

Two new species of the *Hercostomus hamatus* group (Diptera: Dolichopodidae) from China

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Abstract

Two new species of the *Hercostomus hamatus* group from China are described as new to science. A key to the species of the group from China is presented.

Key words: Dolichopodidae, *Hercostomus*, new species, China

Introduction

The *Hercostomus hamatus*-group is characterized by the hind femur with a black tip, veins R_{4+5} and M distinctly convergent apically, and cercus small triangular with several finger-like apical processes and long bristles (WEI, 1997; ZHANG and YANG, 2003). It contains 31 known species in China. In the present paper, 2 species are described as new to science. A key to the species of the *hamatus*-group from China is given. The types are deposited in the Insect Collection of China Agricultural University (CAU), Beijing.

Key to species (males) of the *Hercostomus hamatus*-group from China

1. Subcosta swollen basically; fore tarsomere 5 with a dorsal process 2
- Subcosta not swollen; fore tarsomere 5 without dorsal process 4
2. Fore tarsomere 5 with very small dorsal process
..... *H. prolixus* WEI
- Fore tarsomere 5 with large and wide dorsal process 3
3. Fore tarsomere 5 with dorsal process longer than wide *H. proctus* WEI
- Fore tarsomere 5 with dorsal process wider than long *H. guizhouensis* WEI
4. Fore tarsomeres 3-4 always flattened 5
- Fore tarsus normal 11
5. Postocular bristles entirely black 6
- Mid and lower postocular bristles yellow
..... *H. exacutus* WEI
6. Fore tarsomeres 3-4 distinctly flattened 7
- Fore tarsomeres 3-4 slightly flattened 9
7. Cercus with finger-like processes 8
- Cercus without finger-like processes
..... *H. chiaiensis* ZHANG et YANG
8. Lateral lobe on epandrium with long acute apex. .
..... *H. acutilobatus* n. sp.
- Lateral lobe on epandrium uniformly thick
..... *H. dissimilis* YANG et SAIGUSA
9. Arista dorsal to subapical 10
- Arista nearly apical
..... *H. taitungensis* ZHANG et YANG
10. First flagellomere obtuse apically
..... *H. dissectus* YANG et SAIGUSA
- First flagellomere acute apically
..... *H. curvispinus* YANG et SAIGUSA
11. Arista distinctly apical 12
- Arista subapical to dorsal 15
12. Coxae wholly yellow
..... *H. tianeensis* ZHANG et YANG
- Coxae not wholly yellow 13
13. Fore and hind coxae yellow, mid coxa slightly dark 14
- Fore coxa yellow, mid and hind coxae dark brown
..... *H. hualienensis* ZHANG et YANG
14. Lateral lobe on epandrium uniformly thick, strip-like *H. furcutus* WEI
- Lateral lobe on epandrium narrowing apically ...
..... *H. apicularis* YANG et GROOTAERT
15. Thorax mostly yellow or partly yellow 16
- Thorax metallic green 19
16. Lateral lobe on epandrium indistinct
..... *H. longyuwanensis* ZHANG et YANG
- Lateral lobe on epandrium distinctly projected. 17
17. Lateral lobe on epandrium slightly curved, with 2 apical bristles
..... *H. xishuangbannensis* YANG et GROOTAERT
- Lateral lobe on epandrium straight, finger-like, with 1 apical bristle 18
18. Antenna dark brownish yellow except first flagellomere dark; scutellum with yellow margin.
..... *H. curvativus* YANG et SAIGUSA
- Antenna dark; scutellum metallic green
..... *H. xanthodes* YANG et GROOTAERT

19. Scape yellow 20
 – Scape dark brown or black 26
20. Hind coxa yellow, sometimes basally brown . . 21
 – Hind coxa brown to dark brown 23
21. Cercus with 1-2 long finger-like marginal processes 22
 – Cercus without finger-like marginal process
 *H. erectus* YANG et GROOTAERT
22. Clypeus invisible lateral view; M slightly curved forward after m-cu *H. mustus* WEI
 – Clypeus visible lateral view; M nearly straight
 *H. frondosus* WEI
23. Lateral lobe on epandrium shorter than epandrium *H. solutus* WEI
 – Lateral lobe on epandrium longer than epandrium 24
24. Lateral lobe on epandrium acute apically; cercus without distinct finger-like process *H. fistulus* WEI
 – Lateral lobe on epandrium thin and narrow apically; cercus with 2 finger-like processes 25
25. Arista with basal segment 0.3 times as long as apical segment; fore tibia yellow; lateral lobe on epandrium with long apical bristles
 *H. acutatus* YANG et YANG
 – Arista with basal segment 0.15 times as long as apical segment; fore tibia brown apically; lateral lobe on epandrium with short apical bristles
 *H. hamatus* WEI
26. Lateral lobe on epandrium very short, slightly projecting beyond tip of epandrium 27
 – Lateral lobe on epandrium distinctly projecting beyond tip of epandrium 28
27. Lateral lobe on epandrium obtuse
 *H. gansuensis* YANG
 – Lateral lobe on epandrium somewhat acute
 *H. fastigiatus* WEI
28. Lateral lobe on epandrium finger-like, and with wide base 29
 – Lateral lobe on epandrium uniformly thick, apically somewhat obtuse and curved apically 31
29. Cercus lobate with weak apical incision and 2 short marginal processes . *H. concavus* Yang et Saigusa
 – Cercus with 2 long finger-like marginal processes 30
30. First flagellomere longer than wide
 *H. serriformis* n. sp.
 – First flagellomere as long as wide
 *H. litargus* WEI
31. Cercus with 2 long finger-like marginal processes 32
 – Cercus with 4 long finger-like marginal processes
 *H. wui* WEI
32. Hind tibia with 3 pv *H. histus* WEI
 – Hind tibia with 4 pv *H. wudangshanus* YANG

1. *Hercostomus acutilobatus* sp. nov.

(Figs. 1-6)

DIAGNOSIS: First flagellomere rather short, as long as wide; arista subapical. Fore tarsomeres 3-4 black and distinctly flattened, tarsomere 5 brown. Left and right lateral lobes on epandrium asymmetric, acute apically.

DESCRIPTION: *Male*. Body length 5.4–5.7 mm, wing length 4.8–5.1 mm.

Head metallic green with pale grey pollen. Face with pale grey pollen, face narrowing ventrally, as wide as first flagellomere. Hairs and bristles on head black. Postocular bristles (including ventral hairs) entirely black. Antenna (Fig. 1) black with wide ventral area of scape yellow; first flagellomere nearly as long as wide, obtuse apically; arista black, subapical, minutely pubescent, with basal segment 0.1 times as long as apical segment. Proboscis brownish yellow with black hairs; palpus brownish yellow with black hairs and 1 black apical bristle.

Thorax metallic green with pale grey pollen. Hairs and bristles on thorax black. 6 strong dc, 7-8 irregularly paired acr short and hair-like. Scutellum with 2 pairs of bristles (basal pair short and hair-like). Propleuron with several yellow hairs and with 1 black bristle on lower portion. Legs yellow. Coxae yellow, mid coxa with one brownish yellow spot at middle. Fore and mid tarsi from tip of tarsomere 1 onward dark brown, tip of hind femur brownish, hind tibia and tarsus from tip of tibia onward dark brown. Fore tarsomeres 3-4 black and distinctly flattened, tarsomere 5 brown (Fig. 3). Hairs and bristles on legs black. Mid and hind coxae each with 1 outer bristle, mid and hind femur each with 1 preapical bristle. Fore tibia with 4 ad, apically with 2 bristles; mid tibia with 4 ad, 3 pd and 1 av, apically with 4 bristles; hind tibia with 4 ad, 4 pd, 1av, and one row short v, apically with 3 bristles. Hind tarsomere 1 with 2 short v. Relative lengths of tibia and 5 tarsomeres: LI 2.50 : 1.50 : 1.65 : 0.65 : 0.30 : 0.25; LII 3.2 : 2.0 : 1.75 : 1.25 : 0.50 : 0.30 ; LIII 2.25 : 0.63 : 1.25 : 0.73 : 0.35 : 0.23. Wing (Fig. 2) tinged greyish; veins brown, R_{4+5} and M slightly convergent apically; CuAx ratio 0.7. Squama yellow with black hairs. Halter yellow.

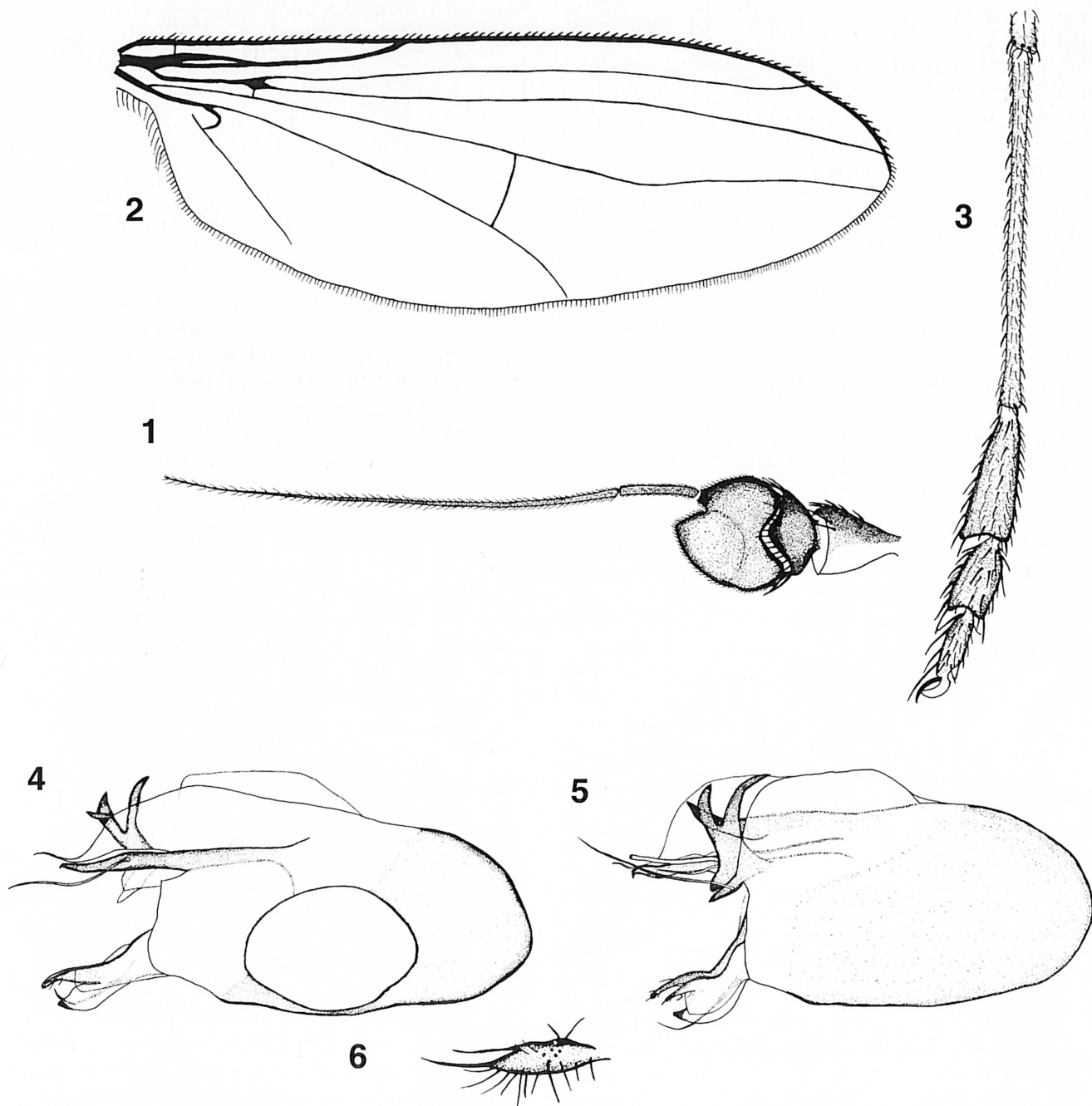
Abdomen metallic green with pale grey pollen. Sternum 4 with one V-shaped process. Hairs and bristles on abdomen black. Male genitalia (Figs. 4-5): Epandrium distinctly longer than wide, nearly truncate apically; left and right lateral lobes asymmetric, acute, each with 1 long bristle on middle portion; cercus (Fig. 6) rather small with 2 finger-like processes and long bristles. Hypandrium irregularly furcated.

Female. Unknown.

Holotype male, Guangxi: Dayaoshan National Nature Reserve, 2005. VII. 24, Yajun Zhu. Paratype: 1 male, same date as holotype.

Dist r i b u t i o n: China (Guangxi).

ETYMOLOGY: The specific name refers to the acute lateral lobe on the epandrium.



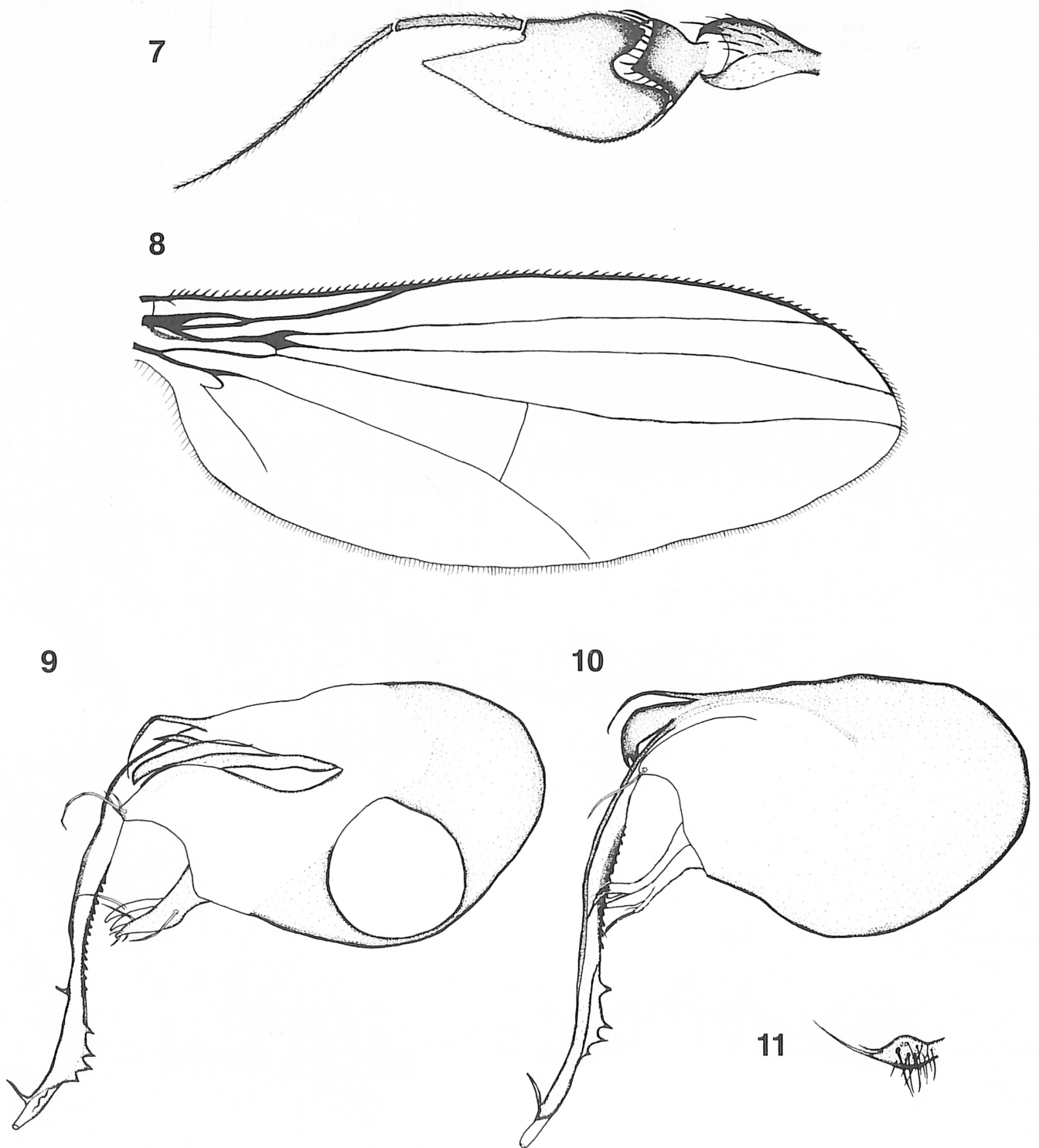
Figs. 1-6 — *Hercostomus acutilobatus* sp. nov. (male). 1. Antenna, lateral view; 2. wing; 3. fore tarsomeres 2-5, lateral view; 4. genitalia (excluding cercus), right lateral view; 5. genitalia (excluding cercus), left lateral view; 6. cercus, lateral view.

REMARKS: The new species is somewhat similar to *Hercostomus dissimilis* YANG *et* SAIGUSA from Sichuan, but may be easily separated from the latter by having the fore tarsomere 5 brown, CuAx ratio 0.7, left and right lateral lobes on the epandrium asymmetric, long and large. In *Hercostomus dissimilis*, the fore tarsomere 5 is white, CuAx ratio is 0.5, and the lateral lobes on the epandrium are short and thick (YANG and SAIGUSA, 1999).

2. *Hercostomus serriformis* sp. nov.
(Figs. 7-11)

DIAGNOSIS: First flagellomere 1.3 times longer than wide, pointed apically; arista dorsal. Aedeagus with many inner denticles.

DESCRIPTION: *Male*. Body length 5.4 mm, wing length 5.1 mm.



Figs. 7-11 — *Hercostomus serriformis* sp. nov. (male). 7. Antenna, lateral view; 8. wing; 9. genitalia (excluding cercus), right lateral view; 10. genitalia (excluding cercus), left lateral view; 11. cercus, lateral view.

Head metallic green with pale grey pollen. Face with pale grey pollen, face narrowing ventrally, narrower than first flagellomere. Hairs and bristles on head black. Postocular bristles (including ventral hairs) entirely black. Antenna (Fig. 7) blackish with ventral area of scape and apical half of first flagellomere yellow; first flagellomere 1.3 times longer than wide, pointed apically; arista black, dorsal, with very short hairs, and with basal segment 0.5 times as long as apical segment. Proboscis yellow with black hairs; palpus yellow with black hairs and 1 black apical bristle.

Thorax metallic green with pale grey pollen, mesonotum and scutellum with grey brown pollen. Hairs and bristles on thorax black. 6 strong dc, 7 irregularly paired acr short and hair-like. Scutellum with 2 pairs of bristles (basal pair short and hair-like), without marginal hairs. Propleuron with several yellow hairs and with 1 black bristle on lower portion. Legs yellow. Fore and hind coxae yellow, mid coxa dark brown (except apex); fore tarsus brown, tip of hind femur blackish, mid and hind tarsi from tip of tarsomere 1 onward dark brown. Hairs and bristles on legs black. Mid and hind coxae each with 1 outer bristle, mid and hind femur each with 1 preapical bristle. Fore tibia with 3 ad, apically with 2 bristles; mid tibia with 3 ad and 2 pd, apically with 3 bristles; hind tibia with 4 ad, 3 pd and 2 av, apically with 3 bristles. Hind tarsomere 1 with 1 v. Relative lengths of tibia and 5 tarsomeres: LI 2.2 : 1.2 : 0.8 : 0.5 : 0.4 : 0.3; LII 3.0 : 1.6 : 1.0 : 0.8 : 0.4 : 0.3; LIII 3.6 : 0.8 : 1.6 : ? : ? : ? [hind tarsomeres 3-5 missing]. Wing (Fig. 8) tinged greyish; veins brown, R_{4+5} and M slightly convergent apically; CuAx ratio 0.7. Squama yellow with black hairs. Halter yellow.

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Abdomen metallic green with pale grey pollen. Sternum 4 with a V-shaped ventral process. Hairs and bristles on abdomen black. Male genitalia (Figs. 9-10): Epandrium distinctly longer than wide; lateral lobe on epandrium large and curved, bearing 1 long and 2 short bristles apically; cercus (Fig. 11) rather small with 2 finger-like processes and long bristles. Hypandrium irregularly furcated. Aedeagus long with many inner denticles.

Female. Unknown.

Holotype male, Guangxi, Dayaoshan National Nature Reserve, 2005. VII. 26, Yinxia LIAO.

DISTRIBUTION: China (Guangxi).

ETYMOLOGY: The specific name refers to the serrate aedeagus.

REMARKS: The new species is somewhat similar to *Hercostomus litargus* WEI from Guizhou, but can be separated from the latter by the first flagellomere 1.3 times as long as wide and pointed apically, veins R_{4+5} and M weakly convergent apically, and aedeagus with many inner denticles. In *Hercostomus litargus*, the first flagellomere is as long as wide and obtuse apically, veins R_{4+5} and M are distinctly convergent apically, and the aedeagus has no denticles (WEI, 1997).

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