

SHORT COMMUNICATIONS

GENERIC CHARACTERS OF *CHALCOTHORE* DE MARMELS, 1985,
WITH NOTES ON THE MALE OF *C. MONTGOMERYI*
(RACENIS, 1968) AND A DESCRIPTION OF THE LARVA
(ZYGOPTERA: POLYTHORIDAE)

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Received July 11, 1988 / Accepted August 26, 1988

Subsequent to a preliminary description (1985 *Resum. IX Congr. venez. Ent., San Cristóbal*, p. 63), the genus *Chalcothore* De Marmels is here described in detail. It combines characters of *Euthore* Selys and *Chalcopteryx* Selys, but also shows a series of original features, viz. short digitiform inferior anal appendages, an ovoid-shaped (in ventral view) distal penis segment, short petiolation of the wings, broad anal field in all wings, absence of sexual dimorphism in wing color pattern, a pantepuyan distribution. It is suggested that *Chalcothore* is an ancient monotypic genus closely related to the common ancestor of both, *Euthore* and *Chalcopteryx*. The ultimate instar exuviae of *Chalcothore montgomeryi* (Racenis) are described and figured. Notes on the habitat of the sp. and on the associated odon. fauna are added.

INTRODUCTION

In his first report on the dragonflies of Venezuelan Guayana RACENIS (1968) describes *Euthore montgomeryi* from five females taken at Guayaraca, alt. 1100 m, on the first terrace of the Auyan-Tepuy, a large table-top mountain. The trifurcate anal vein, the proportion of fore and hind wing quadrangles, the less dense venation and the presence of the primary antenodals led him to place the new species in *Euthore*. He emphasizes, however, that the small size of the insect and the broadened anal field of the wings are features not shared with any of the other members of that genus.

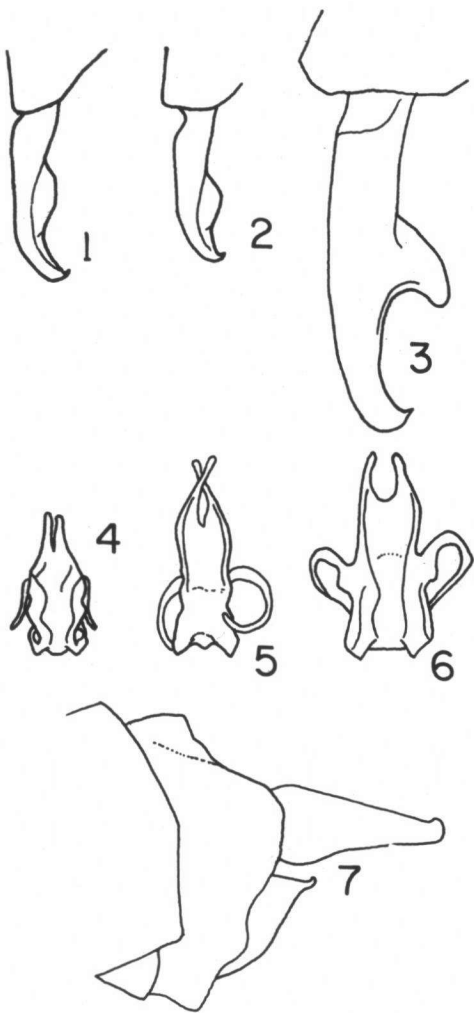
In March 1985, during an expedition organized by the "Fundación Terramar", Caracas, to the central massif of the Marawaka, a mountain in the Venezuelan

Amazonas Territory, I was fortunate enough to collect three males of *Euthore montgomeryi*, which, albeit teneral, could be kept alive for three days, enough to ensure the definitive development of the structural characters. A comparative study of the male secondary genitalia, anal appendages and wing venation in *E. montgomeryi* Racenis, *E. f. fasciata* (Hag.), *E. fastigiata* (Sel.), *E. terminalis* MacL., *Chalcopteryx rutilans* (Ramb.) and *C. scintillans* MacL. revealed that *E. montgomeryi* shares characters with both genera, but also possesses a number of particular features. This has led me to erect a new genus for *Euthore montgomeryi* Racenis.

CHALCOTHORE DE MARMELS, 1985

Material examined. — *Euthore montgomeryi* Racenis: 3 ♂, 1 ♀ subtenerals, Marawaka, 1140 m, Territ. Fed. Amazonas, Venezuela, 10-17-III-1985, J. De Marmels leg.; 3 ♀ (incl holotype), Guayaraca, 1100 m, Auyan-Tepuy, Bolívar, Venezuela, 17-20-IV-1956, J. Racenis leg.; 1 ♀, km 119 of the road from El Dorado to Santa Elena de Uairén, ± 1100 m, Bolívar, Venezuela, 14-IV-1957, F. Fernández Yépes & C.J. Rosales leg.

Small-sized (total length 27-29 mm), similar to *Chalcopteryx* Selys. Fore wings of same size and shape as hind wings (as in *Euthore*). Petiolation of wings very short, not exceeding $\frac{1}{3}$ to



Figs 1-7. Male structural characters: (Figs 1-3) Left superior anal appendage, dorsal view, of: (1) *Chalcothore montgomeryi* (Marawaka, Amazonas Fed. Territ., Venezuela); — (2) *Chalcopteryx scintillans* (Upper Rio Baria, Amazonas Fed. Territ.); — (3) *Euthore f. fasciata* (Rancho Grande, Aragua, Venez.). — (Figs 4-6) Apical segment of penis, ventral view, of same specimens: (4) *C. montgomeryi*; — (5) *C. scintillans*; — (6) *E. f. fasciata*. — (Fig. 7) *C. montgomeryi*, last abdominal segment with anal appendages, left lateral view.

$\frac{2}{3}$ of the distance between wing base and arculus. Antenodal portion of fore wing little shorter than postnodal (1:1.3). 25-35 antenodal cross-veins, 25-32 postnodals; 2 primary antenodals. Hind margin of wing branching from anal vein in a marked angle, opening a broad anal field, whose cells are considerable higher than those of cubital space at the level of quadrangle. Quadrangle of hind wing $1\frac{1}{2}$ times as long as that of fore wing. R_3 branching from subnodus (as in *Euthore*); supplementary sectors arising from main veins so that the latter appear forked (as in *Chalcopteryx*). Anal vein trifurcate; pterostigma of same size and shape in fore and hind wings (as in *Euthore*); proximal side of pterostigma strongly oblique (as in *Euthore*), much more so than distal side (Fig. 8). Superior anal appendages of male lacking internal tooth, but with an internal ridge (as in *Chalcopteryx*) (Fig. 1). Very short digitiform inferior appendages are present at the external upper angle of the paraprocts (Fig. 7). Penis with an oval-shaped third segment (Fig. 4), which is broadest at half-length between the segment's base and the tips of the penis horns. — There is no sexual dimorphism in color pattern of wings.

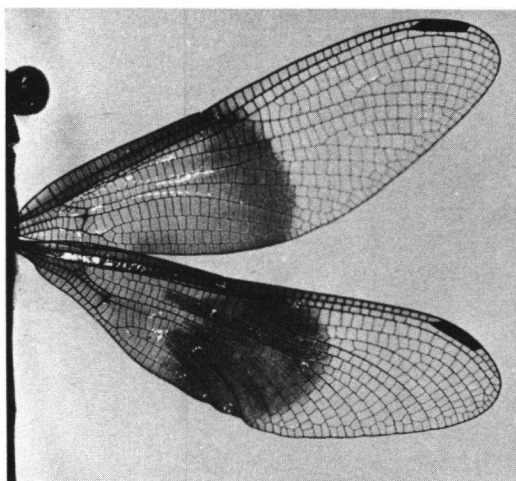


Fig. 8. *Chalcothore montgomeryi*, subterminal male: right wing pair.

Chalcothore De Marmels is monotypic. — **Genotype:** *Euthore montgomeryi* Racenis.

Remarks. — The combination of characters known from either *Euthore* or *Chalcopteryx*, and the absence of sexual dimorphism suggest a primitive genus, which might be close to the common ancestor of both. The single species so far known is restricted to the region of "Pantepuy" (MAYR & PHELPS, 1967), viz. the ridges and table-top mountains of the Guayana shield, from which the

Amazonian *Chalcopteryx* as well as the Andean *Euthore* are absent. *Chalcothore montgomeryi* is so far known only from Venezuela: Auyan-Tepuy (Bolívar); Sierra de Lema (Road El Dorado — Santa Elena, Bolívar); Marawaka (Territorio Federal Amazonas). At all sites the species lives along small rivers or creeks in the forest, at elevations of about 1000 m. The flight season seems to begin around mid-March. The last-instar exuviae can be found clinged to dead branches in the water near the river bank. Therefore, the habitat of *Chalcothore* is

reminescent of that of *Chalcopteryx* rather than of *Euthore*, which prefers the vicinity of small cascades, where the species known to me fly over rocky walls and hanging roots, all wet from drops and seeping water. On the other hand, neither *Chalcothore* nor *Euthore* have been observed below elevations of about 1000 m, while *Chalcopteryx* is a low-land genus, which does not normally occur above 600 m.

DESCRIPTION OF THE LARVA

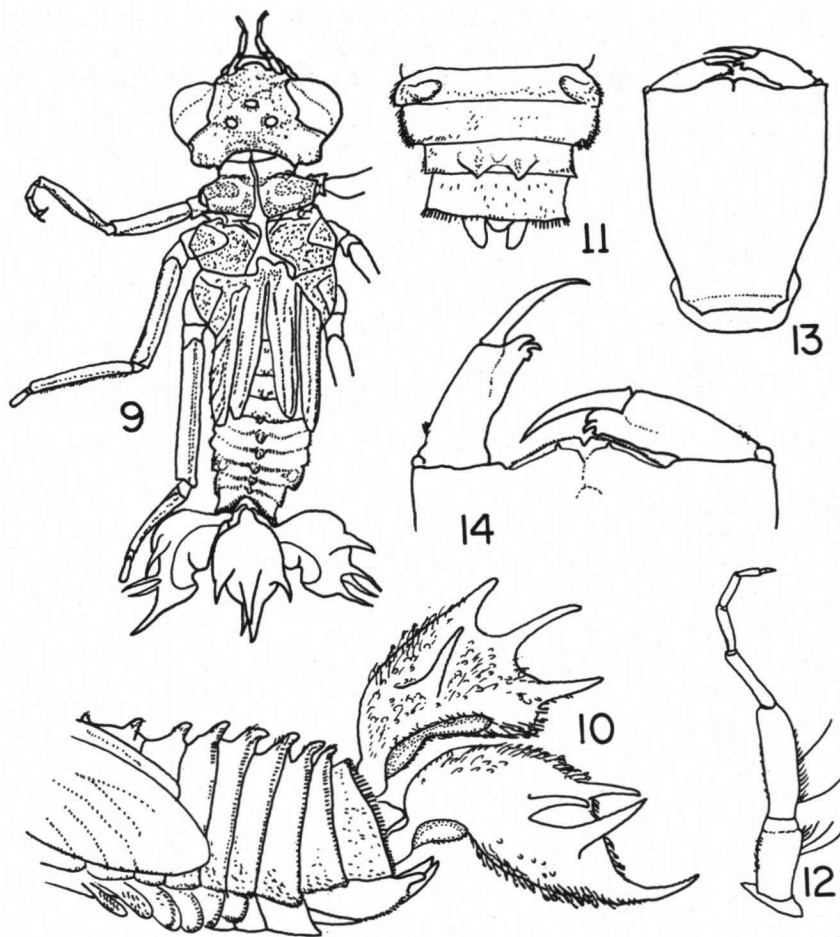
Material examined. — 1 ♂, 1 ♀, last instar exuviae, Marawaka, 1140 m, Territ. Fed. Amazonas, 10-17-III-1985, J. De Marmels leg. Both exuviae have been collected together with the emerging adults.

Unicolorous, brown. Head as broad as thorax, with well-pronounced external angle of cephalic lobe; occiput concave. Free margin of labrum with a row of stiff hairs; 7-segmented antennae, the first segment with 3 long and 3 short setae internally in the distal half; second segment internally with 1 long seta at its base and another at half-length, in addition to a large number of short, scale-like setae and, in its dorsal and external part, minute hairs. Hinge of prementum scarcely surpassing first coxae; each labial palp externally with 3 to 4 small spines close to articulation with prementum; internal margin of palps very finely denticulated; free margin of median lobe with about 20 denticles, which are better developed than those of palps; a triangular apical incision accompanied on each side by a single denticle situated in the interior of the median lobe (Fig. 14). — Prothorax partially granulated, laterally truncated and with its hind margin very slightly rounded. Femora laterally compressed, their dorsal carina armed with two rows of scales, 2 ventral carinae present. Tibiae with 2 dorsal and 2 latero-ventral carinae. Three-jointed tarsi; simple claws with dorso-ventrally expanded base. Hind wing sheaths reaching to base of segment 6. — Abdominal segments 1-9 with dorsal hooks covered with scales, as are the distal margins of segments 5-10 and the cerci. Posterior border of segment 10 with an approximately triangular dorso-median incision. Ventral abdominal gills on segments 2-7; these gills ventrally (externally) beset with small scales. Caudal gills petiolated and inflated, with a feathery appearance produced by a dense cover of leaf- or feather-like setae; these setae consisting of a petiole and tracheated lamina. Each lateral gill with 4 almost bare digitiform processes, the median gill with 5 such projections (Figs 9-10).

Measurements (in mm). — Total length (excl. gills) 9; lateral gill 2.5; hind femur 3; hind tibia 3.2-3.5.

HABITAT

On the Marawaka, *Chalcothore montgomeryi* was found along a stony blackwater river, about 8 m wide, in a mountain forest, as well as on a small, 2 m



Figs 9-14. Last instar exuviae of *Chalcothore montgomeryi*: (9) female exuviae, dorsal view; (10) abdomen, same specimen, showing abdominal gills, left lateral and median caudal gills, gonapophyses and dorsal hooks, left lateral view; — (11) male, abdominal segments 7-10 with abdominal gills of segment 7, gonapophyses and cerci, ventral view; — (12) male, left antenna, dorsal view; — (13) female, labium, ventral view; — (14) same, anterior portion, dorsal view.

wide lateral affluent. Among other species observed at the river were *Rimanella arcana* (Needham), *Hetaerina medinai* Racenis, *Dimeragrion percubitale* Calvert, *Zonophora s. solitaria* Racenis and an undescribed species of *Brechmorhoga* Kirby. At a nearby ditch with very little slowly running water a population of *Iridictyon trebbau* Racenis thrived and larvae of an undescribed *Castoraeschna* Calvert and of *Neocordulia biancoi* Racenis were found.

ACKNOWLEDGEMENTS

My thanks to Professor Dr A.B.M. MACHADO, Universidad Federal de Minas Gerais, Belo Horizonte (Brazil), who kindly compared specimens of *Chalcothore montgomeryi* with the type of *Chalcopteryx seabrai* Santos & Machado.

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