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The female of paltothemis cyanosoma garrison (odonata: libellulidae)
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The genus *Paltothemis* Karsch has been included within the subfamily Trithemistinae (Bridges, 1993), although its taxonomic affinities within the group remain unclear. The genus has a particular distributional pattern with one widely distributed species: *P. lineatipes* Karsch (ranging from southwestern USA to Panama) and two species with restricted distributions: *P. cyanosoma* Garrison, a species apparently endemic to western Mexico, and *P. nicolae* Hellebuyck, a recently described species restricted to the highlands of El Salvador (Hellebuyck, 2002). *Paltothemis cyanosoma* is known from only a few specimens and from a few localities in Mexico (Garrison, 1973; González, 1993). In this paper I describe the unknown female sex of *P. cyanosoma* and compare it with those of *P. lineatipes* and *P. nicolae*.

**DESCRIPTION OF THE FEMALE**

*Paltothemis cyanosoma* Garrison


**Head.** Labium tawny, dark brown mesally; base of mandibles yellow, black antecapically, with red tips; labrum dark brown almost black, anteclypeus grayish, postclypeus olive green; frons tawny, dark brown at top (Fig. 1), dark color ex-
FIGURES 1-2. Head of Paltothemis cyanosoma (Fig. 1) and P. lineatipes (Fig. 2); frontal view.

tending laterobasally from base of antennae down below; vertex dark brown, with pale spot between lateral cones; antennae black; occiput dark olive green, posterior margin conspicuously convex and with tuff of short golden hairs.

Thorax. Brown, prothorax pale brown with dark brown stripes at middle lobe, posterior lobe dark brown; pterothorax dark brown with an incomplete “T” shape stripe on mesepisternum and with an additional tawny spot above middle part of humeral suture; a complete pale stripe on most part of mesepimeron connected above with a pale transverse stripe running below superior margin of pleurite; a short pale oblique stripe on metepisternum just above spiracle; a fully developed pale stripe covering most of metepimeron.

Venational characters (those for second female in parentheses): 12:16½ /15 ½:12 FW, 11:10/11:12 HW (11:12½/12 ½:11 FW and 12:9/10:11 HW); LFW triangle 2-celled, RFW triangle 3-celled; HW triangle 1-celled; HW subtriangle 3-celled; 3 cell rows in discoidal field in all wings (2 cell rows in all wings); arculus between first and second antenodal in all wings; one cubito-anal vein in all wings.

Abdomen. Dark brown with yellow spots and stripes as follows: 1-3 yellow laterally, segs. 4-9 with both dorsolateral and lateral yellow stripes gradually reduced apically, 9 with vestigial lateral spot, 10 with a dorsal spot only, cercus dark brown to almost black. Vulvar lamina with a conspicuous “V” incision (Fig. 3).


Diagnosis. Females of P. cyanosoma can be separated from those of both P. lineatipes and P. nicolae by the color of labrum, which is black in P. cyanosoma (Fig. 1) and pale in both P. nicolae and P. lineatipes (Fig. 2). Both P. cyanosoma and P. nicolae have a deep “V” shaped vulvar lamina but the angle is smaller than 90° (Fig. 3) in P. cyanosoma and larger than 98° in P. nicolae (see for comparison Fig. 16 of Hellebuyck, 2002). Females of P. lineatipes have a shallow incision which tends to be more “U” shaped (see Fig. 4).

Biological notes. P. cyanosoma was found at two separate sites during field collections. One of
FIGURES 3-4. Vulvar lamina of Palthothemis cyanosoma (Fig. 3) and P. lineatipes (Fig. 4); ventral view.

The second spot is located in Jalisco state, near El Tuito. Here P. cyanosoma was found at a small, exposed stream surrounded by transitional pine-oak forest at low altitude (860 m asl). At this site P. cyanosoma coexists with the common and widespread P. lineatipes. Other odonates found here are Hetaerina americana (Fabricius), H. occisa Selys, Argia oculata, A. oenea, A. ulmeca Calvert, the rare Protoneura rojiza González, Dythemis maya Calvert, Libellula croceipennis Selys and the rare Macrothemis ultima González. At both sites males of P. cyanosoma perched on exposed rocks at sunny spots, similar to habits described for P. lineatipes (Dunkle, 1978). P. nicolae differs also in its habits from these two species: “a forest species that prefers shaded clear cold water creeks with rocky bottoms intermixed with fine sand and pebbles” (Hellebuyck, 2002).

KEY TO PALTOTHEMIS

1. Frons metallic purple in males and dark brown in females; body dark in males; hind wing without a basal spot; labrum black (eastern Mexico) .......................... P. cyanosoma

1’. Frons red or iridescent blue in both males and females; body pale (orange or yellow orange) in males; hind wing with an orange or orange brown spot; labrum pale ................................. 2

2(1’). Abdomen of males patterned with orange and dark brown. HW in males (and also in some females) suffused with an orange coloration. Vulvar lamina with a shallow incision and with lobes relatively wide (USA to northern South America) .......................... P. lineatipes

2’. Abdomen of males patterned with gray and
brown. HW in males with a large basal orange-brown spot. Vulvar lamina with a deep incision and with lobes subtriangular (El Salvador) . 

\textit{P. nicolae}

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I dedicate this paper to the memory of Alicia Rodríguez Palafox, an enthusiastic entomologist and friend who always had a smile for all of us even in difficult times. This is for you Alice...