Discovery of second new species of the genus Spiniphilus Lin & Bi, and female of Heterophilus scabricollis Pu with its biological notes
(Coleoptera: Vesperidae: Philinae: Philini)

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Abstract

A new philine species of the genus Spiniphilus Lin & Bi, 2011, S. xiaodongi sp. nov. is described from Yunnan, China. The female of Heterophilus scabricollis Pu, 1988 is described for the first time with its biological and ecological data.

Key words: new species, Philini, China, taxonomy, biology, description

Introduction

The genus Spiniphilus was established for S. spinicornis from Yunnan, China by Lin & Bi (2011). In 2011, two additional males of this species were collected, along with one quite different male believed to be congeneric, from a lower altitude locality in Yunnan. This peculiar specimen, having the process of antennomeres III to X much longer than the type species, was discussed with Dr. Petr Švácha and mentioned as “one undescribed species” of the genus (Švácha & Lawrence 2014). This second species has not been described until now due to a lack of sufficient material. Additional specimens confirming the validity of the second new species were collected from the same locality in 2013. The species is described herein as S. xiaodongi sp. nov. This new species is the 12th species from the subfamily Philinae to be reported from China (Löbl & Smetana 2010; Lin & Bi 2011).

In addition, the female of Heterophilus scabricollis Pu, 1988 is described for the first time. Although two female specimens of the genus Heterophilus were described by Lin & Bi (2011), they were in poor condition and their species identity was uncertain. During the same expedition in 2013, several additional specimens were collected of both sexes of Heterophilus scabricollis Pu, 1988, from the type locality. Phenological and habitat information was recorded and reported for the first time herein.

Materials and methods

The depositories of the specimens examined are abbreviated as follows: Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZAS); Personal collection of Chang-Chin Chen, Tianjin, China (CCCC); and Personal collection of Wen-Xuan Bi, Shanghai, China (CBWX).

Specimens of males were collected by light trap. The females of Heterophilus scabricollis Pu, 1988 were hand-collected from emergence holes. Holes were excavated using a pickax (Fig. 12) and females were then extracted from the emergence hole using long forceps.
males) were found in ca. 1.5 cm diameter emergence holes at depths of 10–20 cm. The soil galleries are usually vertical or slightly oblique. The expedition team searched three grasslands of similar vegetative composition, and about 60% of the holes (n= 42) of 1.5 cm diameter contained a single female. However, no beetles were recovered from holes less than 1.0 cm diameter (n>10), although spiders and wasps were often found instead. This size specificity suggests the holes which females hide in during the daytime are most likely also their emergence holes, though there were some deeper holes that could not be completely excavated. Females cannot fly because the hind wings are strongly reduced in spite of well-developed elytra. Copulation and oviposition were not observed but likely occurs at night in the grassland. They may lay eggs before July because all females collected on 9 July, 2013 did not contain eggs, presumably because they had already oviposited as this would be very late for an unmated female to be found. Larvae were not found, but are likely to be subterranean and feed on the roots of cogongrass (i.e. Imperata cylindrica) based on the location of holes in grassland areas with cogongrass (Figs. 16–20). Larva of a congener, Heterophilus punctulatus has been recorded feeding on the roots of cogongrass (Chiang & Chen 1996; Švácha et al. 1997; Švácha & Lawrence 2014).

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