New species of Dolichopodinae from China
(Diptera, Dolichopodidae)

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Abstract
In this paper 5 species of Dolichopodinae (Diptera, Dolichopodidae) are described as new to science: Hercostomus basiflavus sp. nov., H. beijingensis sp. nov., H. nanjingensis sp. nov., H. spatiosus sp. nov., and Hypophyllus sinensis sp. nov.

Zusammenfassung
Es werden 5 neue Dolichopodinae-Arten (Diptera, Dolichopodidae) aus China beschrieben: Hercostomus basiflavus sp. nov., H. beijingensis sp. nov., H. nanjingensis sp. nov., H. spatiosus sp. nov., and Hypophyllus sinensis sp. nov.

Introduction
The genus Hercostomus LOEW, 1857 is distributed worldwide with about 180 known species (CORPUS 1989). Eleven species have been known from continental China (DYTE 1975, NEGROBOV 1991). Four new species of the genus Hercostomus are added to the fauna of China. The genus Hypophyllus HALIDAY, 1832 is a typical representative of the Palaearctic fauna with 7 known species, of which 1 species was known from China (NEGROBOV 1991). One new species of the genus Hypophyllus is known to occur in China. The types of the new species are deposited in the Insect Collection of China Agricultural University, Beijing.

Hercostomus basiflavus sp. nov. (Figs. 1-2)
Male. Body length 3.1 mm, wing length 3.8 mm.
Head metallic green with dense grayish pruinosity. Hairs and bristles on head black; ocellar tubercle with 2 strong bristles and 2 short posterior hairs, frons with 1 strong
bristle on postero-lateral corner. Antenna blackish; flagellum 1.2 times as long as wide, somewhat acute apically; arista dark brown, minutely pubescent, with basal segment 0.3 times as long as apical segment. Proboscis dark yellow with black hairs; palpus pale yellow with black hairs.

Thorax yellow, but metallic green dorsally and with grayish pruinosity; mesonotum yellow on anterior margin and antero-lateral area; pteropleuron blackish. Hairs and bristles on thorax black; 5-6 irregularly paired acr, short and hair-like; 6 strong dc; scutellum with 2 strong bristles. Legs yellow; fore and mid tarsi brownish yellow, apex of hind tibia and hind tarsus 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 distinct apico-ventral bristle; mid tibia with 3 anterior dorsal bristles, 2 posterior dorsal bristles and 1 ventral bristle; hind tibia with 4 anterior dorsal bristles, 3 posterior dorsal bristles and 6 weak ventral bristles; hind tarsomere 1 with 1 rather strong ventral bristle at base. Relative lengths of segments (excluding coxae and trochanters) of legs: LI 2.3 : 2.6 : 1.3 : 0.8 : 0.7 : 0.6 : 0.3; LII 3.2 : 3.8 : 1.8 : 1.1 : 0.9 : 0.7 : 0.3; LIII 3.7 : 4.2 : 1.3 : 1.6 : 1.0 : 0.7 : 0.4. Wing slightly tinged with brownish; veins brown; R4+5 and M distinctly convergent, CuAx ratio 0.5. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green; tergites 1-2 yellow except median portion and posterior margin. Hairs on abdomen black. Male genitalia (Fig. 2): Epandrium much longer than wide, with lateral lobe narrowly separated from it; cercus narrow and curved; hypandrium furcate apically; aedeagus with apical portion thin and weakly curved upward.

Female unknown.

Holotype ♀, Zhejiang: Gutianshan, 17.VII.1992, Xuexing CHEN.

Distribution. China (Zhejiang).

Remarks. This new species is very similar to H. luteipleuris PARENT, 1944 from Shanxi, China. It can be separated from the latter by having the antenna blackish, R4+5 and M distinctly convergent apically, abdomen metallic green with yellow spots only on tergites 1-2. In luteipleuris, the antenna is yellow with apical half of flagellum darker, R4+5 and M slightly convergent, abdomen yellow with narrow anterior border of segments black (PARENT 1944).

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

Male. Body length 5.8 - 6.0 mm, wing length 5.3 - 5.5 mm.

Head metallic green with dense grayish pruinosity. Hairs and bristles on head black; ocellar tubercle with 2 strong ocellar bristles and 3 very short posterior hairs, frons with 1 strong bristle on postero-lateral corner. Antenna black; flagellum 1.8 times longer than wide, somewhat acute apically; arista black, minutely pubescent, with basal segment 0.6 times as long as apical segment. Proboscis dark brownish yellow with black hairs; palpus black with black hairs.

Thorax metallic green with grayish pruinosity. Hairs and bristles on thorax black; 7-8 paired acr, short and hair-like; 6 strong dc; scutellum with 2 strong bristles. Legs yellow; fore tarsomere 5 and mid and hind tarsomeres 2-5 darker. 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 ventral bristle, and 1 indistinct apico-ventral bristle; mid tibia with 3-4 anterior dorsal bristles,
Figs. 1-2. Hercostomus basiflavus sp. nov.:
1) antenna, lateral view; 2) male genitalia, lateral view.

Figs. 3-4. Hercostomus beijingensis sp. nov.:
3) antenna, lateral view; 4) male genitalia, lateral view.
2 posterior dorsal bristles and 3 ventral bristles; hind tibia with 3 anterior dorsal bristles, 3 posterior dorsal bristles and 7 rather weak ventral bristles; hind tarsomere 1 with 3 short ventral bristles. Relative lengths of segments of legs: LI 3.7 : 4.0 : 2.3 : 1.3 : 1.0 : 0.7 : 0.5; LII 4.8 : 6.0 : 3.1 : 1.7 : 1.3 : 0.8 : 0.5; LIII 5.3 : 6.8 : 2.0 : 2.8 : 1.6 : 1.0 : 0.65. Wing slightly tinged with brown; veins brown; R4+5 and M distinctly convergent, CuAx ratio 0.8. Squama yellow with blackish hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 4): Epandrium much longer than wide, with wide apical portion; cercus nearly quadrato, with one thin projection at middle of outer margin which is directed inward; hypandrium slender and acute apically, with one hook-like projection at base; aedeagus slender and somewhat curved, geniculate apically.

Female unknown.


Distribution. China (Beijing).

Remarks. This new species is similar to H. additus Parent, 1926 from Shanghai. It may be separated from the latter by having the antenna wholly black, arista with basal segment rather long (0.6 times as long as apical segment). In additus, the antenna is yellow with flagellum darker apically, arista has rather short basal segment (STACKELBERG 1929).

**Hercostomus nanfingensis** sp. nov. (Figs. 5-6)

Male. Body length 4.2 mm, wing length 4.2 mm.

Head metallic green with dense grayish pruinosity. Hairs and bristles on head black; ocellar tubercle with 2 strong ocellar bristles and 2 very short posterior hairs, frons with 1 strong bristle on postero-lateral corner. Antenna yellow; flagellum (except base) brownish, as long as wide, somewhat acute apically; arista brown, distinctly minutely pubescent, with basal segment 0.4 times as long as apical segment. Proboscis brown with black hairs; palpus black with black hairs.

Thorax metallic green with grayish pruinosity. Hairs and bristles on thorax black; 7-8 irregularly paired acr, short and hair-like; 5 strong dc; scutellum with 2 strong bristles and some short hairs on dorsal surface and apical margin. Legs yellow; coxae blackish; mid and hind tarsi dark brown with tarsomere 1 (except apex) paler. 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 anterior dorsal bristles, 2 posterior dorsal bristles and 1 distinct apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 3 posterior dorsal bristles and 1 ventral bristle; hind tibia with 4 anterior dorsal bristles, 4 posterior dorsal bristles and 2 weak ventral bristles; hind tarsomere 1 with 1 short ventral bristle at base. Relative lengths of segments of legs: LI 3.0 : 3.1 : 1.5 : 0.6 : 0.45 : 0.3 : 0.3; LII 3.9 : 4.2 : 2.0 : 1.0 : 0.9 : 0.6 : 0.3; LIII 4.1 : 4.8 : 1.2 : 1.6 : 1.1 : 0.8 : 0.3. Wing nearly hyaline; veins black; R4+5 and M parallel apically, CuAx ratio 0.7. Squama pale yellow with black hairs. Halter pale yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 6): Epandrium rather broad, somewhat narrow apically, with lateral lobe broad and rounded apically; hypopygial foramen located on its base; cercus nearly triangular with distinct marginal denticles; hypandrium moderately long, somewhat narrow apically; aedeagus thin and straight apically.

Female unknown.
Holotype \( \delta \), Jiangsu: Nanjing, 14.VII.1986, Ming XIE.
Distribution. China (Jiangsu).
Remarks. This new species is similar to *H. aerosus* (FALLEN, 1823) from the Palaearctic region (including Taiwan). It may be separated from the latter by having the antenna yellow with flagellum (except base) brownish. In *aerosus*, the antenna is wholly black (STACKELBERG 1929).

*Hercostomus spatiosus* sp. nov. (Figs. 7-8)

Male. Body length 2.9 mm, wing length 2.8 mm.

Head metallic green with dense grayish pruinosity. Hairs and bristles on head black; ocellar tubercle with 2 strong ocellar bristles and 2 very short posterior hairs, frons with 1 strong bristle on postero-lateral corner. Antenna black; flagellum 2.3 times as long as wide, somewhat acute apically; arista black, indistinctly minutely pubescent, with basal segment as long as apical segment. Proboscis brown with black hairs; palpus black with black hairs.

Thorax metallic green with grayish pruinosity. Hairs and bristles on thorax black; 5 irregularly paired ac, short and hair-like; 6 strong dc; scutellum with 2 strong bristles. Legs balckish; apices of femora, tibiae yellow; fore tarsus yellow with tarsomere 5 darker, mid and hind tarsi brown with tarsomere 1 paler. 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 weak dorsal bristles and 1 weak apico-ventral bristle; mid tibia with 3 anterior dorsal bristles, 2 posterior dorsal bristles and 1 ventral bristle; hind tibia with 3 anterior dorsal bristles, 3 posterior dorsal bristles and 1 weak ventral bristle; hind tarsomere 1 with 1 short ventral bristle at base. Relative lengths of segments of legs: L1 1.6 : 1.7 : 0.7 : 0.4 : 0.35 : 0.25 : 0.25; LII 2.2 : 2.3 : 1.2 : 0.7 : 0.6 : 0.4 : 0.3; LIII 2.3 : 2.5 : 0.8 : 1.0 : 0.6 : 0.4 : 0.3. Wing hyaline; veins blackish; R4+5 and M parallel apically, CuAx ratio 0.5. Squama pale yellow with black hairs. Halter pale yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 8): Epandrium distinctly longer than wide, somewhat pointed apically, with lateral lobe truncate apically; cercus widening towards apex, with distinct marginal denticles; hypandrium elongate; aedeagus with apical portion slender and nearly straight.

Female unknown.

Holotype \( \delta \), Hebei: Pingquan, 1200 m, 5.VII.1986, Ding YANG.
Distribution. China (Hebei).
Remarks. This species is somewhat similar to *H. novus* PARENT, 1926 from Shanghai. It can be distinguished from the latter by having the antenna wholly black with elongate flagellum (2.3 times as long as wide). In *novus*, the antenna is yellow with flagellum (except base) brown and rather short (STACKELBERG 1929).

*Hypophyllus sinensis* sp. nov. (Figs. 9-11)

Male. Body length 7.0 - 7.7 mm, wing length 7.7 - 8.0 mm.

Head metallic green with dense grayish pruinosity. Hairs and bristles on head black, but postero-ventral surface with pale hairs; ocellar tubercle with 2 strong ocellar bristles and 4-6 short posterior hairs, frons with 1 strong bristle on postero-lateral corner. Antennal scape and pedicel yellow, flagellum black, as long as wide; arista black, distinctly minutely pubescent, with basal segment 0.3 times as long as apical segment. Proboscis dark brown with black hairs; palpus dark brownish yellow with black hairs.
Figs. 5-6. *Hercostomus nanjingensis* sp. nov.:
5) antenna, lateral view; 6) male genitalia, lateral view.

Figs. 7-8. *Hercostomus spatiosus* sp. nov.:
7) antenna, lateral view; 8) male genitalia, lateral view.
Thorax metallic green with dense grayish pruinosity. Hairs and bristles on thorax black; acr very short and irregular, 6 strong dc; scutellum with 2 strong bristles and some short hairs on apical margin. Legs slender and yellow; fore tarsus brownish yellow, mid and hind tarsi brown to dark brown with tarsomeres 4-5 white. Hairs and bristles on legs black, but femora with some pale ventral hairs, mid and hind tarsomeres 4-5 with white hairs. Mid and hind coxae with 1 bristle; mid femur with 1 preapical bristle, hind femur with 2 preapical bristles; fore tibia with 1 anterior dorsal bristle, 2 posterior dorsal bristles, 2 posterior ventral bristles and 1 long apico-ventral bristle; mid tibia with 4 anterior dorsal bristles, 2 posterior dorsal bristles, and 2 ventral bristles; hind tibia with 8-9 long anterior dorsal bristles, 5-6 long posterior dorsal bristles, 9-10 long ventral bristles. Wing distinctly incised at mid posterior margin, nearly hyaline, tinged with dark brown on apico-anterior field; veins dark brown; R4+5 and M distinctly convergent, CuAx ratio 0.7 - 0.8. Squama yellow with blackish hairs. Halter yellow.

Abdomen metallic green with black hairs. Male genitalia (Fig. 11): Epandrium longer than wide, somewhat narrow apically, with lateral lobe rather broad; hypopygial foramen located on its basal portion; cercus rather large with many very short marginal denticles; hypandrium slender apically; aedeagus slender and nearly straight apically.

Figs. 9-11. *Hyphyllus sinensis* sp. nov.: 9) wing; 10) antenna, lateral view; 11) male genitalia, lateral view.
Female. Body length 5.9 - 6.1 mm, wing length 6.8 - 7.0 mm. Similar to male except as follows: Eyes rather widely separated. Legs shorter; mid and hind tarsomeres 4-5 dark brown with black hairs; apico-ventral bristle on fore tibia indistinct; hind tibia with 4-5 anterior dorsal bristles, 4 posterior dorsal bristles and 4-5 anterior ventral bristles.

Holotype ♂, allotype ♀, paratypes 11 ♀ 6 ♂, Hubei: Shennongjia, 1700 m, 29.VI.1984, Chi-kun YANG and Xinli WANG. Paratypes 7 ♀ 3 ♂, Gansu: Kangxian, 800 m, 30.VII.1980, Chi-kun YANG; 1 ♂, Gansu: Kangxian, 1200 m, 29.VII.1980, Fasheng Li; 2 ♀, Gansu: Chenzxian, 29.VII.1980, Fasheng Li; 1 ♂, Gansu: Gangu, 1230 m, 26.VII.1980, Fasheng Li; 1 ♂, Shaanxi: Ningshan, 19.VI.1985, Chi-kun YANG.

Distribution. China (Hubei, Gansu, Shaanxi).

Remarks. This new species can be easily separated from H. luteicornis PARENT, 1944 from Shaanxi of China, by having the antennal flagellum wholly black, male hind tibia with many long bristles, male cercus nearly semicircular. In luteicornis, the antennal flagellum is yellow with apical half black, male hind tibia many long hairs absent, male cercus nearly triangular (PARENT 1944).

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