

## Three new species of the *Fannia serena* species subgroup from China (Diptera: Fanniidae)

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The *Fannia serena* species group (Diptera: Fanniidae) is mainly distributed in the Holarctic region and comprises four subgroups with a total of 32 species. Three new species of the *Fannia serena*-subgroup, *Fannia aureomarginata* Wang et Cheng, **sp. n.**, *F. suberemna* Wang, **sp. n.** and *F. wui* Wang, **sp. n.**, are described from China. An identification key to all known species of the *Fannia serena*-subgroup is also provided.

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### 1. Introduction

The genus *Fannia* Robineau-Desvoidy, 1830 (Diptera: Fanniidae) is a species rich genus of flies. The *Fannia serena*-group was erected by Chillcott in 1961 and then reviewed and further defined by later specialists (Hennig 1965, Pont 1965, Rozkošný *et al.* 1997, Wang *et al.* 2006). The *F. serena*-group now comprises 4 subgroups, one of which is the *F. serena*-subgroup. The species of *Fannia serena*-subgroup are distributed in the Holarctic and the northern margin of the Oriental regions.

The taxa of the *Fannia serena*-subgroup share the following diagnostic characters: the pre-sutural acrostichal setulae are commonly biserial (rarely triserial), the lower calypter is linear in shape, the mid femur is without spine-like setae anteroventrally, the hind coxa is without setae posteroventrally, the hind femur is without posteroventral setae in the distal part, the tibiae are usually with a single seta (except for a few

species), the abdomen is broadest on the posterior margin of the syntergite 1+2, and the male cerci are often in the shape of an inverted T in the posterior view.

In this paper, three new species of the *F. serena*-subgroup are described from China and a key to the 32 known species (including the three new species) of the subgroup is given.

### 2. Materials and methods

The specimens examined in this study were collected by sweeping from brushwood with hand nets. The external morphology was observed under a stereoscopic microscope and metric characters were measured with an ocular micrometer. To observe the detailed characters of the male terminalia, these organs were detached from the body, cleared by warming in a 10% KOH solution (at approximately 100 °C) for several minutes, placed in a droplet of glycerol, and observed un-

der a compound light microscope. The type specimens of the new species are deposited in the Institute of Entomology, Shenyang Normal University (IESNU), Shenyang, Liaoning Province, China.

The morphological terminology follows McAlpine (1981). Absolute measurements are used for body length in millimeters (mm). Abbreviations used for characters are:

- For setae: *acr* = acrostichal, *ad* = antero-dorsal, *av* = anteroventral, *d* = dorsal, *dc* = dorsocentral, *ial* = intra-alar, *p* = posterior, *pd* = posterodorsal, *pv* = posteroventral, *pra* = prealar
- For veins: Sc = subcosta, Rs = radial node, M = medial, dm-cu = discal medial–cubital, R<sub>4+5</sub> = branch of radius, r-m = radial–medial crossvein.

### 3. Taxonomy

#### 3.1. Descriptions

##### 3.1.1. *Fannia aureomarginata*

Wang & Cheng, **sp. n.**

*Material.* Holotype: ♂, P. R. China, Yunnan, Mt. Yulong, 3,200 m, 24.V.2007, S. C. Bai leg. (IESNU).

*Diagnosis.* The new species resembles *Fannia wui* **sp. n.**, but differs from it in having calypters brown, margins rather golden, hind tibia with 2 *av* and 3–5 *ad*, frontal setae 12–13, arista longer, prementum longer, *pra* shorter, and ♂ tergite 5 blunter, with rows of stout spine in the posterior part. The new species resembles also *Fannia setifemorata*, but differs from it in having scutum with dark brown pruinosity, mid tibia with 3–4 *pd*, halteres black, wing-base concolourous, basicosta brown, *pra* shorter, and ♂ tergite 5 blunter, with stout spines in the posterior part.

*Description.* Male: Body length 5.0 mm. Head: Eye with thin and short hairs, facets enlarged on anterior margin in upper part; occipital setae uniserial, long and curved towards anterior in upper half, longest occipital setae on vertex slightly shorter than ocellar bristles, and gradually shorter to both sides; upper part of head with 2 rows of occipital-orbital bristles behind occipi-

tal setae; upper part of fronto-orbital plate with thick golden-brownish pruinosity, lower part and fronto-orbital plate with silver-grey pruinosity, median part of frons about 2 times as wide as width of anterior ocellus, and about 3/4 of width of first antennal flagellomere; frontal vitta black, narrowest part about equal to width of one fronto-orbital plate, frontal setae 12–13, strong, on lower margin of ocellar triangle, upper orbital setae absent; fronto-orbital plate bare, median part about 2/5–1/3 of width of first antennal flagellomere; antennae black, first flagellomere 1.5 times as long as wide, arista black, swollen at base, pubescent, longest hair about as long as its basal diameter; epistoma not projecting beyond vibrissal angle, vibrissal angle behind frontal angle in profile; peristomal setae uniserial, outside with uniserial short bristles, gena and postcranium with black hairs, in upper part of gena without setae, proboscis of medium length, labellum developed, prementum with thin greyish-yellow pruinosity, slightly shining, about 2 times as long as high; palpus black, long, about as long as prementum. Thorax: ground-colour black, scutum with dark brown pruinosity, without stripes, *acr* biserial, strong, a pair of prescutellar setae stout; distance between two *acr* rows narrower than distance between outer *acr* row and *dc* row, *dc* 2+3, *ial* 0+2, *pra* 2, (one side 3) anterior one strongest, about 1/2 of length of posterior notopleural seta, notopleura without setulae, proepisternal setae 2, prostigmatal seta 1, and around it with 9–10 long setulae, basisternum, proepisternal depression, anepimeron, meron and katepimeron bare, katepisternal setae 1:1, katepisternum without ventral spines, only with usual setae; anterior spiracle yellow, posterior one dark brown; calypters brown, margins goldish, lower one linear, not projecting beyond upper one. Wings brownish, wing-base concolourous, tegula dark brown, epaulet black, basicosta brown, costal spine inconspicuous, vein Sc not curved bow-like; node of Rs bare on ventral and dorsal surfaces; vein M straight, vein M parallel to vein R<sub>4+5</sub> in distal part, vein r-m slightly thickened, vein dm-cu straight, crossveins without obvious cloud, halteres black. Legs: black, only base of fore tibia yellow, ventral edge of fore coxa without spine on anterior margin, fore femur with complete *pv* rows, fore tibia without *ad* and median *p*, first fore tarsomere with

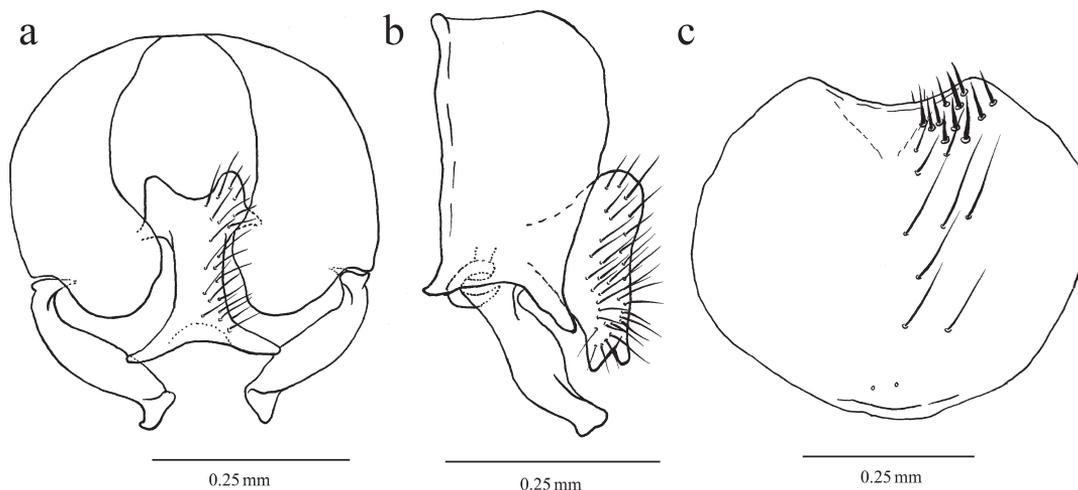


Fig. 1. *Fannia aureomarginata* Wang & Cheng, **sp. n.** (male holotype). – a. Terminalia, posterior view. – b. Terminalia, lateral view, – c. 5<sup>th</sup> sternite, ventral view.

1–2 long setae in basal part ventrally; length of first tarsomere about 2/5 of length of fore femur, fore tarsomere without light patch, mid coxa without any hooked spines or spine-like setae, mid femur with *av* row, sparse and long in basal part, towards apex gradually becoming shorter and denser, and becoming comb-like in distal 1/3, without gaps; *pv* row biserial in middle, with one slender complete *p* row in upper part; mid tibia not more swollen than fore and hind tibiae, slightly swollen in distal half, with short fine hairs on ventral surface, longest apical hairs about equal to width of mid tibia, with 3 stout *ad*, 3–4 *pd*, mid first tarsomere without special structure; hind coxa bare on posterior and inner margin, hind femur with a complete *av* row, 1 stout subapical seta longer than width of hind femur, *pv* in basal 2/3, short except for 1–2 in basal part, others not longer than width of hind femur, hind tibia with 2 *av*, 2–3 *ad*, 1 median *d*, some erect setulae on posterior surface, hind tarsomere without special structure. Abdomen: oval, flat, tergites with thick greyish-yellow pollinosity, slightly brown pollinosity, tergites 2–4 each with a median inverted “T” vitta, tergite 5 with a dark median stripe, sternite 1 bare, tergites 2–4 with many long setae, sternite 5 and terminalia as shown in Fig. 1.

*Etymology.* The specific name refers to the gish margins of calypters.

*Distribution.* P. R. China, Yunnan, Mt. Yulong (type locality).

### 3.1.2. *Fannia suberemna* Wang, **sp. n.**

*Material.* Holotype: ♂, P. R. China, Ningxia, Jingyuan, Tawan, 1,856 m, 2.VII.2008, M. F. Wang leg. (IESNU). Paratype: 1♂, P. R. China, Ningxia, Jingyuan, Mt. Baiyun, 2,200 m, 27.VI.2008, leg. M. F. Wang leg. (IESNU).

*Diagnosis.* The new species resembles *Fannia eremna*, but differs from it in having hind femur without *pv*, *pra* short, frontal setae 7–10, the base of basal fore tibia yellow; the distal part of mid tibia with long hairs, cerci not cavate in the distal part but slightly exerted in the middle part, surstylus slender, and the width of tergite 5 longer than the length.

*Description.* Male: Body length 4.0–4.5 mm. Head: Eye with thin and short hairs, facet enlarged on anterior margin in upper part; occipital setae uniserial, long and curved towards anterior in upper half, longest occipital setae on vertex, equal to or slightly shorter than ocellar bristles, upper part of head with 2 rows of occipital-orbital bristles behind occipital setae; upper part of fronto-orbital plate with thick brown pruinosity, lower part and fronto-orbital plate with grey pruinosity, median part of frons about 3/4 of distance of posterior ocellus, and about 3/4 of width of first antennal flagellomere; frontal vitta black, with light grey pruinosity, disappeared in the narrowest part, frontal setae 7–10, on lower 3/4 of frons, upper orbital setae absent; fronto-orbital plate bare, median part about 2/5 of width of first

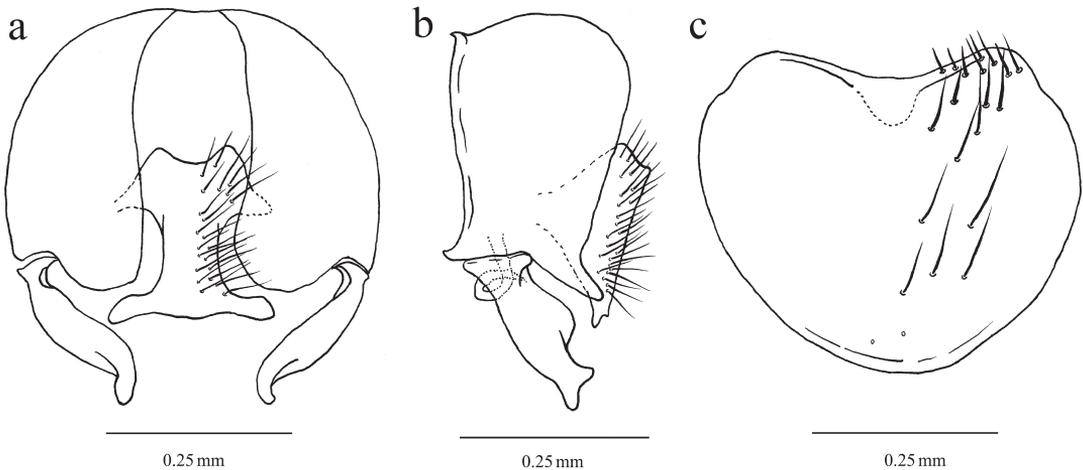


Fig. 2. *Fannia suberemna* Wang, **sp. n.** (male holotype). – a. Terminalia, posterior view. – b. Terminalia, lateral view. – c. 5<sup>th</sup> sternite, ventral view.

antennal flagellomere, antennae black, first flagellomere 1.5 times as long as wide, arista black, swollen at base, pubescent, longest hair no longer than its basal diameter; epistoma not projecting beyond vibrissal angle, vibrissal angle behind frontal angle in profile, peristomal setae uniserial, outside with some short bristles, gena and postcranium with black hairs, in upper part of gena without setae, prementum with thin greyish-yellow pruinosity, slightly shining, about 2.5 times as long as high; palpus black, rodlike, about as long as prementum. Thorax: ground-colour black, with grey-yellowish pruinosity in side, scutum with dark brown pruinosity, without obvious stripes, *acr* biserial, strong, a pair of prescutellar setae stout; distance between two *acr* rows narrower than distance between outer *acr* row and *dc* row, *dc* 2+3, *ial* 0+2, *pra* 2, (one side 3) anterior one strongest, about 1/3 of length of posterior notopleural seta, notopleura without setulae, proepisternal setae 2, prostigmatal seta 1 (with 1 stout seta in lower part), and around it 7–9 long setulae, basisternum, proepisternum, anepimeron, meron and katepimeron bare, katepisternal setae 1:1, katepisternum without ventral spines, only with some short setae; anterior spiracle yellow, small, posterior one brown; calypters dark brown, margins concolourous, lower one linear, not projecting beyond upper one. Wings: brownish, wing-base concolourous, tegula dark brown, epaulet black, basicosta brown, costal spine conspicuous, slightly longer than around

spine; vein Sc not curved bow-like, node of Rs bare on ventral and dorsal surfaces, vein M straight, vein M parallel to vein  $R_{4+5}$  in distal part, vein r-m slightly thickened, vein dm-cu slightly convex in middle, crossveins without obvious cloud, halteres black brown. Legs: black, only base of fore tibia yellow; ventral edge of fore coxa without spine on anterior margin, fore femur with complete *pv* rows, fore tibia without *ad* and median *p*, first fore tarsomere with 1–2 long setae in basal part ventrally; fore tarsomere without light patch, mid coxa without hooked spines or spine-like setae, mid femur with *av* row, sparse and long in basal part, towards apex gradually becoming shorter and denser, with a vacancy at subapical part, with 4–5 straight setae in distal part; *pv* row biserial in middle, with one slender complete *p* row in upper part; mid tibia slightly swollen in distal half, not more swollen than others, with short fine hairs on ventral surface, longest apical hairs about equal to width of mid tibia, with 1 *ad* and *pd* 1 in distal part, mid first tarsomere without special structure; hind coxa bare on posterior and inner margin, hind femur with short setaceous *av* row in basal part, 2–4 in distal part obviously strong, 2–3 in distal 1/3 long, at least 2 *av* longer than width of hind femur, *pv* absent, with some short setae in posterior ventral basal and dorsal parts, the rest all bare, hind tibia with 1 *av*, 1 *ad*, 1 median *d*, hind tarsomere without special structure. Abdomen: oval, flat, ground-colour black, tergites with thick greyish-brown pollinosity,

Tergite 2 and 3 with large median triangular spot, tergite 5 with a dark median stripe, wider in basal part, each tergite side with stout setae; sternite 1 bare, sternite 5 and terminalia as shown in Fig. 2.

*Etymology.* The specific name refers to the similarity of the new species and *F. eremna* Chillcott.

*Distribution.* P. R. China, Ningxia, Jingyuan (type locality).

### 3.1.3. *Fannia wui* Wang, sp. n.

*Material.* Holotype: ♂, P. R. China, Ningxia, Jingyuan, Mt. Dingshan, 2,200 m, 27. VI.2008, M. F. Wang leg. (IESNU). Paratype: 1♂, P. R. China, Ningxia, Longde, Sutai, 2,150 m, 26. VI.2008, M. F. Wang leg. (IESNU).

*Diagnosis.* The new species resembles *Fannia setifemota*, but differs from it in having calypters and halteres dark brown, hind tibia with 1 *av*, the length of *pv* shorter than the width of hind femur, apical hairs of mid tibia on the ventral surface shorter than the width of mid tibia, wing-base concolourous, fronto-orbital plate narrower, not cavate in distal part but slightly exserted in the middle part, the middle of surstylus broad in profile, the margin of tergite 5 parallel in the middle, without stout spine rows in the posterior part. The new species resembles also *Fannia tripla*, but differs from it in having broad frons, frontal setae 8–10, first antennal flagellomere about 1.5 times as long as wide, apical hairs of mid tibia on the ventral surface shorter, hind tibia with 3–5 *ad*, *pv* in the basal 3/5 of hind femur, the middle of cerci thin in profile.

*Description.* Male: Body length 4.8 mm. Head: Eye with thin and short hairs, facet enlarged on anterior margin in upper part; occipital setae uniserial, long and curved towards anterior in upper half, occipital setae on vertex slightly shorter than ocellar bristles, with 1–2 rows of occipital-orbital setae behind occipital setae; upper part of fronto-orbital plate with thick golden-brownish pruinosity, lower part and fronto-orbital plate with silver-grey pruinosity, median part of frons narrower than distance of anterior ocellus from exterior margin, and about 3/4 of width of first antennal flagellomere; frontal vitta black, narrowest part linear, frontal setae 8–10, situated on lower margin of ocellar triangle, with some small hairs between them in lower part, fronto-orbital

plate bare, median part about 2/5 of width of first antennal flagellomere, antennae black, first flagellomere 1.5 times as long as wide, arista black, swollen at base, short pubescent, longest hair about no longer than its basal diameter; epistoma not projecting beyond vibrissal angle, vibrissal angle behind frontal angle in profile, peristomal setae uniserial, outside with uniserial short bristles, gena and postcranium with black hairs, upper part of gena without setae, proboscis stout, labellum developed, prementum with thin greyish-brown pruinosity, slightly shining, about 1.5 times as long as high; palpus black, rodlike, longer than prementum. Thorax: ground-colour black, scutum and lateral surface with dark brown pruinosity, without stripes, *acr* biserial, strong, a pair of prescutellar setae stout; distance between two *acr* rows narrower than distance between outer *acr* row and *dc* row; *dc* 2+3, *ial* 0+2, *pra* 2, anterior one strongest about 3/5 of length of posterior notopleural seta; notopleura without setulae, proepisternal setae 2, prostigmatal seta 1, and around it with 12–14 long setulae, basisternum, proepisternum, anepimeron, meron and katepimeron bare, katepisternal setae 1:1, katepisternum without ventral spines, only with long setae; anterior spiracle light yellow, posterior one dark brown; calypters dark brown, margins concolourous, lower one linear, not projecting beyond upper one. Wings brownish, wing-base concolourous, only with a white patch in basal part, tegula dark brown, epaulet black, basicosta brown, costal spine inconspicuous, vein Sc not curved bow-like, node of Rs bare on ventral and dorsal surfaces, vein M straight, vein M parallel to vein R<sub>4+5</sub> in distal part, vein r-m slightly thickened, vein dm-cu slightly convex forward in middle, crossveins without obvious cloud, halteres black brown. Legs: entirely black, ventral edge of fore coxa without spine on anterior margin, fore femur with complete *pv* rows, fore tibia without *ad* and median *p*, first fore tarsomere with 1–2 long setae in basal part ventrally; length of first tarsomere about 2/5 length of fore femur, fore tarsomere without light patch, mid coxa without any hooked spines or spine-like setae, mid femur with *av* row, sparse and long in basal part, towards apex gradually becoming shorter and denser, and becoming comb-like in distal 1/3, without gaps; *pv* biserial in middle, with one complete *p* row in

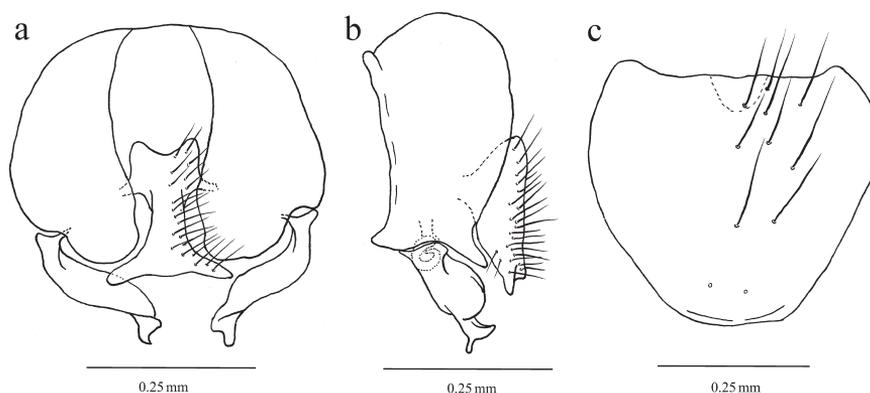


Fig. 3. *Fannia wui* Wang, **sp. n.** (male holotype). – a. Terminalia, posterior view. – b. Terminalia, lateral view. – c. 5<sup>th</sup> sternite, ventral view.

upper part; mid tibia not more swollen than others, slightly swollen in distal half, with short fine hairs on ventral surface, longest apical hairs slightly shorter than width of mid tibia, with 3–4 *ad*, 2–4 *pd*, mid first tarsomere without special structure; hind coxa bare on posterior and inner margin, *av* row of hind femur short in basal part, and long in distal part, the one in subapical part longest, longer than width of hind femur, *pv* in basal 3/5–2/3, length shorter than width of hind femur, hind tibia with 1 *av*, 3–5 *ad*, median 1 *d*, hind tarsomere without special structure. Abdomen: oval, flat, ground-colour black, tergites with thick greyish-brown pollinosity, tergites 2 and 3 with more brownish pollinosity, each with large median triangular spot, each tergite side with stout setae; especially sides of 1<sup>st</sup> and 2<sup>nd</sup> syntergite, distal part of these setae hooked, sternites 2–4 with dark median triangular spot, sternites 5 with a dark median stripe, sternite 1 bare, sternites 2–4 with many long setae, sternites 5 and terminalia as shown in Fig. 3.

*Etymology.* The species is named according to professor Yuxiao Wu.

*Distribution.* P. R. China, Ningxia, Jingyuan (type locality).

### 3.2. Key to the known species of the *Fannia serena*-subgroup (males)

1. Frons narrow, median part at most as wide as first antennal flagellomere 2
- Frons broad, median part about 1.5 times as wide as first antennal flagellomere
- F. diploura* Wang, Xue & Zhang, 2006

2. *Pra* 1 3
- *Pra* 2 (at least 2 on one side) 6
3. Tibiae yellow 4
- Tibiae black 5
4. Thorax and abdomen black, abdomen with obvious triangular marks
- F. pallitibia* (Rondani, 1866)
- Thorax and abdomen grey, abdomen with a narrow black median longitudinal stripe
- F. pruinosa* (Meigen, 1826)
5. Fronto-orbital plates almost contiguous
- F. similis* (Stein, 1895)
- Fronto-orbital plates separated by a distinct frontal vitta *F. bradorei* Chillcott, 1961a
6. Hind tibia with more than 1 seta on anteroventral or anterodorsal surface 7
- Hind tibia with 1 *av* and 1 *ad* 12
7. Hind tibia with 1 *ad*, mid tibia with 3 *ad*, calypters infuscated, halteres dark brown, frontal setae 11–14 *F. tripla* Nishida, 1975
- Hind tibia with 2–5 *ad* 8
8. Hind tibia with 2 *av* 9
- Hind tibia with 1 *av* 11
9. Mid tibia with 1 *ad*, hind tibia with 1 *ad*
- F. ampla* Nishida, 1994
- Mid tibia with 3 *ad* 10
10. Mid tibia with 3–4 *pd*, haltere brownish, basicostal scale dark brown, *pra* short, about 1/2 length of notopleural setae
- F. aureomarginata* Wang & Cheng, **sp. n.**
- Mid tibia with 2 *pd*, haltere brownish-yellow, basicostal scale brownish-yellow, *pra* about 2/3 length of notopleural setae
- F. setifemorata* Wang, Xue & Zhang, 2006
11. Upper calypter and haltere fuscous, legs

- black, first antennal flagellomere about 1.5 times as long as wide, length of prementum about 1.5 times as long as high, mid tibia with 2–4 *pd*, hind margin of 5<sup>th</sup> sternite broad, surstylus of terminalia short and wide in profile  
*F. wui* Wang, **sp. n.**
- Upper calypter and haltere yellow, knees and basal part of fore tibia yellowish, first antennal flagellomere about 2 times as long as wide, length of prementum about 2.2 times as long as high, mid tibia with 4–5 *pd*, hind margin of 5<sup>th</sup> sternite narrow, surstylus slender in profile  
*F. setitibia* Wang, 2008
  - 12. Mid tibia with 2 *ad* 13
  - Mid tibia with 1 *ad* 14
  - 13. Eye bare, frontal setae 8, haltere dark brown at apex  
*F. cylosternita* Xue & Wang, 1996
  - Eye with long and brown hairs, frontal setae 10, haltere brownish-yellow  
*F. longiseta* Wang, 2008
  - 14. Hind femur with a long *pv* row, longest seta about 1.5 times as long as femoral diameter, proepimeral setae 6–8, cerci parallel on outer margins  
*F. abrupta* Malloch, 1924
  - Hind femur without *pv* row; or if with, longest seta at most as long as femoral diameter 15
  - 15. Upper calypter dark brown 16
  - Upper calypter usually yellowish to brown; or if dark brown, postoccipital bristles absent 21
  - 16. Haltere dark brown 17
  - Haltere yellow  
*F. latihamata* Xue, Gao & Wang, 1996
  - 17. Presutural *acr* biserial 18
  - Presutural *acr* triserial 20
  - 18. Hind femur with 2–3 strong *av* in distal half 19
  - Hind femur with 4 strong *av* in distal half, cerci with ventral margin medially convex (in posterior view)  
*F. carbonella* (Stein, 1895)
  - 19. Hind femur with curved setae on posterior to posteroventral surface, *pra* about 2/3 length of notopleural setae, leg black  
*F. eremna* Chillcott, 1961b
  - Hind femur without curved setae on posterior to posteroventral surface, *pra* about 1/3 length of notopleural setae, knees and basal part of fore tibia yellowish  
*F. suberemna* Wang, **sp. n.**
  - 20. Hind femur with a multiserial row of setae on basal 2/3 posteroventrally, longest ones equal to femoral diameter, frons about 2 times as wide as diameter of anterior ocellus, cerci gradually becoming narrower towards apex, tergite 9 with a long seta on posterior margin  
*F. alpina* Pont, 1970
  - Hind femur only with a row of hair-like *pv* in basal half, longest ones shorter than femoral diameter, frons about 2.5–3 times as wide as diameter of anterior ocellus, cerci abruptly becoming narrower on distal 1/3, the apex obvious curved towards caudad, tergite 9 without a long seta on posterior margin  
*F. uptiodactyla* Wang, & Xue, 1998
  - 21. Mid tibia with 2 *pd* 22
  - Mid tibia with 1 *pd* 23
  - 22. Eye with distinct hairs, first antennal flagellomere about 2.5 times as long as wide, frontal setae 11–15, prementum about 2.5 times as long as wide  
*F. angusta* Nishida, 1994
  - Eye bare, first antennal flagellomere about 2 times as long as wide, frontal setae 8–9, prementum about 2 times as long as wide  
*F. similiserena* Feng & Xue, 2006
  - 23. Abdominal tergites with a median longitudinal stripe 24
  - Abdominal tergites with triangular marks 27
  - 24. Fore tibia black at base, at most knees yellow 25
  - Fore tibia yellow at base, all knees and basal part of all tibiae yellowish, cerci broad  
*F. subsimilis* Ringdahl, 1934
  - 25. Postoccipital bristles present 26
  - Postoccipital bristles absent, abdomen with thin greyish pollinosity  
*F. meridionalis* Chillcott, 1961a
  - 26. Proepimeral setae 2–3, cerci truncate on apical margin  
*F. cinerea* Chillcott, 1961b
  - Proepimeral seta 0–1, cerci strongly concave on apical margin  
*F. intermedia* Chillcott, 1961a
  - 27. Hind femur without distinct *pv* row 29
  - Hind femur with a row of *pv* in basal half 28
  - 28. Halteres brownish-yellow, frontal setae 9  
*F. peneserena* Nishida, 1972
  - Knob of halteres black, frontal setae 6–7  
*F. caucasica* Pont, 2015
  - 29. Fronto-orbital plate visible in profile 30
  - Fronto-orbital plate narrow, not visible in profile, hind tibia with numerous setulae on posteroventral surface  
*F. montana* Nishida, 1975

30. Postoccipital bristles present, occipital bristles long and irregular 31  
 – Postoccipital bristles absent, occipital bristles short and regular, abdomen with heavy brown pollinosity *F. immaculata* Malloch, 1913
31. Haltere brownish-yellow, width of 5<sup>th</sup> sternite at most subequal to its length  
*F. serena* (Fallén, 1825)  
 – Haltere dark brown, width of 5<sup>th</sup> sternite obviously broader than its length  
*F. kelaenohaltera* Wang & Sun, 2010

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