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Agromyzidae (Diptera) of Malaysia (Part 1)*,†

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Abstract Eighteen species of Agromyzidae are recorded from West Malaysia, of which 6 species are described as new by the senior author and 8 species are new to the Malaysian fauna.

Up to the present, only fourteen species of Agromyzidae have been recorded from Malaya by SPENCER (1961) and SASAKAWA (1963). All of the material upon which this paper is based was collected by the senior author under the 1986 joint Japanese-Malaysian project of the "Systematic and Ecological Surveys on Some Plant-parasitic Microarthropods in Peninsular Malaysia". Fourteen more, including 6 new species, are herein added to the fauna, making the total known in Malaysia 28. This is a small number as compared with the Oriental fauna.

The dominance of the two genera, *Melanagromyza* and *Cerodontha*, is well illustrated in the material. The species of economic importance, such as *Melanagromyza sojae* and *obtusa*, and *Ophiomyia phaseoli* and *centrocematis*, on the leguminous crops, are well known already. A highly polyphagous *Chromatomyia horticola* was maintaining a high population in the cultivated land of vegetables and flower gardens, Cameron Highlands. It is of interest to record *Liriomyza asterivora*, as this species has hitherto been known only from Japan (including the Ryukyu Is.). We will discuss the distribution of Agromyzidae in Malaysia in the next paper, because our knowledge is still fragmentary.

The morphological terms and abbreviations are the same as described by SASAKAWA (1961). The holotypes are deposited in the Forest Research Institute of Malaysia (FRIM) and part of paratypes in Kyoto Prefectural University.

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Description

1. *Melanagromyza cordiophoeta* SPENCER

Melanagromyza cordiophoeta SPENCER, 1961, 71.

Black species, with greenish mesonotum and strongly metallic abdomen, and whitish yellow fringe on calypter; eye bare; gena about 1/20 height of eye; arista pubescent.

Malaysian specimens are small, 2.1–2.2 mm in wing length, and calypter is whitish, with margin not differentiated as well as those from New Guinea and New Britain (SASAKAWA, 1963). The male genitalia are distinctive (SASAKAWA, 1963, fig. 6).

Specimens examined. 2 ♂, Port Dickson, Negeri Sembilan, West Malaysia, 14–17. VIII. 1986, M. SASAKAWA.

Distribution. Singapore, Malaya; New Guinea, New Britain, New Ireland.

2. *Melanagromyza metallica* (THOMSON)

Agromyza metallica THOMSON, 1869, 609.

This shining greenish species is widely distributed in the Old World tropics from Micronesia to Africa, and recorded here from Malaysia for the first time. The larval main host is *Bidens pilosa* (SPENCER, 1977). The flies were collected on one of hosts, *Ageratum* sp., in Malaysia.

Specimens examined. 10 ♂ 7 ♀, FRIM, Kepong, Selangor, West Malaysia, 7–8. & 23. VIII. 1986, M. SASAKAWA; 4 ♂ 1 ♀, Pasoh Forest Reserve, Negeri Sembilan, 9–13. VIII. 1986 (M. S.); 3 ♂ 1 ♀, Port Dickson, Negeri Sembilan, 14–17. VIII. 1986 (M. S.); 1 ♀, Sungai Buloh, Selangor, 20. VIII. 1986 (M. S.); 11 ♂ 11 ♀, Berinchang, Cameron Highlands, 28–31. VIII. & 2. IX. 1986 (M. S.); 4 ♂ 7 ♀, Tanah Rata, Cameron Highlands, 29. VIII. 1986 (M. S.).

3. *Tropicomyia atomella* (MALLOCH)

Agromyza atomella MALLOCH, 1914, 331.

This polyphagous, epidermal miner is very common in Malaysia.

Specimens examined. 2 ♂ 1 ♀, Pasoh Forest Reserve, Negeri Sembilan, West Malaysia, emerg. 20. VIII. 1986, on *Gnetum* sp., M. SASAKAWA; 1 ♂, Tanah Rata, Cameron Highlands, emerg. 10. IX. 1986, on Leguminosae (M. S.); 1 ♀, Tanah Rata, emerg. 12. IX. 1986, on *Smilax* sp. (M. S.); 1 ♀, FRIM, Kepong, Selangor, 5. VIII. 1986 (M. S.). Pupae on *Eupatorium odoratum* and *Wikstroemia polyantha* did not emerge.

Distribution. China, Philippines, Vietnam, Malaya, India, Ceylon. New to Malaysia.

4. *Tropicomyia malayensis* SASAKAWA, n. sp.

(Fig. 1)

Black; frons matt, ocellar triangle weakly shining; mesonotum gray-dusted, weakly shining; abdomen shiny; wing more or less distinctly fuscous along anterior margin; calypter gray, with margin and fringe black.

Frons about 1.3 times as wide as eye; parafrontalia not projecting above eye, bearing 2 *ors*, 2 *ori* and a row of several *oh*; ocellar triangle with ventral apex at level of second *ors*, extending ventrally as carina or furrow to dorsal margin of lunule; lunule low, with median furrow; eye bare; gena 1/10–1/15 height of eye; third antennal segment rounded, with pile minute; arista longer than height of eye, microscopically pubescent.

Mesonotum with 0+2 *dc*, 8 rows of *acr*. Wing with costal sections in proportion of 3.7 (3.5–3.8): 0.9: 0.8; r-m distinctly beyond middle of discal cell; ultimate section of M_{1+2} nearly 5 times as long as penultimate; ultimate section of M_{3+4} 2/3 length of penultimate. Mid tibia with or without a weak posterodorsal bristle.

Genitalia: Epandrium with about 20 short spines ventrally; cerci about 2/3 height of epandrium; hypandrium Y-shaped, about 2/3 length of phallapodeme, with basal apodeme short; epiphallus rather long, phallus nearly 1/2 of phallapodeme, basiphallus short, distiphallus with dorsal lobes spinulose; ejaculatory apodeme 175 μm long and 100 μm in greatest width.

Length of wing: 1.6 mm.

Holotype ♂, paratopotypes 3 ♂, FRIM, Kepong, Selangor, West Malaysia, 5. VIII. 1986, M. SASAKAWA.

Distribution. Malaya.

The male genitalia of this species are very similar to those of *T. polyphyta* (KLEINSCHMIDT), known from Australia, in general appearance, but the distiphallus is quite different from each other.

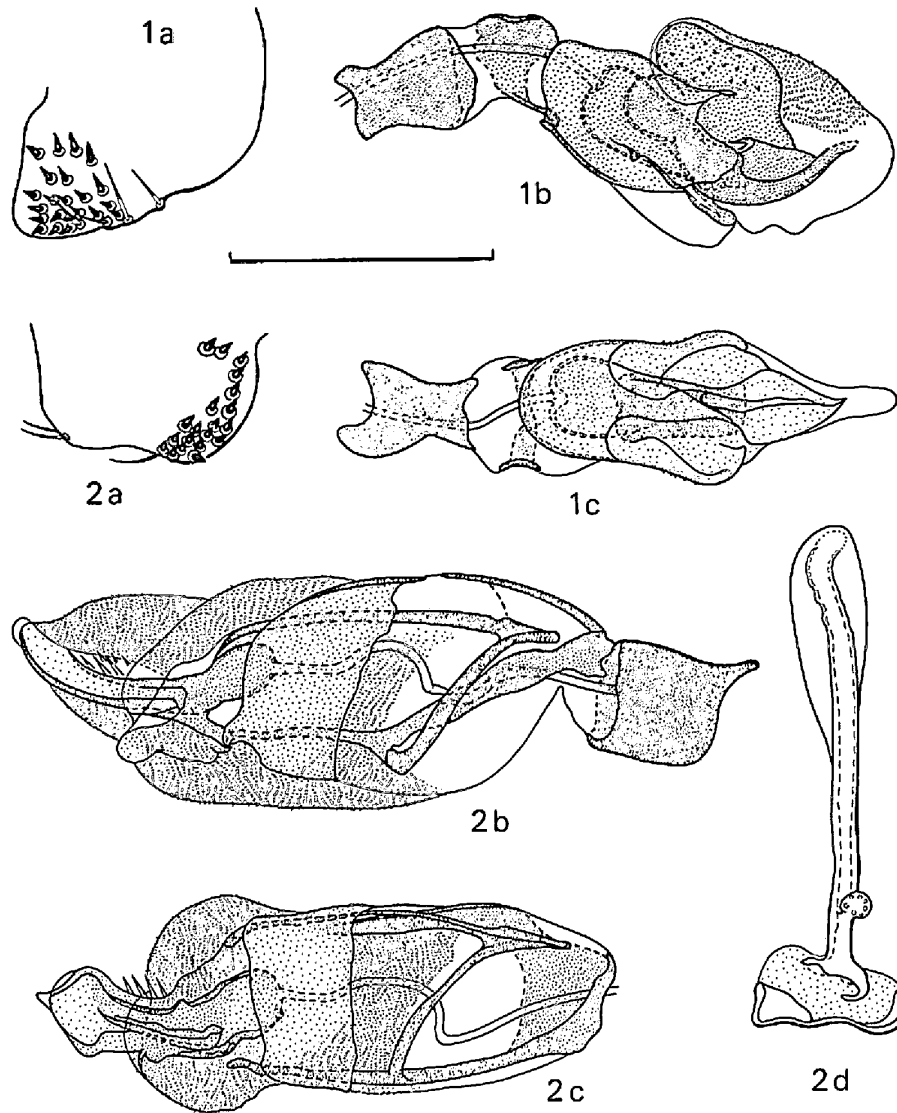
5. *Ophiomyia furcata* SASAKAWA, n. sp.

(Fig. 2)

Black, slightly grayish pruinose; ocellar triangle and mesonotum weakly shining, abdomen strongly shining; antennae brown-tinged; calypter gray, with fringe black.

Frons about 1.3 times as wide as eye; parafrontalia not projecting above eye, bearing 2 *ors*, 2 *ori* and a row of several *oh*, *ori* nearly 1/2 of first *ors*; ocellar triangle with ventral apex at level of second *ors*, extending ventrally as a weak furrow to dorsal margin of lunule; eye bare; gena 1/9–1/13 height of eye; *vi* normal, *pm* very short; third antennal segment rounded, minutely pilose; arista almost as long as height of eye, microscopically pubescent.

Mesonotum with 0+2 *dc*, 6 rows of *acr*. Wing with costal sections in pro-



Figs. 1-2. *Tropicomyia malayensis* SASAKAWA, n. sp. (1) and *Ophiomyia furcata* SASAKAWA, n. sp. (2); a, surstylus, inner view; b, phallus, lateral view; c, phallus, ventral view; d, ejaculatory apodeme. Scale: 0.1 mm.

portion of 2.5:0.9:0.7; r-m beyond middle of discal cell; ultimate section of M_{1+2} about 4.5 times as long as penultimate; ultimate section of M_{3+4} 2/3 length of penultimate. Mid tibia with one short posterodorsal bristle.

Genitalia: Epandrium with 18-20 spines on each posteroventral corner; hypandrium with basal apodeme short, 3/5 length of phallapodeme; phallus as long as hypandrium, basiphallus consisting of a pair of Y-shaped sclerites, distiphallus rather simple, bearing several spines; ejaculatory apodeme 170 μm long, with blade variable in width (65-80 μm) and membranous to weakly sclerotized.

Length of wing: 1.2 mm (holotype) (1.0-1.3 mm).

Holotype ♂, paratopotypes 16 ♂, FRIM, Kepong, Selangor, West Malaysia, 6. VIII. 1986, M. SASAKAWA.

Distribution. Malaya.

This species closely resembles *O. rotata* (SPENCER), known from the Philippines and Australia, in the structures of male genitalia, but is readily recognizable by the minute size, wide frons, long ultimate section of M_{3+4} , sparsely spinose distiphallus and long ejaculatory apodeme with narrow blade.

6. *Phytobia longipes* SASAKAWA, n. sp.

(Fig. 3)

Black; parafrontalia subshining, lunule silvery pruinose; antenna dark brown; mesonotum and abdomen densely dusted with gray; wing very faintly brown-tinged, yellow at base; claypter largely gray, yellow at base, with margin and fringe black; halter yellow.

Frons about 1.5 times as wide as eye; ocellar triangle not differentiated from frons; parafrontalia linearly or not projecting above eye-margin, bearing 2 *ors* and 2 *ori*, no or only one *oh* just ventrad of first *ors*; gena 1/20 height of eye; third antennal segment as long as wide, rounded apically, pilose distinctly, arista as long as height of eye, pubescent; *pm* 5.

Mesonotum with 1+3 *dc*, 8 rows of *acr*, *prsc* as long as anterior *dc*; sternopleuron with 3-4 setae before *stpl*. Wing with costal sections in proportion of 3.5:1:0.8; r-m beyond middle of discal cell; ultimate section of M_{1+2} 3.1-3.8 times as long as the penultimate; ultimate section of M_{3+4} only a little shorter than penultimate. Mid tibia with 2 posterodorsal bristles.

Genitalia: Epandrium with surstylus ovoid, 1/4 as high as epandrium, with about 27 setae in 3-4 rows; hypandrium U-shaped; postgonite very long, 4/7 length of hypandrial sidepiece, weakly pointed on tip; phallus shorter than hypandrium, with ventral tubular process extremely long, distiphallus simply tubular, spinulose on laterodistal end; ejaculatory apodeme 190 μ m long, 170 μ m in greatest width.

Length of wing: 2.2 mm.

Holotype ♂, FRIM, Kepong, Selangor, West Malaysia, 7. VIII. 1986, M. SASAKAWA. Paratopotype ♂, 22. VIII. 1986, M. SASAKAWA.

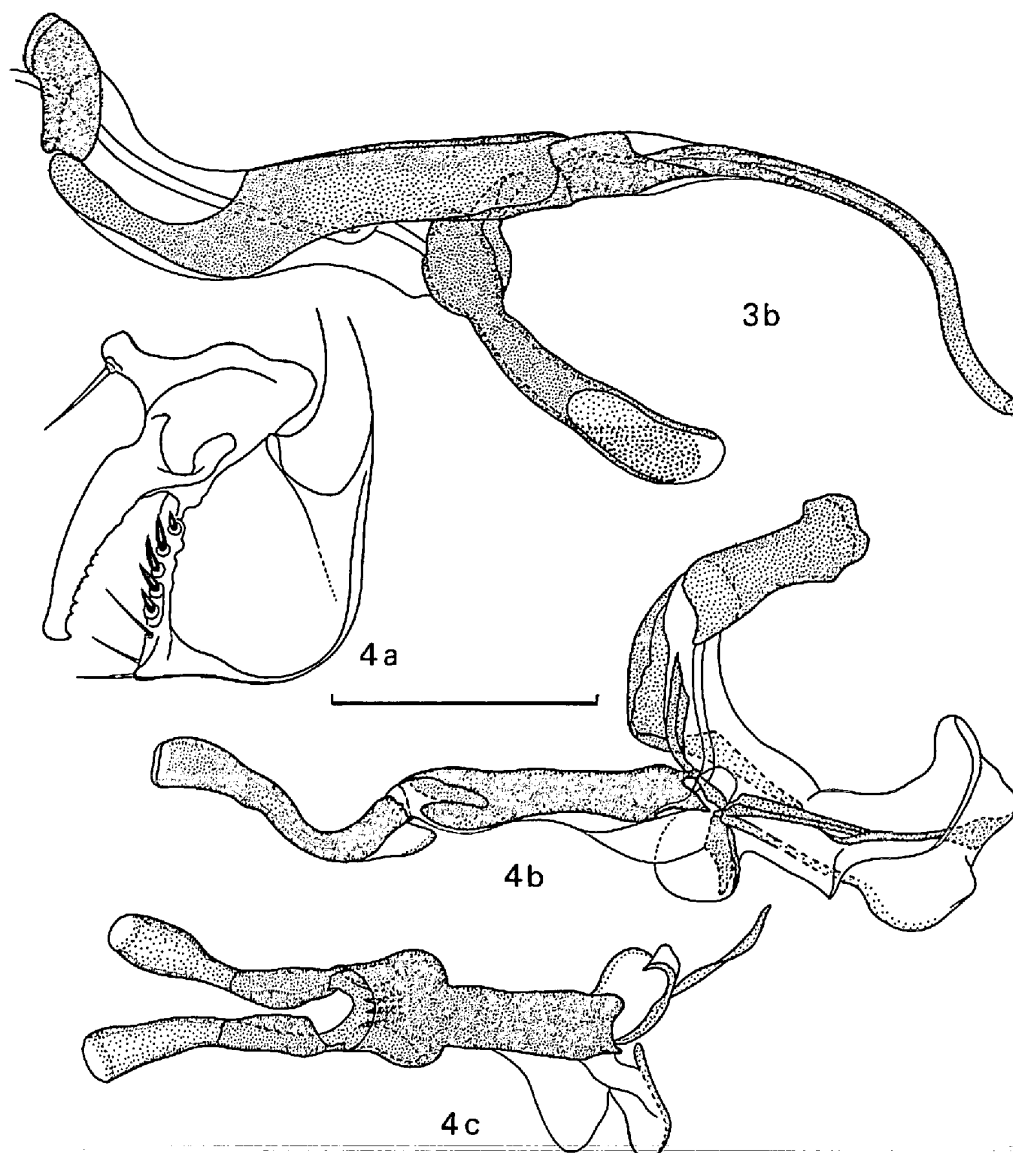
Distribution. Malaya.

This species is distinctive in the size, linear gena and elongated ventral process of basiphallus, differing from Oriental *nigrita* (MALLOCH).

7. *Cerodontha (Icteromyza) duplicata* (SPENCER)

Phytobia (Icteromyza) duplicata SPENCER, 1961, 84.

This species is immediately distinguishable by the brown frons and black femora except for yellow knees from *C. piliseta* (BECKER).



Figs. 3–4. *Phytobia longipes* SASAKAWA, n. sp. (3) and *Cerodontha (Dizygomyza) notopleuralis* SASAKAWA, n. sp. (4), lettering as in Fig. 1.

Specimens examined. 2 ♂, Berinchang, Cameron Highlands, West Malaysia, 31. VIII. 1986, M. SASAKAWA.

Distribution. Formosa, Philippines, Flores Is., Malaya, India, Nepal; New Britain. New to Malaysia.

8. *Cerodontha (Poemyza) cornigera* (DE MEIJERE)

Dizygomyza (Poemyza) cornigera DE MEIJERE, 1934, 264.

This species is recognizable by the coloration of legs (fore knee distinctly yellow,

middle knee indistinctly) and by having a pair of short prescutellar bristles and short ultimate section of M_{3+4} .

Specimen examined. 1 ♀, FRIM, Kepong, Selangor, West Malaysia, 22. VIII. 1986, M. SASAKAWA.

Distribution. Formosa, Java, Malaya.

9. *Cerodontha (Poemyza) flavipalpis* SASAKAWA, n. sp.

Head including antennae blackish brown, dorsal 1/2 of frontalia and genae somewhat paler; lateral margins of ocellar triangle and posteroventral corner of gena dark yellow; palps brownish yellow. Thorax black, mesonotum densely gray-dusted, notopleuron brown, mesopleural suture and base of wing yellow; abdomen sparsely gray pollinose. Wing with veins pale brownish yellow; calypter with margin and fringe pale brown; halter whitish yellow. Legs with all knees narrowly yellow, tarsi brownish yellow except brown last or last two segments.

Frons twice as wide as eye; parafrontalia slightly projecting above eye-margin, broadening ventrally, at widest point together occupying 6/8 width between eyes; lunule high and narrow, slightly lower than length of frons; *ors* 2, *ori* 2, *oh* in a row dorsally but 2 rows below level of first *ori*; eye distinctly hairy; gena 1/7 height of eye; third antennal segment small, rounded, minutely pilose; arista as long as height of eye, pubescent.

Mesonotum with 0+3 *dc*, first *dc* 1/3–1/2 length of third, 4 irregular rows of *acr*; scutellum with basal *sc* subequal to *acr* in length. Wing with costal sections in proportion of 2.5: 1: 0.7; r–m almost at middle of discal cell; ultimate section of M_{1+2} about 6 times as long as the penultimate; ultimate section of M_{3+4} slightly longer than penultimate (1: 1.2).

Length of wing: 1.5 mm.

Holotype ♀, FRIM, Kepong, Selangor, West Malaysia, 5. VIII. 1986, M. SASAKAWA.

Distribution. Malaya.

This species is similar to *C. oryzivora* (SPENCER) in general appearance, but is characterized by having the hairy eye, yellowish palp, sparser row of acrostichal setae and shorter ultimate section of M_{3+4} .

10. *Cerodontha (Dizygomyza) notopleuralis* SASAKAWA, n. sp.

(Fig. 4)

Head with frons, lunule and face brown, lunule silvery pruinose; parafrontalia pale brown dorsally and brownish yellow ventrally; gena brownish yellow; antenna and palp brownish black. Thorax black; mesonotum gray-dusted, weakly shining; humerus brown, notopleuron brownish yellow, mesopleural suture and base of wing yellow. Wing with veins yellow basally; calypter yellow, with fringe yellow to brownish yellow; halter yellow. Legs black; only fore knee narrowly yellow,

all tarsi yellowish brown. Abdomen black, subshining, tergites 2–4 with posterior margins narrowly yellow.

Frons twice as wide as eye, slightly diverging ventrally; ventral 1/3 of parafrontalia projecting above eye in profile; *ors* 2, reclinate; *ori* 2, incurved; *oh* in a row, dorsal ones erect and ventral ones proclinate; lunule slightly lower than semi-circular; gena about 1/10 height of eye; third antennal segment about 2/3 as long as greatest width of eye, distinctly pilose; arista as long as height of eye, swollen on basal 1/5, pubescent.

Mesonotum with 1+3 *dc*, 4–5 irregular rows of *acr*, *prsc* slightly longer than *acr*. Wing with costal sections in proportion of 2.8: 1: 0.7; *r-m* beyond middle of discal cell; ultimate section of M_{1+2} 7 times as long as penultimate; ultimate section of M_{3+4} 1.5 times as long as penultimate. Mid tibia with one posterodorsal bristle.

Genitalia: Epandrium with a papillate process dorsoapically, surstylus with 5 spines and several setae; phallus with ventral processes well-developed, a pair of distal tubules subequal to basal section of distiphallus in length; ejaculatory apodeme 130 μm long, 85 μm in greatest width.

Length of wing: 1.5 mm.

Holotype ♂, FRIM, Kepong, Selangor, West Malaysia, 5. VIII. 1986, M. SASAKAWA.

Distribution. Malaya.

This species is smallest of the known Oriental species of this genus. It differs from *C. omissa* SPENCER in the pale parafrontalia and notopleuron, and longer ultimate section of M_{3+4} . Male genitalia are similar to those of New Guinean *C. ochreata* SASAKAWA, but the spines on surstylus are few but stronger, and ventral membranous process is not spinulose.

11. *Liriomyza asterivora* SASAKAWA

Liriomyza asterivora SASAKAWA, 1956, 127.

This minute species is characterized by having the outer vertical bristles on black area, 4 rows of acrostichals, brown keel-shaped area almost along entire ventral margin of mesopleuron, and yellow lateral margins on abdominal tergites.

Larvae mine the leaves of *Aster indicus* in Japan and of *Synedrella undiflora* in Malaysia; initial coiled mine is larger on *Synedrella*; frass is deposited seemingly in a thread-like line near center of mine.

Specimens examined. 1 ♂, Port Dickson, Negeri Sembilan, West Malaysia, 15. VIII. 1986, on *Synedrella*, M. SASAKAWA; 1 ♀, Sungai Buloh, Selangor, 20. VIII. 1986 (M. S.); 9 ♂ 3 ♀, Tanah Rata, Cameron Highlands, 29. VIII. 1986 (M. S.).

Distribution. Malaya; Japan. New to Malaysia.

12. *Liriomyza brassicae* (RILEY)

Oscinis brassicae RILEY, 1884, 322.

This cosmopolitan species is one of the cruciferous crop pests, and is recorded here from Malaysia for the first time. The distinct feature of this species is the variable darkening of parafrofrontalia and orbits.

Specimens examined. 2 ♀, Berinchang, Cameron Highlands, West Malaysia, 31. VIII. 1986, M. SASAKAWA.

13. *Liriomyza katoi* SASAKAWA

Liriomyza katoi SASAKAWA, 1961, 400.

This species has the darkened third antennal segment, and both inner and outer vertical bristles arising from yellow area of vertex. The male genitalia are similar to those of European *L. ptarmicae* DE MEIJERE, but in this species the third antennal segment is pilose normally, mesopleuron is entirely yellow, and black areas of sterno- and hypopleura are broadly separated from each other. Malaysian specimens are smaller than the Japanese ones: wings 1.2–1.4 mm in males, 1.5–1.6 in females.

Larvae mine the leaves of *Artemisia* spp., forming a linear mine.

Specimens examined. 2 ♂ 1 ♀, Tanah Rata, Cameron Highlands, West Malaysia, 29. VIII. 1986, M. SASAKAWA; 1 ♂, Berinchang, Cameron Highlands, 31. VIII. 1986 (M. S.); 1 ♂ 2 ♀, Berinchang, emerg. 2. IX. 1986, on *Artemisia* sp. (M. S.).

14. *Calycomyza lantanae* (FRICK)

Phytobia (Calycomyza) lantanae FRICK, 1956, 287.

This species is characterized by having the whitish fringe on calypter, entirely yellow orbits and yellow knee on fore femur.

Male genitalia: Epandrium with a patch of about 20 spines on each postero-ventral corner, surstylus with 13–15 spines and several setae; phallus distinctive (SPENCER & STEGMAIER, JR. 1973, figs. 189–190); ejaculatory apodeme broad at base, about 1/2 width of blade, 155 μm long, 115 μm in greatest width.

Female genitalia: Similar to those of *C. artemisiae* (KALT.), but spermathecae are provided distinctly with notch ventrally, 60 × 60 to 60 × 65 μm.

Larvae mine the leaves of *Lantana* spp., forming upper surface blotch with a short linear mine firstly. Puparium is reddish brown; mandibles each with 2 teeth; dorsal process of paraclypeal phragma with a hole anteriorly; anterior spiracles with 6–8 bulbs, posterior spiracles with 3 bulbs, of which ventral one is the largest.

Specimens examined. 1 ♂ 1 ♀, Kuala Lumpur, West Malaysia, emerg. 1. IX. 1986, on *Lantana* sp., M. SASAKAWA.

Distribution. U. S. A.; Bahamas, Trinidad, Venezuela; Malaya. New to Malaysia; it seems that this species has been introduced inadvertently into Malaysia

on cultivated varieties of *Lantana*.

15. *Phytoliriomyza diplazii* SASAKAWA, n. sp.

(Fig. 5)

Male. Head including antenna and palp yellow, but parafrontalia and arista brown, both *vt* on brown area, ocellar triangle, dorsal 1/2 of postorbis, occiput and dorsal 2/3 of postgenae dark brown. Mesonotum including humeri and abdominal tergites shining brown, sparsely gray-dusted; scutellum concolorous with mesonotum; notopleuron and postnotum pale brown, pleurotergite brown-tinged, pleurae yellow; abdominal sternite yellow to brownish yellow. Wing with veins pale brown; calypter tinged with brown, with margin and fringe brown; halter yellow. Legs yellow except for brown tibiae and tarsi.

Frons nearly twice as wide as eye, dorsal part of parafrontalia projecting above

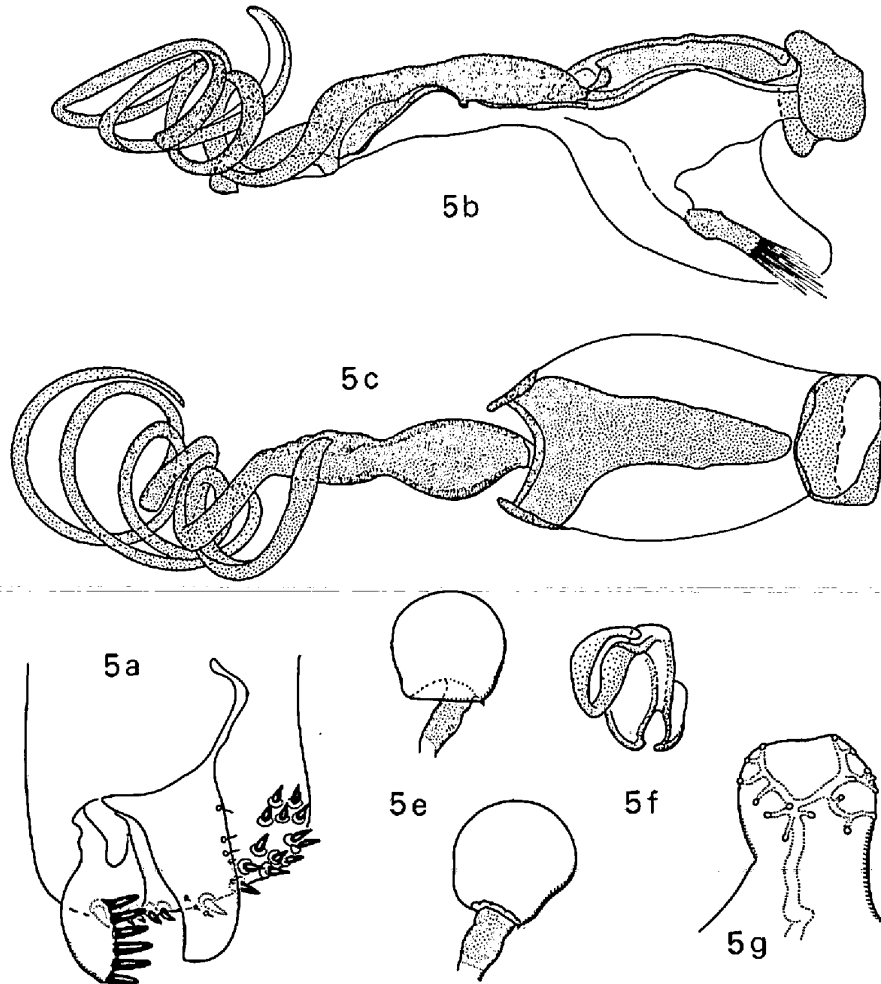


Fig. 5. *Phytoliriomyza diplazii* SASAKAWA, n. sp.; e, spermathecae; f, ventral receptacle; g, posterior spiracle of puparium.

eye in profile; *ors* 2, *ori* 1, accompanying with 1 or 2 hair-like setulae below *ori*; *oh* absent; lunule small, lower than semicircular; gena 1/5–1/6 height of eye; third antennal segment small, rounded, minutely pilose; arista as long as or shorter than height of eye, pubescent.

Mesonotum with 1+3 *dc*, anterior two shorter than postermost one; 2 sparse, irregular rows of *acr*, *ia* subequal to first *dc* in length. Wing with costal sections in proportion of 2.7: 1: 0.6, r-m before middle of discal cell, ultimate section of M_{1+2} about 4 times as long as the penultimate, ultimate section of M_{3+4} slightly longer than penultimate (7: 6).

Genitalia: Epandrium with about 20 spines on each posteroventral corner and along ventral margin; surstylus divided into 2 lobes, of which anterior one bears 6 long spines; hypandrium V-shaped, about 5/8 length of phallapodeme; basiphallus broadened at end, with a distinct setose process ventrally; distiphallus with a pair of coiled processes; ejaculatory apodeme 125 μm in length and width, respectively.

Length of wing: 1.4–1.5 mm (holotype).

Female similar to male described above, but the eye is larger than that of male, gena narrower (1/8 height of eye), last 2 abdominal tergites not pruinose, more shining than anterior ones, and wings longer, 1.7–1.8 mm. Ovipositor brown, sparsely gray-dusted on basal 2/3; egg-guide subtriangular, 50 μm long; ninth tergite 75 μm long, ninth sternite with 3 pairs of *nsm*; cercus with 3 *ts*, of which median one is shorter than laterals; spermathecae suborbicular, minutely sinuate at base, 85 \times 90 μm , neck of duct brown; ventral receptacle 95 μm long, with tail long and brown-tinged.

Holotype ♂, Lata Iskandar Perak State, Cameron Highlands, West Malaysia, emerg. 12. IX. 1986, M. SASAKAWA. Allotype ♀, emerg. 3. IX. 1986; paratopotypes 6 ♂, emerg. 1–13. IX. 1986; 2 ♀, emerg. 3–12. IX. 1986, M. SASAKAWA.

Distribution. Malaya.

Larva mines the leaf of *Diplazium asperum*. Mine: Whitish, upper surface linear mine, occupying the tip of leaf, blackish along median rib by frass.

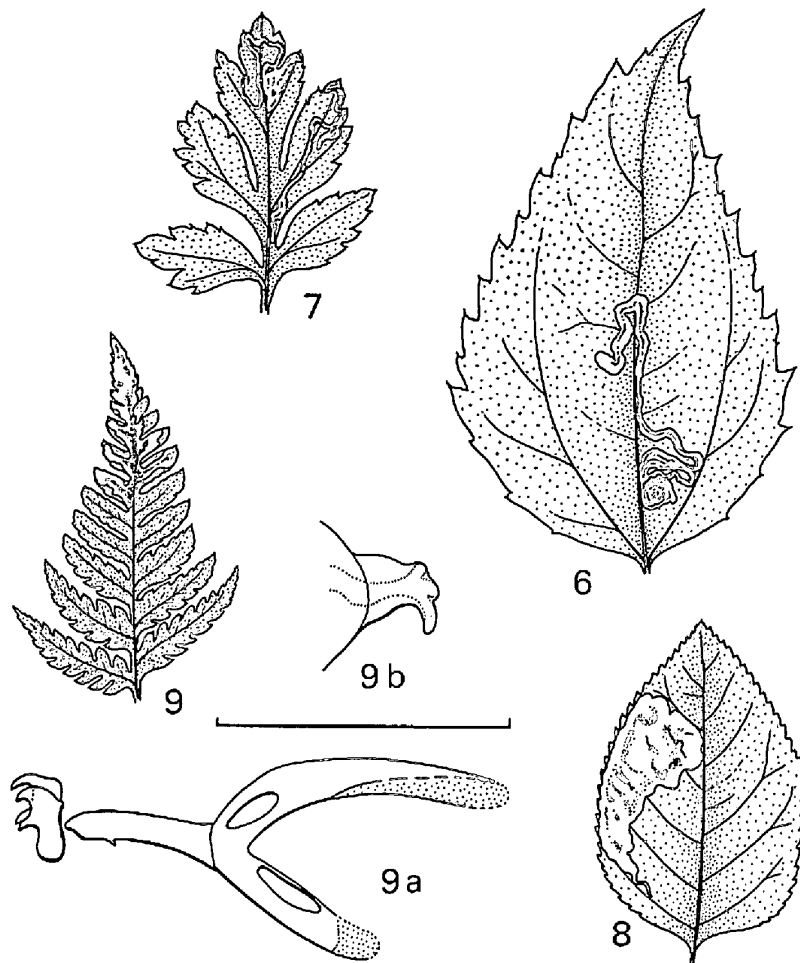
Puparium yellowish brown, 1.7–1.9 mm long, 0.75–0.95 mm in greatest width; mandibles each with a tooth; anterior spiracle with 6 bulbs; posterior spiracles projected posterolaterally, each with 14–17 bulbs in two groups.

This species is somewhat related to *P. arctica* (LUNDBECK) and *tricolor* (MALLOCH) in size and coloration, but the male genitalia are quite different among them. A pair of coiled sections of distiphallus are brown and only membranous at apices, differing from those of *australensis* SPENCER.

16. *Chromatomyia horticola* (GOUREAU)

Phytomyza horticola GOUREAU, 1851, 148.

This is one of the polyphagous agricultural pests on the plants of Cruciferae,



Figs. 6–9. Leaf-mines: *Liriomyza asterivora* on *Synedrella* (6); *Liriomyza katoi* on *Artemisia* (7); *Calycomyza lantanae* on *Lantana* (8); *Phytoliriomyza diplazii* on *Diplazium* (9). a, Cephalopharyngeal sclerites, lateral view; b, posterior spiracle, lateral view, of *Calycomyza lantanae*.

Leguminosae, etc.

Specimens examined. 10 ♂ 10 ♀, Tanah Rata, Cameron Highlands, West Malaysia, 29. VIII. 1986, M. SASAKAWA; 3 ♂ 3 ♀, Berinchang, Cameron Highlands, 31. VIII. 1986 (M. S.); 1 ♂ 1 ♀, Tanah Rata, Cameron Highlands, emerg. 31. VIII. –2. IX. 1986, on *Bellis perennis* L. (M. S.); 5 ♂ 5 ♀, Tanah Rata, emerg. 1–3. IX. 1986, a kind of weed of Compositae (*Siegesbeckia orientalis* ?) (M. S.).

Distribution. China, Malaya, India, Thailand; Europe; Africa.

17. Additional Identified Leaf-miners

1) Leaf-miner on *Scaveola frutescens*

Linear mines on leaves have been found at Port Dickson on 15 August. This species is certainly *Ophiomyia cornuta* DE MEIJERE.

2) Leaf-miner on *Alangium griffithii*

Characteristic epidermal mines with pupae of *Tropicomyia atomella* were found at FRIM, Kepong, on 23 August.

3) Seed-head feeder of *Lantana camara*

The larvae of *Ophiomyia lantanae* (FROGGATT) were collected at Tanah Rata, Cameron Highlands, on 2 September.

18. Unidentified Species

A single female specimen of *Ophiomyia*, *Liriomyza* and *Pseudonapomyza*, respectively, was collected at FRIM, Kepong. Those descriptions had better be left until additional materials are available.

Acknowledgements

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支部活動報告

東北支部 1988年8月6日、東北支部第35回大会が山形県羽黒国民休暇村で開催され、次の講演があった。

- 1) オガサワラクビキリギスの発育調節と光周期：安藤喜一(弘前大農)；
- 2) 青森県におけるジャガイモヒゲナガアブラムシの生態，春季における有翅胎生雌虫出現に関する考察：石谷正博(青森知作園試)；
- 3) 長期間の連続した冷却状態がコナガの生存に及ぼす影響：本多健一郎(東北農試)；
- 4) アフヨトウの多発生と越冬地の気象：平井一男(東北農試)；
- 5) キンモンホソガフェロモントラップの高さ別による誘引比較：若公正義(果樹試盛岡)；
- 6) クズハキリバチの生態：郷右近勝夫(東北学院大生物)・前田泰生(島根大農)；
- 7) アカアシノミゾウムシの生活史について：山家敏雄(林試東北)；
- 8) 林床鞘翅目のニッチとギルドについて：小林四郎(山形大農)；
- 9) コガタルリハムシ成虫休眠の問題点，休眠関連蛋白質・休眠覚醒の雌雄差：栗原守久・一守貴志・大友令史(岩手大農)；
- 10) 前幼虫態休眠のホルモン調節：鈴木幸一・藤沢 巧・中村武彦(岩手大農)。