

***HETERAGRION ARCHON* SPEC. NOV.
FROM THE COASTAL CORDILLERA OF VENEZUELA
(ZYGOPTERA: MEGAPODAGRIONIDAE)**

J. DE MARMELS

Museo del Instituto de Zoología Agrícola "Francisco Fernández Yépez" (MIZA),
Facultad de Agronomía, Universidad Central de Venezuela, Apartado 4579,
Maracay 2101-A, Venezuela
demarmjc@gmail.com

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The new sp. is described and illustrated from a single ♂, which is compared with the holotype ♂ of *H. palmichale* Hartung. The two differ in colour pattern of head and shape of cerci. A map showing distribution of all four species of *Heteragrion* Selys occurring north of the Orinoco River is provided.

INTRODUCTION

The discovery of a new species of *Heteragrion* Selys at a place which seemed well explored, is surprising, and one is tempted to claim that this one must have come from somewhere else. This is probably untrue. The discovery in the nineties of *H. palmichale* Hartung in a similar habitat and at a similar elevation above sea level, only 70 km to the West from the locality of this new species indicates that there are still undiscovered, rare species within the Venezuelan coastal mountain cloud forest.

METHODS

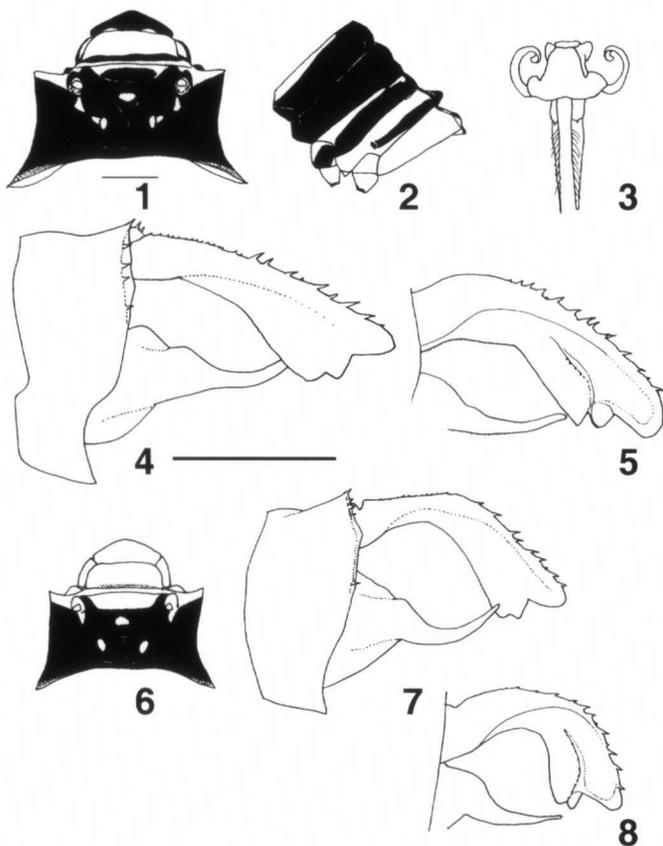
Drawings were made with the help of a camera lucida coupled to a WILD-8 stereomicroscope. All measurements are given in millimeters (mm). Total length and length of abdomen do not include caudal appendages; length of pterostigma refers to maximum extension between proximal radial and distal costal angles of forewing pterostigma. Terminology: Fw=forewing, Hw=hindwing, px=postnodal cross-veins, Pt=pterostigma of forewing. Numbers between parentheses refer to right wing. Wing vein nomenclature follows Riek & Kukalová-Peck (1984), hence "anal crossing" is called CuP.- All specimens examined are deposited in the collection of the Museo del Instituto de Zoología Agrícola "Francisco Fernández Yépez" (MIZA) of the Facultad de Agronomía, Universidad Central de Venezuela, at Maracay, Venezuela.

HETERAGRION ARCHON SP. NOV.

Figures 1-9

Material. — **Holotype** ♂: Venezuela, Aragua State, "Henri Pittier" National Park, Río Castaño, Regresiva del Diablo, 1350 m a.s.l., 10°21'30" N, 67°36' W, 15-VI-2006, J. De Marmels leg. (MIZA No. 17393).

Etymology. — The name is a noun in apposition: *árchon* (Greek) means leader, prince.



Figs 1-8. Structural characters and details of colour pattern in the male holotypes of *Heteragrion archon* sp. n. (Figs 1-5) and *H. palmichale* Hartung (Figs 6-8): (1) head in dorsal view; — (2) pterothorax (schematized); — (3) penis in ventral view; — (4) abdominal segment 10 with caudal appendages in left lateral view; — (5) right caudal appendages in left dorso-internal view; — (6) head in dorsal view; — (7) abdominal segment 10 with caudal appendages in left lateral view; — (8) right caudal appendages in left dorso-internal view. (Figs 1 and 6, and Figs 4, 5, 7, 8, respectively, are to scale: scale bar = 1 mm).

MALE (holotype). — **H e a d.** — Frons angled; labium and rear of head pale; labrum black with two yellow basal spots; mandibles laterally yellow with black margins; clypeus and face yellow; top of head black with ochreous twin-spot between each lateral ocellus and corresponding antenna; antenna black; black basal stripe along fronto-clypeal suture (Fig. 1). Compound eye in life black above, olivaceous green below.

T h o r a x. — Prothorax bright yellow laterally, almost entirely black dorsally: anterior and posterior lobes black, middle lobe also black, but its two humps encircled by obscure yellowish brown externally. Mesepisternum black with narrow yellow antehumeral stripe reaching upper fifth of humeral suture, then passing onto mesepimeron and ending as a yellow tear-shaped spot at antealar ridge. Mesepimeron black, except for said small yellow tear-spot. Metepisternum with black stripe extending between metathoracic spiracle and antealar sinus, including metaparapтерon. Metepimeron yellow, without traces of dark stripe (Fig. 2). Thoracic venter yellow, except for black spot between each, first and second pair of coxae. Legs dark brown (femora) to black (tibiae and tarsi), but coxae and trochanters largely yellow. Wings reaching to end of abdominal segment 6, slightly infumated; pterostigma brown, but pale-lined along margins, and covering more than two cells; venation black. Petiolation reaches beyond CuP; two postdiscal cells before subnodus. There are 25 px in Fw, 21(20) in Hw; RP3+4 originating very little proximally of subnodus; RP2 originating at px 10 in Fw, at px 8 in Hw; IR2 springing next to px 3 or 4 in all wings, and IR1 at px 13 (12) in FW, at 11(10) in Hw.

A b d o m e n. — Mostly black. Yellow are: sides of segments 1 and 2, a narrow mediiodorsal line on segment 2 and basal half of 3, a basal ring on 3-5, interrupted by black on each side of corresponding segment, and a streak lateroventrally on segments 3-6. Yellow lateral streak on segment 7 continuously widening toward segment tip. Segment 8 bright ochreous yellow, but with black, triangular dorsal spot extending from base of segment to about end of first third of segment's length, tapering and fading out along median carina. Segments 9 and 10 black dorsally, except for yellow on extreme base of 9. Venter of segments 8-10 bright yellow, sharply separated from dorsal black. Cercus black, base of paraproct yellow, distal process black. Cercus weakly arched ventrad, broadening towards trifid tip, where the dorsal, minutely denticulated ridge separates proximal prong from smaller middle prong. Paraproct long, robust (Figs 4, 5). Penis as illustrated (Fig. 3).

M e a s u r e m e n t s (in mm). — Total length 59.6; abdomen 49.0; cercus 1.7; Fw 36.0; Hw 34.5; maximum width of Hw 6.0; Pt 2.5.

FEMALE AND LARVA. — not known.

HABITAT. — The male was perching on a dead branch at the side of a small waterfall in total shadow, at about 11 a.m. The bed of the stony stream is about four meters wide where the holotype was collected (the stream is much narrower

elsewhere), and is covered by dense cloud forest. This 200-300 m part of the stream has been extensively explored many times since the nineteen fifties, and is thus far the richest known for Megapodagrionidae in Venezuela. Four genera and five species have been recorded up to date, i. e. *Heteragrion archon*, *Philogenia cassandra* Hagen, 1862, *P. ferox* Rácenis, 1959, *Sciotropis cyclanthorum* Rácenis, 1959, and *Teinopodagrion venale* (Hagen in Selys, 1862).

REMARKS. — The new species is similar only to *H. palmichale* with which it is closely related. Both are characterized by the following synapomorphies: Cercus arched downwards, expanding towards tip; tip apparently trifid, due to shortening of terminal branch and apical excision of internal branch as to suggest presence of a third, median branch separated from internal branch by denticulated dorsal ridge, and from terminal branch by distal fossa; paraproct long and robust, not spine-like. Total body size unusually large.

H. archon differs from *H. palmichale* in a series of character states. In spite of same total length, *H. archon* is a much more robust species. Wings in *H. archon* reach to end of S 6, but only to end of S 5 in *H. palmichale*; Fw is 6 mm and Hw 5.5 mm longer in *H. archon* than in *H. palmichale* (Fw 30 mm, Hw 29 mm). Maximum width of wings is 6 mm in *H. archon*, but less than 5 mm in *H. palmichale*. Venation is similar in both species, except that IR2 springs from px 3 or

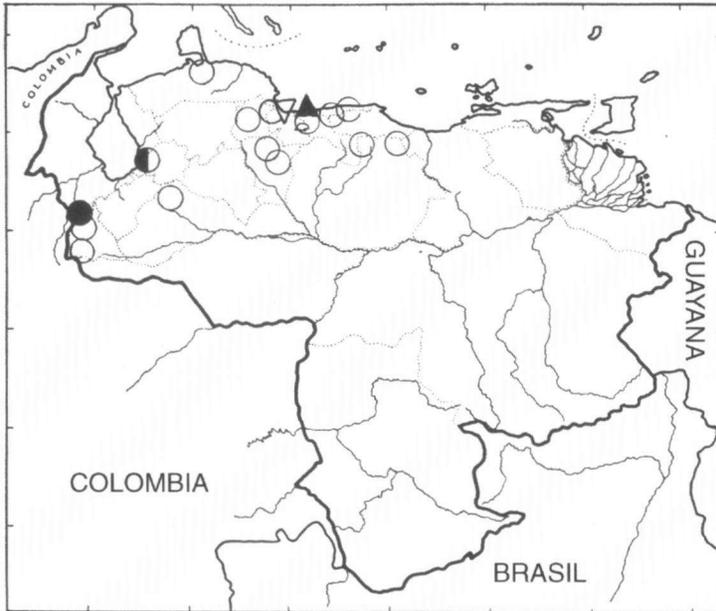


Fig. 9. Map showing known distribution of the four species of *Heteragrion* recorded north of the Orinoco River, viz. *H. archon* (solid triangle), *H. palmichale* (∇ inverted triangle), *H. mitratum* (● and ● circles), and *H. chrysops* (○ and ○ circles).

4 (Fw and Hw) in *H. archon*, but from px 6 (Fw) and 5 (Hw) in *H. palmichale*. The two species differ in color pattern of head (Figs 1, 6); cercus is considerably more arched ventrad in *H. palmichale* (Figs 7, 8) than in *H. archon*.

No other of the four species of *Heteragrion* recorded so far from north of the Orinoco river is known to live at similar elevations above sea level as do *H. archon* and *H. palmichale*. The other two species are *H. chrysops* Hagen, 1862, and *H. mitratum* Williamson, 1919 (see map in Fig. 9). Both are found below 800 m a.s.l.

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REFERENCE

HARTUNG, M., 2002. *Heteragrion palmichale* spec. nov., a new damselfly from the Cordillera de la Costa, Venezuela (Zygoptera: Megapodagrionidae). *Odonatologica* 31(2): 187-191.