Amazonas. As the original diagnosis is very laconic and lacks illustrations it is doubtful whether the species could be correctly identified without a reexamination of the type. In spite of that, SJÖSTEDT (1918) identified as *humeralis* a female and a male specimen collected in the Amazon by the Swedish entomological expedition of Dr Roman. This material was used by him for redescribing the female and describing the hitherto unknown male. Sjöstedt's identification of *humeralis* was based on the good agreement of the female collected by Roman with Selys' description and specially on the presence of a deep V-shaped excavation in the posterior lobe of the female prothorax. According to SELYS (1886) this character distinguishes *humeralis* from all the other known species of *Protoneura*. We have however in our collection two species of Amazonian *Epipleoneura* (a new species and Santos' *manauensis*) which also have a V-shaped excavation in the posterior lobe of the female

* Our papers in *Bol. Mus. paraense Emilio Goeldi* 51(1964): 1-15, and *Ciencia & Cultura* 27 (1975): 764-766, should be regarded as parts 1 and 2 resp. of this series.

prothorax. The difficulty in knowing what is really Selys' "*Protoneura humeralis*" and the need of this knowledge for the erection of new species, prompted us to study the type of this species. This was done during our 1981 visit to Selys' collection in Brussels with a grant provided by the National Research Council of Brazil.

Pinned in the righ upper corner of box 27 of Selys' collection we found under the label of *Protoneura humeralis* a single female specimen bearing 5 pin labels:

(1) "Coary, amaz" (handwritten in ink; green label).
(2) "humeralis S." (handwritten in ink; green label).
(3) "Coll. Selys" (handwritten in ink, with no. "95" in red pencil; white label).
(4) "Bei Förster" (handwritten in ink with no. "95" in red pencil; white label).
(5) "Desseiné par Santos — 5-X-64" (handwritten in ink; white label).

These data are in good agreement with those contained in Selys' description of *P. humeralis* where one reads: "Patrie: Coary (Amazone). Coll. Selys. Une femelle unique". Therefore there is no doubt about this specimen being the type and I have labelled it as the holotype of *P. humeralis*".

The specimen is in good condition except for the detached head which is contained in a small paper triangle pinned under the specimen. A stick was passed through the abdomen into the thorax. The abdomen is broken between segments 3-4 and 6-7 but the parts are glued together. Both antennae are reduced to the scape.

Thanks to the generosity of Dr G. Demoulin the holotype could be brought on loan to Belo Horizonte, for redescription and illustration.

REDESCRIPTION OF THE HOLOTYPE

Head: — Labium and labrum yellowish; anteclypeus, postclypeus, lateral part of mandibles, genae, frons, base and scape of the antennae bluish. A small dark spot on each side of the postclypeus and a dark line along the fronto-clypeal suture. A dark rectangular area in the upper horizontal part of frons between the antennae, obliquely connected by a dark line, with a dark spot in the upper part of the genae. Dorsal part of the head dark metallic green. Rear of the head black.

Prothorax: — Olive-gray turning into metallic green dorsally, with a yellowish-white band on each side. Posterior lobe (Fig. 1) with a deep V-shaped middle excavation limited on each side by a flat triangular process, bordered by white. Each process is continuous laterally with a white elevated rim (Fig. 1).

Pterothorax: — Mesoepisternum dark-metallic green except for a yellowish line (Fig. 1) along the inferior two thirds of the humeral suture. Mesostigmal plates (Fig. 1) dark-metallic-green bordered by white. All the rest of the pterothorax yellowish-white except for a dark-green mesoepimeral band (Fig. 1) which becomes brown at its inferior third and continues into the mesinfraepisternum. A brownish line along the second lateral suture, enlarged into an elongated dark spot at its upper fourth. Legs pale yellow with brown

spines. Claws with a well developed tooth.

Wings: — Hyaline, pterostigma light brown occupying a whole cell (two wings) or slightly less. Post-nodals: in fore wing, 10-11; in hindwing, 9.R3 in front wing originating at the 5th, in hindwing at the 4th postnodal. IR2 in forewing originating at the level of the 7th or 8th post-nodal; in hindwing at the level of the 7th post-nodal. CuP in all the wings terminating at one third of the distance between the crossvein descending from the subnodus and that descending from

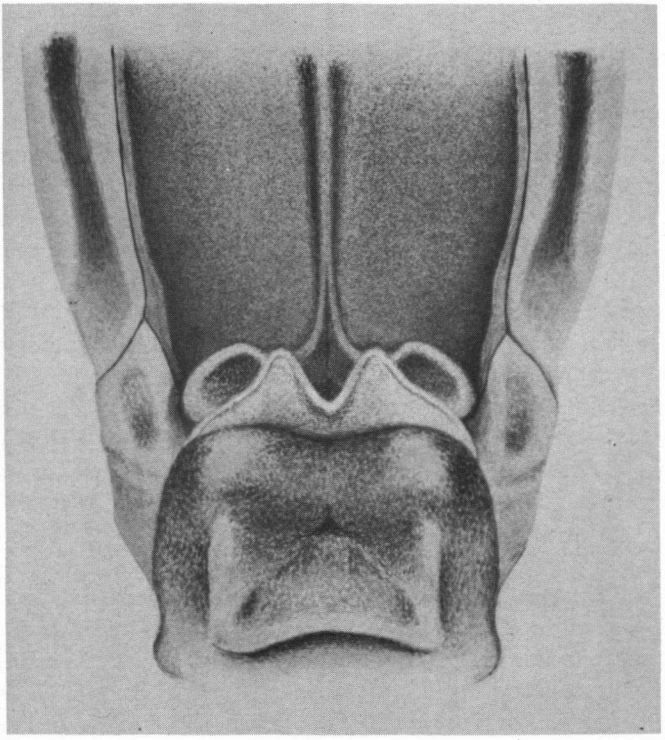

Fig. 1. *Epipleoneura humeralis* (Selys, 1886). Antero-dorsal view of the prothorax and part of the pterothorax of the female holotype.

the first post-nodal. Arculus distal to the second antenodal by a distance of about one half of its upper limb. Upper limb of arculus about two-thirds of the lower limb in length. CuA in hind wing situated in the middle of the distance between the 1th and 2th antenodal, in front wing slightly beyond. In all the wings IR3 arising at the subnodus, R4 + R5 proximal. In hindwing IR3 and R4 + R5 clearly joined at the first descending crossvein, in forewing, the two veins distinctly separated by a small crossvein. First and third antenodal costal spaces about

equal, second slightly shorter.

Abdomen: — Segments 1-8 pale yellow ventrally, dorsally brown with metallic green hues more evident on segments 1-2 and apex of 3. Segments 3-7 with a small pale yellow lunule at their base and a dark-brown lunule at their apex. Segments 9-10 yellowish with a large dark dorsal spot on the proximal half of 9. Ovipositor yellow.

Measurements: — Abdomen 28 mm; length of fore wing 21 mm; of hindwing 20 mm; maximum width of forewing 3.6 mm, of hindwing 3.5 mm; pterostigma 0.7 mm; first antenodal costal space 2.2 mm, second 2 mm, third 2.2 mm.

THE GENERIC POSITION OF SELYS' "*PROTONEURA HUMERALIS*"

Since WILLIAMSON (1915) split the Selysian subgenus *Protoneura* into the genera *Epipleoneura, Epipotoneura, Protoneura* and *Psaironeura,* later adding *Phasmoneura* (WILLIAMSON, 1916), the generic position of some of the Selysian species of *Protoneura,* such as *P. humeralis,* could not be determined with certainty. WILLIAMSON (1915) suggested that *humeralis* might be a *Protoneura* (s. str.) or, more probably, an *Epipleoneura,* the genus in which the species was placed by RÁCENIS (1960). However, SJÖSTEDT (1918) placed *humeralis* in *Protoneura.* None of these authors, however, studied the type of the species, the venation of which had never been described in detail.

The wide wings and the proportions of the antenodal costal spaces rules out the possibility that *humeralis* might be a *Protoneura* as defined by WILLIAMSON (1915) and redefined by COWLEY (1941). By the presence of IR3 arising at the subnodus and R4 + R5 proximal, by the termination of CuP produced beyond the cross vein descending from the subnodus, the species runs out to *Epipleoneura* in WILLIAMSON's (1915) key (page 620). It has, however, in the hindwing, IR3 joined with R4 + R5 at the first descending crossvein, a character reported so far only for *Epipotoneura* and *Psaironeura* (WILLIAMSON, 1915). The significance of this character in the genus *Epipleoneura* was evaluated by estimating its frequency in 100 specimens (50 males and 50 females) of *Epipleoneura lamina,* the type species of the genus. In 91% of the specimens IR3 was clearly separated from R4 + R5 by a distinct crossvein in all the wings. In 6% of the specimens the two veins were separated by a distance about the thickness of vein IR3 at least in one wing and in 3% of the species the two veins were joined in two wings. Thus the fusion of IR3 with R4 + R5 occurs in *Epipleoneura* although in a very low frequency. The presence of this character in a single specimen of *humeralis* cannot be taken as evidence against it being a true *Epipleoneura.*

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