



Three new species of *Phyllomyza* Fallén (Diptera: Milichiidae) from Yintiaoling National Nature Reserve of Chongqing, with an updated key from China

YUQIANG XI^{1,3}, YONGQIANG ZHU^{1,4}, CHANG LIU^{1,5}, DING YANG^{2,6} & XINMING YIN^{1,7,*}

¹ State Key Laboratory of Wheat and Maize Crop Science/Henan International Laboratory for Green Pest Control, Department of Entomology, Henan Agricultural University, Zhengzhou 450046, China

² Department of Entomology, China Agricultural University, Beijing 100193, China

³ yuqiangxi2012@126.com, <https://orcid.org/0000-0002-3285-8904>

⁴ yq16262405055@163.com, <https://orcid.org/0000-0002-0987-8552>

⁵ 1369383769lc@sina.com, <https://orcid.org/0000-0001-6958-1112>

⁶ dyangcau@126.com, <https://orcid.org/0000-0002-7685-3478>

⁷ xinmingyin@126.com, <https://orcid.org/0000-0003-3936-3557>

* Corresponding author.

Abstract

Three species of the genus *Phyllomyza* Fallén from Yintiaoling National Nature Reserve are described as new to science: *P. fuscusagenis* **sp. nov.**, *P. hirtipes* **sp. nov.** and *P. obtususa* **sp. nov.** An updated key to the species of *Phyllomyza* from China is presented. The specimens are deposited in the Insect Collection of Henan Agricultural University.

Key words: Phyllomyzinae, taxonomy, new species, description

Introduction

The freeloader fly genus *Phyllomyza* is a small genus of the subfamily Phyllomyzinae (Milichiidae), which distributes globally with exception of the Neotropical Region. There are 37 species recorded from Chinese fauna, including 4 species from Taiwan Island (Hendel 1914; Malloch 1914a, b; Hennig 1937, 1967; Papp 1976, 1984; Papp & Wheeler 1998; Yang 1998; Brake 2000; Iwasa 2003; Xi & Yang 2013, 2015a, b; Xi, Yin & Yang 2016; Xi, Yang & Yin 2018, 2019; Xi & Yin 2018; Xi et al. 2021).

Phyllomyza is widely distributed, some species may frequently be found on logs, tree-stump, foliage or in grass. It can be characterized by: three laterocline orbital setae; first flagellomere in male usually greatly enlarged; lunule usually with a pair of setae (Brake, 2000).

Yintiaoling National Nature Reserve (31°23.8'~31°33.6'N, 109°41.3'~109°57.7'E) is located in the southwest part of China with rich wildlife resources, especially the various insects. In this paper, three species of *Phyllomyza* from Yintiaoling Nature Reserve are described as new to science, and an updated key to the known species of *Phyllomyza* from China is presented.

Material and methods

Specimens were studied and illustrated with a Leica DM 2500. Genitalia preparations were made by removing and softening the apical portion of the abdomen in cold saturated NaOH for 6 hours. After examination, they were transferred to fresh glycerine and stored in a microvial pinned below the specimen or moved to an ethanol tube together with the wet specimens.

Type materials are deposited in the insect collection of Henan Agricultural University, Zhengzhou (HAU). Terms used for adult structures follow McAlpine (1981) and Brake (2000). The following abbreviations are used:

asc—apical scutellar seta(e); bsc—basal scutellar seta(e); dc—dorsocentral seta(e); h—humeral seta(e); kepsts—katepisternal seta(e); npl—notopleural seta(e); pa—postalar seta(e); pos—postsutural seta(e); ppl—propleura seta(e); prs—presutural seta(e); prsc—prescutellar seta(e); sa—supraalar seta(e); S—sternite; T—tergite.

Taxonomy

Key to species (males) of *Phyllomyza* from China

1. Palpus almost bare, without setulae 2
- Palpus with short setulae at tip and ventral side 12
2. Frons with 3 or 5 interfrontal setae 3
- Frons with 4 interfrontal setae 6
3. Frons with 5 interfrontal setae *P. prolongatusa* Xi, Yang & Yin
- Frons with 3 interfrontal setae 4
4. Postocellar setae converging; first flagellomere irregularly quadrate *P. nigrimarginata* Xi, Shen, Yang & Yin
- Postocellar setae cruciate; first flagellomere irregularly circular 5
5. Gena approximately one-ninth of eye height; cercus lacking ventral appendix *P. fuscusa* Xi, Yin & Yang
- Gena approximately one-eleventh of eye height; cercus with short ventral appendix *P. gangliiformisa* Xi, Shen, Yang & Yin
6. Cercus with short ventral appendix; arista 2.5 times longer than first flagellomere 7
- Cercus lacking ventral appendix; arista 3 times longer than first flagellomere 8
7. Gena relatively broad, approximately one-sixth of eye height; palpus long *P. glossophyllusa* Xi, Yin & Yang
- Gena relatively narrow, approximately one-eighth of eye height; palpus short *P. nudipalpis* Malloch
8. First flagellomere 1.5 times wider than long 9
- First flagellomere less than 1.5 times wider than long 10
9. Gena relatively broad, approximately one-sixth of eye height; first flagellomere irregularly circular *P. aureolusa* Xi, Yin & Yang
- Gena relatively narrow, approximately one-eleventh of eye height; first flagellomere irregularly quadrangular *P. ruiiiensis* Xi, Yang & Yin
10. Arista 2.5 times as long as first flagellomere *P. luteigenis* Xi, Yang & Yin
- Arista 3.0 times as long as first flagellomere 11
11. Gena approximately one-fourteenth of eye height; knob of halter brownish *P. guangxiensis* Xi, Yang & Yin
- Gena approximately one-tenth of eye height; knob of halter yellowish *P. leioipalpus* Xi, Yin & Yang
12. Palpus slightly longer, at least 0.6 mm long 13
- Palpus length less than 0.6 mm long 15
13. Frons with 4 interfrontal setae; eye 1.5 times higher than long *P. basilatusa* Xi, Yin & Yang
- Frons with 3 interfrontal setae; eye 1.4 times higher than long 14
14. First flagellomere irregularly quadrangular; lunule brownish *P. longisetae* Xi, Shen, Yang & Yin
- First flagellomere irregularly rectangular; lunule darkish grey *P. sinensis* Xi & Yang
15. Cercus with ventral appendix 16
- Cercus lacking ventral appendix 23
16. Frons with 3 interfrontal setae 17
- Frons with 4 interfrontal setae 18
17. Eye 1.5 times higher than long; knob of halter darkish brown *P. motuoensis* Xi, Yang & Yin
- Eye 1.3 times higher than long; knob of halter yellowish white *P. striolatum* Xi, Yang & Yin
18. Vibrissal angle relatively acute *P. obliquusa* Xi & Yin
- Vibrissal angle relatively blunt 19
19. Arista 3.5 times longer than first flagellomere *P. obtususa* **sp. nov.**
- Arista 3 times longer than first flagellomere 20
20. Eye 1.3 times higher than long; postocellar setae converging *P. lii* Xi, Shen, Yang & Yin
- Eye 1.5 times higher than long; postocellar setae cruciate 21
21. Gena approximately one-ninth of eye height; M_1 between r-m and dm-cu as long as dm-cu *P. hirtipes* **sp. nov.**
- Gena approximately one-tenth of eye height; M_1 between r-m and dm-cu longer than dm-cu 22
22. Vibrissa located at the level of lower eye margin; calypter with yellowish microtrichae *P. epitacta* Hendel
- Vibrissa located below the level of lower eye margin; calypter with blackish microtrichae *P. fuscusagenis* **sp. nov.**
23. Arista at least 3 times longer than first flagellomere; eye 1.6 times higher than long 24
- Arista 3 times as long as first flagellomere; eye less than 1.6 times higher than long 25
24. Gena approximately one-eleventh of eye height; arista darkish brown *P. claviconis* Yang
- Gena approximately one-seventh of eye height; arista black *P. covexusa* Xi & Yin
25. M_1 between r-m and dm-cu as long as dm-cu 26
- M_1 between r-m and dm-cu longer than dm-cu 27
26. Gena narrow, approximately one-eleventh of eye height; palpus long, 5 times longer than wide. . . . *P. angustigenis* Xi & Yang

-.	Gena relatively broad, approximately one-seventh of eye height; palpus long, 7 times longer than wide	<i>P. euthyipalpis</i> Xi & Yang	
27.	M_1 between r-m and dm-cu at least 1.5 times longer than dm-cu		28
-.	M_1 between r-m and dm-cu less than 1.2 times longer than dm-cu		34
28.	Vibrissa located at level of lower eye margin		29
-.	Vibrissa located below level of lower eye margin		32
29.	Postocellar setae converging; gena approximately one-ninth of eye height	<i>P. clavellata</i> Xi & Yang	
-.	Postocellar setae cruciate; gena approximately one-tenth of eye height		30
30.	Frons with 5 interfrontal setae; tibiae blackish brown	<i>P. melanogastera</i> Xi, Shen, Yang & Yin	
-.	Frons with 3 or 4 interfrontal setae; tibiae yellowish		31
31.	Frons with 4 interfrontal setae; ocellar triangle brownish	<i>P. flevies</i> Xi, Yang & Yin	
-.	Frons with 3 interfrontal setae; ocellar triangle blackish	<i>P. luteipalpus</i> Malloch	
32.	Halter white; palpus sickle-shaped	<i>P. drepanipalpis</i> Xi & Yang	
-.	Halter dark brown or yellowish; palpus slightly flat and straight		33
33.	Gena approximately one-seventh of eye height; knob of halter yellowish	<i>P. emeishanensis</i> Xi & Yang	
-.	Gena approximately one-fifth of eye height; knob of halter with upper half white and lower half dark brown	<i>P. latustigenis</i> Xi & Yang	
34.	First flagellomere irregularly quadrangular		35
-.	First flagellomere irregularly circular		37
35.	Eye 1.4 times higher than long; ocellar triangle brown		36
-.	Eye 1.2 times higher than long; ocellar triangle black	<i>P. dicrana</i> Xi & Yang	
36.	Gena approximately one-ninth of eye height; arista 3 times longer than first flagellomere	<i>P. brevipalpis</i> Xi, Shen, Yang & Yin	
-.	Gena approximately one-fourteenth of eye height; arista 2.5 times longer than first flagellomere	<i>P. squadratpalpus</i> Xi, Yang & Yin	
37.	Vibrissal angle relatively acute, its tip less than 60 degree angle	<i>P. cuspidigera</i> Xi & Yang	
-.	Vibrissal angle flat and blunt		38
38.	Cercus with thin ventral appendix; hind tibia brownish	<i>P. dilatata</i> Malloch	
-.	Cercus lacking short ventral appendix; hind tibia dark brown		39
39.	Palpus wide, 2.6 times longer than wide; knob of halter with upper half brown brownish and lower half dark brown	<i>P. planipalpis</i> Xi & Yang	
-.	Palpus basally wide and apically narrowed; knob of halter with upper half yellow and under half yellowish	<i>P. tibetensis</i> Xi & Yang	

***Phyllomyza fuscusagenis* sp. nov.**

(Figs 1, 2, 7, 8)

Diagnosis. Gena narrow, approximately one-tenth of eye height. Surstylus with upper blade of bifurcated tip extremely swollen, with apical margin blunt, the lower one thin and longer than upper one.

Description. Male. Body length 1.4–1.6 mm; wing length 1.4–1.6 mm.

Head brown with greyish microtomentum; orbital plate darkish brown with microtomentum, ocellar triangle darkish brown without microtomentum; lunule strap-shaped, brown with black margin. Posterior eye margin ventrally diverging from head margin; eye 1.5 times as high as long, gena approximately one-tenth of eye height. Setae and setulae on head black; ocellar triangle with 2 ocellar setae and 3 short setae; frons with 3 orbital and 2 frontal setae on brown orbital stripe, orbital setae laterocline and frontal setae mediocline, 4 interfrontal setae; postocellar setae cruciate. Lunule with 2 setae. Vibrissal angle relatively blunt; vibrissa strong, located below the level of lower eye margin. Antenna brown with microtomentum; pedicel with short black setulae at middle and margin, setulae at margin longer than others, the longest one about 2.5 times longer than others; first flagellomere with pubescence, irregularly quadrate; arista 3 times as long as first flagellomere, black, distinctly pubescent. Proboscis slightly short and fold, darkish brown, with sparse setulae. Palpus short, with blunt tip in lateral view, about 0.4 mm, 3.5 times longer than wide; darkish brown with short dense black pubescence, margins with sparse setulae.

Thorax brownish with grey microtomentum except mesonotum shiny brownish with sparse black microtomentum; scutellum brownish with grey microtomentum. Setae and setulae on thorax black; 1 h, 2 dc, 1 prsc, 2 npl, 1 prs, 1 pos, 1 sa, 2 pa, 1 kepsts (a row of setulae at forward position); scutellum 1.5 times wider than long, with pair of asc and bsc, asc 3 times longer than bsc. Legs slender, coxae and femora darkish brown, tibiae yellow except hind tibiae brown with yellow apically, tarsi yellowish. Setae and setulae on legs black. Mid tibia with 1 black preapical dorsal seta. Wing hyaline, veins brown; M_1 between r-m and dm-cu a little longer than dm-cu. Calypter yellowish, with dense blackish microtrichae, margin with thin and long setulae. Knob of halter brownish, stalk brownish.

Abdomen brown with grey microtomentum. Setae and setulae on abdomen black; T2–T5 with setae, marginal setae longer than others; sternites with sparse setulae at posterior 3/4. Posteromedial triangular projection of T1 into T2 strong; S2 irregularly horseshoe-shaped and apex blunt and round, S3 generally trapezoid, apical margin slightly wider than basal margin, S4 horizontal rectangular, basal margin smooth, S5 horizontal trapezoid, apical margin flat. Male genitalia: epandrium with 7 strong black setae; surstylus with upper blade of bifurcated tip extremely swollen, with apical margin blunt, the lower one thin and longer than upper one; cercus arched with longer ventral appendix, with short sparse setae.

Female. Unknown.

Type material. HOLOTYPE male, CHINA, Chongqing, Yintiaoling Nature Reserve, Mt. Guanshan, Maizitang, 2168 m, 31°28'N 109°47'E, 2022. VIII. 17, Xulong Chen. PARATYPES: 2 males, Yintiaoling Nature Reserve, Lanying Grand Canyon, 875 m, 31°26'N 109°50'E, 2022. VIII. 13, Xulong Chen.

Distribution. China (Chongqing)

Etymology. The specific epithet refers to the colour of gena.

Remarks. This new species is distinctly different from other species of this genus in the hind tibia brown with yellow apex; the relatively longer palpus.

Phyllomyza hirtipes sp. nov.

(Figs 3, 4, 9, 10)

Diagnosis. Gena approximately one-ninth of eye height. Surstylus with upper blade of bifurcated tip extremely swollen and apical margin flat, the lower blade thin and with sharp tip.

Description. Male. Body length 1.3–1.5 mm; wing length 1.3–1.5 mm.

Head brown with greyish microtomentum; orbital plate brown, with microtomentum, ocellar triangle brownish without microtomentum; lunule strap-shaped, darkish brown with black margin. Posterior eye margin ventrally diverging from head margin; eye 1.5 times as high as long, gena approximately one-ninth of eye height. Setae and setulae on head black; ocellar triangle with 2 ocellar setae and 3 short setae; frons with 3 orbital and 2 frontal setae on darkish brown orbital stripe, orbital setae laterocline and frontal setae mediocline, 4 interfrontal setae; postocellar setae cruciate. Lunule with 2 setae. Vibrissal angle relatively flat; vibrissa strong, located below level of lower eye margin. Antenna darkish brown with microtomentum; pedicel with black setulae at middle and margin, setulae at margin longer than others, the longest one about 3 times longer than others; first flagellomere with pubescence, irregularly circular; arista 3 times as long as first flagellomere, brown, distinctly pubescent. Proboscis short, brown, with sparse black setulae. Palpus short with blunt apex, anterior 1/3 narrowed in lateral view, about 0.2 mm; darkish brown with short dense brown pubescence, margin with short sparse setae.

Thorax darkish brown with grey microtomentum, except mesonotum shiny brown with sparse black microtomentum; scutellum darkish brown with grey microtomentum. Setae and setulae on thorax black; 1 h, 2 dc, 1 prsc, 2 npl, 1 prs, 1 pos, 1 sa, 2 pa, 1 ia, 1 kepsts (a row of setulae at forward position); scutellum 1.5 times wider than long, with pair of asc and bsc, asc 3 times longer than bsc. Legs slender, coxae and femora darkish brown, tibiae yellow except hind tibiae darkish brown at posterior 2/3, tarsi yellowish. Setae and setulae on legs black. Mid tibia with 1 black preapical dorsal seta. Wing hyaline; veins brown; M_1 between r-m and dm-cu as long as dm-cu. Calypter yellowish, with dense brownish microtrichae, margin with black setulae. Knob of halter darkish brown, stalk brownish.

Abdomen brown with grey microtomentum. Setae and setulae on abdomen black; T2–T5 with long setae at posterior margin; sternites with sparse setulae. Posteromedial triangular projection of T1 into T2 strong; S2 generally horseshoe-shaped, apical margin blunt, S3 vertically rectangular, S4 and S5 horizontally trapezoid, S5 shorter than S4, only half as long as S4. Male genitalia: epandrium with 7 strong black setae; surstylus with upper blade of bifurcated tip extremely swollen and apical margin flat, the lower blade thin and with sharp tip; cercus arched with a little longer ventral appendix, with short sparse setae.

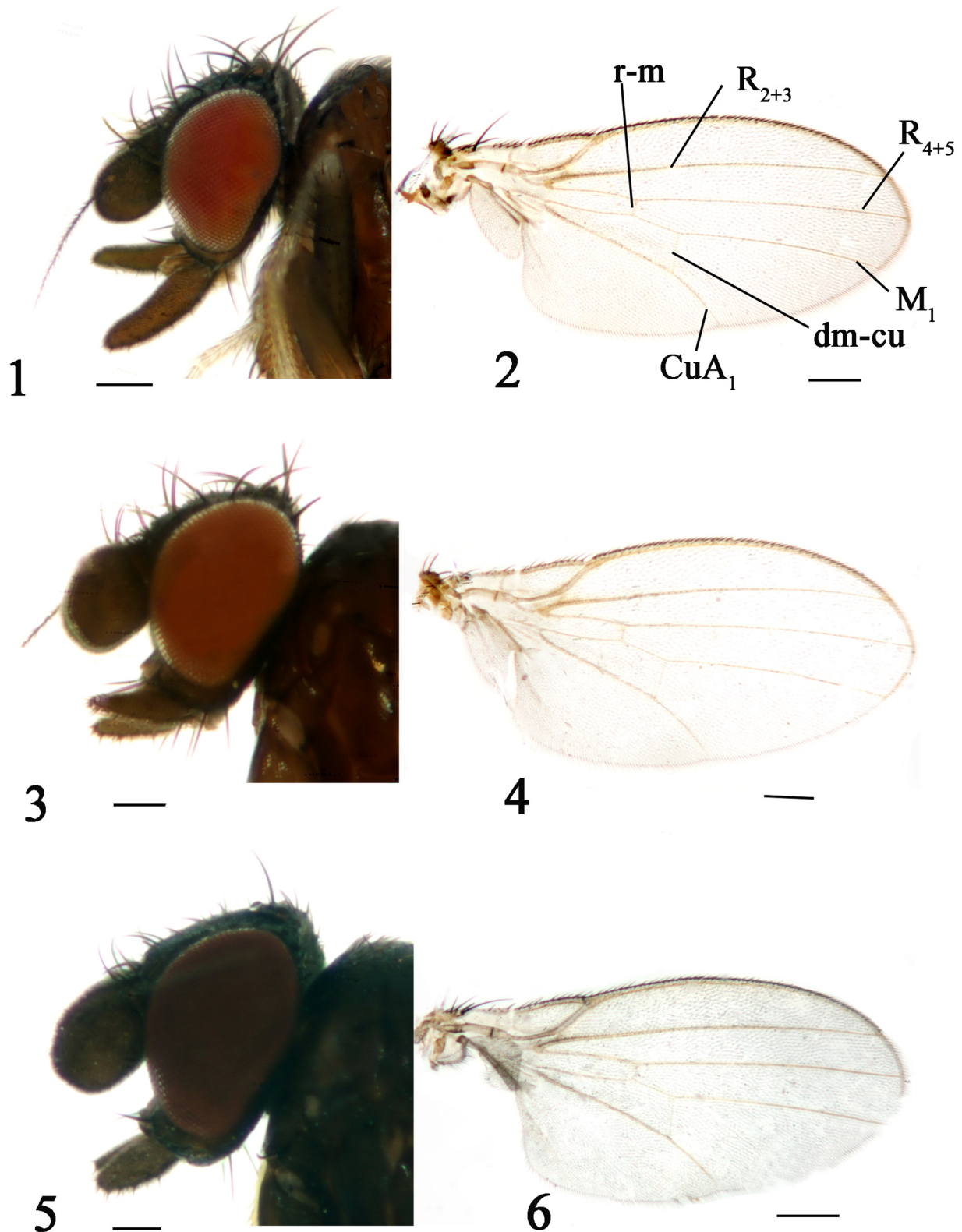
Female. Unknown.

Type material. HOLOTYPE male, CHINA, Chongqing, Yintiaoling Nature Reserve, Huangcaoping, 2168 m, 31°25'N 109°55'E, 2022. VI. 30, Yuliang Guan & Rongzhen Xu. PARATYPES: 2 males, same data as holotype.

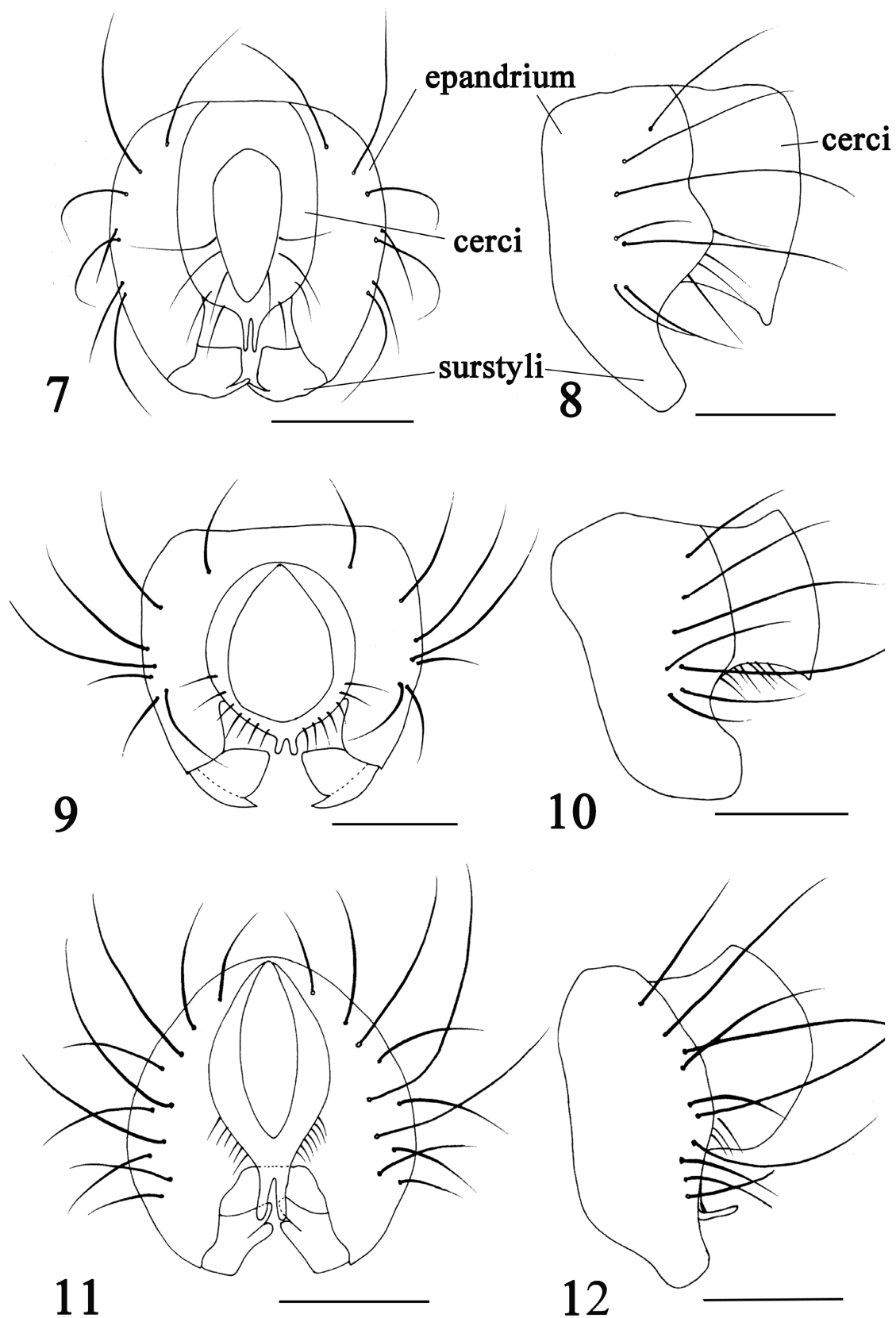
Distribution. China (Chongqing)

Etymology. The specific epithet refers to the epandrium with strong setae.

Remarks. This species is similar to *P. motuoensis* Xi, Yang *et* Yin, but can be separated by the 4 interfrontal setae; the vibrissa located below level of lower eye margin; the M_1 between r-m and dm-cu as long as dm-cu. In *P. motuoensis*, the number of interfrontal setae are three; the vibrissa is located at the level of lower eye margin; M_1 between r-m and dm-cu longer than dm-cu (Xi, Yang & Yin 2019).



FIGURES 1–6. Head (male, lateral view) and wing (male). 1–2, *Phyllomyza fuscusagenis* sp. nov.; 3–4, *Phyllomyza hirtipes* sp. nov.; 5–6, *Phyllomyza obtusus* sp. nov. Scale bars = 0.1 mm.



FIGURES 7–12. Male epandrium, cercus, and surstylus, posterior view and lateral view. 7, *Phyllomyza fuscusagenis* sp. nov., posterior view; 8, *Phyllomyza fuscusagenis* sp. nov., lateral view; 9, *Phyllomyza hirtipes* sp. nov., posterior view; 10, *Phyllomyza hirtipes* sp. nov., lateral view; 11, *Phyllomyza obtusus* sp. nov., posterior view; 12, *Phyllomyza obtusus* sp. nov., lateral view. Scale bars = 0.1 mm.

***Phyllomyza obtususa* sp. nov.**

(Figs 5, 6, 11, 12)

Diagnosis. Gena approximately one-tenth of eye height. Surstylus with upper blade of bifurcated tip swollen and apical margin flat and blunt, the lower blade slightly swollen and shorter than the upper one.

Description. Male. Body length 1.3–1.5 mm; wing length 1.2–1.5 mm.

Head darkish brown with greyish microtomentum; orbital plate shiny brown with microtomentum, ocellar triangle darkish brown without microtomentum; lunule strap-shaped, darkish brown with black margin. Posterior eye margin ventrally diverging from head margin; eye 1.4 times as high as long, gena approximately one-tenth of eye height. Setae and setulae on head black; ocellar triangle with 2 setae and 3 short setae; frons with 3 orbital and 2 frontal setae on brown orbital stripe, orbital setae lateroconate and frontal setae medioconate, 4 interfrontal setae; postocellar setae cruciate. Lunule with 2 setae. Vibrissal angle relatively flat, approximately right-angle; vibrissa strong, located below level of lower eye margin. Antenna darkish brown with microtomentum; pedicel with black setulae at middle and margin, setulae at margin longer than others, the longest one about 3.5 times longer than others; first flagellomere with pubescence, irregularly circular; arista 3 times as long as first flagellomere, black, distinctly pubescent. Proboscis slender, greyish white at apical half part and the rest blackish, with sparse black setulae. Palpus flat with blunt apex in lateral view, 0.2 mm, 2 times as long as wide; darkish brown with short dense black pubescence, margin with short sparse setulae.

Thorax darkish brown with grey microtomentum except mesonotum shiny darkish brown with sparse black microtomentum; scutellum brown with grey microtomentum. Setae and setulae on thorax black; 1 h, 2 dc, 1 prsc, 2 npl, 1 prs, 1 pos, 1 sa, 1 pa, 1 ia, 1 kepsts (a row of setulae at forward position); scutellum 1.5 times wider than long, with pair of asc and bsc, asc 3 times longer than bsc. Legs slender, coxae and femora darkish brown, tibiae brown except fore tibiae darkish yellow, tarsi yellowish. Setae and setulae on legs black, mid tibia with 1 black preapical dorsal seta. Wing hyaline, veins brown; M_1 between r-m and dm-cu as long as dm-cu. Calypter yellowish, with dense brownish microtrichae, margin with brownish setulae. Knob of halter brown, stalk brownish.

Abdomen brown with grey microtomentum. Setae and setulae black; T2–T5 with long setae at posterior margin; sternites with sparse setulae. Posteromedial triangular projection of T1 into T2 weak; S2 generally horseshoe-shaped, S3 vertical rectangular, S4 generally subquadrate, S5 slightly trapezoid, apical margin slightly wider than basal margin. Male genitalia: epandrium with strong black setae; upper blade of bifurcated tip of surstylus swollen and apical margin flat and blunt, the lower blade slightly swollen and shorter than the upper one; cercus arched with a little longer ventral appendix, with short sparse setae.

Female. Unknown.

Type material. HOLOTYPE male, CHINA, Chongqing, Yintiaoling Nature Reserve, Yezhuping, 1550 m, 31°28'N 109°49'E, 2022. VI. 22, Yuliang Guan & Rongzhen Xu. PARATYPES: 3 males, same data as holotype.

Distribution. China (Chongqing)

Etymology. The specific epithet refers to the blunt vibrissal angle.

Remarks. This species is similar to *P. brevipalpis* (Hendel, 1919), but can be separated by the gena approximately one-tenth of eye height; the M_1 between r-m and dm-cu as long as dm-cu. In *P. brevipalpis*, the gena is approximately one-fourth of eye height; the M_1 between r-m and dm-cu longer than dm-cu at least 1.5 times (Hendel 1919).

Acknowledgements

We are grateful to two anonymous reviewers and the subject editor for their constructive comments. And thank is also given to Mr. Xulong Chen (Chongqing), Mr. Yuliang Guan and Rongzhen Xu for their kind help and collecting the specimens. This research was funded by the Key R&D and promotion projects of Henan Province (212102110471), Central Plains Science and Technology Innovation Talent (224200510018), Entrepreneurship Training Program for College Students of Henan Agricultural University in 2022 (2022CYXL090, 2022CYXL095, 2022CYXL096), China Agriculture Research System of MOF and MARA(CARS-27), the Special Foundation for National Science and Technology Basic Research Program of China (2018FY100400) and the National Natural Science Foundation of China (31672333).

References

- Brake, I. (2000) Phylogenetic systematics of the Milichiidae (Diptera, Schizophora). *Entomologia Scandinavica*, 57 (Supplement), 1–120.
- Hendel, F. (1914) H. Sauter's Formosa-Ausbeute. Acalyptrate Musciden (Dipt.). III. *Supplementa Entomologica*, 3, 90–117.
- Hendel, F. (1919) Neues über Milichiiden (Dipt.). *Entomolog Mitteilungen*, 8, 196–220.
- Hennig, W. (1937) Milichiidae et Carnidae. In: Lindner, E. (Ed.), *Die Fliegen der Palaearktischen Region*, 6(1), 1–91. Schweizerbart, Stuttgart.
- Hennig, W. (1967) Neue Acalyptratae aus dem Baltischen Bernstein. *Stuttgarter Beiträge zur Naturkunde*, 175, 1–27.
- Iwasa, M. (2003) The genus *Phyllomyza* Fallén (Diptera: Milichiidae) from Japan, with descriptions of four new species. *Entomological Science*, 6, 281–288.
<https://doi.org/10.1046/j.1343-8786.2003.00031.x>
- Malloch, J.R. (1914a) A synopsis of the genera of Agromyzidae, with descriptions of new genera and species. *Proceedings of the United States National Museum*, 46, 127–154.
<https://doi.org/10.5479/si.00963801.46-2018.127>
- Malloch, J.R. (1914b) Formosan Agromyzidae. *Annales Historico-Naturales Musei Nationalis Hungarici*, 12, 306–336.
- McAlpine, J.F. (1981) Morphology and terminology-adults. In: McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R. & Wood, D.M. (coord.), *Manual of Nearctic Diptera. Vol. 1, Agriculture Canada Monograph*, 27, pp. 9–63.
- Papp, L. (1976) Milichiidae and Carnidae (Diptera) from Mongolia. *Acta Zoologica Academiae Scientiarum Hungaricae*, 22, 369–387.
- Papp, L. (1984) Family Milichiidae. In: Soós, A. & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera, Vol. 10*, Akadémiai Kiadó, Budapest, pp. 110–118.
- Papp, L. & Wheeler, T.A. (1998) Family Milichiidae. In: Papp, L. & Darvas, B. (Eds.), *Family Milichiidae. Vol. 3. Contributions to a Manual of Palaearctic Diptera*, Science Herald, Budapest, pp. 315–324.
- Xi, Y.Q. & Yang, D. (2013) Four new species of *Phyllomyza* Fallén from China (Diptera, Milichiidae). *Zootaxa*, 3718 (6), 575–582.
<https://doi.org/10.11646/zootaxa.3718.6.5>
- Xi, Y.Q. & Yang, D. (2015a) The genus *Phyllomyza* Fallén (Diptera, Milichiidae) from China, with description of five new species. *Transactions of the American Entomological Society*, 141, 44–55.
<https://doi.org/10.3157/061.141.0105>
- Xi, Y.Q. & Yang, D. (2015b) *Phyllomyza* Fallén (Diptera: Milichiidae) newly found in Tibet with descriptions of two new species. *Florida Entomologist*, 98 (2), 495–498.
<https://doi.org/10.1080/00305316.2018.1477632>
- Xi, Y.Q., Yin, X.M. & Yang, D. (2016) *Phyllomyza* Fallén (Diptera: Milichiidae) from Yunnan with descriptions of four new species. *Entomotaxonomia*, 38 (1), 29–38.
<https://doi.org/10.11680/entomotax.2016009>
- Xi, Y.Q., Yang, D. & Yin, X.M. (2018) The genus *Phyllomyza* Fallén from China, with descriptions of three new species (Diptera, Milichiidae). *ZooKeys*, 760, 143–157.
<http://doi.org/10.3897/zookeys.760.22595>
- Xi, Y.Q., Yang, D. & Yin, X.M. (2019) New *Phyllomyza* Fallén, 1810 (Diptera, Milichiidae) from Tibet with a key to species of China. *Oriental Insects*, 53 (2), 177–190.
<https://doi.org/10.1080/00305316.2018.1477632>
- Xi, Y.Q. & Yin, X.M. (2018) Four new species of *Phyllomyza* Fallén (Diptera: Milichiidae), with an updated key from China. *Zoological Systematics*, 43 (3), 309–316.
<http://doi.org/10.11865/zs.201824>
- Xi, Y.Q., Shen, S., Yin, X.M. & Yang, D. (2021) Six new species in the genus *Phyllomyza* Fallén (Diptera: Milichiidae) from China with a key to Chinese species. *Entomotaxonomia*, 43 (1), 1–14.
<https://doi.org/10.11680/entomotax.2021001>
- Yang, C.K. (1998) The family Milichiidae new to Henan, with description of a new species (Diptera: Acalyptratae). In: Shen, X.C. & Shi, Z.Y. (Eds.), *Fauna and Taxonomy of Insects in Henan. Vol. 2*. China Agricultural Science and Technology Press, Beijing, pp. 95–96.