

**MACROTHEMIS ULTIMA SPEC. NOV., A NEW DRAGONFLY  
FROM THE STATE OF JALISCO, MEXICO  
(ANISOPTERA: LIBELLULIDAE)**

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It is described from 9 ♂ (holotype ♂: nr E. Tuito, Jalisco, 25-XI-1990; deposited in UNAM, Mexico). Along with *M. inequiunguis* Calv., the new sp. is distinguishable from all other Mexican *Macrothemis* spp. by the shortness of tarsal tooth. Its affinities and differences with *M. inequiunguis* and *M. aurimaculata* Donnelly are discussed.

**INTRODUCTION**

The genus *Macrothemis* comprises a group of 36 described species of neotropical dragonflies. In Mexico, it is represented by *M. delia* Ris, *M. extensa* Ris, *M. hemichlora* Burm., *M. imitans* Karsch, *M. inacuta* Calv., *M. inequiunguis* Calv., *M. musiva* Calv. and *M. pseudimitans* Calv. (PAULSON, 1982). *M. inequiunguis* is the only Mexican species belonging to the "*M. tessellata* group" (sensu COSTA, 1990), characterized by the short tarsal tooth. Here I describe *M. ultima* sp. n., a species closely related to *M. inequiunguis*, from which it is distinguished by the coloration of head, thorax and abdomen, and by the morphology of posterior hamuli and abdominal appendages.

**MACROTHEMIS ULTIMA SPEC. NOV.**

Figures 1-8

Material -- Holotype ♂: Mexico, Jalisco state, 4 km N & 6 km E of El Tuito on road to El Coale (820 m), 25 XI 1990, E. González leg., Paratypes 8 ♂ same data as holotype, E. González, E. Ramirez and J. Villa leg. The holotype and four paratypes are deposited at UNAM, Mexico. Other paratypes will be deposited at IORI (Gainesville), USNM (Washington) and in T. W. Donnelly's and R.W. Garrison's collections.

**Etymology** - The name is derived from the latin "ultimus" = last, because it is the last species of the "*tessellata*" group which has thus far been described.

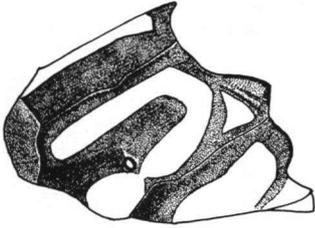
**[MALE] holotype.** **H e a d:** Labium, mandibles and labrum black, anteclypeus dark gray, postclypeus grayish blue; frons shiny black with metallic blue reflections excepting a pale line along the fronto-clypeal suture, and with a deep median sulcus; vertex shiny black with metallic blue reflections excepting an opaque line on posterior margin; occiput dark brown; rear of head dark brown with three pale spots, a large suboval postoccipital spot and one spot on each postocular lobe; face, occiput and rear of head with dark hairs.

**T h o r a x:** Prothorax brown, with a pale band on anterior margin of anterior lobe and a dorsal spot on middle lobe, posterior lobe yellowish brown; pterothorax dark brown with pale green as follows: antehumeral stripe tapering anteriorly, abruptly widening posteriorly forming a capitate club; a stripe on mesepimeron and metepisternum, these two stripes connecting dorsally forming an inverted "U" spot, an isolated small pale triangular on dorsoposterior margin of metepisternum, metepimeron mostly pale with a wide brown stripe along metapleural suture and an ill-defined brownish band near dorsoposterior angle (Fig. 1).

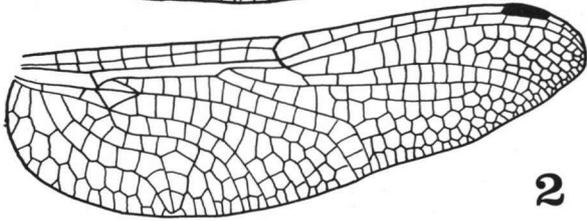
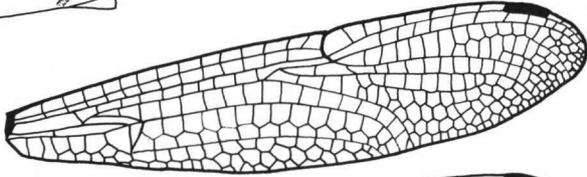
**W i n g s.** - Venation black, pterostigma dark brown, nodal formula:  $7:13 \frac{1}{2} - 12\frac{1}{2}:7$  (FW) and  $8:10-9\frac{1}{2}:8$  (HW), discoidal index 0.80, hind wings with two cubitoanal crossveins (Fig. 2). Legs black, with procoxae, protochanter and 0.75 of inner surface of profemur pale green, hind femur armed with 9 (LHF) and 11 (RHF) truncated, posteriorly directed spines (Fig. 3), tarsal tooth shorter than claw (Fig. 4).

**A b d o m e n.** - Black, pale green as follows: lateral sides of 1; anterodorsal, anteroventral and posterolateral spots on 2, the last vertically elongated; seg. 3 with a lateral stripe extending 0.8 the length of segment interrupted only by transverse carina, basally confluent with ventral pale stripe along ventral margin of tergite; seg. 4 with small dorsolateral spot at base, a thin elongate dorsolateral stripe and a narrow pale stripe along ventral margin of tergite, in 5 same maculation but more reduced, 6 entirely black except for narrow white stripe along ventral margin of tergite, segs 7-9 laterally expanded, a large spot on 7 covering most of tergum and with narrow white stripe along ventral margin of tergite, segs. 8-10 black (Fig. 5). Abdominal appendages black, in dorsal view cercus swollen and converging at 0.50 of its length, in lateral view ventral margin concave in basal 0.60 and with a tooth at 0.70 of its length, epiproct extending 0.90 the length of cerci and ending in two small dorsal teeth (Figs 6-7). Accessory genitalia as in Figure 8.

**Figs. 1-8** *Macrothemis ultima* sp. n., ♂: (1) thoracic colour pattern (holotype); - (2) right pair of wings (paratype); - (3) left third femur (holotype); - (4) hind tarsal claw (holotype); - (5) terminus of abdomen, dorsal view, (paratype); - (6-7) abdominal appendages, dorsal and lateral views (holotype); - (8) accessory genitalia, lateral view (holotype).



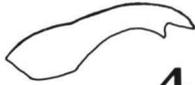
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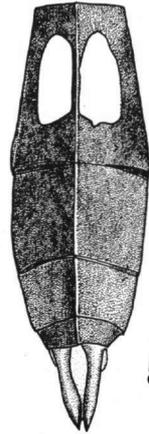
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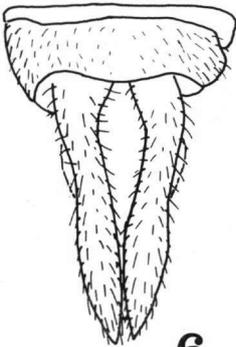
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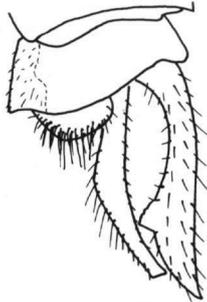
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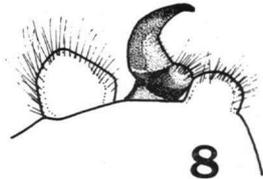
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8

Measurements (in mm). - Body length (incl. app.) 38.8, hind wing 30.0, cerci 1.79, epiproct 1.49. Paratypes (mean in brackets): 32.5-37.9 (35.6), 28.5-30.0 (29.3), 1.74-1.91 (1.84), 1.45-1.53 (1.48).

PARATYPES. - Little variation was observed among paratypes possibly due to the restricted collecting area. Six of nine specimens have the posterior lobe of prothorax dark brown. The number of hind tibial spines ranges from 9-12 (10.6) (left) and 9-13 (11.0) (right). Discoidal index varies from 0.60 to 0.80.

## DISCUSSION

*M. ultima* (sp.n.) and *M. inequiunguis* are the only Mexican species of the genus having the apex of the tarsal claws longer than the inferior tooth. Males of *ultima* are distinguished from those of *inequiunguis* by the larger size and darker coloration. The hind wings of *inequiunguis* average 26.4 mm (25.1-27.5, N=11) (24.5-28, in CALVERT, 1895). *M. inequiunguis* is a paler species having the sides of the synthorax pale green with ill defined brown stripes on interpleural and metapleural sutures, in *ultima* there are two conspicuous brown stripes on these structures. Other differences are: *ultima* has two cubitoanal crossveins while *inequiunguis* has one; the ventral tooth of the cerci in *ultima* is more distally located compared to *inequiunguis* (0.70 vs 0.60 of cerci length, see CALVERT, 1895, fig. 40). In size and maculation, males of *ultima* resemble *aurimaculata* Donnelly although the pale spots on seg. 7 are pale green in *ultima* and pale orange in *aurimaculata*. Other structural differences are: The internal margin of the hamule in *aurimaculata* is evenly curved throughout while the same part in *ultima* is straight in its basal half. The cercus of *aurimaculata* has a small ventral tooth while *ultima* has a well developed subtriangular tooth (for comparison see figs 2-4, in DONNELLY, 1984).

BIONOMICS. - Specimens of *M. ultima* were collected at a small stream running through a transitional pine-oak forest. The stream has a bed of large rocks. Males were taken while slowly flying up and down stream as is typical of members of this genus. They sat on upper surfaces of leaves instead of on rocks, similar to *M. proterva* (BELLE, 1987). Other libellulids which seem to breed in the stream are the rare *Paltothemis cyanosoma* Garrison and *P. lineatipes* Karsch.

## ACKNOWLEDGEMENTS

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