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Sympetrum paramo sp. n. (Odonata: Libellulidae) from the Venezuelan high Andes, with a key to the species of *Sympetrum* Newman, 1833 found in Venezuela

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Abstract

De Marmels J. 2001. *Sympetrum paramo* sp. n. (Odonata: Libellulidae) from the Venezuelan high Andes, with a key to the species of *Sympetrum* Newman, 1833 found in Venezuela. Entomotropica Vol. 16(1):15-19.

The new species is described and illustrated on the basis of four males and one female (holotype ♂. Venezuela: Mérida State, Sierra Nevada National Park, Páramo El Tisure, Laguna Tisure, 3 650 m, 29.xii.1994; MIZA). Diagnostic characters are the strongly developed first white lateral thoracic stripe, the dark tibiae and the checkered abdominal pattern. A key to adults of all species of *Sympetrum* found in Venezuela is provided. The difference at the species level between *S. illotum* (Hagen) and *S. gilvum* (Selys) is confirmed and illustrations of important features of both are given.

Additional key words: Anisoptera, dragonflies, neotropical, taxonomy

Resumen

De Marmels J. 2001. *Sympetrum paramo* sp. n. (Odonata: Libellulidae) de los altos Andes venezolanos, con una clave para las especies de *Sympetrum* Newman, 1833 presentes en Venezuela. Entomotropica Vol 16(1):15-19.

La descripción ilustrada de la especie nueva se basa en cuatro machos y una hembra (holotipo ♂. Venezuela: estado Mérida, Parque Nacional Sierra Nevada, Páramo El Tisure, Laguna Tisure, 3 650 m, 29.xii.1994; MIZA). Caracteres de valor diagnóstico son la primera banda lateral blanca del tórax, única desarrollada, las tibias oscuras y el patrón variado de negro y amarillo del abdomen. Una clave para todas las especies del género *Sympetrum* presentes en Venezuela permite la identificación de los adultos. Se confirma la diferencia a nivel de especie entre *S. illotum* (Hagen) y *S. gilvum* (Selys). Para ambas especies se presentan ilustraciones de sus estructuras más importantes.

Palabras clave adicionales: Anisoptera, libélulas, neotropical, taxonomía.

Introduction

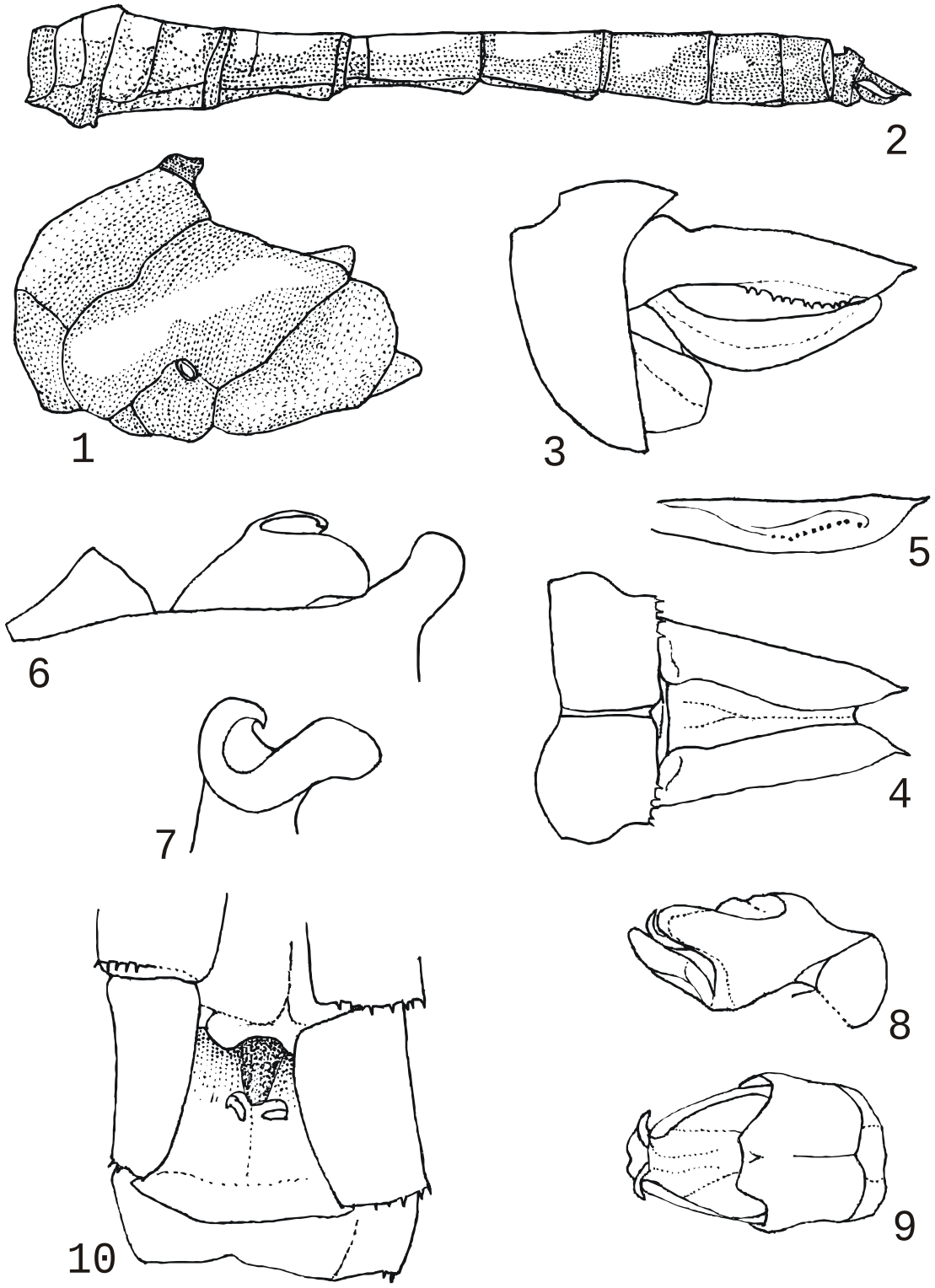
The genus *Sympetrum* Newman, 1833 is represented in Venezuela by five species, one of which is described below as new to science. *Sympetrum gilvum* (Selys, 1844) is widely distributed in the Andes and is the only species present in the Coastal Cordillera. *Sympetrum evanescens* De Marmels, 1992 and the new species are known each from two localities in the Cordillera of Mérida only, while the remaining two species, viz. *S. chaconi* De Marmels, 1994 and *S. roraimae* De Marmels, 1988 are restricted to Pantepui (Guayana Highlands).

The new species was collected in the Páramo life zone, between 3 500 and 3 650 m elevation, at natural lagoons high above tree line. Only *Aeshna marchali* Rambur, 1842 was also observed at one of the collecting sites (3 500 m). The holotype and two paratypes are deposited at the MIZA; the remaining two paratypes (males) are stored at the Museo de Artrópodos, La Universidad del Zulia, Maracaibo (MALUZ).

Sympetrum paramo sp. n.

(Figures 1-10)

Material examined (4 ♂♂, 1 ♀). **Holotype** ♂: Venezuela (Mérida State): Sierra Nevada National Park, Páramo El Tisure, Laguna Tisure, 3 650 m, 29.xii.1994, J. Camacho and M. García (MIZA). **Paratypes**: 3 ♂♂, same locality, date and collectors as holotype (1 ♂ in MIZA, 2 ♂♂ in



Figures 1-10. *Sympetrum paramo* sp. n.: **1**. pterothorax of holotype ♂ (left lateral view), **2**. abdomen, holotype (left lateral view), **3**. abdominal segment 10 with caudal appendages, holotype (left lateral view), **4**. same (dorsal view), **5**. left cercus of paratype ♂ (ventral view), **6**. secondary genitalia of second and third abdominal segments of paratype ♂ (right lateral view), **7**. right hamulus of holotype ♂ (right lateroventral view), **8**. penis of paratype (left lateral view), **9**. same (ventral view), **10**. abdominal segment 8 with vulvar scale of paratype ♀ (ventral view). (Figures not to scale)

The shape of the outer branch of the hamulus in *S. paramo* is unique in being slightly curved exad at tip. Otherwise the hamulus is similar to that of *S. evanescens*. The penis of all species is much alike, but most similar between *S. paramo* and *S. evanescens*. Noteworthy is the strong expression over its entire length of the first white lateral thoracic stripe *in S. paramo*, again a character shared with *S. evanescens*, although in mature males of the latter the stripe finally becomes totally obscured. In *S. gilvum* and in the two Pantepuyan species both white lateral stripes persist in the mature state, but only in their lower third (De Marmels 1988, 1992, 1994).

Sympetrum gilvum was given specific status by Tai (1967) on the basis of a careful comparative study. I was able to compare several specimens of *S. illotum* from the United States and Mexico with Venezuelan *S. gilvum*. This study has confirmed Tai's findings, and there can be no doubt that *S. gilvum* is indeed a species separate from *S. illotum* (Figures 11-22).

Key to the species of *Sympetrum* found in Venezuela

[wing vein nomenclature follows Riek and Kukalová-Peck (1984)]

1. Andes and/or Coastal Cordillera 2
- Pantepui 4

2[1] No dark stripe in front of vertex; dark brown basal spot in subcostal field of HW reaching close to or beyond ax1; amber basal coloration in HW at least to tip of triangle; tibiae pale brown. Tamá, Cordillera of Mérida, Coastal Cordillera ..... ***S. gilvum***

- Dark stripe in front of vertex present; no dark brown basal spot in HW; amber basal coloration in HW restricted to extreme base, not reaching ax1; tibiae and tarsi brown black 3

3[2] Posterior half of dorsal surface of frons black, anterior half white; usually only 7.5 ax in FW; wing venation black; abdomen vividly patterned with black laterally and ochreous dorsally; male epiproct not reaching to apical spine of cerci. Cordillera of Mérida ..... ***S. paramo***

- Posterior half of frons black only in front of middle ocellus and laterally along compound eyes, anterior half red or brown; usually 9.5 ax in FW; wing venation in male red, in female black; abdomen unicolorous (dark red in male) with conspicuous black dorsomedian spot on segments 8 and 9; male epiproct reaching to base of apical spine of cerci. Cordillera of Mérida ..... ***S. evanescens***

4[1] Male cerci almost straight in lateral view; dark brown portion of basal spot in subcostal field of HW reaching close to ax2; HW at most with 1-2 duplicated cells at wing margin between RP3-4 and MA, and 2-3 between CUA and the vein springing from heel. Auyán Tepuí ..... ***S. chaconi***

- Male cerci strongly bent ventrad in lateral view; dark brown portion of basal spot in subcostal field of HW reaching to ax1; HW with 2-5 duplicated cells at wing margin between RP3-4 and MA and three or more between CUA and the vein arising from heel. Roraima and Kukenam ..... ***S. roraimae***

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References

DE MARMELS J. 1988. *Sympetrum roraimae* spec. nov. vom venezolanischen Guayana-Hochland (Odonata: Libellulidae). Opusc zool flumin 28: 1-6.

DE MARMELS J. 1992. *Sympetrum evanescens* spec. nov., a hitherto overlooked dragonfly from the central Andes of Venezuela (Odonata: Libellulidae). Opusc zool flumin 79: 1-7.

DE MARMELS J. 1994. *Sympetrum chaconi* spec. nov. from Auyan-Tepui, Venezuela, with notes on a Pantepuyan form of *Tramea binotata* (Rambur) (Anisoptera: Libellulidae). Odonatologica 23(4):405-412.

RIEK EF, KUKALOVÁ-PECK J. 1984. A new interpretation of dragonfly wing venation based upon Early Upper Carboniferous fossils from Argentina (Insecta: Odonatoidea) and basic character states in pterygote wings. Can J Zool 62(2):1150-1166.

TAI LCC. 1967. Biosystematic study of *Sympetrum* (Odonata: Libellulidae) [Doctoral Thesis]. Purdue University. Lafayette, Indiana.

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