

New species of *Chrysotimus* and *Hercostomus* from Beijing (Diptera: Dolichopodidae)

by Lili ZHANG, Ding YANG* and Patrick GROOTAERT

Abstract

In the present paper, 9 genera and 17 species of Dolichopodidae from Beijing are listed. Three species are described as new to science: *Chrysotimus xiaolongmensis* sp. n., *Hercostomus* (*Hercostomus*) *caixiae* sp. n., and *H. (H.) mentougouensis* sp. n.

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

Introduction

Beijing City is located within North China region of the Palaearctic Realm. It is semi-humid with the subtemperate climate. Eight genera and 11 species of Dolichopodidae were known to occur in Beijing. In the present paper, 6 species are added to Beijing, and among them 3 species are described as new to science. Up to now 9 genera and 17 species are known from Beijing. A key to the known species of *Hercostomus* from Beijing is also given. As the collecting is not enough, it is highly possible that more species will be found in this region.

The types are deposited in the Insect Collection of China Agricultural University, Beijing.

1. *Rhaphium baihuashanum* YANG, 1998

Rhaphium baihuashanum YANG, 1998. Bull. Inst. R. Sci. Nat. Belg. Entomol. 68: 162. Type locality: Beijing (Baihuashan).

Distribution. China (Beijing).

2. *Amblysilopus ancistroides* YANG, 1995

Amblysilopus ancistroides YANG, 1995. Bull. Inst. R. Sci. Nat. Belg. Entomol. 65: 179. Type locality: Hubei (Shiyan).

Distribution. China (Beijing, Hubei, Shaaxi).

Genus *Chrysotimus* LOEW

The genus *Chrysotimus* belongs to the subfamily Peloropeodinae with 11 known species from China mainly based on the studies made by PARENT (1944), YANG (2001) and YANG & SAIGUSA (2001). Here this genus is recorded from Beijing for the first time with 1 new species.

3. *Chrysotimus xiaolongmensis* sp. nov. (Figs. 1-4)

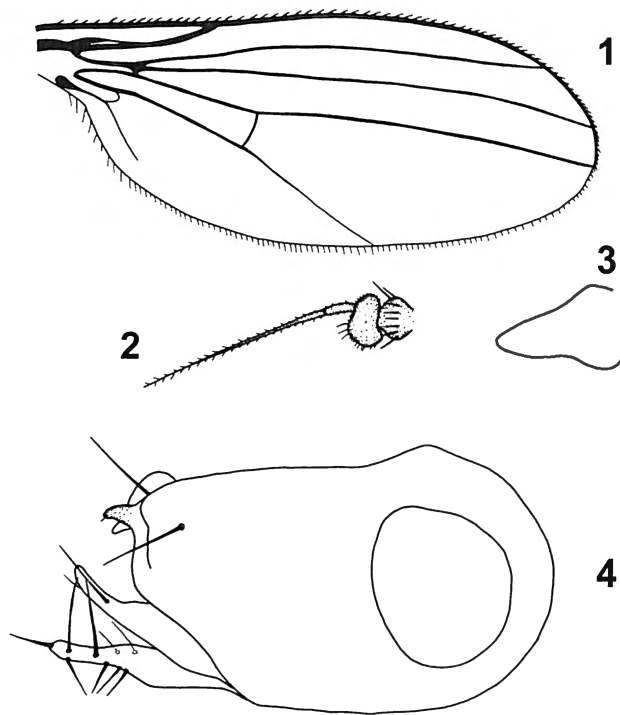
Diagnosis. acr absent. Hind tarsomere 1 with one group of 4 short erect bristles.

Male. Body length 2.1 mm, wing length 2.4 mm.

Head metallic green with pale gray pollen; eyes distinctly separated, face slightly narrowing downward. Hairs and bristles on head pale; middle and lower postocular bristles (including postero-ventral hairs) pale. Antenna dark brown; first flagellomere rather short, 0.5 times as long as wide; arista subapical, distinctly pubescent. Proboscis dark brown with brownish hairs; palpus dark brown with brownish hairs and 2 brownish bristles.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax pale; 6 dc (first dc rather short); acr absent; scutellum with 2 pairs of bristles (basal pair weak and short, apical pair long and strong). Propleuron with 1 pale hair and 1 pale bristle on lower portion. Legs [hind tarsomeres 3-5 broken off] yellow; fore coxa yellow, mid and hind coxae brownish yellow; tarsomere 5 dark brown. Hairs and bristles on legs pale; mid coxa with 1 anterior outer bristle, hind coxa with 1 outer bristle. Hind femur with 1 preapical bristle, one row of ad and one row of pd.

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Figs. 1-4 — *Chrysotimus xiaolongmensis* sp. n. 1. wing; 2. antenna; 3. hypandrium, ventral view; 4. male genitalia, lateral view.

Fore tibia without distinct bristles; mid tibia with 2 ad and 2 pd, apically with 3 bristles; hind tibia with 1 ad and 1 pd, apically with 3 bristles. Hind tarsomere 1 with one group of 4 short erect bristles on basal 1/5. Relative lengths of tibia and 5 tarsomeres LI 0.8 : 0.5 : 0.2 : 0.15 : 0.07 : 0.1; LII 1.0 : 0.55 : 0.2 : 0.15 : 0.1 : 0.1; LIII 1.1 : 0.4 : 0.3 : ? : ? : ?. Wing hyaline; veins brownish, R₄₊₅ and M parallel apically; CuAx ratio 0.23. Squama brownish with pale hairs. Halter pale yellow.

Abdomen metallic green with gray brown pollen. Hairs and bristles on abdomen brownish. Male genitalia (Figs. 3-4): Epandrium distinctly longer than wide with 1 thick and short finger-like lateral process; surstylus nearly straight, slightly curved apically; cercus long and narrow; hypandrium somewhat tapering toward apex in ventral view.

Female. Unknown.

Holotype male, Beijing: Mentougou, Xiaolongmen, 2002. IX. 8, Ding YANG.

Distribution. China (Beijing).

Etymology. The specific name refers to the type locality Xiaolongmen.

Remarks. The new species is similar to *Chrysotimus flavisetus* NEGROBOV, 1978 from USSR, but can be easily

separated from the latter by the surstylus on the epandrium rather short (NEGROBOV, 1978).

4. *Guzeriplia beijingensis* YANG et SAIGUSA, 2001

Guzeriplia beijingensis YANG et SAIGUSA, 2001. Bull. Inst. R. Sci. Nat. Belg. Entomol. 71: 157. Type locality: Beijing (Xiaolongmen).

Distribution. China (Beijing).

5. *Hydrophorus praecox* (LEHMANN)

Dolichopus praecox (LEHMANN), 1822. Indic. scholar. Hamb. Gymn. Acad.: 42 (*Dolichopus*). Type locality: "in agro Hamburgensis".

Distribution. China (Beijing, Henan, Shandong, Tibet, Xinjiang, Taiwan); Europe, North and South America, Australia and New Zealand.

6. *Neurigona xiangshana* YANG, 1999

Neurigona xiangshana YANG, 1999. Bull. Inst. R. Sci. Nat. Belg. Entomol. 69: 200. Type locality: Beijing (Xiangshan).

Distribution. China (Beijing).

7. *Syntormon beijingensis* YANG, 1998

Syntormon beijingensis YANG, 1998. Bull. Inst. R. Sci. Nat. Belg. Entomol. 68: 167. Type locality: Beijing (Sanbao).

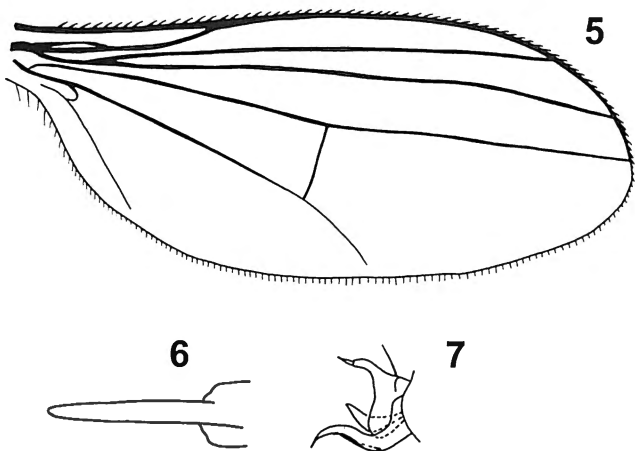
Distribution. China (Beijing).

Genus *Hercostomus* LOEW

The genus *Hercostomus* is one of the largest genera in the family Dolichopodidae. It is highly diversified in China with over 200 known species. Up to now, 8 species are known to occur in Beijing. Among them the following 2 species are described as new to science: *H. (H.) caixiae* sp. n., *H. (H.) mentougouensis* sp. n.

Key to species (males) of *Hercostomus* from Beijing

- 1. Middle and lower postocular bristles black 2
- Middle and lower postocular bristles pale yellow 3
- 2. First flagellomere obtuse apically, as long as wide; cercus long band-like
- *xiaolongmensis* YANG et SAIGUSA



Figs. 5-7 — *Hercostomus (Hercostomus) arcticus* YANG
5. wing; 6. hypandrium, ventral view; 7. apical genital processes, lateral view.

- First flagellomere acute apically, 1.8 times longer than wide; cercus nearly quadrate . . . *beijingensis* YANG
- 3. First flagellomere as long as wide, obtuse apically *brevipilosus* YANG et SAIGUSA
- First flagellomere longer than wide, acute apically 4
- 4. Cercus large and quadrate, with distinct finger-like marginal processes 5
- Cercus not quadrate 6
- 5. R_{4+5} and M nearly parallel apically; cercus with swollen apex *arcticus* YANG
- R_{4+5} and M convergent apically; cercus without swollen apex *mentougouensis* sp. n.
- 6. Cercus triangular 7
- Cercus oval *sichuanensis* YANG
- 7. First flagellomere with long and acute lower-apical corner, 2.6 times longer than wide . . . *caixiae* sp. n.
- First flagellomere 1.5 times as long as wide *shandonganus* YANG

8. *Hercostomus (Hercostomus) arcticus* YANG, 1996
(Figs. 5-7)

Hercostomus (Hercostomus) arcticus YANG, 1996. Dtsch. ent. Z. 43 (2): 235. Type locality: Heilongjiang, Beijing.

Specimens examined. 3 males, Beijing: Mentougou, Xiaolongmen, 2002.VIII.9, Shuwen An; 3 males, 5 females, Beijing: Mentougou, Xiaolongmen, 2002.VIII.9, Caixia Gao.

Distribution. China (Beijing, Heilongjiang, Shaanxi).

9. *Hercostomus (Hercostomus) beijingensis* YANG, 1996

Hercostomus (Hercostomus) beijingensis YANG, 1996. Entomofauna. 17 (18): 318. Type locality: Beijing.

Distribution. China (Beijing, Shaanxi).

10. *Hercostomus (Hercostomus) brevipilosus*
YANG et SAIGUSA, 2002

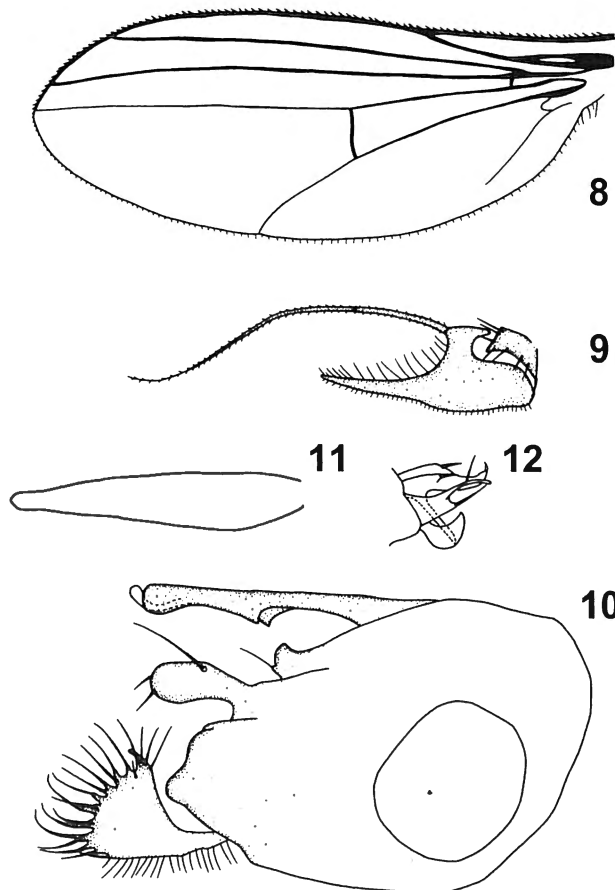
Hercostomus (Hercostomus) brevipilosus YANG et SAIGUSA, 2002. Dtsch. ent. Z. 49 (1): 65. Type locality: Shaanxi.

Specimens examined. 1 male, Beijing: Mentougou, Xiaolongmen, 2002.VIII.9, Shuwen An; 2 males, Beijing: Mentougou, Xiaolongmen, 2002.VIII.9, Caixia Gao.

Distribution. China (Beijing, Shaanxi).

11. *Hercostomus (Hercostomus) caixiae* sp. nov.
(Figs. 8-12)

Diagnosis. Belonging to *baishanzuensis*-species group. First flagellomere brown, 2.6 times longer than wide, with long and acute lower apical corner. Fore tibia without distinct bristles; hind tarsomere 1 shorter than tarsomere



Figs. 8-12 — *Hercostomus (Hercostomus) caixiae* sp. n. 8. wing; 9. antenna; 10. male genitalia, lateral view; 11. hypandrium, ventral view; 12. apical genital processes, lateral view.

2. Wing tinged with brownish. Hypandrium thick, with somewhat acute inner denticle.

Male. Body length 3.3 mm, wing length 4.0 mm.

Head pale metallic green with pale gray pollen. Hairs and bristles on head black; middle and lower postocular bristles (including postero-ventral hairs) pale yellow; ocellar tubercle distinct, with 2 strong oc and 2 short posterior hairs. Antenna brown; first flagellomere brown, 2.6 times longer than wide, with long and acute lower apical corner; arista brown, subapical, short pubescent, basal segment 0.4 times as long as apical segment. Proboscis brown with black hairs, palpus dark brown with black hairs and 2 black apical bristles.

Thorax pale metallic green with pale gray pollen. Hairs and bristles on thorax black; 6 strong dc, 3-4 irregularly paired acr; scutellum with one pair of strong bristles. Propleuron with 1 black bristle on lower portion. Legs [mid tarsomeres 2-5 and hind tarsomeres 4-5 broken off] yellow; fore and mid coxae brown, hind coxa brownish; tarsi brownish to brown. Hairs and bristles on legs black. Fore coxa with 2 anterior bristles, mid and hind coxae each with 1 outer bristle; mid and hind femora each with 1 preapical bristle. Fore tibia without distinct bristles; mid tibia with 3 ad (the 1st rather short), 2 pd, and 1 av, apically with 3 bristles; hind tibia with 2 ad, 3 pd, and 1 av, apically with 3 bristles. Fore tarsomere 1 with 1 short v at base. Relative lengths of tibia and 5 tarsomeres LI 1.2 : 0.6 : 0.35 : 0.25 : 0.15 : 0.15; LII 1.8 : 0.9 : ? : ? : ? : ?; LIII 2.0 : 0.55 : 0.7 : 0.5 : ? : ?. Wing hyaline, tinged with brownish; veins brown, R_{4+5} and M convergent apically; CuAx ratio 0.44. Squama brown with black hairs. Halter pale yellow.

Abdomen metallic green with gray brown pollen. Hairs on abdomen black. Male genitalia (Figs. 10-12): Epan-drium with long and curved outer lateral lobe and short wide inner lateral lobe; cercus nearly triangular, with distinct finger-like marginal processes; hypandrium thick, with somewhat acute inner denticle.

Female. Body length 3.2–3.7 mm, wing length 3.0–3.7 mm. Similar to male, except first flagellomere rather short, 1.3 times longer than wide; arista with rather short basal segment and fore tibia with 1 very short ad and 1 very short pd.

Holotype male, Beijing: Mentougou, Xiaolongmen. 2002.VIII.9, Caixia Gao. *Paratypes* 2 females, same as holotype.

Distribution. China (Beijing).

Etymology. The new species is named after Ms. Caixia Gao.

Remarks. The new species is very similar to *H. (H.) curvilobatus* YANG et SAIGUSA from Shaanxi, but can be separated from the latter by the first flagellomere 2.6 times longer than wide, and fore tibia without distinct bristles. In *curvilobatus*, the first flagellomere is 2.0 times

longer than wide, and the fore tibia has 1 ad and 2 pd (YANG et SAIGUSA, 2002).

12. *Hercostomus mentougouensis* sp. nov. (Figs. 13-17)

Diagnosis. Belonging to *cyaneculus*-species group. First flagellomere brown (except basal portion yellow), 1.4 times as long as wide. Wing hyaline, tinged with grayish, particularly on anterior field.

Male. Body length 4.7-5.3 mm, wing length 4.7-5.6 mm.

Head metallic green with pale gray pollen. Hairs and bristles on head black; middle and lower postocular bristles (including postero-ventral hairs) pale yellow; ocellar tubercle distinct, with 2 strong oc and 2 short posterior hairs. Antenna yellow; first flagellomere brown (except basal portion yellow), 1.4 times longer than wide; arista brown, subapical, distinct pubescent, with basal segment 0.3 times as long as apical segment. Proboscis brown with black hairs, palpus dark brown with black hairs and 2 black apical bristles.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 5 strong dc, 3-4 irregularly paired acr; scutellum with one pair of strong bristles and several short marginal hairs. Propleuron with 1 black bristle on lower portion. Legs yellow; all coxae yellow; tarsi brown to dark brown except tarsomere 1 somewhat pale basally. Hairs and bristles on legs black. Fore coxa with 2 anterior bristles, mid and hind coxae with 1 outer bristle; mid and hind femora with 1 preapical bristle. Fore tibia with 2 ad and 1 pd, apically with 3 bristles (apv rather long); mid tibia with 4 ad (the 1st rather short), 2 pd and 2 av, apically with 4 bristles; hind tibia with 3 ad, 4 pd, and 3-4 av, apically with 3 bristles. Fore tarsomere 1 with 1 short v at base, hind tarsomere 1 with 1 v at base. Relative lengths of tibia and 5 tarsomeres LI 1.8 : 0.9 : 0.5 : 0.3 : 0.2 : 0.2; LII 2.6 : 1.2 : 0.55 : 0.5 : 0.3 : 0.2; LIII 2.9 : 0.9 : 1.0 : 0.7 : 0.35 : 0.25. Wing hyaline, tinged with grayish, particularly on anterior field; veins brown, R_{4+5} and M convergent apically; CuAx ratio 0.8. Squama brown with black hairs. Halter pale yellow.

Abdomen metallic green with gray brown pollen. Hairs and bristles on abdomen brownish. Male genitalia (Figs. 15-17): Epan-drium longer than wide, nearly truncate apically, with lateral lobe short and slightly curved apically; cercus large and quadrate, with some finger-like marginal processes; hypandrium straight and obtuse apically; aedeagus slender and somewhat swollen apically.

Female. Body length 5.1–5.5 mm, wing length 5.2-5.5 mm. Similar to male.

Holotype male, Beijing: Mentougou, Xiaolongmen, 2002.VIII.9, Caixia Gao & Shuwen An. *Paratypes* 86 males, 149 females, same as holotype.

Distribution. China (Beijing).

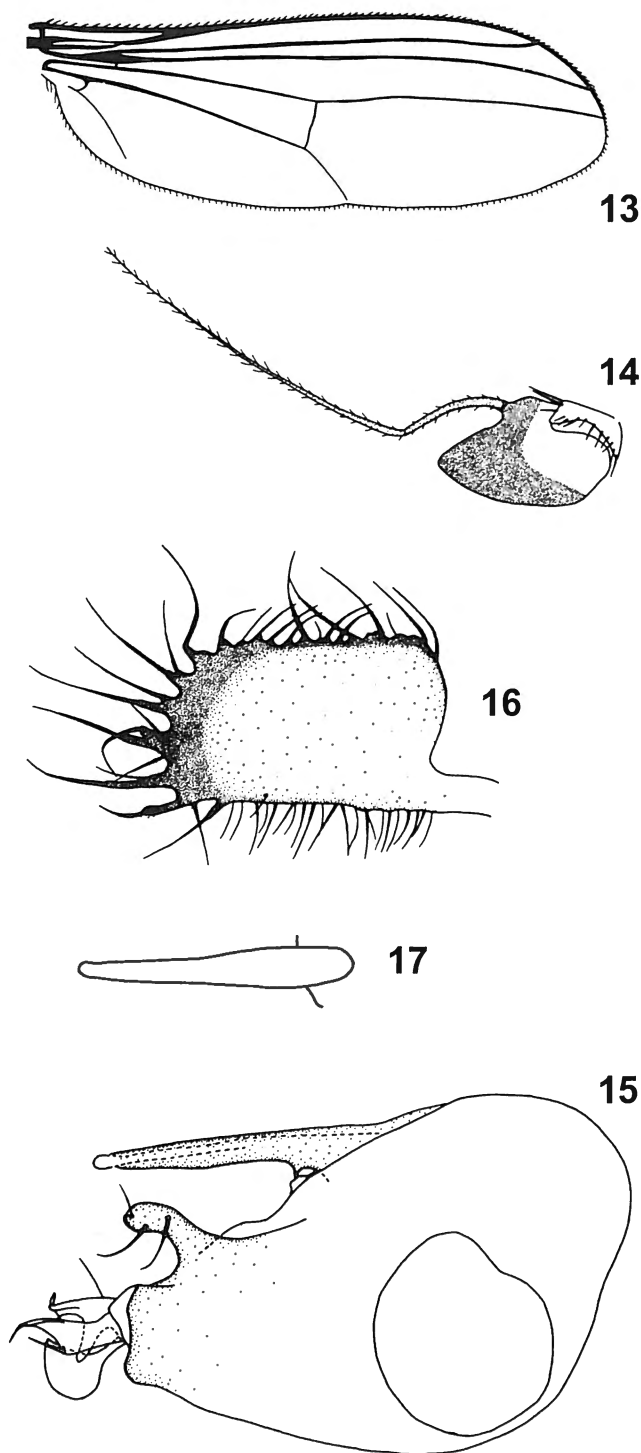


Fig. 13-17 — *Hercostomus (Hercostomus) mentougouensis* sp. n. 13. wing; 14. antenna; 15. male genitalia, lateral view; 16. cercus; 17. hypandrium, ventral view.

Etymology. The specific name refers to the type locality Mentougou.

Remarks. The new species is very similar to *H. (H.) arcticus* YANG from Heilongjiang and Beijing, but can be separated from the latter by R_{4+5} and M convergent

apically, cercus quadrate and hypandrium obtuse apically in ventral view. In *arcticus*, R_{4+5} and M are nearly parallel, the cercus has the somewhat swollen apex, and the hypandrium is somewhat acute in ventral view (YANG, 1996 b).

**13. *Hercostomus (Hercostomus) shandonganus*
YANG, 1996**

Hercostomus (Hercostomus) shandonganus YANG, 1996. Dtsch. ent. Z. 43 (2): 239. Type locality: Shandong.

Specimen examined. 1 male, Beijing: Mentougou, Xiaolongmen, 2002.VIII.10, Shuwen An.

Distribution. China (Beijing, Shandong).

**14. *Hercostomus (Hercostomus) sichuanensis*
YANG, 1997**

Hercostomus (Hercostomus) sichuanensis YANG, 1997. Stud. Dipt. 4 (1): 119. Type locality: Sichuan (Maerkang).

Specimen examined. 1 male 2 females, Beijing: Mentougou, Xiaolongmen, 1999.VII.22-25, Xueyou Hu.

Distribution. China (Beijing, Sichuan).

**15. *Hercostomus (Hercostomus) xiaolongmensis*
YANG et SAIGUSA, 2001**

Hercostomus (Hercostomus) xiaolongmensis YANG et SAIGUSA, 2001. Bull. Inst. R. Sci. Nat. Belg. Ent. 71: 159. Type locality: Beijing.

Distribution. China (Beijing, Shaanxi, Yunnan).

16. *Dolichopus aubertini* PARENT, 1936

Dolichopus aubertini PARENT, 1936. Encycl. ent. (BII) Dipt. 7: 126 (*Dolichopus*). Type locality: Chine, Tien-tsin (China).

Distribution. China (Beijing, Tianjin, Hebei).

17. *Dolichopus bigeniculatus* PARENT, 1926

Dolichopus bigeniculatus PARENT, 1926. Encycl. ent. (BII) Dipt. 3: 114 (*Dolichopus*). Type locality: Zi-Ka-Wei [= near Shanghai] (China).

Distribution. China (Beijing, Henan, Shaanxi, Sichuan, Zhejiang, Jiangsu, Anhui); Russia.

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