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AMPHICNEMIS BRAULITAE SPEC. NOV. FROM CAMIGUIN ISLAND, THE PHILIPPINES (ZYGOPTERA: COENAGRIONIDAE)

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The new sp. is described, illustrated and compared with the other 3 spp. of the Amphicnemis forcipata Brauer-group. Holotype ♂: Philippines, Camiguin, Guinsiliban, Lilob, 30-IV-2003; deposited in RMNH, Leiden. A few notes on the ecology are provided.

INTRODUCTION

The genus *Amphicnemis* is one of the most speciose and widely distributed groups of the Philippine damselflies. Currently, ten described species and some 14-15 partly unverified new taxa are known from the country (HÄMÄLÄINEN & MÜLLER, 1997), all endemic to the Philippines. During a recent survey of the odonate fauna of Camiguin Island (VILLANUEVA, 2005) a population of an *Amphicnemis* species was found in a small Nipa swamp in Guinsiliban on the southeastern coast of the island. A male specimen was sent to Dr Matti Hämäläinen (University of Helsinki, Finland) for study, and he kindly informed that it represents an undescribed species.

AMPHICNEMIS BRAULITAE SP. NOV.

Figures 1-4

Material. – Holotype ♂: Philippines, Camiguin Island, Guinsiliban, Lilob, 30-IV-2003, R.J. Villanueva leg. Deposited in the National Museum of Natural History Naturalis (RMNH) in Leiden. – Paratypes: 4 ♂, 3 ♀, from the same locality as the holotype, 8-IV-2001, 27-III- 2003, 30-IV-2003, R.J. Villanueva leg., all in R.J. Villanueva collection, but 2 ♂ and ♀ paratypes will be deposited at RMNH, Leiden.

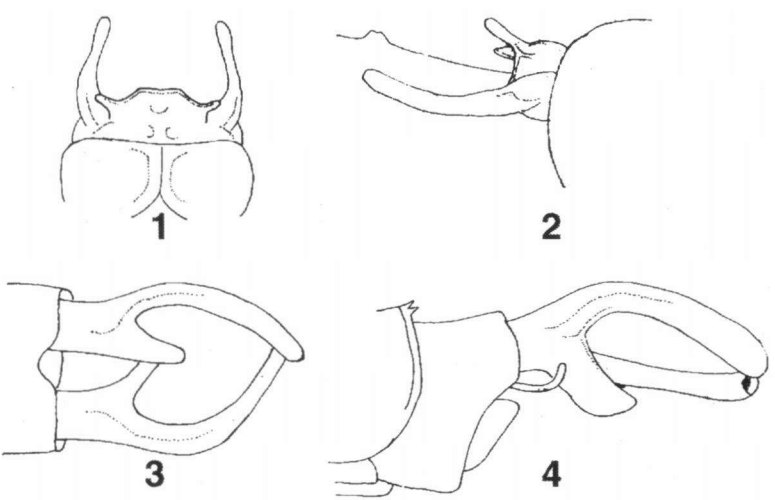
Etymology. – The species is dedicated to my grandmother Braulita Torayno.

MALE (holotype). – Head. – Labium whitish; labrum furnished with paired me-

dial depressions, black with the anterior third beige; genae yellow green; base of mandibles partly dark brown. Anteclypeus with sinuous pale bluish stripe; postclypeus black; anterior surface of frons with yellowish band interrupted by black in the middle; frons above, vertex and occiput black, with metallic green reflections. Antennal scape black with obscure yellow band in frontal portion, pedicle black with yellow apical ring, 3rd segment dark brown, partly pale in front, rest of antennae dark brown.

Thorax. – Prothorax (Figs 1-2) metallic blue-green, lower part of the anterior lobe and the lower side of median lobe beige. The median lobe is smooth and only slightly raised. The middle portion of the posterior lobe is low, broad and fan-shaped directed rearward; on its sides furnished with elevated, sharply pointed processes which are directed upwards and outwards. Lateral portions of the hind lobe develop into long horn-like processes, directed nearly straight rearward and forming almost a right angle with the projecting part of the middle lobe. The horns are just reaching the "tooth" on the dorsal carina of the synthorax. Their basal part is flat, triangular with median ridge, at the root of the remaining cylindrical portion, which becomes slightly enlarged at its apical 1/4, that bends slightly inward, with blunt smoothed tips.

Synthorax. – Mesepisternum entirely metallic green. Dorsal carina furnished with a small "tooth", projecting forward, and arising less than 1/4 of the synthorax length from the prothorax. Mesinfraepisternum metallic green except on lateral and ventral borders that are yellow. Mesepimeron partly metallic green, partly yellow brown. Metepisternum beige except for a large triangular metallic green patch near the wing base. Metepimeron and ventral side of synthorax entirely beige.



Figs 1-4. *Amphicnemis braulitae* sp. n., holotype ♂: (1) prothorax, dorsal view; – (2) posterior lobe of prothorax, right lateral view; – (3) anal appendages, dorsal view; – (4) same, left lateral view.

Legs. – Coxa and trochanter beige, but little darker than metepisternum. The femora and tibia are beige, with black streak along the joints. Spines black. The fore femora have three long and four short pairs of spines, middle and hind femora have four long pairs while the tibia has irregular number of long spines.

Wings. – Hyaline, black veins. Neuration of the genus; petiolation ceases before Ac, arculus in both wings opposite 2nd antenodal cross-vein, middle fork is at subnodus. There are 11-13 postnodal cross-veins in both wings. R3 is between Pnx5-6; IR2 is opposite Pnx10; IR3 1/4 of cell length off subnodus. The dark brown pterostigma nearly rectangular, with subcostal side slightly longer than costal side.

Abdomen. – In dorsal view, S1-S2 and S10 slightly broader than S3-S9. In lateral view, S1-S2, S8-S10 and apical portion of inflating S7 slightly broader than S3-S6. S10 half as long as S9. S9 about half as long as S8. S7 longer than S8-S10 combined. S2-S8 and S10 dark metallic green in dorsal half, beige in ventral half. S1 beige, with metallic colour restricted to a large triangular patch, with base on the apex. S9 mostly metallic green, with large infero-apical yellow spot and beige ventral portion.

Anal appendages (Figs 3-4). – The superiors slightly shorter than segments 9 and 10 together, white, forked at basal 1/3 of total length after broad joint base, with upper fork arching downward and inward. Basal portion of upper fork slightly oval, where bend inward becomes flatter. The apices overlap each other and contain white bristles, with small tubercle on the tip, pointing forward in upper fork and rearward in the lower. Lower fork robust, interior triangular branch directed about 45° downward inward, in the rear furnished with a white bristle. Vermiform process at the base of superior appendages narrow and elongated, clearly visible in lateral position and directed parallel to basal margin of the lower branch of superior. Inferior appendage with a short tubercle, clearly visible in lateral view, with fine whitish bristle.

Measurements (in mm). – [Holotype]: abdomen (incl. appendages) 35, hind wing 21; – [Paratypes]: abdomen 35-39, hind wing 21-23.

VARIATION IN PARATYPE MALES. – The structure of prothorax is identical in all paratypes, although there are small differences in the middle portion of the posterior lobe. Some specimens have a broader middle portion and others have a slight median depression unlike the holotype which is nearly flat. The lateral horns of the posterior lobe may bend slightly inwards, about 1/4 of the entire length at apex, or project nearly straight rearwards. The basal vermiform process of the superior appendage may be curved upwards instead of running along the lower fork of the superior appendage. The colouration is fairly constant though some specimens have a darker metallic colour and some tend to be more bluish than others, some vary in the shape of the metallic patch in mesepimeron, probably largely an age-dependant variability.

FEMALE. – Resembles closely the male, differing only in as follows: some have shorter horns in the hind lobe of prothorax, not reaching the "tooth" of synthorax, mesinfraepisternum has reduced metallic color, mesepisternum has metallic colour limited as a large streak in same area of the male. Abdomen much shorter than male; S1 lacks the triangular metallic green spot which appears only as a large dorso-apical band; S1-

S8 nearly of equal broadness; S9 a quarter broader. Pterostigma smaller, nearly squarish; 13-14 postnodals in both wings. The ovipositor is longer than segments 9 and 10 combined, furnished with a black stylus.

Measurements (in mm). – Abdomen 32-35, hind wing 21-24.

DISCUSSION. – The new species belongs to the same group as *A. furcata* Brauer, 1868 and *A. circularis* Lieftinck, 1974, which are characterized by a branched superior and a rudimentary inferior appendages in males (see figures in LIEFTINCK, 1957, 1974). HÄMÄLÄINEN & MÜLLER (1997) recognized also *A. dentifer* (Needham & Gyger, 1939), of which only the female has so far been described, and three still unnamed taxa as being referable to this group.

A. braulitae sp. n. male differs clearly from its congeners, *furcata*, *circularis* and *dentifer* (M. Hämäläinen has kindly provided information on the undescribed *dentifer* male) in the structure of anal appendages and hindlobe of prothorax. In *braulitae* the lower branch of the forked superior appendage is considerably longer and robuster than in the other species. Moreover, in *braulitae* the peculiar vermiform rudiment ventrally at the base of superior appendage is longer and more visible than in *furcata* and *circularis*; in *dentifer* it is missing. Unlike in the other species, the middle portion of the posterior lobe of prothorax has two obliquely elevated pointed processes. The "tooth" on the middorsal carina of synthorax is smaller than in *circularis* and *dentifer* (completely lacking in *furcata*).

NOTES ON ECOLOGY. – The type locality, a Nipa swamp at Lilob, is surrounded by ricefield in the North and South, shoreline in the East and by a provincial road in the West, and has an area of ca 5 hectares. The swamp is divided by a large pond that traverses from the road to the coast, and it is separated from the sea by a sandbar less than 3 m wide during the high tides. The deepest part of the muddy pond reaches 4 m and its widest point is about 5 m. *Amphicnemis* was found only on the northern side. Lush *Nipa fruticans* trees cover the area that supports also ferns and several species of grass and vine and it is dotted also by mangrove trees. The ground is muddy, with plenty of decaying vegetation. During extremely high tides the water level in the area rises.

Amphicnemis prefers a cool, shady and moist area, with plenty of vegetation. It flies low above the ground, ca 2 feet. Some were seen hovering 2 m above the ground, but always about 2 ft above the vegetation. It perches on any substrate: twig, leaf, *Nipa* or tree trunk, vine or rock – as long as the perching site is not exposed to direct sunlight. Pairs in tandem were observed about 10-12 AM and the oviposition takes place on moist or muddy ground rich in humus. Observations were made during March-May and October-December, but adults are probably present throughout the year.

Several similar habitats in the island, particularly near the type locality, were explored but *A. braulite* was not seen there. Unless the species can be found in other localities, its status is endangered. Particularly so as the type locality is situated close to a town.

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