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SHORT COMMUNICATIONS

MACROTHEMIS MEURGEYI SPEC. NOV. FROM GUADELOUPE (ANISOPTERA: LIBELLULIDAE)

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The new sp. is described and figured from specimens of both sexes, collected from Guadeloupe in the Caribbean Sea. Holotype ♂: Guadeloupe, Basse Terre, Habitation Deravin, SE of Pigeon, 9-II-2006; deposited at FSCA, Gainesville/FL, USA. The sp. is closely related to *M. imitans* Karsch from eastern South America. The all-black abdomen can readily separate it from *M. imitans*.

INTRODUCTION

According to MAY (1998), the genus *Macrothemis* consists of 39 neotropical species and one subspecies. NEEDHAM et al. (2000) treat the subspecies *M. imitans leucozona* Ris as a full species, bringing the total to 40 described species. I describe *M. meurgeyi* sp. n., a species closely related to *M. imitans* Karsch, from which it can be separated by the all-black abdomen, hamuli morphology, and the abdominal appendages. The new species appears to be restricted to Guadeloupe. Larva material is available for its future description.

MACROTHEMIS MEURGEYI SP. NOV.

Figures 1-6

M a t e r i a l. – **Holotype** ♂: GUADELOUPE, Basse Terre, Habitation Deravin, SE of Pigeon, 9-II-2006, Jerrell J. Daigle (JJD): – **Allotype** ♀: same data but Source Sulfureuse de Sofaïa, Rivière Salée, 6-II-2006, Francois Meurgey (FM); – **Paratypes** (3 ♂, 1 ♀): same data as holotype, 1 ♂ (JJD); same data as holotype but 11-II-2006, 1 ♂ (FM); same data as holotype but Sofaïa, Sainte Rose, 1-II-2006, 1 ♂ (FM); same data as allotype but Rivière Lezard, middle course (upper part) near Chemin

de Diane, 20-III-1979 "F/GU/16/20.3.1979", Coll. by the Austrian Mission 1979 of the Institute of Zoology of the University of Vienna. From Prof. Dr. Ferdinand Starmühlner, 1 ♀, FSCA (Florida State Collection of Arthropods). The holotype and the Rivière Lezarde paratype female are deposited in the Florida State Collection of Arthropods (FSCA), Gainesville, Florida, USA. The allotype is deposited in the Museum of Natural History, Nantes, France. The remaining paratypes are in the collections of Jerrell J. Daigle and François Meurgey.

Etymology. – The species is named for François Meurgey, a tireless French researcher currently studying the Odonata of the French West Indies.

MALE (**holotype**). – Head. – Eyes in life blue. Face blackish-brown, labrum and mandible dark brown. Labium black with 2 small posterior pale spots. Antefrons pale yellow with blackish smudges anteriorly. Postfrons and vertex metallic blue. Antennae with flagella broken off, basal and second segments black. Occiput dark brown and glossy. Rear of head brown with central pale spot. Face, occiput, and rear of head with black hairs.

Thorax. – Prothorax and lobes dark brown. Pterothorax blackish-brown (Fig. 1). Mesepisternum with small bluish-green oval spot anteriorly near base of wing. Mesepimeron with non-contiguous bluish-green basal spot and a longer bluish-green stripe anteriorly. Metepimeron with triangulate ventral bluish-green spot and two small bluish-green dots anteriorly near base of wing. Venter dark brown.

Wings. – Venation black, pterostigma dark brown. Wings mostly hyaline with yellowish tinges from base to slightly beyond nodus (Fig. 1). Forewings with 12 ½ - 13 ½ antenodal crossveins and 8 postnodal crossveins. Hindwings with 10 - 10 ½ antenodal crossveins and 9 -10 postnodal crossveins.

Legs. – Armature and legs black. Hind femora with 10-11 subquadrate teeth with the proximal apex margins directed posteriorly. Tarsal claw and tooth subequal.

Abdomen. – Entirely black, dorsally (Fig. 2) and ventrally. Appendages black. View dorsally, cercus slightly constricted about 0.50 its length (Fig. 3). Apex acuminate. In lateral view, ventral margin of cercus angulating into broad triangle with a low, blunt tooth about 0.75 its length (Fig. 4). Epiproct extends about 0.90 of cercus length, narrowing to apex with two small teeth. Hamule long and slender, broadest at base (Fig. 5), then sharply decurved at apical third.

Measurements (mm). – Total length including appendages 42.0, abdomen 30.5, forewing 29.5, and hindwing 29.0.

FEMALE (**allotype**). – Head. – Eyes in life blue with bluish-red tinges dorsally. Face similar to holotype male, but much darker. Black antennae complete with all segments intact.

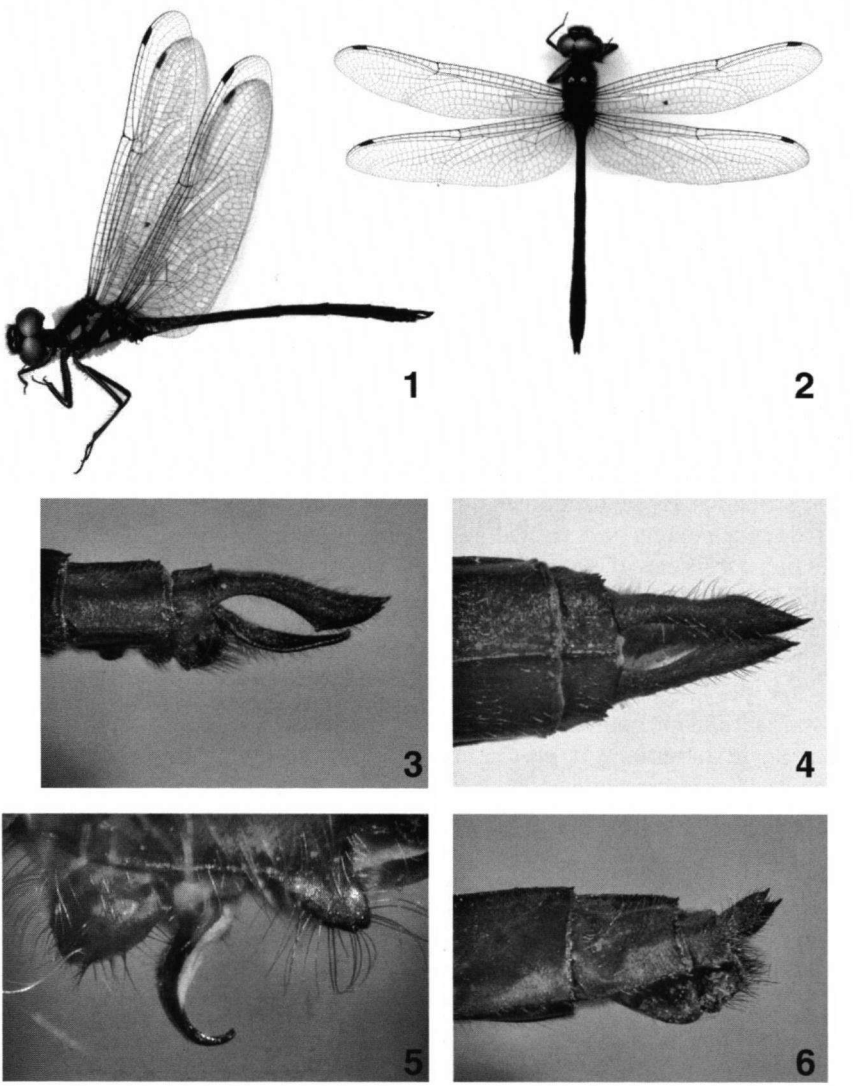
Thorax. – Darker, similar to holotype male but without pale spots on upper mesepisternum and metepimeron.

Wings. – Venation black, pterostigma dark brown. Wings mostly hyaline with orangish-brown area at base of both fore- and hindwings. Forewing with orangish-brown area in apical ¼ of wing. Forewings with 12 ½ antenodal crossveins

and 8 postnodal crossveins. Hindwings with 9-10 antenodal crossveins and 9-10 postnodal crossveins.

Legs. – Armature and legs black, hind femora with short stout spines, not subquadrate as in males. Tarsal tooth and claw subequal.

A b d o m e n. – As in holotype. Entirely black, dorsally and ventrally. Cer-



Figures 1-6. *Macrothemis meurgeyi.* Paratype ♂ (1-2), holotype ♂ (3-5), and allotype ♀ (6): (1) lateral view; – (2) dorsal view; – (3) lateral view of caudal appendages; – (4) dorsal view of appendages; – (5) lateral view of hamule; – (6) lateral view of ovipositor.

cus black, conical about 0.75mm long, slightly constricted just before acuminate apex. Ovipositor black (Fig. 6), extending almost to end of segment 10.

Measurements (mm). – Total length including appendages 39.0, abdomen 27.0, forewing 30.0, and hindwing 30.0.

VARIATION AMONG PARATYPES. – Paratypes similar to holotype and allotype, but orange tinges in wing vary. Total length (mm) of ♂ ranges from 37.0-38.5, ♀ 36.0; abdomen ♂ 27.0-28.5, ♀ 32.0; forewing ♂ 27.5-29.5, ♀ 33.0; hindwing ♂ 25.0-28.5, ♀ 31.5. Postnodal crossveins in forewing ♂ 11 ½-13 ½, ♀ 12 ½ and hindwing ♂ 8-10, ♀ 8/9.

DISCUSSION

Macrothemis meurgeyi is known only from Guadeloupe. Its nearest relative, *M. imitans* Karsch ranges from Trinidad to eastern Brazil, and Argentina. Males of *M. meurgeyi* can be distinguished from *M. imitans* males by the all-black abdomen, the greatly reduced or missing lateral expansion of abdominal segments 7-9, and the much reduced ventral tooth on the cercus. The females of *M. meurgeyi* can be differentiated by the metallic purple postfrons which is mostly orange with a trace of purple near the vertex in *M. imitans*. Also, the large metepimeral spot in *M. imitans* is obscured or missing in *M. meurgeyi*. The all-black abdomen in *M. meurgeyi* females can help separate it from *M. imitans* females, which have a pale striped or spotted abdomen, just like *M. imitans* males.

Odonata workers have treated *Macrothemis leucozona* Ris either as a full species or a subspecies of *M. imitans*, mostly because of the fused pale mesepimeral stripe found in the former. On this basis, it can be differentiated from *M. meurgeyi*, which has two separate pale mesepimeral spots. *M. leucozona* ranges from Texas in the United States south to Bolivia. *M. proterva* Belle from Venezuela does have an all-black abdomen, but the pale brown thorax lacks the bluish-green antehumeral and metepimeral markings found on the blackish-brown thorax of *M. meurgeyi*. In addition, *M. proterva* has 5-6 ventral teeth on the cercus while *M. meurgeyi* has only one much reduced tooth.

Upon examination of specimens identified as *Macrothemis celeno* and *M. hemichlora* (Burmeister) from Guadeloupe, the records for GOYAUD (1994) and DONNELLY (2000) respectively, are now attributed to the new species. *M. celeno* Selys is found only in the Greater Antilles. The smaller size (37.0-42.0 mm), all-black abdomen, and yellow patterned wings of *M. meurgeyi* will separate it from *M. celeno* which is larger (44.0-50.0 mm), has pale spots on the abdomen, and hyaline wings. Also, the mesepisternal pale stripe is shaped like an inverted "L" in *M. celeno* whereas in *M. meurgeyi*, it is reduced to a small oval spot. *M. hemichlora* has only been taken in Central and South America. It can be separated from *M. meurgeyi* by several small ventral teeth on the cercus. The long pale mesepisternal stripe of *M. hemichlora* will separate both males and females from

M. meurgeyi males and females, which have the mesepisternal stripe reduced to a small oval spot.

Macrothemis meurgeyi found on montane rocky streams up to 1100 feet. Adults have been observed either flying high or perching on rocks in the middle of streams and small rivers. Emergence takes place on a rock between the water level and a height of about 0.5 feet. The Sofaïa site was in a pristine forested area and companion species included *Protoneura* n. sp., *Argia concinna* (Rambur), and *Enallagma coecum* (Hagen). At the Habitation Deravin site, males were collected either patrolling a small grassy ditch flowing with clear water coming down the mountainside or along the road flying high 10-15 feet up. Notable companion species at this site were *Orthemis macrostigma* Rambur, *Scapanea archboldi* Donnelly, and *Tramea abdominalis* Rambur.

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