

## NEW CHINESE RECORD OF THE GENUS DOCOSIA WITH A DESCRIPTION OF A NEW SPECIES (DIPTERA, MYCETOPHILIDAE)

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**Abstract** The present paper lists 7 species of a genus newly recorded in China, *Docosia* Winnertz, of which *D. gutianshana* sp. nov., *D. monstrosa* sp. nov., *D. sinensis* sp. nov., *D. laxa* sp. nov., *D. yangi* sp. nov. and *D. flabellata* sp. nov. are described and illustrated as new to science. The characteristics, biology, behavior and geographical distribution of the genus are discussed briefly. A key to Chinese species is provided. The type specimens of the new species are deposited in the Insect Collection of Zhejiang Forestry College.

**Key words** Diptera, Mycetophilidae, *Docosia*, new species.

**Characteristics.** The species of the genus *Docosia* are small black insects. Laterotergite hairy, mediotergite bare. Sc short, ending free or in R.  $R_1$  at most twice as long as crossvein r-m. Point of furcation of M well before level of apex of  $R_1$ . Hind coxa with many posterolateral hairs near base. Lateral ocelli very near eye margins (Vockeroth, 1981).

The genus *Docosia* closely resembles *Sciara*. It is also similar to *Telragoneura* in appearance and habits, but is sharply differentiated by the position of the lateral ocelli close to the eye margins, as well as by the longer vein  $R_1$ . They might easily be confused with the genus *Trichonta* of the Mycetophilinae, which has a rather similar venation, but the microtrichia of the wings and tibiae are quite irregularly arranged. There are no anepisternal bristles, another clear point of distinction from *Trichonta* (Edwards, 1924).

**Biology and behavior.** The adults are mostly found in humid situations in forests and wooded areas, where fungi are more prolific but some species are associated with fungi growing in grasslands, dunes or wetlands (Chandler, 1994). Several species have a predilection for trunks of old living trees bearing mosses or lichens. This habit may provide a clue to their unknown life cycle (Chandler, 1995).

The larvae live in fungi, generally those in a more or less advanced state of decay. Larvae of *D. gilvipes* has been reared from a very wide range of fungi in Europe (including agarics, boleti, encrusting fungi, Peziza and Scleroderma) (Chandler, 1994). *D. fumosa* Edwards, 1924 has the remarkable habit of living in

birds nests. This tendency to saprophagism is another point of similarity with the *Sciarinae*.

The pupae are enclosed in a rather tough cocoon formed partly of silk and partly of the food matrix, within which it is situated (Edwards, 1924).

**Distribution.** There are 19 described Palaearctic species and a similar number of Nearctic species but an unpublished revision by Petr Laaštovka has increased the number of Holarctic species to more than 100, of which about 30 are European. Otherwise only 2 Neotropical species are known (Chandler, 1995). Six new species and 1 new record for China are described and illustrated.

### Key to species

1. Sc ending in R well beyond level of base of  $R_s$  .....  
..... *D. moravica* Landrock
- Sc ending free or in R before level of base of  $R_s$  ..... 2
2. Sc ending in R well before level of base of  $R_s$  ..... 3
- Sc ending free ..... 4
3. Body brownish yellow, C ending at apex of  $R_5$ , halter brownish black  
..... *D. monstrosa* sp. nov.
- Body black, C extends one third distance from  $R_5$  to  $M_1$ , halter yellow  
..... *D. flabellata* sp. nov.
4. C extending half distance from  $R_5$  to  $M_1$  .....  
..... *D. gutianshana* sp. nov.
- C ending at apex of  $R_5$  ..... 5
5.  $R_1$  subequal to crossvein r-m, stalk of median fork a little shorter than crossvein r-m ..... *D. sinensis* sp. nov.
- $R_1$  a little longer than crossvein r-m or 1.5 times as long as crossvein r-m ..... 6
6. With short pale hairs on mesoscutum, with 2-3 long brown setae on scutellum and pale setae on proepisterna, coxae dark on basal three quarters below ..... *D. laxa* sp. nov.
- With brownish yellow setae on mesoscutum, scutellum and proepisterna, coxae yellow ..... *D. yangi* sp. nov.

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# 1 *Docosia gutianshana* sp. nov. (Figs. 1-3)

. Wing length 3.0-3.2 mm. Head black with brown bristling. Palpus white. Antenna yellow, flagellar segments more than 3.0 times as long as wide. Thorax brown grey dusted with few black setae on mesoscutum, scutellum and proepisternum, pleura grey and dull bare. Wing yellow and clear. Costa and radial veins including crossvein r-m brown and marked

only by setulae, other veins colourless. Sc ending free.  $R_1$  subequal to crossvein r-m. Costa extending nearly from  $R_5$  to  $M_1$ . Stalk of median fork a little longer than crossvein r-m. Halter yellow. Legs yellow, but coxae brown on basal two fifths, hind femur brownish yellow on basal half below. Mid tibia with 3-5 d, 5-7 a, 6 v. Hind tibia with 10-12 d, 6-8 a. Abdomen brownish grey. Genitalia brown.



Figs. 1-3. *Docosia gutianshana* sp. nov. Male genitalia. 1. Dorsal view. 2. Ventral view. 3. Lateral view.

. Unknown.

Holotype, Mt. Baishanzu (27°45' N, 119°12' E), 550 m, Qingyuan, Zhejiang, 24 Sep. 1993, WU Hong, No. 931241. Paratypes: 1, the same locality as holotype, No. 931242; 2, the same as holotype, 18 May 1994, Nos. 940717-18.

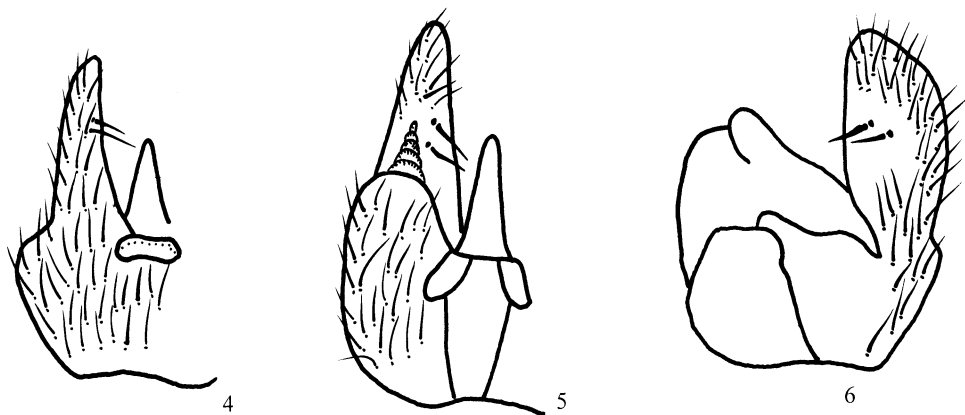
Distribution. China: Zhejiang (Qingyuan).

A distinct species. It can be distinguished from other known species of the genus by the fork at the tip of the gonocoxites.

# 2 *Docosia monstrosa* sp. nov. (Figs. 4-6)

. Wing length 3.0-3.2 mm. Head brownish yellow, with white bristling. Palpus yellow. Antenna

brownish dark, flagellar segments about 2.0 times as long as wide. Thorax brownish yellow; dusted with brownish black setae on mesoscutum, scutellum and proepisternum. Pleura bare. Wing yellow and clear. Costa and radial veins including crossvein r-m brown, other veins and marked only by setulae. Sc ends in R before level of base of  $R_s$ .  $R_1$  about 1.5 times as long as crossvein r-m. C ends in  $R_5$ . Crossvein r-m is a little longer than stalk of median fork. Halter brownish black. Legs yellow. Coxae dark on basal two fifths; trochanter and outer parts gradually darken. Mid tibia with 5 d, 5-7 a, 5 v. Hind tibia with 10-11 d, 12-14 a. Abdomen thin black. Genitalia black.



Figs. 4-6. *Docosia monstrosa* sp. nov. Male genitalia. 4. Dorsal view. 5. Ventral view. 6. Lateral view.

. Wing length 3.0 mm, the same colour and character as male. Genitalia black.

Holotype , Mt. Baishanzu, 1 300 m, Qinyuan, Zhejiang, 2 Sep. 1993, WU Hong, No. 931336. Paratypes 2 , the same locality as holotype, Nos. 931337-38.

Distribution. China: Zhejiang (Qingyuan).

This species is similar to *Docosia moravica* Landrock, but the cerci of the later are about 1.5-2.0 times as long as in the new species.

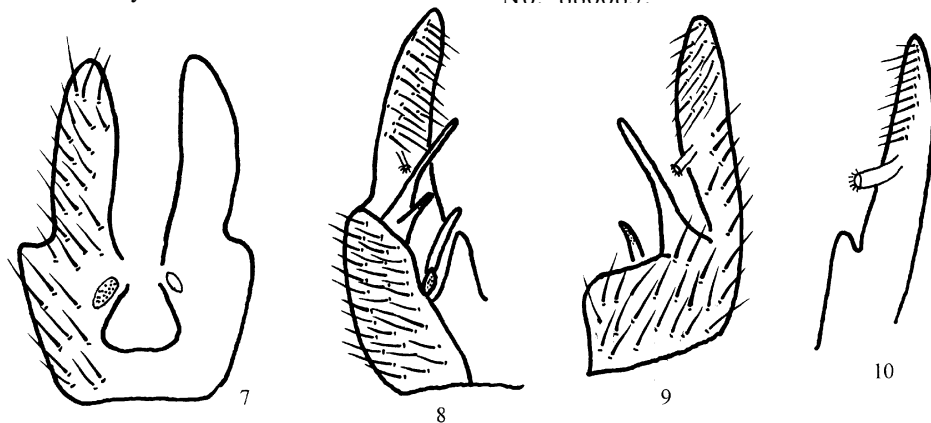
### 3 *Docosia sinensis* sp. nov. (Figs. 7-10)

. Wing length 2.8-3.0 mm. Head brownish yellow, dusted with grey and white bristling. Palpus yellow. Antenna yellow, flagellar segments at most 3.0 times as long as wide. Throax yellow. Prothroax with strong upswept bristles touching in middle. Mesoscutal bristles mainly short. Scutellum and

proepisternum entirely shiny, with white setae. Pleura bare. Wing yellow and clear. Costa and radial veins including crossvein r-m brown, with black setae, other veins colourless and marked only by setulae. Sc ending free. R<sub>1</sub> subequal to crossvein r-m. C ending in R<sub>5</sub>. Stalk of median fork a little shorter than crossvein r-m. Halter white. Legs yellow. Basal two fifths of coxae brownish yellow; basal three quarters of fore femur dark below. Apical half of mid femur dark. Mid tibia with 4-6 d, 6-7 a, 7 v. Hind tibia with 10-11 d, 9-10 a. Abdomen brownish yellow, with pale hairs. Genitalia brownish black.

. Unknown.

Holotype , Mt. Longwang (30.4 °N, 119.4 °E), 600 m, Anji, Zhejiang, 30 July 1996, WU Hong, No. 960226. Paratype 1 , Guiyang (26.5 °N, 106.5 °E), Guizhou, 26 July 1987, YANG Chi-Kun, No. 880085.



Figs. 7-10. *Docosia sinensis* sp. nov. Male genitalia. 7. Dorsal view. 8. Ventral view. 9. Lateral view. 10. Gonostylus, lateral view.

Distribution. China: Zhejiang (Anji), Guizhou (Guiyang).

The new species can be distinguished from other known species of the genus by the strong spur in the centre of the gonostylus.

### 4 *Docosia laxa* sp. nov. (Figs. 11-14)

. Wing length 2.7-3.1 mm. Head brown with white bristling. Palpus brownish yellow. Antenna brownish yellow, flagellar segments 2.0 times as long as broad. Thorax brownish yellow, with short pale hairs on mesoscutum, with 2-3 long brown setae on scutellum and with pale setae on proepisterna; pleura bare. Wing yellow and clear. Costa and radial veins including crossvein r-m brown, with setae, other veins thin brown. Sc ending free. R<sub>1</sub> about 1.5 times as long as crossvein r-m. C ends in R<sub>5</sub>. Stalk of median fork

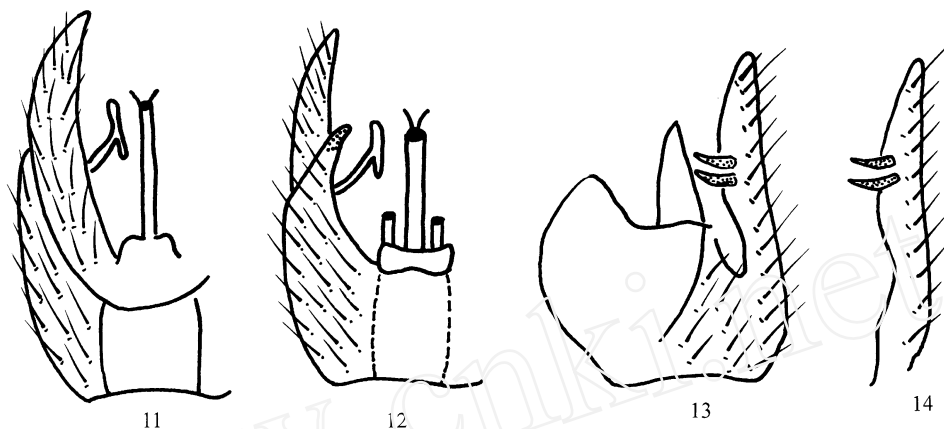
subequal to crossvein r-m. Halter white. Legs yellow. Basal three quarters of coxae dark. Mid tibia with 7-9 d, 5 a, 6-7 v. Hind tibia with 10-11 d, 8-10 a. Abdomen brownish yellow. Genitalia brown, two spurs on the gonostylus.

. Unknown.

Holotype , Guiyang, Guizhou, 1 000 m, 21 July 1987, YANG Chi-Kun, No. 880046. Paratypes: 1 , the same locality as holotype, 25 July 1987, YANG Chi-Kun, No. 880082; 1 , Mt. Lao (36.7 °N, 120.7 °E), Qingdao, Shandong, 4 Aug. 1995, HE Jun-Hua, No. 960407.

Distribution. China: Shandong (Qingdao), Guizhou (Guiyang).

This species is similar to *Docosia canaripes* Landrock, 1980, but the gonostylus of the later lacks a spur.

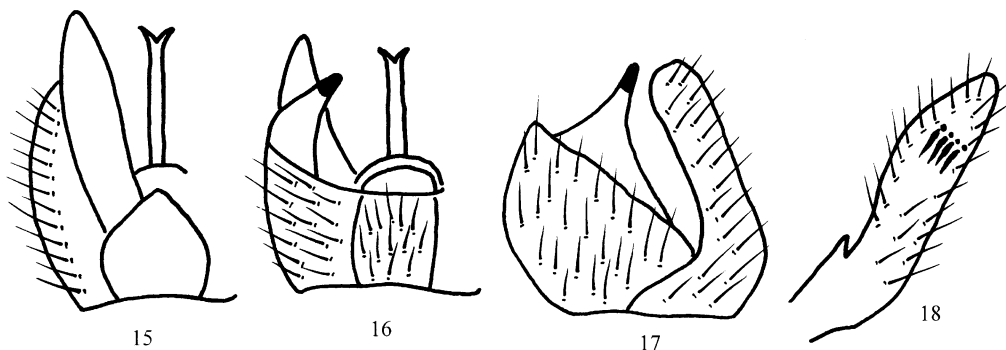


Figs. 11-14. *Docosia laza* sp. nov. Male genitalia. 11. Dorsal view. 12. Ventral view. 13. Lateral view. 14. Gonostylus, lateral view.

##### 5 *Docosia yangi* sp. nov. (Figs. 15-18)

. Wing length 2.9-3.0 mm. Head brownish yellow, with a row of long pale setae on hind margin of head. Palpus yellow. Antenna light yellow. Flagellar segments at most 2.0 times as long as broad. Thorax yellow, with brownish yellow setae on mesoscutum, scutellum and proepisterna. Pleura bare. Wing yellow and clear. Costa and radial veins including

crossvein r-m brown, with thick setae, other veins light yellow and marked only by setulae. Sc ending free.  $R_1$  a little longer than crossvein r-m. C ends in  $R_5$ . Stalk of media fork subequal to crossvein r-m. Halter white. Legs yellow, dark on joints of trochanter and femur, tibia dark. Mid tibia with 6-8 d, 6-7 a, 6 v. Hind tibia with 9-10 d, 8-10 a. Abdomen brownish yellow. Genitalia brown, four spurs on the gonostylus.



Figs. 15-18. *Docosia yangi* sp. nov. Male genitalia. 15. Dorsal view. 16. Ventral view. 17. Lateral view. 18. Gonostylus, dorsal view.

. Wing length 3.0-3.2 mm, the same colour and characters as male. Genitalia brown.

Holotype, Guiyang, Guizhou, 1000 m, 21 July 1987, YANG Chi-Kun, No. 880047. Paratype 1, the same locality as holotype, 26 July 1987, YANG Chi-Kun, No. 880087.

Distribution. China: Guizhou (Guiyang).

This species is similar to *Docosia incolamontis* Chandler, 1994, but the gonostylus of the later has only two spurs.

##### 6 *Docosia flabellata* sp. nov. (Figs. 19-22)

. Wing length 2.5-3.0 mm. Head black with

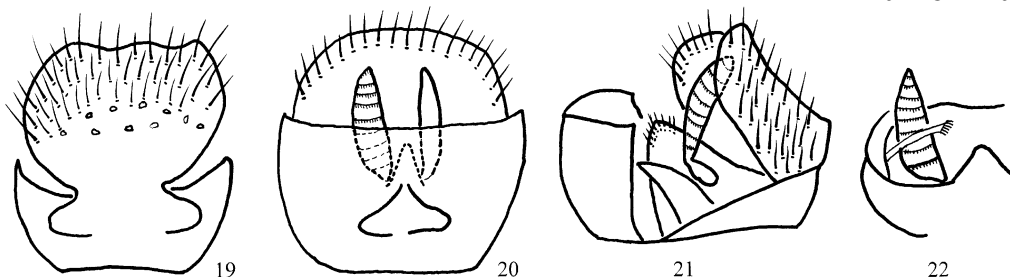
white bristling. Palpus yellow. Antenna black, flagellar segments more than 2.0 to 3.0 times as long as broad. Thorax black, grey dusted with long pale setae on mesoscutum, scutellum and proepisterna. Pleura bare. Wing yellow and clear, C and R veins including crossvein r-m brown, other veins colourless and marked only by setulae. Sc ends in vein R before level of base of vein  $R_s$ .  $R_1$  about 2.5 times as long as crossvein r-m. C extending one third distance from  $R_5$  to  $M_1$ . Stalk of median fork a little shorter than crossvein r-m. Halter yellow. Legs yellow. Basal two fifths of coxae dark. Basal three quarters of femur dark. Basal half of mid-femur dark beneath. Mid tibia

with 6-7 d, 8-9 a, 4 v. Hind tibia with 11-14 d, 6-7 a. Abdomen black. Genitalia black.

. Unknown.

Holotype , Mt. Longwang, 500 m, Anji, Zhejiang, 7 Apr. 1996, WU Hong, No. 960005.

Distribution. China: Zhejiang (Anji).



Figs. 19-22. *Docosia flabellata* sp. nov. Male genitalia. 19. Dorsal view. 20. Ventral view. 21. Lateral view. 22. Cercus.

This species is similar to *Docosia helvevla* Chandler, 1994, but the structure of aedeagus and parameres are different. Sc of the later ends in R a little more than halfway to base of Rs.

#### 7 *Docosia moravica* Landrock, 1916

*Docosia moravica* Landrock, 1916. Z. Mahr. Landesmus. 15: 64.

New record for China.

Material examined. 1 , Mt. Longwang, 500 m, Anji, Zhejiang, 13 May 1996, WU Hong, No. 960121.

Distribution. China: Zhejiang (Anji).

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## 多菌蚊属研究及新种记述(双翅目,菌蚊科)

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**摘 要** 记述中国多菌蚊属 6 新种及中国 1 新纪录种, 简单介绍了该属的形态特征、生活史及地理分布, 模式标本保存在浙江林学院昆虫标本室。本属为中国新纪录属。

**古田山多菌蚊, 新种** *Docosia gutianshana* sp. nov.

(图 1~3)

雄 翅长 3.0~3.2 mm。新种生殖突基节端部分叉, 可区别于 *Docosia* 属的其他已知种。

正模 , 浙江庆元百山祖五岭坑, 550 m, 1993-09-24, 吴鸿采自马氏诱捕器, 编号 931241; 副模 1 , 同正模, 编号 931242; 2 , 采地同正模, 1994-05-18, 编号 940717-18。

**非常多菌蚊, 新种** *Docosia monstrosa* sp. nov. (图 4~6)

雄 翅长 3.0~3.2 mm。新种与 *Docosia moravica* (Landrock, 1916) 相似, 但后者尾须长为新种的 1.5~2.0 倍,

可以区别。正模 , 浙江庆元百山祖茶梅圩, 1300 m, 1993-09-20, 吴鸿采自马氏诱捕器, 编号 931336; 副模 2 , 同正模, 编号 931337-38。

**中华多菌蚊, 新种** *Docosia sinensis* sp. nov. (图 7~10)

雄 翅长 2.8~3.0 mm。新种生殖刺突中央有一粗壮距, 可以区别于 *Docosia* 属其它已知种。正模 , 浙江安吉龙王山, 600 m, 1996-07-30, 吴鸿灯诱, 编号 960226; 副模 1 , 贵州省贵阳林科所, 1987-07-26, 杨集昆采, 编号 880085。

**松卷多菌蚊, 新种** *Docosia laxa* sp. nov. (图 11~14)

雄 翅长 2.7~3.1 mm。新种与 *Docosia canaripes* (Landrock, 1980) 相似, 但后者生殖刺突上无距, 可以区别。正模 , 贵州省贵阳林科所, 1000 m, 1987-07-21, 杨集昆采, 编号 880046; 副模 1 , 采地同正模, 1987-07-25, 杨集昆

采, 编号 880082; 1, 山东青岛崂山, 1995-08-04, 何俊华采, 编号 960407。

**杨氏多菌蚊, 新种** *Docosia yangi* sp. nov. (图 15~18)

雄 翅长 2.9~3.0 mm。新种与 *Docosia incolamontis* (Chandler, 1994) 略相似, 但后者生殖刺突上仅有 2 个距。正模, 贵州省贵阳林科所, 1 000 m, 1987-07-21, 杨集昆采, 编号 880047; 副模 1, 采地同正模, 1987-07-26, 杨集昆采, 编号 880087。

**关键词** 双翅目, 菌蚊科, 多菌蚊属, 新种。

**中图分类号** Q969. 441

**扇状多菌蚊, 新种** *Docosia flabellata* sp. nov. (图 19~22)

雄 翅长 2.5~3.0 mm。新种与 *Docosia helveola* (Chandler, 1994) 相似, 但后者 Sc 脉在 Rs 脉基部后终于 R 脉, 阳茎形状不一, 故容易区别。正模, 浙江安吉龙王山, 500 m, 1996-04-07, 吴鸿采, 编号 960005。

**摩拉多菌蚊** *Docosia moravica* Landrock, 1916 中国新纪录

标本记录: 1, 浙江安吉龙王山, 1996-05-13, 吴鸿采。分布: 浙江 (龙王山); 捷克, 斯洛伐克, 德国, 法国, 英国, 波兰, 瑞典。