

A new species of *Diaphorus* (Diptera: Dolichopodidae) from Guangdong, China

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Abstract: During our study of Dolichopodidae from Shenzhen Fairy Lake Botanical Garden, a new species of *Diaphorus* was found. In this paper, we describe the new species, *Diaphorus minos* Liu & Yang **sp. nov.**, and present a key to the species of the genus *Diaphorus* from Guangdong.

Key words: Empodoidea; taxonomy; long-legged flies; key

中国广东省异长足虻属一新种记述（双翅目：长足虻科）

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摘要：记述采自深圳仙湖植物园的异长足虻属 1 新种：米诺斯异长足虻 *Diaphorus minos* Liu & Yang **sp. nov.**，提供了整体图和解剖生殖器图，编制了广东省该属的分种检索表。

关键词：舞虻总科；分类；长足虻；检索表

Introduction

Liu *et al.* (2018) reviewed the genus *Diaphorus* from China, providing a key to 45 species. During our study of the long-legged flies from Shenzhen Fairy Lake Botanical Garden, a new species of *Diaphorus* was found. Here we described this new species and provide a key to the species of the genus *Diaphorus* from Guangdong.

Material and methods

The specimens on which this study is based were collected from Shenzhen Fairy Lake Botanical Garden of China by Malaise traps. The specimens were stored in 75% ethanol. Specimens of this new species are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing.

The photos were taken using a Leica DVM6 Microscopic imaging system. The genitalia was cut off and deposited in potassium hydroxide (10%) for 12 hours.

Accepted 12 May 2021. Published 25 September 2021. Published online 6 September 2021.

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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.

Key to species of *Diaphorus* of Guangdong, China

1. Mid tarsus without claws *D. mandarinus*
- . Mid tarsus with claws 2
2. Abdomen entirely black 3
- . Abdomen mainly black with yellow base *D. minos* Liu & Yang **sp. nov.**
3. Halter yellow *D. qingchengshanus*
- . Halter black *D. guangdongensis*

Taxonomy

1. *Diaphorus minos* Liu & Yang **sp. nov.** (Figs 1–8)

Description. Male (Fig. 1). Body length 4 mm, wing length 3.3 mm.

Head metallic green with red compound eyes; eyes contiguous on face. Hairs and bristles on head black, postocular bristles (including postero-ventral hairs) brown to black. Antenna dark yellow to dark brown, scape and pedicel dark brown, flagellomere dark yellow; first flagellomere nearly subtrapezoidal, 1.6 times wider than long; arista dark brown, short pubescent (Figs 2, 3). Proboscis brown with black hairs; palpus brown with black hairs and 1 weak bristle at apex (Fig. 4).

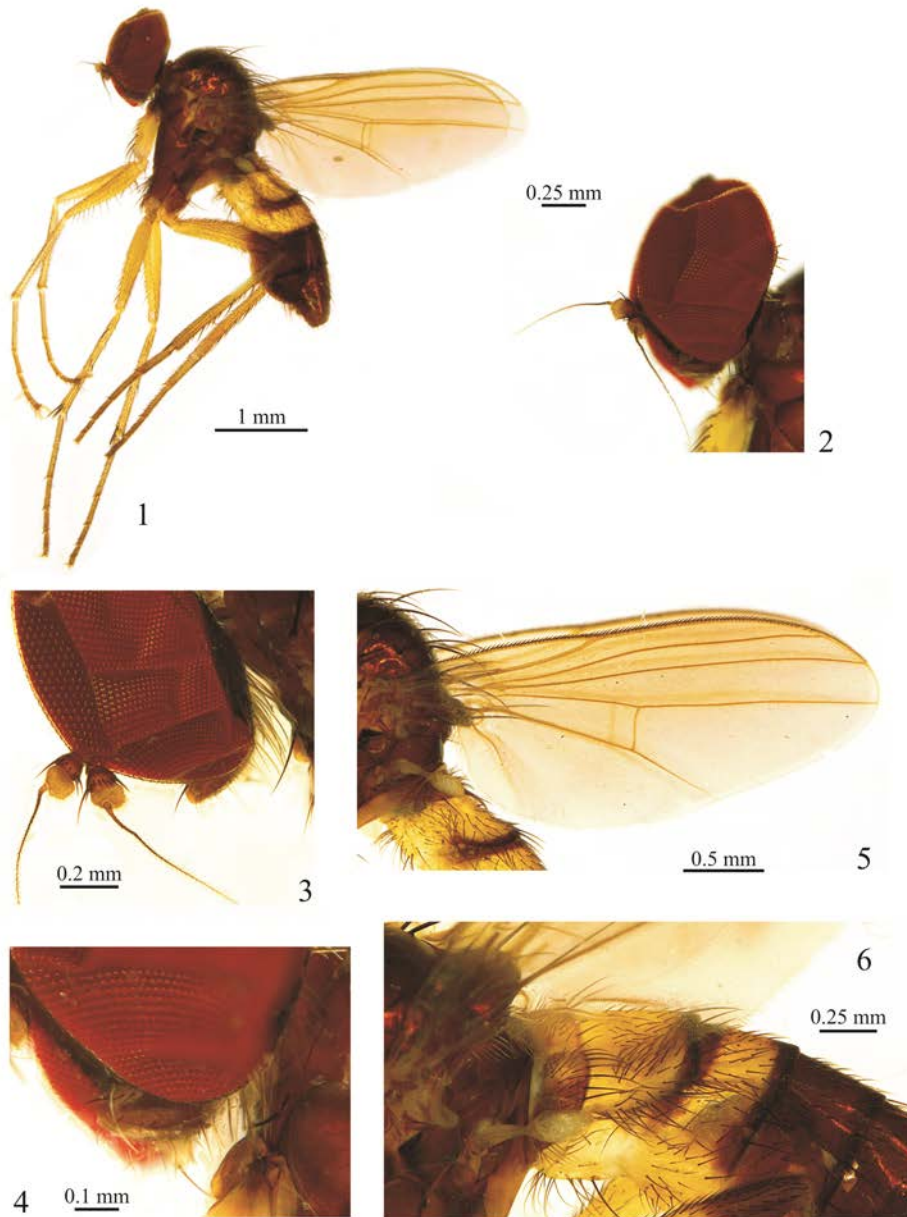
Thorax metallic green. Hairs and bristles on thorax black; 5 dc, 9–10 irregularly paired acr short and hair-like; scutellar bristles long and strong, lateral scutellar bristles weak; proepisternum with 1 long bristle on lower part.

Legs mainly yellow; fore coxa yellow with somewhat brown base, mid and hind coxae brown; hind femur yellow with apical 1/3 brown; hind tibia yellow to light brown from base to apex; fore and mid tarsi from tarsomere 1 onward yellow to brown; hind tarsus from tarsomere 1 onward light brown to brown. Hairs and bristles on legs black. Fore and mid coxae with anterior bristles, hind coxa with 1 outer bristle at base. Hind trochanter with 1 bristle in the middle. Fore femur with ventral hairs long, with row of pv; mid femur with ventral hairs somewhat long; hind femur with 3 av and 5 pv apically. Fore tibia with 2 weak ad at basal 1/4 and 1/2, 4–5 weak bristles apically; mid tibia with 2 ad and 3 weak pd, 3–4 bristles apically; hind tibia with 2 weak ad and row of weak pd, 3–4 short bristles apically. Fore tarsus without claws, with enlarged pulvilli about as long as tarsomere 5; mid and hind tarsi each with 2 small claws and 2 small pulvilli. Relative length of tibia and 5 tarsomeres of legs LI : 8.3 : 4.5 : 2.0 : 1.5 : 0.9 : 0.9 ; LII : 9.5 : 5.6 : 2.9 : 1.9 : 1.1 : 0.8 ; LIII : 13.6 : 3.8 : 3.4 : 2.2 : 1.4 : 0.9.

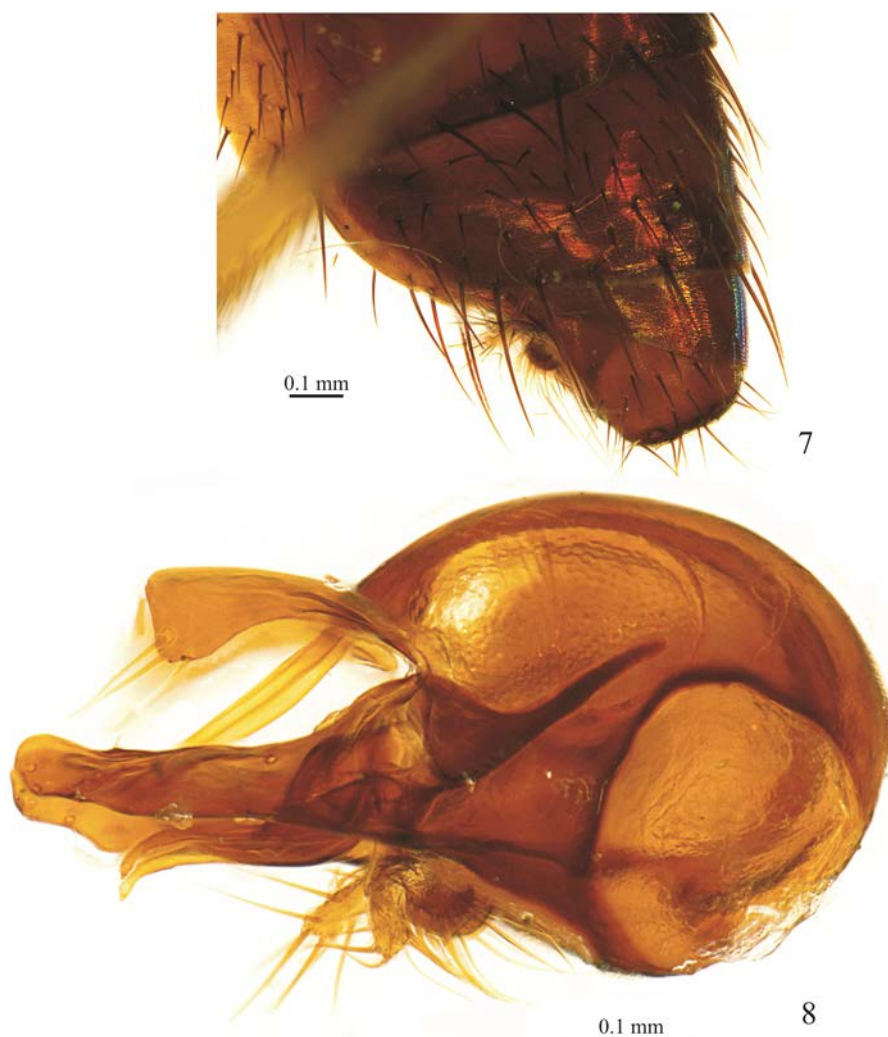
Wing hyaline, tinged brown; veins blackish, R4+5 and M parallel apically; CuAx ratio 0.47 (Fig. 5). Squama pale yellow with black hairs. Halter pale yellow.

Abdomen mainly metallic green; tg 1 mainly yellow, tinged metallic green on both sides,

tg 2 yellow with narrow posterior margin metallic green, tg 3 yellow with narrow anterior and posterior margins metallic green; st 1–3 yellow (Fig. 6). Hairs and bristles on abdomen black. Tg 6 without hairs and bristles (Fig. 7); st 8 with 4 bristles. Male genitalia (Fig. 8): epandrium somewhat rounded. Hypandrium nearly truncate apically. Lateral epandrial lobe wide and long, with 3 strong bristles at apex. Ventral lobe of surstylus long and thin, with some hairs. Cercus short with short ventral lobe, with long bristles. Phallus thin and long.



Figures 1–6. *Diaphorus minos* Liu & Yang **sp. nov.**, holotype ♂. 1. Habitus, lateral view; 2. First flagellomere, lateral view; 3. Antenna, lateral view; 4. Proboscis and palpus, lateral view; 5. Wing, lateral view; 6. Abdomen 1–3, lateral view.



Figures 7, 8. *Diaphorus minos* Liu & Yang **sp. nov.**, holotype ♂. 7. Tip of abdomen, lateral view; 8. Genitalia, reverse lateral view.

Female. Unknown.

Holotype. ♂, **China**, Guangdong, Shenzhen, Fairy Lake Botanical Garden, 29.575N 114.175E, 01–23-IV-2015, leg. Haihang LIN.

Remarks. In the key to the Chinese species of *Diaphorus* (Liu *et al.* 2018), this new species runs to *D. longiseta* and *D. basiniger*, but the ventral lobe of this new species is small and the tg 1 is tinged metallic green on both sides. *D. longiseta* and *D. basiniger* each has the ventral lobe at least 2 times longer than the cercus; and tg 1 are yellow and metallic green respectively (Yang *et al.* 2011).

Etymology. The specific epithet is after the mythical character “Minos” from Greek mythology.

Diagnosis. 5 dc, 9–10 irregularly paired acr short and hair-like; tg 1 mainly yellow, tinged

metallic green on both sides, st 1–3 yellow; cercus short with short ventral lobe.

2. *Diaphorus qingchengshanensis* Yang & Grooaert, 1999

Diaphorus qingchengshanensis Yang & Grooaert, 1999: 230. Type location: China, Sichuan, Qingcheng Mountain.

Specimens examined. 1♂, **China**, Guangdong, Shenzhen, Fairy Lake Botanical Garden, 29.575N 114.175E, 01–23-IV-2015, leg. Haihang LIN; 1♂, **China**, Guangdong, Shenzhen, Fairy Lake Botanical Garden, 29.575N 114.175E, 01–23-V-2015, leg. Haihang LIN.

Distribution. China (Guangdong, Henan, Shaanxi, Sichuan).

Remarks. In the previous description, the CuAx was 0.65; but the two examined specimens here are 0.43 and 0.5, respectively.

Diagnosis. 5 dc, 10–11 irregularly paired acr; lateral epandrial lobe bearing about 15 bristles; mid tibia with 2 ad and 2 pd, hind tibia with 2 ad and 6 pd (Figs 9, 10).



Figures 9, 10. *Diaphorus qingchengshanensis* Yang & Grooaert, 1999. Specimen from Fairy Lake Botanical Garden, Guangdong, China. 9. Habitus, lateral view; 10. Tip of abdomen, lateral view.

Acknowledgements

The authors thank Mr. Haihang LIN (Shenzhen) for collecting the specimens.

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