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Authors: Liu, Xiaoyan, and Yang, Ding

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Speccafrons (Diptera: Chloropidae: Oscinellinae) newly found in mainland China with description of a new species

Xiaoyan Liu[1,] and Ding Yang[2]*

Abstract

The genus, *Speccafrons* Sabrosky 1980 (Diptera: Chloropidae), has only 6 known species in the world, and it is recorded from mainland China for the first time. One species, *Speccafrons digitiformis* **sp. nov.**, is described as new to science, and *S. costalis* (Duda), is newly recorded from mainland China. A key to the world species of genus *Speccafrons* is given.

Key Words: *Siphonella*, *Speccafrons costalis*, *S. digitiformis* **sp. nov.**, taxonomy, China

Resumen

El género, *Speccafrons* Sabrosky (Diptera: Chloropidae), tiene sólo 6 especies conocidas en el mundo, y es registrado por primera vez en la China continental. Se describe una especie, *Speccafrons digitiformis* **sp. nov**., como nueva para la ciencia y se registra por primera vez *S. costalis* (Duda) para la China continental. Se provee una clave de las especies del género *Speccafrons* del mundo.

Palabras clave: *Siphonella*, *Speccafrons costalis*, *S. digitiformis* **sp. nov.**, taxonomía, China

Speccafrons Sabrosky 1980 is a small genus of subfamily Oscinellinae (Diptera: Chloropidae), which was proposed rather recently by Sabrosky (1980) for a Nearctic species, *S. mallochi.* It belongs to the *Siphonella* genus group (Kanmiya 1983), with the following characters: head much wider than long; face concave, with a linear median carina; gena narrow; frons speckled, thickly clothed with short setulae, and sparsely microtomentose universally or in reticular-form; scutum as long as wide, convex, minutely or weakly shagreened, glossy or entirely microtomentose in both sexes; male surstylus highly specialized, incrassate and semi-globose, larger than epandrium in lateral view; gonites not well demarcated; hypandrium closed (Sabrosky 1980; Kanmiya 1983; Merz 2008). Currently, 6 species are placed in *Speccafrons*, 5 of which are known in the Palaearctic Region and 2 species also occur in the Oriental Region (Kanmiya 1983; Nartshuk 1990, 2007; Merz 2008). The larvae of all species with known biology were reared from egg masses of spiders on which they apparently are carnivorous (Kanmiya 1983; Ismay & Nartshuk 2000).

In the present paper, the genus *Speccafrons* is recorded from mainland China for the first time with 2 species. One species, *S. digitiformis* **sp. nov.**, is described as new to science, and one species, *S. costalis* (Duda), is newly recorded from mainland China. A key to the world species of genus *Speccafrons* is given.

Materials and Methods

Specimens were studied and illustrated with a ZEISS Stemi 2000–c stereomicroscope. Genitalic preparations were made by macerating the apical portion of abdomen in warm 10% NaOH for 17–20 min, after examination it was transferred to fresh glycerin and stored in a microvial pinned below the specimen. Specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing. The following abbreviations are used: *a pa* – anterior postalar seta(e), *a npl* – anterior notopleural seta(e), *ap sc* – apical scutellar seta(e), *dc* – dorsocentral seta(e), *npl* – notopleural seta(e), *oc* – ocellar seta(e), *orb* – orbital seta(e), *p npl* – posterior notopleural seta(e), *poc* – postocellar seta(e), *p pa* – posterior postalar seta(e), *sap sc* – subapical scutellar seta(e), *vte* – outer vertical seta(e), *vti* – inner vertical seta(e).

Results

Key to the species (males) of *Speccafrons* of the world

1.— Scutum entirely black 2

1'.— Scutum brown with 4 narrow black stripes and a small black macula on each postalar region 6

2.— Scutum weakly glossy, with thin gray microtomentum, minutely but distinctly shagreened 3

[1]Hubei Insect Resources Utilization and Sustainable Pest Management Key Laboratory, College of Plant Science and Technology, Huazhong Agricultural University, Wuhan 430070, China

[2] Department of Entomology, College of Agronomy and Biotechnology, China Agricultural University, Beijing 100193, China

*Corresponding author: E-mail: yanziliu52@163.com

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2′.— Scutum glossy, almost without microtomentum 4

3.— Frons without microtomentum; ocellar triangle entirely microtomentose and weakly glossy; scutum largely microtomentose (widespread in Europe; Mongolia) . . . . . *S. halophila* (Duda)

3′.— Frons with gray microtomentum; ocellar triangle largely glossy except for lateral margins sparsely microtomentose; scutum weakly glossy (Japan; China: Yunnan, Taiwan) . . . . . *S. costalis* (Duda)

4.— Halter brownish black (USA) . . . . . *S. mallochi* (Sabrosky)

4′.— Halter yellow 5

5.— Legs black except for all knees, tips of all tibiae and all tarsi brown, fore coxa yellow with a black stripe on inner side; gena yellow dorsally and dark brown ventrally, 1.5 times as wide as diameter of fore tibia (Switzerland) . . . . . *S. genavensis* Merz

5′.— Legs yellow with dark spots at middle of all femora and tibiae, fore coxa yellow to pale brown with indistinct infuscation on inner side; gena uniformly yellow, as wide as diameter of fore tibia (Cyprus) . . . . . *S. cypria* Nartshuk

6.— Legs brownish yellow with all femora blackened except each distal end, fore tibia weakly infuscated with dark brown medially, mid tibia narrowly and hind tibia broadly blackened medially, all tarsi pale yellow (Japan; Thailand; China: Taiwan) . . . . . *S. pallidinervis* (Becker)

6′.— Legs yellow except for middle 1/3 of hind tibia black (China: Yunnan, Guizhou) . . . . . *S. digitiformis* **sp. nov.**

1. *Speccafrons digitiformis* **sp. nov.** (Figs. 1-8)

DIAGNOSIS

Ocellar triangle with gray microtomentum. Scutum brown with 4 narrow black stripes and a small black macula on each postalar region. Legs yellow except for middle 1/3 of hind tibia black. Gonites tapered to narrow apices, long finger-like.

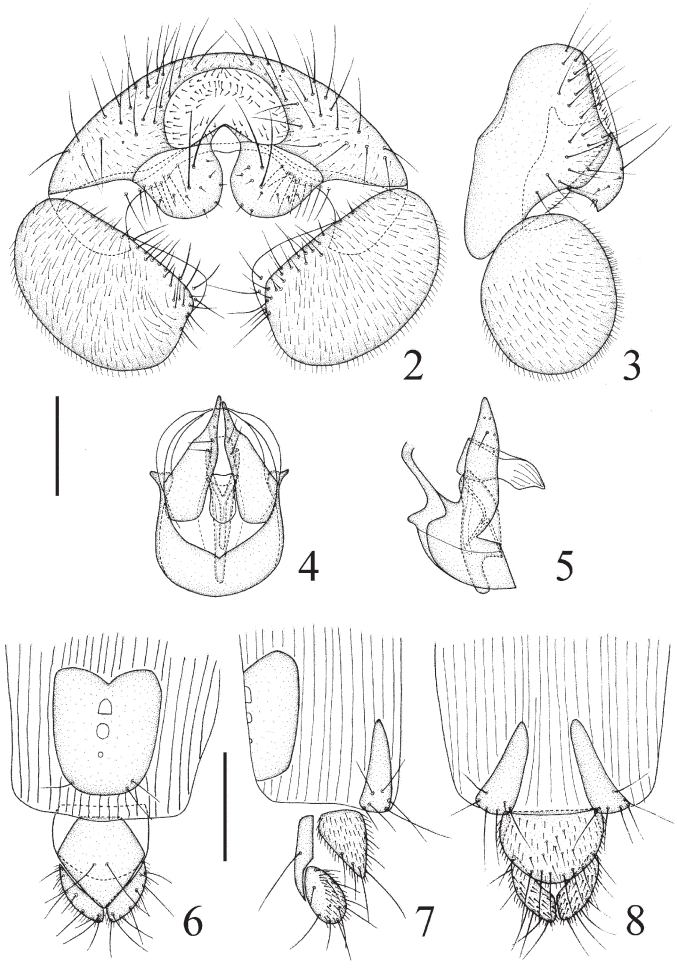
DESCRIPTION

Male (Fig. 1). Body length 2.3–2.4 mm, wing length 1.6–1.9 mm.

Head brown with gray microtomentum, 0.7 times as long as high, as wide as thorax; face yellow, somewhat concave in lateral view, facial carina linear; frons yellowish brown with yellow apex, 0.9 times as long as wide, projecting slightly in front of eye; gena yellow, broad, 0.5 times as wide as first flagellomere; parafacial indistinct. Ocellar triangle blackish brown, with gray microtomentum, extending to 0.6 of frons, with pointed apex; ocellar tubercle blackish brown. Postgena and occiput black. Cephalic setae and setulae yellow; *orb* 8 moderately long; *vte* longest; *oc* hair-like, *poc* developed, *poc* 2 times as long as *oc*; *vti* hair-like, *vte* developed, *vte* 2 times as long as *vti*. Antenna yellow except for distodorsal margin of first flagellomere yellowish brown, with thick grayish microtomentum; first flagellomere as long as wide; arista brown except for basal segment yellowish brown, with short pubescence. Proboscis and palpus yellow with yellow setulae.



Fig. 1. *Speccafrons digitiformis* **sp. nov.** Male body, lateral view. Scale bar = 0.5 mm.



Figs. 2–8. *Speccafrons digitiformis* **sp. nov.** 2–5. Male. (2) Epandrium, posterior view; (3) Epandrium, lateral view; (4) Hypandrium and phallic complex, ventral view; and (5) Hypandrium and phallic complex, lateral view. 6–8. Female. (6) Abdominal terminalia, dorsal view; (7) Abdominal terminalia, lateral view; and (8) Abdominal terminalia, ventral view. Scale bar = 0.1 mm.

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Thorax blackish brown, thickly covered with grayish microtomentum, evenly covered with short setulae. Scutum brown, as long as wide, with 4 narrow black stripes and a small black macula on each postalar region. Thoracic pleuron glossy brown without microtomentum except for anteroventral portion of anepisternum, ventral 2/3 of katepisternum and posteroventral portion of katepimeron black. Katepisternum with some yellow setulae. Scutellum yellow, 0.7 times as long as wide; *ap sc* developed, 1.5 times as long as scutellum; *sap sc* 0.5 times as long as *ap sc*. Setae and setulae on thorax yellow; *npl* 1+2, *a npl* as long as *p npl*; *a pa* shorter than *p pa*; 1 *dc* hair-like, as long as *a pa*. Legs yellow except for middle 1/3 of hind tibia black. Setulae on legs brown. Wing 2.3 times as long as wide, hyaline; veins brown. Relative lengths of 2nd : 3rd : 4th costal sections = 4 : 2 : 1; crossveins r-m and m-m not approximate, r-m at basal 0.6 of discal cell. Halter yellow.

Abdomen glossy brown except for tergites 1+2 yellow with distolateral portion brown, tergite 5 yellow with a small triangular brown spot; venter yellow. Setulae on abdomen yellow. Male genitalia (Figs. 2-5): Epandrium yellow with long yellow setulae; surstylus strongly sclerotized, globose, with small pointed prominence directed medially, covered with short thick setulae, weakly articulating with epandrium. Cercus separate, large and broad, as long as broad. Gonites not well demarcated, tapered to narrow apex, long finger-like; phallus short, tube-like; phallapodeme short with basal stalk broad in lateral view. Hypandrium closed.

Female. Body length 2.4–2.7 mm, wing length 2.2–2.5 mm.

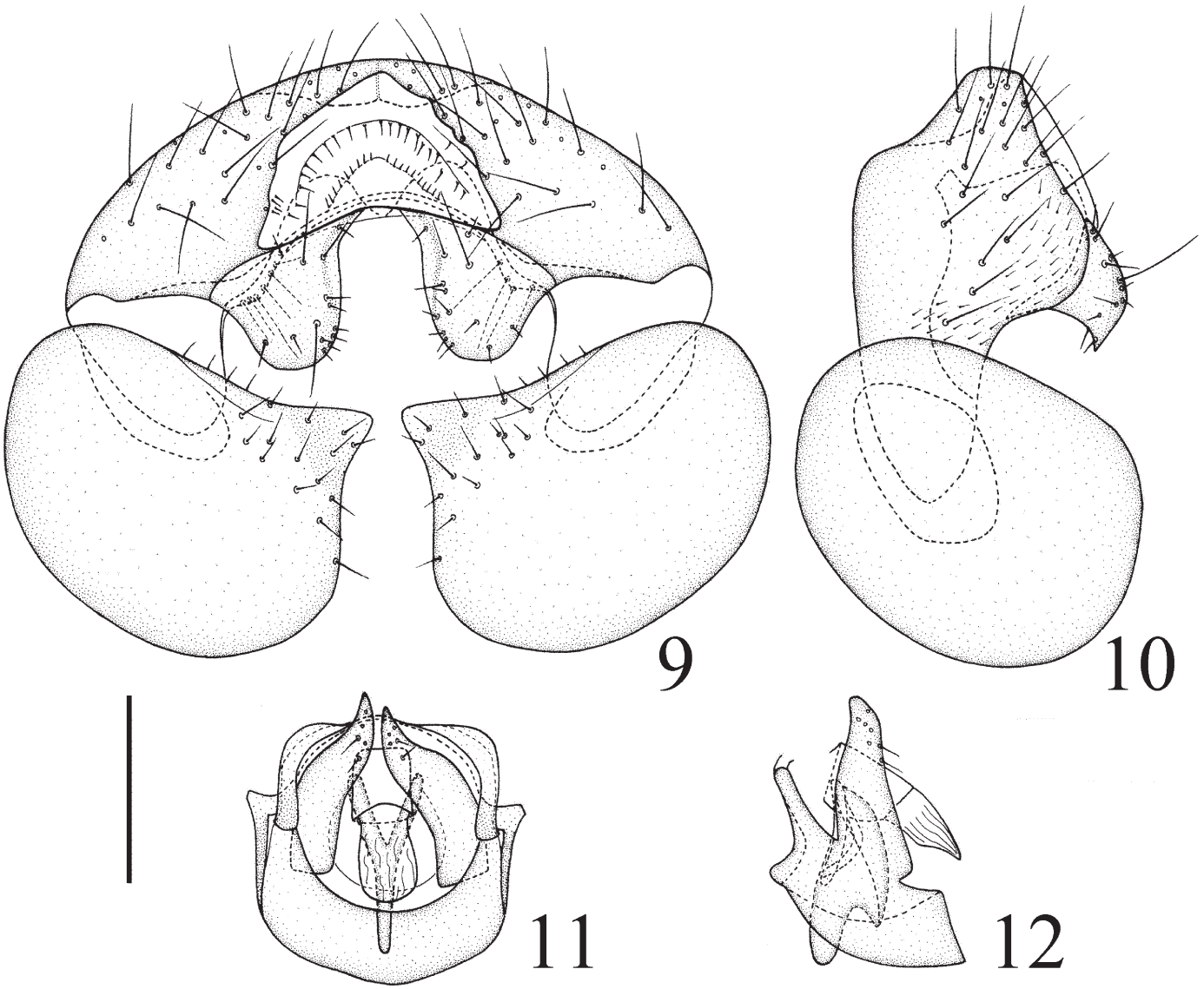
External characteristics similar to male except for scutellum brown with yellow marginally. Female genitalia (Figs. 6-8): Tergite 9 rhombic, as long as wide, with 2 long setae; sternite 9 semicircular, with long stout setae. Cercus short and stout with some long setae.

TYPE MATERIAL

HOLOTYPE male, CHINA: Yunnan, Kunming, Xishan, 15-IV-2007, Coll. Hui Dong (in 75% alcohol, deposited in CAU). Paratypes 63 males, 36 females, same date as holotype; 1 male, Guizhou, Rongjiang, Pingyang, 02-VI-2005, Coll. Yanling Xu (in 75% alcohol, deposited in CAU).

DISTRIBUTION

China (Yunnan, Guizhou).



Figs. 9–12. *Speccafrons costalis* (Duda). Male. (9) Epandrium, posterior view; (10) Epandrium, lateral view; (11) Hypandrium and phallic complex, ventral view; and (12) Hypandrium and phallic complex, lateral view. Scale bar = 0.1 mm.

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REMARKS

The new species is somewhat similar to *S. pallidinervis* (Becker) in having the thorax thickly covered with grayish microtomentum, scutum brown with 4 narrow black stripes and a small black macula on each postalar region. It can be separated from the latter by the following features: scutellum yellow; legs yellow except for middle 1/3 of hind tibia black. In *S. pallidinervis*, the scutellum is black; the legs are brownish yellow with all femora blackened except for each distal end, fore tibia weakly infuscated with dark brown medially, mid tibia narrowly and hind tibia broadly blackened medially, all tarsi pale yellow (Becker 1911; Kanmiya 1983).

ETYMOLOGY

The specific name is from the Latin *digitiformis* ("digitiform"), and it refers to the shape of gonites.

2. *Speccafrons costalis* (Duda, 1930) (Figs. 9-12)

Siphunculina costalis Duda, 1930: 282. Type locality: China (Taiwan).
Oscinella costalis Sabrosky, 1977: 292.
Speccafrons costalis Kanmiya, 1983: 141.

DIAGNOSIS

Frons black with gray microtomentum; gena yellowish brown, ventral margin black, broad, 0.5 times as wide as first flagellomere. Ocellar triangle black and largely glossy except for lateral margins and ocellar tubercle which are sparsely microtomentose, extending to 0.7 of frons. Antenna brownish yellow except for dorsal 1/2 of first flagellomere brown; arista black except for basal segment yellow, with short pubescence. Scutum and scutellum entirely black, weakly glossy, minutely but distinctly shagreened and clothed with many brown setulae. Legs yellow except for coxae black; femora black with yellow distal ends; middle 1/3 of hind tibia black. Abdomen glossy brown except for tergite 1 with yellow distally; venter yellow. Setulae on abdomen brown. Male genitalia (Figs. 9-12): Epandrium yellow with long yellow setulae; surstylus strongly sclerotized, globose, with small pointed prominence directed medially, smooth, with sparse setulae around median prominence, weakly articulating with epandrium. Cercus separate, large and broad, as long as broad. Gonites not well demarcated, pointed at top, short; phallus short, tube-like; phallapodeme short with basal stalk broad in lateral view. Hypandrium closed.

Female. Unknown.

SPECIMENS EXAMINED

Two ♂, CHINA: Yunnan, Xishuangbanna, Wangtianshu, 09-V-2009, Coll. Xiushuai Yang (in 75% alcohol, deposited in CAU).

DISTRIBUTION

China (Yunnan, Taiwan); Japan.

REMARKS

Speccafrons costalis is somewhat similar to *S. halophila* (Duda), but it can be separated from the latter by the following features: frons with gray microtomentum; ocellar triangle black largely glossy except for lateral margins and ocellar tubercle. In *S. halophila*, the frons is glossy and the ocellar triangle is entirely microtomentose and weakly glossy (Kanmiya 1983).

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