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Xanthochlorus (Diptera: Dolichopodidae) newly found in Tibet with description of a new species

Yuqiang Xi[1], Baohai Wang[2,] and Ding Yang[1,*]*

Abstract

Previously 3 Chinese species of the genus *Xanthochlorus* (Diptera: Dolichopodidae) were known to occur in Shaanxi and Henan. Here this genus is newly reported from Tibet with one new species, *Xanthochlorus tibetensis* **sp. nov.** This finding extends the distribution of the genus in Asia to the Himalayas. Relationship of the new species with the known ones is discussed. A revised key to the Chinese species of *Xanthochlorus* is presented.

Key Words: long-legged fly; *Xanthochlorus tibetensis*; Tibet

Resumen

Anteriormente se conocia la presencia de 3 especies chinas del género *Xanthochlorus* (Diptera: Dolichopodidae) en Shaanxi y Henan. Aquí se reporta neuvemente este género del Tíbet con una nueva especie, *Xanthochlorus tibetensis* **sp. nov.** Este hallazgo extiende la distribución de este género en Asia hacia los Himalayas. Se discute su relación con las especies relacionadas. Se presenta una clave actualizada de las especies de *Xanthochlorus* de China.

Palabras Clave: mosca de danza; mosca de patas largas; *Xanthochlorus tibetensis*; Tíbet

The subfamily Xanthochlorinae consist of only one genus *Xanthochlorus*, and this genus is a very rare group in the Dolichopodidae. *Xanthochlorus* is distributed in the Holarctic and Oriental Regions with 15 known species. Among them, one species occurs in the Nearctic Region, 12 in the Palaearctic and 2 in the Oriental (Yang et al. 2006; Chandler & Negrobov 2008). The major references dealing with this genus are as follows: Robinson (1964), Negrobov (1978), Chandler & Negrobov (2008), and Yang et al. (2011).

The following 3 species of *Xanthochlorus* were recorded from China (Olejníček 2004; Yang & Saigusa 2005; Wang et al. 2008, Yang et al. 2011): *Xanthochlorus chinensis* Yang et Saigusa, 2005 and *X. nigricilius* Olejníček, 2004 from Shaanxi; *X. henanensis* Wang, Yang et Grootaert, 2008 from Henan. The Chinese species were revised by Yang et al. (2011). Tibet is a plateau region with an average elevation of 4,900 m (16,000 feet) in Asia, located in the north-east of the Himalayas. It mostly belongs to the Palaearctic Region except that Southern Tibet is considered as Oriental. In this paper, the genus *Xanthochlorus* is newly recorded in the Oriental region with description of a new species based on material that was collected by Ms. Yaling Zhang and the junior author with a Malaise trap in the subtropical forest in Bomi, Southern Tibet. This finding extends the distribution of the genus in Asia to the Himalayas. A revised key to the species of *Xanthochlorus* from China is presented.

Materials and Methods

Type specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing. Morphological terminology generally follows McAlpine (1981) and Cumming & Wood (2009). The following abbreviations are used: acr–acrostichal, ad–anterodorsal, av–anteroventral, dc–dorsocentral, 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, sa–supraalar, sc–scutellar, vt–vertical.

Results

A revised key to Chinese species (males) of *Xanthochlorus*
(modified from Yang et al. 2011)

1. First flagellomere nearly quadrate (Fig. 4; Olejníček 2004, Fig. 1; Yang et al. 2011, Fig. 988a) 2

—. First flagellomere semicircular (Yang et al. 2011, Fig. 987a) . . . . . *Xanthochlorus chinensis* Yang & Saigusa

2. First flagellomere and arista dark brown; first flagellomere wider than long (Fig. 4; Yang et al. 2011, Fig. 988a); dark brown stripe along dc absent 3

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—. Antenna including arista wholly yellow; first flagellomere about as long as wide (Olejníček 2004, Fig. 1); dark brown stripe along dc present . . . . . *Xanthochlorus nigricilius* Olejníček

3. First flagellomere with acute lower apical corner (Yang et al. 2011, Fig. 988a); surstylus 3/4 as long as epandrium (Yang et al. 2011, Fig. 988a) . . . . . *Xanthochlorus henanensis* Wang, Yang & Grootaert

—. First flagellomere without acute apical corner (Fig. 4); surstylus 1/4 as long as epandrium (Fig. 5) . . . . . *Xanthochlorus tibetensis* **sp. nov.**



Figs. 1–3. *Xanthochlorus tibetensis* **sp. nov.** 1. Male, lateral view; 2. female, lateral view; 3. female wing. Scale bar = 1 mm.

1. *Xanthochlorus chinensis* Yang & Saigusa, 2005

Xanthochlorus chinensis Yang & Saigusa, 2005: 754. Type locality: Shaanxi, Fuping, Dadianzi, 1,650–1,800 m, 5 km N of Donghetai (China).

DIAGNOSIS

First flagellomere semicircular, distinctly wider than long (Yang et al. 2011, Fig. 987a). Surstylus with dorsal lobe acute apically and ventral lobe irregularly furcated apically; hypandrium with a long lateral arm strongly curved inwards apically (Yang et al. 2011, Fig. 987b).

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China (Shaanxi).

2. *Xanthochlorus henanensis* Wang, Yang & Grootaert, 2008

Xanthochlorus henanensis Wang, Yang & Grootaert, 2008: 253. Type locality: Henan, Nanyang, Neixiang, Baotianman (China).

DIAGNOSIS

First flagellomere slightly wider than long, nearly quadrate with acute lower apical corner (Yang et al. 2011, Fig. 988a). Scutellum metallic green with brownish margin. Mid tarsomere 1 longer than tarsomeres 2-5 combined, with 2 rows of ventral bristles. Surstylus with long thick dorsal lobe bearing an apical hook, and with short narrow ventral lobe furcated apically; hypandrium with a short lateral arm irregularly furcated (Yang et al. 2011, Fig. 988b).

DISTRIBUTION

China (Henan).

3. *Xanthochlorus nigricilius* Olejníček, 2004

Xanthochlorus nigricilius Olejníček, 2004: 9. Type locality: Shaanxi, Qinling mts., 1,000-1,300 m, Xunyangba (6 km E) (China).

DIAGNOSIS

Antenna including arista yellow. First flagellomere about as long as wide, nearly quadrate (Olejníček 2004, Fig. 1). Mesoscutum with dark brown stripe along dc. Surstylus with dorsal lobe apically acute and strongly curved (Olejníček 2004, Figs. 2 and 3).

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China (Shaanxi).

4. *Xanthochlorus tibetensis* **sp. nov.** (Figs. 1–3, 4–7)

DIAGNOSIS

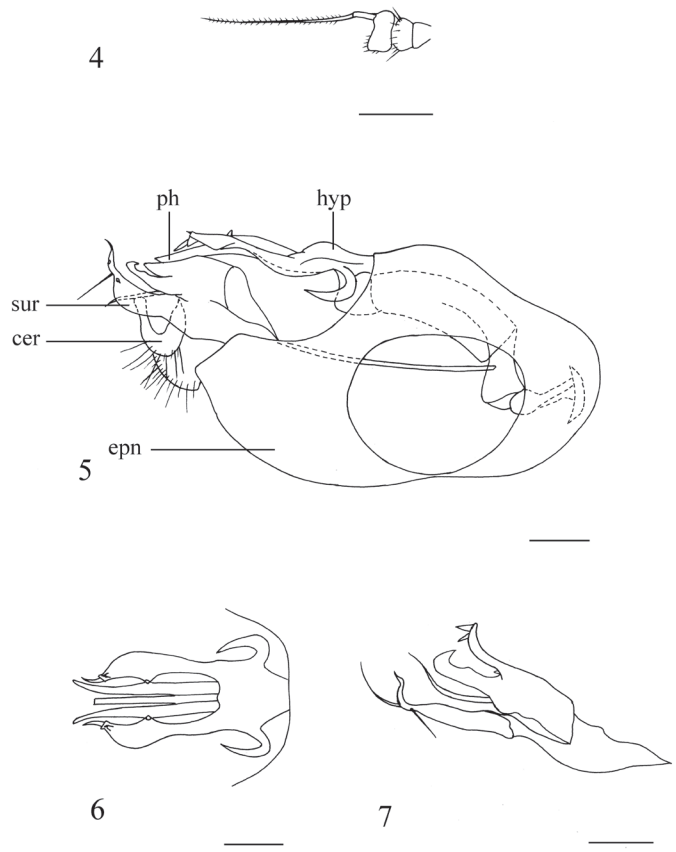
Bristles on head mostly yellow, but those on thorax black. First flagellomere nearly quadrate, 0.8 times longer than wide. Mid tarsomere 1 with 2 short weak av. Hypandrium basally with a short hook-like lateral process, apically deeply incised with lateral arm slightly curved.

DESCRIPTION

Male (Fig. 1). Body length 2.5 mm; wing length 2.8 mm.

Head metallic green with pale gray pollen; eyes narrowly separated on face; face distinctly narrower than frons and narrowed downwards. Hairs and bristles on head mostly yellow; ocellar tubercle with 2 long black oc and 2 very short black posterior hairs; 2 black vt shorter than oc. Antenna (Fig. 4) yellow except first flagellomere dark brown; first flagellomere nearly quadrate, 0.8 times longer than wide; arista dark

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Figs. 4–7. *Xanthochlorus tibetensis* **sp. nov.** (male). 4. Antenna, lateral view ; 5. genitalia, lateral view; 6. hypandrium and phallus, ventral view; 7. surstylus, ventral view. Abbreviations: cer = cercus; epn = epandrium; hyp = hypandrium; sur = surstylus; ph = phallus. Scale bar = 0.2 mm.

brown with short basal segment. Proboscis dark yellow with blackish hairs; palpus yellow with blackish hairs and 1 blackish apical bristle.

Thorax somewhat shiny yellow with thin pale gray pollen; mesoscutum posteriorly with a quadrate dark brown median spot just before scutellum; scutellum pale metallic green at mid-basal area; laterotergite with a small dark brown spot at anterior margin and pteropleuron with a small black spot near anterior margin. Hairs and bristles on thorax black; 5 strong dc, acr absent, 1 h, 1 short ih, 1 ph, 2 npl, 1 sa, 1 psa. Propleuron with 1 short weak yellow bristle on upper portion and 1 long yellow bristle on lower portion. Scutellum with 2 long apical sc and 2 tiny lateral hairs (about 1/10 as long as sc). Legs including coxae yellow except tarsomere 5 brown. Hairs on legs blackish, bristles black, except those on coxa nearly wholly yellow. Fore coxa with 6-7 bristles on antero-apical portion; mid coxa with 1 outer bristle at middle; hind coxa with 1 outer bristle at basal 1/3. Fore tibia without major bristles. Mid tibiae with 2 ad and 2 pd (shorter and weaker than ad), apically with 3 bristles; hind tibia with 6 short weak pd and 2 short weak pv, apically with 3 bristles. Mid tarsomere 1 with 2 short weak av. Relative lengths of tibia and 5 tarsomeres of legs LI 1.8 : 1.0 : 0.55 : 0.5 : 0.3 : 0.2; LII 2.7 : 1.35 : 0.5 : 0.4 : 0.2 : 0.15; LIII 3.2 : 1.0 : 0.75 : 0.45 : 0.3 : 0.2. Wing (Fig. 3) hyaline, slightly tinged dark yellow; veins brownish yellow, M gently bent apically, M and R_{4+5} convergent apically; CuAx ratio 0.4. Squama dark yellow, with brown hairs. Halter dark yellow.

Abdomen somewhat shiny yellow with thin pale gray pollen. Hairs and bristles on abdomen blackish. Genitalia (Figs. 5–7). Epandrium distinctly longer than wide; surstylus distinctly shorter than epandrium, with narrow dorsal lobe acute and curved apically, and with wide ventral lobe apically furcated. Cercus bent, basally wide and apically finger-like. Hypandrium basally with a short hook-like lateral process, apically deeply incised with lateral arm slightly curved. Phallus apically with lateral arm apically slightly curved outwards and median process shorter than lateral arm.

Female (Fig. 2). Body length 2.7–2.8 mm, wing length 3.6-3.7 mm. Similar to male.

TYPE MATERIAL

HOLOTYPE ♂, CHINA: Tibet, Bomi (N 29°51'42.57", E 95°46'1.59"), Guxiang, Suotongcun, 2,600 m, 15.IX.–15.VIII.2014, Malaise trap in subtropical forest, leg. Baohai Wang and Yaling Zhang (CAU). Paratypes 9 ♀, same data as holotype (CAU).

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China (Tibet).

REMARKS

This new species is somewhat similar to *Xanthochlorus henanensis* Wang, Yang & Grootaert from Henan, but may be separated from the latter by the first flagellomere without acute apical corner and the surstylus distinctly shorter than epandrium. In *Xanthochlorus henanensis*, the first flagellomere has an acute lower apical corner, and the surstylus is nearly as long as epandrium (Wang et al. 2008; Yang et al. 2011).

ETYMOLOGY

The specific name refers to the type locality Tibet.

Acknowledgments

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