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Description of the larva and biological notes on *Vermiophis taihangensis* Yang & Chen, 1993 (Diptera: Vermileonidae) from China

O.G. OVTSHINNIKOVA[1], ZHILIANG WANG[2], A.N. OVCHINNIKOV[1], XINLI WANG [2] & V. A. KRIVOKHATSKY[1]

[1]*Zoological Institute, Russian Academy of Sciences, St. Petersburg 199034, Russia*
[2]*Department of Entomology, China Agricultural University, Beijing 100094, China*

Abstract

Unmixed colonies of larval antlions and wormlions in similar pits were found in the Xiaolongmen National Forest Park in the Taihang Shan, China. A male of *Vermiophis taihangensis* Yang & Chen, 1993 was reared from a larva and a morphological description of the third instar larval wormlion is presented. The larva of *Vermiophis taihangensis* differs from the related species *V. ganquanensis* Yang, 1979 in the well developed sclerotized stigmata on abdominal segment 4, but is similar in the structure of the lateral row of setae and the same number of spines (6) on the pseudopod on the abdominal segment 1.

Key words: Diptera, Neuroptera, Vermileonidae, wormlions, antlions, larval biology, larval morphology

Introduction

In this paper, new data on the biology and larval morphology of these rare flies, featured in the book "Demons of the Dust" (Wheeler, 1930), are given. Information on coterminous colonies of the antlion *Euroleon coreanus* Okamoto, 1926 (Neuroptera, Myrmeleontidae) and the wormlion *Vermiophis taihangensis* Yang & Chen, 1993 (Diptera, Vermileonidae) in the Taihang Mountains (Hebei Province, China) is given, and a morphological description of the wormlion larva is presented. Pitfall traps of antlion larvae of the subfamily Myrmeleontinae (with about 100 species in the world fauna), mostly from the genera *Myrmeleon* Linnaeus and *Euroleon* Esben-Petersen, are well known. Larvae of the Vermileonidae are the wormlions that construct pitfall traps for the purpose of capturing prey. Vermileonidae constitute a more rare taxocene in closely related semiarid cenoses; about 40 species are known in this family in the World (Palaearctic, Nearctic, and Afrotropical regions).

Material and methods

The study was conducted 6–8 VII 2006 in a human-destroyed forest landscape close to the Beijing—Lhasa Road in Hebei Province, at the boundary of the Xiaolongmen National Forest Park (Taihang Mountain). Larvae of *Vermiophis taihangensis* were collected on Taihang Mountain (1100 m elevation) ca. 100 km west of Beijing. The reared adult was identified using the key in Nagatomi et al. (1999); the larva has not been previously described.

The antlions larvae were determined using the key in Krivokhatsky (2011). Colonies (separate groups of pits) of both the antlion and the wormlion were found in similar sandy or dusty places at rock borders, in small hollows in slopes or along their bases. Several wormlion larvae were collected for rearing in the laboratory and description. The names of morphological structures follow the Manual of Palaearctic Diptera (Nagatomi, 1997), other terms, also used in dipterology (Teskey, 1981; Ludwig *et al*., 1996, 2001), are placed in brackets.

The photographs were taken by Victor Krivokhatsky, Andrey Ovchinnikov and Wang Zhiliang.

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FIGURE 10. Colony of wormlion *Vermiophis taighanensis*.

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