CARNUS HEMAPTERUS (DIPTERA, CARNIDAE) AND ITS OCCURRENCE IN SLOVAKIA

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Abstract: The paper deals with an occurrence and identification of the fly Carnus hemapterus (Diptera, Carnidae), recorded in nests of Sturmis vulgaris. The adults were collected from two sites situated in western Slovakia. Males were identified according to the ratio between width and length of the surstylus and parameres, females according to the shape of the sixth abdominal sternum. Key words: Carnus hemapterus, Carnidae, Diptera, Slovakia

INTRODUCTION

The species Carnus hemapterus Nitzsch, 1818 belongs to the family Carnidae, Diptera, which has not been considerably studied in detail yet. Generally, 58 species of 4 genera have been described worldwide, other species are expected to be described in the future. Carnus hemapterus was recorded in Palaeartctic and Nearctic regions (PAPP 1984, SABROSKY 1965). It occurs in cavernicolous bird nests as well as at bird nests nesting arboreally and arbustically. It has not been recorded in nests on ground or water. The life cycle has not been studied completely. In contact with its suitable host the adult parasite loses its wings and stays in a nest. It is assumed that the adults probably feed on blood or skin products of nestlings. Larvae are scavengers (PAPP 1978).

MATERIALS AND METHODS

All the observed specimens were images collected from nestings of Sturmis vulgaris. The material was sampled in the period from hatching to forming the first fluff. Adults were concentrated in the area of cloaca of nestlings, soon after defection they dispersed. The flies were obtained by an extractor or manually (by finger covered by saliva). The captured images were stored in 75 % ethylalcohol, and later determined according to the papers by PAPP (1978) and GRIMALDI (1997). The material consists of 24 individuals.

RESULTS AND DISCUSSION

List of records:
1) June 8, 1998 3 ♂ and 2 ♀: Botanical Garden in Bratislava; leg. Országhová, Strapoňová, Blázníková
2) May 19, 2005 4 ♀: Botanical Garden in Bratislava; leg. Országhová, Jamriška
3) June 25, 2005 4 ♀; Bernoldáková; leg. Országhová
4) July 3, 2005 3 ♀ and 8 ♂: Bernoldáková; leg. Országhová. 1 ♂ winged

In Slovakia, the records of this species have been known from Čelce (8177 grid reference number of the Databank of Slovak fauna) (GREGOR 1986) and Nature Reserve Beckovská Skalice (7273) (STRAKA, pers. comm.). At present, there is only one species of the genus Carnus described in Europe (PAPP 1978). However, GRIMALDI (1997) recorded the occurrence of other three species in North America. Carnus hemapterus may be distinguished from the other genera of the family Carnidae by distinct frontal triangle, slender setae occupitales and lack of setae postverricalles. Sclerites of abdomen are different at each sex. Females have slender and hardly distinguished sternites 1-5, however sternite 6 is secondarily enlarged. Males have small and gently sclerotized tergites 6-8. Tergite 9 (epandrium) is short, broad and compressed (PAPP 1978). Onto epandrium surstyl following being connected by condyles (Fig. 1).

Fig. 1. Surstylus of Carnus hemapterus (♂, July 3, 2005; Bernoldáková)

They cover a compound reproduction system. Each species has a different ratio between the apical width and total length of surstylus. According to GRIMALDI (1997) this ratio is estimated at 0.40 for Carnus hemapterus. The ratio recorded by us was 0.42.

Fig. 2. Paramere of Carnus hemapterus (♂, July 3, 2005; Bernoldáková)

Aedeagus is enclosed from the both sides by triangular parameres (Fig. 2), which is another specific

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determination character. According to GRIMALDI (1997), as well as to our measurements, the ratio between the total width and total length of paramere is 0.55.

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