

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 Gospic (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 Gospic 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

M a t e r i a l. – 15 ♂ & ♀ exuviae: Gospic, Croatia (10-VIII-1990); – Ulcinj, Montenegro (20-VIII-1991). All R. Seidenbusch leg.

H e a d. – 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 (δ , φ) 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 φ 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

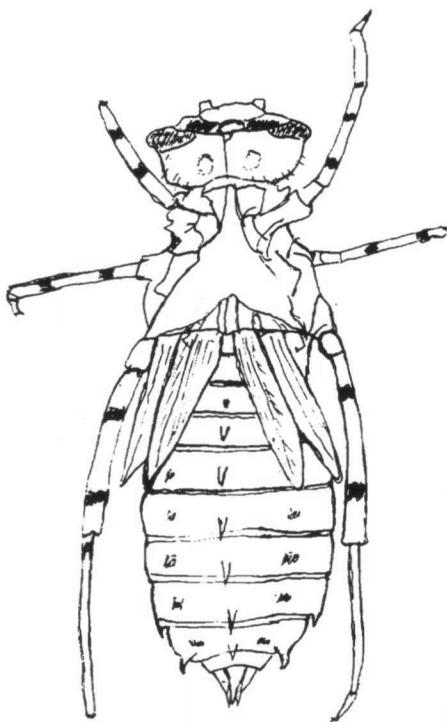
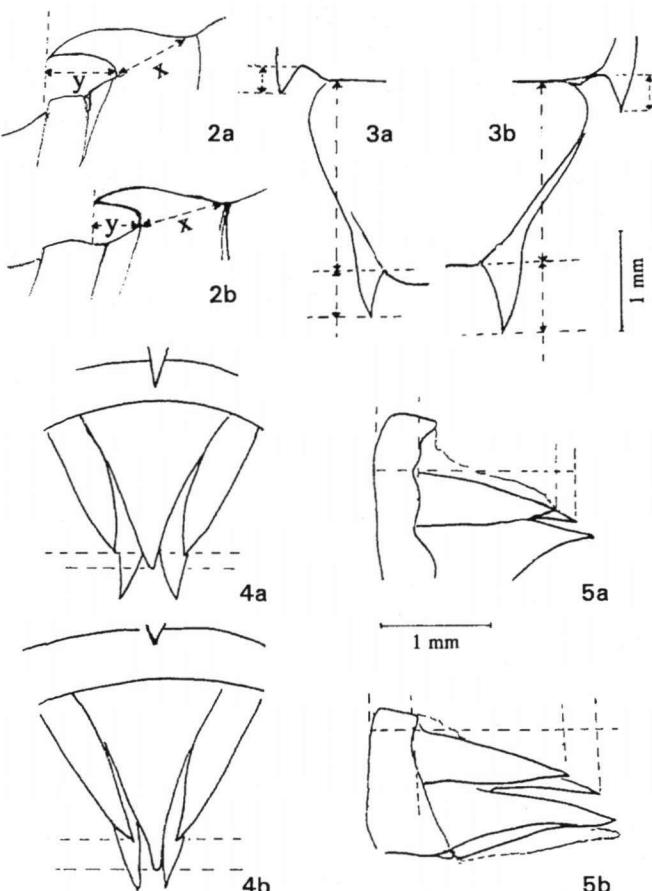


Fig. 1. *Somatochlora meridionalis* Nielsen, exuviae, dorsal view.



Figs 2-5. Structural features of *Somatochlorella 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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