

A new species of *Acerophagus* (Hymenoptera: Encyrtidae) from China

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Abstract: A new encyrtid species, *Acerophagus chuanensis* sp. nov., is described. Micro photos are provided to illustrate diagnostic characters of the species. A second species, *Acerophagus malinus*, is also reviewed.

Key words: Chalcidoidea; parasitoid; taxonomy

中国抑虱跳小蜂属一新种记述（膜翅目：跳小蜂科）

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摘要: 记述抑虱跳小蜂属 1 新种: 川抑虱跳小蜂 *Acerophagus chuanensis* sp. nov., 提供了新种的形态特征照片, 并对玉棒抑虱跳小蜂 *Acerophagus malinus* 进行了评述。

关键词: 小蜂总科; 寄生蜂; 分类

Introduction

In the recent review of encyrtid wasps (Hymenoptera: Chalcidoidea: Encyrtidae) of Macaronesia, Trjapitzin (2008) synonymized the genus *Pseudaphycus* Clausen, 1915 (= *Pseudaphycus* Timberlake, 1916; see Noyes, 2010) with *Acerophagus* Smith (Smith, 1880). Previously *Pseudaphycus* was separated from *Acerophagus* Smith by the palpal formula (see Trjapitzin, 2008) and by the coloration of female antennae (see Noyes & Hayat 1984; Trjapitzin 2008). More recently, Noyes (2010) found the funicle segments of *Acerophagus* are not always 5-segmented, four species from Costa Rica having the funicle 6-segmented. Presently, the genus *Acerophagus* is consisted of nearly 100 species (Noyes 2018). Eight species of *Acerophagus* are known from China (Liao *et al.* 1987; Xu 1999; Zhang & Huang 2004; Xu *et al.* 2006; Li & Si 2010; Zu & Li 2017). In this paper, we describe a new species of *Acerophagus* collected from Sichuan, China. The closely related species *Acerophagus malinus* (Gahan) is also reviewed.

Material and methods

The specimens were reared from a mealy bug on *Buxus megistophylla*. When the parasitoids emerging, they were killed and preserved using 95% ethanol. The specimens were prepared using a standard procedure modified from Noyes (1982). For slide-mounted specimens, microphotographs were taken with a Leica DM-2500 compound microscope under 100× or 200× magnification. All the material including type specimens were deposited in the National Zoological Museum of China, Institute of Zoology, Chinese Academy of Sciences, Beijing (IZCAS).

Morphological terminology and abbreviations follow those of Zhang & Huang (2004). Absolute measurements were used for body length. The following abbreviations are used in the text: funicle segment number (F1, F2, ... F6), length of mid tibia (MT), length of ovipositor (OL), length of gonostylus (GL). The description of the new species based on the holotype and examination of colour, sculpture and other measurements were made before slide mounting.

Taxonomy

1. *Acerophagus chuanensis* sp. nov. (Figs. 1–6)

Diagnosis. Head about 3.5× as wide as frontovertex; antennal scape about 4× as long as broad; pedicel about as long as F1–F5 combined; antennal clava 3-segmented (Fig. 1); lineal calva of fore wing interrupted by one line of setae in the middle (Fig. 2).

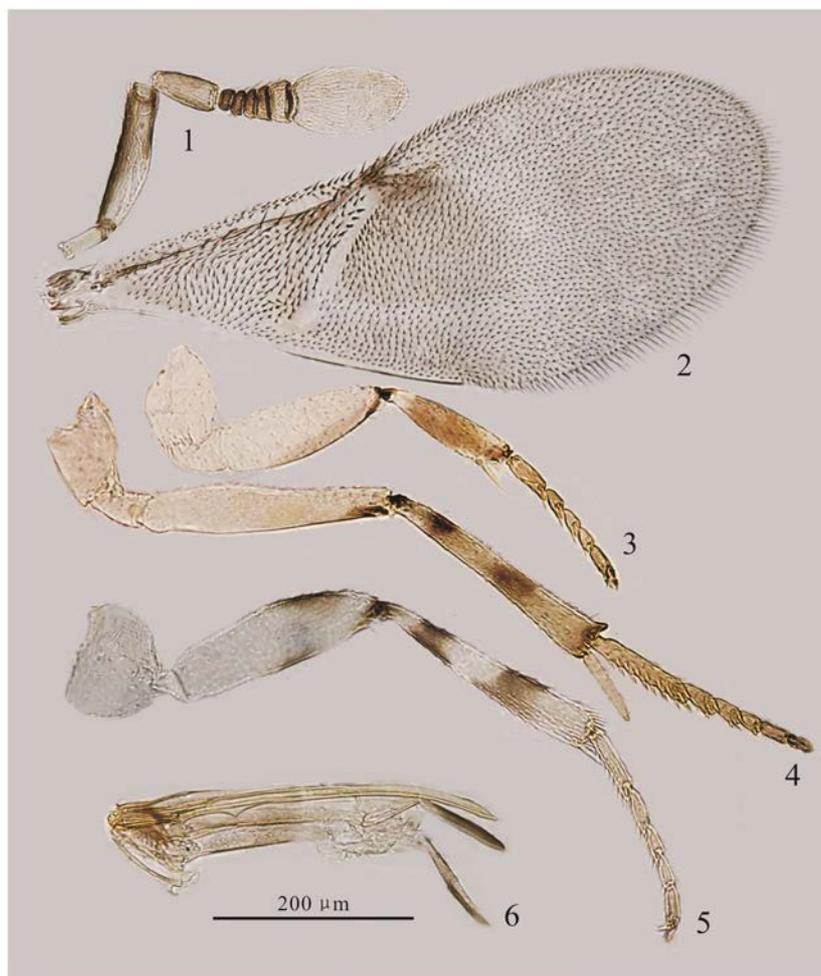
Description. Female (holotype, length 1.2 mm). Head orange yellow with face yellowish white; pronotum dark brown; mesoscutum, axillae and scutellum generally orange yellow, but hind margins and anterior part of mesoscutum that covered by pronotum, apex of scutellum dark brown; metanotum and propodeum dorsally dark brown; lateral and ventral part of thorax yellowish white; antennal scape dark yellow brown, except a longitudinal yellowish white stripe along ventral margin; pedicel dark brown but ventrally yellow; F1–F4 dark brown, F5 yellowish white (Fig. 1), clava yellowish white; tegula yellow, apically dark brown; wings hyaline, but fore wing with a slightly infuscate spot below marginal and stigmal veins (Fig. 2); fore leg (Fig. 3) with coxa and femur yellowish white, apex of femur ventrally yellow brown, tibia yellowish brown but apices yellowish white, all tarsus segments yellow brown; mid leg (Fig. 4) with coxa and femur yellowish white, extreme apex of femur ventrally yellow brown, tibia yellowish white but with two dark bands in the middle and the apices marked dark brown, all tarsus segments yellowish white except extreme apex of terminal tarsomere brown; hind leg (Fig. 5) with coxa and femur yellowish white, femur sub apically marked dark brown, tibia yellowish white but with two dark brown bands in the middle and the base marked dark brown, all tarsus segments yellowish white except extreme apex of terminal tarsomere brown; gaster dorsally dark brown and ventrally yellowish; exerted part of ovipositor sheath dark brown (Fig. 6).

Head. In dorsal view head about 3.5× as wide as frontovertex; ocelli forming an angle about 50°, posterior ocelli separated from occiput margin by about their own diameters and from inner eye margin by about half their own diameters; antenna (Fig. 1) with scape very slightly expanded and flattened, 4× as long as broad; funicle with F1 to F5 distinctly

transverse; clava 3-segmented, apically more or less obliquely truncated; palpi formula 4-3; mandible with three acute teeth.

Thorax. Mesoscutum without notaular lines; fore wing relatively wide, about 2.3× as long as broad, venation as in Fig. 2.

Gaster. Ovipositor (Fig. 6) clearly exerted, the exerted part of ovipositor sheath about 1/4 gaster length. Relative measurements: OL 120, GL 30, MT 70.



Figures 1–6. *Acerophagus chuanensis* sp. nov., ♀. 1. Antenna; 2. Fore wing; 3. Fore leg; 4. Mid leg; 5. Hind leg; 6. Ovipositor.

Male. Body length about 0.8 mm, very similar to female but for antenna and genitalia.

Host. *Dysmicoccus* sp. (Hemiptera: Pseudococcidae) on *Buxus megistophylla*.

Distribution. China (Sichuan).

Holotype. ♀, **China**, Sichuan, Pengzhou, 16-VII-2018, Yaoguang QIN & Yanzhou ZHANG (IZCAS). **Paratype.** ♂, same data as holotype (IZCAS).

Comments. *Acerophagus chuanensis* is close to *A. malinus* (Gahan, 1946) and *A. coccurae* (Sharkov, 1995) in appearance. *Acerophagus chuanensis* can be separated from *A.*

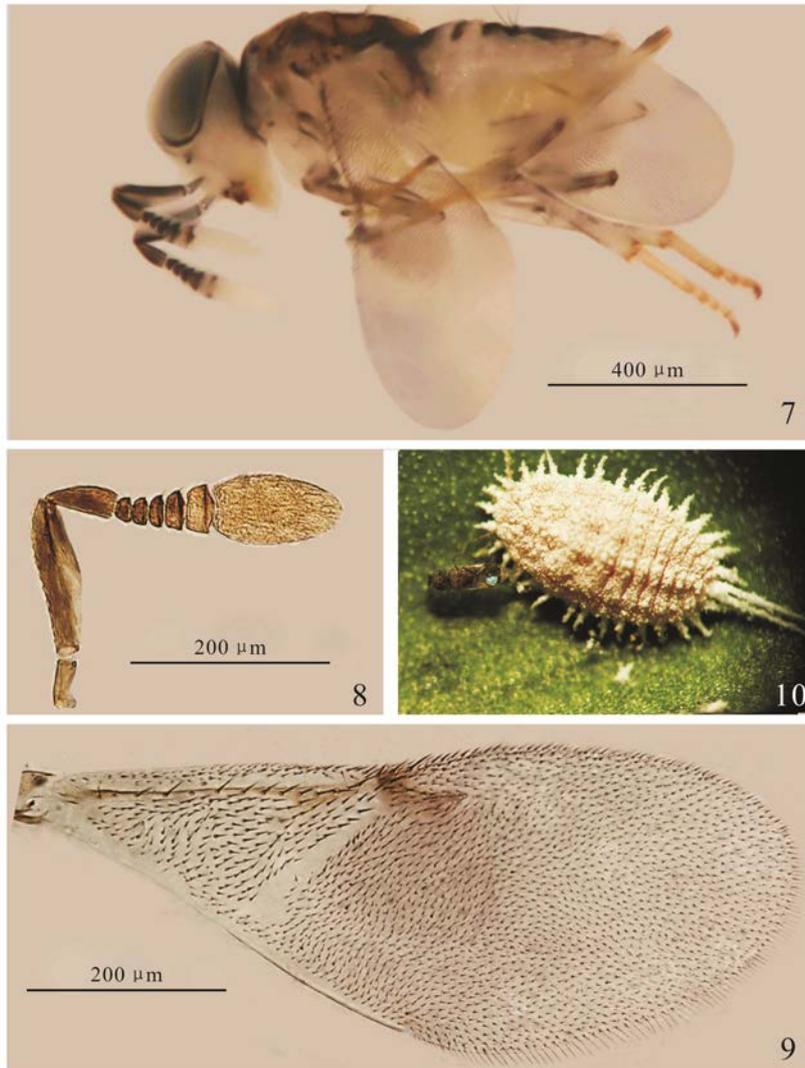
malinus as follows: pedicel about as long as F1–F5 combined (in *malinus*, pedicel about as long as F1–F4 combined); linea calva interrupted by one line of setae (in *malinus*, linea calva not interrupted). *Acerophagus chuanensis* can be separated from *A. coccurae* by: scape about 4.3× as long as broad (in *coccurae*, scape about 4× as long as broad); pedicel about as long as F1–F5 combined (in *coccurae*, pedicel about as long as F1–F4 combined); linea calva interrupted by one line of setae (in *coccurae*, linea calva interrupted by two lines of setae).

2. *Acerophagus malinus* (Gahan) (Figs. 7–9)

Pseudaphycus malinus Gahan, 1946: 317.

Pseudaphycus malinus Gahan: Tachikawa, 1963: 39; Liao *et al.*, 1987: 177.

Acerophagus malinus (Gahan): Trjapitzin, 2008: 168.



Figures 7–10. 7–9, *Acerophagus malinus*, ♀. 7. Body, lateral view; 8. Antenna; 9. Fore wing; 10. A female of *Acerophagus malinu* ovipositing in the mealy bug, *Pseudococcus comstocki*.

Diagnosis. Head about 3.5× as wide as frontovertex; antennal scape 4–4.5× as long as broad; pedicel about as long as F1–F4 combined; antennal clava 3-segmented (Chinese specimens, Fig. 8) or solid; linea calva of fore wing not interrupted in the middle (Fig. 9).

Host. *Coccura suwakoensis*, *Coccura ussuriensis*, *Dysmicoccus brevipes*, *Pseudococcus comstocki* (Fig. 10), *Pseudococcus cryptus*, and *Pulvinaria vitis* (Tachikawa, 1963; Trjapitzin, 1989; Noyes & Hayat, 1994, Blumberg *et al.*, 1999).

Distribution. China (Beijing, Hebei); Armenia (Babayan & Oganessian 1976); Canada; the United States of America (Gordh 1979); Japan (Tachikawa 1963); Korea; Russia; Uzbekistan (Trjapitzin 1989).

Specimens examined. 4♀, **China**, Beijing, Haidian, 25-X-2006, Yanzhou ZHANG; 3♀, Beijing, Haidian, 26-VIII-2014, Xubo WANG & Qingsong ZHOU; 2♀, Beijing, Haidian, 17-IX-2015, Xubo WANG & Yanzhou ZHANG (IZCAS).

Comments. In the original description of *Acerophagus malinus* (Gahan, 1946), the clava is solid, and the antennal scape is about 4× as long as broad. However, females of the Chinese specimens are 3-segmented (slide mounted material), the antennal scape is about 4.5× as long as broad. Presently we regarded these specimens as variations of *Acerophagus malinus*, pending a further study using perhaps molecular methods.

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