

A new species of *Chrysotimus* (Diptera: Dolichopodidae) from Fujian, China

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Abstract: During our study of Dolichopodidae from Wuyishan Mountain in Fujian, a new species of *Chrysotimus* was found. Here we describe the new species *Chrysotimus wuyishanensis* Liu & Yang **sp. nov.** and discuss similar species.

Key words: long-legged flies; new species; *Chrysotimus*; Wuyishan Mountain

中国福建黄鬃长足虻属一新种记述（双翅目：长足虻科）

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摘要: 记述采自中国福建省武夷山的黄鬃长足虻属 1 新种：武夷山黄鬃长足虻 *Chrysotimus wuyishanensis* Liu & Yang **sp. nov.**，提供了该种的整体图和解剖生殖器图，并与近似种进行了比较。

关键词: 长足虻；新种；黄鬃长足虻属；武夷山

Introduction

The genus *Chrysotimus* in the subfamily Peloropeodinae currently has 80 known species. But none from Fujian Province, China. Wang *et al.* (2015) reviewed the genus *Chrysotimus* from China and provided a key to 34 species. During our study of the long-legged flies from Wuyishan Mountain, Fujian province, China, a new species of *Chrysotimus* was found. Here we describe the new species and discuss its similar species.

Material and methods

The specimens on which this study is based were collected with sweep nets in Wuyishan Mountain, Fujian Province, China. The specimens were stored in 75% ethanol and deposited in the Entomological Museum, China Agricultural University (CAU), Beijing.

The photos were taken using a Leica DVM6 Microscopic imaging system and some photos restacked with Helicon focus 6.0 software. The genitalia was cut off and deposited in

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potassium hydroxide (10%) for 12 hours.

Morphological terminology for adult structures mainly follows McAlpine (1981). Terms for the structures of the male genitalia follow Cumming and Wood (2009). The body length was measured from the insertion of the antenna to the apex of the genitalia in males. The following abbreviations are used: acr — acrostichal bristle; ad — anterodorsal bristle; av — anteroventral bristle; d — dorsal bristle; dc — dorsocentral bristle; LI — fore leg; LII — mid leg; LIII — hind leg; pd — posterodorsal bristle; st — sternite; tg — tergite; v — ventral bristle; CuAx ratio — length of m-cu / length of distal portion of CuA.

Taxonomy

Chrysotimus wuyishanensis Liu & Yang *sp. nov.* (Figs 1, 2)

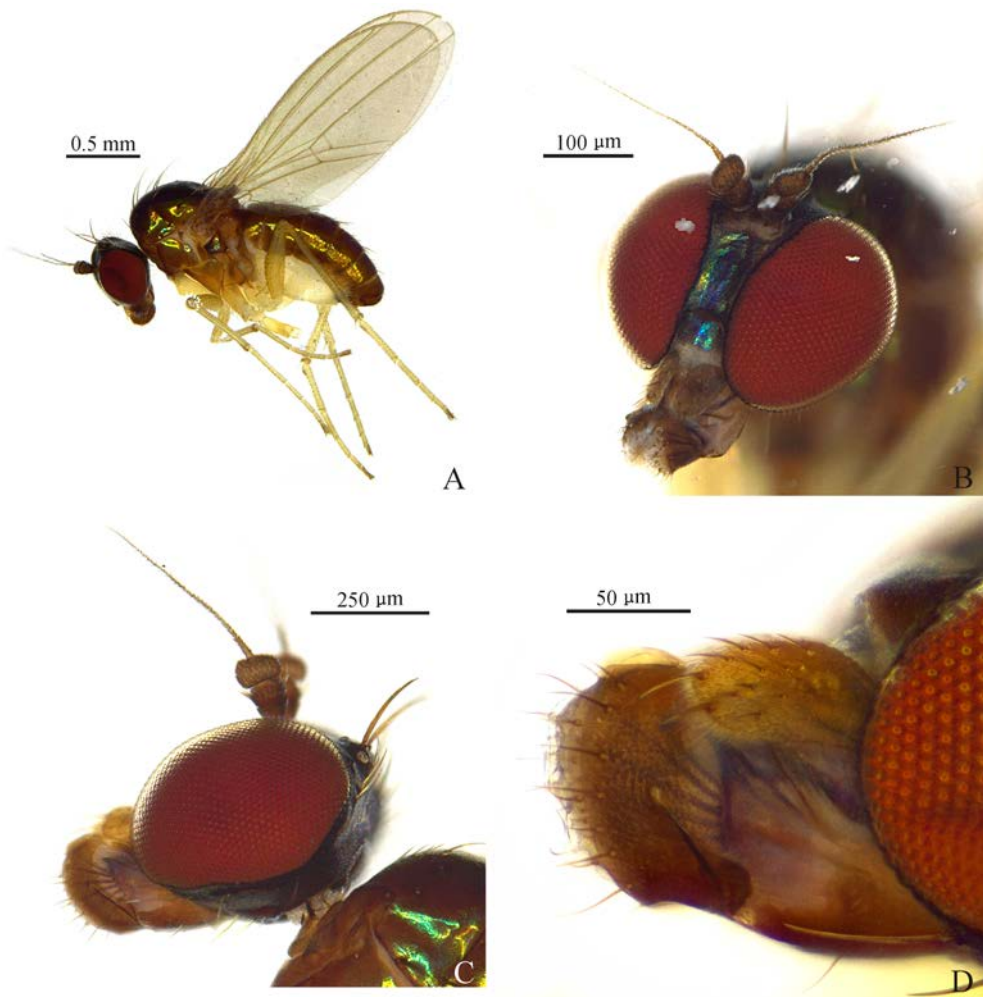


Figure 1. *Chrysotimus wuyishanensis* Liu & Yang *sp. nov.*, holotype, ♂. A. Habitus, lateral view; B. Head, anterior view; C. Head, lateral view; D. Proboscis and palpus, lateral view.

Description. Male (Fig. 1A). Body length 1.9–2.4 mm, wing length 2.0–2.4 mm.



Figure 2. *Chrysotimus wuyishanensis* Liu & Yang **sp. nov.**, holotype, ♂. A. Thorax, dorsal view; B. Hind tarsomere 1, lateral view; C. Wing, lateral view; D. Abdomen, lateral view.

Head metallic green with red compound eyes; eyes separated on face (Fig. 1B). Hairs and bristles on head black, postocular bristles (including postero-ventral hairs) brown to black. Antennal scape and pedicel dark brown to black, first flagellomere dark brown; first flagellomere nearly a subtrapezoid, 1.7 times wider than long; arista dark brown, short pubescence (Fig. 1C). Proboscis dark brown with black hairs; palpus brown with brown hairs and weak bristles (Fig. 1D).

Thorax metallic green. Hairs and bristles on thorax black; 5 strong dc, acr absent; one pair of scutellar bristles long and strong, longer than dc (Fig. 2A); proepisternum with 1 weak bristle on lower part.

Legs mainly yellow except tips of tarsomeres 4–5 dark brown. Hairs and bristles on legs black. Fore coxa with 3–4 anterior and apical bristles, mid coxa with 2–3 anterior and apical bristles, hind coxa with 1 brown outer bristle near middle. Hind trochanter with 1 bristle near middle. Mid femur with 1 subapical av; hind femur with 1 subapical ad. Mid tibia with 2–3 weak pd, 2 bristles apically; hind tibia with 2 ad and 3 pd, 3–4 bristles apically. Hind tarsomere 1 with 14 short and blunt black ventral bristles on basal 1/5 (Fig. 2B). All tarsi with 2 claws. Relative length of tibia and 5 tarsomeres of legs LI : 6.3 : 2.7 : 1.3 : 0.9 : 0.4 : 0.5 ; LII : 8.0 : 4.2 : 1.8 : 1.4 : 0.8 : 0.8 ; LIII : 9.0 : 3.6 : 2.4 : 1.7 : 1.1 : 0.8.

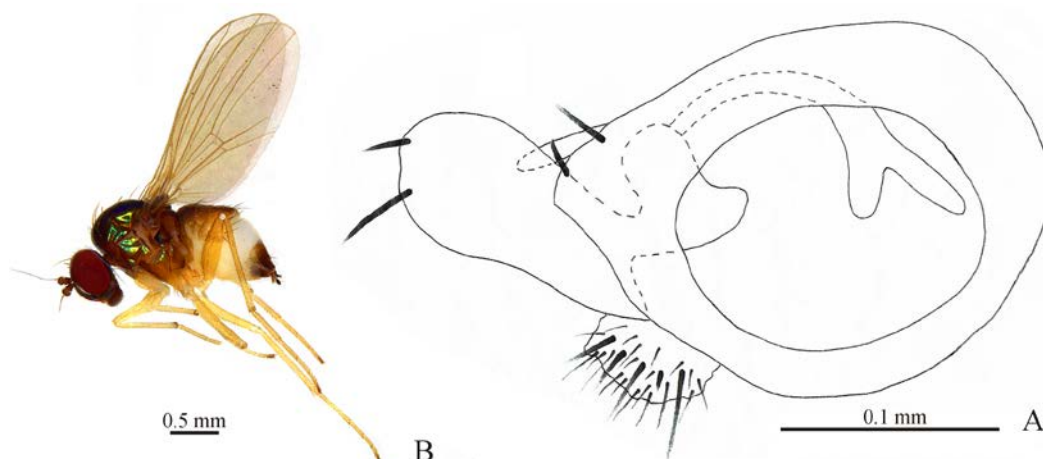


Figure 3. *Chrysotimus wuyishanensis* Liu & Yang **sp. nov.** A. Holotype, ♂, Genitalia, reversed lateral view; B. Paratype, ♀, habitus, lateral view.

Wing hyaline, tinged brown; veins blackish, R_{4+5} and M parallel apically; CuAx ratio 0.3 (Fig. 2C). Squama brown with brown hairs. Halter pale yellow to brown.

Abdomen mainly metallic green; hairs and bristles on abdomen black. Hind margin of tg 1–5 with bristles; tg 6 without hairs and bristles (Fig. 2D). Male genitalia (Fig. 3A): epandrium somewhat rounded. Lateral epandrial lobe protruded, bearing 2 bristles. Surstylus long and thick, not bifurcated at apex, bearing 2 bristles at apex. Cercus short with moderately long bristles. Phallus thin.

Female (Fig. 3B). Body length 2.1–2.5 mm, wing length 2.1–2.5 mm. Similar to male, but hind tarsomere 1 without short and blunt black ventral bristles on basal 1/5, and tg 3–4 degraded.

Holotype. ♂, **China**, Fujian, Wuyishan, Guadun, 27°43'51"N 117°38'47"E, 1,241 m, 23-VIII-2022, leg. Wenqian CAO. **Paratypes.** 20♂13♀, same data as holotype.

Etymology. The specific epithet derives from the type locality of Wuyishan.

Diagnosis. 5 strong dc, acr absent; hind tarsomere 1 with 14 short and blunt black ventral bristles on basal 1/5; surstylus long and thick, not bifurcated at apex.

Remarks. In the key to the Chinese species of *Chrysotimus* (Wang *et al.* 2015), this new species runs to *C. xuae* Wang, Yang & Grootaert, 2005, but the surstylus is not bifurcated at apex. In *C. xuae*, the surstylus is bifurcated at apex (Yang *et al.* 2011).

Discussion

There are 24 species of *Chrysotimus* with hind tarsomere 1 with bundle(s) of black ventral bristles at base in China, and 8 of them without acr. These two features are key in classification. Other features such as the colour of hairs and bristles on thorax, the number of the ventral bristles at base of hind tarsomere 1, and the position of arista in the first flagellomere, can also be used in separating *Chrysotimus* species. The most effective means to identify is to examine the male genitalia. All species can be easily separated using the dissected and mounted genitalia. Yang *et al.* (2011) listed most of *Chrysotimus* in China with

male genitalia presented.

Although “the hind tarsomere 1 with bundle(s) of black ventral bristles at base” is the key feature in identification of *Chrysotimus*, a species group is harder to propose because of the diversity of the bristles. And if “the hind tarsomere 1 with bristles” is an autapomorphy of the genus, it is therefore necessary to check more species from other geographical fauna.

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