The *Hercostomus ulrichi* group from Palaearctic China (Diptera: Dolichopodidae)

Lili Zhang, Ding Yang & Kazuhiro Masunaga


A new species group, the *Hercostomus ulrichi* group, is established. The species of this group are reviewed. The following two species are described as new to science: *Hercostomus anae* sp. n. and *H. geniculatus* sp. n.

L. Zhang, Institute of Zoology, Chinese Academy of Sciences, Beijing 100080, China; Department of Entomology, China Agricultural University, Beijing 100094, China

D. Yang (author for correspondence), Department of Entomology, China Agricultural University, Beijing 100094, China; Key Lab of Insect Evolution and Environmental Changes, Capital Normal University, Beijing 100037, China

K. Masunaga, Lake Biwa Museum, Oroshimo 1091, Kusatsu, Shiga, 525-0001 Japan

Received 5 December 2005, accepted 23 March 2006

1. Introduction

The genus *Hercostomus* Loew is distributed worldwide with about 600 known species. There were 28 known species from China before 1995, of which only 11 species are distributed in continental China (Dyte 1975, Negrobov 1991). The 225 species of *Hercostomus* have been added to the fauna of China since 1995 mainly based on the work of Wei (1997), Yang and Grootaert (1999), Yang and Saigusa (1999a,b, 2000, 2001a,b,c,d, 2002), Yang and Yang (1995), Zhang and Yang (2003), Zhang, Yang and Masunaga (2004, 2005). Up to now, 253 species of *Hercostomus* are known to occur in China.

The taxonomic status of *Hercostomus ulrichi* Yang is still not clear. Here we enclose it in one new species-group i.e. the *Hercostomus ulrichi* group together with two new species, *Hercostomus anae* sp. n. and *Hercostomus geniculatus* sp. n. The types of new species are deposited in the Entomological Museum of China Agricultural University, Beijing.

2. Taxonomy


2.1. The *Hercostomus ulrichi* group

*Diagnosis.* Thorax and abdomen chiefly yellow. Lower postocular bristles yellow. First flagellomere large and elongated; arista with long basal segment (0.7–1.0 times as long as apical segment). Epandrial lateral lobe long and strip-like with several long bristles; cercus band-like,
rounded apically with strong bristles.

The *ulrichi*-group includes the following 3 species: *Hercostomus ulrichi* Yang, 1996, *H. anae* sp. n. and *H. geniculatus* sp. n. This group is distributed in the Palearctic China except *H. ulrichi*, also extended to the Oriental China.

Remarks. The *Hercostomus ulrichi* group is somewhat similar to the *Hercostomus flavi-maculatus* group in having the thoracic pleuron yellow, the middle and lower postocular bristles pale, all coxae yellow, and male cercus band-like, usually with some strong apical bristles, but can be separated from the latter by the arista indistinctly minutely pubescent with the rather long basal segment and the epandrial lateral lobe long and strip-like.

2.2. Key to species of the *Hercostomus ulrichi* group from China

1. Antenna black; first flagellomere 1.9 times longer than wide, pointed apically. Sichuan (Nanping) *H. ulrichi* Yang, 1996
   – Antenna chiefly brown; first flagellomere 2.2–2.3 times longer than wide, somewhat obtuse apically 2
2. Arista with basal segment as long as apical segment; lateral lobe on epandrium weakly curved. Beijing (Xiaolongmen) *H. anae* sp. n.
   – Arista with basal segment 0.7 times as long as apical segment; lateral lobe on epandrium strongly curved and geniculate. Beijing (Xiaolongmen) *H. geniculatus* sp. n.

2.3. *Hercostomus anae* sp. n. (Fig. 1)


*Diagnosis.* Arista indistinctly pubescent with basal segment as long as apical segment. Lateral lobe on epandrium weakly curved.

*Description.* Male. Head metallic green with pale gray pollen. Face narrower than first flagellomere. Hairs and bristles on head black; lower postocular bristles yellow, postero-ventral hairs pale. Antenna brown with narrow base of first flagellomere brownish yellow; first flagellomere 2.3 times longer than wide, somewhat obtuse apically; arista brown, indistinctly pubescent, with basal segment as long as apical segment. Proboscis yellow with black hairs; palpus yellow with black hairs.

Thorax yellow; dorsum metallic green except humeri yellow; pteropleuron with 1 black dot on antero-dorsal corner. Hairs and bristles on thorax black; 6 strong dc, 7–8 irregular paired acr short and hair-like; scutellum with 2 pairs of bristles (basal pair short and hair-like). Propleuron with 1 long bristle on lower portion. Legs yellow; all coxae yellow; tarsi from tip of tarsomere 1 on-ward brown to dark brown. Hairs and bristles on legs black. Fore coxa with 3 apical bristles, mid and hind coxae each with 1 outer bristle. Mid and hind femora each with 1 preapical bristle. Fore tibia with 1 short ad, apically with 3 short bristles; mid tibia with 2 ad, 2 pd and 1 short av, apically with 4 bristles; hind tibia with 3 ad, 3 pd and 1 short av, apically with 2 bristles. Relative lengths
of tibia and 5 tarsomeres LI 1.15: 0.65 : 0.3 : 0.25 : 0.1 : 0.15; LII 1.7 : 0.75 : 0.5 : 0.35 : 0.25 : 0.15; LIII 2.0 : 0.5 : 0.65 : 0.45 : 0.3 : 0.15. Wing tinged with grayish; veins brown. R<sub>4+5</sub> and M weakly convergent; CuAx ratio 0.4. Squama yellow with black hairs. Halter yellow.

Abdomen yellow with posterior margins of tergites 2–7 brown. Hairs and bristles on abdomen black. Male genitalia (Fig. 1c–e): Epandrium longer than wide; lateral lobe on epandrium long and strip-like, slightly curved with several bristles; cercus rounded apically with bristles; hypandrium broad and truncate apically in ventral view.

Body length 2.7 mm, wing length 3.7 mm.

Female. Unknown.

Distribution. China (Beijing), Palearctic Realm.

Etymology. The species is named after the collector Ms. Shuwen An.

Differential diagnosis. This new species is somewhat similar to *H. ulrichi* Yang, but may be separated from the latter by the first flagellomere 2.3 times longer than wide and the large cercus. In *H. ulrichi*, the first flagellomere is 1.9 times as long as wide, and the cercus is rather small (Yang 1996).

2.4. *Hercostomus geniculatus* sp. n. (Fig. 2)


Diagnosis. Arista minutely pubescent, with basal segment 0.7 times as long as apical segment. Lateral lobe on epandrium strongly curved apically and nearly geniculate; cercus uniformly band-like and nearly straight.

Description. Male. Head metallic green with pale gray pollen. Hairs and bristles on head black; lower postocular bristles yellow. Antenna brown with base of first flagellomere brownish yellow; first flagellomere 2.2 times longer than wide, somewhat obtuse apically; arista brown, minutely pubescent, with basal segment 0.7 times as long as apical segment. Proboscis dark yellow with pale hairs; palpus yellow with black hairs.

Thorax yellow; dorsum metallic green except humeri yellow; pteropleuron with 1 black dot on antero-dorsal corner. Hairs and bristles on thorax black; 6 strong dc, 7–8 irregular paired acr short and hair-like; scutellum with 2 pairs of bristles (basal pair short and hair-like). Propleuron with 1 long bristle on lower portion. Legs [hind tarsomeres 4–5 broken] yellow; all coxae yellow; tarsi from tip of tarsomere 1 onward brown to dark brown. Hairs and bristles on legs black. Fore coxa with 3 apical bristles, mid and hind coxae each with 1 outer bristle. Mid and hind femora each with 1 preapical bristle. Fore tibia without distinct bristles, apically with 2 bristles; mid tibia with 2 ad, 2 pd and 1 pv, apically with 4 bristles; hind tibia with 3 ad, 3 pd, 3 thin av and 1 pv, apically with 2 bristles. Relative lengths of tibia and 5 tarsomeres LI 1.25: 0.55 : 0.25 : 0.1 : 0.15; LII 1.75 : 0.75 : 0.4 : 0.3 : 0.25 : 0.2; LIII 2.0 : 0.5 : 0.6 : 0.5 : : : ?. Wing tinged with grayish; veins...
brown. R₄₊₅ and M convergent; CuAx ratio 0.5. Squama yellow with black hairs. Halter yellow.

Abdomen yellow with posterior margins of tergites 2–7 brown. Hairs and bristles on abdomen black. Male genitalia (Fig. 2c–e): Epan-drium longer than wide; lateral lobe on epan-drium strongly curved and nearly geniculate with distinct bristles; cercus band-like, nearly straight, and with bristles; aedeagus somewhat thick.

Body length 3.4 mm, wing length 4.1 mm.

Female. Unknown.

Distribution. China (Beijing), Palaearctic Realm.

Etymology. The specific name refers to the geniculate lateral lobe on the epandrium.

Differential diagnosis. The new species is similar to H. anae sp. n., but may be separated from the latter by the lateral lobe on the epandrium nearly geniculate and the cercus uniformly band-like and nearly straight.

2.5. Hercostomus ulrichi Yang, 1996

Hercostomus (Hercostomus) ulrichi Yang, 1996: 240. Type locality: Sichuan (Nanping).


Diagnosis. Antenna black; first flagellomere 1.9 times longer than wide and somewhat pointed apically. Lateral lobe on epandrium nearly straight; cercus rather small.

Distribution. China (Gansu, Henan, Sichuan), Palaearctic Realm and Oriental Realm.

Acknowledgements. We are very grateful to Mrs. Caixia Gao and Ms. Shuwen An, China Agricultural University, Beijing for collecting specimens. The research was supported by National Natural Science Foundation of China (No. 30225009).

References


