

# New Records of Lauxaniid and Agromyzid Flies (Insecta, Diptera), with the Description of a New Species

Mitsuhiro Sasakawa

7–6–7 Korigaoka, Hirakata-shi, Osaka, 573–0084 Japan  
E-mail: sasakawa@star.odn.ne.jp

**Abstract** Five species of the Lauxaniidae and three of the Agromyzidae are recorded from the Imperial Palace, Akasaka Imperial Gardens and Tokiwamatsu Imperial Villa, Tokyo, of which one lauxaniine, *Minettia cycliostylis*, is described as new to science, and two species are recorded for the first time in Japan.

**Key words:** Diptera, Lauxaniidae, Agromyzidae, Tokyo, new species, new record.

## Introduction

The lauxaniid and agromyzid flies found in the Imperial Palace, Akasaka Imperial Gardens and Tokiwamatsu Imperial Villa, Tokyo, were recorded by myself (Sasakawa, 2005, 2006). Important additional material became available from there. It has now become to clarify further the occurrence of a number of known species and in this paper one new species is described.

## Materials and Methods

The dried specimens of the lauxaniid and agromyzid flies were collected mainly by Kenkichi Kanmiya, a member of the faunistic surveys on Diptera in the Imperial Palace, the Akasaka Imperial Gardens and the Tokiwamatsu Imperial Villa, Tokyo, in 2005. The terms and abbreviations follow the previous paper (Sasakawa, 2005).

The holotype of a new species is deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo (NSMT).

## Taxonomy

### Lauxaniidae

1. *Homoneura (Homoneura) demeijerei* Malloch  
*Homoneura (Homoneura) demeijerei* Malloch,

1929: 75 (misspelled as *demeijerii*).

Imperial Palace: 1 ♀, 21 July 2005 (Kanmiya).

This small, yellowish and clear-winged species is distinctive in having the bicolor first antennal flagellomere, mesoscutum and scutellum (cf. Sasakawa, 1992: 169). It differs from *H. (H.) assidua* Shatalkin, 1993, with the bicolor antennal flagellomere, known from Russia (Far East), in the length of hairs on the arista [the dorsal longest hair is 1.6 times as long as width of the flagellomere in *H. (H.) demeijerei*, while equal to width of flagellomere in *H. (H.) assidua*] and coloration of the thorax [entirely fulvous in *H. (H.) assidua*].

*Distribution.* Malaysia, Vietnam, Sumatra; Japan (new record).

2. *Homoneura (Homoneura) mediospinosa* Merz  
*Homoneura mediospinosa* Merz, 2002: 100.

Akasaka Imperial Gardens: 1 ♂, 20 July 2005 (Kanmiya).

Tokiwamatsu Imperial Villa: 1 ♀, 3 Oct. 2005 (Kanmiya).

See Sasakawa, 1983: 289.

*Distribution.* Europe, Japan.

3. *Homoneura (Homoneura) shinonagai* Sasakawa  
*Homoneura (Homoneura) shinonagai* Sasakawa

kawa, 2005: 293.

Tokiwamatsu Imperial Villa: 4♂3♀, 20 July and 3 Oct. 2005 (Kanmiya and M. Owada).

The specimens agree well with the original description, the following differences being noted: wing with the apices of  $R_{2+3}$ ,  $R_{4+5}$  and  $M_{1+2}$  are slightly infuscated in male but much paler in female; acr are arranged in four rows; wing length: 2.6–3.0 mm in male, 3.2–3.8 in female.

*Distribution.* Japan.

#### 4. *Itomyia curvata* Sasakawa

*Itomyia curvata* Sasakawa, 2005: 296.

Akasaka Imperial Gardens: 1♀, 20 July 2005 (Kanmiya).

Female is recorded for the first time, and differs from male in the following points: frons and parafrotaia weakly shiny; parafacialia brown, weakly shiny; palpus yellow, distinctly darkened on apex; mesoscutum brownish black, mat, grayish-dusted; legs brownish yellow except for fore tibia and tarsus; first antennal flagellomere six times as long as wide, gradually narrowing apically; three pairs of presutural acr shorter than those of the postsuturals; wing 2.9 mm long, ultimate section of  $M_{3+4}$  1/7 length of penultimate.

*Distribution.* Japan.

#### 5. *Minettia (Frendelia) cyclostylis* Sasakawa, n. sp.

(Figs. 1–2)

*Holotype:* Male (NSMT-I-DIP 6498), Imperial Palace, Tokyo, 21 July 2005, coll. K. Kanmiya. Paratypes: 2♀, same data as holotype; 1♂8♀, Akasaka Imperial Gardens, 20 July 2005 (Kanmiya); 1♀, Tokiwamatsu Imperial Villa, 20 July 2005 (Kanmiya).

*Diagnosis.* This large, black species is characterized by having the plumose arista, three brownish stripes on the mesoscutum and several long setae at the anteroventral corner of anepisternum, the U-shaped protandrium, the rounded surstylus, and the asymmetric phallic processes.

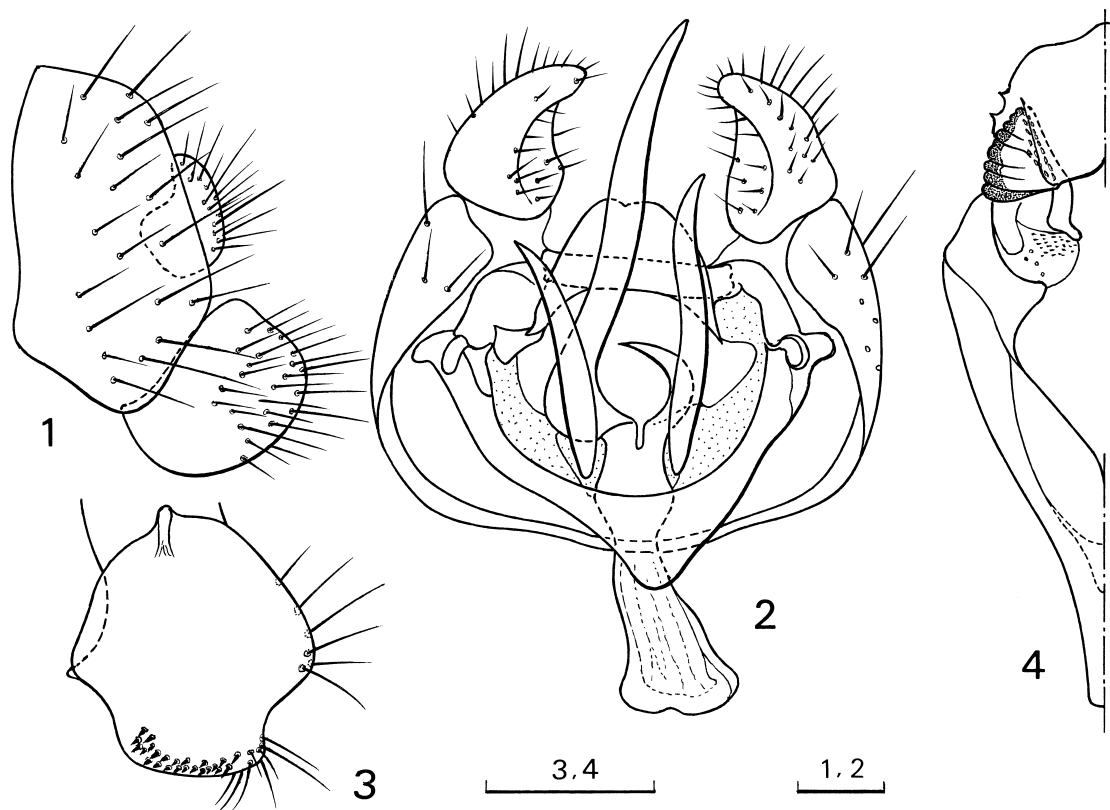
*Male.* Black; frons and ocellar triangle weakly shiny, frontalia brown along ventral margin; face

brown-tinged centrally; gena brown; antenna pale brown, arista black; palpus black; mesoscutum and scutellum densely gray-dusted, the former with central line indistinctly brownish and declines narrowly brown, extending midway between anterior margin of scutum and transverse suture, postpronotal lobe and propleuron brown; pleura blackish brown, gray-dusted; abdomen shiny, epandrium pale brown. Wing faintly tinged with brown, without darkened base; veins brownish yellow; calypter brownish gray, with fringe pale brown; halter with stalk brownish yellow, knob dark brown. Legs with coxae brownish black, femora and tibiae dark brown, tarsi brownish yellow.

Frons only a little wider than eye (15 : 13) parallel-sided but slightly diverging on ventral half; parafrotaia with ventral part projecting above eye in profile; lower or shorter than upper; oh in row; oc longer than lower or; eye 1.3 times as high as wide; gena 1/10 height of eye; face flat, with ventrolateral tubercles, antennal grooves shallow; first antennal flagellomere 1.5 times as long as wide, narrowing apically, minutely pilose; arista shorter than eye height, plumose, with dorsal longest hair approximately equal to width of first flagellomere in length.

Mesoscutum with 0+3 dc, eight rows of acr, prsc as long as second dc; anepisternum with three or four long setae at anteroventral corner; stpl two. Wing 4.5 mm, costa extending to  $M_{1+2}$ , with three sections in proportion of 3.3 : 1 : 0.6; r-m almost at midpoint of discal cell; ultimate section of  $M_{1+2}$  nearly 1.5 times as long as penultimate; ultimate section of  $M_{3+4}$  0.16 of penultimate. Legs:  $f_1$  with seven v;  $t_2$  with pd stronger than that on  $t_1$ ,  $t_3$  without pd;  $t_2$  with two spurs, of which outer one distinctly shorter than inner.

Protandrium U-shaped, narrowly projected ventrally, thrice as high as epandrium, as long as epandrium in dorsal side. Epandrium with surstylus large, suborbicular in lateral view, nearly 1/2 height of epandrium, slightly incurved on ventral apex. Hypandrium V-shaped; pregonites black, unequal in length. Phallic processes black, un-



Figs. 1–4. Male genitalia of *Minettia (Frendelia) cycliostylis* n. sp. (1–2) and *Melanagromyza rohdendorfi* Spencer (3–4). 1, epandrium, cercus and surstylus, lateral view; 2, epandrium, surstylus, hypandrium, pregonite and phallus, ventral view; 3, right surstylus, inner view; 4, hypandrium, gonite, phallic hood, left half, ventral view. Scale=0.1 mm.

equal in length, left process 2.5 times as long as the right and projected downward on tip, right process incurved apically.

Body length 5.7–6.0 (5.7 in holotype) mm.

*Female.* Similar to male, but first antennal flagellomere darker than that of male, wing 4.1–4.8 mm long, slightly infuscated at base. Legs:  $f_1$  with 8–10 v, 6–8 d;  $f_2$  with 6 or 7 a;  $f_3$  with 1 a. Body length: 3.8–5.2 mm.

*Distribution.* Japan.

*Remarks.* This species is similar to *Minettia (Frendelia) ryukyuensis* Sasakawa, 2002, in having the plumose arista and the round surstylus. But, their male genitalia are quite different from each other, that is, in *M. (F.) ryukyuensis* the protandrium is horseshoe-shaped, the hypandrium is semicircular, and the phallus is tubulate

(cf. Sasakawa, 2002: fig. 1). The structure of the phallus and gonites of this new species is quite similar to that of Oriental *Minettia (Frendelia) fuscofasciata* (de Meijere, 1910) in appearance, but in *M. (F.) fuscofasciata* the epandrium is provided with the apically bifurcate surstylus, the hypandrium is semicircular, and the right pregonite is equal to the left phallic process in length (cf. Sasakawa, 2001: fig. 4B).

### Agromyzidae

6. *Melanagromyza rohdendorfi* Spencer  
*Melanagromyza rohdendorfi* Spencer, 1966: 30.  
 Tokiwamatsu Imperial Villa: 1 ♂, 20 July 2006  
 (Owada).

A single male specimen agrees with the origi-

nal description except for the following different points: mesoscutum is slightly pollinose, with faintly greenish luster and the abdomen is also greenish black (not bluish as in the original description); the calypter is brownish gray, with the brownish white fringe (not ochrous); the inclinate ori are three or four (not 2 or 3); oh are proclinate, and arranged in two rows below level of second ors; the gena is 1/7 height of eye (not 1/5); the first antennal flagellomere is covered by pile which is as long as the basal thickness of arista (not inconspicuous); the arista is rather distinctly pubescent (not bare appearing); five or six rows of acr are extended behind level of the second dc. These variations might conceivably result from differences in the specimen examined. In addition, the following diagnostic characters including the genitalia are noted for the first time: one reclinate oh is situated between ors; the costal three sections are in proportion of 4 : 1 : 1; the crossvein r-m is situated on distal third of the discal cell. Male genitalia: cercus with eight stout setae on the anteroventral part; surstylus (Fig. 3) as wide as epandrium, bearing 24 or 25 spinules in two irregular rows along ventral margin; hypandrium 310  $\mu\text{m}$  long (Fig. 4), strongly curved ventrally at middle; pregonite weakly sclerotized; phallic hood spinulose and sinuate along lateral margin, and granulated inside; phallapodeme 510  $\mu\text{m}$  long, phallus 280  $\mu\text{m}$  long, distiphallus with dorsal lobes granulated on outer surface and spinulose internally; ejaculatory apodeme 150  $\mu\text{m}$  long, 95  $\mu\text{m}$  wide.

*Distribution.* Russia, Japan (new record).

7. *Cerodontha (Butomomyza) staryi* (Starý)  
*Dizygomyza staryi* Hering, Starý, 1930: 49.  
Tokiwamatsu Imperial Villa: 1 ♂, 20 July 2005 (Owada).  
See Sasakawa, 2005: 60.  
*Distribution.* Europe, Japan.
8. *Pseudonapomyza spicata* (Malloch)  
*Phytomyza spicata* Malloch, 1914: 334.  
*Pseudonapomyza spicata* (Malloch): Hennig, 1941: 173.

Akasaka Imperial Gardens: 1 ♂, 3 Oct. 2005 (Kanmiya).

*Distribution.* Asia, Pacific, Middle East, Africa.

### Acknowledgements

I wish to express my sincere thanks to Drs. K. Kanmiya, of the Kurume University, Kurume, and M. Owada, of the National Museum of Nature and Science, Tokyo, for allowing me to examine the flies collected in the Imperial Palace, Akasaka Imperial Gardens and Tokiwamatsu Imperial Villa, Tokyo.

### References

- Fallén, C. F., 1820. *Ortalides Sveciae*. 34 pp. Lund.
- Hennig, W., 1941. Verzeichnis der Dipteren von Formosa. *Entomologische Beihefte*, **8**: 1–239.
- Malloch, J. R., 1914. Formosan Agromyzidae. *Annales Musei Nationalis Hungarici*, **12**: 306–336.
- Malloch, J. R., 1929. Notes on some Oriental sapromyzid flies (Diptera), with particular reference to the Philippine species. *Proceedings of the U. S. National Museum*, **74**: 1–97.
- Merz, B., 2002. Einführung in die Familie Lauxaniidae (Diptera, Acalyptata) mit Angaben zur Fauna der Schweiz. *Mitteilungen der Entomologischen Gesellschaft Basel*, **52**: 29–128.
- Sasakawa, M., 1983. A revision of the Japanese species of *Homoneura* (*Homoneura*) (Diptera, Lauxaniidae). Part 2. *Kontyû*, **51**: 289–297.
- Sasakawa, M., 1992. Lauxaniidae (Diptera) of Malaysia (Part 2): A revision of *Homoneura* van der Wulp. *Insecta Matsumurana*, new series, **46**: 133–210.
- Sasakawa, M., 2001. Oriental Lauxaniidae (Diptera) Part 2. Fauna of the Lauxaniidae of Viet Nam. *Scientific Reports of Kyoto Prefectural University, Human Environment and Agriculture*, (53): 39–94.
- Sasakawa, M., 2002. Oriental Lauxaniidae (Diptera) Part 3. Fauna of the Lauxaniidae in Japan (Ryukyus) and Formosa. *Scientific Reports of Kyoto Prefectural University, Human Environment and Agriculture*, (54): 33–61.
- Sasakawa, M., 2005. Fungus gnats, lauxaniid and agromyzid flies (Diptera) of the Imperial Palace, the Akasaka Imperial Gardens and the Tokiwamatsu Imperial Villa, Tokyo. *Memoirs of the National Science Museum, Tokyo*, (39): 273–312.
- Sasakawa, M., 2006. Lauxaniid flies (Diptera) of the Garden of the Imperial Palace, Tokyo. *Memoirs of the National Science Museum, Tokyo*, (43): 335–339.

- Spencer, K. A., 1966. A revision of European species of the genera *Melanagromyza* Hendel and *Hexomyza* Enderlein, with a supplement on the genus *Ophiomyia* Braschnikov (Diptera: Agromyzidae). *Beiträge zur Entomologie*, **16**: 3–60.
- Starý, B., 1930. Studie o Dizygomyzách (Dipt.) minujících v listech ostřic. *Sborník Klubu Přírodovědeckého v Brně*, **12**: 49–50.