

## Species of *Chrysotus* Meigen in Palaeartic China (Diptera: Dolichopodidae)

Mengqing Wang & Ding Yang\*

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The species of the genus *Chrysotus* from Palaeartic China are reviewed and keyed. The following 5 species are described as new to science: *Chrysotus bifurcatus* sp. n., *C. brevicercus* sp. n., *C. luoyangensis* sp. n., *C. sinuolatus* sp. n., and *C. xinjiangensis* sp. n. Three species are recorded from China for the first time: *C. gramineus* (Fallén), *C. suavis* Loew, and *C. pennatus* Lichtwardt. Information on their distribution is also given or updated.

M. Q. Wang, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing 100094, China

D. Yang (\*author for correspondence), Department of Entomology, China Agricultural University, Beijing 100094, China; E-mail: dyangcau@yahoo.com.cn

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### 1. Introduction

The genus *Chrysotus* Meigen, 1824 belongs to the subfamily Diaphorinae. It can be easily recognized from other Diaphorinae species by the following characters: male and female frons wider than face; eyes shortly haired; male eyes with enlarged facets toward face; first flagellomere of male with arista subapical in notch or to side of tip; upper part of propleuron bare; male abdominal tergite 6 with bristles; surstylus not branched, tapering and curved apically (Robinson & Vockeroth 1981, Wang & Yang 2006). It is distributed worldwide with 285 described species (Yang *et al.* 2006), of which 55 species are known from the Palaeartic, 17 from the Oriental, 20 from the Australian, 13 from the Afrotropical, 107 from the Nearctic, and 92 from the Neotropical region. Negrobov and his co-workers (1980, 1995, 2000, and 2003) revised the Palaeartic *Chrysotus*.

In the present paper, five new species are described, three species are recorded from China for

the first time, and a key to the species of the genus from Palaeartic China is presented to separate these species.

### 2. Materials and methods

The specimens on which this study are based were collected from Henan, Hebei, Shandong, Beijing, Gansu, Qinghai, Ningxia, Neimeng, Xinjiang and Jilin by different collectors in different years. All material is preserved in 75% alcohol and deposited in the Entomological Museum of China Agricultural University, Beijing.

Morphological terminology for adult structures mainly follows McAlpine (1981). Terms for the structures of the male genitalia follow Cumming *et al.* (1995). The abbreviations are used as follows: acr = acrostichal bristle, ad = anterodorsal bristle, av = anteroventral bristle, CuAx ratio = length of m-cu / length of distal portion of CuA, d = dorsal bristle, dc = dorsocentral

bristle, LI = fore leg, LII = mid leg, LIII = hind leg, pd = posterodorsal bristle, pv = posteroventral bristle, v = ventral bristle.

### 3. Taxonomy

#### 3.1. Key to species of *Chrysotus* from Palaearctic China (males)

1. Fore coxa with all hairs and bristles pale 2
  - Fore coxa at least with bristles black 10
2. Hind tarsus pale yellow 3
  - Hind tarsus black or dark brown 6
3. Mid femur black; aedeagus with rowed denticles apically. Beijing
  - serratus* Wang & Yang, 2006
  - Mid femur pale yellow; aedeagus without rowed denticles apically 4
4. Hind femur wholly yellow 5
  - Hind femur with black apex. Jilin, Ningxia, Neimeng, Hebei, Shanxi, Tianjin, Shandong  
*cilipes* Meigen, 1824
5. First flagellomere large with blunt apex, nearly square. Beijing, Hebei *liui* nom. n.
  - First flagellomere small with acute apex, subtriangular. Beijing, Henan, Taiwan  
*degener* Frey, 1917
6. Fore and mid tibiae yellow 7
  - All tibiae black. Hebei  
*laesus* (Wiedemann, 1817)
7. Mid tibia with 3 ad and 2 pd bristles. Henan  
*uoyangensis* sp. n.
  - Mid tibia with 1 or 2 ad bristles, but without pd bristle 8
8. Hind tibia and tarsus without flattened bristle; aedeagus with large symmetrically bifurcated apical portion. Xinjiang, Beijing  
*suavis* Loew, 1857
  - Hind tibia and tarsus with 2 rows of dense flattened long bristles; aedeagus not as above 9
9. Squama with black hairs; aedeagus with furcated apex. Hebei, Beijing  
*pennatus* Lichtwardt, 1902
  - Squama with pale yellow hairs; aedeagus not furcated apically. Liaoning  
*rubzovi* Negrobov & Maslova, 1995
10. Hind tarsus chiefly pale yellow 11
  - Hind tarsus chiefly or entirely brown to black 14
11. Mid femur chiefly pale yellow 12
  - Mid femur chiefly brown or black 13
12. Hind tibia black. Jilin, Hebei  
*femoratus* Zetterstedt, 1843
  - Hind tibia chiefly pale yellow. Jilin, Xinjiang, Ningxia, Gansu, Neimeng, Beijing, Shandong, Fujian  
*pseudocilipes* Hollis, 1964
13. Mid tibia with 1 d bristle; aedeagus with furcated apical portion. Gansu, Guizhou  
*bifurcatus* sp. n.
  - Mid tibia with 2 d bristles; apical portion of aedeagus not furcated. Gansu, Shaanxi, Shanxi, Hebei, Beijing, Guizhou  
*pulchellus* Kowarz, 1874
14. Fore coxa yellow, mid and hind coxae black 15
  - All coxae black or blackish 16
15. Hind femur yellow with black apex, hind tibia entirely black; aedeagus apically with 2 swollen lateral lobes. Beijing  
*xiaolongmensis* Wang & Yang, 2006
  - Hind femur and tibia yellow; aedeagus apically with 1 swollen lateral lobe. Xinjiang  
*xinjiangensis* sp. n.
16. First flagellomere with blunt apex, nearly trapeziform; aedeagus apically with curved thin process. Qinghai  
*sinuolatus* sp. n.
  - First flagellomere with acute apex, subtriangular; aedeagus apically without curved thin process 17
17. Mid and lower postocular bristles pale yellow. Gansu, Shaanxi, Shanxi, Hebei, Guizhou  
*gramineus* (Fallén, 1823)
  - Mid and lower postocular bristles black 18
18. First flagellomere 1.3 times wider than long; hind femur without rowed v bristle; hind tibia with row of v bristles. Henan, Shandong  
*brevicercus* sp. n.
  - First flagellomere 2 times wider than long; hind femur with row of long v bristles; hind tibia without rowed v bristle. Beijing  
*beijingensis* Wang & Yang, 2006

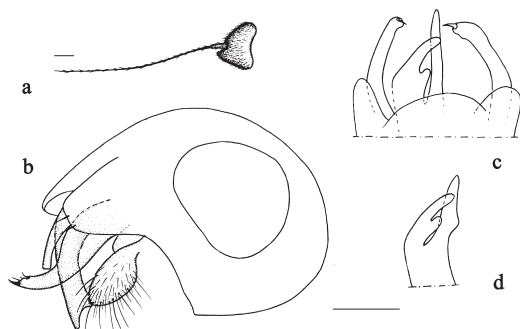


Fig. 1. *Chrysotus bifurcatus* sp. n., male. – a. First flagellomere, lateral view. – b. Genitalia, lateral view. – c. Tip of genitalia, ventral view. – d. Aedeagus, ventral view. Scale bar 0.1 mm.

### 3.2. *Chrysotus bifurcatus* sp. n. (Fig. 1)

**Material examined.** Holotype ♂: Gansu: Wenxian, 7.VIII.1980, leg. Ch. K. Yang. Paratypes 1♂, 1♀: same data as holotype; 1♂, 1♀: Guizhou: Huaxi 1,000 m a.s.l., 27.V.1980, leg. Ch. K. Yang.

**Diagnosis.** Eyes contiguous on face. First flagellomere subtriangular, as long as wide. Legs brown except all coxae blackish, fore and mid femora with yellow apical portion, and all tibiae yellow. Aedeagus with bifurcated apex.

**Description.** Male. Body length 2.1–2.5 mm, wing length 1.9–2.0 mm.

Head metallic green with pale gray pollen; eyes contiguous on face. Hairs and bristles on head black, postocular bristles (including postero-ventral hairs) pale. Antenna black; first flagellomere subtriangular (Fig. 1a), as long as wide; arista black, short pubescent. Proboscis brownish with brown hairs; palpus yellow with 1 black apical bristle.

Thorax dark metallic green with pale gray pollen. Hairs and bristles on thorax black; 5 strong dc, 6–7 irregularly paired acr short and hair-like; scutellum with 2 pairs of bristles, basal pair short and hair-like; propleuron with 1 black hair and 1 black bristle on lower part.

Legs brown, all coxae blackish; fore and mid femora with yellow apical portion, all tibiae yellow, all tarsi from tip of tarsomere 1 onward pale yellow to dark yellow. Hairs and bristles on legs brown. Fore and mid coxae with brown antero-

apical bristles; hind coxa with 1 outer bristle at base. Fore femur with 3–4 pv apically; mid femur with 2–3 av apically; hind femur with 2–3 av and 2 pv apically. Fore tibia with 1 ad at basal 1/4, apically with comb-like hairs and 3 bristles; mid tibia with 1 ad, apically with 4 bristles; hind tibia with 1 ad and 1 pd, apically with comb-like hairs and 4 bristles. All tarsomere 1 with row of short v. Relative length of tibia and 5 tarsomeres of legs LI 3.4 : 1.7 : 0.8 : 0.6 : 0.4 : 0.4; LII 4.2 : 2.1 : 1.0 : 0.7 : 0.4 : 0.4; LIII 4.6 : 1.4 : 1.0 : 0.7 : 0.5 : 0.4.

Wing hyaline, veins black;  $R_{4+5}$  and M parallel apically, CuAx ratio 0.3. Squama pale with yellow hairs. Halter pale.

Abdomen dark metallic green with pale gray pollen; hairs and bristles on abdomen black. Male genitalia (Figs. 1b–d): Epandrium somewhat rounded, surstylus tapering apically; cercus short and wide, with moderately long hairs; aedeagus with bifurcated apex.

Female. Body length 2.1–2.5 mm, wing length 1.9–2.0 mm. Similar to male.

**Remarks.** The new species is similar to *Chrysotus xiaolongmensis* Wang & Yang, 2006, but may be separated from the latter by having the fore coxa blackish and hind tibia yellow, and the aedeagus is bifurcated apically. In *xiaolongmensis*, the fore coxa is yellow, the hind tibia is black, and the aedeagus is not furcated apically.

**Distribution.** China (Gansu, Guizhou).

**Etymology.** The specific epithet refers to the aedeagus with the bifurcated apex.

### 3.3. *Chrysotus gramineus* (Fallén, 1823) (Fig. 2)

*Dolichopus gramineus* Fallén, 1823. Monogr. Dolichopod. Svec.: 19. Type locality: not given [Sweden].

**Material examined.** 1♂: Gansu: Wenxian, 7.VIII.1980, leg. Ch. K. Yang; 1♂, 1♀: Guizhou: Huaxi 1,000 m a.s.l., 27.V.1981, leg. Ch. K. Yang.

**Diagnosis.** Eyes contiguous on face. Middle and lower postocular bristles (including postero-ventral hairs) pale yellow. First flagellomere subtriangular, 1.3 times wider than long. Acr 4–5 pairs. All coxae blackish. Hind tibia with row of av. Squama pale yellow with pale hairs, halter



Fig. 2. *Chrysotus gramineus* (Fallén), male, genitalia, lateral view. Scale bar 0.1 mm.

pale yellow. Surstylus with acute apex, and aedeagus with bifurcated apex.

**Distribution.** China (Gansu, Shaanxi, Shanxi, Hebei, Guizhou); England, Sweden, Finland, Ireland, Norway, Denmark, Belgium, Belarus, Germany, France, Netherlands, Austria, Switzerland, Italy, Andorra, Greece, Spain, Hungary, Bulgaria, Czech, Slovakia, Romania, Poland, Yugoslavia, Russia, Ukraine, Kirgizia, Korea.

### 3.4. *Chrysotus brevicercus* sp. n. (Fig. 3)

**Material examined.** Holotype ♂: Henan: Songxian, Baiyunshan, 18.VII.2004, leg. H. Dong. Paratypes 6♂♂: same data as holotype; 6♂♂: Henan: Songxian, Baiyuanshan, 15.VII.2004, leg. K. Y. Zhang; 1♂: Henan: Nanyang, Neixiang, Baotianman, 25.VII.2004, leg. H. Dong; 2♂♂: Henan: Nanyang, Neixiang, Baotianman, 24.VII.2004, leg. K. Y. Zhang; 20♂♂: Henan: Songxian, Tianchishan, 12–13.VII.2004, leg. K. Y. Zhang; 1♂: Henan: Luoyang, Luanchuan, Longyuwan, 19.VII.2004, leg. K. Y. Zhang; 10♀♀: Henan: Luoyang, Luanchuan, Longyuwan, 21.VII.2004, leg. K. Y. Zhang; 5♂♂: Henan: Luoyang, Luanchuan, Longyuwan, 20.VII.2004, leg. H. Dong; 1♂: Shandong: Mouping, Kunyushan, 19.VIII.2004, leg. H. Dong.

**Diagnosis.** Eyes narrowly separated on face. First flagellomere subtriangular, 1.3 times wider than long. Legs chiefly black; fore and mid tibiae chiefly yellow with blackish bases; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; hind tibia brownish, with basal 1/3 and apical 1/3 brown, hind tarsus entirely brown. Male cercus short and broad, with weak marginal processes.

**Description.** Male. Body length 2.2–2.5 mm, wing length 1.8–1.9 mm.

Head metallic green with pale gray pollen; eyes narrowly separated on face. Hairs and on head black, postocular bristles (including postero-ventral hairs) black. Antenna black; first flagellomere subtriangular (Fig. 3a), 1.3 times wider than long; arista black, short pubescent. Proboscis blackish with black hairs; palpus brown with 1–2 black apical bristles.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 5 strong dc, 5–6 irregularly paired acr short and hair-like; scutellum with 2 pairs of bristles, basal pair short and hair-like; propleuron with 2 black bristles on lower part.

Legs black; all coxae and trochanters black; fore and mid femora chiefly black with dark yellow tip; fore and mid tibiae yellow with blackish bases; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown; hind femur black, hind tibia brownish with basal 1/3 and apical 1/3 brown, hind tarsus entirely brown. Hairs and bristles on legs black. Fore and mid coxae with black antero-apical bristles; hind coxa with 1 black

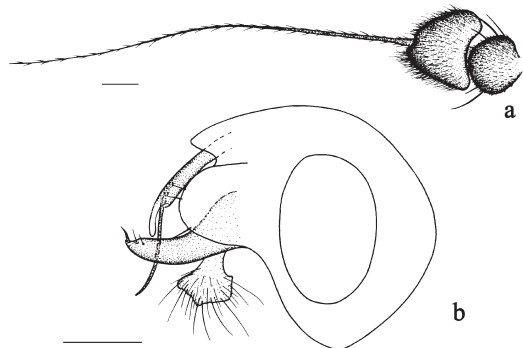


Fig. 3. *Chrysotus brevicercus* sp. n., male. – a. Antenna (excluding scape), lateral view. – b. Genitalia, lateral view. Scale bar 0.1 mm.

outer bristle at base. Fore femur with 2–3 pv apically; mid femur with 2 av and 2–3 pv apically; hind femur with row of 4–5 long av and 2–3 short pv apically. Fore tibia with 1 weak ad at basal 1/4, apically with comb-like hairs and 4 bristles; mid tibia with 2 ad and 1 pd, apically with 4 bristles; hind tibia with 3 ad and row of v (of which basal 5–6 longer), apically with comb-like hairs and 4 bristles; mid and hind tarsomere 1 each with row of short v. Relative length of tibia and 5 tarsomeres of legs LI 3.6 : 1.7 : 1.0 : 0.8 : 0.5 : 0.5; LII 4.1 : 2.2 : 1.0 : 0.8 : 0.6 : 0.5; LIII 5.0 : 1.5 : 1.2 : 0.8 : 0.6 : 0.5.

Wing hyaline, veins brown;  $R_{4+5}$  and M parallel apically, CuAx ratio 0.3. Squama yellow with black hairs. Halter pale yellow.

Abdomen metallic green with pale gray pollen; hairs and bristles black. Male genitalia (Fig. 3b): Epandrium somewhat rounded, surstylus tapering and curved apically; cercus short and broad, with weak marginal processes; aedeagus slender; hypandrium short.

Female. Body length 2.8–3.1 mm, wing length 2.2–2.5 mm. Similar to male, but eyes widely separated on face, and hind tibia without rowed v.

**Remarks.** The new species is similar to *Chrysotus logvinovskii* Negrobov, Tsurikov *et* Maslova, but may be separated from the latter by the postocular bristles (including postero-ventral hairs) black and the different male genitalia. In *logvinovskii*, the postocular bristles (including postero-ventral hairs) are pale yellow.

**Distribution.** China (Henan, Shandong).

**Etymology.** The specific epithet refers to the short and broad cercus.

### 3.5. *Chrysotus liui* nom. n.

*Chrysotus liui* nom. n. for *Chrysotus quadratus* Wang & Yang, 2006 (preoccupied by Van Duzee, 1915).

*Chrysotus quadratus* Wang & Yang, 2006. Mitt. Mus. Nat. kd. Berl., Dtsch. entomol. Z. 52(2): 251. Type locality: Beijing.

**Material examined.** Holotype ♂: Beijing: Xiangshan Park, 17–19.VIII.1997, leg. D. Yang. Paratypes 4♂♂: same data as holotype. Other material: 1♂, 1♀: Hebei: Qinhuangdao, Xiyu-

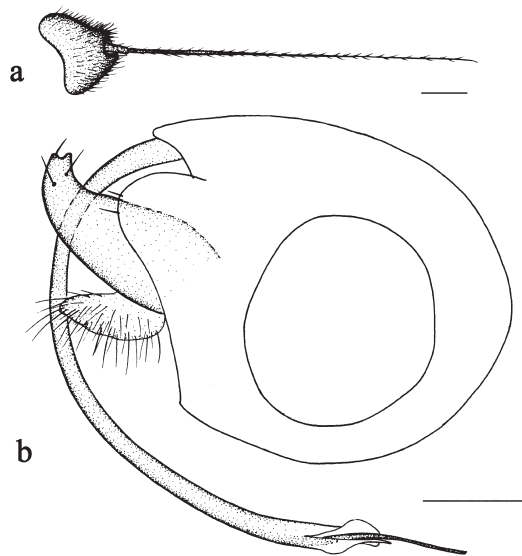


Fig. 4. *Chrysotus luoyangensis* sp. n., male. – a. First flagellomere, lateral view. – b. Genitalia, lateral view. Scale bar 0.1 mm.

chang, 16.VIII.2004, leg. X. Y. Liu.

**Diagnosis.** Eyes very narrowly separated on face. First flagellomere somewhat quadrate. Middle and lower postocular bristles pale. Legs chiefly yellow. Fore coxa yellow with pale hairs and bristles.

**Distribution.** China (Beijing, Hebei).

### 3.6. *Chrysotus luoyangensis* sp. n. (Fig. 4)

**Material examined.** Holotype ♂: Henan: Luoyang, Luanchuan, Longyuwan 1,000m a.s.l., 19.VII.2004, leg. K. Y. Zhang. Paratypes 1♂, 1♀: Henan: Xinyang, Jigongshan, 13.VII.1997, leg. Zh. Li; 2♂♂, 1♀: Gansu: Chengxian, 20.VII.1980, leg. Ch. K. Yang.

**Diagnosis.** Eyes contiguous on face. Legs yellow; mid and hind coxae black; hind femur with apical half blackish; hind tibia with apical 1/3 blackish; hind tarsus blackish. Aedeagus slender, furcated apically.

**Description.** Male. Body length 2.0–2.3 mm, wing length 1.8–2.1 mm.

Head metallic green with pale gray pollen; eyes contiguous on face. Hairs and bristles on head black, postocular bristles (including postero-ventral hairs) pale yellow. Antenna

black; first flagellomere 1.2 times wider than long (Fig. 4a), trapeziform; arista black, short pubescent. Proboscis blackish with black hairs; palpus yellow with 2 brown apical bristles.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 5 strong dc, 5–6 irregularly paired acr short and hair-like; scutellum with 2 pairs of bristles, basal pair short and hair-like; propleuron with 2 black bristles on lower part.

Legs yellow; fore coxa yellow with blackish base, mid and hind coxae black with yellow apex; hind femur with apical half blackish; hind tibia with apical 1/3 blackish; fore and mid tarsi from tip of tarsomere 1 onward brown to dark brown, hind tarsus blackish. Hairs and bristles on legs black. Fore and mid coxae with pale yellow antero-apical bristles; hind coxa with 1 black outer bristle at base. Fore femur with 2–3 pv apically; mid femur with 2 av and 2–3 pv apically; hind femur with 3–4 av and 1–2 pv apically. Mid tibia with 3 ad (1 short and other 2 long) and 2 short pd, apically with 4 bristles; hind tibia with 1 ad, 4–5 pd, and row of av, apically with comb-like hairs and 4 bristles. Mid and hind tarsomere 1 with row of short v. Relative length of tibia and 5 tarsomeres of legs LI 3.6 : 1.8 : 0.9 : 0.7 : 0.4 : 0.4; LII 4.6 : 2.6 : 1.2 : 0.9 : 0.5 : 0.4; LIII 5.4 : 1.5 : 1.4 : 0.9 : 0.5 : 0.5.

Wing hyaline, veins black;  $R_{4+5}$  and M parallel apically, CuAx ratio 0.2. Squama pale with black hairs. Halter pale.

Abdomen metallic green with pale gray pollen; hairs and bristles on abdomen black. Male genitalia (Fig. 4b): Epandrium somewhat rounded, surstylus tapering and curved apically; cercus short and wide, with somewhat acute apex; aedeagus slender, furcated apically.

Female. Body length 2.2 mm, wing length 2.1 mm. Similar to male.

**Remarks.** The new species is similar to *Chrysotus decipiens* Negrobov, Tsurikov *et* Maslova, but may be separated from the latter by the lower postocular bristles (including postero-ventral hairs) pale yellow. In *decipiens*, the postocular bristles (including postero-ventral hairs) are black.

**Distribution.** China (Henan).

**Etymology.** The specific epithet refers to the locality of the holotype Luoyang.

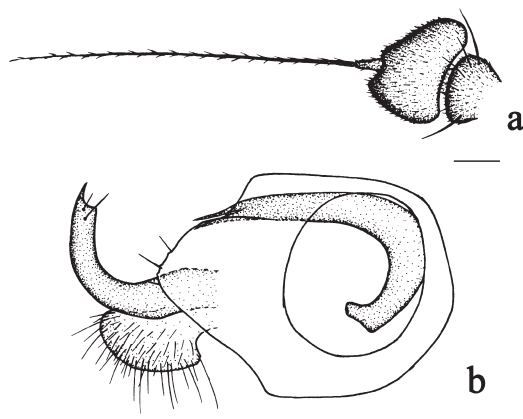


Fig. 5. *Chrysotus pennatus* Lichtwardt, male. – a. antenna (excluding scape), lateral view. – b. genitalia, lateral view. Scale bar 0.1 mm.

### 3.7. *Chrysotus pennatus* Lichtwardt, 1902 (Fig. 5)

*Chrysotus pennatus* Lichtwardt, 1902. Természetr. Füzet. 25: 197. Type locality: Yugoslavia (Novi).

**Material examined.** 2♂♂, 1♀: Hebei: Qinhuangdao, Xiyuchang, 16.VIII.2004, leg. X. Y. Liu; 1♂: Beijing: Qinglongxia, Qinglonghu, 6.VII.2004, leg. Y. L. Xu; 1♂: Beijing: Gongzhufen, 2.VIII.1957, leg. Ch. K. Yang.

**Diagnosis.** Eyes contiguous on face. Postocular bristles (including postero-ventral hairs) pale yellow. Legs black; all coxae black; fore and mid femora with base and apex yellow, hind femur with basal portion yellow; fore and mid tibia yellow, hind tibia and tarsus black; hind tibia somewhat swollen, with row of strong and row of flattened strong ad. Aedeagus bearing symmetrically bifurcated apex.

**Distribution.** China (Hebei, Beijing); Germany, Italy, Greece, Hungary, Yugoslavia, Romania, Russia.

### 3.8. *Chrysotus sinuolatus* sp. n. (Fig. 6)

**Material examined.** Holotype ♂: Qinghai: Menyuan, Fengzhakou, 15–18.VII.1989, leg. M. C. Wei. Paratypes 24♂♂, 6♀♀: same data as holotype.

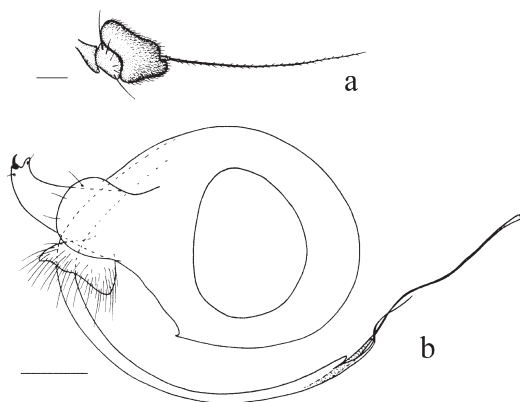


Fig. 6. *Chrysotus sinuolatus* sp. n., male. – a. Antenna, lateral view. – b. Genitalia, lateral view. Scale bar 0.1 mm.

**Diagnosis.** Eyes narrowly separated on face. Legs chiefly black; fore and mid femora with yellow apex; fore and mid tibiae yellow; fore and mid tarsi from tip of tarsomere 1 onward brownish to brown, hind tarsus entirely black. Aedeagus apically with curved thin process.

**Description.** Male. Body length 1.8–2.2 mm, wing length 2.2–2.5 mm.

Head metallic green with pale gray pollen; eyes narrowly separated on face. Hairs and bristles on head black, lower postocular bristles (including postero-ventral hairs) pale. Antenna black; first flagellomere (Fig. 6a) large, trapeziform, as long as wide; arista black, short pubescent. Proboscis dark brown with black hairs; palpus yellow with 2 brown apical bristles.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 6 strong dc, 9–10 irregularly paired acr short and hair-like; scutellum with 2 pairs of bristles, basal pair short and hair-like; propleuron with 1 black bristle and 1 black hair on lower part.

Legs black; all coxae black; fore and mid femora with yellow apex, hind femur black; fore and mid tibiae yellow, hind tibia black; fore and mid tarsi from tip of tarsomere 1 onward brownish to brown, hind tarsus entirely black. Hairs and bristles on legs black. Fore and mid coxae with black antero-apical bristles; hind coxa with 1 black outer bristle at base. Fore femur with 2–3 pv apically; mid femur with 2 preapical bristles and 2–3 av apically; hind femur with 1 preapical bristle and 2–3 av apically. Fore tibia with 1 ad at

basal 1/4, apically with comb-like hairs and 3 bristles; mid tibia with 2 long ad and 2–3 pd, apically with 3 bristles; hind tibia with 2 ad, 3–4 pd, and 4–5 v, apically with comb-like hairs and 3 bristles. Fore and hind tarsomere 1 with row of short v. Relative length of tibia and 5 tarsomeres of legs LI 3.3 : 1.7 : 0.7 : 0.6 : 0.4 : 0.4; LII 4.2 : 2.2 : 1.0 : 0.7 : 0.4 : 0.4; LIII 5.0 : 1.5 : 1.1 : 0.7 : 0.5 : 0.5.

Wing hyaline, veins black;  $R_{4+5}$  and M parallel apically, CuAx ratio 0.2. Squama yellow with black hairs. Halter pale.

Abdomen metallic green with pale gray pollen; hairs and bristles on abdomen black. Male genitalia (Fig. 6b): Epandrium somewhat rounded, surstylus wide with swollen apex; cercus with acute apex, with moderately long hairs; aedeagus slender, apically with curved thin process.

Female. Body length 1.6–1.7 mm, wing length 1.8–2.0 mm. Similar to male, but eyes widely separated on face.

**Remarks.** The new species is similar to *Chrysotus beijingensis* Wang & Yang, 2006, but may be separated from the latter by the large first flagellomere as long as wide and surstylus with the swollen apex. In *beijingensis*, the first flagellomere is rounded, 2.0 times wider than long, and the surstylus has no swollen apex.

**Distribution.** China (Qinghai).

**Etymology.** The specific epithet refers to the aedeagus apically with the curved thin process.

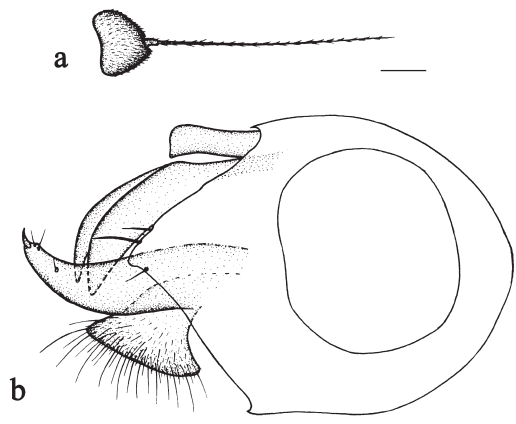


Fig. 7. *Chrysotus suavis* Loew, male. – a. First flagellomere, lateral view. – b. Genitalia, lateral view. Scale bar 0.1 mm.

### 3.9. *Chrysotus suavis* Loew, 1857 (Fig. 7)

*Chrysotus suavis* Loew, 1857. Programm K. Realschule Meseritz 1857: 49. Type locality: Germany: "Cöln"; Austria: "Neusiedler See in Ungarn".

*Material examined.* 5♂♂, 5♀♀: Xinjiang: Kuerle 1,020 m a.s.l., 16.VIII.1958, leg. Ch. Q. Li; 1♂, 2♀♀: Xinjiang: Kuerle 1,000 m a.s.l., 18.VIII.1958, leg. Ch. Q. Li; 1♂: Xinjiang: Tulufan, 28.VII.1958, leg. Ch. Q. Li; 1♂: Beijing: Huairou, Qinglonghu, 6.VII.2004, leg. Y. L. Xu.

*Diagnosis.* Eyes contiguous on face. First flagellomere subtriangular. Legs dark brown; all femora with yellow apex, fore tibia yellow; hind tibia somewhat swollen with 4 pd. Fore and mid coxae with yellow hairs and bristles. Epandrium of male genitalia with acute apex, surstylus wide with acute apex; cercus subtriangular, with moderately long hairs; aedeagus broad, apical portion symmetrically bifurcated.

*Distribution.* China (Xinjiang, Beijing); Finland, England, Sweden, Norway, Switzerland, France, Belgium, Netherlands, Germany, Austria, Italy, Spain, Greece, Poland, Hungary, Romania, Bulgaria, Czech, Slovakia, Yugoslavia, Russia, Armenia, Ukraine, Middle Asia, Afghanistan, Mongolia, Iraq, Egypt, Israel, Turkey, Algeria.

### 3.10. *Chrysotus xinjiangensis* sp. n. (Fig. 8)

*Material examined.* Holotype ♂: Xinjiang: Urumchi, 12.VII.2005, leg. X. Sh. Bai. Paratypes 3♂♂: same data as holotype.

*Diagnosis.* Eyes contiguous on face lower portion. Legs chiefly yellow. Aedeagus slender, apically with 1 swollen lateral lobe.

*Description.* Male. Body length 3.0–3.6 mm, wing length 2.8–3.0 mm.

Head metallic green with pale gray pollen; eyes contiguous on face lower portion. Hairs and bristles on head black, lower postocular bristles (including postero-ventral hairs) pale. Antenna black; first flagellomere 1.2 times wider than long; arista black, short pubescent. Proboscis brownish with brown hairs; palpus pale yellow with black hairs.

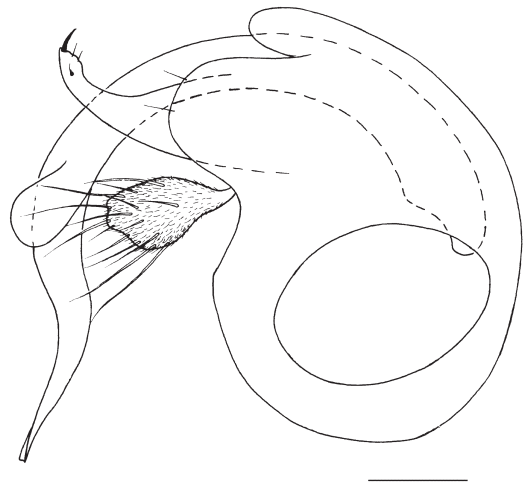


Fig. 8. *Chrysotus xinjiangensis* sp. n., male genitalia, lateral view. Scale bar 0.1 mm.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 6 strong dc, 9–10 irregularly paired acr short and hair-like; scutellum with 2 pairs of bristles, basal pair short and hair-like; propleuron with 1 black bristle on lower part.

Legs yellow; fore coxa yellow with dark base, mid and hind coxae blackish; fore and mid tarsi from tarsomere 3 onward brownish to brown, hind tarsus from tip of tarsomere 1 onward brown to dark brown. Hairs and bristles on legs black. Fore and mid coxae with black antero-apical bristles; hind coxa with 1 black outer bristle at base. Fore femur with 3–4 pv apically; mid femur with 3–4 av and 3 pv apically; hind femur with 3 av and 2–3 pv apically. Fore tibia with 1 ad at basal 1/4, apically with comb-like hairs and 3 bristles; mid tibia with 2 ad and 2 pd, apically with 3 bristles; hind tibia with 2 ad, 4–5 pd, and row of v on whole length, apically with comb-like hairs and 3 bristles. Fore and hind tarsomere 1 with row of short v. Relative length of tibia and 5 tarsomeres of legs LI 4.2 : 2.4 : 1.0 : 0.8 : 0.6 : 0.3; LII 5.5 : 2.8 : 1.5 : 1.0 : 0.5 : 0.4; LIII 6.4 : 2.0 : 1.8 : 1.0 : 0.6 : 0.5.

Wing hyaline, veins black;  $R_{4+5}$  and M parallel apically, CuAx ratio 0.22. Squama yellow with yellow hairs. Halter pale.

Abdomen metallic green with pale gray pollen; hairs and bristles on abdomen black. Male



genitalia (Fig. 8): Epandrium somewhat rounded, lateral lobe wide with 2 apical hairs, surstylus broad with acute apex; cercus with narrow base and wide apex, with moderately long hairs; aedeagus slender, apically with 1 swollen lateral lobe.

Female. Unknown.

*Remarks.* The new species is similar to *Chrysotus xiaolongmensis* Wang & Yang, 2006, but may be separated from the latter by the completely yellow hind femur and tibia. In *xiaolongmensis*, the hind femur has the black apex, and the hind tibia is black.

*Distribution.* China (Xinjiang).

*Etymology.* The specific epithet refers to the locality of the type Xinjiang.

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