

**DESCRIPTION OF THE LAST INSTAR LARVA OF  
*SOMATOCHLORA MERIDIONALIS* NIELSEN, 1935  
(ANISOPTERA: CORDULIIDAE)**

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Ultimate instar larva is described and illustrated from exuviae, collected at Gospić (Croatia) and Ulcinj (Montenegro). A brief differential diagnosis is provided, and a note on the habitat is added.

**INTRODUCTION**

NIELSEN (1935) has described the taxon as a subspecies of *S. metallica* (Vander L.). SCHMIDT (1957) elevated it to the species rank; this classification was adopted also by CARCHINI in his monograph (1983a) and key (1983b) of the Italian odonate larvae. TERZANI (1990) has given some differential features between *metallica* and *meridionalis*. Since he only gives figures of the lateral and dorsal views of the caudal portion of abdomen, a supplementary description was considered useful and it is provided here.

Our material originates from a small brook, 3 km W of Gospić in Croatia, and from a similar brooklet, 5 km N of Ulcinj in Montenegro. At both localities exuviae were collected at a bridge, where they were clinging on the stony walls and the ceiling.

***SOMATOCHLORA MERIDIONALIS* NIELSEN**

Figures 1, 2a, 3a, 4a, 5a

**Material.** – 15 ♂ & ♀ exuviae: Gospić, Croatia (10-VIII-1990); – Ulcinj, Montenegro (20-VIII-1991). All R. Seidenbusch leg.

**Head.** – Occipital tubercles weak or rudimentary. Antennae 7-segmented, with 3rd and 7th segments longest. Labial palps with 6+6 (6+7, 7+7) setae, distal border with 8-9 crenations, each supporting 4-5 setulae; mentum 2×8+3-4 mental setae.

**Thorax and abdomen.**—Pale, brownish, weakly spotted or marked with brownish pattern. Dorsal spines on segments 3-9 strong and curved, on segments 3-4 more slender and well erected, basal width of spine 9 (x) is shorter or of the same length as the distal part of spine 9 (y), surpassing segment 9 (in lateral view) (cf. Fig. 2a); lateral spines on segments 8/9; those on segment 9 about half the length of the segment; ratio length lateral spine 8 : spine 9 is  $1 : \approx 2$  (ventral view). — Length ratios in anal pyramid: cerci : epiproct  $1 : \approx 1.1$ ; — segment 10 : paraprocts  $1 : \approx 4$  (in lateral view); segment 10 : cerci  $1 : \approx 3.5$  (in lateral view).

**Measurements** (in mm).—Total length ( $\delta$ ,  $\eta$ ) 22.5 ( $\pm 1.0$ ); cerci 1.3; epiproct 1.5; dorsal paraproct 1.65; length tergite 10 0.4; length lateral spine on segment 8 0.35, on segment 9 0.85.

**DIFFERENTIAL DIAGNOSIS AND DISCUSSION.** — Comparative material *S. metallica*: 2 exuviae (Sulzbach-Rosenberg, Bavaria, Germany), 2 exuviae (Kulz/Oberviechtach, Bavaria, Germany); cf. Figs 2b, 3b, 4b, 5b. — *S. graeseri*: 1  $\eta$  exuviae (Primorye, Russia; A.Yu Haritonov leg.).

With regard to its shape and dorsal spines, the final instar larva of *S. meridionalis* is very similar to *S. metallica*. The distinct feature for separation are the lateral spines. That on segment 9 is about one fourth the length of the segment. Length ratio spine 8 : spine 9 is  $1 : \leq 1.5$ . Length ratios in the *metallica* anal pyramid are also slightly different, viz. cerci : epiproct  $1 : \approx 1.2$ , segment 10 : paraprocts  $1 : \approx 3.5$ , segment 10 : cerci  $1 : \approx 3$ . Normally, in *metallica* the basal length of dorsal spine on segment 9 (x) is longer than its distal part (y), surpassing the segment.

*S. graeseri* (Sel.) has a similar exuviae, but its dorsal spines on segments 3-5 are blunt and curved, while in *meridionalis* they are rather acute and erect. Due to the distinctly shorter pyramid, the lateral spines on segment 9 reach about the level of the tips of cerci, while in *meridionalis* they reach only half the length in dorsal view.

Contrary to the Tuscany larvae published by TERZANI (1990), the lateral spines on segment 9 in the Balkan exuviae do not reach "ca 2/3 of the segment's length", but seldom more than the half of it. This is probably due to a different way of

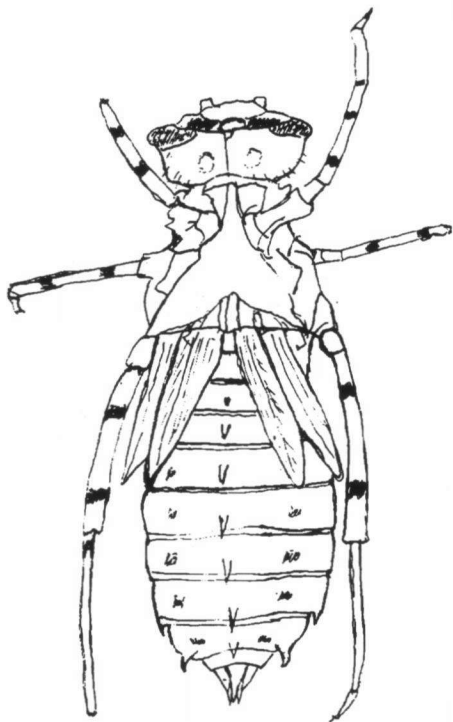
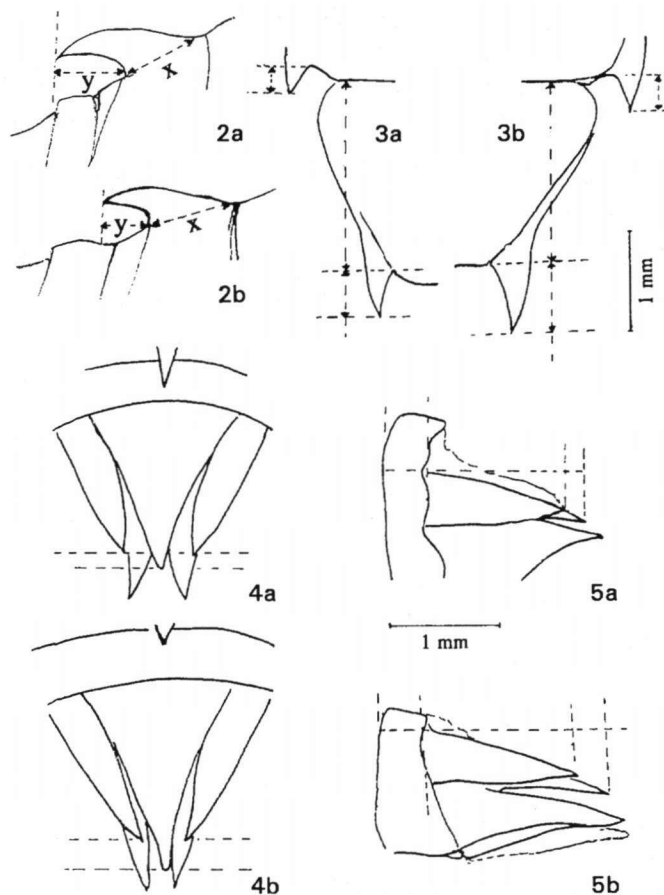


Fig. 1. *Somatochlora meridionalis* Nielsen, exuviae, dorsal view.



Figs 2-5. Structural features of *Somatochlora meridionalis* (a) and *S. metallica* (b) exuviae: (2) dorsal spine on segment 9, lateral view [ $x$ =basal width,  $y$ =distal length]; – (3) lateral spines on segments 8/9, ventral view; – (4) anal pyramid, dorsal view; – (5) segment 10 and anal pyramid, lateral view. – [Lines indicate ratios]

measuring. In dorsal view and when measured along its outer edge, the spines will undoubtedly reach  $2/3$  of the length of the segment. The length of dorsal spine on segment 9 is shown in Terzani's figures, but is not mentioned in the text. The slightly shorter epiproct in *meridionalis* than in *metallica* is not apparent from Terzani's figures. Even so, his description is very valuable indeed.

As pointed out already by TERZANI (1990), on geographical grounds, Nielsen's description of the larva of *S. metallica* (CONCI & NIELSEN, 1956) is referable to this species, although at that time he considered *meridionalis* merely a subspecies of the latter.

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