

REVISION OF THE SPECIES OF *SYNECHES* FROM GUANGDONG (DIPTERA: EMPIDOIDEA: HYBOTINAE)

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ABSTRACT. – The species of the genus *Syneches* Walker from Guangdong are revised. The following three species are described as new to science: *S. guangdongensis*, new species; *S. latus*, new species; and *S. xui*, new species. A key to the species of the genus from Guangdong is presented.

KEY WORDS. – Empidoidea, Hybotinae, Guangdong, *Syneches*, new species.

INTRODUCTION

The genus *Syneches* Walker belongs to the subfamily Hybotinae. It is characterized by the following features: palpus rather short and thin, Rs very long, R_{4+5} and M_1 parallel to convergent apically, anal cell nearly as long as basal cells, hind femur weakly to distinctly thickened with distinct ventral bristles, male genitalia symmetrical (Saigusa, 1964; Chvála, 1983; Sinclair, 1996).

It is distributed worldwide with over 120 known species. There were previously 40 known species from the Oriental Realm (Smith, 1975) and 12 known species from the Palaearctic Realm (Chvála & Kovalev, 1989). Up to now, 15 species are known to occur in China, which were studied mainly by Yang & Yang (1987), Yang & Wang (1998), Yang et al. (2002), and Saigusa & Yang (2002). The major references dealing with *Syneches* are as follows: Brunetti (1920), Frey (1938), Saigusa (1964, 1990), and Wilder (1974).

Guangdong belongs to South China region of the Oriental Realm. In the present paper, the genus *Syneches* is recorded from Guangdong for the first time with four species. Three species are described as new to science. A key to the species of the genus from Guangdong is presented. In east Asia, the following three subgenera in *Syneches* were used: *Epiceia* Walker, *Harpamerus* Bigot, and *Syneches* s. str. (Smith, 1975). However, we still follow Saigusa (1964) in not separating the subgenera as there are no significant differences between them. The types are mainly deposited in the insect collection of China Agricultural University (CAU), Beijing, except some paratypes, which are kept in the Zoological

Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research, National University of Singapore.

The following abbreviations are used: ad-anterodorsal, av-anteroventral, d-dorsal, h-humeral, oc-ocellar, npl-notopleural, pd-posterodorsal, psa-postalar, pv-posteroventral, v-ventral.

TAXONOMY

Key to species of *Syneches* from Guangdong

1. Wing grayish; stigma distinctly longer than wide 2
– Wing hyaline; stigma rather short, wider than long *S. apiciflavus* Yang, Yang & Hu
2. Hind femur with one row of long thin av only 3
– Hind femur with nearly three rows of short spine-like v *S. xui*, new species
3. Antenna black; femora black with yellow tip *S. guangdongensis*, new species
– Antenna brownish-yellow with first flagellomere brownish; femora yellow with basal 1/3 of fore and mid femora and extreme base of hind femur brown *S. latus*, new species

Syneches apiciflavus Yang, Yang & Hu, 2002

Syneches apiciflavus Yang, Yang & Hu, 2002: 733.

Material examined. – 3 males, 1 female, Guangdong: Liuxihe, 16 Jul.2003, coll. Xingyue Liu (CAU); 1 male, 6 females, Guangdong: Shixing, Chebaling National Nature Reserve, 10 Jul.2003, coll. Shuwen An (CAU).

Diagnosis. – Antenna blackish, but first flagellomere with yellow apex. Femora yellow with extreme tip blackish. Wing hyaline; stigma rather short, wider than long. R_{4+5} and M_1 parallel apically.

Distribution. – China (Guangdong, Hainan).

***Syneches guangdongensis*, new species**

(Figs. 1, 2)

Material examined. – Holotype - male, Guangdong: Ruyuan, Nanling National Nature Reserve, 26 Mar.2003, coll. Ding Yang (CAU).

Diagnosis. – Antenna black. Palpus brownish yellow. Wing grayish. Femora black with yellow tip.

Description. – **Male** – Body length 6.0 mm, wing length 5.6 mm.

Head black with gray pollen. Eyes contiguous on frons for a long distance, dark brown with enlarged upper facets dark yellow. Hairs and bristles on head black; ocellar tubercle distinct, with 2 oc and 8 hairs, oc little longer than hairs. Antenna black; scape without hairs; pedicel with cirlet of subapical hairs; first flagellomere nearly quadrate with 2 dorsal hairs; arista brown, indistinctly pubescent except tip thin and bare. Proboscis black; palpus brownish yellow with 4 long ventral hairs.

Thorax black with gray pollen. Hairs and bristles on thorax black; h absent, 2 short strong npl subequal in length, mesonotum with short hairs except mid-posterior area with long hairs and with one transverse row of 3 bristle-like prescutellar hairs, 1 long psa; scutellum with long marginal

hairs (of which 6 hairs are bristle-like). Legs black; femora with yellow tips; tibiae and tarsi yellow except tarsomere 5 dark brown. Hairs and bristles on legs black. Fore femur 1.1 times as wide as mid femur; hind femur 1.1 times as wide as mid femur, with one row of 7-8 long av which are longer than thickness of hind femur). Fore tibia apically with 2 weak d. Mid tibia with 1 ad at base and several long posterior hairs, apically with 4-5 bristles (of which 1 ad and 1 av are long and brownish yellow). Hind tibia with 1 ad near base, apically with 4-5 bristles. Wing grayish; stigma long and dark brown; veins dark brown, R_{4+5} and M_1 convergent apically. Squama brown with pale hairs. Halter dark brown.

Abdomen curved downward, black with gray pollen. Hairs on abdomen black. Male genitalia (Figs. 1, 2): tergal lobe narrowing toward tip in lateral view, its outer apical margin distinctly incised and forming upper and lower apical corners; hypandrium wide basally and narrow apically, its apical margin indistinctly incised; aedeagus nearly straight apically, with curved subapical lateral process.

Female. – Unknown.

Distribution. – China (Guangdong).

Etymology. – The species is named after the type locality Guangdong.

Remarks. – The new species is somewhat similar to *Syneches furcatus* Saigusa & Yang, 2002, from Henan, but may be separated from the latter by the legs mostly yellow. In *S. furcatus*, the legs are black with the mid tarsomeres 1-2 brownish yellow only (Saigusa & Yang, 2002).

***Syneches latus*, new species**

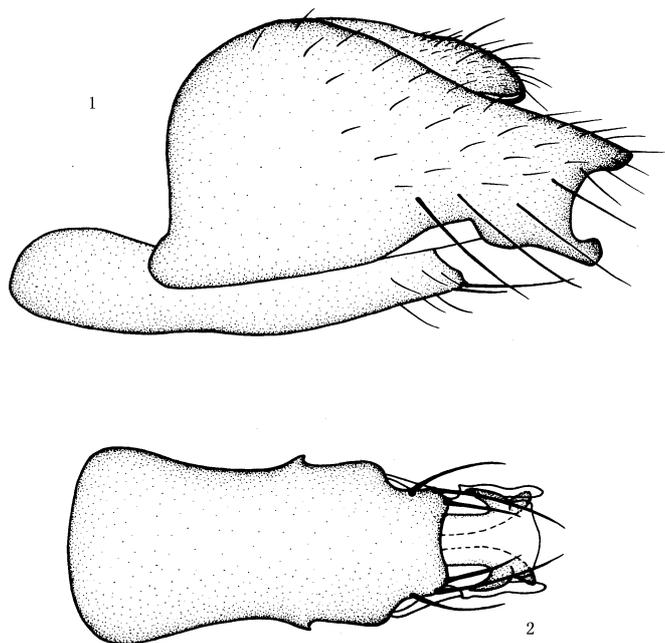
(Figs. 3, 4)

Material examined. – Holotype - male, Guangdong: Yingde, Shimentai National Forest Park, 28 Mar.2003, coll. Ding Yang (CAU).

Diagnosis. – Antenna brownish-yellow with brownish first flagellomere. Palpus brownish-yellow. Wing grayish. Hairs on abdomen mostly long and pale.

Description. – **Male** – Body length 5.6 mm, wing length 5.4 mm.

Head black with gray pollen. Eyes contiguous on frons for a long distance, dark brown with enlarged upper facets dark yellow. Hairs and bristles on head black; ocellar tubercle distinct, with 2 oc and 10 hairs, oc little longer than hairs. Antenna brownish yellow, first flagellomere brownish; scape without hairs; pedicel with cirlet of subapical hairs; first flagellomere nearly quadrate with 1 dorsal hair; arista brownish, indistinctly pubescent except tip thin and bare. Proboscis brownish yellow; palpus brownish-yellow with 2 long ventral hairs.

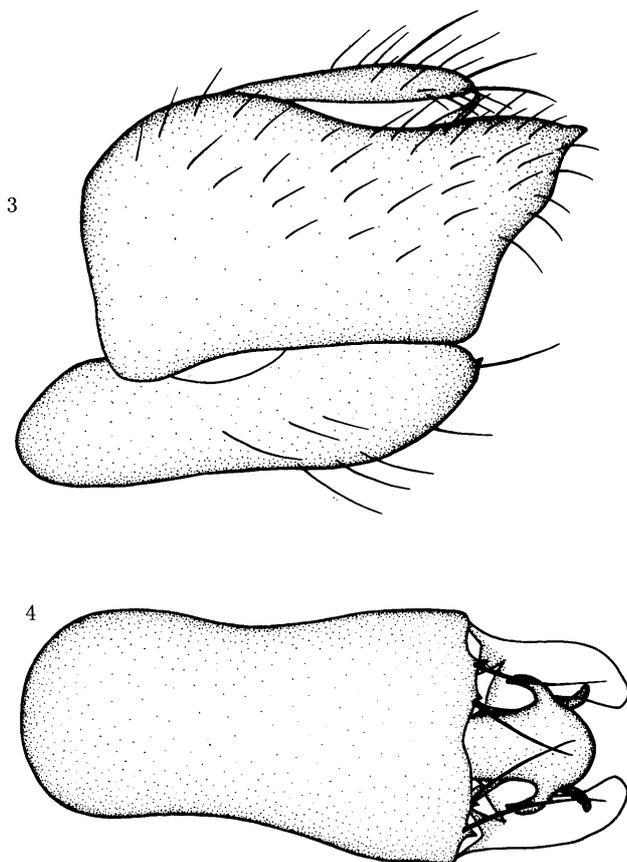


Figs. 1, 2. *Syneches guangdongensis*, new species (male). 1. genitalia, lateral view; 2. hypandrium and aedeagus, ventral view.

Thorax black with gray pollen. Hairs and bristles on thorax black; h absent, 2 strong npl subequal in length, mesonotum with short hairs except mid-posterior area with long hairs and with one transverse row of 3 prescutellar bristles, 1 long psa; scutellum with long marginal hairs (of which 6 hairs are bristle-like). Legs yellow; coxae and trochanters black; fore and mid femora with basal 1/3 brown, hind femur with extreme base brown; tarsomere 5 black. Hairs and bristles on legs black. Fore femur 1.1 times as wide as mid femur; hind femur 1.1 times as wide as mid femur, with one row of 7-8 long thin av distinctly longer than thickness of hind femur (of which only 4 av are stronger). Fore tibia apically with 4 bristles. Mid tibia with 1 ad at base and one row of 6-7 posterior bristles, apically with 4 long bristles. Hind tibia with 1 long ad and some long posterior hairs, apically with 4-5 bristles including 1-2 long brownish yellow pd. Wing grayish; stigma long and dark brown; veins dark brown, R_{4+5} and M_1 convergent apically. Squama brownish with pale hairs. Halter brown.

Abdomen curved downward, black with gray pollen. Hairs on abdomen mostly long and pale. Male genitalia (Figs. 3, 4): tergal lobe nearly uniformly wide in lateral view, with outer apical margin obliquely subtruncate, and with short acute upper apical corner; hypandrium with slightly wide apical portion, and its apical margin weakly incised medially with 2 weak spines on each side; aedeagus rounded apically, with curved subapical lateral process.

Female. – Unknown.



Figs. 3, 4. *Syneches latus*, new species (male). 3. genitalia, lateral view; 4. hypandrium and aedeagus, ventral view.

Distribution. – China (Guangdong).

Etymology. – The species is named by the hypandrium wide apically.

Remarks. – The new species is similar to *Syneches acutatus* Saigusa & Yang, 2002, from Henan, but can be separated from the latter by the antenna brownish-yellow with the first flagellomere brownish, hairs on the abdomen mostly long and pale, and the hypandrium wide apically with a weak mid-apical incision. In *S. acutatus*, the antenna is wholly yellow, the hairs on the abdomen are black, and the hypandrium is narrow apically with a distinct mid-apical incision (Saigusa & Yang, 2002).

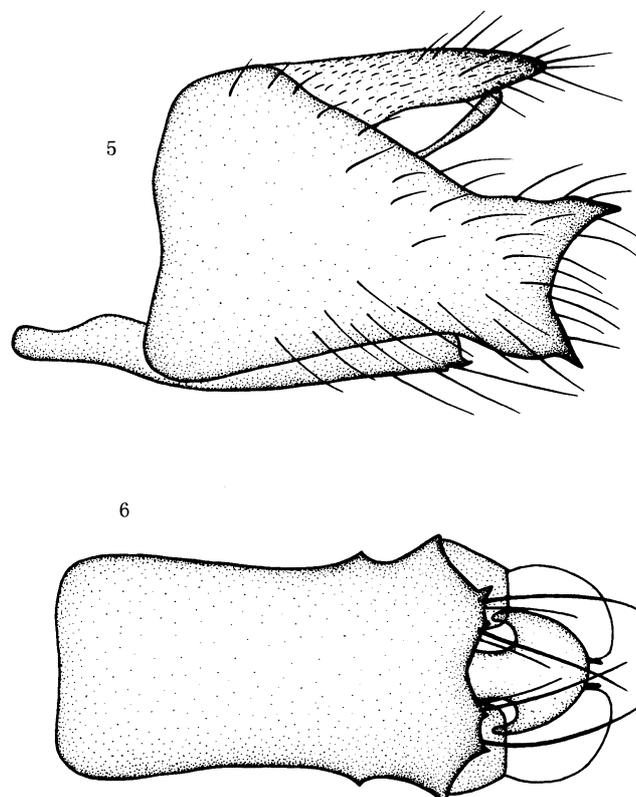
***Syneches xui*, new species**
(Figs. 5, 6)

Material examined. – Holotype - male, Guangdong: Ruyuan, Nanling National Nature Reserve, 26 Mar.2003, coll. Ding Yang (CAU).

Paratypes – 3 males, same data as holotype (CAU, ZRC).

Diagnosis. – Palpus brownish-yellow. Antenna black. Wing gray. Femora yellow with extreme bases brown. Hind femur with nearly three rows of spine-like bristles. Hairs on abdomen mostly long and pale.

Description. – *Male* – Body length 6.0-6.7 mm, wing length 6.0-6.2 mm.



Figs. 5, 6. *Syneches xui*, new species (male). 5. genitalia, lateral view; 6. hypandrium and aedeagus, ventral view.

Head black with gray pollen. Eyes contiguous on frons for a long distance, dark brown with enlarged upper facets dark yellow. Hairs and bristles on head black; ocellar tubercle distinct, with 2 long oc and 2 posterior hairs. Antenna black; scape without hairs; pedicel with circlet of subapical hairs; first flagellomere nearly quadrate with 2 dorsal hairs; arista black, short pubescent except tip thin and bare. Proboscis brownish; palpus brownish-yellow with 6-7 long ventral hairs.

Thorax black with gray pollen. Hairs and bristles on thorax black; h absent, 2 short strong npl subequal in length, mesonotum with short hairs except mid-posterior area with long hairs and with one transverse row of 3 prescutellar bristles, 1 long psa; scutellum with long marginal hairs (of which 6 hairs are bristle-like). Legs yellow; coxae and trochanters black; femora with extreme bases brown; tarsomere 5 black. Hairs and bristles on legs black. Fore femur 1.1 times as wide as mid femur; hind femur 1.4-1.5 times as wide as mid femur, with nearly three rows of short spine-like av which are shorter than 1/2 of thickness of hind femur. Fore tibia apically with 2 d. Mid tibia with 3-4 ad and nearly two rows of long posterior hairs, apically with 3-4 long bristles including 1 long brownish-yellow pv. Hind tibia with 1 strong ad at basal 1/3 and 6-7 brownish-yellow pd, apically with 5 bristles (of which 2 pd are long and brownish-yellow). Wing gray; stigma long and dark brown; veins dark brown, R_{4+5} and M_1 convergent apically. Squama brownish with pale hairs. Halter brown.

Abdomen curved downward, black with gray pollen. Hairs on abdomen mostly long and pale. Male genitalia (Figs. 5, 6): tergal lobe narrowing toward tip in lateral view, with outer apical margin distinctly incised and forming acute upper and lower apical corners; hypandrium with weak subapical lateral spine, and its apical margin weakly incised medially with 2 weak spines on each side; aedeagus rounded apically, with curved subapical lateral process.

Female. – Unknown.

Distribution. – China (Guangdong).

Etymology. – The species is named after Prof. Zaifu Xu.

Remarks. – The new species is peculiar, and can be easily separated from other known species of the genus from China by the hind femur with nearly three rows of short spine-like bristles.

DISCUSSION

The genus *Syneches* is highly diversified in the Oriental Realm. Guangdong belongs to the South China region of the Oriental Realm with a subtropical to tropical climate. There are now four species of the genus *Syneches* known to occur in Guangdong. Three new species are endemic to Guangdong, and one known species is endemic to the South China region. It is highly possible that more species will be found in this region.

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