

Six new species of Dolichopodinae from China (Diptera, Dolichopodidae)

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Abstract

Six new species (*Hercostomus abnormis*, *H. nudus*, *Paraclius yunnanensis*, *Ludovicius acutatus*, *L. flavus*, *L. henanus*) of the subfamily Dolichopodinae from China are described as new to science.

Key words: Dolichopodidae; taxonomy; *Hercostomus*; *Paraclius*; *Ludovicius*; new species; China.

Introduction

The genus *Hercostomus* LOEW, 1857 is worldwide in distribution with about 280 known species. Eleven species are known to occur in continental China (NEGROBOV, 1991). Two new species are added to the fauna of China.

The genus *Paraclius* LOEW, 1864, is worldwide in distribution with 17 known species from the Palaearctic and Oriental regions (NEGROBOV, 1991; DYTE, 1975). One new species is described from the mainland of China. The genus *Ludovicius* RONDANI, 1843 is characterized by the rather large scape but relatively reduced pedicel and very elongated arista with apical flag which is variable in shape. It is distributed in the Palaearctic region only, with 6 known species (NEGROBOV, 1991). Only 1 species, *L. miricornis* PARENT, was known from China by the author (YANG in press). Three new species are described.

This research is based on the Insect Collection of China Agricultural University (CAU) and the collection of the Zoological Institute (ZI) of Academia Sinica.

Hercostomus (Hercostomus) abnormis sp. nov. (Figs 1-2)

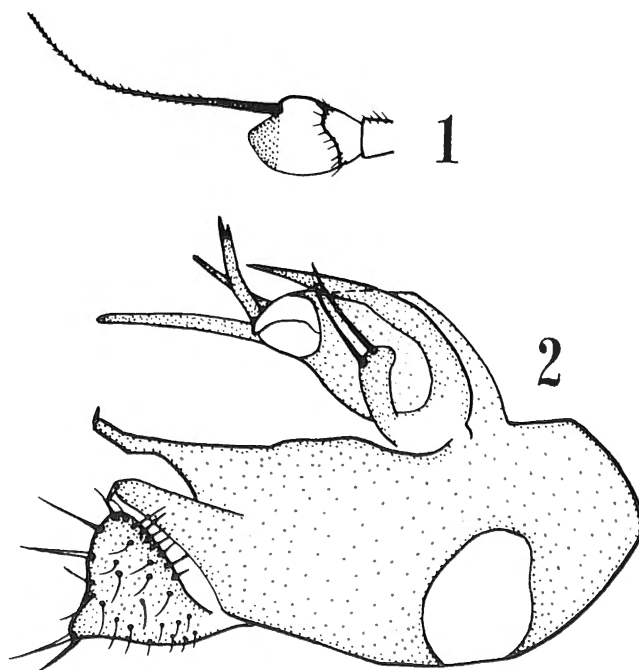
Male. Body length 2.4 mm, wing length 2.3 mm.

Head metallic green with grayish pruinosity. Hairs and bristles on head black; postocular hairs yellow. Antenna yellow, first flagellomere yellow except apex dark yellow, nearly as long as wide, obtuse apically; arista black, indistinctly minutely pubescent, with basal segment 0.3

times as long as apical segment. Proboscis brownish yellow with blackish hairs; palpus yellow with blackish hairs.

Thorax weakly metallic green with grayish pruinosity; mesonotum yellow laterally, scutellum (except base) yellow; pleuron yellow except pteropleuron blackish. Hairs and bristles on thorax black; 4-5 irregularly paired acr, short and hair-like; 6 strong dc.

Legs yellow. Hairs and bristles on legs black; mid and hind coxae with 1 bristle, mid and hind femora with 1 preapical bristle; fore tibia with 1 anterodorsal bristle, 2 posterodorsal bristles; mid tibia with 2 anterodorsal bristles, 2 posterodorsal bristles; hind tibia with 2 anterodorsal bristles, 3 posterodorsal bristles. Relative lengths of segments (excluding coxae and trochanters) of legs LI (fore leg) 2.5: 2.4: 1.3: 0.6: 0.4: 0.3: 0.3; MII (mid leg) 3.1: 3.3:



Figs 1-2. – *Hercostomus (Hercostomus) abnormis* sp. nov., male. 1. antenna, lateral view; 2. genitalia, lateral view.

1.8: 0.9: 0.8: 0.5: 0.3; LIII (hind leg) 3.6: 3.8: 1.1: 1.3: 0.9: 0.7: 0.4.

Wing hyaline; veins dark brown; R4+5 and M strongly convergent, CuAx ratio (length of m-cu/length of CuA distal section) 0.35. Squama yellow with yellow hairs. Halter yellow.

Abdomen weakly metallic green; terga 1-2 dark yellow to yellow except posterior margin of tergum 2.

Hairs on abdomen black. Male genitalia (Fig. 2): Epandrium longer than wide, cleft apically, with baso-lateral lobe furcate; cercus nearly triangular; hypandrium distinctly swollen with thin branches apically; aedeagus very slender and more or less straight apically.

Female. Unknown.

Holotype ♂ (ZI), Xinjiang: Yanqi (950-1,170 m), 5.VIII.1958, Changqin LI.

Distribution. China (Xinjiang).

Remarks. This new species is similar to *H. luteipleuratus* PARENT from Shanxi. It may be separated from the latter by having the following characters: postocular hairs wholly yellow; R4+5 and M strongly convergent; squama yellow with pale hairs.

***Hercostomus (Hercostomus) nudus* sp. nov.**

(Figs 3-4)

Male. Body length 2.3 mm, wing length 2.7 mm.

Head metallic green with grayish pruinosity. Hairs and bristles on head black; postocular hairs black. Antenna blackish; first flagellomere 1.8 times as long as wide, pointed apically; arista black, bare, with basal segment 0.4 times as long as apical segment. Proboscis blackish with black hairs; palpus black with black hairs.

Thorax metallic green with gray pruinosity. Hairs and bristles on thorax black; acr absent, 6 strong dc; scutellum without marginal hairs.

Legs yellow with tarsi brown to dark brown. Hairs and

bristles on legs black; mid and hind coxae with 1 bristle, mid and hind femora with 1 preapical bristle; fore tibia with 1 anterodorsal bristle, 2 posterodorsal bristles; mid tibia with 2-3 anterodorsal bristles, 2 posterodorsal bristles and 1 anteroventral bristle; hind tibia with 2 anterodorsal bristles, 3 posterodorsal bristles and 1 anteroventral bristle. Relative lengths of segments of legs LI 2.6: 2.7: 1.1: 0.8: 0.7: 0.5: 0.4; LII 3.2: 3.5: 1.4: 1.2: 1.0: 0.8: 0.4; LIII 3.4: 4.1: 1.1: 1.7: 1.1: 0.8: 0.5.

Wing nearly hyaline; veins dark brown; R4+5 and M nearly parallel, CuAx ratio 0.55. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 4): Epandrium longer than wide, somewhat contracted apically, with lateral lobe rather large; cercus large and nearly quadrate, with short marginal denticles; hypandrium rather thick apically; aedeagus slender and distinctly curved.

Female. Unknown.

Holotype ♂ (ZI), Sichuan: Mountain Emei (1,800-1,900 m), 14.VIII.1957, Zongyuan WANG.

Distribution. China (Sichuan).

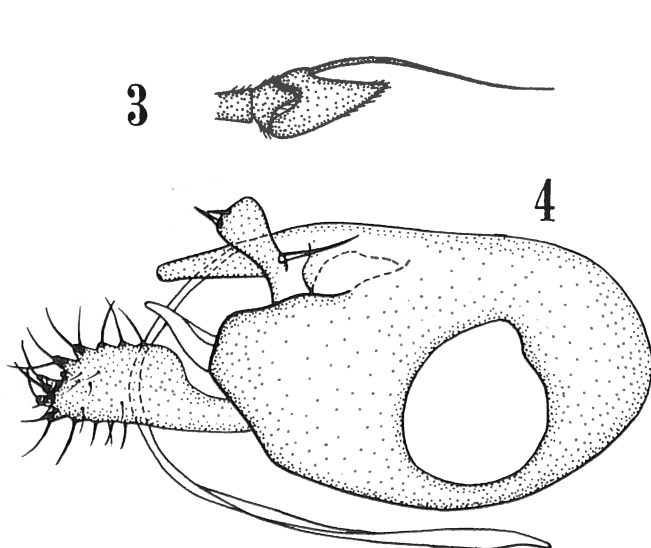
Remarks. This new species is very peculiar and easily separated from other known species of the genus from China by having the arista bare and acr absent.

***Paraclius yunnanensis* sp. nov.**

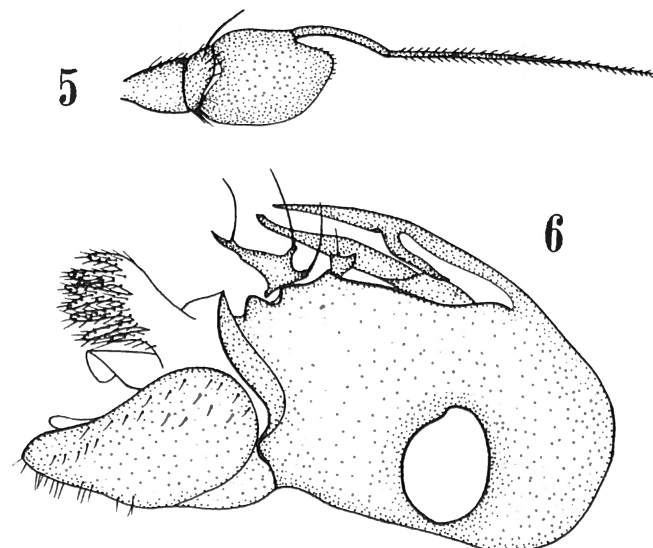
(Figs 5-6)

Male. Body length 5.0 mm, wing length 5.2 mm.

Head metallic green with dense pale gray pruinosity. Hairs and bristles on head black; postocular hairs black. Antenna black; first flagellomere 1.2 times as long as wide, obtuse apically; arista black, minutely pubescent, with basal segment 0.35 times as long as apical segment. Proboscis brown with black hairs; palpus black with black hairs.



Figs 3-4. - *Hercostomus (Hercostomus) nudus* sp. nov., male. 3. antenna, lateral view; 4. genitalia, lateral view.



Figs 5-6. - *Paraclius yunnanensis* sp. nov., male. 5. antenna, lateral view, 6. genitalia, lateral view.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 5-6 irregularly paired acr, short and hair-like; 6 strong dc.

Legs pale brownish yellow; fore coxa brownish yellow, mid and hind coxae blackish; dorsal margin (including apex) of hind femur and tips of tibiae brown to dark brown; tarsi brown to dark brown, fore and mid tarsomere 1 pale with dark tip. Hairs and bristles on legs black; mid and hind coxae with 1 bristle, mid femur with 2 preapical bristles, hind femur with 1 preapical bristle; fore tibia with 3 anterodorsal bristles and 2 posterodorsal bristles; mid tibia with 4 anterodorsal bristles, 4 posterodorsal bristles, and 3 ventral bristles; hind tibia with 5 anterodorsal bristles and 5 posterodorsal bristles. Relative lengths of segments of legs LI 5.0: 4.9: 3.0: 1.1: 0.9: 0.6: 0.6; LII 6.9: 8.3: 4.3: 3.1: 2.2: 1.2: 0.7; LIII 8.0: 10.8: 2.9: 4.0: 2.6: 1.4: 0.9.

Wing nearly hyaline, tinged with brownish yellow on anteroapical margin above R4+5; veins dark brown; M strongly curved toward R4+5 apically, CuAx ratio 1.6. Squama pale yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 6): Epandrium longer than wide, wide apically, with tow separated lateral lobes irregular in shape; cercus large and somewhat subtriangular; hypandrium long with a curved lateral process; aedeagus slightly curved and thin apically.

Female. Unknown.

Holotype ♂ (CA), Yunnan: Ruili (750 m), 3.V.1981, Chikun Yang.

Distribution. China (Yunnan).

Remarks. This new species is similar to *pilosellus* BECKER from the Oriental region. It differs from the latter in the following points: mid and hind coxae blackish, first flagellomere shorter (1.2 times as long as wide), cercus subtriangular with very short hairs; in *pilosellus*, mid and hind coxae yellow, first flagellomere longer (about 1.5 times as long as wide), cercus oval with long hairs apically (BECKER, 1922).

***Ludovicicus acutatus* sp. nov.**

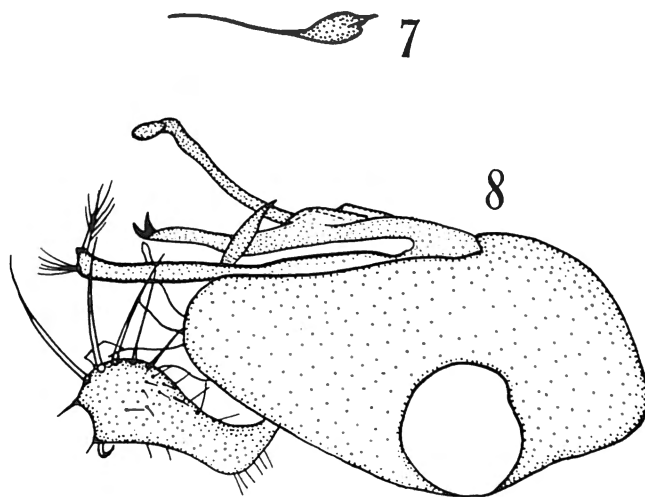
(Figs 7-8)

Male. Body length 4.3 mm, wing length 5.0 mm.

Head dark metallic green with gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow. Antenna black; first flagellomere pale on ventral portion, oval; arista subapical and very slender, with swollen apex bearing an acute process. Proboscis brownish yellow with pale hairs; palpus black with black hairs.

Thorax dark metallic green with gray pruinosity. Hairs and bristles on thorax black; 2-3 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with some marginal hairs laterally.

Legs [mid and hind tarsi broken] yellow; mid and hind coxae tinged with black. Hairs and bristles on legs



Figs 7-8. – *Ludovicicus acutatus* sp. nov., male. 7. apical portion of arista, lateral view; 8. genitalia, lateral view.

black, but coxae and fore tibia with only pale hairs; mid and hind coxae with 1 bristle, mid and hind femora with 1 preapical bristle, mid femur with a row of brownish ventral bristles; fore tibia with 2 dorsal bristles; mid tibia with 1 dorsal bristle.

Wing hyaline; veins dark brown; R4+5 and M distinctly convergent apically, CuAx ratio 0.4. Squama yellow with pale hairs. Halter pale yellow.

Abdomen metallic green with thin gray pollen. Hairs on abdomen black. Male genitalia (Fig. 8): Epandrium longer than wide, rounded apically; cercus thick apically, with a weak apical incision; hypandrium divided into irregular branches, with a long lateral arm; aedeagus slender and acute apically.

Female. Unknown.

Holotype ♂ (ZI), Sichuan: Maerkang (3,230 m), 8.VII.1961, Xiaof LI.

Distribution. China (Sichuan).

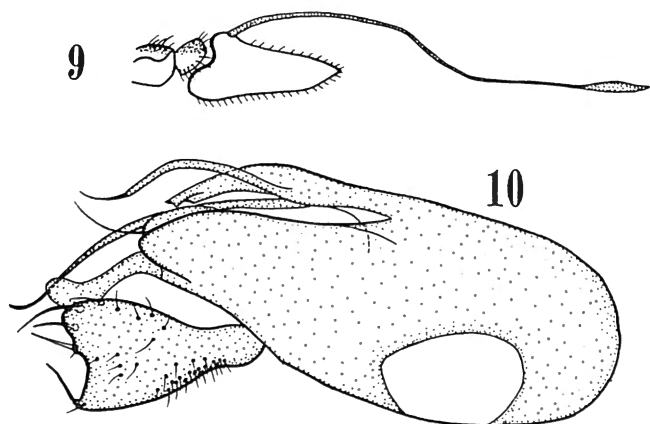
Remarks. This new species is somewhat similar to *dufourii* MACQUART from Europe and North Africa. It may be separated from the latter by having the mid femur with a row of ventral bristles. In *dufourii*, the mid femur has no ventral bristles (STACKELBERG, 1941).

***Ludovicicus flavus* sp. nov.**

(Figs 9-10)

Male. Body length 4.3 mm, wing length 3.9 mm.

Head dark metallic green with gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow. Antenna yellow, scape and pedicel blackish dorsally; first flagellomere distinctly elongated, 2.3 times as long as wide, pointed apically; arista dorsal and very slender, dark brown, with slightly swollen apex. Proboscis yellow with black hairs; palpus brown with black hairs.



Figs 9-10. – *Ludovicus flavus* sp. nov., male. 9. antenna, lateral view; 10. genitalia, lateral view.

Thorax yellow with gray pruinosity; dorsum (except anterior margin and anterolateral area of mesonotum) metallic green; pteropleuron blackish. Hairs and bristles on thorax black; acr absent, 6 strong dc.

Legs yellow; all coxae yellow; mid and hind tarsi brownish yellow. Hairs and bristles on legs black; mid and hind femora with 1 preapical bristle, mid femur with 2 yellow ventral bristles, hind femur with 3 yellow ventral bristles; fore tibia with 2 posterodorsal bristles; mid tibia with 4 anterodorsal bristles, 2 posterodorsal bristles and 2 anteroventral bristles; hind tibia with 3 anterodorsal bristles and 5 posterodorsal bristles; hind tarsomere 1 with 2 short ventral bristles.

Wing nearly hyaline; veins brownish yellow; R4+5 and M convergent apically, CuAx ratio 0.4. Squama yellow with pale and black hairs. Halter yellow.

Abdomen metallic green with thin gray pollen; terga 1-2 yellow, sterna 1-6 dark yellow to yellow. Hairs on abdomen black. Male genitalia (Fig. 10): Epandrium much longer than wide, somewhat acute apically; cercus wide apically, with a weak apical incision; hypandrium with a slender and curved lateral arm; aedeagus slender and curved apically.

Female. Unknown.

Holotype ♂ (CAU), Henan: Luanchuan, 14.VII.1996, Jien XU.

Distribution. China (Henan).

Remarks. This new species is very similar to the latter in the body coloration, but can be distinguished from it by having the scape and pedicel darker dorsally and swollen apex of arista entirely black.

Lucovicus henanus sp. nov.
(Figs 11-13)

Male. Body length 3.6 mm, wing length 3.6 mm.

Head dark metallic green with gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow. Antenna yellow; first flagellomere distinctly elongated,

3.6 times as long as wide, pointed apically; arista dorsal and very slender, dark brown, with slightly swollen and pale apex. Proboscis yellow with black hairs; palpus brown with black hairs.

Thorax yellow with gray pruinosity; dorsum (except anterior margin and anterolateral area of mesonotum) metallic green; pteropleuron blackish. Hairs and bristles on thorax black; acr absent, 6 strong dc.

Legs yellow; all coxae yellow; mid and hind tarsi (except tarsomere 1) brownish yellow to brown. Hairs and bristles on legs black; mid and hind coxae with 1 bristle, mid and hind femora with 1 preapical bristle, mid femur with 3 brown ventral bristles, hind femur with 1 brown ventral bristle; fore tibia with 2 posterodorsal bristles; mid tibia with 2 anterodorsal bristles, 2 posterodorsal bristles and 2 anteroventral bristles; hind tibia with 2 anterodorsal bristles and 4 posterodorsal bristles; hind tarsomere 1 with 3 short ventral bristles.

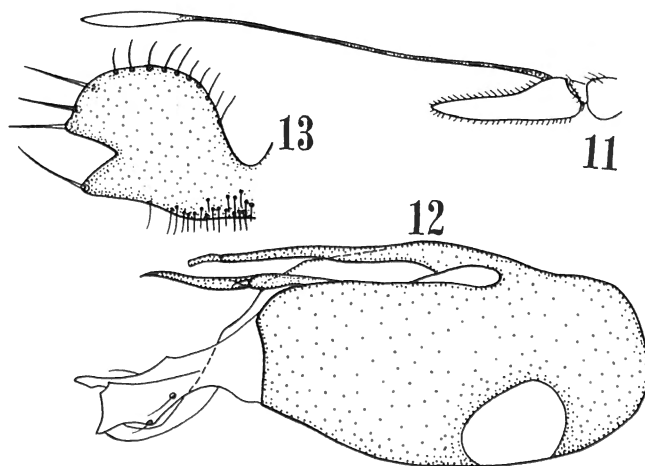
Wing hyaline; veins brownish yellow; R4+5 and M convergent apically, CuAx ratio 0.4. Squama dark yellow black hairs. Halter yellow.

Abdomen pale metallic green with thin gray pollen; terga 1-3 yellow with posterior margin of terga 2-3 darker, terga 4 brownish yellow laterally, sterna 1-6 dark yellow to yellow. Hairs on abdomen black. Male genitalia (Fig. 10): Epandrium much longer than wide, wide apically; cercus broad, with a deep apical incision; hypandrium with a thin and nearly straight lateral arm; aedeagus slender, weakly curved and acute apically.

Female. Unknown.

Holotype ♂ (CAU), Henan: Mountain Baiyun (1,500 m), Songxian, 18.VII.1996, Chi-kun YANG and Wanzhi CAI.

Distribution. China (Henan). *Remarks*. This new species can be separated from *flavus* sp. nov. by having the swollen apex of arista pale and male cercus with a deep apical incision.



Figs 11-13. – *Ludovicus henanus* sp. nov., male. 11. antenna, lateral view; 12. genitalia, lateral view; 13. cercus, lateral view.

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