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SHORT COMMUNICATIONS

PALAEMNEMA BRASILIENSIS SPEC. NOV., FIRST PLATYSTICTIDAE RECORD FROM BRAZIL (ZYGOPTERA)

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The new sp. is described and illustrated based on δ specimens collected in the State of Amapá. Holotype δ : Brazil: Amapá, Serra do Navio, I-1957. It is close to *P. ed-mondi* Calvert and *P. brevignoni* Machet.

INTRODUCTION

The genus *Palaemnema* is the only representative of the family Platystictidae in the New World. Since the monumental review of the genus (CALVERT, 1931) in which 26 species were reported, new taxa were described by COWLEY (1934), KENNEDY (1938, 1940, 1942), DE MARMELS (1989a, 1989b), MA-CHET (1990) and DONNELLY (1992). The total number of species today is 45 (KALKMAN et al., 2008) distributed mainly in Central America and Mexico but also in Venezuela, Colombia, Ecuador and Peru. Here, *P. brasiliensis* sp. n. is described from the State of Amapá that represents the first record of the family in Brazil.

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PALAEMNEMA BRASILIENSIS SP. NOV. Figures 1-5

M a t e r i a l. – Holotype δ : Brazil, State of Amapá, Serra do Navio, I-1957, Machado & Pereira leg. – Paratypes 2 δ , same data as holotype (near a shallow pool inside forest). The specimens are deposited in A.B.M. Machado collection, Belo Horizonte, Brazil.

E t y m o l o g y. – The name refers to the fact that it is the first species of the genus described from Brazil.

MALE. – Holotype. H e a d. – Labium whitish yellow; labrum white with the border brown. Base of mandibles, genae, and anteclypeus gray with white lateral spots. Postclypeus dark brown; antefrons and dorsum of head dark with metallic green or copper shining. Rear of head dark brown.

T h o r a x. – Prothorax: hind prothoracic lobe and middorsal part of medium and anterior lobes reddish brown. Remaining parts pale. Pterothorax: Middorsal carina black; mesepisternum and mesepimeron reddish brown; metepisternum reddish brown with a pale (probably blue in living) stripe; metepimeron pale. Legs brownish yellow, tarsal claws with supplementary tooth. Wings hyaline, pterostigma brown surmounting two cells. Px in FW, 15-16 in Hw 14-16; R3 arising near Px 7 in FW and Px 6 in HW. IR2 arising near Px 8-9 in FW and HW.

A b d o m e n. - S1-S2 with lateral pale stripe. S3-S6 brown with an anterolateral yellow stripe; S7 black, S8-S9 dorsally dark brown, laterally light brown.



Figs 1-5. Palaemnema brasiliensis, sp. n. (Figs 1-3 holotype): (1) cerci, dorsal view; -(2) cercus and paraproct, lateral view; -(3) apex of paraproct, dorsal view; -(4) penis, lateral view; -(5) same, ectal view.

S10 black with ventrolateral pale spot. Cerci brown; paraprocts laterally brown in the basal half, black in the distal half.

Structural characters. – Hind prothoracic lobe, semicircular. Cerci in dorsal view (Fig. 1) with the ventral border of the distal half straight, in lateral view (Fig. 2) smoothly curved, distal half projected ventrally in a subrectangular dilation. Paraprocts in lateral view slightly shorter than cerci with a distal excavation. Apex of paraprocts in dorsoposterior view (Fig. 3) curved medially with a proximal small and a distal large tooth (Fig. 3). Penis (Figs 4-5) with terminal and inner folds, terminal filaments form B (CALVERT, 1931), in lateral view pin-shaped (Fig. 4). In ectal view (Fig. 5) spoon-shaped.

Measurements (mm). - FW 21.00; abdomen 31.46, total length 36.66.

VARIATION IN PARATYPES. – One of the paratypes is larger than the holotype (HW 22.93, abdomen 35.27, total length 42.29).

DISCUSSION

P. amazonica keys out to *P. edmondi* Calvert, 1931 from Colombia in HECK-MAN (2008) and it is also very close to *P. brevignoni* Machet, 1990. These three

Characters	P. brasiliensis	P. edmondi	P. brevignoni
Anteclypeus	Dark brown	Pale blue	Bluish yellow
Pronotum hind lobe	Reddish brown	Black	Light brown
Ventral margin of cercus in lateral view	Angulated at the point where cercus enlarges	Not angulated	Angulated at the pont where cercus enlarges
Tooth of dorsal margin of cercus in lateral view	Absent	Present	Hardly visible
Cercus in relation to paraprocts	Only slightly longer	Only slightly longer	Much longer
Distal dilation of cercus in lateral view	Very evident	Absent not evident	Very evident
Ventral margin of distal half of cercus	Straight	Straight	Rounded
Tip of penis filament in ectal view	Spoon-shaped	Shoe-shaped	Information not available
Tip of penis filament in lateral view	Pin-shaped	Subtriangular	Subtriangular
Dorsum of abdomen S8-S9	Dark brown	Blue	Dark brown
S10	Black with ventro- lateral pale spot	Blue with ventro- lateral black stripe	Dorsally bluish, laterally brown

 Table I

 Main characters separating Palaemnema brasiliensis, P. edmondi and P. brevignoni

species share wings totally hyaline, propleuron pale, apex of cerci not excised, penis type B and dorsal surface of apex of paraprocts in posterior view with two teeth. The characters separating these three species are shown in Table I. The specimens of *P. brasiliensis* were collected flying or perched on sticks near the ground, near a shallow pool in a shady and humid forest.

ZOOGEOGRAPHIC CONSIDERATIONS

The family Platystictidae, represented in the New World by the genus Palaemnema, is distributed from southern United States (2 species) to Peru. Twenty five species were so far known from South America that makes 26 with *P. brasiliensis*. They are distributed in the following countries (Fig. 6, map): Venezuela (8), Colombia (7), Ecuador (7), Peru (4), French Guiana (1), Brazil (1). Since *P. brevignoni* has been reported from French Guiana and Venezuela (TSUDA, 2000), it is likely that it occurs also in Surinam and Guyana. Thus we have a very



Fig. 6. Palaemnema distribution in South America.

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unusual distribution in which a tropical forest genus (PAULSON, 2006) that occurs in the countries surrounding the northern and northwestern parts of Brazil had never been recorded in this country. The area to which these countries are neighbours involves 5 Brazilian states and contains the majority of the Brazilian Amazon forest. It is difficult to explain this distribution only by zoogeographical factors. I believe, the most probable explanation has to do with the difficulty in collecting specimens of *Palaemnema*, as already pointed out by CALVERT (1931) and KENNEDY (1938). The former author states that "Because of their position near the ground and because of the banded, dull coloration, they are very difficult to see while the collector stands upright". KENNEDY (1938) mentions that E.B. Williams took large series by crawling on hands and knees which put his eyes low enough to see the contour of the dragonfly rather than its colour". It is very likely, therefore, that further collecting at the adequate sites in the Amazonian forests of Brazil using the above mentioned strategy will reveal a great number of new Palaemnema species. This is in agreement with KALKMAN et al. (2008) who place Platystictidae among the families with relatively many undescribed species due to their inconspicuous habits and small ranges.

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