



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 19, Heft 13: 233-240

ISSN 0250-4413

Ansfelden, 30. Juni 1998

New species of Dolichopodidae from South China (Diptera, Dolichopodidae)

Ding YANG

Abstract

In this paper six species of Dolichopodidae (Diptera) from South China are described as new to science: *Hercostomus flavimaculatus* sp. nov., *H. qingchenganus* sp. nov., *H. tianmushanus* sp. nov., *Ludovicicus sichuanensis* sp. nov., *Mesorhaga guangxiensis* sp. nov., *Amblysilopus guangxiensis* sp. nov.

Zusammenfassung

In dieser Arbeit werden sechs Arten von Dolichopodidae (Diptera) aus Süd-China neu für die Wissenschaft beschrieben: *Hercostomus flavimaculatus* sp. nov., *H. qingchenganus* sp. nov., *H. tianmushanus* sp. nov., *Ludovicicus sichuanensis* sp. nov., *Mesorhaga guangxiensis* sp. nov., *Amblysilopus guangxiensis* sp. nov.

Introduction

The research is based on the Insect Collection of China Agricultural University, Beijing. Six species of the family Dolichopodidae from South China are described as new to science.

***Hercostomus (Hercostomus) flavimaculatus* sp. nov. (Figs. 1-2)**

Male. Body length 4.8 mm, wing length 5.0 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow. Antenna wholly black; third antennomere 1.7 times as long as wide, somewhat obtuse apically; arista dark brown, minutely pubescent, with basal segment 0.4 times as long as apical segment. Proboscis and palpus dark yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 8-9 irregularly paired acr, short and hair-like; 6 strong dc; scutellum without short hairs. Legs entirely 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 2 posterior dorsal bristles, without apico-ventral bristle; mid tibia with 1-2 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 3 anterior dorsal bristles, 3-4 posterior dorsal bristles and 3 ventral bristles; hind tarsomere 1 with 2 ventral bristles. Relative lengths of segments (excluding coxae and trochanters) of legs LI (fore leg) 4.7 : 5.1 : 3.0 : 1.4 : 1.1 : 0.75 : 0.7; LII (mid leg) 6.1 : 6.9 : 3.6 : 2.0 : 1.35 : 1.0 : 0.7; LIII (hind leg) 7.6 : 9.2 : 2.2 : 3.2 : 2.0 : 1.1 : 0.8. Wing hyaline; veins brownish yellow; R4+5 and M distinctly convergent, CuAx ratio (length of crossvein m-cu/length of Cu distal section) 0.4. Squama yellow with yellow hairs. Halter yellow.

Abdomen metallic green; segments 1-4 yellow with narrow or wide posterior margins of tergites 1-4 black. Hairs on abdomen black. Male genitalia (Fig. 2): Epandrium longer than wide, with lateral lobe short and rounded; cercus very large and somewhat triangular; hypandrium short and furcate; aedeagus acute apically.

Female. Body length 4.3 mm, wing length 4.4 mm. Similar to male, but hind tarsus brown except tarsomere 1 pale.

Holotype ♂, paratype 1 ♀: Sichuan, Nanping, 2000 m, 1987.VII.15, Xiaochun ZHANG. Distribution. China, Sichuan.

Remarks. This new species may be easily separated from *H. luteipleuratus* PARENT, 1944 and *H. rubroviridis* PARENT, 1927 from China by the wholly metallic green thorax and wholly black antenna. In *luteipleuratus* and *rubroviridis*, the thorax is partly yellow and antenna is chiefly yellow (PARENT 1944; NEGROBOV 1977).

Hercostomus (Hercostomus) qingchenganus sp. nov. (Figs. 3-4)

Male. Body length 3.5 - 3.9 mm, wing length 3.9 - 4.0 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; postocular hairs wholly black. Antenna yellow with third antennomere blackish except base; third antennomere 1.4 times longer than wide, acute apically; arista black, minutely pubescent, with basal segment 0.6 times as long as apical segment. Proboscis brownish yellow with black hairs; palpus black with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 7-8 paired acr, short and hair-like; 6 strong dc; scutellum with some marginal hairs. Legs yellow; all coxae yellow; tarsi brownish from tip of tarsomere 1 onward. Hairs and bristles on legs black; mid and hind coxae with 1 bristle, mid and hind femora with 1 preapical bristle; fore tibia with 1-2 anterior dorsal bristle and 2 posterior dorsal bristles, without apico-ventral bristle; mid tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 2 anterior dorsal bristles, 3 posterior dorsal bristles and 2 anterior ventral bristles; hind tarsomere 1 with 1 short ventral bristle at base. Relative lengths of segments of legs LI 3.3 : 3.7 : 1.8 : 0.8 : 0.65 : 0.35 : 0.35; LII 4.7 : 5.2 : 2.4 : 1.4 : 1.2 : 0.7 : 0.5; LIII 5.2 : 5.9 : 1.8 : 2.2 : 1.4 : 1.0 : 0.55. Wing hyaline; veins dark brownish yellow; R4+5 and M slightly convergent apically, CuAx ratio 0.55. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 4): Epandrium longer than wide, its apex narrow and rounded with very long dense hairs; cercus small and band-like; hypandrium rather small and nearly invisible from the lateral view.

Female. Unknown.

Holotype ♂, paratype 1 ♂: Sichuan, Qingcheng Mountain, 800 m, 1987.VII.21, Xiangxian WANG.

Distribution. China, Sichuan.

Remarks. This new species is easily separated from other known species from China by the apex of the epandrium narrow and rounded with very long dense hairs.

Hercostomus (Hercostomus) tianmushanus sp. nov. (Figs. 5-6)

Male. Body length 4.1 mm, wing length 4.3 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; postocular hairs wholly black. Antenna [arista broken] brownish yellow; third antennomere blackish and angular apically, nearly as long as wide. Proboscis and palpus brownish yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 8-9 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with some short hairs on dorsal surface and apical margin. Legs yellow; coxae blackish; tarsi brown to dark brown from tip of tarsomere 1 onward. 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 anterior dorsal bristle, 2 posterior dorsal bristles and 1 long apico-ventral bristle; mid tibia with 3 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 3 anterior dorsal bristles, 3-4 posterior dorsal bristles and 2 anterior ventral bristles; hind tarsomere 1 with 1 short ventral bristle at base. Relative lengths of segments of legs LI 4.0 : 4.3 : 2.2 : 0.9 : 0.7 : 0.4 : 0.4; LII 5.6 : 6.2 : 2.7 : 1.6 : 1.2 : 0.8 : 0.55; LIII 6.0 : 7.2 : 1.9 : 2.2 : 1.6 : 1.0 : 0.6. Wing hyaline; veins brownish yellow; R4+5 and M weakly convergent apically, CuAx ratio 0.7. Squama pale yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 6): Epandrium longer than wide, somewhat narrow apically, with strongly curved lateral lobe; cercus curved and band-like with short marginal denticles; hypandrium long, somewhat narrow apically.

Female. Unknown.

Holotype ♂: Zhejiang, Tianmushan Mountain, 1987.VIII.13, Qiang LI.

Distribution. China, Zhejiang.

Remarks. This new species is similar to *H. grandis* YANG & YANG, 1995 from Zhejiang, but differs from the latter in the following points: fore tibia with a long apico-ventral bristle, CuAx 0.7, lateral lobe on male epandrium strongly curved; in *grandis*, fore tibia with a short apico-ventral bristle, CuAx 0.9, lateral lobe on epandrium not distinctly curved.

Ludovicus sichuanensis sp. nov. (Figs. 7-8)

Male. Body length 3.6 mm, wing length 3.7 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; postocular hairs wholly black. Antenna blackish except third antennomere with baso-ventral area yellow; third antennomere 2.1 times as long as wide, somewhat acute apically; arista subapical, very slender, black with pale tip, indistinctly minutely pubescent apically. Proboscis brownish yellow with black hairs; palpus black with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 7-8 irregularly paired acr, short and hair-like; 6 strong dc; scutellum without short hairs. Legs yellow; fore coxa yellow, mid and hind coxae partly tinged with blackish; fore tarsomere 5, mid and hind tarsi from apex of tarsomere 1 onward 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 anterior dorsal bristle and 2 posterior dorsal bristles, without apico-ventral bristle; mid tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 2 anterior dorsal bristles, 3 posterior dorsal bristles and 2 anterior ventral bristles; hind tarsomere 1 with 1 short ventral bristle at base. Relative lengths of segments of legs LI 3.7 : 4.0 : 2.2 : 1.1 : 0.8 : 0.6 : 0.4; LII 4.9 : 5.8 : 3.2 : 2.0 : 1.3 : 0.9 : 0.6; LIII 5.4 : 7.0 : 2.0 : 2.6 : 1.6 : 1.0 : 0.65. Wing hyaline, slightly tinged with grayish; veins dark brownish yellow; R4+5 and M distinctly convergent apically; CuAx ratio 0.4. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 8): Epandrium distinctly longer than wide, its lateral lobe large with a curved spine; cercus broad with indistinct marginal denticles; hypandrium elongate; aedeagus curved and acute apically.

Female. Unknown.

Holotype ♂: Sichuan, Nanping, 2000 m, 1987.VII.16, Xiangxian WANG.

Distribution. China, Sichuan.

Remarks. This species is similar to *L. impar* RONDANI, 1843 from Europe, but may be separated from the latter by having the entirely black postocular hairs. In *impar*, lower postocular hairs are yellow (STACKELBERG 1941).

Mesorhaga guangxiensis sp. nov. (Figs. 9-10)

Male. Body length 3.3 - 3.5 mm, wing length 3.4 - 3.5 mm.

Head metallic green with thin pale gray pruinosity. Hairs and bristles on head black, but postero-ventral surface with pale hairs; frons with 1 bristle on postero-lateral slope. Antenna wholly black; third antennomere subtriangular, wider than long; arista dorsal, black. Proboscis blackish with blackish hairs; palpus black with black hairs.

Thorax metallic green with black hairs and bristles; 3 irregularly paired acr, 5 strong dc; scutellum with 2 paired bristles. Legs black; apices of fore and mid femora dark yellow to yellow; tibiae and tarsomere 1 yellow except apex of hind tarsomere 1 brown, tarsomeres 2-5 brown to dark brown. Hairs and bristles on legs black; mid tibia with 1 short anterior dorsal bristle and 2 short posterior dorsal bristles. Relative lengths of segments of legs LI 3.2 : 3.6 : 2.2 : 1.1 : 0.6 : 0.35 : 0.3; LII 4.2 : 4.6 : 3.2 : 1.6 : 1.0 : 0.5 : 0.3; LIII 4.9 : 5.7 : 2.1 : 2.2 : 1.2 : 0.7 : 0.35. Wing hyaline; veins black; M strongly bent medially. Squama dark brownish yellow with black hairs. Halter dark brown.

Abdomen metallic green with black hairs. Male genitalia (Fig. 11): Epandrium narrow and long, with large lateral lobe; surstylus somewhat narrow apically; cercus narrow and distinctly curved, with weakly concave apical margin; hypandrium very slender.

Female: Unknown.

Holotype ♂, paratype 1 ♂: Guangxi, Shiwandashan Mountain, 1991.VII.11, Chi-kun YANG.

Distribution. China, Guangxi.

Remarks. This new species is somewhat similar to *M. fujianensis* YANG, 1995 from Fujian, but may be separated from the latter by having the surstylus rather narrow apically. In *fujianensis*, the surstylus is short and broad with concave apical margin (YANG 1995).

Amblypsilopus guangxiensis sp. nov. (Figs. 11-13)

Male. Body length 4.5 mm, wing length 3.8 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black, but postero-ventral surface with pale hairs; frons with 1 long bristle on postero-lateral slope.

Antenna wholly black; third antennomere subtriangular, wider than long; arista distinctly shorter than width of head, apical, black. Proboscis and palpus yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 1 paired acr strong, 2 strong posterior dc and 4 hair-like dc anterior; lateral scutellar bristle absent. Legs yellow; fore coxa yellow, mid and hind coxae black; fore and mid tarsi from tip of tarsomere 1 onward and hind tarsomeres 3-5 brown to dark brown. Hind tarsomeres 3-5 distinctly flattened. Hairs on legs black; coxae with only yellow hairs and bristles; fore tibiae with 6 curved ventral hairs on apical portion. Relative length of legs LI 4.0 : 6.9 : 1.3 : 0.6 : 0.4 : 0.3 : 0.3; LII 4.3 : 6.2 : 4.1 : 1.1 : 0.8 : 0.4 : 0.3; LIII 5.2 : 8.0 : 3.2 : 1.3 : 0.5 : 0.4 : 0.2. Wing hyaline; veins black; M2 indistinct. Squama brown with black hairs. Halter dark brown.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 13): Epandrium narrow apically, with rather thin lateral lobe; surstylus with acute projection; cercus very slender; hypandrium long with long lateral arm.

Female: Unknown.

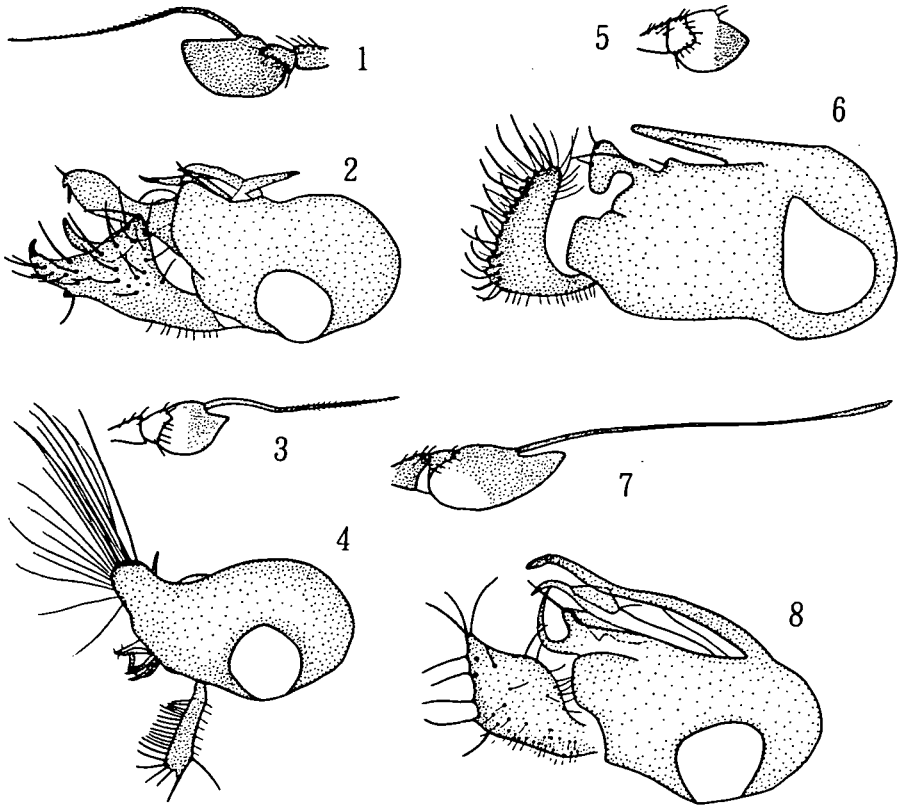
Holotype ♂: Guangxi, Shiwandashan Mountain, 1991.VII.11, Chi-kun YANG.

Distribution. China, Guangxi.

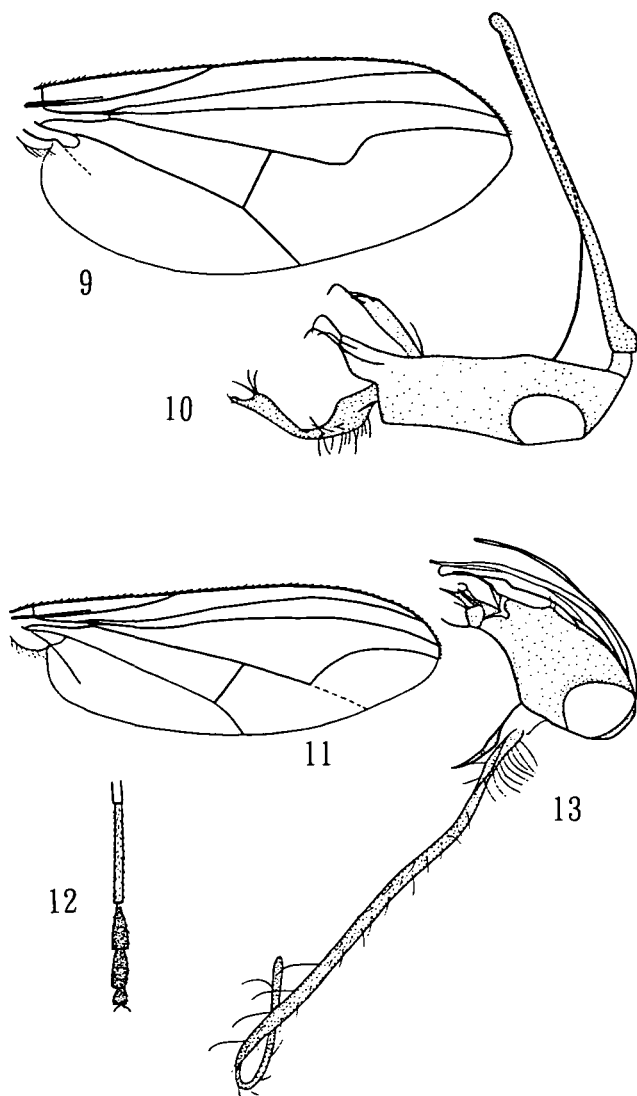
Remarks. This new species is similar to *A. subtilis* (BECKER, 1924) from Taiwan, but may be separated from the latter by having the wholly black antenna. In *subtilis*, the third antennomere is yellow (BECKER 1922; BICKEL 1994).

Acknowledgements

My sincere thanks are expressed to Dr. P. GROOTAERT (Institut Royal des Science Naturelles, Brussels), Dr. H. ULRICH (Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn), Dr. M. SATO (Rishiri Town Museum, Hokkaido), Prof. Chi-kun YANG (Beijing Agricultural University, Beijing) for their help in many ways.



Figs. 1-2. *Hercostomus (Hercostomus) flavimaculatus* sp. nov. - 1, Antenna, lateral view; 2, male genitalia, lateral view.
Figs. 3-4. *Hercostomus (Hercostomus) qingchenganus* sp. nov. - 3, Antenna, lateral view; 4, male genitalia, lateral view.
Figs. 5-6. *Hercostomus (Hercostomus) tianmushanus* sp. nov. - 5, Antenna, lateral view; 6, male genitalia, lateral view.
Figs. 7-8. *Ludovicicus sichuanensis* sp. nov. - 7, Antenna, lateral view; 8, male genitalia, lateral view.



Figs. 9-10. *Mesorhaga guangxiensis* sp. nov. - 9, Wing; 10, male genitalia, lateral view.
Figs. 11-13. *Amblypsilopus guangxiensis* sp. nov. - 11, Wing; 12, hind tarsus; 13, male genitalia, lateral view.

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Author's address:

Dr. Ding YANG

Department of Entomology

China Agricultural University

Beijing 100094, P. R. China

(E-mail: Dyangcau@ihw.com.cn)

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:

Maximilian SCHWARZ, Konsulent für Wissenschaft der O.Ö. Landesregierung,
Eibenweg 6, A-4052 Ansfelden

Redaktion: Erich DILLER (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089)8107-159

Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen / Gusen

Wolfgang SCHACHT, Scherrerstrasse 8, D-82296 Schöngesing, Tel. (089) 8107-146

Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102

Johannes SCHUBERTH, Bauschingerstrasse 7, D-80997 München, Tel. (089) 8107-160

Emma SCHWARZ, Eibenweg 6, A-4052 Ansfelden

Thomas WITT, Tengstraße 33, D-80796 München

Postadresse: Entomofauna (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089) 8107-0,
Fax (089) 8107-300

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Zeitschrift/Journal: [Entomofauna](#)

Jahr/Year: 1998

Band/Volume: [0019](#)

Autor(en)/Author(s): Yang Ding

Artikel/Article: [New species of Dolichopodidae from South China \(Diptera, Dolichopodidae\). 233-240](#)