



## Seven new species of *Strongylophthalmyia* Heller, 1902 (Diptera: Strongylophthalmyiidae) from the Eastern Palaearctic and Oriental Regions with notes on peculiar rare species

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### Abstract

Seven species of *Strongylophthalmyia* are described as new species: *Strongylophthalmyia armipes* n. sp. (Malaysia), *S. biloba* n. sp. (Indonesia), *S. bukittinggiana* n. sp. (Indonesia), *S. minutissima* n. sp. (Thailand), *S. prominens* n. sp. (Vietnam), *S. strigosa* n. sp. (China), *S. vichrevi* n. sp. (Russia). New data on morphology and distribution of *S. bifasciata* Yang et Wang 1992 and *S. malayensis* Evenhuis, 2016 are provided.

**Key words:** systematics, Vietnam, Malaysia, Indonesia, Thailand, China, Russia

### Introduction

Strongylophthalmyiidae is a small family of acalyptrate Diptera containing two genera, *Strongylophthalmyia* Heller, 1902 and *Nartshukia* Shatalkin, 1993 (Galinskaya & Shatalkin 2016). The genus *Strongylophthalmyia* is found in the Nearctic, Palaearctic, Oriental and Australian Regions, displaying its highest diversity in the Oriental (Evenhuis 2016). Including the new species described in this study, there are 87 known species in this family.

This study is a continuation of the study on *Strongylophthalmyia* systematics begun in an earlier article on the genus by Galinskaya & Shatalkin (2016). Recently, there were two detailed reviews in addition to our article (Iwasa & Evenhuis 2014; Evenhuis 2016), in which the morphology, biology, systematics, distribution and history of Strongylophthalmyiidae were examined in detail; so these aspects are not discussed here.

### Materials and methods

The new species described in this study are rare. There are no studies with an assessment of the taxonomic significance of male genitalia characters for *Strongylophthalmyia* to date. There is some information on male genitalia in some species of the *S. crinita* group (see, Shatalkin 1996). The coloration of body (head, thorax, legs, wings and abdomen) is important for identification of species in this family. Hence, genitalic characters are not used in the descriptions of new species in this study.

The types of the new species are deposited in the collection of Zoological Museum of Moscow University (ZMUM), Naturalis Biodiversity Center, Netherlands (NBCN) and National Museum Prague (NMPC).

In the key and descriptions of species, the morphological terminology, including abbreviations of wing veins, and wing cells, follows Cumming & Wood (2009). Labels of specimens are quoted verbatim.

Several terms that are not universally accepted are explained below.

Frontal index is the ratio of distance from anterior margin of frons to hind ocelli and distance from hind ocelli to inner vertical seta. Costal index is the ratio of section of C between R<sub>1</sub> and R<sub>2+3</sub> and section of C between R<sub>2+3</sub> and

$R_{4+5}$ . Discal index is the ratio of section of  $M_{1+2}$  between r-m and dm-cu and section of  $M_{1+2}$  between bm-cu and r-m. Medial index is the ratio of section of  $M_{1+2}$  between r-m and dm-cu and section of  $M_{1+2}$  between dm-cu and wing margin

## Species descriptions

### *Strongylophthalmyia armipes*, n. sp.

(Fig. 1)

**Material examined.** *Holotype*: ♂, Malaysia, Sabah st 1660 m, Mt. Kinabalu (6.025°N, 116.59 °E), 18.II.2014, leg. N.Vikhrev. *Paratype*: ♂, same locality as holotype (ZMUM).

**Diagnosis.** This new species is characterized by the following combination of characters: male flagellomere unmodified, without dorsal process; fore femur without dorsal spicules; thorax and abdomen entirely black; all coxae and all femora entirely black; mesonotum matte, covered with short pale setulae presuturally, and with rows of black setae postsuturally; vein  $R_{2+3}$  is short: costal index = 0.7; wing with apical spot, brownish median crossband, and weak darkening in anterior part at level of  $R_s$ ; tarsi with two basal segments yellow and three distal segments blackish; basal process on male hind femur with three black setae and one yellowish setula.

Among *Strongylophthalmyia* species with black coxae, *S. armipes*, n. sp. can be distinguished by short pale setulae covering the presutural mesonotum, 4 (1+3) black dorsocentral setae, and by the short vein  $R_{2+3}$  (costal index = 0.7).

**Description. Male.** *Head* black, globose in lateral view, its length subequal to its height; frons black with small yellow spot above antenna (this spot extending posteriorly as narrow stripe along frons in paratype). Anterior width of frons about 0.7 times as long as its width at level of first ocellus, frons height equal to its anterior width; frontal index = 1.8. Occiput slightly convex (in dorsal view). Face yellowish with row of short setulae (0.04 mm) along suture. Gena with silver grey pubescence, setae absent. Scape and pedicel yellowish brown, first flagellomere dark brown, narrowly yellowish basally, about 1.2 times as long as wide; about 2.8 times as long as eye diameter; marginal setulae short (0.03 mm); arista dark brown, bare. Mouthparts dark brown, palpus brownish-yellow. Two strong reclinate fronto-orbital setae, 2 short fronto-orbital setulae anteriorly to setae, 1 ocellar seta, 1 postocellar seta, 1 inner and 1 outer vertical seta.

*Thorax* entirely black. Mesonotum matte with thin but distinct punctation, sparsely covered with short pale setulae presuturally and with rows of black setae postsuturally; pleuron black, shining; scutellum bare, matte. One very large presutural intra-alar seta; 4 (1+3) large dorsocentral setae; acrostichal setulae situated in two rows with irregular setulae between acrostichal and dorsocentral rows, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta and one short discal scutellar seta. All setae black.

*Legs.* Coxae blackish, trochanters yellow; fore femur blackish, fore tibia yellow, brownish in basal half; mid and hind femora and tibiae black; tarsi yellow, three distal segments blackish. Hind trochanter with posterior blackish tubercle; hind femur basally with round posteroventral process, without ventral setulae (male of *Strongylophthalmyia papuana* Iwasa & Evenhuis 2014 with three or four ventral setulae), and with smaller sub-basal process bearing three black setae and one yellowish setula (Fig. 1e).

*Wing* with narrow apical spot, with median transverse band at level of dm-cu vein and with weak darkening in anterior part at level of  $R_s$ . Right side of median band crossing vein  $R_{2+3}$ . Vein  $R_{2+3}$  short: costal index = 0.7. Veins  $R_{4+5}$  and  $M_{1+2}$  almost parallel apically. Discal index = 2.9; medial index = 0.6. Cell bm about 0.5 times as long as cell dm. Calypter brownish grey with fan of very long light setulae on margin. Halter with darkish stem and whitish knob.

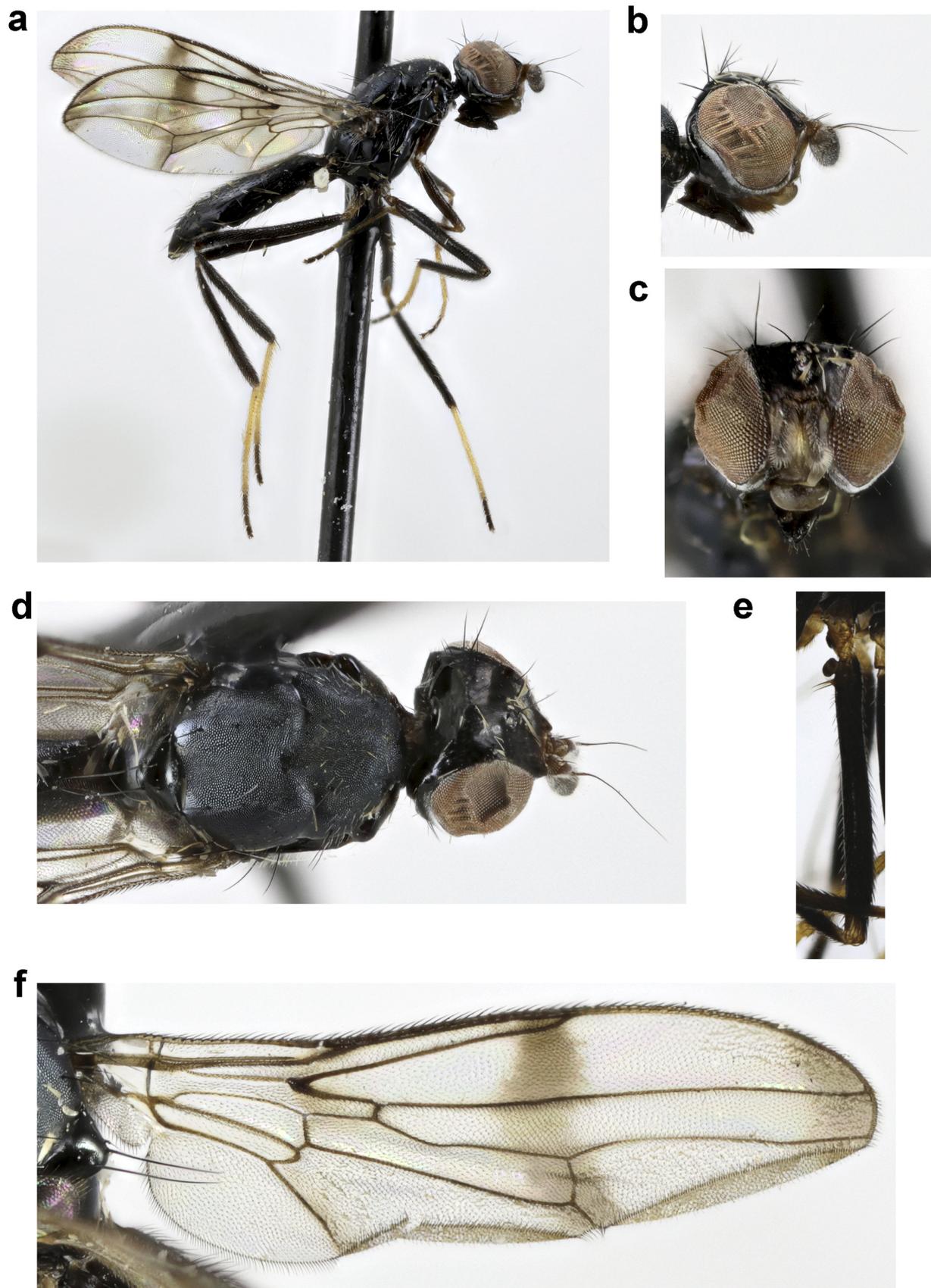
*Abdomen* entirely black, faintly shining, with distinct punctation.

*Lengths.* Body, 4.0 mm; wing, 3.3 mm.

**Female** unknown.

**Distribution.** Malaysia.

**Etymology.** The specific name refers to the male hind legs armed, bearing various appendages.



**FIGURE 1.** *Strongylophthalmyia armipes* n. sp. Male holotype: a—habitus, lateral view; b—head, lateral view; c—head, anterior view; d—head and thorax, dorsal view; e—hind femur; f—wing.

***Strongylophthalmyia biloba*, n. sp.**

(Figs. 2, 3)

**Material examined.** *Holotype*: ♂, Fort de Kock (Sumatra), 920 m, 1925, leg. E. Jacobson. *Paratype*: ♀, same locality as holotype (NBCN).

**Diagnosis.** The male of the new species is characterized by a prominent dorsal process on the first flagellomere and belongs to the *punctata* cohort (sensu Evenhuis, 2016). In this cohort males of some of species are characterized by anepisternum with small tuft of silvery white or dark brown to black setulae near katepisternum. Males of the known species that have these setulae are clearly distinguishable. At first, we did not find them in the new species. Re-examination revealed that, from some angles of view, structures similar to the silvery setulae are visible.

Since this tuft of setulae near the katepisternum is hardly visible, below we provide two revised fragments of Evenhuis's key that will make it possible to identify our new species among species of the *punctata* group. In one case (version I), the male of the new species is regarded as having the anepisternal tuft of setulae; in the other case (version II), it is regarded as not having these setulae. Evenhuis (2016, p. 238) mentioned that the holotype of *S. spinosa* Frey has the dorsal antennal processes of both antennal flagellomeres broken off and missing. Based on other characters, Evenhuis (2016) suggested that the male of *S. spinosa* is characterized by S-shaped dorsal antennal process. In the first revised fragment (version I) we moved *S. spinosa* in the key, so as not to use the character of dorsal antennal process.

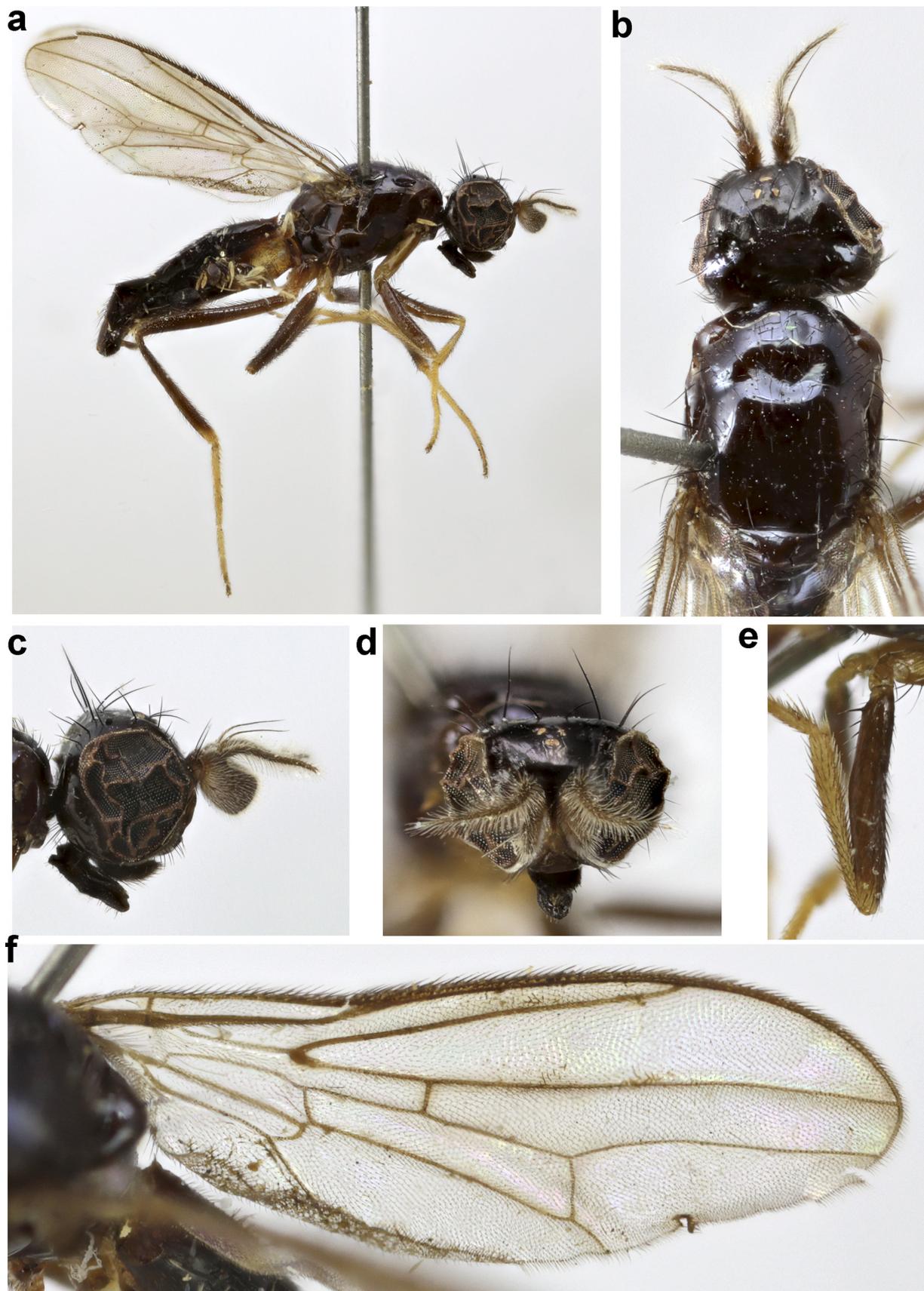
**Version I. Anepisternum with visible small tuft of hairs.**

- 2. Anepisternum with small tuft of silvery white or dark brown to black hairs near katepisternum (Evenhuis 2016, Fig. 38) . . . 2a
- Anepisternum without tuft, scattered hairs may be present dorsally or ventrally (Evenhuis 2016: Fig. 40) . . . . . 12
- 2a. Anterior part of thorax yellowish, black elsewhere (Evenhuis, 2016, Fig. 43) (Burma) . . . . . *S. spinosa* Frey (see couplet 9)
- Anterior part of thorax black (yellowish brown color may be present on postpronotum only) . . . . . 2b
- 2b. Dorsal antennal process not S-shaped or distinctly kinked (e.g., Fig. 2c; Evenhuis 2016: Figs 27, 36, 37) . . . . . 2c
- Dorsal antennal process distinctly S-shaped or distinctly kinked (Evenhuis 2016: Figs 22, 33, 34) . . . . . 4
- 2c. Hind femur (Fig. 2a) dark brown or black, yellow at extreme apex . . . . . 3
- Hind femur yellow, brown apically (see *S. thaili* L.Papp in Galinskaya & Shatalkin, 2016: Fig. 10a) . . . . . 11
- 3. Fore femur (Evenhuis 2016: Fig. 39, 68) ventrally with paired subbasal cluster of yellowish white hairs (Peninsular Malaysia) . . . . . *S. lowi* Evenhuis
- Fore femur (Fig. 2e) ventrally with strong black thorn-like spicule (Sumatra) . . . . . *S. biloba*, n. sp.
- 4. Fore femur brown to black, usually slightly swollen medially; anepisternal tuft black to dark brown . . . (Sabah, Sarawak) . . . . . *S. borneensis* Evenhuis
- Fore femur yellowish, concave in lateral view, not usually swollen medially; anepisternal tuft white . . . . . 5

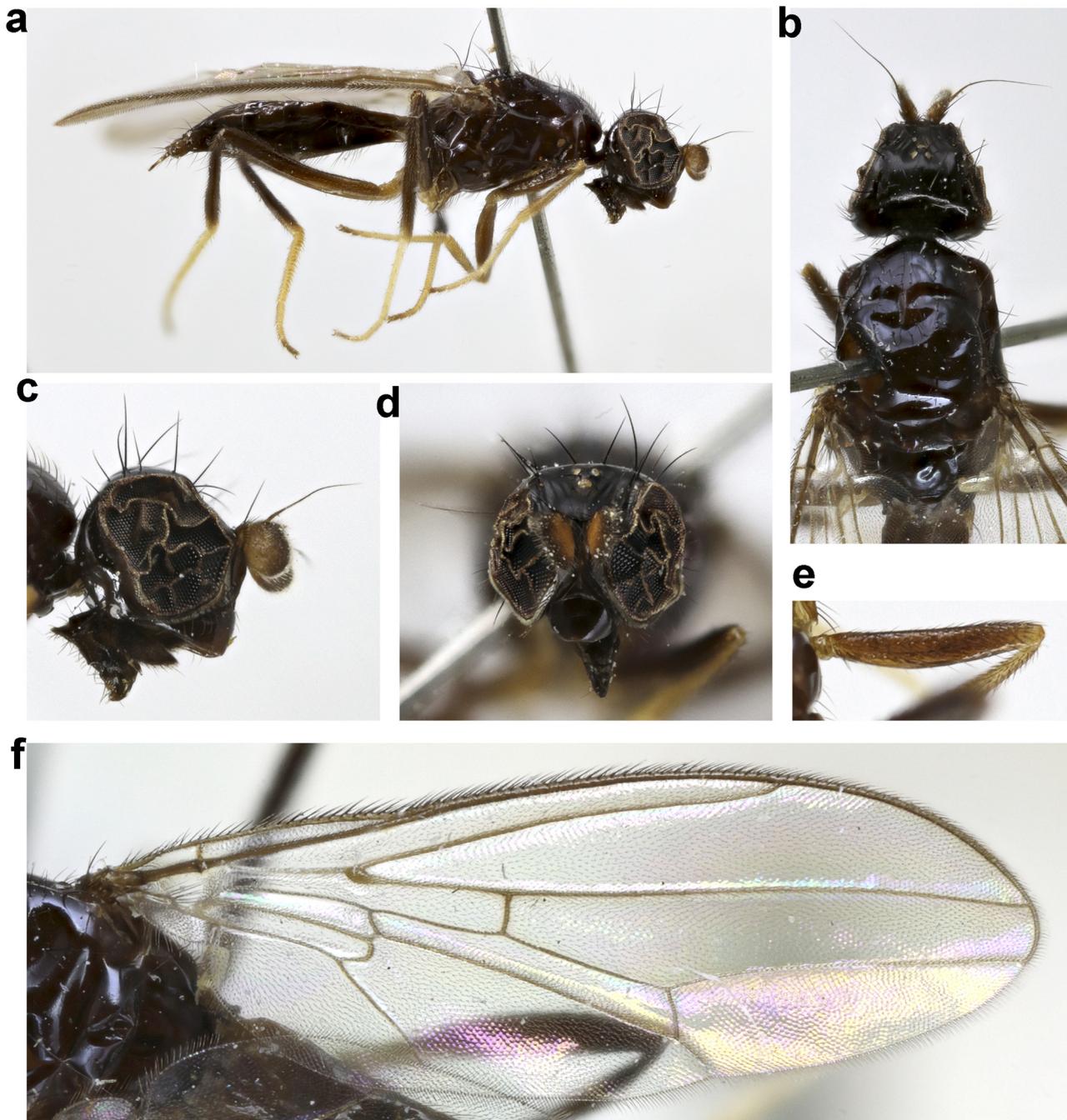
**Version II. Anepisternum without visible small tuft of hairs.**

- 17. Pleura brown; abdominal tergites brown. . . . . 17a
- Pleura yellow; abdominal tergites yellow (Sumatra) . . . . . *S. oxybeles* Evenhuis
- 17a. R<sub>2+3</sub> ending in costa before level of crossvein dm-cu. Legs yellow; fore femur (Evenhuis 2016: Fig. 69) dorsally with small patch of 10 very short black thorn-like spicules mid-dorsally, ventrally with subbasal thorn-like cluster of orange-yellow hairs. Male flagellomere yellow, ovoid; dorsal antennal process nearly straight (Evenhuis 2016: Fig. 28) (Peninsular Malaysia) . . . . . *S. malayensis* Evenhuis
- R<sub>2+3</sub> ending in costa well beyond level of crossvein dm-cu. Femora, mid and hind tibiae dark brown narrowly yellow proximally and distally; fore femur with 5 short black thorn-like spicules dorsally and with subbasal strong black thorn-like spicule ventrally (Figs 2a,e). Male flagellomere mostly dark brown with yellowish base, subrhomboid, dorsal antennal process slightly curved in base (Fig. 2c) (Sumatra) . . . . . *S. biloba*, n. sp.

The male of the new species differs from the males of other species of the *punctata* group in having the fore femur (Fig. 2e) ventrally with a subbasal strong black thorn-like spicule. Externally it is very similar to males of *S. lowi* Evenhuis, 2016 and *S. borneensis* Evenhuis, 2016. *S. lowi* is characterized by yellow tibiae, an apically rounded flagellomere, and the fore femur has 4 strong black thorn-like spicules dorsally (length of these spicules is subequal to half of femur width), and a paired subbasal cluster of yellowish white setulae ventrally (in *S. biloba*, n. sp. with five short black thorn-like spicules). *S. borneensis* differs in having black fore tibia, mid and hind femora yellow in the basal 1/5, dorsal process of flagellomere S-shaped, arista shorter than flagellomere, R<sub>2+3</sub> ending on costa at level of crossvein dm-cu, and costal index = 0.84.



**FIGURE 2.** *Strongylophthalmyia biloba* n. sp. Male holotype: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, lateral view; d—head, anterior view; e—fore femur; f—wing.



**FIGURE 3.** *Strongylophthalmyia biloba* n. sp. Female paratype: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, lateral view; d—head, anterior view; e—fore femur; f—wing.

**Description. Male (Fig. 2).** *Head* black, shining, 0.9 times as long as high; frons entirely black, moderately widened towards vertex, its anterior width about 0.8 times as great as its width at level of first ocellus, its height about 1.3 times as great as its anterior width; frontal index = 0.9. Occiput weakly convex (seen from above). Face yellowish-brown with row of short setulae (0.08 mm) along suture. Gena yellowish with golden pubescence; length of setulae 0.014–0.02 mm. Antenna yellowish brown, flagellomere sub-rhomboid with rounded dorsal and ventral corner apically, mostly dark brown with yellowish base, which is wider ventrally; with long dorsal tubular process 1.8 times as long as flagellomere; marginal setulae on dorsal process pale, long (0.08 mm), about 3 times as long as maximum width of dorsal process; arista longer than flagellomere, dark brown, bare. Palpus boat-shaped, dark brown, with straight dorsal margin and arcuate ventral margin, on top only with short black setae. Mouthparts dark

brown. Frons between upper fronto-orbital and outer vertical setae without short setulae. Three large reclinate fronto-orbital setae (middle one longest), one short fronto-orbital setulae anteriorly to setae, one ocellar seta, one postocellar seta, one inner vertical seta, one outer vertical seta.

*Thorax* entirely black, shining. Mesonotum shining; two long postsutural and one short presutural dorsocentral setae; long black hair-like setulae in dorsocentral and acrostichal rows; one presutural intra-alar seta, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta, and one setula-like short lateral scutellar seta; anepisternum with tuft of white hairs medially, sometimes barely visible.

*Legs.* Coxae and trochanters yellow; fore femur brownish, narrowly yellow proximally and distally; fore tibia yellow; mid and hind femora dark brown; mid and hind tibiae dark brown, narrowly yellow distally; tarsi brightly yellow, segment 5 dark brown. Fore femur in basal half with five short black spines dorsally and with three subbasal spines (basal spine very long) ventrally (Fig. 2e).

*Wing* (2a, f) unpigmented. Costal index = 1.2.  $R_{4+5}$  and  $M_{1+2}$  almost parallel apically. Discal index = 1.4. Medial index = 0.55. Cell bm slightly less than 0.5 times as long as cell dm. Calypter yellowish with fan of very long yellowish setulae on margin. Halter with whitish knob and yellowish stem.

*Abdomen* black, shining, yellowish basally.

*Lengths.* Body, 4.5 mm; wing, 3.8 mm.

**Female** (Fig. 3) differs from male as follows: first flagellomere with dorsal process short and cone-like; marginal darkening of first flagellomere narrower, its length no more than 1/3 of the length of the segment. Anepisternum without tuft of white setulae medially. Body length 4.3 mm; wing length 3.9 mm. Females of *S. biloba*, **n. sp.** are characterized by a small cone-like projection on the postpedicel that is also seen in a minority of other congeners.

**Distribution.** Indonesia (Sumatra).

**Etymology.** Specific epithet refers to the bilobate shape of the first flagellomere.

### ***Strongylophthalmyia bukittingiana*, n. sp.**

(Figs. 4, 5)

**Material examined.** *Holotype*: ♂, Fort de Kock (Sumatra), 920 m, 1925, leg. E. Jacobson. *Paratypes*: 1 ♂, 3 ♀, same locality as holotype (NBCN).

**Diagnosis.** This new species can be distinguished by the following combination of characters. Male antennal flagellomere unmodified, without dorsal process; fore femur without dorsal spicules, although stiff setulae may be present. Palpus bicoloured. Mesonotum black. Postpronotum black. Frons entirely black. Arista dark brown, bare. Femora yellow, hind femur with wide brownish darkening. Hind tibia brownish with median one third yellowish. Wing unpigmented. Two dorsocentral setae. Large species, body length 4.0–4.4 mm.

The two other species of the genus with a bicoloured palpus, *S. indica* Shatalkin, 1996 and *S. dichroa* Galinskaya & Shatalkin, 2016, are distinguished from *S. bukittingiana*, **n. sp.** by short yellow setulae covering the mesonotum and by a single dorsocentral seta. *Strongylophthalmyia indica* further differs in having the frons yellow anteriorly and the coxae are entirely yellow. The hind tibia of *S. dichroa* has a slight darkening in the basal half. *Strongylophthalmyia bukittingiana* has a long saber-shaped postpronotal seta (Figs 4b, 5b,d), and the hind trochanter with yellow lamellar projection bearing thick setae and setulae in both sexes is unique to this species.

**Description. Male** (Fig. 4). *Head* black, slightly shorter than high; frons entirely black, shining, slightly widened towards vertex, its anterior width about 0.8 times as long as its width at level of fore ocellus, its height (up to hind ocelli) about 0.9 times as great as its anterior width; frontal index = 1. Occiput black, weakly convex (seen from above). Face brownish, with row of short setulae along suture. Gena yellow with whitish pubescence. Antenna yellow, flagellomere dark brown with yellowish tint, paler on inner-basal margin; flagellomere small, 0.2 times as wide as eye height; flagellomere 0.67 times as long as its width; marginal setulae of flagellomere pale and moderately long. Arista dark brown, bare. Palpus elongate, yellow basally and blackish in apical half. Mouthparts dark brown. Frons between upper orbital and outer vertical setae without short setulae. Three reclinate fronto-orbital setae (middle one longest), one ocellar, one postocellar, one inner vertical, one outer vertical.

*Thorax* black. Mesonotum slightly matte, with very thin punctation and with setulae arranged in lines; scutellum matte. Postpronotum with long (0.2 mm) strongly bent seta (Fig. 4b). One dorsocentral, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one thick apical scutellar seta.

*Legs* yellow; hind coxa brownish, hind femur with apical quarter brown; hind tibia brownish with medial third yellowish. Hind trochanter with yellow lamellar projection bearing thick setae and setulae. Hind femur basally with mushroom-shaped process bearing 3 short setulae apically.

*Wing* unpigmented, with faint darkening apically. Vein  $R_{2+3}$  long: costal index = 1.6.  $R_{4+5}$  and  $M_{1+2}$  almost parallel apically. Discal index = 2.5, medial index = 0.67. Cell bm about 0.43 times as long as cell dm. Calypter light yellow with fan of very long yellowish setulae on margin. Halter with darkish stem and whitish knob.

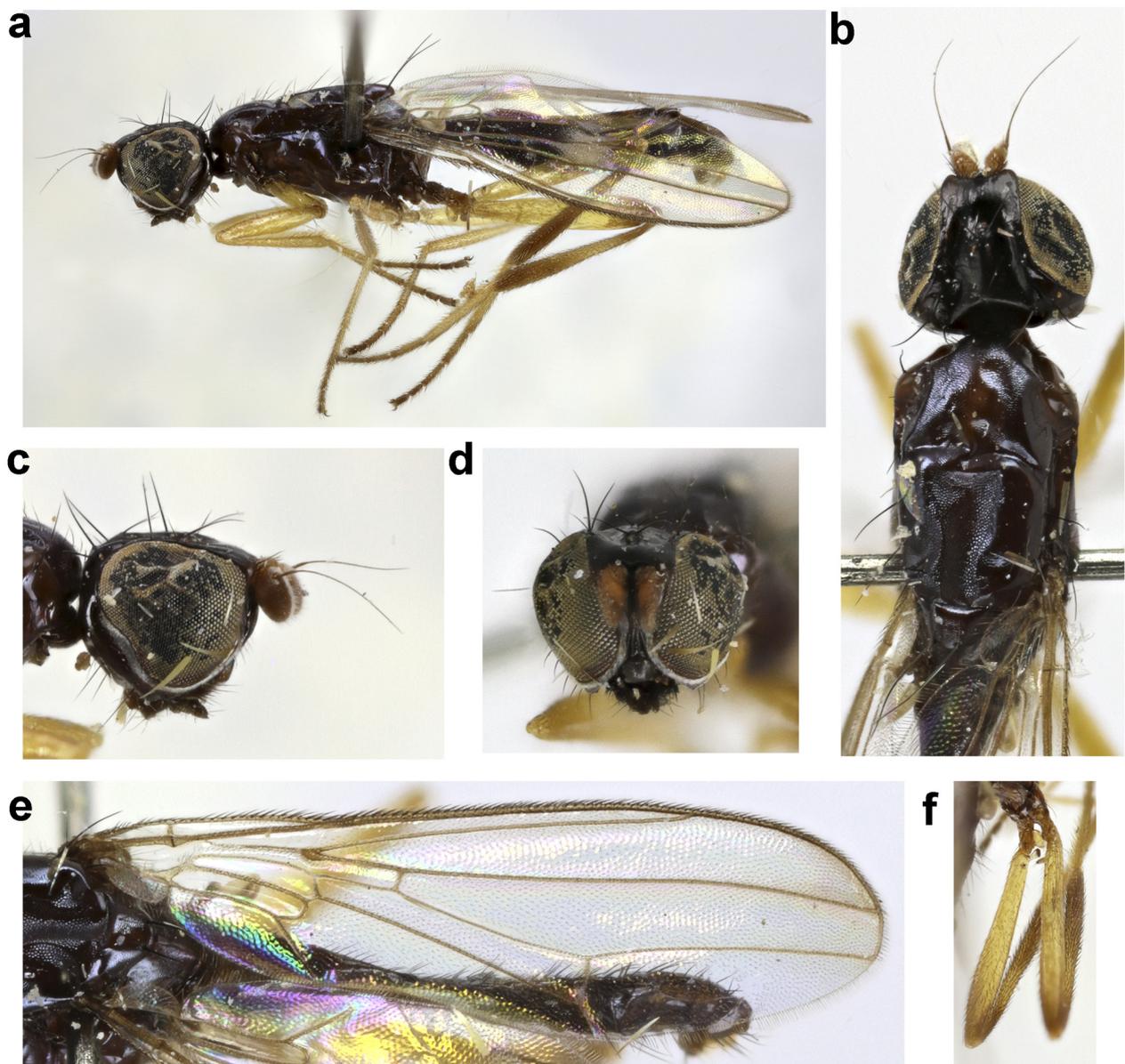
*Abdomen* black, slightly shining.

*Lengths*. Body, 4.2 mm; wing, 3.2 mm (holotype). Body, 4.4 mm; wing, 3.5 mm (paratype).

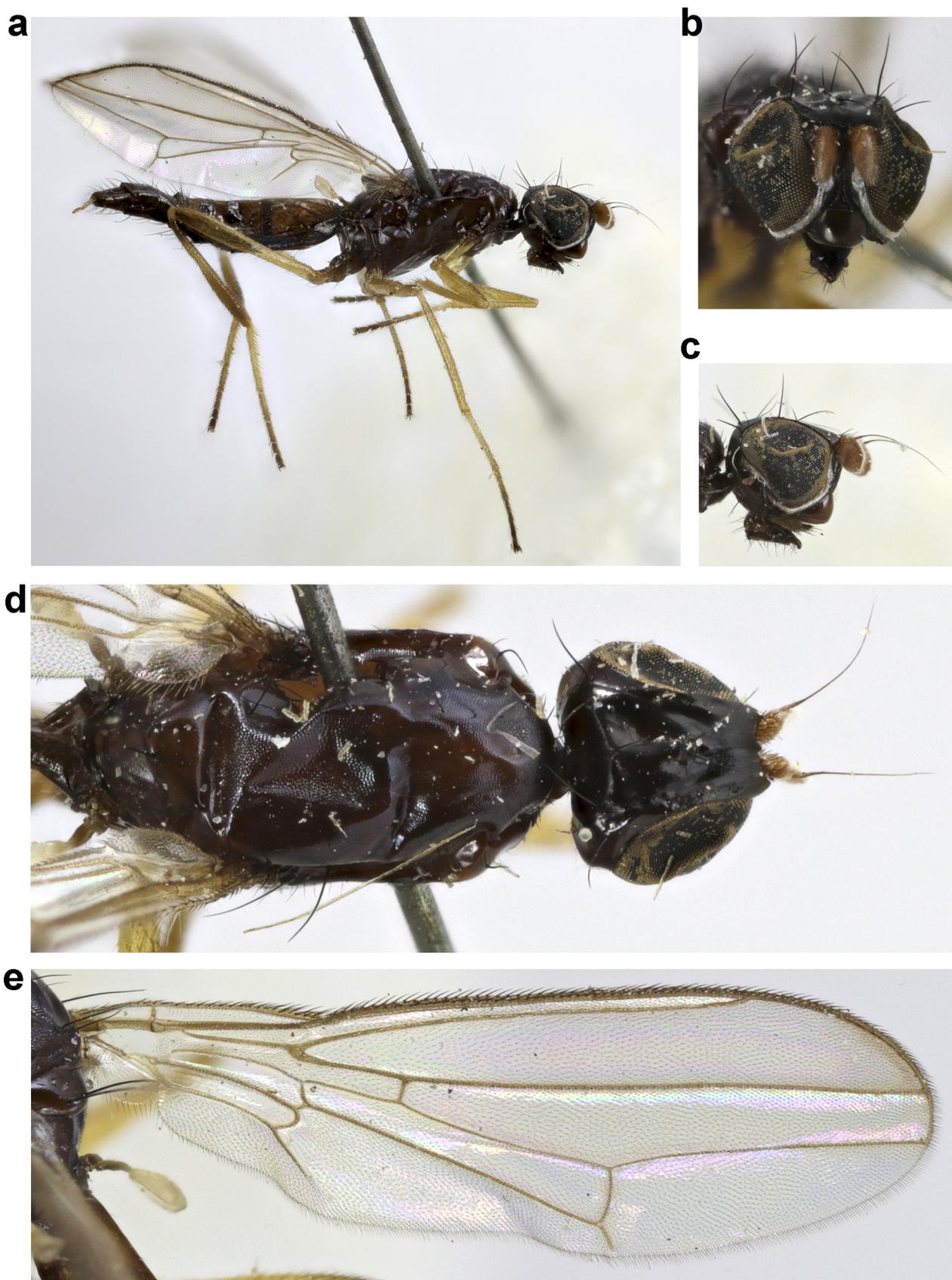
**Female** (Fig. 5) differs from male in the first flagellomere paler apically, palpus dark brown, and length of postpronotal seta 0.26. Abdominal tergite 5 is arcuate posteriorly and bears one pair of larger setae laterally. Postpronotum bears a long saber-shaped seta (Fig. 5b, d), but hind trochanter and hind femur without peculiar processes and setae. Body length 4.2–4.4 mm; wing length 3.6–3.9 mm.

**Distribution.** Indonesia (Sumatra).

**Etymology.** The specific epithet refers to the modern name of the type locality – the Bukittinggi city.



**FIGURE 4.** *Strongylophthalmyia bukittinggiana* n. sp. Male holotype: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, lateral view; d—head, anterior view; e—wing; f—hind femur.



**FIGURE 5.** *Strongylophthalmyia bukittingiana* n. sp. Female paratype: a—habitus, lateral view; b—head, anterior view; c—head, lateral view; d—head and thorax, dorsal view; e—wing.

***Strongylophthalmyia minutissima*, n. sp.**

(Fig. 6)

**Material examined.** *Holotype*: ♂, Thailand, Phuket, env. Nai Yang beach, 6–10.XII 2009, leg. N. Vikhrev (ZMMU).

**Diagnosis.** This new species is characterized by the following combination of characters: male antennal flagellomere unmodified, without dorsal process; fore femur without dorsal spicules; arista bare; thorax and abdomen entirely black; legs yellow, hind femur with preapical brownish ring; wing hyaline; mesonotum slightly matte, sparsely clothed with short pale setulae; frons black shining, yellow in anterior third up to fore ocellus; face yellow; palpus entirely yellow; small size: body length 1.8 mm.

Externally, this new species is similar to *S. dichroa* from Vietnam, *S. indica* from India (Meghalaya) and *S. paula* Shatalkin, 1993 from the Palaearctic in general body coloration. *S. dichroa* and *S. indica* are characterized by a bicolored palpus (new species with monochrome yellow palpus) and larger body sizes: 4.8 mm in *S. dichroa* and 3.5 mm in *S. indica* (the new species is 1.8 mm long). Furthermore, the frons is entirely black in *S. dichroa* (new species has the frons mostly black, yellow in anterior third). *S. paula* differs from the new species in the wide brown ring medially on the hind tibia, frons entirely black, and body length 2.1–3.0 mm (the new species has the hind tibia yellow, frons black with yellow anterior third, and body 1.8 mm long).

**Description. Male.** *Head* black, 1.1 times as long as high. Frons shining black, yellow in anterior third up to fore ocellus; widened towards vertex, its anterior width about 0.83 times as great as width at level of fore ocellus, its height (up to hind ocelli) about 0.67 times as great as its anterior width; frontal index equal to 0.6. Occiput black, slightly concave medially. Face yellow with row of short setulae along suture. Gena yellow with whitish pubescence. Antenna yellow, first flagellomere about 0.9 times as wide as its width; its marginal setulae pale and rather long, only 0.5 times as long as first flagellomere; arista dark brown, bare. Palpus relatively wide, yellow with black setulae apically. Mouthparts yellow. Frons between upper orbital and outer vertical setae without short setulae. Three reclinate fronto-orbital setae, one ocellar seta, one postocellar seta, one inner and one outer vertical seta, three setula-like short frontal setae.

*Thorax* black. Mesonotum slightly matte, densely clothed with short pale setulae. Pleuron shining. Scutellum matte. One thin presutural intra-alar seta, one dorsocentral seta, acrostichal setae not differentiated, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta.

*Legs* yellow, hind femur with brownish preapical ring.

*Wing* unpigmented. Vein  $R_{2+3}$  intermediate in length: costal index = 1. Ratio between distance from  $R_{4+5}$  to  $M_{1+2}$  at level of dm-cu and length of costal vein between  $R_{4+5}$  and  $M_{1+2}$  equal to 1.9. Discal index = 2.7. Median index = 0.53. Calypter grayish with fan of long darkish setulae on margin. Halter with darkish stem and slightly brownish knob.

*Abdomen* black matte, posterior tergites slightly shining.

*Lengths.* Body, 1.8 mm; wing, 1.4 mm.

**Female** unknown.

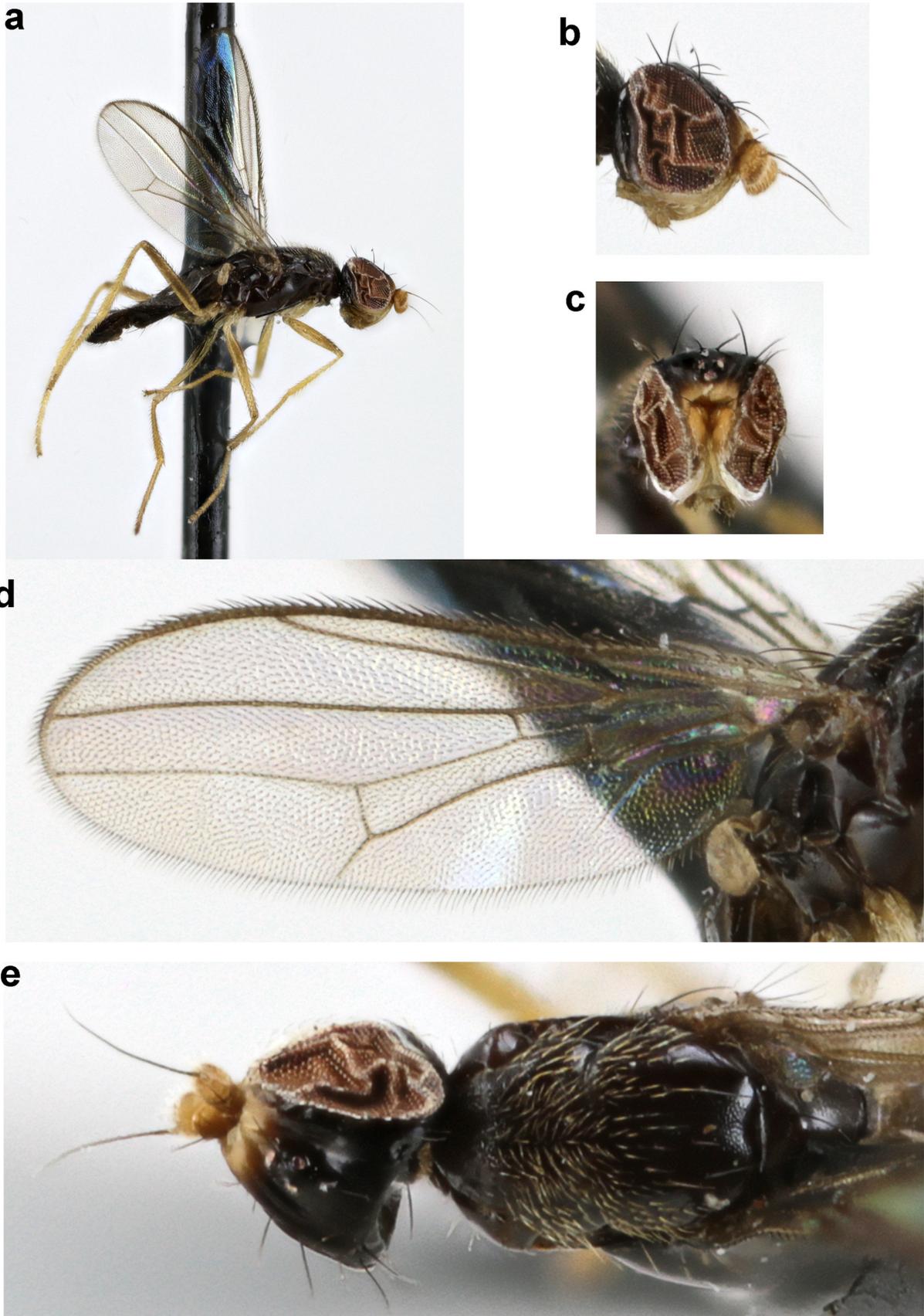
**Etymology.** The specific epithet is the feminine form of the Latin “minutissimus” (smallest).

***Strongylophthalmyia prominens*, n. sp.**

(Fig. 7)

**Material examined.** *Holotype*: ♂, Vietnam. Bái Sâu, Cát Tiên National Park. 11 422837 N, 107 426241 E, 22. XI. 2016, leg. Galinskaya T.V. (ZMUM).

**Diagnosis.** This new species is characterized by the following combination of characters: male flagellomere unmodified, without dorsal process; male fore femur without dorsal spicules; arista bare; thorax and abdomen entirely black; fore and mid coxae yellow, hind coxa black; fore femur yellow, mid and hind femora largely black; hind tibia brownish with median third yellow; tarsi with three basal segments yellow and two distal segments blackish; mesonotum shining, covered with setae-like black setulae; wing with brownish apical spot and brownish median crossband, apical spot blurred and situated on apical part of wing including cells  $r_{2+3}$  and  $r_{4+5}$ ; halter with whitish knob; setulae on basal process on the hind femur of males yellow.



**FIGURE 6.** *Strongylophthalmyia minutissima* n. sp. Male holotype: a—habitus, lateral view; b—head, lateral view; c—head, anterior view; d—wing; e—head and thorax, dorsal view.

In the key presented in Galinskaya & Shatalkin (2016: couplet 35), this species runs to *S. obtecta* Galinskaya & Shatalkin, 2016. Both species have two dorsocentral setae and two rows of black setulae along the dorsocentral rows, as well as two rows of long black acrostichal setae. *Strongylophthalmyia obtecta* differs as follows: postpronotum laterally, proepisternum, and anepisternum behind anterior spiracle yellowish-brown; fore coxa yellow with blackish stripe basally on anterior surface; hind coxa yellow; mid tibia black; median transverse band on wing at level of dm-cu wide and well-developed.

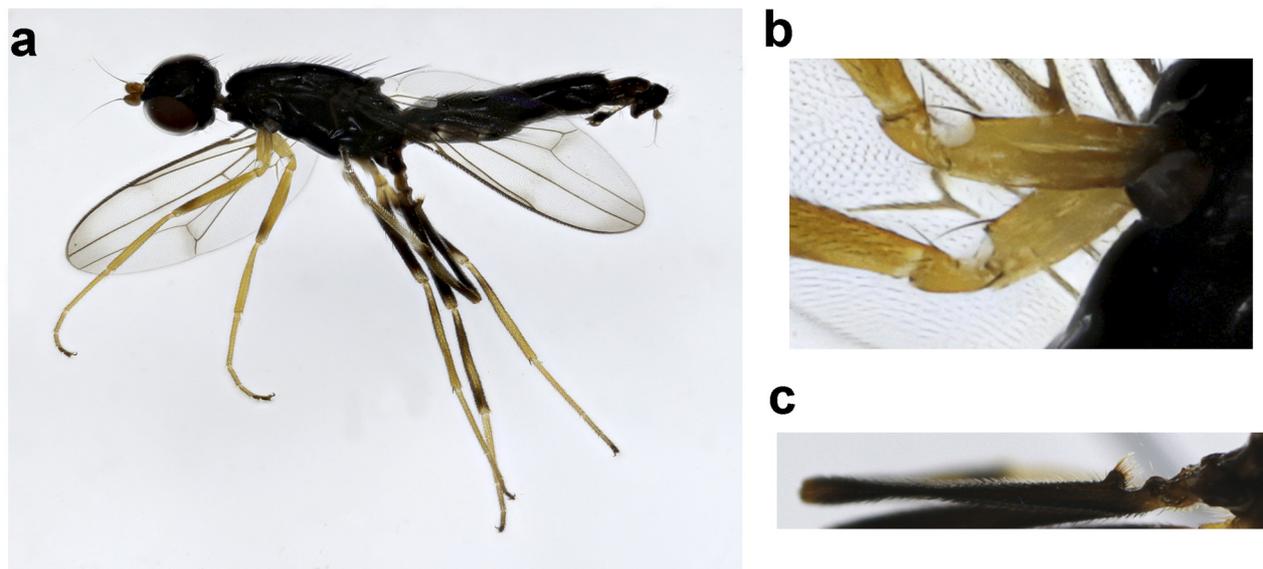
*Strongylophthalmyia prominens*, **n. sp.** can also be confused with *S. polita* (de Meijere, 1914) and *S. vichrevi*, **n. sp.** *S. polita* differs from *S. prominens*, **n. sp.** as follows: vein r-m divides discal cell medially; fore femur mostly black, narrowly yellow basally; tarsi yellow with three last segments blackish. *S. prominens*, **n. sp.** differs from *S. vichrevi*, **n. sp.** as follows: fore femur and mid tibia predominantly yellow; hind tibia brownish with medial third yellow; tarsi yellow with two last segments blackish; hind femur (in males) with processes.

An important male feature of *S. prominens*, **n. sp.** is the presence of a distinctive glans at the end of distiphallus that is similar to that of *S. raricornis* Shatalkin, 1981 (Shatalkin 1996: p. 155, Fig. 31; see also Evenhuis 2016: Fig. 86, p. 228) from the Far East. *Strongylophthalmyia raricornis* is morphologically similar to *S. obtecta* and *S. stricta* Galinskaya & Shatalkin, 2016 (p. 18).

Evenhuis (2016) placed *S. raricornis* in the **coarctata subgroup (punctata group)**. Males of *S. papuana* Iwasa & Evenhuis, 2014 (Papua New Guinea) have externally similar glans to *S. raricornis*. However, in contrast to *S. raricornis*, *S. papuana* has the antennal flagellomere without dorsal process.

**Description. Male.** *Head* black. Occiput poorly convex (in dorsal view). Face blackish with row of short darkish setulae along suture. Gena with silver grey pubescence. Scape and pedicel yellowish brown. Flagellomere yellowish, narrowly brownish apically, about 0.6 times as wide as its length; flagellomere small, about 0.3 times as wide as eye diameter; marginal setulae of flagellomere short (0.03 mm); arista dark brown, bare. Mouthparts dark brown, palpus dark brown. Three fronto-orbital setae, one ocellar seta, one postocellar seta, one inner and one outer vertical seta.

*Thorax* entirely black. Mesonotum and pleuron shining. Scutellum bare, without setulae. Metanotum black, shining. Two dorsocentral setae, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta. All setae black.



**FIGURE 7.** *Strongylophthalmyia prominens* **n. sp.** Male holotype: a—habitus, lateral view; b—fore coxa; c—hind femur.

*Legs.* Fore and mid coxae yellow. All trochanters yellow. Fore femur yellow with blackish preapical ring; mid femur black narrowly yellow basally and apically; hind femur black, hind tibia brownish basally and apically and yellowish in median 1/3. Fore coxa with dorsal large seta apically (Fig. 7b); hind femur ventrally with transverse sub-basal mushroom-like process bearing row of nine closely approximated yellow setulae, and with dark bulge

with two setulae at border of femur and trochanter. Fore tibia yellow; mid tibia yellow, slightly darkish in basal third. Tarsi yellow, two last tarsomeres blackish.

*Wings* with weak apical darkening; with very weak median transverse band that faded centrally and positioned at level of dm-cu and point of insertion of  $R_{2+3}$  to costa. Costal index = 1. Veins  $R_{4+5}$  and  $M_{1+2}$  almost parallel apically. Discal index = 1.8. Median index = 0.6. Cell bm about 0.5 times as long as discal cell. Calypter brownish-grey with fan of long darkish setulae on margin. Halter with darkish stem and whitish knob.

*Abdomen* entirely black, shining. Genitalia black, phallus with large glans apically. Cerci with two very long setulae apically.

*Lengths.* Body, 4.6 mm; wing, 3.2 mm.

**Female** unknown.

**Etymology.** Specific epithet refers to both the glans on distiphallus and the distinctive process of the hind femora.

### ***Strongylophthalmyia strigosa* n. sp.**

(Figs. 8, 9)

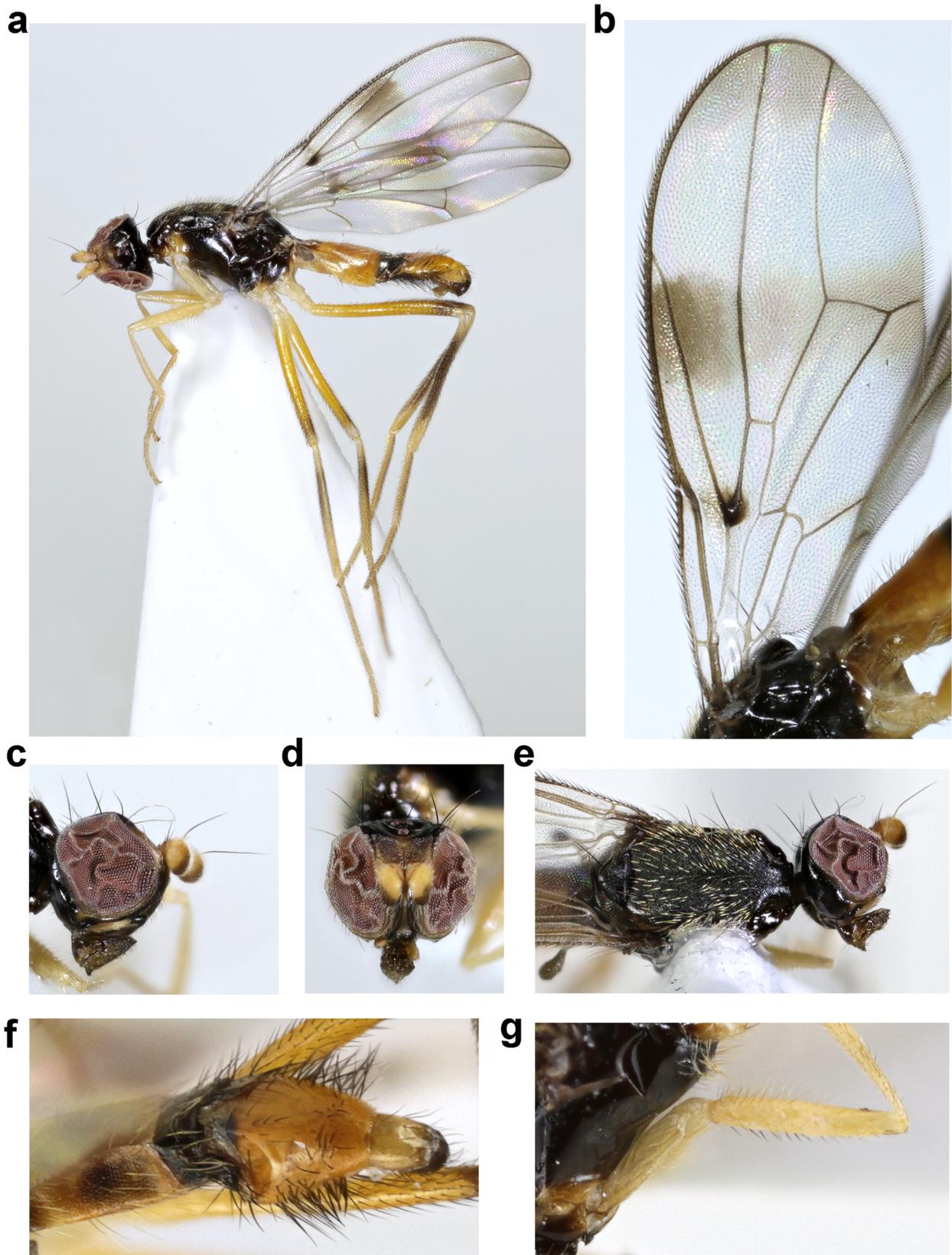
**Material examined.** *Holotype:* ♂, China, Sichuan, prov Ya'an, Baoxing, city park 1050 m, 30°22' 16"N, 102°48' 16"E, 12.VI.2014. J.Hájek, J. Růžička, M. Tkoč lgt. *Paratype:* ♂, same locality as holotype; ♀, same locality as holotype, 30°22' 16"N, 102°48' 49"E, 14.VI.2014; ♂, Sichuan, Gaize, Luding, Moxizhen, Hailuoguo Glacier Forest Park, Gonghecun village, 1680 m. 29°36' 42"N, 102°6' 41"E, 21.VI.2014. J.Hájek, J. Růžička, M. Tkoč lgt. (NMPC).

**Diagnosis.** This new species is very similar to *S. trifasciata* Hennig, 1940 from Taiwan and *S. gavryushini* Galinskaya & Shatalkin, 2016 from Vietnam, in all males having strong setae on the sixth abdominal segment. In *S. gavryushini*, these setae are black dorsally and yellowish laterally (Galinskaya & Shatalkin 2016: Fig. 4b), and in *S. strigosa* n. sp. and *S. trifasciata*, these setae are totally black; in *S. trifasciata*, part of these setae forms two closely spaced lateral tufts (see. Hennig 1940: p. 311, Fig. 20).

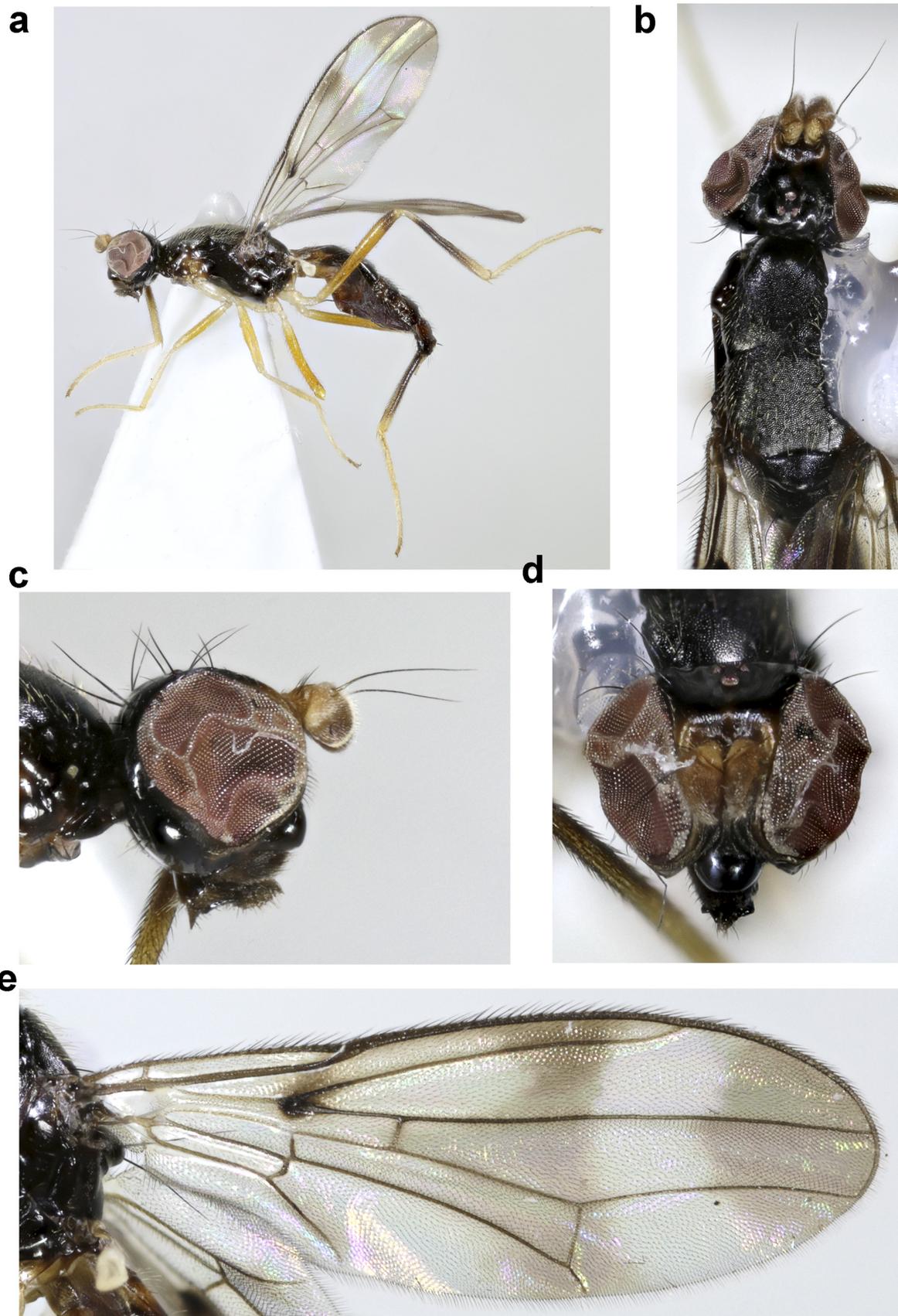
As these diagnostic setae are male-specific and the sexes apparently differ in abdominal coloration, we do not have full confidence in the conspecificity of the female described here. It may represent a separate species or the unknown female of *S. gavryushini*. Males of *S. strigosa* n. sp. also differ from the female in the coloration wing pattern and leg colouration.

We present below a key to species of the *Strongylophthalmyia trifasciata* species subgroup, including the above-mentioned three species. These species belong to the *fascipennis* group sensu Evenhuis (2016: p. 207) and differ from the other species in the presence of strong setae on the sixth abdominal segment in male and female sexual dimorphism in the coloration of abdomen.

1. Mesonotum black; pleuron black; anepisternum yellow, at least around anterior thoracic spiracle; antennal flagellomere unmodified, without dorsal process; arista dark brown, bare; two large orbital setae; wing with weak apical darkening, with weak brownish medial band, darker between C and  $R_{4+5}$ , and with strong brown spot on  $R_s$ . Male: abdomen widely yellow, matte with light brownish (*S. gavryushini*) or black spots and strips, tergite V more or less black in *S. trifasciata* and *S. strigosa* n. sp.; abdominal tergites V and VI with large setae dorsally and laterally. Female: abdomen black, at most tergites I and II yellowish; abdominal tergites V and VI without large setae ... *Strongylophthalmyia trifasciata* group ..... 2
- Combination of characters different ..... Other species of *Strongylophthalmyia*
2. Male ..... 3
- Female (female of *S. gavryushini* is unknown) ..... 5
3. Legs entirely yellow. Black strong setae on the tergite six of the abdomen form two lateral tufts closely spaced among themselves (see Hennig 1940: p. 311, Fig. 20). ..... *S. trifasciata* Hennig
- Legs yellow; hind femur with subapical brown ring; hind tibia widely brown, yellow basally and apically. Black strong setae on the tergite six of the abdomen do not form two lateral tufts ..... 4
4. Postpronotum black dorsally. Tergite V black. Large setae on tergite six black. .... *S. strigosa* n. sp.
- Postpronotum entirely yellow. Tergite V yellow. Large setae on tergite six black dorsally and yellowish laterally .....  
..... *S. gavryushini* Galinskaya & Shatalkin
5. Legs entirely yellow. Postpronotum yellow ..... *S. trifasciata* Hennig
- Legs yellow; hind femur with subapical brown ring; hind tibia widely brown, except on basal 1/6 and apical 1/7. Postpronotum black, yellow laterally, above anterior spiracle. .... *S. strigosa* n. sp.



**FIGURE 8.** *Strongylophthalmyia strigosa* n. sp. Male holotype: a—habitus, lateral view; b—wing; c—head, lateral view; d—head, anterior view; e—head and thorax, dorsal view; f—abdomen, dorsal view; g—fore femur.



**FIGURE 9.** *Strongylophthalmyia strigosa* n. sp. Female paratype: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, lateral view; d—head, anterior view; e—wing.

**Description. Male** (Fig. 8). *Head* black. Frons shining black, anteriorly with yellowish-brown matte stripe, narrow medially and widening near eyes, forming triangular spots; matte dark brown transverse stripe with a narrow yellow longitudinal line medially between stripe on frons and fore ocellus. Occiput shining black. Face blackish-brown, matte; clypeus shining black. Gena and postgena shining black with small yellow spot at eye margin. Frontal index = 2.5. Antenna yellowish, flagellomere small, rounded, brownish apically. Arista dark brown, bare. Proboscis dark brown, palpus yellowish, large, elongate-oval. Two large reclinate fronto-orbital setae, one short fronto-orbital setulae anteriorly to setae, one ocellar seta, one postocellar seta, one inner and one outer vertical setae. *Thorax* black. Mesonotum matte, densely covered with relatively long golden setulae. Postpronotum shining black. Pleura shining black; anepisternum anteriorly above fore coxa and proepisternum yellow; prosternum yellow. Scutellum black matte, without setulae. Metanotum shining black. One presutural intra-alar seta, one dorsocentral seta, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one long thick apical scutellar seta. Male paratype from Gaize with thoracic setae yellow, cephalic setae black.

*Legs* yellow; hind femur with brown subapical ring; hind tibia brown with basal 1/6 and apical 1/7 yellow. Fore coxa with yellowish white setulae on apical half dorsally. Fore femur with row black dorsal setulae and densely covered with yellow setulae (slightly shorter than femur maximum width) in basal half ventrally; its apical half with similar setulae, that are fewer in number and arranged in one line.

*Wing* with weak apical darkening, with weak brownish medial band that is darker between C and R<sub>4+5</sub>, with very dark brown spot at apex of R<sub>s</sub>, and with weak narrow faint dark band situated between costa and spot on R<sub>s</sub>. Costal index = 1. Discal index = 1.6. Medial index = 0.6. Cell bm about 0.5 times as long as cell dm. Calypter greyish with fan of very dark setulae on margin. Halter with brownish stem and grey knob.

*Abdomen* yellow, second tergite with two brownish spots that almost meet medially; fourth and fifth tergite black; fifth tergite anteriorly with black foliaceous process, epandrium dark brown; abdominal tergite six with area of very large black setae laterally (Fig. 8f).

*Length.* Body, 3.7 mm; wing, 3.2 mm (holotype). Body, 3.1–3.4 mm; wing, 2.8–3.2 mm (paratypes).

**Female** (Fig. 9). Differs from male as follows: yellow band absent in anterior part of the frons, divided into two small spots between base of antenna and eye margin. Narrow yellowish medial longitudinal line between ocellar triangle and anterior edge of frons weakly expressed. Two large orbital setae. Yellow area around anterior thoracic spiracle (anepisternum anteriorly above fore coxa, proepisternum, and prosternum) slightly widened to lateral edge of postpronotum. Yellow setulae on metathorax shorter and fewer in number. Mid femur and tibia entirely yellow. Abdomen black, brownish-yellow anteriorly, without process on fifth tergite and without area of large black setae on terminal abdominal tergites.

*Lengths.* Body, 4.2 mm; wing, 4.1 mm.

**Etymology.** Specific epithet refers to the presence of fields of strong setae on the terminal abdominal tergites of males.

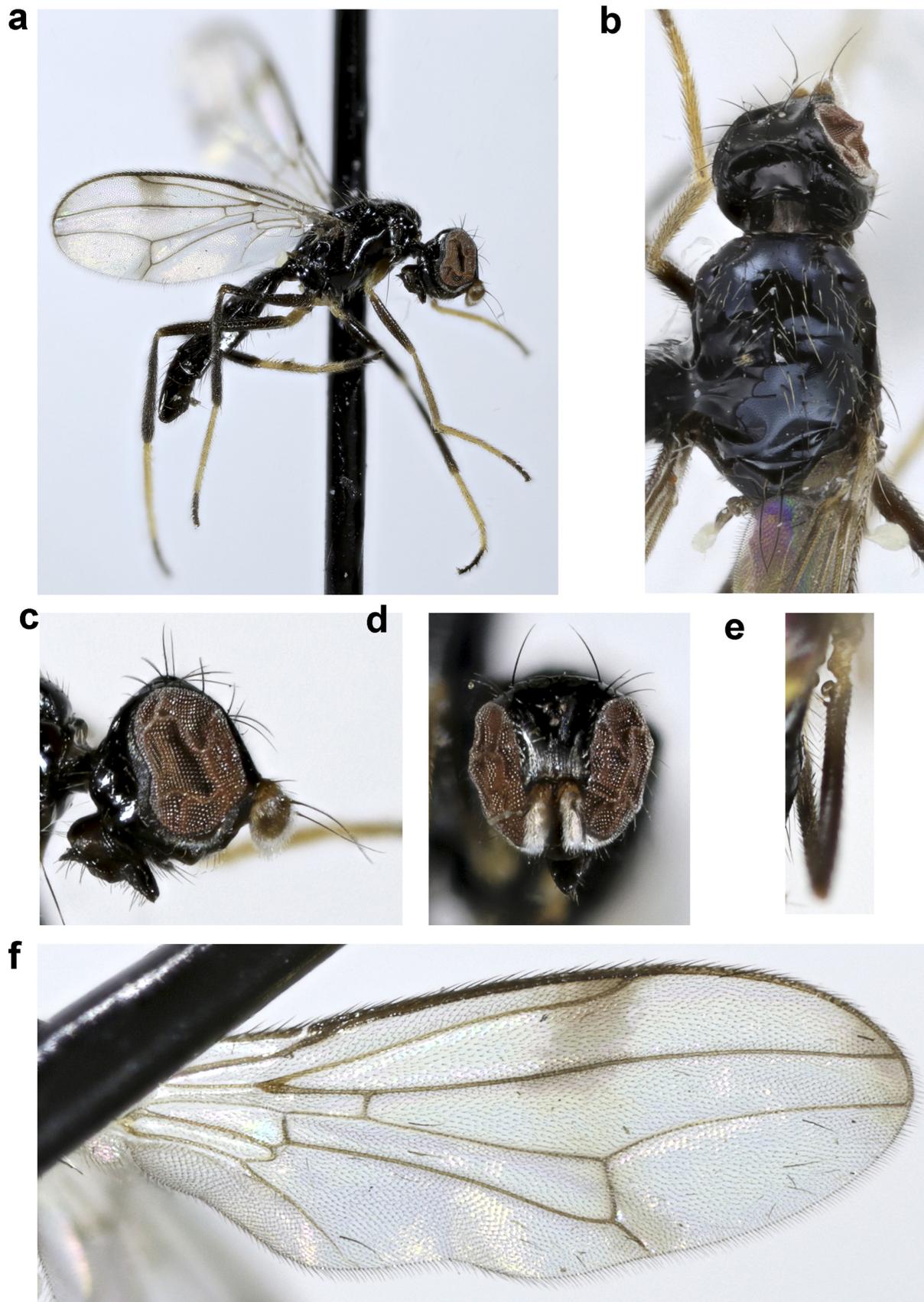
### ***Strongylophthalmyia vikhrevi* n. sp.**

(Fig. 10)

**Material examined.** *Holotype*: ♂, Primorsky reg., Kamenushka (43.62°N, 132.23 °E), 22–24.VI.2014, N.Vikhrev leg. (ZMUM).

**Diagnosis.** This new species is characterized by the following combination of characters, which are unique to this species among all species of the genus. Male flagellomere unmodified, without dorsal process. Fore femur without dorsal spicules although stiff setulae may be present. Mesonotum entirely black shining, with rows of black and yellowish setae; dc-row includes five yellowish setae and three black setae between each yellow seta. Fore coxae yellow, brownish basally. Hind femora entirely black. Mid tibia black, narrowly brownish-yellow basally. Tarsal segments 1 and 2 yellow, segments 3–5 dark brown. Costal index = 1. Wing with brown median crossband and apical spot. Face black; palpus dark brown or blackish.

As mentioned in the diagnosis of *S. prominens* n. sp. (see above), this species and *S. polita* are very similar to *S. vikhrevi* n. sp. *Strongylophthalmyia polita* differs from *S. vikhrevi* n. sp. by the following characters: mesonotum with the black strong setae; fore coxa yellow; vein r-m inserted in the middle of discal cell; wingmarks poorly expressed.



**FIGURE 10.** *Strongylophthalmyia vikhrevi* n. sp. Male holotype: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, lateral view; d—head, anterior view; e—hind femur; f—wing.

**Description. Male.** *Head* entirely black shining, almost as long as high. Frons widened towards vertex, frons anterior width about 0.67 times as great as its width at level of anterior ocellus, frons height about 1.3 times as long as its anterior width; frontal index equal to 1.7. Occiput poorly convex (in dorsal view). Face with row of short setulae along suture. Gena with grey tomentose setulae and golden pubescence. Antenna yellow, flagellomere slightly darkened apically, about 1.2 times as long as wide. Marginal setulae of first flagellomere short and pale; arista dark brown, bare. Palpus narrow, black with apical seta; mouthparts blackish. Frons between upper orbital and outer vertical setae without short setulae. One ocellar, one postocellar, one inner vertical, one outer vertical, three large, reclinate and five short, setula-like fronto-orbital setae.

*Thorax* black, shining. Basisternum without yellow spots between fore coxae. Mesonotum shining, sparsely covered with pale setulae; pleuron shining; scutellum bare matte. One dorsocentral seta, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta, and one setula-like short lateral scutellar seta.

*Legs.* Coxae yellow, brownish basally; fore femur dark brown, narrowly yellow basally and apically; fore tibia yellow; mid and hind femora and tibiae dark brown; tarsi with segments 1 and 2 yellow, segments 3–5 dark brown. Fore femur with row of long pale setae basally. Hind trochanter with posterior brownish shallow swelling; hind femur basally with a round posteroventral yellowish-brown mushroom-like process and with a smaller sub-basal process bearing five yellowish setulae (Fig. 5e).

*Wing* with narrow apical spot and median transverse band on level of dm-cu: this crossband almost undeveloped between  $R_{4+5}$  and  $M_{1+2}$ . Anterior part of median band on distal side crossing connection of vein  $R_{2+3}$  and wing margin. Costal index = 1.2.  $R_{4+5}$  and  $M_{1+2}$  subparallel apically. Discal index = 3.2. Medial index = 0.8. Cell bm about 0.45 times as long as cell dm. Calypter brownish gray with fan of very long yellowish setulae on margin. Halter with whitish knob and brownish stem.

*Abdomen* black shining; abdominal segments 1 and 2 with long light setulae.

*Length.* Body, 3.1 mm; wing, 2.7 mm.

**Female** unknown.

**Etymology.** Named in honor of N.E. Vikhrev.

## New faunistic records

### *Strongylophthalmyia basisterna* Galinskaya & Shatalkin

*Strongylophthalmyia basisterna* Galinskaya & Shatalkin, 2016: 11 (female)

**Material examined.** ♀, China, Sichuan, Baoxing, Dengchigou, 1600–1800 m, 30°22' 32"N, 102°49' 44"E, 13.VI.2014. J.Hájek, J. Růžička, M. Tkoč lgt. (NMPC).

This female specimen differs from the original description in the following characters. Face and clypeus brownish-yellow (original description: dark brown), palpus yellow (original description: dark brown), abdomen black, tergites anteriorly with narrow brownish bordering (original description: tergite 4 laterally, tergites 5 and 6 totally yellow).

Previously known from Vietnam, this specimen represents a new country and a new Palaearctic record.

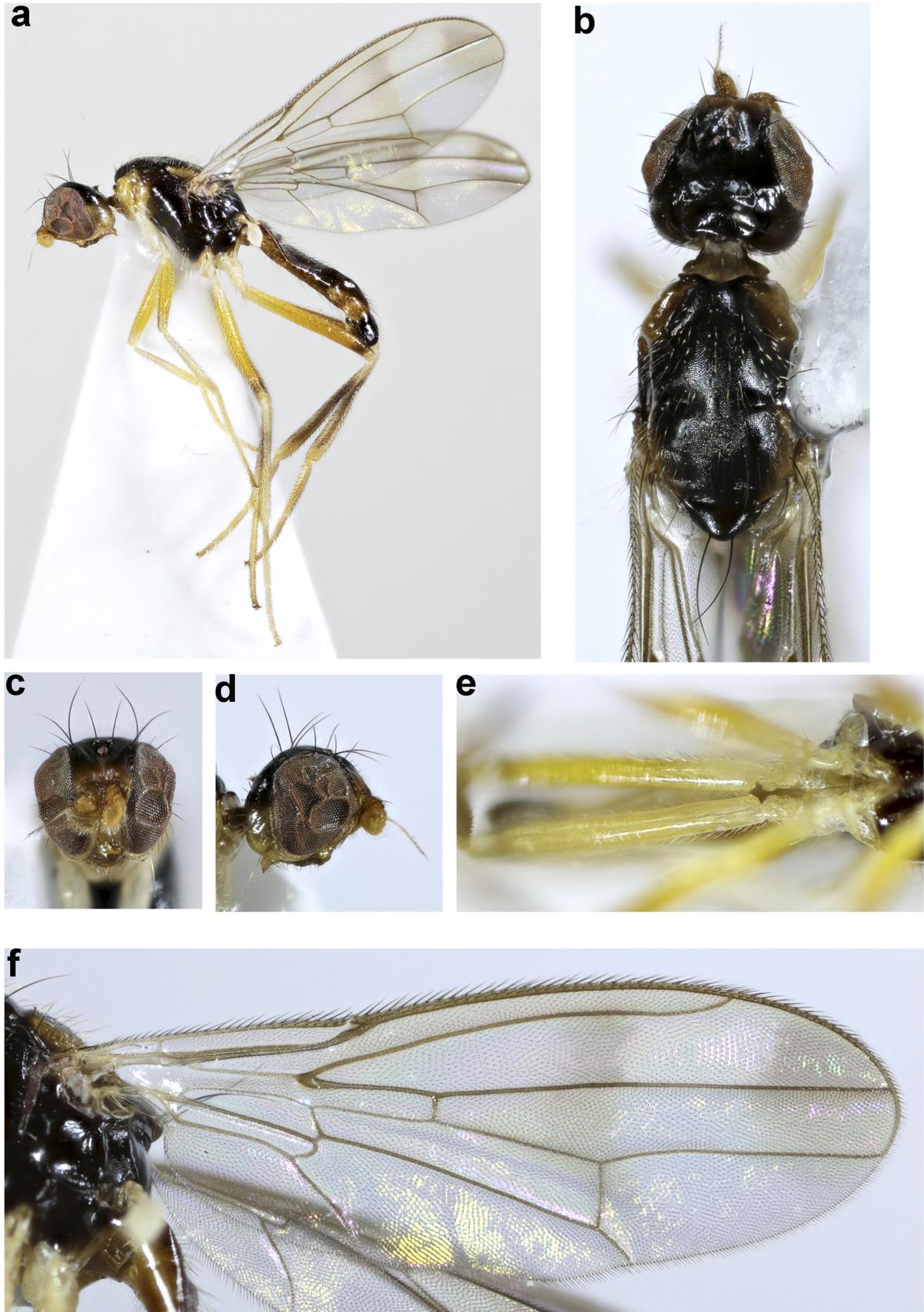
### *Strongylophthalmyia bifasciata* Yang & Wang 1992

(Fig. 11)

*Strongylophthalmyia bifasciata* Yang & Wang, 1992: 447 (male, female).

**Material examined.** ♂, China, Sichuan, Baoxing, Dengchigou, 1600–1800 m, 30°22' 32"N, 102°49' 44"E, 13.VI.2014. J.Hájek, J. Růžička, M. Tkoč lgt. (NMPC).

Since there is very little information on Chinese continental species, below we provide a description of *S. bifasciata* and a revised fragment of our key (Galinskaya & Shatalkin 2016) that will allow for determination of our new species, including *S. strigosa* n. sp., and other species of the *S. trifasciata* species group.



**FIGURE 11.** *Strongylophthalmyia bifasciata* Yang & Wang 1992. Male: a—habitus, lateral view; b—head, and thorax, dorsal view; c—head, anterior view; d—head, lateral view; e—hind legs, ventral view; f—wing.

**Description. Male. Head.** Frons black, anteriorly with yellowish matte band, width of the band equal to half of distance from fore edge of frons to fore ocellus; frontal index = 2.2. Occiput black shining in dorsal half; yellow in ventral half. Face, gena and postgena yellow. Antenna yellow, scape and pedicel brownish-yellow. Flagellomere small, rounded. Arista white, covered with short white setulae. Mouthparts yellowish; palpus yellowish, apically brownish. Two orbital setae, one ocellar seta, one postocellar seta, one inner and outer vertical setae, seven setula-like short frontal setae.

**Thorax** black, metathorax matte, with thin punctation, covered with sparse, pale setulae; with two lateral crescent-like yellow bands, extending from transverse suture to scutellum (like in some specimens of *Chyliza*, Psilidae). Postpronotum yellow. Pleura black shining; propleuron and prosternum yellow. Scutellum black matte, metanotum black shining. Two dorsocentral setae, two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta.

**Legs** yellow; mid femur with weak apical darkening, mid tibia in middle 1/3 brownish laterally; hind femur with developed apical ring; hind tibia brownish laterally in middle 3/5. Hind coxa with small disc-shaped process on inner surface (Fig. 11 e).

**Wing** with large but very weak apical darkening: its proximal margin almost reaches level of vein  $R_{2+3}$  and with median transverse band on level of dm-cu. Costal index = 2. Discal index = 1.5. Medial index = 0.6. Vein r-m inserted at basal 2/5 of discal cell. Cell bm about 0.43 times as long as cell dm. Calypter yellowish with fan of very long yellowish setulae on margin. Halter with whitish knob and brownish stem.

**Abdomen** laterally yellow, dorsally black; abdominal tergite five black shining.

**Lengths.** Body, 3.8 mm; wing, 3.2 mm.

### Revised fragment of the key from Galinskaya & Shatalkin (2016)

12. **Only males.** Abdomen matte, predominantly yellowish with large setae on tergites five and six. Two orbital setae . . . . . 12a  
 - **Males and females.** Abdomen black shining, anterior and posterior abdominal tergites predominantly yellowish. Large setae on tergite six absent. Usually three orbital setae. . . . . 13
- 12a. Wing with three brownish marks: short cross-band basally at level of apex of  $R_s$ , median crossband at level of vein dm-cu, and large apical spot. Tergite V more or less black. Abdominal tergite six with large black setae. . . . . 12b  
 - Wing with two brownish marks: short basal cross-band at level of  $R_s$  absent. Tergite V yellow with brownish spots. Abdominal tergite six with 6–7 long yellowish setae laterally . . . . . *S. gavryushini* Galinskaya & Shatalkin
- 12b. Postpronotum yellow. Black strong setae forming on abdominal tergite VI two lateral tufts . . . . .  
 . . . . . *Strongylophthalmyia trifasciata* Hennig  
 - Postpronotum black, yellow laterally directly above anterior spiracle. Black strong setae on the abdominal tergite VI do not form two lateral tufts. . . . . *S. strigosa* n. sp.
13. Arista with short setulae . . . . . 14  
 - Arista bare . . . . . 16
14. Frons black . . . . . 15  
 - Frons black, yellow in anterior third. Basisternum with pair of yellow spots. Body length 5.5–6.0 mm. Myanmar. . . . .  
 . . . . . *S. humeralis* Frey
15. Wing: median transverse band between C and  $R_{2+3}$  undeveloped; apical spot small, its length equal to distance from this spot to  $R_{2+3}$  vein; short cross-band at level of  $R_s$  absent. Mesonotum with two lateral yellow crescent-like bands, extending from transverse suture to scutellum. Abdomen yellow laterally, black dorsally; abdominal posterior to tergites 5 black shining. Face yellow, arista yellow covered with light setulae. Body length 3.8–5.0 mm (male), 6.0 mm (female). China (Zhejiang). . . . .  
 . . . . . *S. bifasciata* Yang & Wang  
 - Wing: median transverse band between C and  $R_{2+3}$  well-developed, reaching costal margin; apical spot large, extended from connection of  $R_{2+3}$  and  $R_{4+5}$  veins, short cross-band at level of  $R_s$  in anterior half of wing developed. Mesonotum without yellow crescent-like bands. Abdomen black, ovipositor partially yellow. Face black, arista dark brown. Male unknown. Female body length 5.0. China (Guangxi). . . . . *S. yaoshana* Yang & Wang
16. Abdomen black, broadly yellow basally, tergite six with lateral yellow spots extending from anterior margin to two thirds of its length. Wing with two brownish marks: short cross-band at level of  $R_s$  undeveloped; median crossband on dm-cu vein almost undeveloped between C and  $R_{2+3}$ . Male unknown. Female body length 3.6 mm. Vietnam . . . . .  
 . . . . . *S. tomentosa* Galinskaya & Shatalkin  
 - Abdomen entirely black, or yellow basally; tergite six black. Wing with three brownish marks: apical spot, cross-band at level of vein dm-cu, and short crossband at level of  $R_s$  in anterior half of wing. Median cross-band well developed between C and  $R_{2+3}$  . . . . . 17
17. At least area around anterior spiracle and postpronotum yellow laterally. Fore legs entirely yellow . . . . . 17a  
 - Area around anterior spiracle and postpronotum brown laterally. Fore coxa and femur partially black . . . . . 18
- 17a. Legs completely yellow. Postpronotum yellow (female) . . . . . *S. trifasciata* Hennig  
 - Legs yellow; hind femur with subapical brown ring; hind tibia widely brown, yellow apically and basally. Postpronotum dorsally brown or black, laterally yellow . . . . . 17b

- 17b. Male. Mid tibia yellow. Body length 4.2 mm. Vietnam ..... *S. annulipes* Galinskaya & Shatalkin  
 - Female. Mid tibia widely darkened, yellowish basally and in apical quarter ..... 17c  
 17c. Frons entirely black. Abdomen entirely black. Three orbital setae. Body length 3.8–4.7 mm. .... *S. annulipes*  
 - Frons black, anteriorly with yellow spot between antenna and eye. Abdomen black, yellow basally. Two fronto-orbital setae.  
 Body length 3.1–3.7 mm. China (Sichuan). .... *S. strigosa* n. sp.

### ***Strongylophthalmyia malayensis* Evenhuis**

(Fig. 12)

*Strongylophthalmyia malayensis* Evenhuis, 2016: 226 (male)

**Material examined.** ♀, Malaysia, Sabah st 1430 m, Mt. Kinabalu (5.977°N, 116.579 °E), 13–17.II.2014, N.Vikhrev leg. (ZMUM).

**Systematic remarks.** This female specimen can be identified as *Strongylophthalmyia immaculata* Hennig in both in Frey's (1956) and Steyskal's (1971) keys, but *S. immaculata* differs from *S. malayensis* in smaller size: body, 2.2 mm; wing, 2.0 mm in description of the male (Evenhuis, 2016, p. 222); wing, 2.5 mm in description of Hennig (1940, p. 310, Fig. 16). *S. immaculata* belongs to *S. punctata* group sensu Evenhuis (2016) with males possessing a dorsal antennal process. This group includes two subgroups: *punctata* subgroup characterized by the presence of thorn-like spicules dorsally on the fore femur in males and *coarctata* subgroup without thorn-like spicules. We have checked the descriptions of all known species of both subgroups. The species of the second subgroup are characterized by the black coloration of the mesonotum. Therefore, our specimen of the female is one of the species of the first subgroup and, along the whole set of primary morphological characters, could be associated with *S. immaculata* or with *S. malayensis* or with the unknown species. It is impossible to describe new species based on females, if there are no good diagnostic characters. Therefore, only the associations with *S. immaculata* or with *S. malayensis* are considered here.

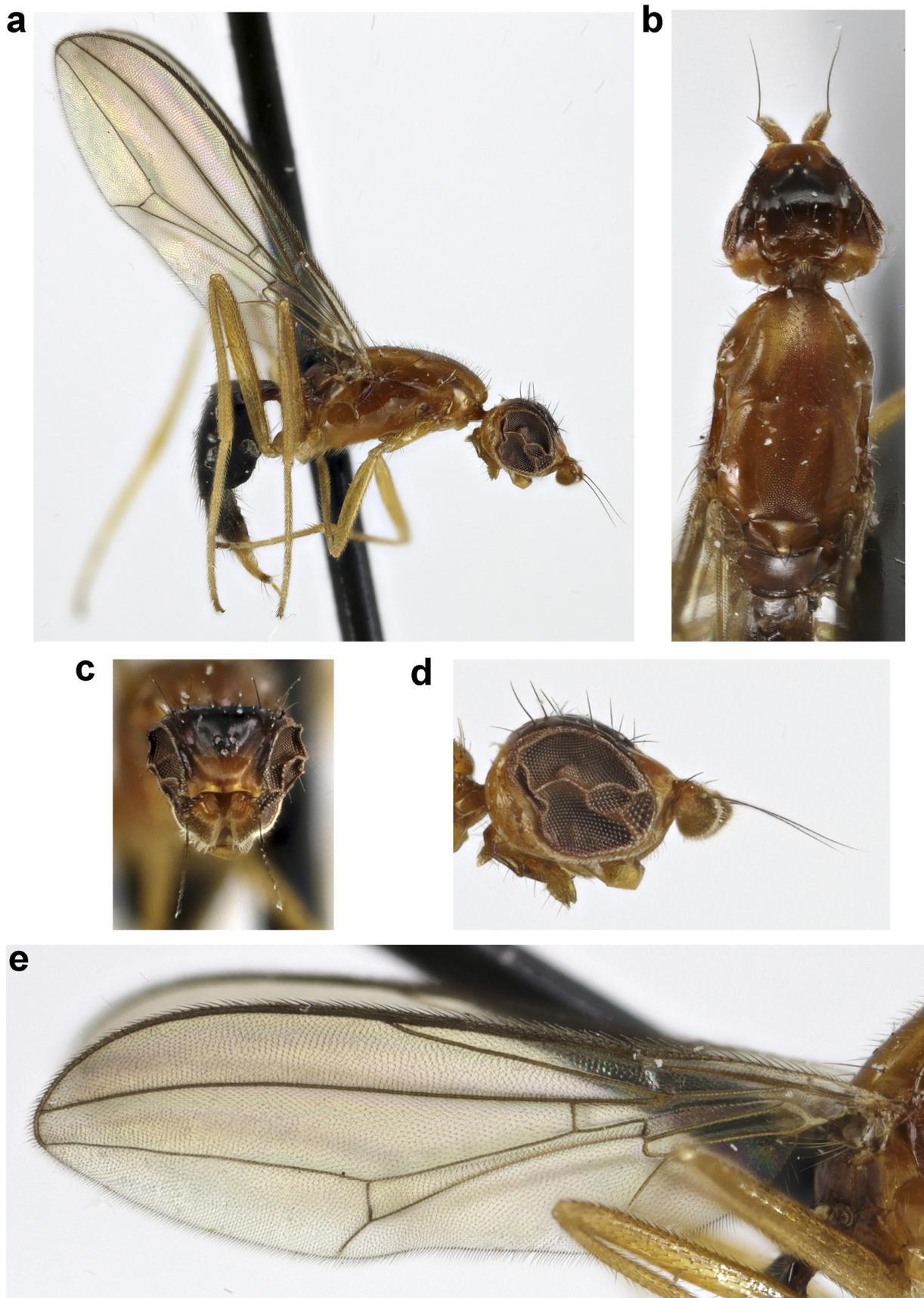
Evenhuis (2016) presented a large compilation of wing photos of the *punctata* subgroup species, summarizes in tables.

These tables show that in the wing venation *S. immaculata* (Evenhuis 2016: Fig. 54) and *S. malayensis* (Evenhuis 2016: Fig. 54) are similar to each other and to the specimen of a female described below (Fig. 12a, e) and differ from other species of *Strongylophthalmyia* in the following character: veins  $R_{4+5}$  and  $M_{1+2}$  converging distally. To assess the level of convergence of these veins, it is needed to determine next indicators. First indicator is the ratio of distance between veins  $R_{4+5}$  and  $M_{1+2}$  at the level of dm-cu and the length of dm-cu. Second indicator is the ratio of distance between veins  $R_{4+5}$  and  $M_{1+2}$  at the level of dm-cu and distance of the costal vein between  $R_{4+5}$  and  $M_{1+2}$ . First indicator is equal: in *S. immaculata* 1.4; in *S. malayensis* (male) 2.1; in *S. malayensis* (female) 2.1. Second indicator is equal: in *S. immaculata* 2.0; in *S. malayensis* (male) 2.3; in *S. malayensis* (female) 2.6 (2.7). Discal index is equal: in *S. immaculata* 2.1 in Evenhuis (2016) and 2.2 in Hennig (1940); in *S. malayensis* (male) 3.5; in *S. malayensis* (female) 3.5. As we can see, the wing indices show a closer relationship of female specimen to the male of *S. malayensis*, rather than the male of *S. immaculata*.

**Description. Female.** *Head* yellow, slightly longer (1.1 times) than high; frons with matte black triangular spot including ocellar triangle and restricting by outer vertical and postocellar setae behind; frons with two narrow short blackish stripes along eye margin separated one from another by yellow area; frons slightly widened towards vertex, its anterior width about 0.8 times as long as its width at level of first ocellus, frontal length about 0.9 times as long as its anterior width. Frontal index = 1.1. Occiput poorly convex (seen from above). Face yellow with row of yellow setulae along suture; clypeus yellow, shining. Gena with silver gray pubescence of short setulae. Antenna yellow, flagellomere yellowish gray, widely yellow basally, with short yellow dorsal setulae; its length about 0.9 times as long as wide. Arista dark brown, bare. Mouthparts and palpus yellow. Frons between upper orbital and outer vertical setae without short setulae. Three reclinate to latero-clinate orbital setae, one ocellar, one postocellar, one inner and one outer vertical setae, three large, reclinate to latero-clinate and two short, setula-like fronto-orbital setae.

*Thorax* yellow; mediotergite brownish-yellow. Mesonotum slightly shining, sparsely covered with short pale setulae; pleuron shining; scutellum bare, matte. One dorsocentral seta (yellowish), two notopleural setae, one supraalar seta, one postalar seta, one anepisternal seta, one stout apical scutellar seta.

*Legs* yellow, last tarsal segment darkened; spurs on mid and hind tibiae yellow.



**FIGURE 12.** *Strongylophthalmyia malayensis* Evenhuis, 2016. Female: a—habitus, lateral view; b—head and thorax, dorsal view; c—head, anterior view; d—head, lateral view; e—wing.

*Wing* transparent. Costal index = 0.7. Apical section of vein  $M_{1+2}$  curved in direction of vein  $R_{4+5}$ ; First indicator = 2.1 and; second indicator = 3.5. Discal index = 3.5. Medial index = 0.6. Cell  $bm$  about 0.4 times as long as cell  $dm$ . Calypter yellowish with fan of very long yellowish setulae on margin. Halter with yellow stem and whitish knob. Abdomen black, shining, segment 1 and ovipositor yellowish.

*Lengths*. Body, 3.8 mm; wing, 3.5 mm.

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