



Revision of the *Neochauliodes sinensis* species-group (Megaloptera: Corydalidae: Chauliodinae)

XINGYUE LIU¹, FUMIO HAYASHI² & DING YANG^{1,3}

¹Department of Entomology, China Agricultural University, Beijing 100094, China. E-mail: liu_xingyue@yahoo.com.cn;
dyangcau@yahoo.com.cn

²Department of Biology, Tokyo Metropolitan University, Minamiosawa 1-1, Hachioji, Tokyo 192-0397, Japan

³Correspondence author

Abstract

The *Neochauliodes sinensis* species-group, the largest species-group within the genus *Neochauliodes* Weele, is revised. The following two species are described as new to science: *Neochauliodes amamioshimanus* and *N. robustus*. A key to all species of the *Neochauliodes sinensis* species-group is presented. Discussion of the phylogeny and zoogeography of the species-group is provided.

Key words: Corydalidae, Chauliodinae, *Neochauliodes*, species-group, new species, Asia

Introduction

Neochauliodes Weele is the largest genus within the subfamily Chauliodinae, with about 40 described species and subspecies. The geographical distribution of *Neochauliodes* is rather wide, extending from far eastern to southeastern Asia. Compared with the other Asian fishfly genera, *Neochauliodes* appears to be the most successful group as attested by its species richness and the relatively high population density of many of its species.

The latest revisionary works on *Neochauliodes* were of Liu & Yang (2005a, 2005b, 2006a), in which the generic characters were summarized and 18 species were newly described or re-described from China. The generic status of *Neochauliodes* was clarified with the Nearctic genus *Nigrionia* as its sister (Liu & Yang 2006b).

Neochauliodes sinensis Walker, 1853 is the commonest species in *Neochauliodes* and has been revised by many early authors (Weele 1907, 1910; Lestage 1927; Kimmins 1954), resulting in several subspecies being erected based on the differences in the wing patterns and genitalia. Despite the revisions, the identity and the distribution of *N. sinensis* and its subspecies remain highly confused. For example, the figure of the genitalia of *N. sinensis* made by Weele (1907) differs sharply from that of the type specimen. Additionally, *Neochauliodes fraternus* McLachlan was misplaced as a subspecies of *N. sinensis* by Weele (1910), and some distributions of *N. sinensis* and its subspecies recorded by Lestage (1927) are also doubtful. The revision of Kimmins (1954) is considered to be most convincing among these early works because of the full and accurate illustrations of the type species. In the recent revisions of Liu & Yang (2005a, 2005b, 2006a), the *Neochauliodes sinensis* species-group, formerly mentioned as ‘the *Neochauliodes sinensis* complex’, was recognized by the distally curved R₃ and R₄, with additional species newly described or placed in this species-group. However, the species of *N. sinensis* group possess the richest diversity in *Neochauliodes*, and there