

The genus *Dolichopus* from Southwest China (Diptera, Dolichopodidae)

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Abstract

The species of the genus *Dolichopus* from Southwest China are revised. Three species, *Dolichopus ancistrus*, *D. meridionalis* and *D. shii*, are described as new to science.

Key words: Dolichopodidae, *Dolichopus*, new species, China.

Introduction

The genus *Dolichopus* LOEW is distributed worldwide. About 240 species are known from the Palaearctic region (NEGROBOV, 1991), and 5 species from the Oriental region (DYTE, 1975). Two species are known to occur in Southwest China. In the present paper 3 new species are added to this region. The present research is based on the collections of China Agricultural University (CAU) and Zoological Institute of Academia Sinica (ZI). Some paratypes are kept in the Institut Royal des Sciences Naturelles de Belgique (IRSN).

Genus *Dolichopus* LATREILLE

Dolichopus LATREILLE, 1796, *Precis carat. gen. Ins.*: 159.
 Type species: *Musca unguolata* LINNAEUS.

Diagnosis. Eyes in both sexes distinctly separated. Antennal scape haired dorsally; arista subapical and 2-segmented. Hind tarsomere 1 nearly as long as tarsomere 2, with strong dorsal bristles. Wing: R and M weakly convergent; M somewhat bent, sometimes with rudimentary M2. Male cercus with some finger-like marginal processes.

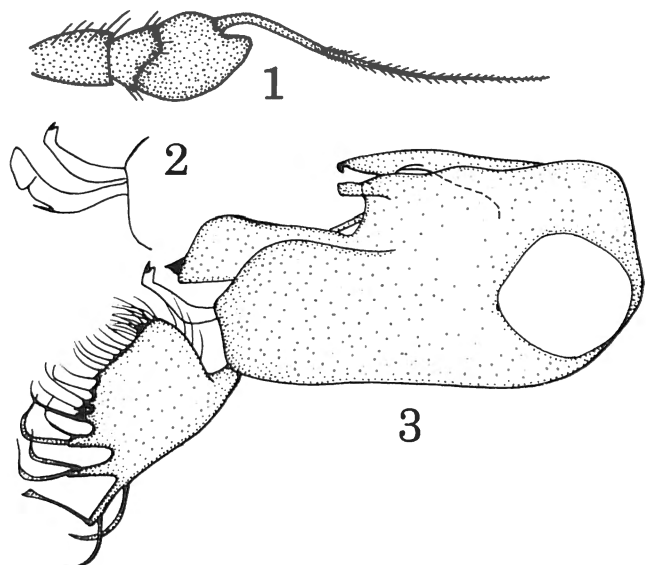
Key to species of *Dolichopus* from Southwest China

1. Legs chiefly yellow 2
- Legs entirely black; antenna entirely black *shii* sp. nov.

2. Hind femur without ventral bristles 3
- Hind femur with long ventral bristles; antenna entirely black *ancistrus* sp. nov.
3. Squama with black hairs 4
- Squama with pale hairs; antenna black with scape and pedicel yellow ventrally .. *yunnanus* PARENT
4. Hind tibia yellow with apical 3/5 black *meridionalis* sp. nov.
- Hind tibia black with basal 1/8 yellow *legendrei* PARENT

Dolichopus ancistrus sp. nov. (Figs 1-3)

Male. Body length 5.8-6.0 mm, wing length 5.7-5.8 mm. **Head** metallic green with pale gray pruinosity. Hairs and



Figs 1-3. - *Dolichopus ancistrus* sp. nov., male. 1: antenna, lateral view; 2: apical processes; 3: genitalia, lateral view.

bristles on head black; lower postocular hairs yellow; ocellar tubercle with 2 strong bristles and 4 very short posterior hairs, frons with 1 strong bristle on posterolateral corner. Antenna wholly black, first flagellomere 1.1 times as long as wide, obtuse apically; arista black, minutely pubescent, with basal segment half as long as apical segment. Proboscis black with black hairs; palpus yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 7 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with 2 strong bristles.

Legs yellow; fore coxa yellow, mid and hind coxae black; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; apical 2/5 hind tibia and entire hind tarsus dark brown to black.

Hairs and bristles on legs black; coxae with partly pale hairs; mid and hind femora with 1 preapical bristle; hind femur with 9 black ventral bristles; fore tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles, 2 posterior ventral bristles and 1 brown thin apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristles; hind tibia with 5 anterior dorsal bristles, 5 posterior dorsal bristles and 6-7 ventral bristles; hind tarsomere 1 with 3 dorsal bristles, 1 lateral bristles and 4 short ventral bristles. Relative lengths of segments (excluding coxae and trochanters) of legs LI 3.5: 3.9: 2.2: 1.0: 0.7: 0.4: 0.3; LII 4.8: 5.3: 1.7: 1.2: 0.8: 0.6; LIII 5.0: 5.8: 2.9: 2.8: 1.8: 1.1: 0.8.

Wing hyaline; veins black; costal callus short and weak; R4+5 and M somewhat convergent; M without rudimentary M2; CuAx ratio 0.7. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 3): Epandrium distinctly longer than wide, nearly truncate apically, its lateral lobe with 2 short black spines; cercus large and nearly quadrate, with some fingerlike marginal processes; hypandrium with thin and curved tip; aedeagus slender and more or less straight apically.

Female. Body length 5.0-6.0 mm, wing length 5.8-6.0 mm. Similar to male except as follows: hind tibia wholly yellow, tarsus from tip of tarsomere 1 onward brown to dark brown; hind femur without ventral bristles; costal callus absent.

Holotype ♂, Yunnan: Kunming, 16.V.1981, Fasheng LI. Paratypes: 1 ♀, same data as holotype; 3 ♂♂, 2 ♀♀, Yunnan: Quqing, 12-13.V.1941; 3 ♂♂, 5 ♀♀, Yunnan: Kunming, 13.VI.1938; 2 ♂♂, Yunnan: Kunming, 12.V.1942; 1 ♀, Yunnan: Kunming, 2.VI.1943; 1 ♂, Yunnan: Kunming, 10.VI.1940; 1 ♂, Yunnan: Chengong, 23.V.?. (CAU & IRSN).

Distribution. China (Yunnan).

Remarks. This new species is somewhat similar to *angustipennis* KERTÉSZ from the Palearctic region. It may be separated from the latter by having the hind femur with 1 preapical bristle. In *angustipennis*, the hind femur bears 2 preapical bristles (STACKELBERG, 1930).

Dolichopus legendrei PARENT

(Fig. 4-5)

Dolichopus legendrei PARENT, 1930, Ann. soc. Sci. Brux. (B) 50: 87. Type locality: Yunnan.

Male. Body length 5.3 mm, wing length 5.9 mm.

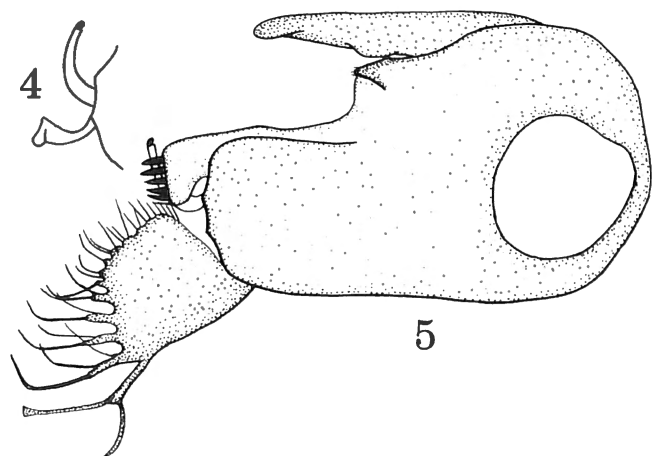
Head metallic green with pale gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow; ocellar tubercle with 2 strong bristles and 4 very short posterior hairs, frons with 1 strong bristle on posterolateral corner. Antenna first flagellomere broken yellow. Proboscis black with black hairs; palpus yellow 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 with 2 strong bristles and several pale marginal hairs.

Legs yellow; fore coxa yellow and tinged with black basally, mid and hind coxae black; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; hind tibia (except basal 1/8) and entire hind tarsus black. Hairs and bristles on legs black; mid and hind femora with 1 preapical bristle; fore tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles, 2 posterior ventral bristles and 1 brown apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristles; hind tibia with 5 anterior bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tarsomere 1 with 2 dorsal bristles, 2 lateral and 3-4 short ventral bristles. Relative lengths of segments of legs LI 3.6: 3.6: 1.9: 0.8: 0.6: 0.4: 0.4; LII 5.0: 5.2: 2.8: 1.3: 1.1: 0.7: 0.6; LIII 5.1: 5.6: 2.8: 2.2: 1.6: 1.0: 0.8.

Wing hyaline; veins black; costal callus somewhat long and distinct; R4+5 and M somewhat convergent; M with rudimentary M2; CuAx ratio 0.6. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 5): Epandrium distinctly longer than wide, its lateral



Figs 4-5. - *Dolichopus legendrei* PARENT, male. 4: apical processes; 5: male genitalia, lateral view.

lobe with 6 short black spines; cercus quadrate, with some finger-like marginal processes; hypandrium with rather thick apex; aedeagus nearly straight apically.

Female. Unknown.

Specimen examined. 1 ♂, Yunnan: Kunming, 5.III.1942 (CAU).

Distribution. China (Yunnan).

Remarks. This species is characterized by having the hind tibia black with basal 1/8 yellow and lateral lobe of epandrium with six black spines. It is redescribed with figuration of male genitalia for the first time.

Dolichopus meridionalis sp. nov.

(Figs 6-8)

Male. Body length 4.5-5.0 mm, wing length 4.8-5.0 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow; ocellar tubercle with 2 strong bristles and 4 very short posterior hairs, frons with 1 strong bristle on postero-lateral corner. Antenna yellow; first flagellomere black except base, 1.1 times as long as wide, obtuse apically; arista black, minutely pubescent, with basal segment 0.4 times as long as apical segment. Proboscis brownish with black hairs; palpus yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 6-7 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with 2 strong bristles.

Legs yellow; fore coxa yellow, mid and hind coxae blackish; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; apical 3/5 of hind tibia

and entire hind tarsus dark brown to black. Hairs and bristles on legs black; mid and hind femora with 1 pre-apical bristle; fore tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles, 1 posterior ventral bristle, and 1 thin brownish apico-ventral bristle; mid tibia with 3 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 4 anterior dorsal bristles, 5 posterior dorsal bristles and 1 anterior ventral bristle; hind tarsomere 1 with 2 dorsal bristles, 2 lateral bristles and 3 short ventral bristles. Relative lengths of segments of leg LI 3.2: 3.2: 1.6: 0.7: 0.4: 0.35: 0.4; LII 4.0: 4.3: 2.5: 1.3: 1.1: 0.7: 0.5; LIII 4.2: 4.8: 2.1: 2.1: 1.5: 0.9: 0.7. Wing hyaline; veins black; costal callus short and weak; R4+5 and M weakly convergent, M with rudimentary M2; CuAx ratio 0.7. Squama pale yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (fig. 8): Epandrium distinctly longer than wide, slightly narrow apically, its lateral lobe with 4-5 short black spines; cercus large and nearly semicircular, with some finger-like marginal processes; hypandrium somewhat acute apically; aedeagus slender and nearly straight apically.

Female. Unknown.

Holotype ♂, Yunnan: Cangning (1,600 m), 23.IV.1981, Fasheng LI. Paratypes: 1 ♂, Yunnan: Yunxian (1100 m), 23.IV.1981, Chi-kun YANG; 1 ♂, Yunnan: Menghai (1,160), 18.IV.1981, Fasheng LI; 1 ♂, Guizhou: Huaqi, 27.V.1981, Chi-kun YANG; 1 ♂, Guangxi: Tianlin, 31.V.1982, Xinli WANG. (CAU & IRSN).

Distribution. China (Yunnan, Guizhou, Guangxi).

Remarks. This new species is similar to *simulator* PARENT from Shanghai, but may be separated from the latter by having the hind tibia black on apical 3/5. In *simulator*, the hind tibia is black on narrow apex (STACKELBERG, 1933).

Dolichopus shii sp. nov.

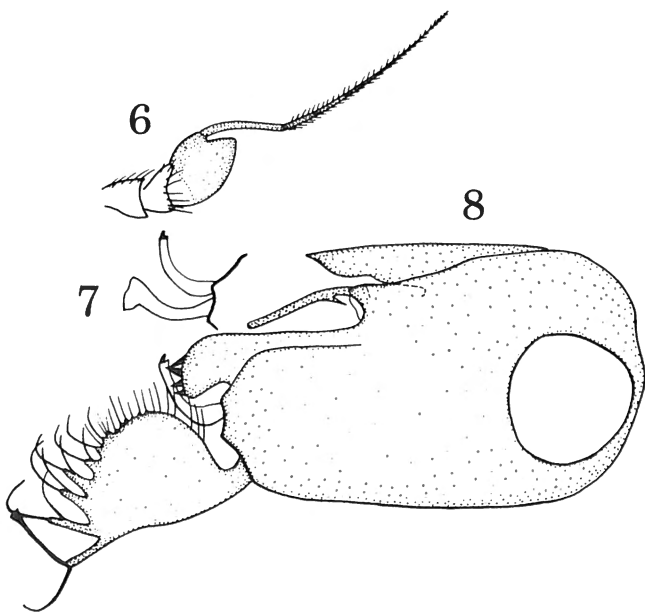
(Figs 9-11)

Male. Body length 4.7-5.1 mm, wing length 5.0-5.2 mm.

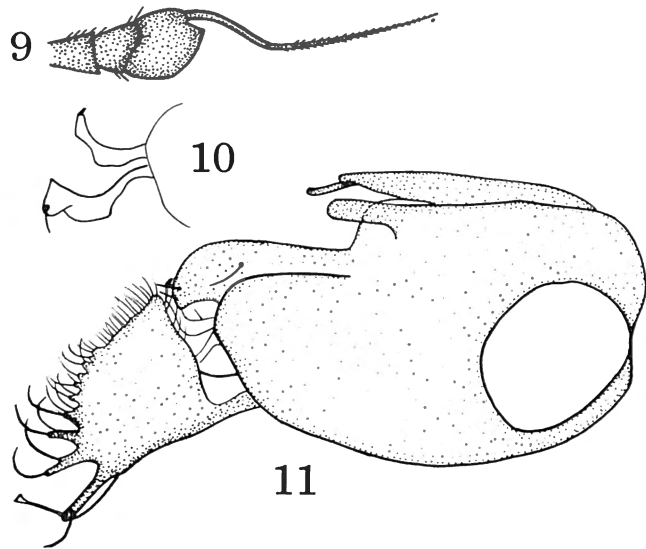
Head metallic green with pale gray pruinosity. Hairs and bristles on head black; lower postocular hairs yellow; ocellar tubercle with 2 strong bristles and 2 very short posterior hairs, frons with 1 strong bristle on posterolateral corner. Antenna wholly black; first flagellomere as long as wide, somewhat angular apically; arista subapical, black, minutely pubescent, with basal segment 0.6 times as long as apical segment. Proboscis black with black hairs; palpus black 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 2 strong bristles and short pale marginal hairs.

Legs wholly black. Hairs and bristles on legs black; mid and hind femora with 1 preapical bristle; fore tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles, 1 pos-



Figs 6-8. — *Dolichopus meridionalis* sp. nov., male. 6: antenna, lateral view; 7: apical processes; 8: male genitalia, lateral view.



Figs 9-11. — *Dolichopus shii* sp. nov., male. 9: antenna, lateral view; 10: apical processes; 11: male genitalia, lateral view.

terior ventral bristle, and 1 apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 5 anterior dorsal bristles, 4 posterior dorsal bristles and 1 anterior ventral bristle; hind tarsomere 1 with 3 dorsal bristles, 2-4 lateral bristles and 5 short ventral bristles. Relative lengths of segments of legs LI 3.2: 3.3: 1.8: 0.8: 0.6: 0.35: 0.35; LII 4.3: 5.1: 3.1: 1.4: 1.1: 0.7: 0.6; LIII 5.0: 5.9: 2.9: 2.8: 1.8: 1.1: 0.75.

Wing hyaline, tinged with grayish particularly on anterior field; veins black; coastal callus indistinct; R4+5 and M weakly convergent apically, M without rudimentary M2; CuAx ratio 0.4. Squama pale yellow with black hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 11): Epandrium distinctly longer than wide, somewhat rounded apically, its lateral lobe with 2 thin black spines; cercus large and nearly quadrate, with some finger-like marginal processes; hypandrium with thin and curved tip; aedeagus slender and nearly straight apically. *Female*. Unknown.

Holotype ♂, Xizang; Yela (4,400 m), 18.VI.1966, Suyong WANG. Paratypes: 1 ♂, same data as holotype; 1 ♂, Sichuan: Maerkang (3,230 m), 9.VI.1961, Xiaofu LI; 1 ♂, Qinghai: Yushu (3,900-4,300 m), 21.VI.1964, Suyong WANG (ZI).

Distribution. China (Sichuan, Xizang, Qinghai).

Remarks. This new species is similar to *atripes* MEIGEN from Europe, but differs from the latter in the following points: tarsi wholly black, fore tibia with 1 posterior ventral bristle, hind tarsomere 1 with 3 dorsal bristles; in *atripes*, base of fore and mid tarsomere 1 pale, fore tibia with 2-3 posterior ventral bristles, hind tarsomere 1 with 2 dorsal bristles (STACKELBERG, 1930). This new species is named in honour of Prof. Yongshan SHI.

Dolichopus yunnanus PARENT
(Figs 12-14)

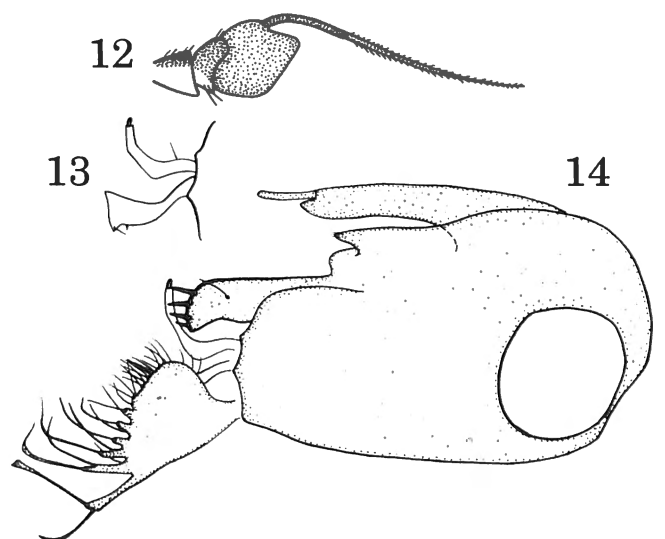
Dolichopus yunnanus PARENT, 1930, Ann. Soc. Sci. Brux. (B) 50: 87. Type locality: Yunnan.

Male. Body length 4.4-4.7 mm, wing length 4.4-5.3 mm.

Head metallic green with pale gray pruinosity. Hairs and bristles on head black; lower postocular hairs black; ocellar tubercle with 2 strong bristles and 2 very short posterior hairs, frons with 1 strong bristle on posterolateral corner. antenna black with scape and pedicel yellow ventrally; first flagellomere as long as wide, obtuse apically; arista situated at middle of dorsal margin of flagellomere, black, minutely pubescent, with basal segment 0.4 times as long as apical segment. Proboscis black with black hairs; palpus yellow with black hairs.

Thorax metallic green with pale gray pruinosity. Hairs and bristles on thorax black; 8 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with 2 strong bristles and some short pale marginal hairs.

Legs yellow; fore coxa yellow, mid and hind coxae blackish; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; apical 1/4 of hind tibia and entire hind tarsus dark brown to black. Hairs and bristles on legs black; mid and hind femora with 1 pre-apical bristle, fore tibia with 2 anterior dorsal bristles, 2 posterior dorsal bristles, 1 posterior ventral bristle, and 1 apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 2 posterior dorsal bristles and 1 anterior ventral bristle; hind tibia with 6 anterior dorsal bristles, 5 posterior dorsal bristles and 1 anterior ventral bristles; hind tarsomere 1 with 2 dorsal bristles, 2 lateral bristles and 5 short ventral bristles. Relative lengths of segments of legs LI 3.0: 3.2: 1.6: 0.6: 0.4: 0.3: 0.3; LII 4.0: 4.5: 2.4: 1.3: 1.1: 0.65: 0.5; LIII 4.1: 5.0: 2.2: 2.2: 1.6: 0.8: 0.6.



Figs 12-14. — *Dolichopus yunnanus* PARENT, male. 12: antenna, lateral view; 13: apical processes; 14: male genitalia, lateral view.

Wing hyaline; veins black; coastal callus short and weak; R4+5 and M weakly convergent, with (or without) rudimentary M2; CuAx ratio 0.6. Squama yellow with pale hairs. Halter yellow with brown stem.

Abdomen metallic green with black hairs. Male genitalia (Fig. 14): Epandrium distinctly longer than wide, irregularly weakly incised apically, its lateral lobe with 4 black spines; cercus nearly quadrate, with some finger-like marginal processes; hypandrium somewhat thick apically, with somewhat acute tip; aedeagus slender apically.

Female. Unknown.

Specimens examined. 1 ♂, Yunnan: Kunming, 13.VI.1938 (CAU); 1 ♂, Yunnan: Dali (2,100 m), 30.V.1955, P. POPOV (ZI).

Distribution. China (Yunnan)

Remarks. This species is redescribed with figuration of male genitalia for the first times.

Acknowledgements

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