



## Two new species and one newly recorded species of Tachinidae from Chongqing, China (Diptera: Calyptratae)

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### Abstract

Tachinid specimens (Diptera, Tachinidae) from Yintiaoling National Nature Reserve, Chongqing, Oriental China were collected and examined, two species are recognized and new to science, *Billaea yintiaoling* sp. nov., *Leskia flavitugula* sp. nov., and *L. miranda* Mesnil is newly recorded for China. Here their descriptions, illustration and keys to species of Chinese species of *Billaea* and *Leskia* are provided. The specimens in this study are kept in the Insect Collection, Shenyang Normal University, China (SYNU).

**Key words:** tachinid fly, taxonomy, *Billaea*, *Leskia*, Yintiaoling

### Introduction

During our Invertebrate Resource Survey of Yintiaoling National Nature Reserve, Wuxi County, Chongqing, China organized by Prof. Zhisheng Zhang, Southwest University in Summer, 2022, more than 1000 tachinid specimens (Diptera, Tachinidae) were collected and examined, one species of *Billaea* Robineau-Desvoidy and one of *Leskia* Robineau-Desvoidy are recognized and are new to science, and *L. miranda* Mesnil is newly recorded for China. Here their descriptions, illustration and keys to species of Chinese species of *Billaea* and *Leskia* are provided.

The tachinid genera, *Billaea* (74 species) and *Leskia* (39 species) are all globally distributed (O'Hara and Henderson 2020). Totally there are 19 *Billaea* species recorded from eastern Palearctic and Oriental regions of Asia, including 14 species from China, reviewed by Zhang *et al.* (2015). And a key to all East Asian *Billaea* species was given in detail. Species of *Leskia* from East Asia were published and studied by Mesnil (1973), Crosskey (1976), Herting (1984), Tschorsnig and Herting (1994), Tschorsnig and Richter (1998), O'Hara, Shima & Zhang (2009) and O'Hara and Henderson (2020). But only one *Leskia* species was recorded from China.

### Material and methods

Specimens in the study were collected from the Yintiaoling National Nature Reserve, Chongqing, China. The morphological terminology and measurements used in the descriptions follows Cumming and Wood (2017) and Tschorsnig and Richter (1998). The specimens were examined with Zeiss Stemi SV11 stereomicroscopes. Consecutive digital images of heads, abdomens and bodies of male adults were taken with a Leica 205A microscope and images were blended with Leica Application Suite Version 4.12.0. Dissections of male terminalia were carried out following the method described by O'Hara (2002), and dissected terminalia were placed in glycerine in a small plastic tube pinned together with the source specimen. The tachinid specimens of this study were deposited in the Insect Collection of Shenyang Normal University, Shenyang (SYNU).

## Taxonomy

### Genus *Billaea* Robineau-Desvoidy

#### Key to species of *Billaea* of East Asia [Couplets 1–7 and 10–18 as in Zhang *et al.* (2015)]

- 8 Thorax with 4 longitudinal black vitta on presutural scutum; abdomen broadly reddish brown or reddish yellow on sides of tergites 3 and 4 . . . . . 9'
- Thorax with 5 or 4 longitudinal black vitta on presutural scutum, if median vitta present, 1–1.5 times as wide as inner vitta on presutural scutum; abdomen dark brown or reddish brown, triangular markings on tergites 3 and 4 completely separated from each other . . . . . 9
- 9 Vibrissa strong, longer than antenna; ocellar seta weak; abdomen dark brown to brown. In lateral view surstylus straight at posterior surface and slightly pointed at apex . . . . . *B. atkinsoni* (Baranov)
- Vibrissa weak, less than antennal length; ocellar seta stronger than upper frontal setae; abdomen brown, sometimes reddish yellow. In lateral view surstylus slightly bent posteriorly and bluntly rounded at apex . . . . . *B. chinensis* Zhang et Shima
- 9' Abdomen dark, covered with white pruinosity, posterior black band on tergites 3 to 5, which is triangularly extended anteriorly on both sides, syntergite 1+2 and tergite 3 without lateral marginal and median marginal setae . . . . . *B. robusta* Malloch
- Abdomen reddish yellow with posterior black band on tergite 4, and entire tergite 5 dark brown with yellowish white pruinosity on both sides, tergites 3 and 4 without triangular markings in male. Syntergite 1+2 and tergite 3 each with a pair of lateral marginal setae, tergite 3 with 2 median marginal setae . . . . . *B. yintiaoling* sp. nov.

#### *Billaea yintiaoling* Zhang sp. nov.

Figs 1–12

**Diagnosis.** Facial carina long, narrow and high, gena 0.5–0.6 of eye height. Fore tibia with 1 posterior seta, fore claws and pulvilli shorter than fifth tarsomere in male. Abdomen laterally reddish yellow to brown, without a pair of large triangular black markings on tergites 3 and 4, dark brown on posterior margin of tergite 4 and entire tergite 5.

**Description.** Body length 8.0–11.5 mm.

**Male. Head** (Figs 7–8). With whitish pruinosity, frontal vitta dark brown, parafacial with sparsely pruinosity on lower half, lunule reddish brown. Antenna with scape, pedicel and base of postpedicel reddish yellow, 5/6–7/8 postpedicel dark brown, palpi yellow. Vertex about 0.20 of head width; frontal vitta widened anteriorly, about 1.3 times as wide as fronto-orbital plate at narrowest point, fronto-orbital plate with 1–2 rows of fine short black hairs, 11–12 pairs of inclinate frontal setae, lowest setae at level with base of antenna. Parafacial nearly parallel-sided, 2–3 times as wide as postpedicel, nearly bare, only hairy on upper portion. Face rather well concave, facial carina long, narrow and high, visible antenna in lateral view. Gena 0.5–0.6 as high as eye height, lower margin of face protruding forward. Occiput flattened, mostly with yellowish hairs, with 2 rows of black hairs below postocular setae. Inner vertical seta about as long as 2/3 of eye height, ocellar setae usually stronger than upper frontal setae, vibrissa inserted above level of lower margin of face, equal or slightly longer than antenna. Postpedicel about 4 times as long as pedicel. Arista plumose, equal or slightly narrower than postpedicel width. Palpus as long as postpedicel and prementum, prementum 4 times as long as wide, labella large.

**Thorax** (Figs 5–6). Black with dense yellowish gray pruinosity; dorsum with 2 broad outer and 2 narrow inner dark brown longitudinal vittae and one brown median vitta, which narrower on presutural scutum and wider on postsutural scutum, inner vitta 1/4–1/3 as wide as pruinose portion between inner and outer vittae on presutural scutum, extending to anterior 2/5 of postsutural scutum, 2 broad outer vittae extending to anterior 2/3 of postsutural scutum. Scutellum black in ground color, with gray pruinosity on apical 2/3. Prosteronum 1.5–2 times as long as wide, proepisternum hairy, postpronotal lobe with 3 setae nearly standing in a straight line, 2 presutural and 2–4 postsutural acrostichal setae; 3 presutural and 4 postsutural dorsocentral setae, 2 postsutural intra-alar setae; 2–4 supra-alar setae, first and third weak and short or absent. Scutellum with three pairs of marginal setae, apical scutellar setae crossed and 1–3 pairs of short discal scutellar setae. One anepimeral seta, 2 katepisternal setae. Wing hyaline, tinged with brownish; tegula dark brown, and basicosta dark brown on basal 1/2 and reddish brown on apical 1/2. Relative lengths of costal sectors 2nd, 3rd and 4th approximately as 1:2:1, bend of vein M about right-angled, with short appendage, which is shorter than 1/2 length of crossvein r-m or without it; bend of vein M distinctly closer to wing margin than to crossvein dm-cu (2:1), cell  $r_{4+5}$  narrowly opened. Halter yellow. Lower calypter large, pale

yellowish white. Legs dark brown, tibiae brown to reddish brown, pulvilli pale yellowish. Fore tarsi subequal in length to head height, fore claws and pulvilli shorter than 5th tarsomere, fore tibia with a row of short anterodorsal setae on basal 3/5 and usually 1 (seldom 2) posterior seta, preapical anterodorsal slightly longer than preapical dorsal seta. Mid tibia with 2 anterodorsal, 2 posterodorsal and 1 ventral setae. Hind tibia usually with comb-like row of anterodorsal setae of rather uniform length, 1–2 posterodorsal (upper one shorter) and usually 1 ventral seta, 1 preapical anterodorsal and 1 preapical dorsal setae.

**Abdomen.** Long ovate, reddish yellow to brown in ground color, densely covered with pale yellowish white pruinosity on anterior 2/3 to 4/5 of tergites 3 to 5, and a wide dark brown longitudinal median vitta on tergites, and dark brown on posterior margins of tergite 4 and entire tergite 5. Syntergite 1+2 and tergite 3 each with 1–2 pairs of lateral marginal setae, median marginal setae absent on syntergite 1+2, 2 median marginal on setae tergite 3, a row of strong marginal setae on tergites 4 and 5. Tergites 3 to 5 without discal seta, with dense fine and recumbent hairs, sparser on venter. Sternite 5 and male terminalia as the figures (Figs 9–12). In ventral view, sternite 5 rectangular, V-shaped median cleft about 5/9 of the sternite length, lateral lobe bluntly round apically. In caudal view, cerci short, narrowed on distal half, pointed apically, and surstylus long and wide, and bluntly round apically. In lateral view cerci bent ventrally and surstylus broad, bluntly round, slightly bent posteriorly. Pregonite long and bent posteriorly, postgonite nearly as long as basiphallus, distiphallus long, membranous apical part slightly longer than sclerotized basal part.

**Female** (Figs 1–4). Vertex about 1/3 of head width and strongly widened anteriorly, parafacial about 3 times as wide as antenna, gena about 1/2 as high as eye height, 9–10 frontal setae, upper two smaller, 2 proclinate orbital setae, 1 upwardly directed prevertical seta, ocellar seta proclinate, about as long as inner vertical seta, longer than upper frontal setae, outer vertical seta about 1/2 as long as inner vertical seta. Thorax with 3 supra-alar setae, 4th and 5th tarsomere of legs flattened. Abdomen ovate, dark brown, yellow on lateral surface of syntergite 1+2 and tergite 3, grayish white pruinosity on anterior 2/3 of tergites 3 and 4 and anterior 4/5 of tergites 5. A pair of large triangular brown markings on posterior 1/2 of tergite 3, posterior 3/5 of tergite 4, and a trapezoid marking on tergite 5. Other characters are same as in male.

**Type material. Holotype male:** CHINA, Chongqing, Wuxi, Yintiaoling Natural Reserve, Lanying to Huangcaoping, 31.24°N, 109.53°E, elev. 1780–2070 m, 14.VIII.2022, C.T. Zhang. **Paratype:** 1 female, Yintiaoling Nature Reserve, Guanshan Forestry Station, 31.28°N, 109.45°E, elev. 1800–2100 m, 17.VIII.2022, C.T. Zhang.

**Etymology.** The specific name is taken from the country of the type locality, Yintiaoling Nature Reserve, Wuxi County, Chongqing, China.

**Distribution.** China (Chongqing).

**Remarks.** This species is similar to *B. robusta* Malloch from Malaysia, but differs from the latter by a pair of lateral marginal setae on abdominal syntergite 1+2 and tergite 3, and 2 median marginal setae on tergite 3, tergites 3 and 4 without dark triangular markings. The species is also close to *B. chinensis* Zhang *et* Shima from China (Shaanxi, Shanxi, Sichuan, Tibet, Yunnan) and Vietnam, but distinguished by the broader genal height, long, narrow and high facial carina, longer prementum and vibrissae, hind tibia with 1–2 posterodorsal (upper one shorter), 2 median marginal setae on tergite 3, without a pair of triangular dark brown markings on tergites 3 and 4.

## Genus *Leskia* Robineau-Desvoidy

### Key to Chinese species of *Leskia*

- 1 Abdominal syntergite 1+2 not medially excavate to posterior margin, without median marginal seta, tergite 5 with discal setae. Abdomen covered with some golden yellow pruinosity. Genal height about 1/7 of eye height. Prementum 3–3.5 times as long as wide ..... *L. aurea* (Fallén)
- Abdominal syntergite 1+2 medially excavate to posterior margin, tergites each without discal seta. Abdomen at most covered with grayish yellow or grayish white pruinosity. Genal height about 1/4 of eye height. Prementum 3–5 times as long as wide
- 2 Prementum about 3 times as long as wide. Tegula dark except base brownish yellow, costal spine absent or weak. Katameron only with a hair on anterior portion ..... *L. miranda* Mesnil
- Prementum 4–5 times as long as wide. Tegula yellow, costal spine present, slightly shorter than crossvein r-m. Katameron with 4–5 hairs. .... *L. flavitegula* sp. nov.

*Leskia flavitugula* Zhang sp. nov.

Figs 13–24

**Diagnosis.** Gena about 1/4 as high as eye height, occiput mostly with white hairs except a row of sparsely irregular black hairs below postocular setae, prementum about 4.5 times as long as diameter, shorter than head height. 2 presutural and 1 postsutural acrostichal setae, 3 presutural and 3 postsutural dorsocentral setae, scutellum with long lateral setae. Tegula and basicosta yellow, costal spine present, slightly shorter than crossvein r-m. Mid tibia with 1 anterodorsal seta. Abdominal syntergite 1+2 excavate to posterior margin, without median marginal seta, tergite 3 with 2 median marginal setae.

**Male. Head** (Figs 19, 20). Eye bare. Frontal vitta brownish yellow, fronto-orbital plate, parafacial and face yellowish white in ground color, covered with silvery white pruinosity. Occiput with silvery white pruinosity; lunule grayish yellow. Antenna yellow, except apical 1/3 of postpedicel dark brown on outer surface, arista dark brown except yellow basal 1/6, palpi pale yellow, prementum gleaming black. Frons slightly widened anteriorly, about 1/2 of eye width at narrowest point, frontal vitta at narrowest point slightly narrower than fronto-orbital plate, parafacial about as wide as postpedicel at middle in anterior view, lower margin of face protruding forward in lateral view, vibrissa at level of lower margin of face, fronto-orbital plate nearly bare, with sparse hairs on upper half, parafacial bare. Gena about 1/4 as high as eye height, 8–9 pairs of inclinate frontal setae, upper one and lower one smaller, about 0.6 times as long as other frontal setae, lowest frontal setae nearly level with apex of pedicel, outer frontal setae absent, ocellar setae slender, proclinate and hair-like, nearly parallel, about as long as upper frontal setae, inner vertical setae strong, crossed, about as long as 0.6 of eye height, outer vertical seta outward, about 0.4 times as long as inner vertical seta, a pair of smaller postocellar setae. Occiput mostly with white hairs except a row of sparsely irregular black hairs below postocular setae. A row of subvibrissae below vibrissa 0.3–0.4 times as long as vibrissa. Antenna short, scape erect, scape with a hook-like prolongation basally, postpedicel 3.5–4 times as long as wide and about 2.2–2.6 times as long as pedicel. Arista bare, thickened on basal 1/5. Palpus slightly longer than antenna. Prementum about 4.5 times as long as wide.

**Thorax** (Figs 17, 18). Yellow in ground color, with dense grayish yellow pruinosity on dorsum, pleura dark in ground color, with dense grayish white pruinosity. Scutellum dark yellow on apical 1/2–2/3 except for dark brown basally. Anterior spiracle pale yellowish; posterior spiracle reddish yellow. Thoracic dorsum with 4 dark longitudinal vittae, broad outer and narrow inner vittae on presutural scutum, the distance between inner and outer vittae about 4 times as wide as inner vitta, 2 presutural and 1 postsutural acrostichal setae, 3 presutural and 3 postsutural dorsocentral setae, 3 postsutural intra-alar setae, prealar seta slightly shorter than postsutural intra-alar seta, 2 supra-alar setae, anterior one stronger, 3 to 4 postpronotal setae, 3 strong basal setae set in straight line, a pair of strong discal scutellar setae arranged in parallel, about as long as scutellum, apical scutellar setae crossed, about as long as discal scutellar seta, subapical scutellar setae strong, slightly shorter than twice of scutellum, lateral scutellar seta 0.6–0.7 times as long as subscutellar seta, prosternum bare, 1.8 times as long as wide, propisternum bare, upper anepisternum with one setula anteriorly, shorter than prealar seta, 1 anepimeral seta, a tuft of fine hairs around it, 3 katepisterernal setae, lower one setula-like, katepimeron with a few hairs anteriorly, anatergite bare. Wing hyaline, tinged with pale yellowish brown, tegula and basicosta yellow. Lower caelypter pale yellowish white, with short fringe on outer margin, halter yellow, costal spine present, slightly shorter than crossvein r-m, vein first and 2nd costal section ventrally with fine hairs, relative lengths of costal sectors 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> approximately as 1:2:1; base of vein R<sub>4+5</sub> with 2–3 short black hairs dorsally and ventrally, vein M from crossvein dm-cu to its bend 5/7 distance between the bend and wing posterior margin, and about as long as dM-Cu. Legs slender, mostly yellow, with grayish white pruinosity, tarsi brownish yellow, claws blackish brown, pulvilli dark yellow. Fore claw and puvillus equal or longer than 5th tarsomere, fore tibia with a row of short anterodorsal setae on basal 1/2, 5–8 posterodorsal and 2 posterior setae, mid tibia with 1 anterodorsal seta, a row of irregular posterodorsal setae, 1 ventral and 2 posterior setae, hind tibia with a rather set row of anterodorsal setae of irregular length, 3–4 posterodorsal and 3 ventral setae, 2 preapical dorsal setae, preapical anteroventral seta distinctly longer than preapical postventral one.

**Abdomen.** Long ovate, mostly yellow, a dark broad median longitudinal vitta on tergites, tergite 4 with a pair of dark spots on lateral surface, mid-dorsal of tergites 4 to 5 reddish yellow, with grayish white pruinosity on tergites. Syntergite 1+2 nearly excavate to posterior margin and with a pair of lateral marginal setae; tergite 3 with a pair of lateral marginal setae and 2 median marginal setae, tergite 4 and 5 each with a row of marginal setae, tergites without discal setae. Sternites 2 to 4 each with 2 strong posterior setae, sternite 5 and male terminalia as the figures (Figs



21–24). Sternite 5 nearly square in ventral view, V-shaped cleft about 1/3 of the sternite length, lateral lobe convex, with some long setae, bluntly round at apex. In caudal view, cerci slender and narrowed at distal half and pointed apically, surstylus shorter, narrowed, pointed apically. In lateral view, cerci straight at distal half, its apex slightly bent ventrally, surstylus bluntly round at distal half. Distiphallus with some small spines on sclerotized surface and near membranous part. Pregonite nearly triangular, postgonite long and wide, with some setulae on dorsal surface.

**Female.** Frons about as wide as eye, 2 proclinate outer orbital setae, 1–2 pairs of discal scutellar setae, the distance between vein M from crossvein dm-cu to bending slightly shorter than crossvein dm-cu. Fore claw and puvillus shorter than 5<sup>th</sup> tarsomere. Abdomen black, with dense pruinosity on tergites 3 and 4, sternite 3 with 3 pairs of later marginal setae.

**Type material. Holotype male:** China, Chongqing, Wuxi, Yintiaoling Nature Reserve, Guanshan Forestry Station, Tianchiba to Daqiaowan, 31.31°N, 109.49°E, elev. 1079–1968 m, 24.VI.2022, R.Q. Dong. **Paratypes:** 1 male and 1 female, China, Hubei, Yingshan, Huanggang Taohuachong to Niubeijiliang, 600–1500 m, 24.VI.2014, P. Hou.

**Etymology.** The specific name is derived from the Latin adjective *flavus* (yellow) and Latin suffix, *-tegula*, referring to its wholly reddish yellow tegula.

**Distribution.** China (Chongqing, Hubei).

**Remarks.** This species is similar with *L. miranda* Mesnil, but distinguished by the yellowish tegula; prementum 4–5 times as long as wide; lateral scutellar setae longer, costal spine slightly shorter than crossvein r-m; hind tibia with 3 short ventral setae, longer abdomen, dark longitudinal median vitta as wide as the distance between median marginal setae on tergite 3.

### ***Leskia miranda* Mesnil, 1973 (New record for China)**

Figs 25–36

*Leskia miranda* Mesnil, 1973: 1129. Type locality: Tsurugi, Honshu, Japan.

Herting, 1984: 127 (Palaeartic Catalogue). O'Hara, Shima & Zhang, 2009: 151 (Catalogue of China).

Tschorsnig & Richter, 1998: 784 (Palaeartic key).

**Diagnosis. Male** (Figs 29–36). Eyes bare. Antenna yellow, postpedicel brown on apical half, pedicel, thorax, abdomen and legs usually more or less yellow. Frons about 1/4 of head width or 2/3 of eye width, frontal vitta at narrowest point about 1/3 as wide as fronto-orbital plate. Lower margin of face protruding forward in lateral view. Antenna about as long as 2/3 of face height. Postpedicel 2.5–3 times as long as pedicel. Prementum about 3 times as long as wide. Genal height 0.3 of eye height, ocellar setae developed, about as long as upper frontal setae. Occiput with 2 to 3 rows of black hairs below postocular setae. Thoracic dorsum with 4 dark longitudinal vittae, 4 postpronotal setae, 3 strong basal setae set in straight line, 3 presutural and 3 postsutural dorsocentral setae, 0–1+3 postsutural intralar setae; apical and lateral scutellar setae long hair-like, about 1/3 as long as subscutellae seta; 3 katepisterernal setae. Tegula reddish brown on basal 1/2, dark to dark brown on apical 1/2, basicosta reddish yellow, costal spine absent. Fore claw slightly longer than 5th tarsomere, fore tibia with 1 posterior seta, mid tibia with 1 anterodorsal seta, hind tibia with 1 anterodorsal, 2 posterodorsal and 1–2 anteroventral setae, 2 preapical dorsal setae, preapical anteroventral seta distinctly longer than preapical postventral seta. Abdomen long ovate, syntergite 1+2 nearly excavate to posterior margin, with a dark longitudinal median vitta on tergites 3 and 4, which narrower than the distance between median marginal setae on tergite 3, tergite 5 densely covered with yellowish pruinosity, tergites 3 and 4 without median discal setae, tergites 3 to 5 usually with 2 brown lateral marginal markings.

**Female** (Figs 25–28). Frons slightly wider than eye width, 6–7 pairs of crossed frontal setae, upmost one strongest and reclinate, two outer orbital setae proclinate, one previttal seta reclinate, inner vertical seta strong and crossed, outer vertical seta about 1/2 as long as inner vertical seta, Prementum 3–4 times as long as wide. Legs yellow, claws shorter than 5th tarsomere, tarsi brownish, mid and hind femora brown at apex. Abdomen yellow, with a dark median longitudinal vitta and dark posterior transverse band on tergites 3 to 5, densely covered with grayish white pruinosity on median longitudinal vitta area of tergite 3 and anterior 4/5 of tergites 4 and 5. Other characters are same as male.

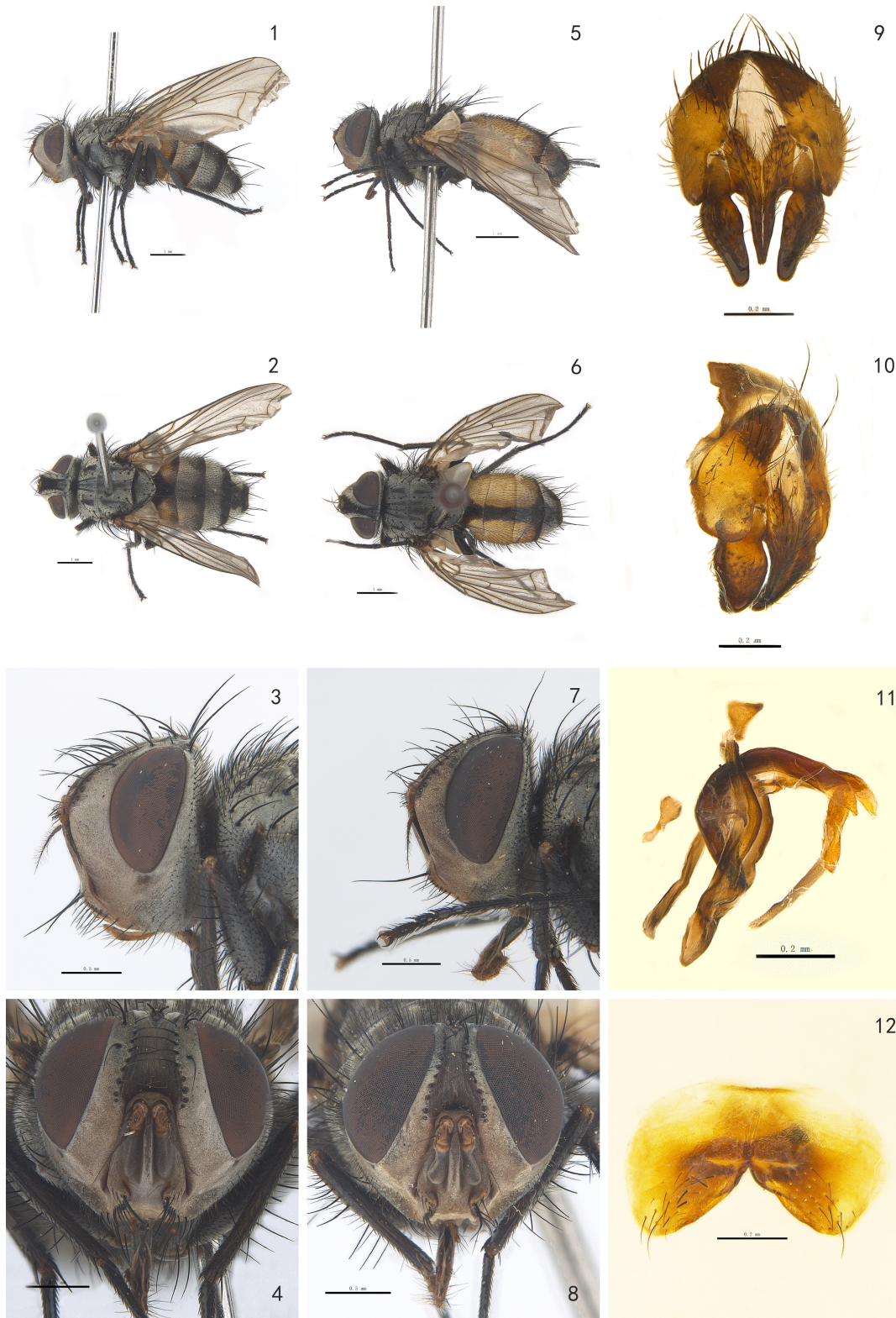
**Specimens examined. CHINA: Chongqing,** 1 male, Wuxi, Yintiaoling Nature Reserve, Guanshan Forestry Center, Shizhuzi, 1987–2154 m 110.15°E, 31.85°N, elev. 1987–2154 m, 11.VIII.2022, Y. Li. **Sichuan:** 1 male,

Hongkou, elev. 1000–1150 m, 12.VIII.2009, Dujiangyan, Zhou YY; 1 female, Mount. Emei, elev. 1200–2500 m, 20.VIII.2013, C.T. Zhang; 1 male, Dujiangyan, 103.29°E, 30.55°N, elev. 900–1100 m, 26–28.VII.2015, Q. Wang. **Hubei:** 1 male, Shennongjia, Yinyuhe, 2200 m, 31.VII.2007, Q.F. Liu. **Liaoning:** 2 females, Benxi, Heshangmao Nature Reserve, 124.21°E, 42.16°N, elev. 588–650 m, 29–31.VIII.2020, C.T. Zhang and X.Y. Li; 1 female, Benxi, Heshangmao Nature Reserve, 124.21°E, 42.16°N, elev. 588–650 m, 5–6.IX.2020, Y.Z. Wang and B.H. Zhang.

**Distribution.** China (Chongqing, Sichuan, Hubei, Liaoning); Japan (Honshū, Kyūshū); Russia (Southern Far East).

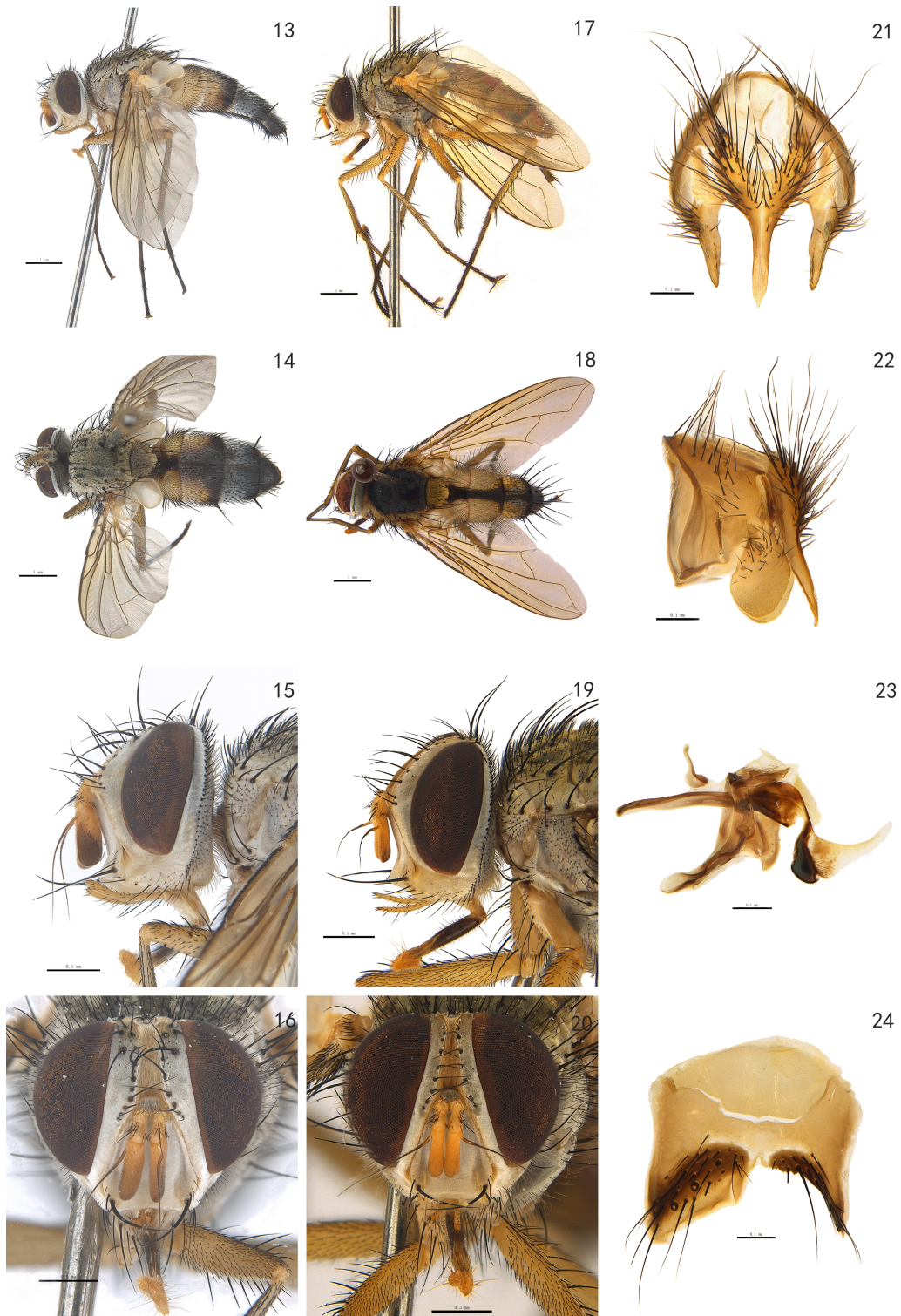
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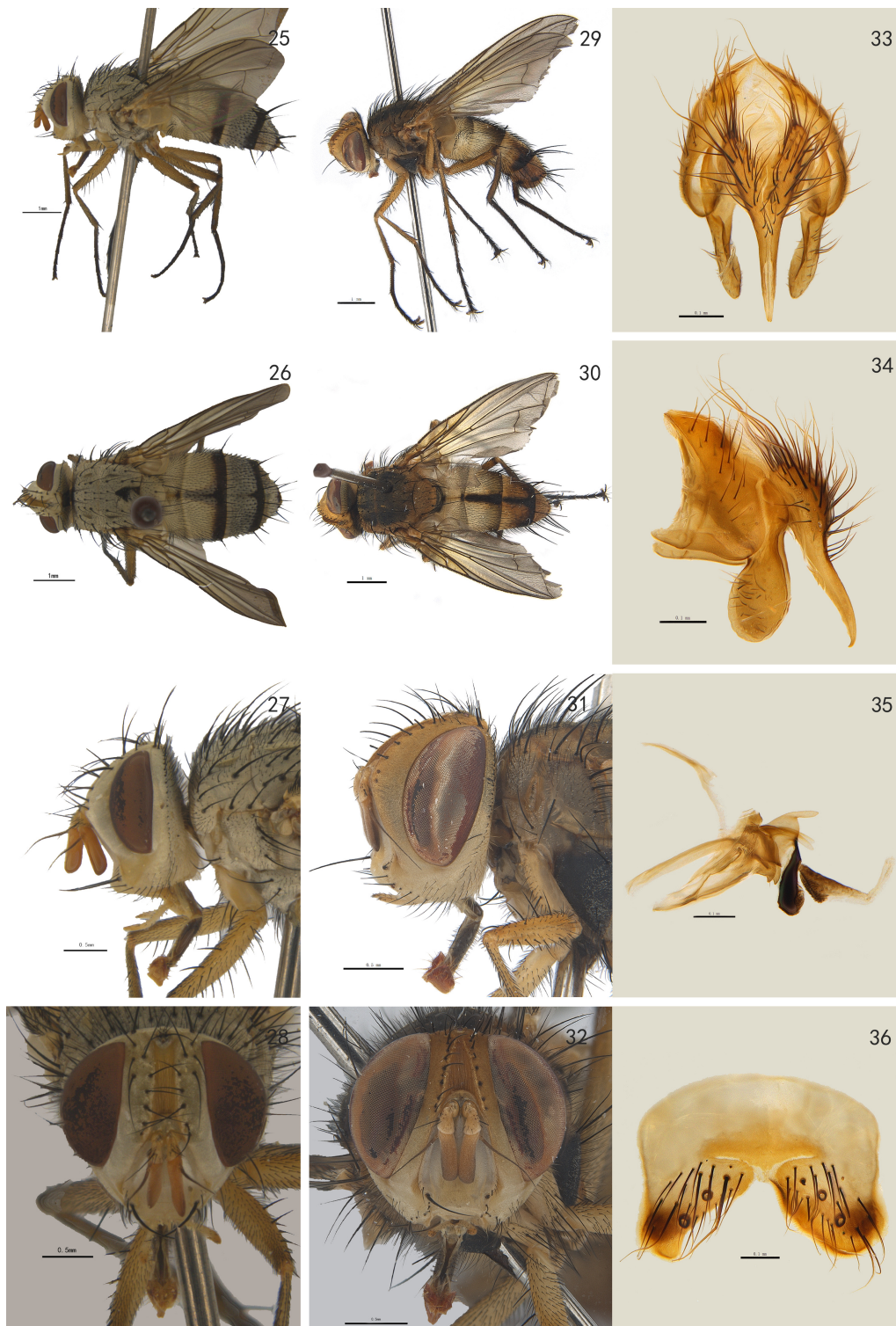


**FIGURES 1–12.** *Billaea yintiaoling* Zhang sp. nov., 1–4, female, 5–12, male. 1–2, 5–6. Body in lateral and dorsal views. 3–4, 7–8. Heads in lateral and anterior views, 9–10. Epandrium, cerci and surstyli in caudal and lateral views. 11. Phallus: Aedeagal apodeme, ejaculatory apodeme, hypandrium, pregonite, postgonite, basiphallus, distiphallus in lateral view. 12. Sternite 5.





**FIGURES 13–24.** *Leskia flavitugula* Zhang sp. nov., 13–16, female, 17–24, male. 13–14, 17–18. Body in lateral and dorsal views. 15–16, 19–20. Heads in lateral and anterior views. 21–22. epandrium, cerci and surstyli in caudal and lateral views. 23. Phallus: Aedeagal apodeme, ejaculatory apodeme, hypandrium, pregonite, postgonite, basiphallus, distiphallus in lateral view. 24. Sternite 5.



**FIGURES 25–36.** *Leskia miranda* Mesnil, 1973, 25–28, female, 29–36, male. 25–26, 29–30. Body in lateral and dorsal views. 27–28, 31–32. Heads in lateral and anterior views. 33–34. epandrium, cerci and surstyli in caudal and lateral views. 35. Phallus: Aedeagal apodeme, ejaculatory apodeme, hypandrium, pregonite, postgonite, basiphallus, distiphallus in lateral view. 36. Sternite 5.



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