

## New species of *Chaetogonopteron* (Diptera: Dolichopodidae) from Guangdong, China

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### Abstract

The following three species of the genus *Chaetogonopteron* are described as new to science: *Chaetogonopteron chebalingense*, *C. liui*, *C. wuhuaense*. A key to the species of the genus from Guangdong is presented.

**Key words:** Dolichopodidae, *Chaetogonopteron*, China, Guangdong, new species.

### Introduction

In the present paper three species of Dolichopodidae from Guangdong of South China are described as new to science. The types of new species are deposited in China Agricultural University (CAU) in Beijing. The following abbreviations are used: acr – acrostichal, ad – anterodorsal, apv – apicoventral, av – anteroventral, dc – dorso-central, h – humeral, ih – inner humeral, LI – fore leg, LII – mid leg, LIII – hind leg, npl – notopleural, oc – ocellar, pd – posterodorsal, ph – posthumeral, psa – postalar, pv – posteroventral, pvt – postvertical, sa – supraalar, su – sutural, vt – vertical.

### Subfamily Sympycninae

#### Genus *Chaetogonopteron* DE MEIJERE, 1914

The genus *Chaetogonopteron* DE MEIJERE, 1914, belongs to the subfamily Sympycninae and is characterized by the following features: both males and females have the first tarsal segment of the hind leg strikingly shortened; many species also have the second tarsal segment shortened, and usually this segment bears a curious appendage (clidium) in males.

#### Key to species of *Chaetogonopteron* from Guangdong (males)

1. Hind tarsomere 1 usually shortened, hind tarsomere 2 without appendage (clidium) . . . . . 2
- Hind tarsomeres 1-2 shortened, hind tarsomere 2 with pale worm-like appendage . . . . . 5

2. First flagellomere more than 4.0 times longer than wide . . . . . 3
- First flagellomere about as long as wide . . . . . 4
3. Six-seven uniseriate acr; fore femur with 5-6 pv on basal half; fore tibia with row of 5 d on apical half. (Guangdong) . . . . . *chebalingense* sp. nov.
- Ten-twelve uniseriate acr; fore femur and fore tibia without distinct bristles. (Guangdong, Guangxi, Yunnan). . . . . *concavum* YANG et GROOTAERT
4. Five dc; 9-10 biseriate acr; hind femur wholly yellow. (Guangdong) . . . . . *liui* sp. nov.
- Six dc; 7-8 uniseriate acr; hind femur with black apex. (Fujian, Guangdong, Guangxi, Henan, Shanghai, Yunnan, Zhejiang) . . . . . *luteicinctum* (PARENT)
5. Wing with black apical spot. (Guangdong) . . . . .  
. . . . . *guangdongense* ZHANG, YANG et GROOTAERT
- Wing without black spot. . . . . 6
6. Mid femur without row of v; fore tibia without row of spine-like d on apical half, fore tarsomeres 1-4 without 2 rows of v. (Guangdong) . . . . .  
. . . . . *nanlingense* ZHANG, YANG et GROOTAERT
- Mid femur with row of long soft v on basal half; fore tibia with row of 12 dense spine-like d on apical half, fore tarsomeres 1-4 each with 2 rows of thin v (Fig. 10). (Guangdong). . . . . *wuhuaense* sp. nov.

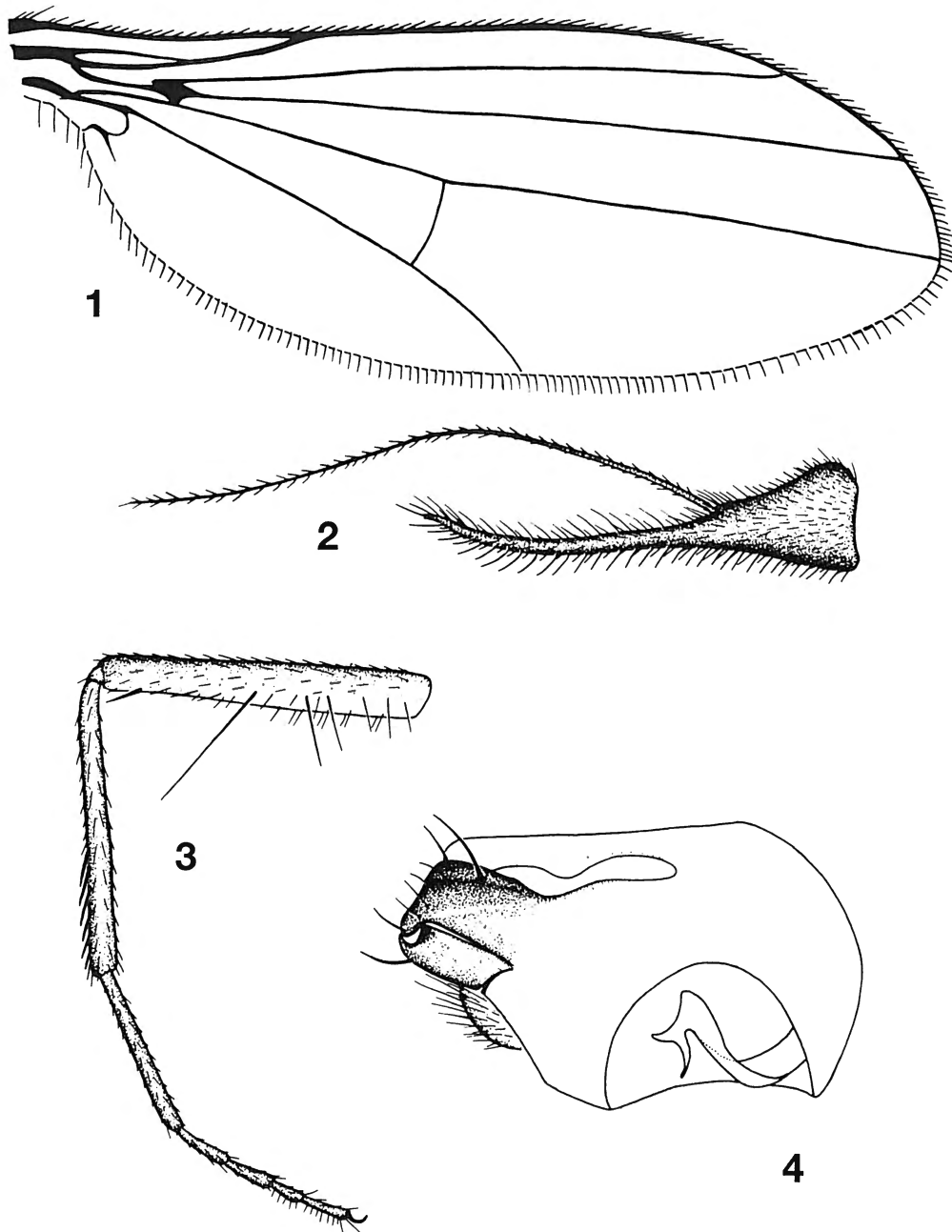
#### 1. *Chaetogonopteron chebalingense* sp. nov. (Figs. 1-4)

**TYPE MATERIAL:** *Holotype male*, Guangdong: Shixing-xian, Chebaling, 2003. VII. 26, Shuwen AN (CAU).

**DIAGNOSIS:** First flagellomere long subtriangular, about 4.2 times longer than wide. Fore femur with 5-6 pv; fore tibia with row of 5 pd on apical half (serration).

**DESCRIPTION:** *Male*. Body length 2.3 mm, wing length 2.1 mm.

**Head:** metallic green, with pale grey pollen; eyes contiguous on face. Hairs and bristles on head black; postocular bristles (including posterior ventral hairs) black. Antenna dark brown; first flagellomere (Fig. 2) long subtriangular, about 4.2 times longer than wide; arista



Figs. 1-4 — *Chaetogonopteron chebalingense* sp. nov., male. 1. wing; 2. first flagellomere; 3. fore leg, lateral view; 4. genitalia, lateral view.

dark brown and very short pubescent, with basal segment rather short. Proboscis brown with black hairs; palpus blackish with black hairs and 1 bristle.

*Thorax*: yellow; mesonotum with a small subtriangular black mid-posterior spot just in front of scutellum; scutellum yellow; upper margins of both pteropleuron and laterotergite blackish or black. Hairs and bristles on thorax black; 6 dc (the first dc weak), 6-7 uniseriate acr. Propleuron with pale hairs on lower part. Scutellum with 2 pairs of bristles, outer pair short and weak, inner pair long and strong, 4 hairs present between inner pair bristles. Legs yellow; all coxae yellow, mid coxa with a black dot on posterior upper corner and a black anterior stripe; tarsi yellow brown to brown. Hairs and bristles on legs

black; fore coxa with 4 apical bristles, mid and hind coxae each with 1 outer bristle. Fore femur (Fig.3) with 4-5 short pv on basal half and 1 very long pv at middle. Fore tibia (Fig.3) with row of 5 pd on apical half; mid tibia with 3 ad, 2 pd and 1 av; hind tibia with 1 ad, 2 pd on basal 1/3, row of short dense pd on middle 1/3, and 1 pd at apical 1/3, 1 av at base. Relative lengths of tibia and 5 tarsomeres LI 3.5: 1.8: 0.7: 0.6: 0.4: 0.4; LII 5.0: 2.5: 1.1: 0.9: 0.6: 0.5; LIII 6.2: 1.0: 1.3: 0.9: 0.6: 0.5. Wing (Fig. 1) weakly tinged with grey; veins brown,  $R_{4+5}$  and M parallel apically, M weakly bent at middle; CuAx ratio (length of m-cu / length of CuA distal section) 0.6. Squama dark brown with black hairs. Halter yellow with brown base.

**Abdomen:** brownish black; terga 1-5 largely blackish, terga 2-3 with brownish yellow lateral area. Hairs and bristles on abdomen black; terga 1-6 with row of long bristles on posterior margin. Male genitalia (Fig. 4): Epandrium longer than wide; surstylus with narrow dorsal lobe bearing 1 bristle and apically with deep incision, and wide ventral lobe with 2 long ventral bristles; cercus somewhat narrow apically; hypandrium rather thick.

**Female.** Unknown.

**DISTRIBUTION:** Guangdong (China).

**ETYMOLOGY:** The specific name refers to the type locality Chebaling (Guangdong).

**REMARKS:** The new species is similar to *Chaetogonopteron concavum* YANG et GROOTAERT from Yunnan, but can be separated from the latter by having 6-7 uniseriate acr, fore femur with 5-6 pv on basal half and fore tibia with row of 5 pd on apical half. *Ch. concavum* has 10-12 uniseriate acr, and fore femur and fore tibia have no distinct bristles (YANG & GROOTAERT, 1999a).

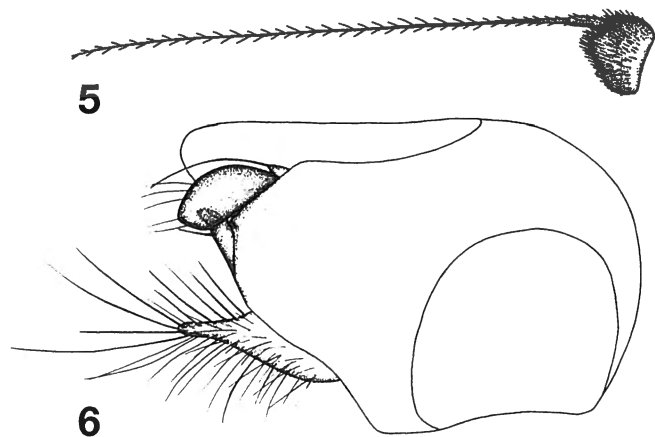
## 2. *Chaetogonopteron liui* sp. nov.

(Figs. 5-6)

**TYPE MATERIAL:** *Holotype male*, Guangdong: Dapu, Fengxi, 2003. VII. 29, Shuwen AN (CAU). Paratypes 19 males, 14 females: same data as holotype, Shuwen AN & Xingyue LIU.

**DIAGNOSIS:** First flagellomere short subtriangular, 1.1 times wider than long. Epandrium basally with a short projection bearing 1 long apical bristle; cercus long, with narrow apex; hypandrium rather thick and straight.

**DESCRIPTION:** *Male.* Body length 3.1-3.3 mm, wing length 3.0-3.1 mm.



Figs. 5-6 — *Chaetogonopteron liui* sp. nov., male. 5. first flagellomere; 6. genitalia, lateral view.

**Head:** metallic green, with pale grey pollen; eyes very narrowly separated on face. Hairs and bristles on head black; postocular bristles (including posterior ventral hairs) black. Antenna dark brown; first flagellomere (Fig. 5) short subtriangular, 1.1 times wider than long; arista subapical, dark brown, with basal segment rather short. Proboscis brown with black hairs; palpus dark brown with 1 black bristle.

**Thorax:** yellow; mesonotum metallic green, with wide anterior and lateral parts dark yellow; scutellum metallic green with yellow lateral and posterior margins; metanotum with blackish median part, pteropleuron with a black dot, laterotergite with dark brown anterior margin. Hairs and bristles on thorax black; 5 strong dc, 9-10 irregularly paired acr; scutellum with 1 pair of long bristles and short marginal hairs. Propleuron with black hairs and 1 black bristle on lower part. Legs yellow; all coxae yellow, mid coxa with a black dot on posterior upper corner and a small blackish anterior stripe; all tarsi with tarsomere 5 brown or dark brown. Hairs and bristles on legs black; fore coxa with 6 apical bristles, hind coxa with 1 outer bristle. Mid tibia with 2 ad, 2 pd and 3 v; hind tibia with 2 ad, 2 pd and 3-5 av. Hind tarsomere 1 shortened with short v, hind tarsomeres 2-3 with row of short v. Relative lengths of tibia and 5 tarsomeres LI 4.8: 3.1: 1.3: 1.2: 0.6: 0.5; LII 7.0: 3.6: 2.0: 1.6: 0.8: 0.4; LIII 8.0: 1.1: 1.9: 1.5: 1.1: 0.6. Wing weakly tinged with greyish; veins brown,  $R_{4+5}$  and M parallel apically, M weakly bent medially; CuAx ratio 0.7. Squama yellow with dark brown margin, and with black hairs. Halter yellow with brown base.

**Abdomen:** yellow to dark yellow with blackish dorsal margins; tergum 1 wholly yellow, tergum 2 dark brown with yellow lateral part. Hairs and bristles on abdomen black; terga 1-6 with row of long bristles on posterior margin. Male genitalia (Fig. 6): Epandrium distinctly longer than wide; surstylus with acute finger-like dorsal lobe bearing 1 bristle, and wide ventral lobe, somewhat curved, with 5 long pale bristles, basally with a short projection bearing 1 long apical bristle; cercus long, with narrow apex; hypandrium rather thick and straight.

**Female.** Body length 2.3-2.8 mm, wing length 2.5-2.6 mm, similar to male.

**DISTRIBUTION:** Guangdong (China).

**ETYMOLOGY:** The specific name refers to the collector Xingyue LIU.

**REMARKS:** The new species is similar to *Chaetogonopteron chaeturum* GROOTAERT et MEUFFELS from Yunnan, but may be separated from the latter by having the scutellum chiefly metallic green, long cercus with narrow apex. In *chaeturum*, scutellum is chiefly or wholly yellow, and the cercus is short (YANG & GROOTAERT, 1999a).

3. *Chaetogonopteron wuhuaense* sp. nov.  
(Figs. 7-11)

TYPE MATERIAL: *Holotype male*, Guangdong: Wuhua, Qimuzhang, 2003. VII. 31, Xingyue Liu. Paratypes: 4 males, 1 female, Guangdong: Xinfeng, Yunjishan, 2003. VII. 19, Shuwen An; 2 males, 1 female, same data as holotype.

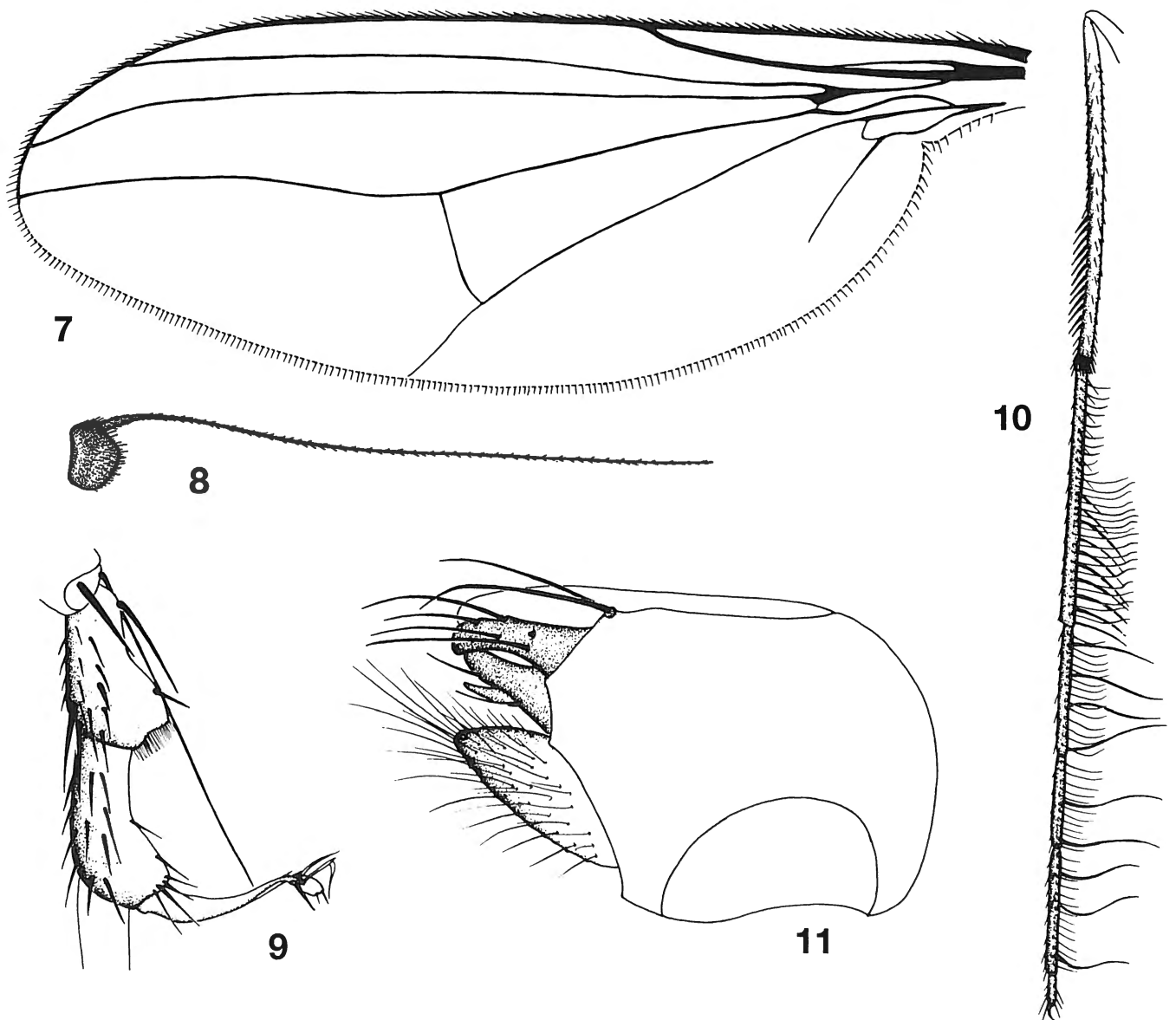
DIAGNOSIS: Thorax yellow except mesonotum with a large metallic green mid-posterior spot. Scutellum with yellow lateral margins. Fore tibia with row of 12 dense spine-like d on apical half (long serration); fore tarsomeres 1-4 with row of thin av and row of pv.

DESCRIPTION: *Male*. Body length 5.6-5.7 mm, wing length 3.9-4.0 mm.

*Head*: metallic green, with pale grey pollen; eyes contiguous on face. Hairs and bristles on head black; lower

postocular bristles (including posterior ventral hairs) pale. Antenna brownish yellow; first flagellomere (Fig. 8) subtriangular, 1.2 time wider than long; arista dorsal, dark brown, very short pubescent, with basal segment rather short. Proboscis brown with pale hairs; palpus dark brown with pale hairs.

*Thorax*: yellow; mesonotum with a large metallic green mid-posterior spot; scutellum with yellow lateral margins; postnotum blackish except lateral portion; pteropleuron with a black dot on antero-upper corner; laterotergite with blackish anterior spot. Scutellum metallic green with yellow lateral margins. Hairs and bristles on thorax black; 5 strong dc, 9-10 irregularly paired acr. Propleuron with 3 pale hairs and 1 pale bristle on lower part. Scutellum with inner pair rather long and outer pair somewhat short. Legs yellow; all coxae yellow, mid coxa with a very small black dot on posterior upper corner; fore tarsus dark brown, mid and hind tarsomere 5 brown. Hairs and bristles on legs black; fore coxa with 8 apical bristles,



Figs. 7-11 — *Chaetogonopteron wuhuaense* sp. nov., male. 7. wing; 8. first flagellomere; 9. hind tarsomeres 1-2, lateral view; 10. fore leg, lateral view; 11. genitalia, lateral view.

hind coxa with 1 outer bristle. Mid femur with row of long soft v on basal half; hind femur with 1 preapical bristle. Fore tibia (Fig. 10) with row of 12 dense spine-like d on apical half; mid tibia with 2 ad, 2 pd and 2 av; hind tibia with 3 long ad on basal half and row of 4-5 av, apically with 1 posterior bristle and 1 very long apico-ventral bristle at extreme tip. Fore tarsomeres (Fig. 10) 1-4 each with row of thin av (those on tarsomeres 1-2 except on base of tarsomere 1 rather long) and row of pv (which are short and dense on basal half of tarsomere 1, long and dense on apical half of tarsomere 1, and long and sparse on tarsomeres 2-4); mid tarsomere 1 with row of short v. Hind tarsomeres (Fig. 9) 1-2 shortened and subequal in length, tarsomere 1 with 1 long v at base, tarsomere 2 with long curved brownish worm-like appendage, tarsomere 3 elongated and curved. Relative lengths of tibia and 5 tarsomeres LI 4.0: 2.5: 1.2: 0.8: 1.0: 0.3; LII 6.5: 2.8: 1.3: 0.8: 0.4: 0.2; LIII 6.2: 0.4: 0.4: 2.1: 1.0: 0.3. Wing (Fig. 7) hyaline, tinged with grey; veins brown,  $R_{4+5}$  and M convergent apically, M weakly bent at middle; CuAx ratio 1.0. Squama brown with dark margin, and with long black hairs. Halter yellow with brown base. *Abdomen*: chiefly dark yellow with grey pollen; terga 1-6 with narrow mid-anterior portion and posterior margin blackish. Hairs and bristles on abdomen black; terga 1-6 with row of long bristles on posterior margin. Male genitalia (Fig. 11): Epandrium distinctly longer than wide, apically with 2 long strong bristles; surstylus with

short finger-like dorsal lobe bearing 1 bristle, and somewhat long ventral lobe bearing 5 long strong bristles at middle; cercus somewhat narrow apically; hypandrium rather straight.

*Female*. Body length 3.3-3.5 mm, wing length 2.9-3.0 mm. Similar to male.

DISTRIBUTION: Guangdong (China).

ETYMOLOGY: The specific name refers to the type locality Wuhua (Guangdong).

REMARKS: The new species is similar to *Chaetogonopteron pallipilosum* YANG et GROOTAERT from Yunnan, but may be separated from the latter by having the fore tibia with rowed spine-like d and the fore tarsomeres 1-4 with 2 rows of long v; epandrium apically with 2 long strong bristles. In *pallipilosum*, the fore tibia has no rowed spine-like d, the fore tarsomeres 1-4 have no 2 rows of long v; and epandrium has no long strong bristle apically (YANG & GROOTAERT, 1999a).

#### Acknowledgments

We are very indebted to Mrs. Shuwen An and Mr. Xinyue Liu (Beijing) for collecting the specimens. We are also grateful to Professor Zaifu Xu (Guangzhou) for his help in many ways. This research is supported by the National Natural Science Foundation of China (No. 30225009).

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