

## CORRESPONDENCE

# First record of the scuttle fly genus *Chonocephalus* Wandolleck (Diptera: Phoridae) from China, with description of a new species

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**Abstract** The scuttle fly genus *Chonocephalus* Wandolleck, 1898 with two species is firstly reported from China. *C. forcipulus* **sp. nov.**, is described and illustrated as new to science.

**Key words** Diptera, Phoridae, *Chonocephalus*, new record, new species, China.

The tiny flies of the genus *Chonocephalus* Wandolleck, 1898 are known for their sexual dimorphism, which have the males normally winged and the females wingless. During nuptial flights, the males would transport the females to suitable larval pabulum (Disney, 1994). Many species of the genus breed in ripe fruits, while some exploit other sources of fermenting detritus or plant material. Some species were also found as secondary pest of oyster mushroom (Rostaman & Disney, 2004).

The taxonomy of the genus is hard to do because of its tiny size and sexual dimorphism. According to the current works, the species of the genus can be identified by the details of the hypopygium (Disney, 2002). It is distributed in Holoarctic, Afrotropical, Neotropical and Australasian Regions (Disney, 2002, 2005, 2008, 2015).

China is an important region in biogeography, stretching over the Palaearctic and Oriental Regions. However, the works of scuttle flies is still few, especially the species with small size or in special habits. In present paper, we reported the genus *Chonocephalus* from China for the first time, with a new species and a newly recorded species.

Specimens were collected into 80% ethanol using sweep nets and Malaise traps. The head, legs, wing and hypopygium were detached and made slides according to the method of Disney (1994). The recognition of species depends primarily on the details of the hypopygium, which based on the methods and terminology of Disney (2002).

Line drawings were made using Leica M205C with a drawing appendage. Photos were made using microscope Leica M205A and Leica DM2500B with the help of a CCD 450 multi-focus imaging system. The type specimens are deposited in Natural History Museum of Shenyang University (NMSU), Shenyang, China.

### ***Chonocephalus* Wandolleck, 1898**

*Chonocephalus* Wandolleck, 1898: 428. Type species: *C. dorsalis* Wandolleck, by monotypy.

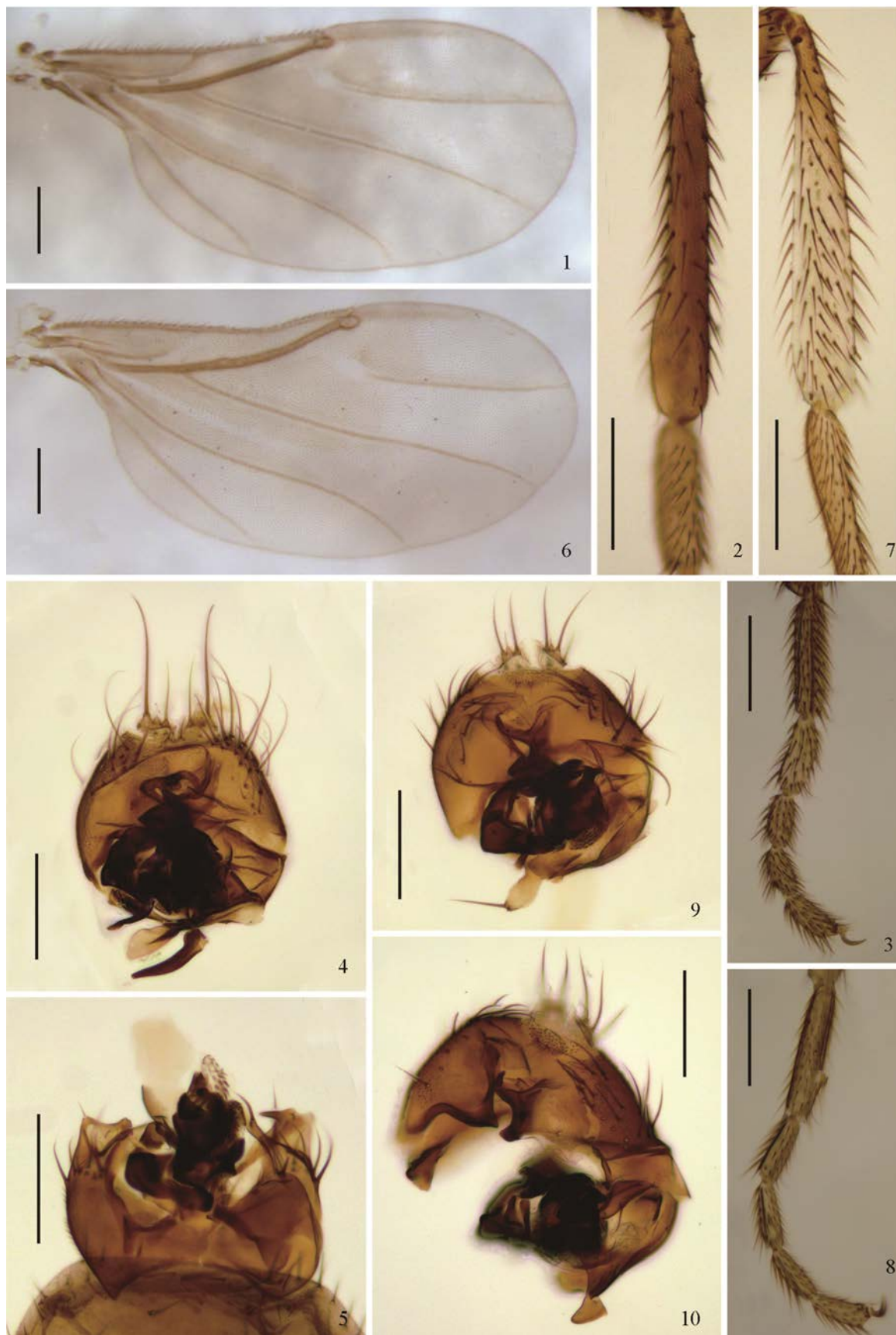
*Epichonocephalus* Schmitz, 1928: 104; synonymized by Disney, 2002: 4. Type species: *E. transversalis* Schmitz.

**Description.** Male. Frons with median furrow, most frontal bristles not differentiated. Ocelli present. Arista present and articulated with postpedicel. Mesopleuron divided, with one to three small hairs near posterior margin. Tibiae without dorsal longitudinal hair palisades and pre-apical isolated bristles. Wings with costa clearly exceeding half wing length, vein  $R_{2+3}$  lack, base of vein  $M_1$  missing, without axillary bristles and small hair at base of Rs. Hypopygium with short anal tube and at least one gonopod.

urn:lsid:zoobank.org:pub:28A54130-1396-4533-B363-76BE01EB3E2E

Received 3 August 2015, accepted 1 December 2015

Executive editor: Fuqiang Chen



Figures 1–10. *Chonocephalus* spp. 1–5. *C. forcipulus* **sp. nov.** 6–10. *C. fletcheri* Schmitz, 1912. 1, 6. wing. 2, 7. Mid tibia. 3, 8. Fore tarsus. 4–5, 9–10. Hypopygium. Scale bar = 0.1 mm.

Female. Ocelli, wings and halteres absent. Tibiae lack dorsal longitudinal hair palisades and pre-apical isolated bristles. Abdomen with well developed tergites I–VI. Sternites 8 and 9 internal, and the single spermatheca lightly sclerotised.

***Chonocephalus forcipulus* sp. nov.** (Figs 1–5, 11–12)

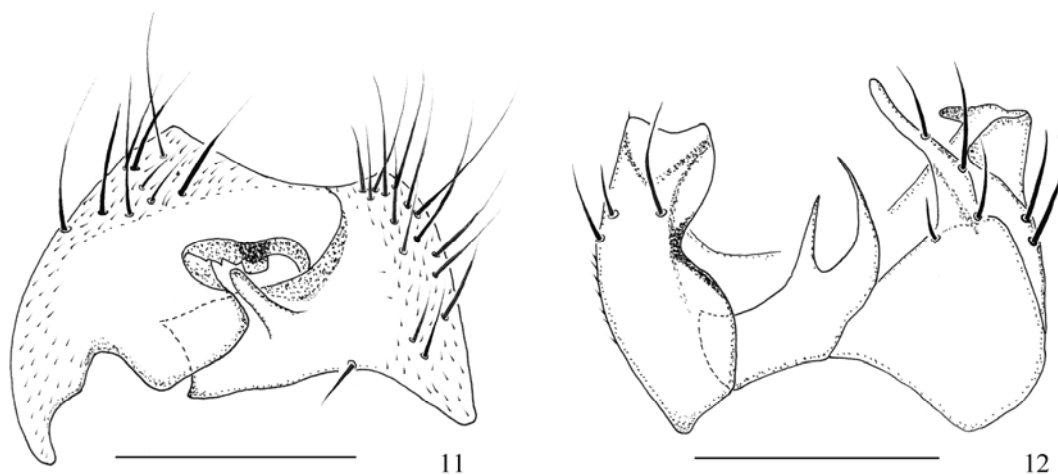
Description. Male. Body generally brown with a pale abdominal venter. Frons brown with a darker ocellar triangle. Only antial and anterolateral bristles clearly differentiated. Postpedicel brown and rounded. Palp strong and about 2 times as long as its greatest breadth. Thorax brownish, dark on top. Scutellum with four fine bristles. Three hairs on upper part of posterior margin of mesopleuron. Legs brown, but all tarsi paler. Front tarsus with a posterodorsal hair palisade on tarsomere 1–4 and tarsomeres 4 and 5 almost same in length. Mid tibia uniformly brown. Hind femur normal and without modification. Wing 1.1–1.2 mm long. Costal index 0.52. Thick veins light brown with tip of costa and vein Rs darker. Thin veins grayish brown and membrane tinged brownish gray. Vein Rs with a vesicle which extends beyond tip of costa. Halter brown. Abdomen with tergites I–VI brown, with only a few short hairs, almost confined to posterior margins. Venter pale grayish with minute, sparse, pale hairs on segments 3–6. Abdominal tergites with fine hairs, little longer in tergites VI. Venter hairs smaller and finer. Hypopygium mainly brown with long hairs, especially in cercus. Left side of epandrium with a dark process before apex, left surstylus and the modified spine lack. Right side of epandrium with a strong process. Bridge strongly developed, dark and M-shaped. Left gonopod long with two bristles and right one lack. Two lobes of hypandrium long, pointed and forceps-shaped.

Material examined. Holotype. ♂, China, Tibet, Motuo (29.65°N, 95.48°E; elev. 2 118m), 3 August 2013, leg. Jianfeng Wang. Paratype. 1♂, same data as the holotype.

Distribution. China (Hainan).

Etymology. The specific epithet refers to forceps-shaped lobes of hypandrium.

Remarks. The species is easily distinguished from other species of the genus by the forceps-shaped lobes of hypandrium, the M-shaped bridge of epandrium and the brown mid tibia. In the key of Disney (2002), the species runs to couplets 3 to *C. heymoni*. In the key of Disney (2005, 2008) it runs separately to 12 and 25, both to *C. heymonsi* and *C. dominicanus*. In the key of Disney (2015), it runs to 33 to *C. heymonsi* and *C. gonocurvatus*. However, the new species is distinguished from *C. heymonsi* and *C. dominicanus* by the details of hypandrial lobes, right gonopod and the bridge. It is also differed from *C. gonocurvatus* by the details of anterior process of epandrium and right gonopod of hypandrium.



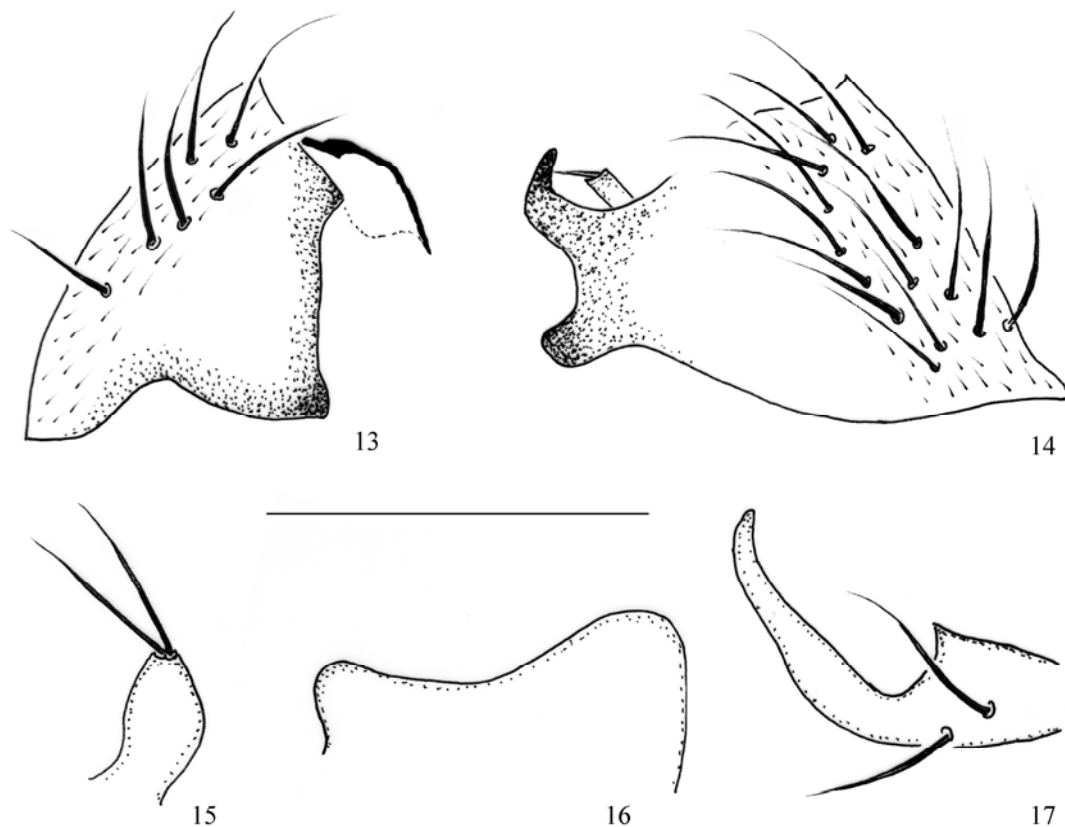
Figures 11–12. *Chonocephalus forcipulus* sp. nov., hypopygium. 11. Posterior view. 12. Ventral view. Scale bar = 0.1 mm.

***Chonocephalus fletcheri* Schmitz, 1912** (Figs 6–10, 13–17)

*Chonocephalus fletcheri* Schmitz, 1912: 728.

*Chonocephalus laetus* Borgmeier, 1963: 251; synonymized by Disney, 2002: 20.

Description. Male. Body generally brown with a pale abdominal venter. Frons brown with a darker ocellar triangle. Only antial and anterolateral bristles clearly differentiated. Postpedicel brown and rounded. Palp strong and about 2.5 times as long as its greatest breadth. Thorax brownish, dark on top. Scutellum with four fine bristles. 3 hairs on upper part of posterior margin of mesopleuron. Legs brown, but all tarsi paler. Front tarsus with a posterodorsal hair palisade on



Figures 13–17. *Chonocephalus fletcheri* Schmitz, 1912, hypopygium. 13. Left epandrium. 14. Right epandrium. 15. Left gonopod. 16. Lobes of hypandrium. 17. Right gonopod. Scale bar = 0.1 mm.

tarsomeres 1–4 and tarsomeres 4 and 5 almost same in length. Mid tibia almost white. Hind femur normal and without modification. Wing 1.2–1.3 mm long. Costal index 0.57. Thick veins light brown with tip of costa and vein Rs darker. Thin veins grayish brown and membrane tinged brownish gray. Vein Rs with a vesicle which extends beyond tip of costa. Halter brown. Abdominal tergites brown, with only a few short hairs, almost confined to posterior margins. Venter pale grayish with minute, sparse, pale hairs on segments 3–6. Abdominal tergites with fine hairs, little longer in tergites VI. Venter hairs smaller and finer. Hypopygium mainly brown with long hairs. Left side of epandrium with a darker process. Left surstylus and the modified spine lack. Right side of epandrium with two strong processes. Bridge strongly developed, arc-shaped. Left gonopod long, with two bristles; right short, with two terminal bristles. Two lobes of hypandrium not very developed.

Material examined. 2♂, China, Yunnan, Tengchong, Laifeng Mountain (25.01°N, 98.46°E; elev. 1 800 m), 7 August 2009, leg. Linxin Su.

Distribution. China (Yunnan); India, Bangladesh, Oman, Yemen, Canada, Cuba, Jamaica, Puerto Rico, Trinidad.

Remarks. The species is characterized by its horseshoe-shaped bridge on left epandrium.

**Funding** The project was funded by the National Natural Science Foundation of China (31372245, 31071965).

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