

**ACANTHAGRION HARTEI SP. NOV. FROM ECUADOR  
(ZYGOPTERA: COENAGRIONIDAE)**

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The new sp. is described and illustrated. Holotype ♂: Ecuador, Morona, Santiago prov., Bomboiza, 20-IX-1990, deposited in USNM, Washington. It is assigned to the *apicale*-group, and differs from the other spp. of that group by characters of the ♂ terminalia and genital ligula.

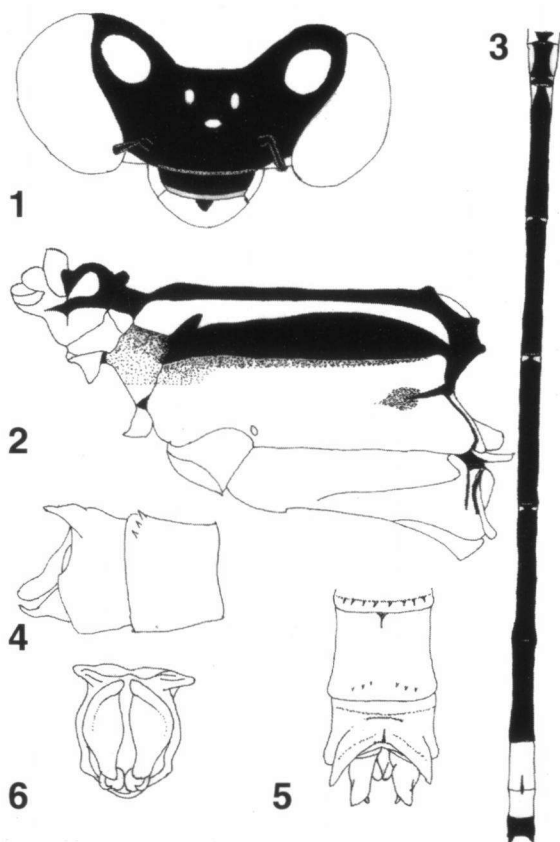
INTRODUCTION

The neotropical genus *Acanthagrion* is presently composed of approximately 41 species distributed from southern North America to 38° S in Argentina. LEONARD (1977) proposed nine species groups. The *apicale*-group includes *A. apicale* Sel., *A. obsoletum* (Förster) and *A. phallicornis* Leonard. The group is characterized mainly by the distal projection of male abdominal segment 10 into two dorsal horns. In addition, LEONARD (1977) characterized the group by the orange coloration of mature specimens and mesepisternal fossae impressed into a tubercle.

**ACANTHAGRION HARTEI SP. NOV.**

Figures 1-8

**Material.** — **Holotype** ♂: ECUADOR, Morona – Santiago prov., Bomboiza, 17 km S Gualaquiza, alt. 880 m, 20-IX-1990, O.S. Flint, Jr leg. — **Paratypes** (18 ♂): 16 same data as holotype; (2 ♂) Napo prov., stream E edge of Lago Agrio, 18-VIII-1980, S.W. Dunkle leg. (R.W. Garrison coll.). Holotype and 14 paratypes deposited in USNM, Washington, 2 paratypes in MLP, La Plata. — **Other material examined.** — *A. apicale*, 1 ♂: ECUADOR, Napo, P.N. Yasuni, swamp (00°39'03" S, 76°21'21" W), T.W. Donnelly leg., (MLP); — *A. obsoletum*, 1 ♂: ECUADOR, Napo, río Sindy (01°2'54" S, 77°44'48" W), alt. 50 m, 12-XI-1997, T.W. Donnelly leg., (MLP).



Figs 1-6. *Acanthagrion hartei* sp. n., holotype ♂: (1) head, dorsal view; - (2) thorax, lateral view; - (3) abdomen, dorsal view; - (4) terminalia, lateral view; - (5) same, dorsal view; - (6) same, posterior view.

stripe on the basal 0.5 external surface, tarsi and claws dark brown. Wings hyaline, pterostigma and venation black. Postnodals (fore/hindwings): 12/10. Origin of  $R_3$ , forewing at sixth, hindwing at fifth or sixth. Origin of  $IR_2$ , forewing at ninth or tenth; hindwing at ninth.

**A b d o m e n** (Figs 3-6). - Dorsal black pattern as in Figure 3. Tergites 1-2 greenish blue, pale areas on 3-6 pale blue, tergites 8-9 dark blue. Sternite 1 brown, except anterior margin and a narrow mid ventral stripe black. Sternites 3-9 brownish. Segment 10 ventrally pale, paraprocts brownish with black tips, cerci black. Horns of segment 10 as long as segment, apices acute (Figs 4-6).

**Genital ligula** (Figs 7-8). - Distal segment with two pairs of lateral lobes, the proximal one elongated with the apical tip rounded in dorsal (ectal) view and foot shaped in lateral view, basally with a small, pointed, caudally directed lobe; subapi-

**E t y m o l o g y**. - Named in honour of Miguel H a r t e, an Argentine plastic artist who give the first author a new and fascinating vision of insects.

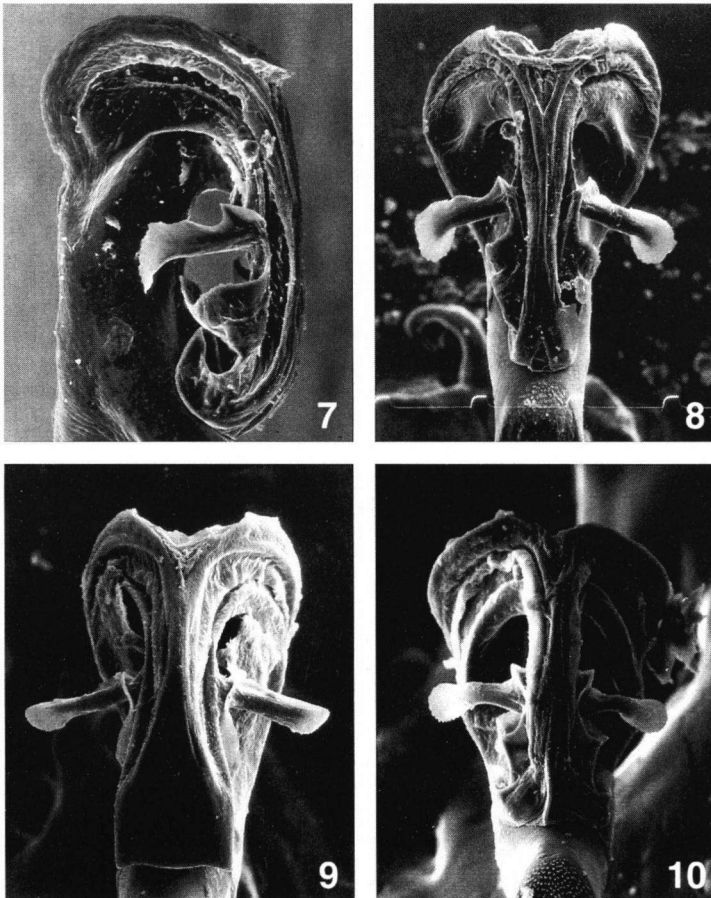
**MALE (holotype)**. - **H e a d** (Fig. 1). - Labium pale; labrum, mandibles, anteclypeus, genae and postocular spots pale blue, except a central black spot on the labrum posterior margin. Postclypeus black, except anterior margin and a small spot on each lateral corner, pale blue. Rear of the head pale. Antennae dark brown.

**T h o r a x** (Fig. 2). - Prothorax dorsally black, except anterior lobe brownish. Lateroventrally pale blue. Pterothorax pale blue, dark pattern as in Figure 2; venter of thorax pale. Legs: coxae and trochanters pale brown (probably pale blue in life), femora dorsally black, pale brown ventrally, tibiae pale brown with a black

cal lateral lobe subtriangular, base as wide as 1.5 of the base of the proximal one. Apex of distal segment with two heavily sclerotized recurved hooks.

Measurements (mm); (n = 17; holotype in [ ]). — Abdomen  $27.24 \pm 0.94$  [26.9], forewing  $18.67 \pm 0.53$  [18.2], hindwing  $17.50 \pm 0.59$  [17.0-17.1], pterostigma  $0.56 \pm 0.06$  [0.5-0.6]; cerci  $0.75 \pm 0.05$  [0.8].

VENATIONAL FEATURES (17 ♂). — Number of postnodals: forewing 10 (9%), 11 (65%), 12 (26%); hindwing 9 (44%), 10 (53%), 11 (3%). Origin of  $R_3$ , forewing, arising at fifth 35%, between fifth and sixth 62%, just before sixth 3%; hindwing between third and fourth 3%, at fourth 6%, between fourth and fifth 71%, just before fifth 20%. Origin of  $IR_2$ , forewing, at seventh 3%, at eighth 47%, at ninth 47%, at tenth 3%; hindwing at seventh 15%, between seventh and eighth 8%, at eighth 62%, at ninth 15%.



Figs 7-10. Males *Acanthagrion hartei* sp. n. (holotype, Figs 7-8), *A. apicale* (Fig. 9) and *A. obsoletum* (Fig. 10): (7) ligula, lateral view; — (8-10) same, ventral view.

## DISCUSSION

*Acanthagrion hartei* belongs to LEONARD's (1977) *apicale*-group because of the presence of dorsal horns on the tenth abdominal segment. Based on the morphology of the genital ligula, *A. hartei* would key out in LEONARD (1977) to *A. apicale* and *A. obsoletum*. All three species share the development of two pairs of lateral lobes of similar morphology and two distal recurved, heavily sclerotized hooks. Small differences occur in the shape of the proximal lateral lobes of the genital ligula and the distal margin of the terminal segment (Figs 8-10). The more proximal lateral lobes of the genital ligula in *A. hartei* are inflated distally as in *A. phallicornis* (not inflated in *A. apicale*), but the dorsal horns of abdominal segment 10 are divergent and acutely pointed (Figs 4-6) in *A. hartei* and *A. apicale*, not rounded as in *A. phallicornis* (LEONARD 1977, figs 82, 87). Abdominal segment 10 of *A. hartei* in lateral view (Fig. 4) is slightly higher than the preceding segment, whereas this same segment is much more strongly elevated in *A. apicale* (LEONARD, 1977, fig. 84). Although Leonard also characterized this species-group by the largely orange and black head and thoracic coloration in mature specimens, these structures are blue in the Gualaquiza males of *A. hartei*, and orange in the two paratypes from Napo province.

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