

Oriental Lauxaniidae (Diptera) Part 1.

MITSUHIRO SASAKAWA*

Abstract : This paper presents the Malayan and Ryukyu faunae of lauxaniid flies. Descriptions of eleven new species are given: *Prosopomyia orientalis*, *Homoneura bistylata*, *longiparameria* and *shewelli*, and *Minettia vockerothi* from Malaya, and *Homoneura dicyrta*, *furcistylis* and *paraforcipata*, *Prosopophorella iriomotensis*, *Steganopsis japonica* and *Protrigonometopus okinawanus* from Ryukyu Islands, Japan. Distribution of genus *Prosopomyia* in Oriental region is recorded for the first time.

(Received on Sept. 14. 1998)

Key words : Taxonomy, Diptera, Lauxaniidae; Malaya; Ryukyu Islands; new species.

The present paper is the first of the taxonomic study of the Oriental Lauxaniidae. The Oriental 44 genera and about 350 species had been studied mainly by Frey(1927), Hendel(1907,1913), Kertész(1913, 1915), Malloch(1927, 1929), de Meijere(1910, 1916, 1924), Sasakawa(1992,1995) and Stuckenberg(1971). The characteristic features in the region are represented by the greatest specific diversity in the genus *Homoneura* van der Wulp(1891) among the known genera, and both the generic and specific ones of the family in the islands such as have found in the Philippines(Luzon) and Java, depending upon the result of researches.

Abbreviations for certain setae or bristles, abdominal segments, and the wing vein indices are followed after my previous paper(1992).

The holotypes of new species based on specimens borrowed from the Eastern Cereal and Oilseed Research Centre, Agriculture and Agri-Food Canada, Ottawa, and the Insect Museum, National Institute of Agro-Environmental Sciences, Tsukuba, are preserved in their respective collections.

I Malaya

About 100 species of the Lauxaniidae have hitherto been known from Malaya, including Singapore(72 species) and North Borneo(Sabah, Sarawak; 35 species)(Shewell, 1977; Sasakawa and Tho, 1990; Sasakawa, 1992 & 1995). They belong to 14 genera(6 of the Homoneurinae and 8 of the Lauxaniinae) out of the Oriental total of 44(13 genera of Homoneurinae and 31 of Lauxaniinae). I examined 170 Malayan specimens collected in January 1990 by Dr. J.R. Vockeroth, Biological Resources Program, Eastern Cereal and Oilseed Research Centre, Canada. It consists of 30 species, of which 5 species are described below as new to science.

1. *Prosopomyia orientalis* n. sp. (Fig. 1)

Female. Black, densely grey dusted; abdomen and postnotum tinged with brown; ventral margin of frons linearly brown; T6 with posterior margin yellowish; antenna brown, but testaceous on basal half of third segment. Wing hyaline, very faintly tinged with yellow; halter yellowish white. Legs testaceous but coxae and femora excepting apices more brownish.

Head 1.5 times as high as broad; frons as long as wide, 1.4 times as wide as eye, slightly diverging ventrally; parafrontalia 1/5 width of frons, bearing 2 long, reclinate *or* and 1 orbital hair between levels of two *or* but a few minute hairs below lower *or*; *oc* about 1/2 length of upper *or*; eye 1.3

*Professor Emeritus, Kyoto Prefectural University, Kyoto 606-8522, Japan.

times as high as wide; face distinctly protruded longitudinally, especially at ventral 1/3; parafacialia very narrow; gena about 1/3 height of eye; *pm* 5-6; third antennal segment ovoid, narrowing apically, nearly twice as long as wide; arista short-haired.

Mesonotum with 0+3 *dc*, 6 rows of *acr*, *prsc* shorter than first *dc*, 1 *h*; scutellum with apical *sc* almost equal to the basal in length; *stpl* 2. Costa with sections 2-4 in proportion of 48:15:9; *r-m* only a little before middle of discal cell; ultimate section of *M*₁₊₂ nearly 1.5 times as long as the penultimate; 5V-index 0.13. Fore femur with a comb of 9-10 short spines antero-ventrally and 4 *pv*; mid femur with 4 *a*; all tibiae with *pd* distinct; mid tibia with 2 spurs, of which posterior one shorter than the anterior.

Body length 2.3 mm, wing length 2.6 mm.

Male. Unknown.

Holotype female, Tanah Rata(1,460 m), Pahang, 4 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya.

Remarks. The genus *Prosopomyia* Loew(1856) is one of the two homoneurine genera in the Palaearctic Region (Stuckenberg, 1971), and is represented by only one species, *pallida* Loew(1856), known from Europe and North Africa. It is of interest to note the occurrence of the genus in the Oriental Region. The new species is distinguishable immediately from *pallida* by its black body.

2. *Phobeticomyia preapicalis* Malloch

Phobeticomyia preapicalis Malloch, 1929:23.

This species is unique in having a hyaline fascia at about its own width from the apex of wing. Other characters are added to the original description as follows: face with a yellowish spindle-shaped spot between glossy bulbs; antenna testaceous, third segment brown-spotted at base of inner side (about 2/5 as long as the length of third segment, not extending to ventral margin), and dorsal longest hair on arista almost twice as long as the width of third segment; mesonotum grey- and dark brown purple-mottled irregularly; scutellum dark brown purple pollinose; mid and hind tibiae each with a yellow preapical ring; wing length 2.5-2.7 mm.

Specimens examined. Four males and 2 females, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya(Singapore).

3. *Noonamyia euphlebia* Sasakawa (Fig. 2)

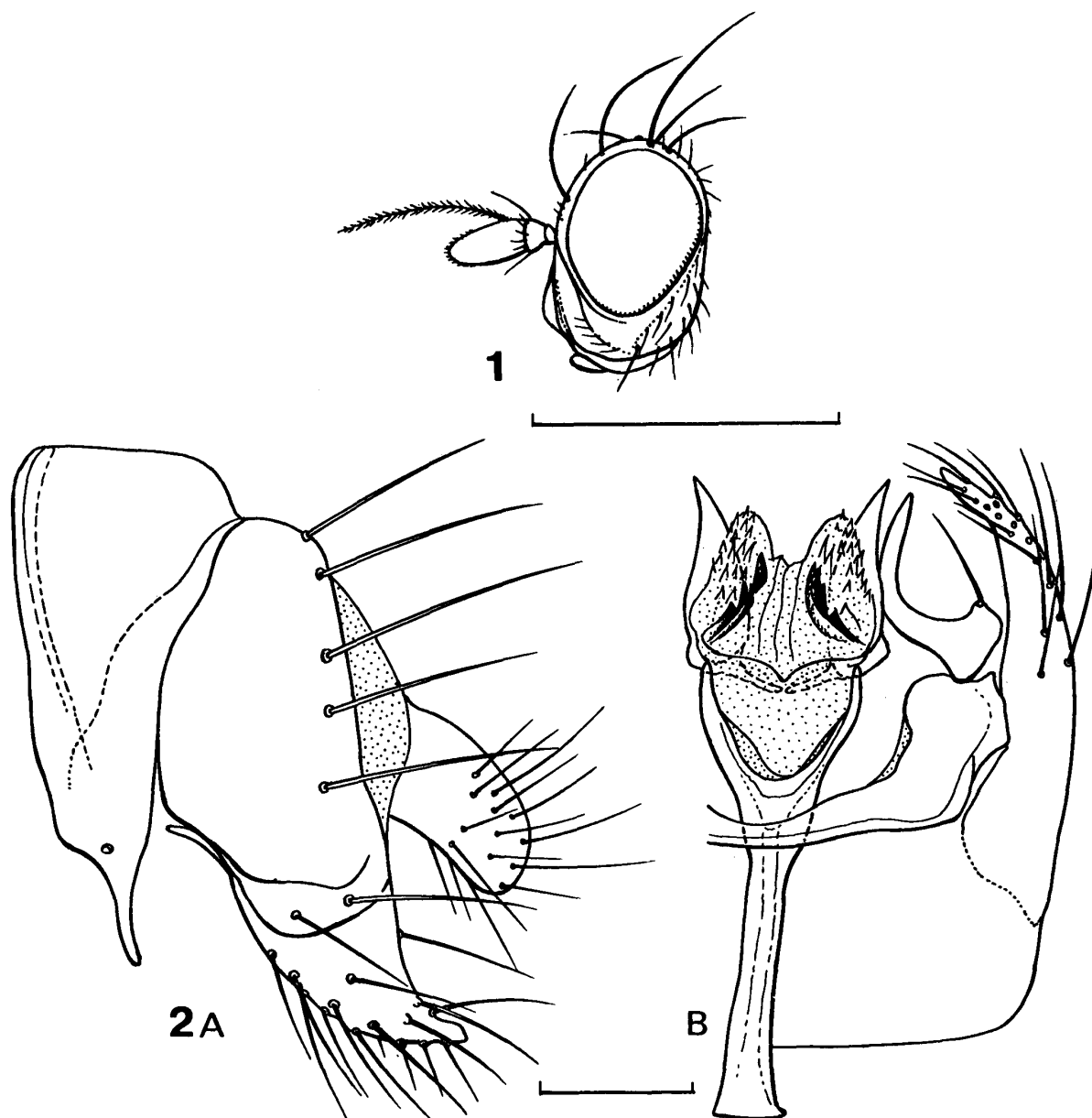
Noonamyia euphlebia Sasakawa, 1990:131.

This species was described by the females collected in Malaya and Borneo(Sabah). The male is similar to the female except for the wing pattern and venation, and the genitalia are described below.

Male and female examined have a hyaline fascia before cross vein *m-m* not projected anteriorly beyond *M*₃₊₄(only between *M*₃₊₄ and posterior margin of wing), while a fascia before cross vein *r-m* slightly projected posteriorly into discal cell as in *sabahna* Sasakawa and *pleuralis* Sasakawa; ultimate section of *M*₁₊₂ 4.5(male)-5.0(female) times as long as the penultimate.

Male genitalia: Protandrium ringed, without dorsal apodeme, sternite linear; epandrium pale brown, with 5-6 pairs of long marginal bristles; surstylus distinctly projected and incurved apically, bearing many setae; hypandrium somewhat crescentic but broadened laterally; pregonite curved postero-ventrally and with a seta at base; aedeagus short, membranous ventrally, bearing a pair of 4-spinal rows at base and many slender spinules distally, with dorso-lateral sclerite pointed distally; aedeagal apodeme long, Y-shaped.

Specimens examined. One male, Ringlet(1,150 m), Pahang, 12 Jan. 1990; 1 female, Tanah Rata(1,460 m), Pahang, 11 Jan. 1990, J.R. Vockeroth.



Figs.1-2. Head of *Prosopomyia orientalis* n. sp.(1) and male genitalia of *Noonamyia euphlebica* Sasakawa (2A, B). A, protandrium, epandrium and surstylus, lateral view; B, hypandrium, pregonite, postgonite and aedeagus, ventral view. Scale 1 mm in Fig.1, 0.1 mm in Fig.2.

4. *Trypetisoma (Trypaneoides) bicincta* (de Meijere)

Lauxania bicincta de Meijere, 1910:138.

Three species: *T. fenestrata* (de Meijere), *sumatrana* Malloch and *tephritina* (de Meijere), are known to occur in Malaya (Sasakawa, 1990). This species is related to *sumatrana* and the following *tricincta*, but differs from them in the presence of interruption in the third hyaline fascia, which is extended across the wing caudad of R_{2+3} -termination in the related species, between veins R_{4+5} and M_{1+2} .

Specimens examined. One male and 1 female, Tanah Rata(1,460 m), Pahang, 7 & 14 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java. New to Malaya.

5. *Trypetisoma (Trypaneoides) tricincta* (Malloch)

Trypaneoides tricincta Malloch, 1927:105.

This species is similar to *sumatrana* in having three hyaline fasciae across the wing and an apical hyaline spot between apices of R₄₊₅ and M₁₊₂, but is not provided with a fasciform spot in cell R₁ (Sasakawa, 1990).

Specimens examined. One male and 1 female, Tanah Rata (1,460 m), Pahang, 6 & 7 Jan. 1990, J. R. Vockeroth.

Distribution. Malaya, Sumatra. New to Malaya.

6. *Homoneura (Neohomoneura) interenus* (Walker)

See Sasakawa, 1992, p. 146.

Specimens examined. Two males and 1 female, Tanah Rata, Pahang, 11 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Borneo, Sumatra.

7. *Homoneura (Euhomoneura) bistylata* n. sp. (Fig. 3)

Male. Black; frons sparsely whitish gray dusted; face and parafacialia densely silverly white pruinose; peristome shiny brown; arista brown at base; thorax densely and abdomen sparsely brownish gray dusted; lateral side of mesonotum and abdominal tergites weakly shining; epandrium with surstylus shiny brown. Wing hyaline, very faintly tinged with brownish yellow along anterior margin,

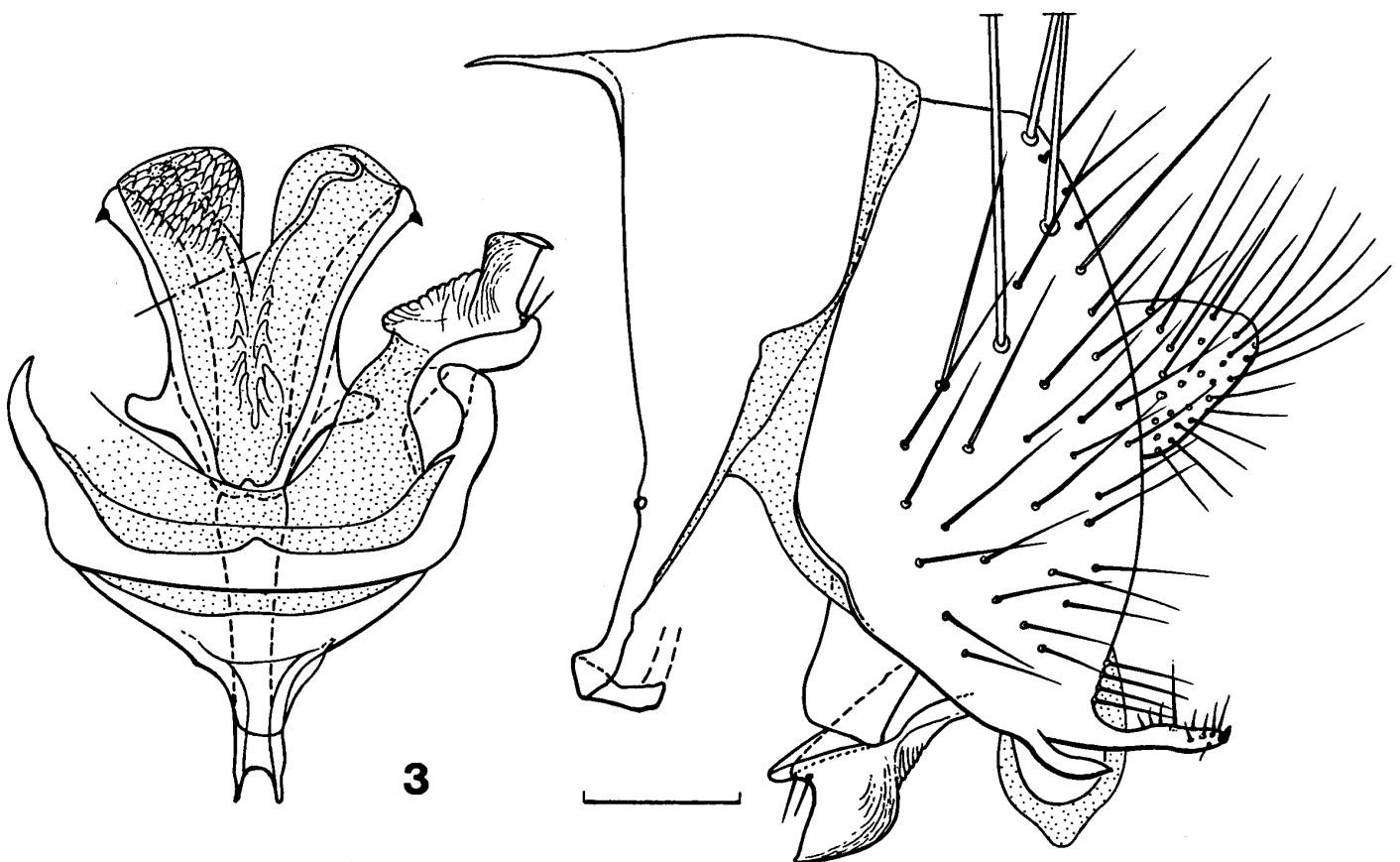


Fig.3. Male genitalia of *Homoneura bistylata* n. sp. Left aedeagal apex is shown the dorsal side.

distinctly brownish at base and without spot on r-m; halter with stalk yellow and knob blackish brown. Legs with coxae and femora blackish brown, tibiae and tarsi testaceous, but hind tibia darkened.

Frons as long as wide, slightly wider than eye (18:15), parallel-sided; lower *or* about 2/3 length of the upper; orbital hairs sparse below level of upper *or*; *oc* shorter than lower *or*; eye slightly higher than broad; gena about 1/7 height of eye; face almost flat; *pm* 5-6, short; third antennal segment nearly twice as long as wide, narrowing apically; arista plumose, with dorsal longest hair nearly twice as long as the width of third segment; palpus with an apico-ventral seta longer than many ventral setae.

Mesonotum with 1+2 *dc*, first *dc* just before suture, 8 rows of *acr*, *prsc* about 1/2 length of the posteriormost *dc*, about 4 rows of *ia*-setulae. Wing with C-index 2.78-3.18, r-m usually at middle of discal cell, 4V-index 1.77-2.17, 5V-index 0.17-0.22; fore femur with 3(-4) *pv*; mid femur with 5-7 *a*; mid tibia with 2 spurs, of which outer one is about 1/2 of the inner; hind femur with 1 *ad*; all tibiae with *pd*.

Protandrium ringed but sternite horizontal in caudal view, with apodeme dorso-basally; epandrium with 3 pairs of long bristles on dorsal side; surstylus two, of which posterior one is about twice as large as the anterior and setulose; hypandrium Y-shaped, with distal apodeme well-developed; pregonite large, with 2 setae; postgonite absent; aedeagus with sclerites laterally, median membranous part bilobate distally.

Body length 2.7(holotype)-3.4 mm, wing length 2.6(holotype)-3.3 mm.

Female. Similar to male, but wing length 3.2-3.3 mm, C-index 2.67-3.09.

Holotype male, Ringlet (1,150 m), Pahang, 12 Jan. 1990, J.R. Vockeroth; right antenna missing. Paratypes: 2 males and 3 females, Tanah Rata (1,460 m), Pahang, 10-15 Jan. 1990; 1 male, Gun. Bermkam (1,525-1,848 m), Tanah Rata, 4 Jan. 1990 (J.R. Vockeroth).

Distribution. Malaya.

Remarks. This new species differs distinctly from the known Oriental species by the clear wing with brownish base, black antenna and palpus, and the presence of two processes on the surstylus. Also, the species shows a close relationship with species of the *trispina*-group of the subgenus *Homoneura* in having the black body, clear wing with base infuscated, annular protandrium and two surstylar processes (Sasakawa, 1992, p.160: key), but it belongs to the subgenus *Euhomoneura* in the presence of presutural dorso-central bristle.

Etymology. The specific name refers to two styloid processes of the male genitalia.

8. *Homoneura (Euhomoneura) lunipennis* (de Meijere)

Lauxania lunipennis de Meijere, 1924:50.

This species is distinct in having the broad, gray-dusted black vitta on the mesonotum, a large lunate dark spot in the anal cell of wing, and a small dark dot between the cloud on m-m and preapical fascia. A male specimen examined (Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth) is small, with the wing length 2.5 mm, and has the femora ringed yellow at middle.

Distribution. Malaya(Singapore), Sumatra. New to Malaya (Singapore).

9. *Homoneura (Homoneura) discoglauca* (Walker)

See Sasakawa, 1992, p.172.

Specimen examined. One female, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya (Singapore), Celebes, Java, Krakatau, Lombok, Formosa, Japan; Solomon Is.

10. *Homoneura (Homoneura) folifera* Malloch

See Sasakawa, 1992, p.174.

Specimens examined. One male, Penang (60-670 m), Pulau, 2 Jan. 1990; 4 females, Tanah Rata, Pahang, 7-15 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Sumatra.

11. *Homoneura (Homoneura) immaculata* (de Meijere)

See Sasakawa, 1992, p.181.

The specimens examined exhibit the following variation : antenna with first and second segments entirely and basal one-third of third segment black; fore and hind tibiae each with two pale brown ventral spots on apex and near base; T6 with a small brown spot at middle; wing length 3.4 (male)-4.0 (female) mm.

Specimens examined. Two males and 2 females, Tanah Rata, Pahang, 11 & 15 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java.

12. *Homoneura (Homoneura) laticosta* (Thomson)

See Sasakawa, 1992, p.181.

Specimens examined. One male and 2 females, Templer Park, Selang, 29 Dec. 1989; 11 males and 8 females, Tanah Rata, Pahang, 6-15 Jan. 1990; 1 male and 1 female, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Thailand, Java, Borneo, Philippines; Solomon Is.

13. *Homoneura (Homoneura) longiparameria* n. sp (Fig. 4)

Female. Testaceous; parafacialia, gena and postgena yellowish; third antennal segment very faintly tinged with brown dorso-apically; arista dark brown; face, ventral part of thoracic pleura, coxae, femora and tibiae pale testaceous yellow. Wing hyaline, very faintly tinged with brownish yellow and slightly clouded around m-m; halter yellow.

Frons wider than long(18:14), about 1.5 times as wide as eye, almost parallel-sided; oc long; lower or slightly shorter than the upper; eye slightly higher than broad(21:18); face slightly swollen on vertical mid-line; gena about 1/5 height of eye; pm 5-6; third antennal segment about twice as long as wide; arista as long as eye height, plumose, with dorsal longest hair almost twice as long as the width of third segment.

Mesonotum with 0+3 dc, 6 rows of acr, prsc shorter than first dc; anterior stpl about 1/2 length of the posterior. Wing with C-index 2.9, r-m slightly before middle of discal cell, 4V-index 1.6, 5V-index 0.15. Fore femur with 4-5 pv, mid femur with 5 a; mid tibia with one long and one short spur; hind tibia with pd subequal to that on fore tibia.

Body length 3.2 mm, wing length 2.7 mm.

Male. Similar to female, but cercus dark brown, wing 2.6 mm long and with C-index 3.2. Genitalia: Protandrium horseshoe-shaped, with dorsal apodeme long; epandrium sparsely setose, with surstylus long, curved and minutely hairy; hypandrium long, with side piece very broad in lateral view; pregonite claw-like; postgonite as long as the side piece of hypandrium, weakly curved before tip; aedeagus largely membranous, with lateral sclerites very narrow and weakly sclerotized.

Holotype female, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth. Paratype male, same data as for holotype; abdomen in a polyethylene tubule with glycerol and pinned with the specimen.

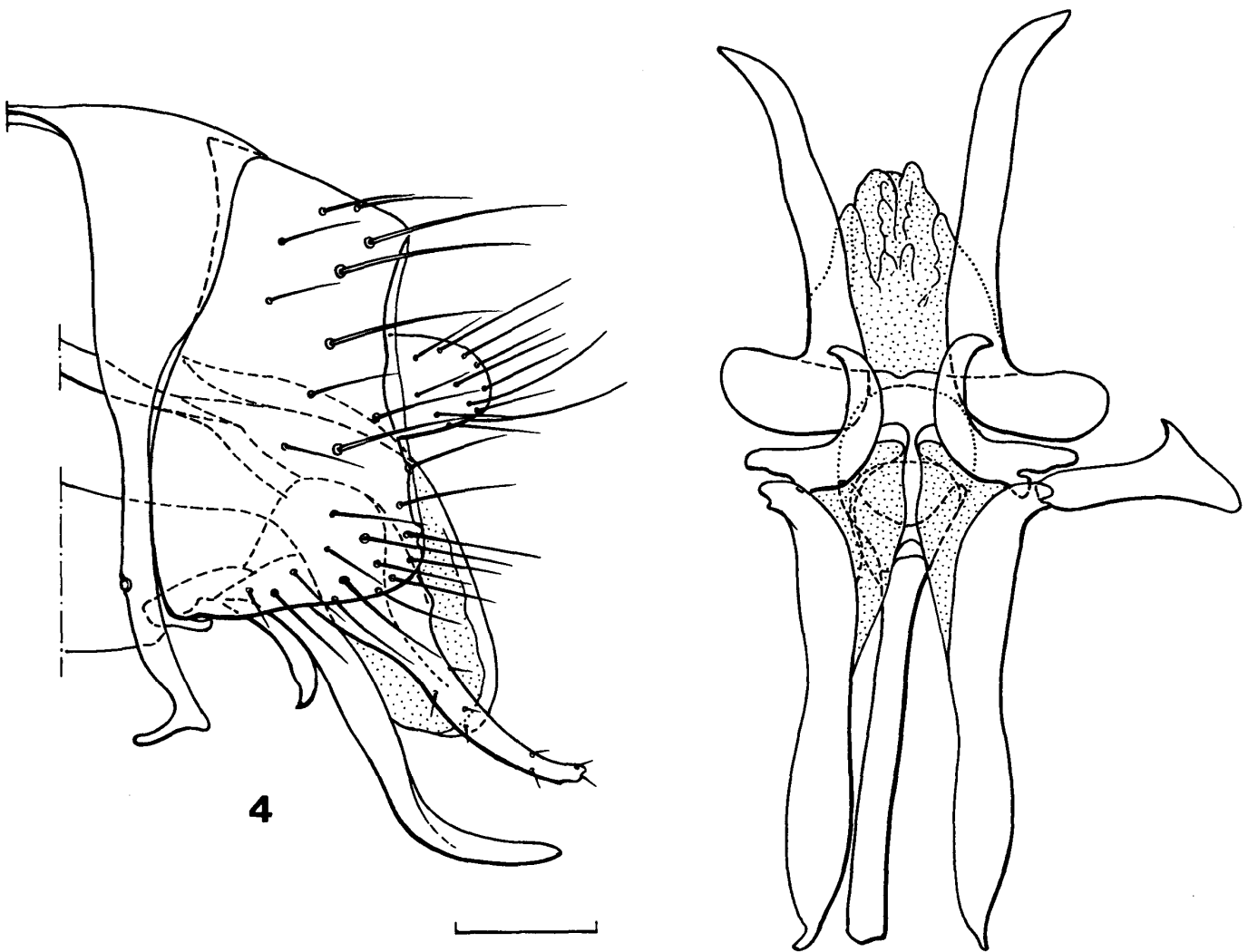


Fig.4. Male genitalia of *Homoneura longiparameria* n. sp.

Distribution. Malaya (Singapore).

Remarks. This species is similar to *H. laticosta* in the body coloration and size, but differs in the shapes of protandrium and hypandrium, the length of surstylus, and the presence of long postgonite and well-sclerotized pregonite.

Etymology. The specific name refers to the long paramere (postgonite) of male genitalia.

14. *Homoneura (Homoneura) picta* (de Meijere)

See Sasakawa, 1992, p.192.

Specimens examined. Twenty-eight males and 13 females, Tanah Rata (1,460 m), Pahang, 6-11 Jan. 1990; 1 male, Brinchang (1,580 m), Pahang, 15 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Thailand, Java, Sumatra, Borneo, Formosa, India, Nepal, China.

15. *Homoneura (Homoneura) quiquenotata* (de Meijere)

See Sasakawa, 1992, p.194.

Specimens examined. Two females, Penang (60-670 m), Pulau, 2 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java, Borneo, Formosa.

16. *Homoneura (Homoneura) quinquevittata* (de Meijere)

See Sasakawa, 1992, p.195.

Specimens examined. Three males and 4 females, Tanah Rata, Pahang, 6 & 10 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java, Sumatra, Borneo, Philippines, Formosa, Japan, India, Nepal.

17. *Homoneura (Homoneura) setiparameria* Sasakawa

Homoneura (H.) setiparameria Sasakawa, 1992:196.

The female is similar to male, but T7 is testaceous yellow, with brown median stripe and lateral spots, and wing length is 4.2-4.5 mm.

Specimens examined. One male and 4 females, Tanah Rata, Pahang, 11 & 15 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya.

18. *Homoneura (Homoneura) shewelli* n. sp. (Fig. 5)

Female. Black; parafrontalia, ocellar triangle and occiput densely grayish dusted; face, parafacialia, gena, postorbit and postgena silvery white pruinose; epistomal margin and gena whitish yellow in ground color; peristome shiny brown; arista brown but white at base; palpus blackish brown; mesonotum and scutellum grayish brown dusted, but lateral side of scutum and pleura to postnotum whitish gray dusted; abdomen brownish dusted, tergites with postero-lateral (2/3 length of T3-4 and 1/2 of T5) and lateral margins silvery white pruinose; T3(4)-5 with central line indistinctly brown, T6 yellow and whitish pruinose longitudinally. Wing hyaline, faintly tinged with brownish yellow anteriorly and around m-m, distinctly brown on about basal one-third obliquely, extending to posterior margin of wing at level of r-m; halter with stalk yellow and knob brown. Legs black, slightly tinged with brown, but tarsi yellow and metatarsus of fore leg largely brown.

Frons slightly wider than long or eye (17:13), parallel-sided; lower or nearly 2/3 length of the upper; oc slightly longer than lower or; face flat but with epistomal margin slightly protruded forwardly; eye almost as high as broad; gena about 1/7 height of eye; third antennal segment about thrice as long as wide; arista with dorsal longest hair 1.8 times as long as the width of third segment; *pm* minute, 5-6.

Mesonotum with 0+3 *dc*, 6-8 rows of *acr*, *prsc* shorter than first *dc*; anterior *stpl* slightly shorter than the posterior. Wing with C-index 2.9-3.0, r-m before middle of discal cell, 4V-index 1.8, 5V-index 0.2. Fore femur with 4 *pv*, mid femur with 6-7 *a*; mid tibia with one long, one short and one minute spurs; *pd* on fore and hind tibiae minute.

Body length 2.6(holotype)-3.1 mm, wing length 2.5(holotype)-2.6 mm.

Male. Similar to female. Genitalia: Protandrium horseshoe-shaped, without dorsal apodeme; epandrium with three pairs of long dorsal setae; surstylus projected shortly and incurved apically, bearing setulae before tip which is minutely bifid; hypandrium V-shaped, postgonite weakly sclerotized on posterior side, ending in membranous claviform process; aedeagal apodeme short, aedeagus membranous but weakly sclerotized on dorsal side.

Holotype female, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth. Paratypes: 1 male and 1 female, same data as for holotype.

Distribution. Malaya (Singapore).

Remarks. This new species belongs to the *dentifera*-group in the coloration, and shows a close relationship with *acrotoma* Sasakawa and *curtiocellaris* Sasakawa than *trispina* Malloch and *folifera* Malloch in the structures of male genitalia. Dark wing base and fore metatarsus, and the claviform membranous postgonite in *shewelli* n. sp. are characteristic.

Etymology. This species is named in honor of the late Mr. G.E. Shewell, distinguished Canadian Dipterist, in appreciation of his outstanding contribution to our knowledge of Oriental Lauxaniidae.

19. *Homoneura (Homoneura) signata* (van der Wulp)

See Sasakawa, 1992, p.198.

Specimens examined. Three males, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Singapore, Thailand, Sumatra, Borneo, Philippines.

20. *Homoneura (Homoneura) trispina* Malloch

See Sasakawa, 1992, p.205.

Specimens examined. Three males and 14 females, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J. R. Vockeroth.

Distribution. Malaya, Singapore, Java, Sumatra, Borneo. New to Singapore.

21. *Homoneura (Homoneura) trypetoptera* (Hendel)

See Sasakawa, 1992, p.207.

Specimen examined. One male, Kuala Lumpur Airport, 30 Dec. 1989, J.R. Vockeroth.

Distribution. Malaya, Thailand, Viet Nam, Java, Sumatra, Borneo, Krakatau, Lombok, Philippines, Formosa, India, Nepal, Ceylon.

22. *Homoneura (Homoneura) ungaranensis* (de Meijere)

See Sasakawa, 1992, p.207.

Specimens examined. Four males, Ringlet (1,150 m), Pahang, 12 Jan. 1990; 2 males and 2 females, Tanah Rata, Pahang, 13-15 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java, Borneo.

23. *Pachycerina sexlineata* de Meijere

Pachycerina sexlineata de Meijere, 1914:234.

This is the only one species for the genus in Malaya, and is characterized by the plumose arista (dorsal longest hair distinctly longer than basal width of third antennal segment), six brown stripes on testaceous mesonotum (median two and submedian two stripes on the *acr*-rows, lateral one on the *dc*-rows, accompanying by short stripes before suture on line of *prs* and on the *ia*-setulae row behind suture, and two stripes along dorsal margins of mesopleuron and sternopleuron), and yellowish costal margin of wing. Female fore tarsus of normal length and brown except for first segment; fore tibia dark brown except for base.

Specimen examined. One female, Tanah Rata (1,460 m), Pahang, 11 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java. New to Malaya.

24. *Trigonometopus (Trigonometopus) brunneicosta* Malloch

See Sasakawa and Tho, 1990, p.124.

Specimen examined. One female, Tanah Rata, Pahang, 11 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Formosa.

25. *Minettia (Frendelia) fuscofasciata* (de Meijere)

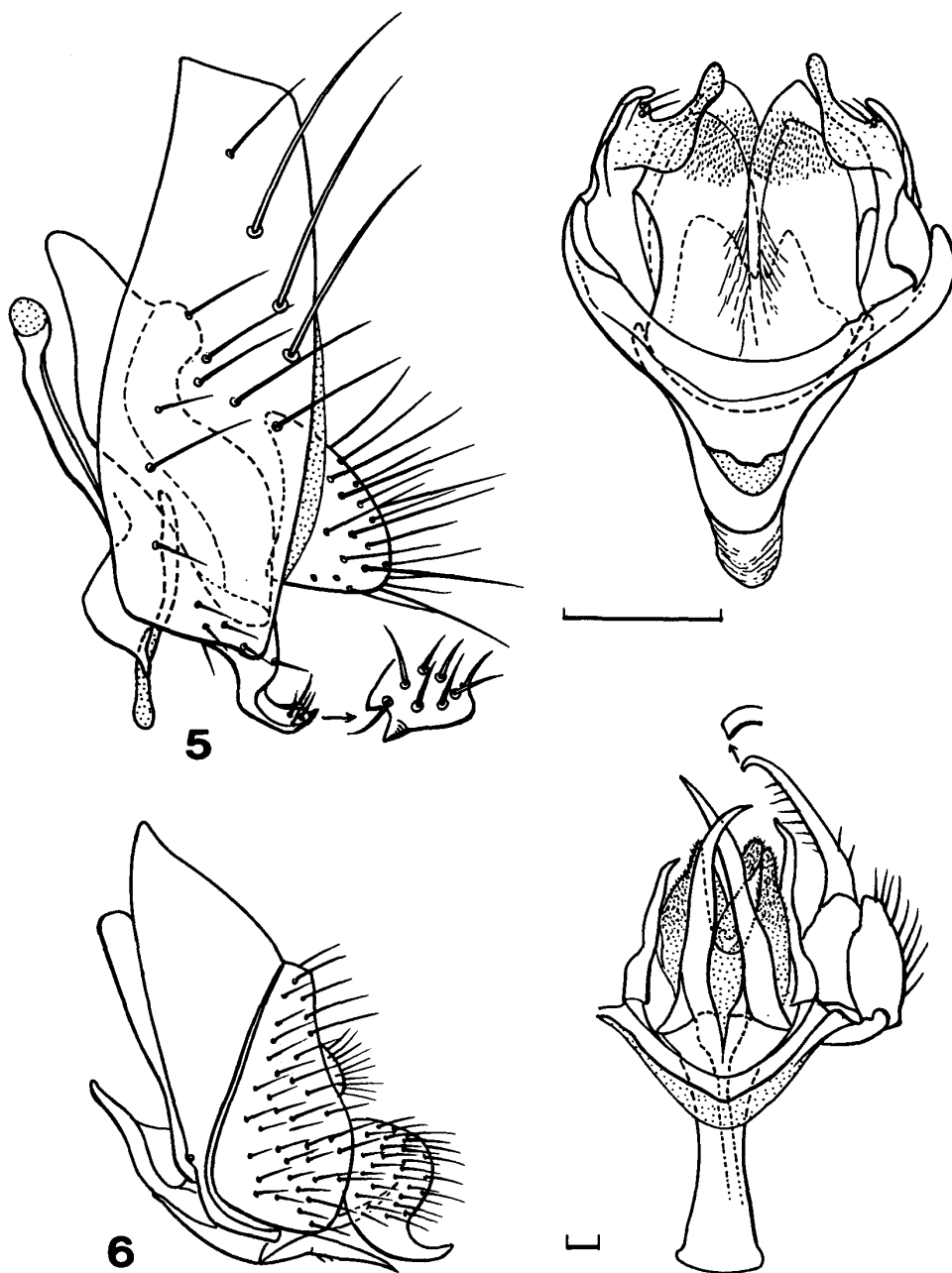
Lauxania fuscofasciata de Meijere, 1910:125.

This black species is characterized by two black stripes just mesad of *dc*-rows on densely brownish-gray pollinose mesonotum. A female specimen examined (Tanah Rata, 15 Jan. 1990, J.R. Vockeroth) is black-vittate shortly behind the suture between *dc*- and *sa*-rows, and is dusted with whitish gray along margin of scutellum; abdominal tergites are entirely black.

Distribution. Malaya, Java, Formosa. New to Malaya.

26. *Minettia (Frendelia) vockerothi* n. sp. (Fig. 6)

Female. Head black; frons mat, distinctly dusted with brownish gray on anterior and lateral parts of ocellar triangle, parafrontalia and parafacialia; face, gena and back of head densely grayish dusted;



Figs.5-6. Male genitalia of *Homoneura shewelli* n. sp.(5) and *Minettia vockerothi* n. sp.(6).

antenna pale brown, arista excepting base blackened; palpus black. Thorax mat, testaceous, sparsely grayish dusted; mesonotum with four brownish-dusted, dark brown vittae which are divided by three densely gray-dusted stripes on median line and both *dc*-lines, of which lateral vitta about half as wide as distance between *dc*- and *sa*-lines. Wing brownish-yellow hyaline, more yellowish costally and basally; calypter and fringe, and halter testaceous yellow. Legs testaceous yellow; distal part of fore tibia, fore tarsus, distal two or three tarsal segments of mid and hind legs fuscous. Abdomen shiny black.

Frons a little wider than long, nearly 1.3 times as wide as eye, slightly diverging ventrally; parafrontalia slightly projecting above eye in profile, bearing two *or* which are shorter than *oc*; orbital hair one or two between levels of both *or* but rather densely scattered below level of lower *or*; vertex with three pairs of incurved short setae before *pvt*; face with ventral rounded swellings distinct; eye slightly higher than broad, very sparsely hairy; gena almost 1/9 height of eye; *pm* 7-10, short; third antennal segment about twice as long as wide; arista plumose, with dorsal longest hair almost as long as the width of third segment.

Mesonotum with 0+3 *dc*, distance between first *dc* and suture as long as that between second and third *dc*, 10(-12) rows of *acr* before suture but 8(-10) rows behind suture, *prsc* and *ia* long; mesopleuron with two short setae before antero-ventral margin in addition to *mspl*; sternopleuron with two bristles. Costa with sections 2-4 in proportion of 55:15:8, r-m slightly before middle of discal cell, *R*₄₊₅ convergent apically with *M*₁₊₂, 4V-index 1.4, 5V-index 0.15. Fore femur with 10-11 *pv*, mid femur with 7-8 *a*, all tibiae with *pd*, mid tibia with two long spurs.

Body length 6.5 mm, wing length 6.0 mm.

Male. Frons wider than long(30:25), 1.24 times as wide as eye; *pm* 12-13; mesopleuron with one antero-ventral bristle and 6-7 setulae in a ventral row distinctly longer than others; r-m at middle of discal cell, 4V-index 1.6; body length 6.2 mm. Genitalia: Protandrium horseshoe-shaped, broad on dorsal side and without apodeme; epandrium about 1/4 as long as protandrium on dorsal side but broadened ventrally; surstylus large, with a long ventral process which is curved inwardly and truncated on tip; hypandrium V-shaped; postgonite black, narrow and more or less sinuate; aedeagus membranous and minutely hairy on dorsal side, ventrally with a pair of black long processes which are crossed each other on apices; aedeagal apodeme slightly longer than aedeagus.

Holotype female, Tanah Rata (1,460 m), Pahang, 7 Jan. 1990, J.R. Vockeroth. Paratype male, same locality as in holotype, 10 Jan. 1990; abdomen in a polyethylene tubule with glycerol and pinned with the specimen.

Distribution. Malaya.

Remarks. This species is closely related to *M. luteitarsis* (de Meijere, 1915), *philippinensis* Malloch (1929) and *nitidiventris* Malloch(1935) in the coloration of mesonotum, wing, halter and abdomen, and the wing length, but differs quite from them in the coloration of thoracic pleura and legs. The surstylus with long ventral process and long postgonite in the new species are distinctive, but the long processes on the ventral side of aedeagus are similar to those of *obscurata* Shewell(1977) with the grayish hyaline wings.

I am very pleased to dedicate this species to its collector, Dr. J.R. Vockeroth of the Biological Resources Program, Agriculture and Agri-Food Canada, to whom I am greatly indebted for extensive collections of Malayan Lauxaniidae.

27. *Minettia* (*Minettiella*) *atrata* (de Meijere)

Lauxania (*Sapromyza*) *atrata* de Meijere, 1910:127.

The characteristics based on the specimens examined are as follows: tarsi of mid and hind legs yellow in both sexes; female with fore tibia narrowly at base, mid and hind tibiae except for dark distal rings, and fore metatarsus yellow; 0+2 *dc* in male and 0+3 in female; only one pair of *acr* before *prsc* long in male, but three postsutural pairs of *acr* strong in female; wing length 3.6(female)

or 4.2(male) mm.

Specimens examined. One male, Tanah Rata (1,460 m), Pahang, 11 Jan. 1990; 1 female, Gun. Beremkam (1,525-1,848 m), Tanah Rata, 4 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Java. New to Malaya.

28. *Maquilingia hirticeps* Malloch

Maquilingia hirticeps Malloch, 1929:36.

A female specimen examined (Tanah Rata, Pahang, 11 Jan. 1990, J.R. Vockeroth) is small, with the body length 2.6 mm and wing length 2.8 mm, and the penultimate section of M_{1+2} is not a little less than half as long as the ultimate one(24:45). Other characters are agreeable with those cited in the original description.

Distribution. Malaya, Philippines. New to Malaya.

29. *Sapromyza (Sapromyza) albicincta* (de Meijere)

Lauxania albicincta de Meijere, 1916:202.

This blackish species is characterized by the bicolored abdominal tergites: T2-3 each with testaceous and silvery whitish pruinose band on posterior half, T4 with posterior band on lateral half and T5 on lateral 1/3, and T4-6 each with testaceous and whitish pruinose median longitudinal stripe, and by the presence of antero-ventral comb of black minute spinules on fore femur. Other characteristics are as follows: face entirely testaceous; antenna with basal two segments dark brown, third segment yellow but distinctly brown along ventral margin to apex; dorsal longest hair on arista almost twice as long as the width of third segment; mesonotum with a pair of gray submedian vittae inside of *dc*-rows (3 *dc*); scutellum with posterior margin yellow; wing 2.1 mm long, hyaline, slightly brownish at base and around m-m; all tibiae and tarsi yellow, *pd* on fore and hind tibiae minute.

Specimens examined. Four males and 4 females, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya(Singapore), Java. New to Singapore.

30. *Sapromyza (Sapromyza) quadrangulata* (de Meijere)

This species differs from *albicincta* in the following points: face blackish brown, with dark testaceous band transversely at middle, peristome yellow; third antennal segment testaceous narrowly along dorso-basal margin; dorsal longest hair on arista almost as long as the width of third segment; mesonotum and scutellum uniformly grayish dusted; 0+2 *dc*; T3-6 each with a pair of median shiny black quadrates and a pair of whitish pruinose quadrates laterally which are surrounded by whitish pruinose, narrow longitudinal and postero-marginal lines; wing 2.1-2.4 mm long; tibiae blackish brown, fore tibia with yellow preproximal ring, mid and hind tibiae each with preproximal and distal rings; all tibial *pd* long. See Sasakawa and Tho, 1990, p.124.

Specimens examined. One male, Ringlet, Pahang, 12 Jan. 1990; 1 male and 6 females, Bt. Timah Nat. Res., Singapore, 23 Jan. 1990, J.R. Vockeroth.

Distribution. Malaya, Singapore, Sumatra, Borneo, Philippines.

II. Ryukyu Islands

One species of the genus *Trypetisoma* Malloch(1924), one species of the genus *Wawu* Evenhuis (1989), and thirteen species of the genus *Homoneura* van der Wulp(1891), have hitherto been recorded from the Ryukyu Islands (Sasakawa, 1982, 1985 & 1997). The present report is based mainly on a material preserved in the Insect Museum, National Institute of Agro-Environmental Sciences, Tsukuba, Japan. The collection contains eight genera: *Homoneura*, *Steganopsis* de Meijere(1910),

Drepanephora Loew (1869), *Melinomyia* Kertész (1915), *Minettia* Desvoidy (1830), *Protrigonometopus* Hendel (1938) and *Sapromyza* Fallén (1810), and nineteen species, among which five: *Homoneura dicyrta*, *furcistylis* and *paraforcipata*, *Steganopsis japonica* and *Protrigonometopus okinawanus*, are new to science. Also, the second species of the genus *Prosopophorella* de Meijere (1917) was collected by Sasakawa and Yoshiyasu in 1982, and described it newly as *P. iriomotensis*.

At present, twenty-one species of the Homoneurinae and eight species of the Lauxaniinae are known to occur on the islands. The dominance of *Homoneura* is represented by 18 species. On the other hand, the probable distribution of the unrecorded lauxaniine genera is two: *Pachycerina* Macquart (1835) and *Diplochasma* Knab (1914).

1. *Homoneura (Homoneura) bistriata* (Kertész)

Specimen examined. First record from Okinawa Is.: one female Tamagusuku, 2 Apr. 1953, T. Shiraki.

2. *Homoneura (Homoneura) brevicornis* (Kertész)

Specimens examined. First record from Iriomote Is.: three males and four females, Ohara, 19 Jan. 1953, T. Shiraki.

3. *Homoneura (Homoneura) crucifera* Sasakawa et Ikeuchi

Specimen examined. First record from Ishigaki Is.: one male, Shiraho, 26 Feb. 1953, T. Shiraki.

4. *Homoneura (Homoneura) dicyrta* n. sp. (Fig. 7)

Male & female. Black; head sparsely pruinose; frons usually brown on ventral half except for central line of parafrontalia; parafacialia and gena faintly brown tinged; antenna and palpus dark brown; thorax densely brownish gray dusted, mesonotum mat; abdomen grayish dusted, very weakly shining. Wing hyaline, very faintly tinged with yellowish brown; halter yellowish brown. Legs with coxae, trochanters and femora dark brown, and tibiae, tarsi and apices of femora testaceous.

Frons a little wider than long, 1.3(female)-1.5(male) times as wide as eye, slightly converging ventrally, with sparse setulae on ventral side; *oc* 1.3 times as long as lower *or*; upper *or* usually 1.3 times as long as the lower; orbital hairs only 2-3; face flat; eye 1.3 times as high as wide; gena 1/7-1/8 height of eye; *pm* 5-7, short; third antennal segment about 1.4 times as long as wide, rounded apically; arista subequal to eye height in length, pubescent.

Mesonotum with 0+3 *dc* and 6 rows of *acr*, first *dc* 1/2-3/5 length of the third, *prsc* shorter than first *dc*, *ipa* about 2/3 of *opa*; anterior *stpl* shorter than the posterior. Wing with C-index 3.0(2.5-3.2), *r-m* beyond middle of discal cell, 4V-index 2.6(2.2-3.0), 5V-index 0.27(0.24-0.29). Fore femur with usually 3(2-4) *pv* distinct, mid femur with 2-4 *a*; mid tibia with one long and one short spurs, fore and hind tibiae each with weak *pd*.

Male genitalia: Protandrium ringed, sternite ventrally broad, with two pairs of marginal setae on dorsal side; epandrium setose moderately; surstylus small and claw-like in lateral view; hypandrium U-shaped; pregonite lobate, slightly curved posteriorly and pointed apically in lateral view; aedeagus membranous ventrally, sclerotized laterally and with a pair of large claw-like processes on latero-distal part; aedeagal apodeme subequal to aedeagus in length.

Body length 2.5(holotype)-2.8(female) mm, wing length 2.5(holotype)-2.8(female) mm.

Holotype male, Ohama, Ishigaki-jima Is., 6 Feb. 1953, T. Shiraki. Paratypes: two females, same data as for holotype; one male and one female, Shimoji, Miyako-jima Is., 7 Mar. 1953, Shiraki; one female, Hirara, Miyako-jima, 9 Mar. 1953, Shiraki; one female, Katsuyama, Okinawa Is., 19 Mar. 1953, Shiraki; one female, Nago, Okinawa Is., 20 Mar. 1953, Shiraki.

Distribution. Japan(Ryukyus).

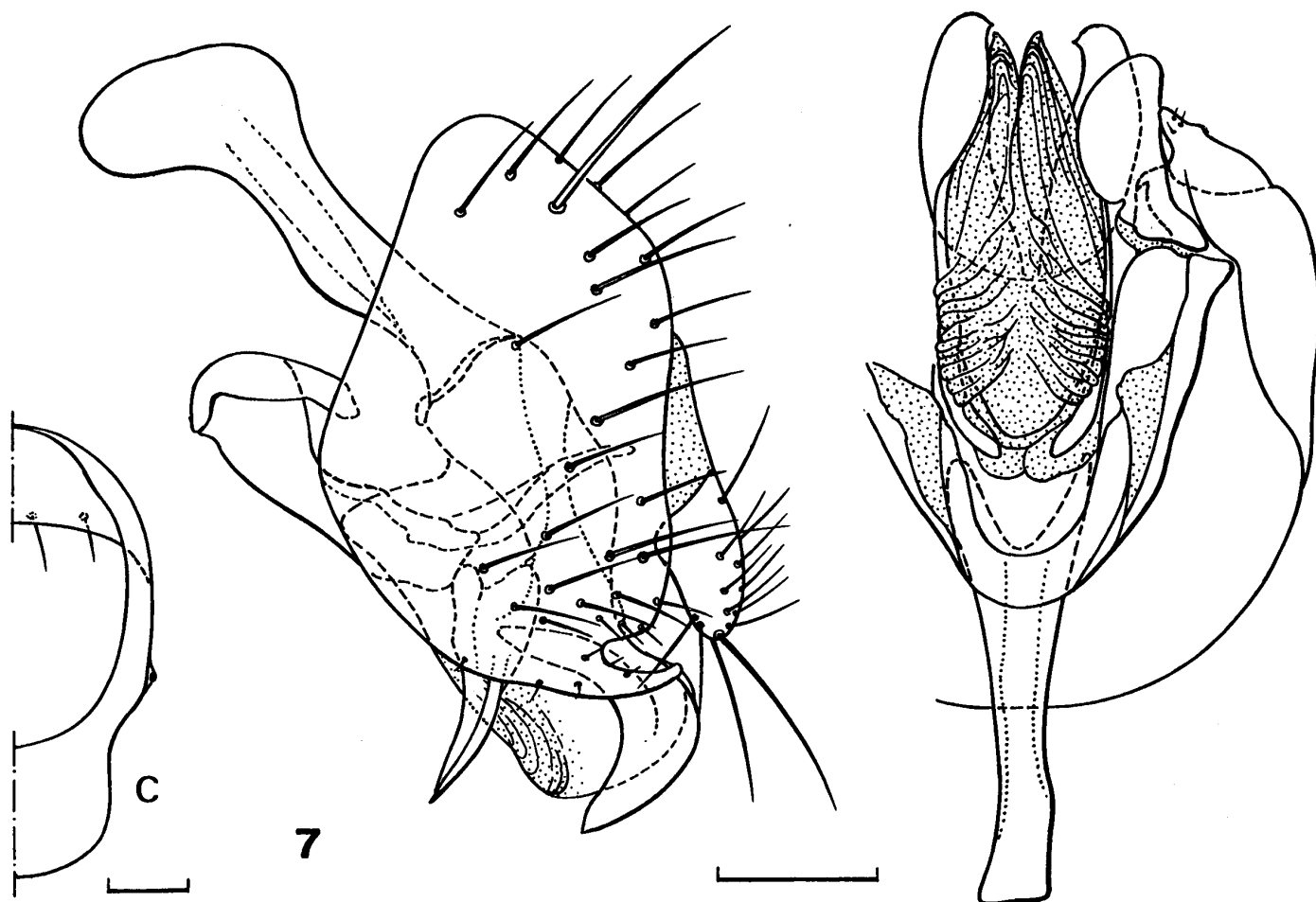


Fig. 7. Male genitalia of *Homoneura dicyrta* n. sp. C, left half of protandrium, anterior view.

Remarks. This new species is similar to *H. exigua* (de Meijere), known from Malaya and Java, in having the pubescent arista and the immaculate wing, but is distinctly larger in size and darker in the frons than in *exigua*.

Etymology. The specific name refers to the two curved processes (outline of pregonite in lateral view and distal process on aedeagus) of the male genitalia.

5. *Homoneura (Homoneura) discoglauca* (Walker)

Specimens examined. First record from Iriomote Is.: seven males and four females, Kanpira, 5 Nov. 1982, M. Sasakawa & Y. Yoshiyasu.

6. *Homoneura (Homoneura) furcistylis* n. sp. (Fig. 8)

Male & female. Yellow to testaceous; arista pale brown; parafrontalia shiny in female and only dorsal half between vertical angle and upper or so in male; face, parafacialia and gena very sparsely pruinose; thorax very sparsely whitish pollinose, mesonotum shiny; abdomen distinctly shining; male cercus yellowish but female one brown; legs yellowish. Wing tinged with yellow, usually bordered with pale brown around both cross veins.

Frons as long as wide, about 1.5 times as wide as eye, slightly divergent ventrally; frons with microscopic hairs sparsely on both lateral sides of ventral parafrontalia; oc subequal to upper or in length; lower or slightly shorter than the upper; eye nearly 1.3 times as high as wide; face flat, antennal grooves shallow; gena $1/8$ - $1/9$ height of eye; pm 6-9, short; third antennal segment 1.5-1.7

times as long as wide; arista as long as or shorter than eye height, plumose, with dorsal longest hair almost 2/3 as long as the width of third segment.

Mesonotum with 0+3 *dc*, 6 rows of *acr*, *prsc* about 1/2 length of posteriormost *dc*, *ipa* slightly shorter than *opa*; anterior *stpl* distinctly shorter than the posterior. Wing with C-index 3.1-3.3, r-m slightly beyond middle of discal cell, 4V-index 1.7-2.0, 5V-index 0.16. Fore femur with 3-4 *pv*, mid femur with 5 *a*; mid tibia with two spurs, of which inner one shorter than the outer; *pd* on fore and hind tibiae distinctly weaker than that on mid tibia.

Male genitalia: Protandrium ringed, slightly longer than epandrium in dorsal side; T8 setose dorso-distally, S8 inverted T-shaped; epandrium sparsely setose posteriorly, minutely pointed at antero-ventral corner and projected bluntly at postero-ventral corner; surstylus separated from epandrium, dark-colored and bifurcated distally; hypandrium V- or Y-shaped; pregonite small, postgonite pointed distally and with two hairs before apex; aedeagus broad, largely membranous, with five pairs of spines on dorsal side, two pairs of large teeth on the ventral and three pairs on the lateral; aedeagal apodeme about 1/2 length of aedeagus; ejaculatory apodeme rod-like, 180 μ m long.

Body length 3.1(female)-4.0(male) mm, wing length 3.2(male & female)-3.8(holotype, male) mm.

Holotype male, Mt. Yonaha, Okinawa Is., 11 Apr. 1953, T. Shiraki; abdomen in polyethylene tubule with glycerol and pinned with the specimen. Paratypes: one male and one female, same locality as in holotype, 25 Mar. 1953, Shiraki.

Distribution. Japan(Ryukyus).

Remarks. This new species is somewhat related to Oriental *H. laticosta* (Thomson) and *spinulosa* Sasakawa in the coloration and the number of acrostichal-rows, but the male genitalia are quite

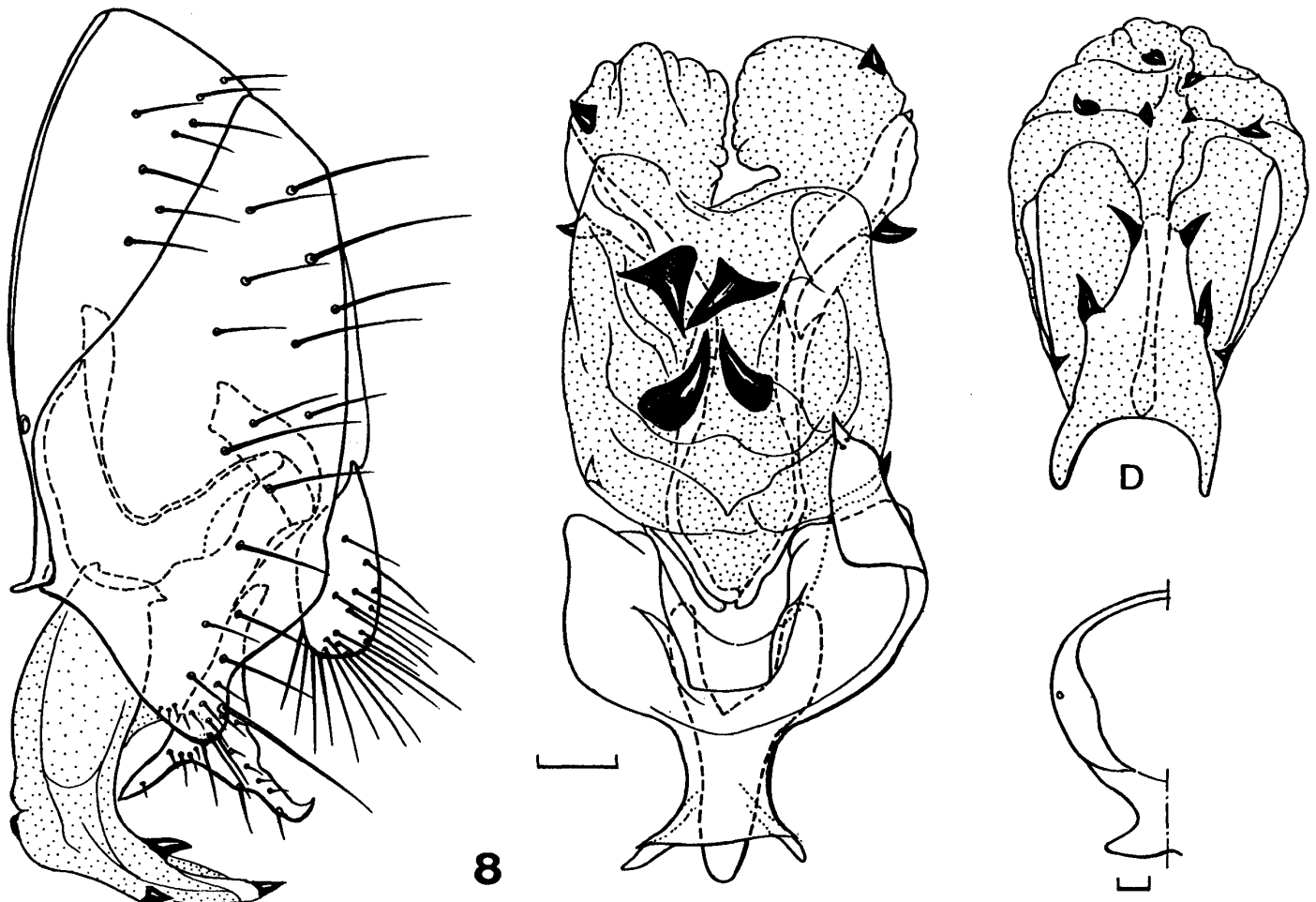


Fig. 8. Male genitalia of *Homoneura furcistylis* n. sp. D, aedeagus, dorsal view.

different from each other in the shapes of protandrial sternite and epandrium, and the structure of aedeagus (for *laticosta*: fig.25, A₁ & B₁; for *spinulosa*: fig.36, A₁ & B₁, in Sasakawa, 1992).

Etymology. The specific name refers to the bifurcate surstylus.

7. *Homoneura (Homoneura) ornatifrons* (Kertész) (Fig. 9)

Lauxania (Minettia) ornatifrons Kertész, 1913:91.

This shiny, blackish species has the testaceous yellow triangle on the frons just above antennal base, posterior margin of scutellum and humeri entirely, yellow legs except for mid and hind femora, and yellow halter. Antenna with first and second segments are yellowish brown to brown and the third blackish brown; arista with dorsal longest hair slightly shorter than the width of third segment.

Male genitalia show a close relationship with *repanda* Sasakawa et Ikeuchi as follows: epandrium fused dorsally with protandrium, with a protuberance at middle of ventral margin before base of surstylus; surstylus projected posteriorly and minutely pointed upwardly on tip; hypandrium broad U-shaped; pregonite with two teeth apically; aedeagus membranous distally, with two pairs of minute and large teeth on ventral and lateral sclerites, respectively; aedeagal apodeme slender.

Body length 2.85(2.8-2.9) mm in male, 2.61(2.1-3.0) mm in female; wing length 2.68(2.5-2.9) mm in male, 2.76(2.5-3.2) mm in female.

Specimens examined. Amami-Oshima Is.: 1 male, Nase, 21 May 1953, T. Shiraki; 1 female, Shinmura, 10 May 1953, Shiraki. Ishigaki-jima Is.: 1 male & 1 female, Kabira, 12 & 23 Feb. 1953, Shiraki; 1 male, Takeda, 14 Feb. 1953, Shiraki; 5 males & 14 females, Mt. Omoto, 4 Nov. 1982, M. Sasakawa & Y. Yoshiyasu. Iriomote-jima Is.: 1 male & 3 females, Sonai, 31 Dec. 1952-1 Jan. 1953, Shiraki; 1 female, Natayama, 9 Jan. 1953, Shiraki; 2 males & 5 females, Kanpira, 5 Nov. 1982, Sasakawa & Yoshiyasu.

Distribution. Formosa, Japan(Ryukyus). New to Japan.

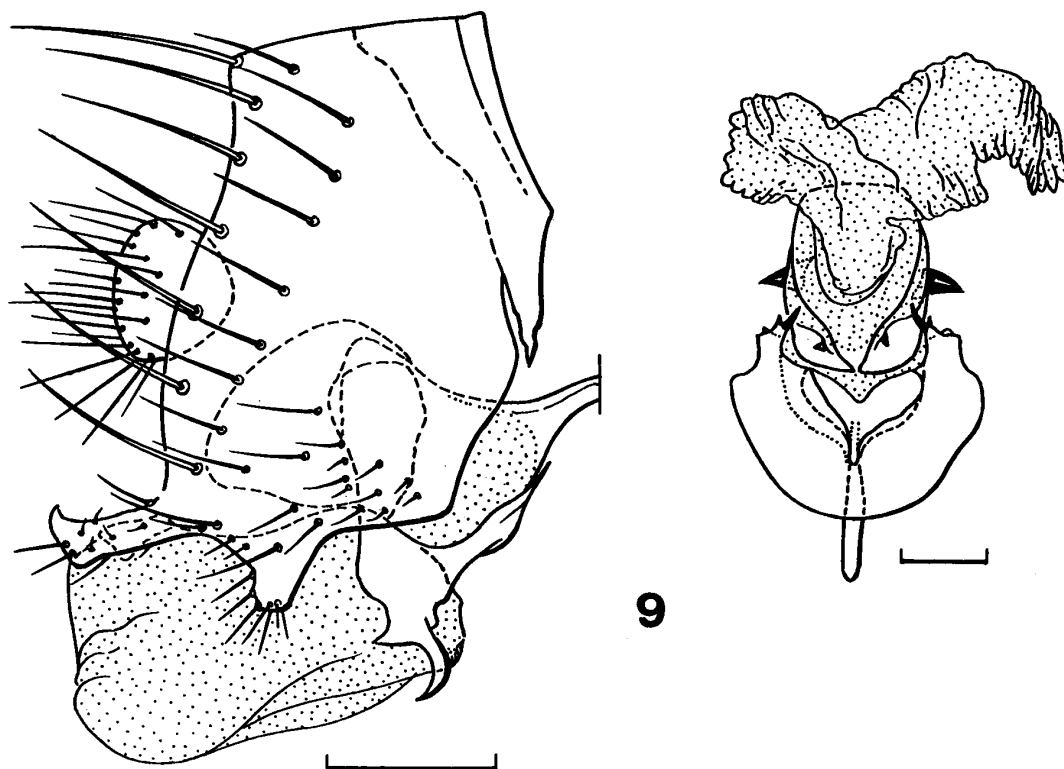


Fig.9. Male genitalia of *Homoneura ornatifrons* (Kertész).

8. *Homoneura (Homoneura) paraforcipata* n. sp. (Fig.10)

Male & female. Testaceous, but palpus and legs yellowish, ocellar triangle and arista slightly brown tinged, abdomen more or less brown tinged and T5 with a pair of black spots which are almost entirely extended throughout the whole length of tergite; frons, face, gena and postgena sparsely pruinose; thorax densely whitish gray dusted; abdomen weakly shining, grayish dusted. Wing faintly tinged with yellow, faintly clouded around m-m; halter testaceous.

Frons as wide as long, a little wider than eye, parallel-sided and setulose on ventral half; upper *or* about 1.3 times as long as the lower; *oc* nearly 1/2 of upper *or*; eye 1.2 times as high as wide; face flat, distinctly beyond parafacialia in profile; gena narrow, 1/10 height of eye; *pm* very short, slightly longer than frontal setulae; third antennal segment 1.7 times as long as wide; arista subequal to eye height in length, microscopically pubescent.

Mesonotum with 0+3 *dc*, 6 rows of *acr*, *prsc* as long as first *dc*, postsutural *ia* short and about 1/3 length of first *dc*, *ipa* subequal to *opa*; anterior *stpl* only a little shorter than the posterior. Wing with C-index 4.0, r-m almost at middle of discal cell, 4V-index 1.5(female)-1.7(male), 5V-index 0.13. Fore femur with 4 *pv*, mid femur with 6-7 *a*; mid tibia with two spurs, of which inner one shorter than the outer, *pd* on fore and hind tibiae distinctly weaker than that on mid tibia.

Male genitalia: Protandrium horseshoe-shaped, distinctly longer than epandrium in dorsal side; epandrium broadened ventrally, sparsely setose; surstylus thick at base but cylindrical apically, setose sparsely on outer side and hairy on inner side; cercus large; hypandrium somewhat Y-shaped; pregonite small and pointed apically, postgonite very long and hairy; aedeagus with a pair of claw-like processes at distal end and a pair of small spines near base of ventral sclerites; aedeagal apodeme shorter than aedeagus; ejaculatory apodeme rod-like, 180 μ m long.

Body and wing length 4.0(male)-4.2(female)(4.1, holotype) mm, respectively.

Holotype female, Kinase, Amami-Oshima Is., 25 May 1953, T. Shiraki. Paratypes: 1 male, Hentona, Okinawa Is., 19 June 1953, Shiraki; 1 female, Yuwan, Amami-Oshima Is., 30 Apr. 1953, Shiraki.

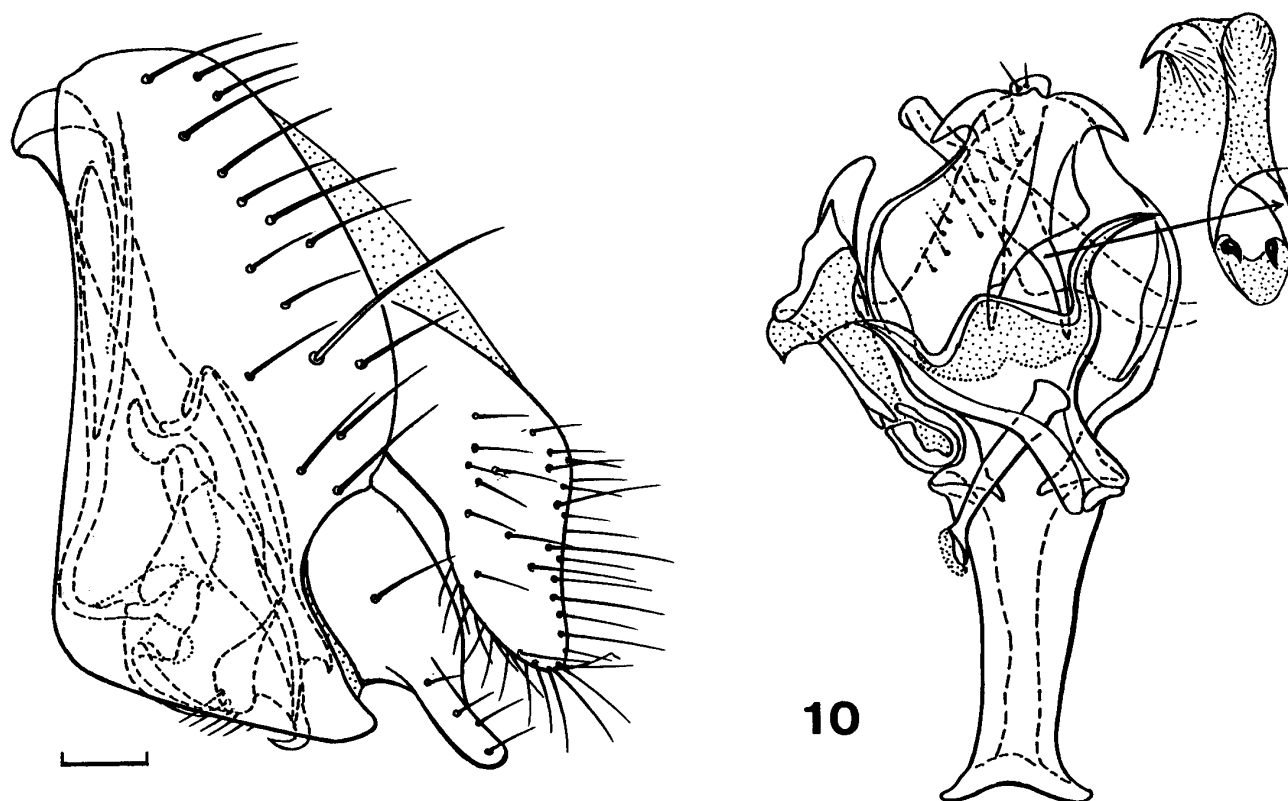


Fig.10. Male genitalia of *Homoneura paraforcipata* n. sp.

Distribution. Japan(Ryukyus).

Remarks. This new species is similar to *H. forcipata* (Kertész, 1913) in having the fifth abdominal tergite bispotted, but is distinguishable by its large size, setulose frons, pubescent arista, and characteristics of the surstylus, postgonite and aedeagus (see fig.19, B₂ for *forcipata*, in Sasakawa, 1992). Also this species is provided with a postsutural intra-alar seta but not strong as seen in the species of the subgenus *Minettioides*.

9. *Homoneura (Homoneura) quinquevittata* (de Meijere)

Specimens examined. First record from Iriomote-jima Is.: 3 males & 1 female, Kanpira, 5 Nov. 1982, M. Sasakawa & Y. Yoshiyasu. Ishigaki-jima Is.: 1 male, Sakieda Bay, 4 Nov. 1982, Sasakawa & Yoshiyasu.

10. *Homoneura (Homoneura) yamagishii* Sasakawa et Ikeuchi

See Sasakawa and Ikeuchi, 1982, p.496.

Specimens examined. First records from Ishigaki-jima and Iriomote-jima Is.: 2 females, Mt. Omoto, Ishigaki Is., 4 Nov. 1982, M. Sasakawa & Y. Yoshiyasu; 1 male & 7 females, Kanpira, Iriomote Is., 5 Nov. 1982, Sasakawa & Yoshiyasu.

11. *Prosopophorella iriomotensis* n. sp (Figs.11, 13-14)

Male. Head testaceous yellow; frontalia between ocellar triangle and ventral level of lower *or* brownish black; occiput with a narrow and pale brown stripe connected with ocellar triangle; *pvt* growing on dark area; parafacialia with a pale brown, small spot laterad of antennal base; vertical angle, central line along base of *or*, face, epistome, gena and postgena pruinose; postgena with a pale brown spot around base of genal bristle. Antenna with first and second segments blackish brown, third segment entirely testaceous; palpus testaceous yellow.

Thorax brownish black; mesonotum mat, densely brown-dusted except for vittae which are more or less grayish yellow when viewed from front: a pair of median vittae between *dc*-rows, postsutural ones laterad of *dc*-rows narrow and short, and lateral ones broad, extending from anterolateral part of notum above testaceous humeral calli to anterolateral corners of scutellum across notopleura; pleura and postnotum densely dusted with whitish gray excepting postero-dorsal corner of mesopleuron. Wing pale brown except for base and posterior margin, with many enclosed, pale spots; calypter with brown fringe; halter yellow. Legs testaceous yellow; mid and hind coxae, and distal two or three tarsal segments brown-tinged; all tibiae with brown proximal and distal rings. Abdomen black, weakly shiny.

Frons almost as wide as long, parallel-sided, about 1.3 times as wide as eye; ocellar triangle with ventral apex extending beyond level of lower *or*, anterior ocellus located just before level of upper *or*; epistome slightly convex; gena about 1/3 height of eye; antennae slightly separated from each other at base; arista with hairs a little longer than 1/6 width of third segment.

Mesonotum with 0+3 *dc*, 6 rows of short *acr*, *prsc* about 1/2 of posteriormost *dc*; *ppl*, *mspl* and *stpl* each one. Wing as in Fig.11. Fore femur with 2 long *pv* distally and a comb of 13-14 spinules anteroventrally; all tibiae each with one *pd*, mid tibia with 2 spurs.

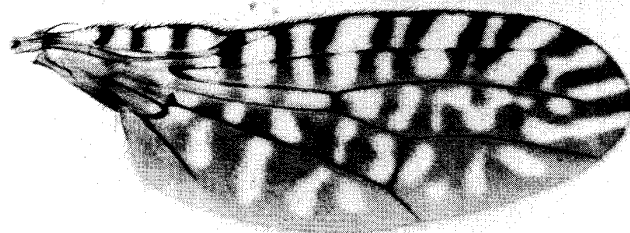
Protandrium ringed with a ventral bridge, as long as T6 in dorsal side but with a semicircular emargination at middle of posterior one-fourth; epandrium narrow; surstylus slightly projected ventally, clavate in lateral view; hypandrium somewhat V-shaped; postgonite clavate, with three setulae; aedeagus with a pair of sclerites on dorsal side and membranous on ventral side; aedeagal apodeme subequal to aedeagus in length.

Body length 3.8 mm, wing length 3.2 mm.

Female. Unknown.

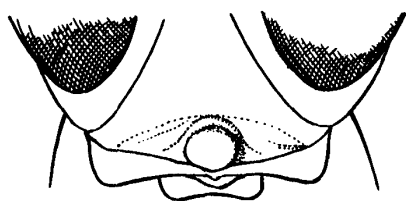


11

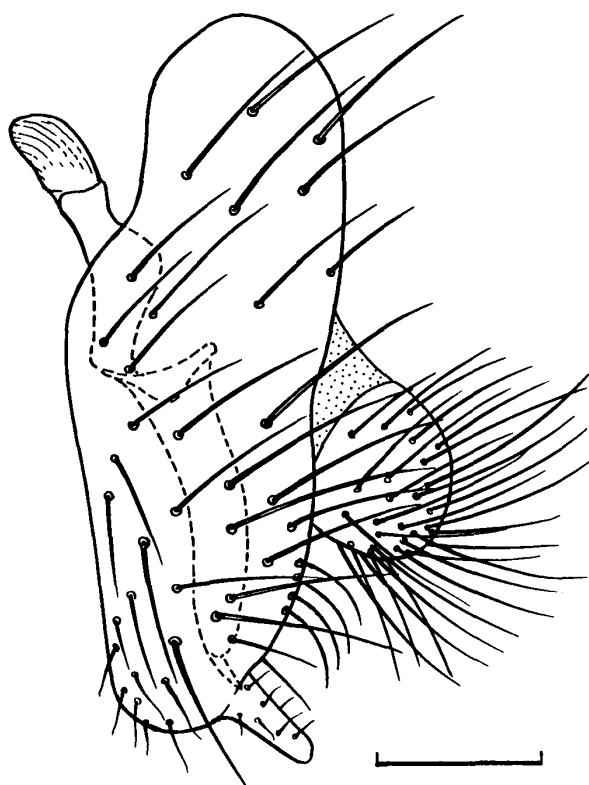
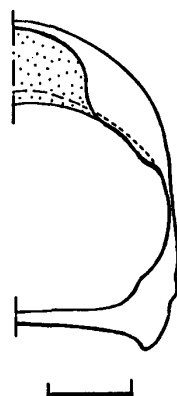
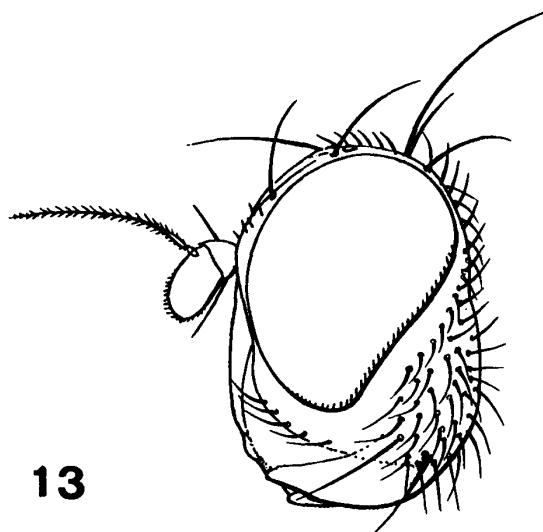


12

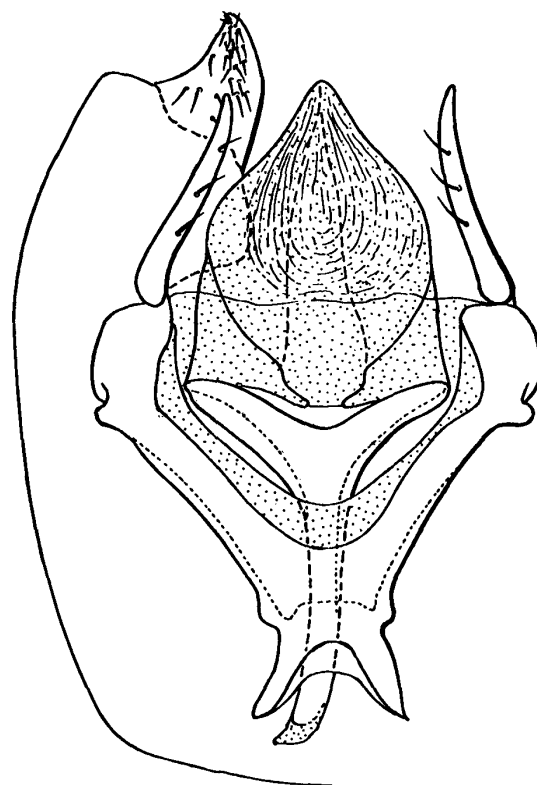
Figs.11-12. Wings of *Drosopophorella iriomotensis* n. sp. (11) and *Drepanephora piliseta* Hendel (12). (Y. Yoshiyasu)



13



14



Figs.13-14. Head and male genitalia of *Prosopophorella iriomotensis* n. sp.

Holotype male, Kanpira, Iriomote-jima Is., 5 Nov. 1982, M. Sasakawa & Y. Yoshiyasu (KPU278); right wing on a small slide and genitalia in polyethylene tubule with glycerol, both pinned with the specimen.

Distribution. Japan (Ryukyus).

Remarks. This is the second species for the genus, and distinguishable easily from *P. buccata* (de Meijere), known from Java, by the coloration of the parafrontalia, antenna, thorax, wing and tibia, presence of a low protuberance on the epistome, and absence of setulae on the scutellum.

12. *Steganopsis convergens* Hendel (Fig.15)

Steganopsis convergens Hendel, 1913:102.

This testaceous yellow species is recognized without trouble by its short-haired arista, two black round-spotted face and narrowly hyaline wing tip. The specimens examined are not provided with the brownish median line on the frons, and are large: body length 2.78(2.4-3.0) mm and wing length 2.67(2.5-2.8) mm in male, and 2.80(2.5-3.5) and 2.75(2.5-3.0) mm in female, respectively; the dark parts on the fore leg are variable: femur with or without a faintly brown-tinged striation on dorso-distal part, tibia usually with basal half to two-thirds except for base pale brown, tarsus with distal one-third (-1/2) of first segment and four distal segments dark brown (*not* darkened uniformly as stated by Hendel — 1 ex. from Anping, China).

Male genitalia with a setal tuft on basal process of the surstylus and without the pregonite are specific.

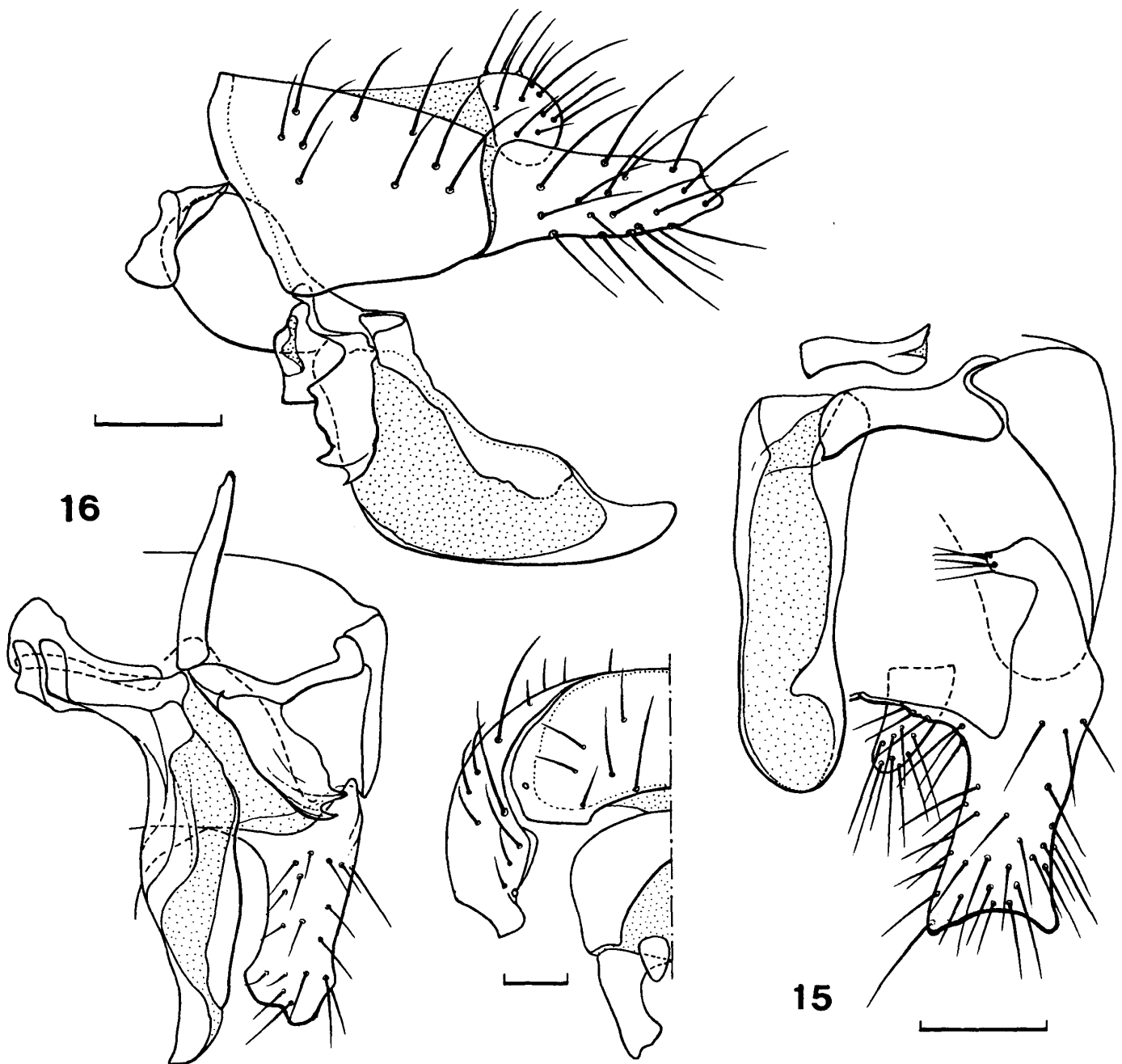
Specimens examined. Amami-Oshima Is.: 1 male, Yuwan, 6 May 1953, T. Shiraki. Okinawa Is.: 2 males & 4 females, Naha, 28 Feb. 1953; 1 female, Nago, 20 Mar. 1953; 1 male, Izumi, 21 Mar. 1953; 1 female, Hentona, 27 Mar. 1953; 1 male & 1 female, Nakagusuku, 31 Mar. 1953; 1 female, Tamagusuku, 2 Apr. 1953; 1 male & 1 female, Hentona, 6 Apr. 1953; 1 female, Misato, 21 Apr. 1953, T. Shiraki. Miyako-jima Is.: 1 male, Hirara, 9 Mar. 1953, Shiraki. Ishigaki-jima Is.: 1 male, Ishigaki, 30 Jan. 1953; 1 male & 1 female, Ishigaki, 20 Feb. 1953; 2 females, Shiraho, 20 Feb. 1953, Shiraki. Iriomote-jima Is.: 1 male, Ohara, 19 Jan. 1953, Shiraki.

Distribution. Japan (Ryukyus), Formosa, Philippines, Indonesia (Sundas), Australia (NE). New to Japan.

13. *Steganopsis japonica* n. sp. (Fig.16)

Male. Head yellow, but ocellar triangle, occiput, dorsal half of postorbit and vertical angle brownish black: dark area extending anteriorly to base of upper *or*, lower *or* growing on an isolated spot; frons mat; face strongly shiny, with a pair of blackish round spots at middle of lateral sides and brown ventro-lateral corners which are connected dorsally with round spots; antenna with first segment yellow, second segment testaceous, third segment brownish black but brownish at base; arista pale brown but yellowish at base; palpus black. Thorax and abdomen shiny black; mesonotum with lateral side faintly brown-tinged, sparsely brownish dusted; anterior part of pleura strongly shining but postero-dorsal corner of mesopleuron, dorsal margin of sternopleuron, pteropleuron, pleurotergite and postnotum sparsely dusted; abdomen sparsely greyish dusted. Wing tinged with brown, and costal to marginal cells distinctly darkened, apical margin of submarginal cells (cell R3 and R5) narrowly hyaline; halter brownish black. Legs blackish brown, but all knees, each distal one-fourth of mid and hind tibiae, first segment of fore tarsus, and mid and hind tarsi excepting pale brown fifth segment yellow.

Frons wider than long, about 1.5 times as wide as eye, parallel-sided; parafrontalia 1/6 width of frons dorsally but broadened below level of lower *or*; ocellar triangle only setulose; *or* subequal to each other in length; orbital hairs minute, 3-4; face slightly convex; gena about 1/4 height of eye; antenna with first segment long, subequal to the second and each 1/5-1/6 length of the third, which



Figs.15-16. Male genitalia of *Steganopsis convergens* Hendel (15) and *S. japonica* n. sp. (16).

is about 8 times as long as wide; arista with dorsal longest hair only a little more than twice as long as the width of third segment.

Mesonotum with 0+2 *dc*, anterior one slightly shorter than the posterior, 4 rows of *acr*, *prsc* as long as anterior *dc* and one postsutural *ia*-row. Wing with R_{4+5} and M_{1+2} slightly diverging beyond discal cell but almost parallel before apices, *r-m* beyond middle of discal cell. Fore femur with 4 *pv*; fore tibial *pd* slightly longer than others; mid tibia with a spur which is subequal to *pd*.

Protandrium large, T7 horseshoe-shaped in caudal view and T8 almost semicircular, both tergites sparsely setose; epandrium small, sparsely setose; surstylus slightly shorter than epandrial height, cylindrical, concave on tip and setose on outer and inner sides; hypandrium transverse bar-like; pregonite bidentate apically; aedeagus sclerotized on both lateral sides; aedeagal apodeme about 1/2 length of aedeagus; ejaculatory apodeme 95 μm long, 40 μm in greatest width.

Body length 2.6(holotype)-2.7 mm, wing length 2.1(holotype)-2.4 mm.

Female. Unknown.

Holotype male, Kainan, Ishigaki-jima Is., 24 Feb. 1953, T. Shiraki. Paratype: 1 male, Inoda, Ishigaki Is., 27 Feb. 1953, Shiraki.

Distribution. Japan(Ryukyus).

Remarks. This new species is similar to two Philippine species, *aterrima* Frey in the coloration of legs and *pusilla* Frey in that of the head, but the facial marking and pale tarsal segments in *japonica* are distinctive. The male genitalia of *japonica* are similar to those of *convergens* Hendel in general appearance, but are provided with the specific pregonites.

14. *Drepanephora piliseta* Hendel (Figs.12, 17)

Drepanephora piliseta Hendel, 1913:101.

The wing is 3.5 mm in length, spineless on the costa, and maculate characteristically with many pale brown fasciae. The hind tibia is distinctive in having a very long *pd* (about 2/3 as long as the tibial length), and two black, curved spurs (long one almost 1/3 length of the tibia, short one 2/3 of the long one).

Male genitalia: Protandrium ringed, T7 about thrice as long as T8 in dorsal side, dark brown on lateral side just above spiracle and with one or two long setae, but sternite very weakly sclerotized; epandrium small, testaceous yellow; surstylus black but brown at base, with many long and short setae; hypandrium U-shaped, upturned before posterior end and separated dorso-mesally, sparsely setose along caudal margin; pregonite small and bare; aedeagus nearly 2/5 length of aedeagal apodeme, sclerotized laterally and bearing a pair of small teeth, and striated on ventral membrane.

Specimen examined. One male, Nakagusuku, Okinawa Is., 31 Mar. 1953, T. Shiraki.

Distribution. Formosa, Japan(Ryukyus). New to Japan.

15. *Melinomyia flava* Kertész

Melinomyia flava Kertész, 1915:500.

The genus *Melinomyia* is peculiar in having a strong bristle near antero-ventral corner of mesopleuron in addition to a normal *mspl*. This is large, testaceous species, with yellowish wings (5.5-6.5 mm long). The specimens examined have the minor differences from the types in the following points: third antennal segment about 1.7 times as long as broad (*not* thrice as in original description); *acr* in 8 rows (*not* 10), *sa* one (*not* four, probably totalized 1 *sa*, 1 *ia* and 2 *pa*).

Specimens examined. One female, Shinokawa, Amami-Oshima Is., 9 May 1953, T. Shiraki; 2 males & 1 female, Mt. Omoto, Ishigaki-jima Is., 4 Nov. 1982, M. Sasakawa & Y. Yoshiyasu.

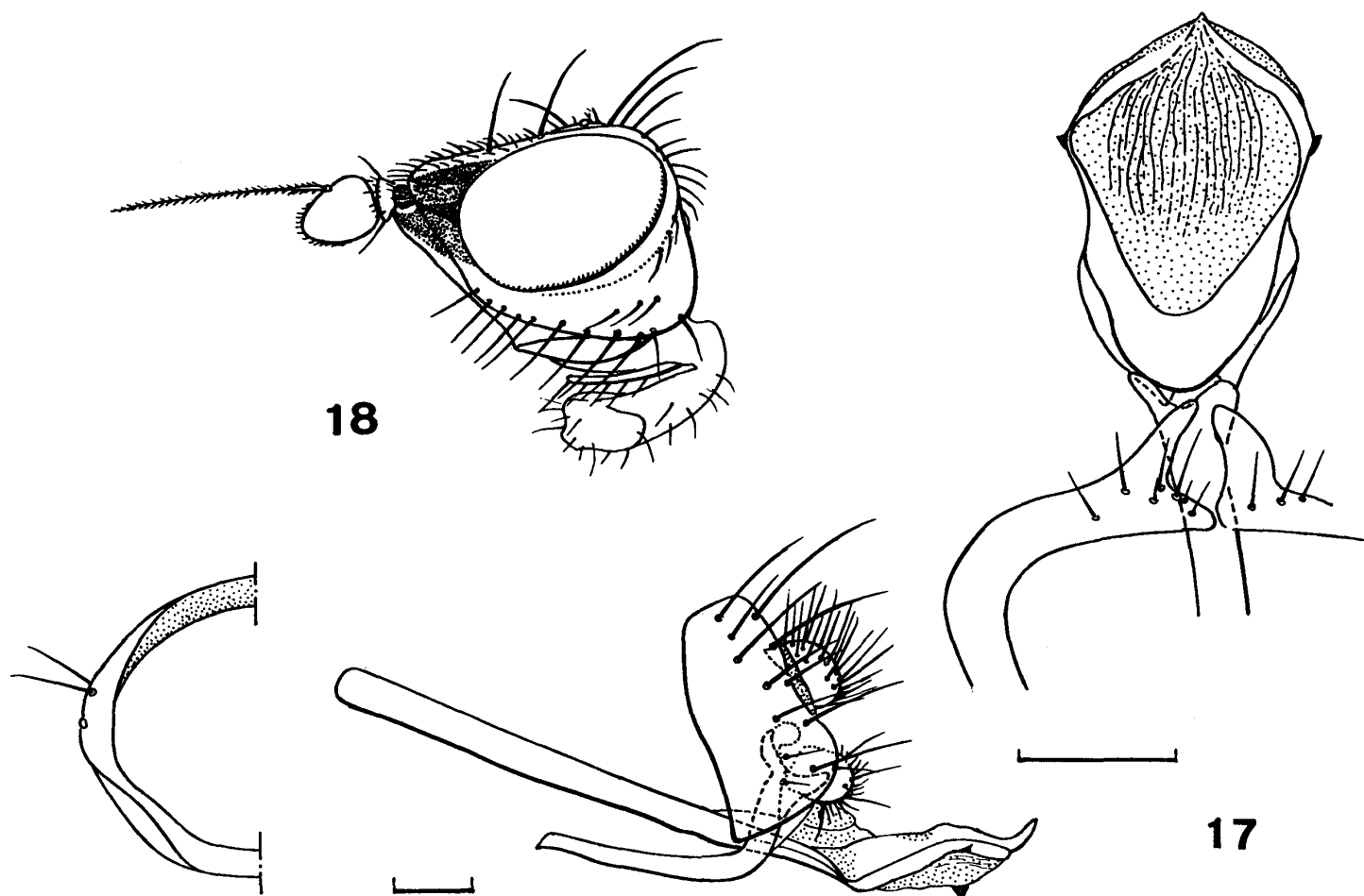
Distribution. Formosa, Japan(Ryukyus). New to Japan.

16. *Minettia (Minettia) tubifera* Malloch

Minettia tubifera Malloch, 1927:165.

This testaceous species is very large, with the wing length 5 mm. The first tarsal segment of hind leg is slightly compressed (about one-half as wide as the broadest width of hind tibia) and bare along the central line on the anterior (ventral) surface. The female specimen examined (Mt. Yuwan, Amami-Oshima Is., 4 May 1953, T. Shiraki) has a pair of strong *acr* (about 1/2 length of *prsc*) behind level of the second *dc*, although this chaetation was not described by Malloch.

Distribution. Formosa, Japan (Ryukyus). New to Japan.



Figs.17-18. Male genitalia of *Drepanephora piliseta* Hendel (17) and head of *Protrigonometopus okinawanus* n. sp.(18).

17. *Protrigonometopus okinawanus* n. sp. (Fig.18)

Female. Head with frons testaceous, and face, gena and postgena yellow; ocellar triangle brown; frons indistinctly brown-striated: median stripe extending between ocellar triangle and anterior margin of frons, lateral ones on anterior half (cephalad from level of lower *or* and laterad of *or*-line); parafrontalia sparsely whitish pruinose; fronto-facial projection brown-tinged, with a narrow brown fascia just below level of antennal base; postorbital area and lateral sides of occiput tinged with brown, but vertical angle and postocellar area yellow; face and gena slightly whitish pruinose; face with a pair of pale brown triangles just ventrad of antennal bases; antenna testaceous but distinctly darkened on outer side, especially blackish on the first segment; arista yellowish brown; palpus yellow.

Thorax with mesonotum pale brown, and scutellum and pleura yellow, sparsely dusted with gray and brownish quadrivittate: median pair of vittae running just mesad of *dc*-line and extending to scutellum (base of apical *sc*), and lateral pair broad (about thrice as wide as median one), extending from humeral calli to bases of outer *pa* (*prs*, *sa* and *npl* growing on brown area); pleura densely whitish pruinose; sternopleuron with dorsal margin (above base of *stpl*) pale brown; abdomen sparsely gray-dusted, T1-5 dark brown but pale on median part of T5; T6, sternites and ovipositor testaceous. Wing hyaline, with anterior margin (between costa and *R*₄₊₅), wing tip (apical 1/4 of cell *R*₅), and around both cross veins and stump vein of *M*₁₊₂ brown; halter yellow, with knob faintly brown-tinged. Legs yellow, distal three segments of fore tarsus faintly brown-tinged.

Frons narrower than long (15:22), 1.5 times as wide as eye, setulose before level of upper or; parafrontalia slightly projecting above eye in profile; oc about 1/2 length of upper or; both or reclinate; gena about 1/3 height of eye; face almost flattened excepting dorso-median carina; antenna with first and second segments short, third segment oval and slightly longer than broad; arista microscopically pubescent.

Mesonotum with 0+3 *dc*, 6 rows of *acr* before suture but 4 rows behind that, *prsc* about 1/2 length of posteriormost *dc*, 1 *ph*; scutellum with apical *sc* slightly diverging. Wing with costa extending to M_{1+2} ; R_1 ending before level of *r-m* which is situated distinctly beyond middle of discal cell; ultimate section of M_{1+2} about twice as long as the penultimate and with a stump vein just before middle, projecting into second posterior cell; 5V-index 0.18 and ultimate section of M_{3+4} 2/3 length of *m-m*. Fore femur with 5 *pv*, hind femur with 1 *ad*, mid tibia with a spur which is slightly stronger than *pd*; *pd* on fore and hind tibiae weaker than that on mid tibia.

Body length and wing length 3.6 mm, respectively.

Male. Unknown.

Holotype female, Izumi, Okinawa Is., 21 Mar. 1953, T. Shiraki.

Distribution. Japan (Ryukyus).

Remarks. This is the third species of the genus *Protrigonometopus* Hendel (1938) in Japan (*P. maculifrons* Hendel, 1938, and *sexlitoris* (Shatalkin, 1992), and is distinctive in having a stump vein on the ultimate section of M_{1+2} , as seen in the species of the genus *Dyticomys* Stuckenberg (1971), and in the wing maculation.

18. *Sapromyza* (*Sapromyza*) *flavopleura* Malloch

Sapromyza flavopleura Malloch, 1927:167.

This species is characterized by the testaceous head, fuscous and densely pruinose mesonotum including humerus and notopleuron, and entirely yellow thoracic pleura, fuscous abdomen, and brownish black basal two segments of the antenna. Wings are 2.4 mm in male and 2.5–3.1 mm in female. Male genitalia are distinctive as follows: protandrium horseshoe-shaped, T8 with two pairs of marginal setae dorsally; epandrium testaceous yellow, slightly protruded on postero-ventral corners, forming the brown and setigerous surstyli; hypandrium simple, pregonite large and with a seta near tip on lateral side; aedeagus membranous, apodeme well-developed.

Specimens examined. One female, Mt. Yuwan, Amami-Oshima Is., 1 May 1953; 1 male & 2 females, Mt. Yonaha, Okinawa Is., 25 Mar. & 11 Apr. 1953, T. Shiraki.

Distribution. Formosa, Japan (Ryukyus). New to Japan.

19. *Sapromyza* (*Sapromyza*) *zebra* (Kertész)

Lauxania (*Minettia*) *zebra* Kertész, 1913:95.

This testaceous species is distinct in having three brown longitudinal stripes on the mesonotum, three brown transverse stripes on the thoracic pleura, and brownish black, central fasciae and lateral bands on the abdominal tergites.

Specimen examined. One female, Shinokawa, Amami-Oshima Is., 9 May 1953, T. Shiraki.

Distribution. Formosa, Japan (Ryukyus), Nepal. New to Japan.

Acknowledgements

My very best thanks are due to Drs. J.R. Vockeroth and J.M. Cumming (Curator of Diptera collection), Agriculture and Agri-Food Canada, Ottawa, for sending me the Malayan material from Malaya and Singapore for examination, and to Dr. T. Matsumura and Mr. N. Fukuhara, National

Institute of Agro-Environmental Sciences, Tsukuba, for allowing me to study the late Shiraki's collections. I also wish to thank Drs. H. Takada, Y. Yoshiyasu and Y. Abe, Kyoto Prefectural University, for valuable assistance during the preparation of this paper.

References

- EVENHUIS, N.L. and T. OKADOME, 1989. Family Lauxaniidae. In EVENHUIS (ed.): Catalog of the Diptera of the Australasian and Oceanian Regions, p.576-589. *Bishop Mus. Press*, Honolulu.
- FREY, R., 1927. Philippinische Dipteren. IV. Fam. Lauxaniidae. *Acta Soc. Fauna Flora fenn.* 56(8): 1-44.
- HENDEL, F., 1907. Neue und interessante Dipteren aus den Kaiserl. Museum in Wien. *Wien. Ent. Ztg.* 26:223-245.
- HENDEL, F., 1913. H. SAUTER's Formosa-Ausbeute. Acalyptrate Musciden (Dipt.) II. *Supplta ent.* 2: 77-112.
- HENDEL, F., 1938. *Muscaria holometopa* (Dipt.) aus China in Naturhistorischen Reichsmuseum zu Stockholm. *Ark. Zool.* 30(3):1-13.
- KERTÉSZ, K., 1913. H. SAUTER's Formosa-Ausbeute. Lauxaniidae (Diptera). *Annls hist.-nat. Mus. natn hung.* 11:88-102.
- KERTÉSZ, K., 1915. H. SAUTER's Formosa-Ausbeute. Lauxaniidae II. *Ibid.* 13:491-534.
- MALLOCH, J. R., 1927. H. SAUTER's Formosa collection: Sapromyzidae (Dipt.). *Ent. Mitt.* 16:159-172.
- MALLOCH, J. R., 1929. Notes on some Oriental sapromyzid flies (Diptera), with particular reference to the Philippines species. *Proc. U. S. natn. Mus.* 74(6):1-97.
- MEIJERE, J. C. H. de, 1908. Studien über südostasiatische Dipteren. II. *Tijdschr. Ent.* 51:105-180.
- MEIJERE, J. C. H. de, 1910. Studien über südostasiatische Dipteren. IV. Die Neue Dipterenfauna von Krakatau. *Ibid.* 53:58-194.
- MEIJERE, J. C. H. de, 1916. Studien über südostasiatische Dipteren. X. D Dipteren von Sumatra (Lauxaniinae). *Ibid.* 58 (Suppl.):64-97.
- MEIJERE, J. C. H. de, 1924. Studien über südostasiatische Dipteren. XV. Dritter Beitrag zur Kenntnis der sumatranischen Dipteren. *Ibid.* 67 (Suppl.):1-87.
- PAPP, L., 1984. Lauxaniidae (Diptera), new Palaearctic species and taxonomical notes. *Acta Zool. Hung.* 301(1-2):159-177.
- SASAKAWA, M., 1992. Lauxaniidae (Diptera) of Malaysia (Part 2). A revision of *Homoneura* van der Wulp. *Ins. matsum. n. s.* 46:133-210.
- SASAKAWA, M., 1995. Lauxaniidae (Diptera) of Malaysia (Part 3). *Ins. matsum. n. s.* 52:149-153.
- SASAKAWA, M., 1997. Lauxaniidae and Agromyzidae (Diptera) of the Ryukyus. *Esakia* 37:141-148.
- SASAKAWA, M. and S. IKEUCHI, 1982, '83 & '85. A revision of the Japanese Species of *Homoneura* (*Homoneura*) (Diptera, Lauxaniidae) Parts 1-3. *Kontyû*, Tokyo, 50:477-499; 51:289-297; 53:491-502.
- SASAKAWA, M. and M. KOZANÉK, 1995. Lauxaniidae (Diptera) of North Korea Part 1. *Jpn. J. Ent.* 63: 67-75.
- SASAKAWA, M. and THO Y.-P., 1990. Lauxaniidae (Diptera) of Malaysia (Part 1). *Esakia, Spec. Iss.* 1: 123-136.
- SHATALKIN, A. I., 1992. New and little-known Palaearctic Diptera of the families Platypezidae, Psilidae and Lauxaniidae. *Russian Ent. J.* 1(2):59-74.
- SHATALKIN, A. I., 1997. East-Asian species of Lauxaniidae (Diptera). Genera *Trigonometopus* Mcq., *Protrigonometopus* HENDEL. *Int. J. Dipterol. Res.* 8(3):163-168.
- SHEWELL, G. E., 1977. Family Lauxaniidae. In DELFINADO, M. D. & D. E. HARDY ed.: A Catalog of the Diptera of the Oriental Region Vol. III. Suborder Cyclorrhapha. p.182-214. *Univ. Press Hawaii*, Honolulu.

STUCKENBERG, B. R., 1971. A review of the Old World genera of Lauxaniidae (Diptera). *Ann. Natal Mus.* 20(3):499-610.