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Agromyzidae (Diptera) from the Bismarck Archipelago, with an Appendix on some related species from the Oriental region.

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Agromyzidae from the Bismarcks have previously been studied by Spencer (1962a) and Sasakawa (1963d) and 25 species have hitherto been known. In this paper I have examined 206 specimens collected in 1962 by the Danish Noona Dan Expedition (Petersen 1966). This material includes 27 species (plus 2 not positively identified), of which 11 and one sub-species are described below as new. Six new synonyms are also established.

A number of these species, such as *Japanagromyza scelesta* sp. n., *Ophiomyia tremenda* sp. n. and *Melanagromyza insignita* sp. n. have highly aberrant male genitalia but it is not felt desirable to erect numerous monotypic genera based solely on the male genitalia of a limited number of specimens and in the complete absence of larvae.

The discovery of two new species in the genus *Pseudonapomyza* closely allied to recently described species from the Ethiopian region is of considerable interest. It is now becoming clear that we are dealing here with a relatively large group widely distributed in the old world tropics. The particular significance of larval characters in this group has recently been shown (Spencer, 1966b) and the breeding of material from leaf-mines will be of the utmost importance in the further clarification of these species.

The distribution of the Agromyzidae known in the Bismarck Archipelago is shown in Table 1.

Table 1. *The distribution of the Agromyzidae known in the Bismarck Archipelago.*

* New Record	New Britain	Duke of York	New Ireland	Dyaul	Lavongai	Mussau	Manus	Further Distribution
Agromyza papuensis Sas.	—	—	×*	—	—	—	—	New Guinea
Japanagromyza kalshoveni (de Meij.)	—	—	—	×*	—	—	—	Java
J. multiplicata Sas.	×	—	—	—	—	—	—	—
J. scelesta sp. n.	—	—	—	—	—	×	—	—
J. trispina (Thom.)	—	—	×*	—	—	—	×*	Oriental, Japan
Ophiomyia centrosematis ssp. *mussauensis* ssp. n.	×	—	×	×	—	×	—	—
O. tremenda sp. n.	—	—	×	—	—	—	—	—
Melanagromyza atomella (Mall.)	×	—	—	—	—	—	—	Australia, Oriental, Japan
M. clavata (Sas.)	×	—	—	—	—	—	—	—
M. conspicua Sp.	×	×*	—	—	×*	×*	—	Australia, Oriental
M. cordiophoeta Sp.	×	—	×*	—	—	—	—	Malaya
M. insignita sp. n.	—	—	×	—	—	—	—	—
M. lividula Sas.	×	—	—	—	—	—	—	—
M. metallica (Thom.)	×	×*	×	×*	×*	×*	×	Australia, Oriental, Africa
M. normalis Sp.	—	—	×	—	—	—	—	—
M. oculata Sas.	×	—	—	—	—	—	—	—
M. phaseoli (Tryon)	×*	—	—	—	×*	×*	—	Australia, Oriental, Africa
M. pseudometallica sp. n.	—	—	×	—	—	—	—	—
M. sojae (Zehntner)	—	×*	×*	—	—	—	—	Australia, Oriental, Africa, Japan
M. sordidata Sp.	×	—	—	—	—	—	—	—
M. surrufa Sas.	×	—	—	—	—	—	—	—
M. trepida sp. n.	×	—	—	—	—	—	—	—
Phytobia furcata Sas.	×	—	—	—	—	—	—	—
P. maai (Sp.)	—	—	—	—	—	—	×	Thailand, New Guinea
P. inusitata sp. n.	—	—	—	—	—	×	—	—
P. yalomensis sp. n.	×	—	—	—	—	—	—	—
Cerodontha (Diz.) *laetifica* sp. n.	—	—	×	—	×	—	—	—
C. (Ict.) floresensis Sp.	×*	—	—	—	—	—	—	Flores, Philippines
C. (Ict.) piliseta (Beck.)	×*	—	—	—	—	×*	—	Oriental, Africa, Europe
Amauromyza papuensis sp. n.	—	—	×	—	—	—	—	—
Pseudonapomyza fabulosa sp. n.	×	—	—	—	—	—	—	—
P. multimoda sp. n.	—	×	×	—	×	×	—	—
P. philippinensis Sp.	—	—	×*	—	—	—	—	Philippines
P. spicata (Mall.)	×*	—	—	×*	—	—	—	Australia, Oriental, Africa
Phytoliriomyza arctica (Lund.)	×*	—	×*	—	—	—	—	Semi-cosmopolitan
Total 35	19	4	14	3	5	7	3	

The regional breakdown gives the following distribution pattern of the 35 species:

Endemic	18
New Guinea	1
Philippines	2
Oriental	7
Australia, Oriental	6
Semi-cosmopolitan	1

Although slightly over 50 % of species appear to be endemic it is felt that this is misleading and is a result of relatively intense collecting in the small islands of the Bismarck Archipelago. Further collecting in New Guinea, Indonesia and the Philippines to the west and in N. Australia to the South will almost certainly reduce this high proportion of endemicism. Numerous new species await discovery throughout the Oriental-Pacific area; when they are first described they will appear as endemic but their true distribution will only become apparent after much further collecting has been possible.

Acknowledgments.

I am particularly grateful to Dr. L. Lyneborg of the Zoological Museum, Copenhagen for allowing me to study this important collection.

I also wish to thank the following for the loan of type material: Mr. Willem N. Ellis, Zoological Museum, Amsterdam; Dr. F. Mihályi, Hungarian Natural History Museum, Budapest; Dr. habil. G. Morge, Deutsches Entomologisches Institut, Eberswalde; Miss S. Nakata, Bernice P. Bishop Museum, Honolulu.

My best thanks are due to my wife for preparation of the illustrations.

Genus **Agromyza** Fallén.

Thirteen species were included in this genus in the author's synopsis of Oriental species (1961b) and a key to identification was provided. Four further species were described by Spencer (1962b) and these were incorporated in the existing key. Two species have now been transferred to other genera — *A. tephrosiae* de Meij. to *Japanagromyza* (Sehgal, 1965) and *A. maai* Spencer to *Shizukoa* (Sasakawa, 1963a: 38) [= Phytobia, cf. Spencer, 1965b: 8]. Three further species have been described by Sasakawa — *A. papillata* Sas., 1963a from S. Vietnam, *A. papuensis* Sas., 1963d from S.E.

New Guinea and *A. subantennalis* Sas., 1963d from N.W. New Guinea. These three species were not incorporated into the existing key.

A. subantennalis Sas. would appear to be synonymous with *A. antennalis* Spencer; *A. papillata* Sas. and *A. papuensis* Sas. are extremely close and run to *A. graminivora* Spencer, 1960 (couplet 8). The aedeagus of this latter species has recently been illustrated (Spencer, 1963a: Fig. 2) and I am now satisfied that this is not the species recorded from Formosa and Indonesia (Spencer, 1961b: 61) which is now accepted as *papuensis* Sas.

The studies undertaken in recent years have shown that many closely related species in this genus can only satisfactorily be distinguished by the male genitalia and existing Oriental-Pacific species require revision, with the illustration of the genitalia of all types. Until this can be done identification of many species can only be tentative.

I would here like to rectify an unfortunate error which appears in my (1961b) key; pre-scutellar should read pre-sutural in both alternatives of couplet 1.

Agromyza papuensis Sasakawa, 1963d.

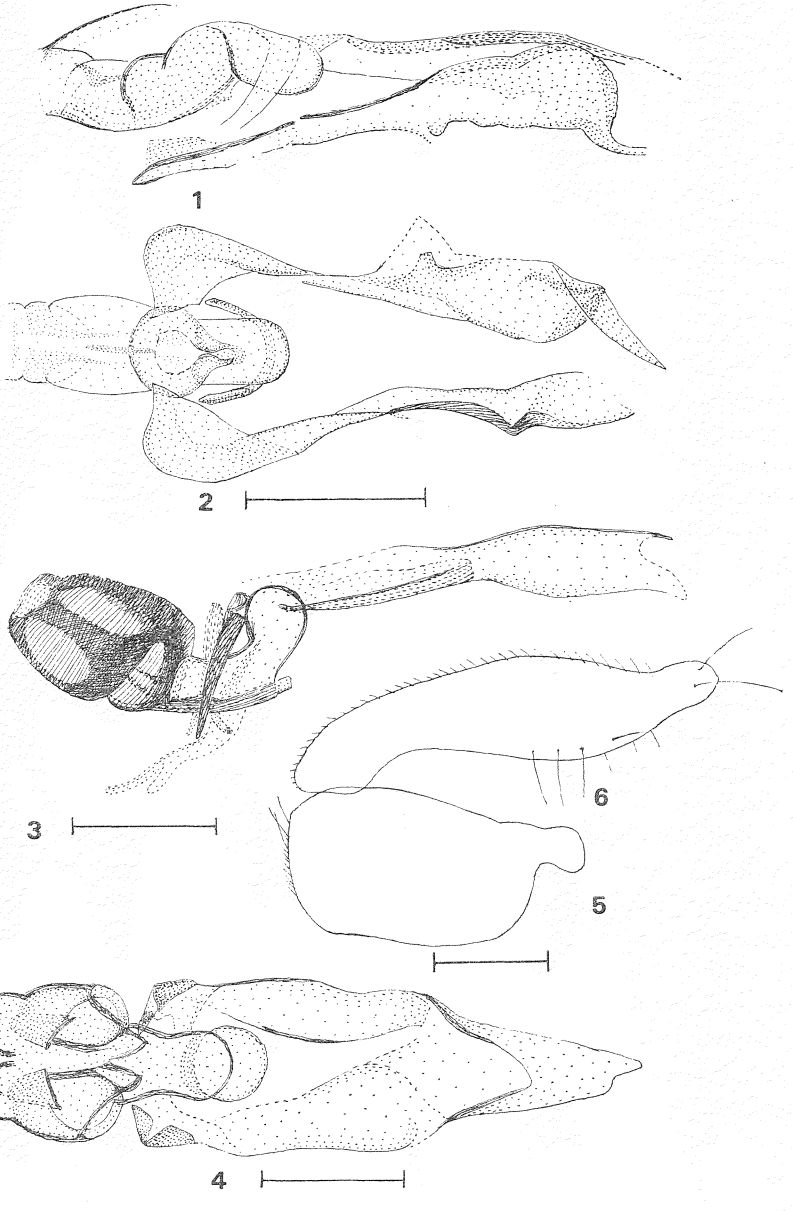
NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 1 ♂, 11.iv. 1962.

Sasakawa described the male genitalia of *A. papuensis,* but of the aedeagus—by far the most significant feature—he merely wrote "typical in form with grass-miners". The aedeagus of the New Ireland specimen is shown in Fig. 1, 2.

The specimen from New Ireland is identical in all respects, including male genitalia, with the species recorded from Indonesia and Formosa (Spencer, 1961b: 61) as *A. graminivora.* The examination of the male from Lombok shows that this was a misidentification and this species can now be accepted as *papuensis. A. graminivora* is discussed in the Appendix below.

A. papuensis can be included in the following amendment to couplet 8 of the author's (1961b) key to Oriental *Agromyza* species:

8 Squamae and fringe silvery-white; 3 ori ..... *plebeia* Malloch
— Squamae greyish, fringe ochreous-brown; 2 ori 8a
8a Antennae largely black; surstylus with up to 20 spines .....
..... *papuensis* Sasakawa
— Antennae paler, distinctly brownish; surstylus with about 10 spines ..... *graminivora* Spencer



Figs. 1-2. *Agromyza papuensis* Sas.: 1) aedeagus, side view; 2) same, dorsal view. Figs. 3-6. *Japanagromyza scelesta* sp. n.: 3) aedeagus, side view; 4) same, ventral view; 5) surstylus; 6) cercus.
Scale line = 0.1 mm.

Genus **Japanagromyza** Sasakawa.

Japanagromyza kalshoveni (de Meijere).

DYAUL: Kollepine, 1 ♀, 12.iii.1962.

This specimen agrees closely with the female holotype from Java which I have recently re-examined.

Important characters are: two bristles on both fore- and mid-tibiae, presence of pre-scutellars, arista appearing largely bare, first cross-vein at basal third of discal cell.

Japanagromyza scelesta sp.n.

Head: Frons slightly wider than eye, not projecting above eye in profile; four stout orbital bristles, orbital setulae lacking; ocellar triangle only weakly defined beyond level of upper ors, lunule small, forming semicircle, with fringe of short hairs at centre of upper margin; jowls narrow, one-thirteenth vertical height of eye; arista long, only slightly shorter than eye height, strongly pubescent.

Mesonotum: Two dorso-centrals, pre-scutellars strong, only slightly weaker than second dc; acrostichals in eight rows.

Wing: Length 2.3 mm, first cross-vein well before centre of discal cell, last section of m4 exceptionally short, one-third length of penultimate.

Legs: Fore-tibia without bristle, only a single bristle on mid-tibia.

Colour: Frons and lunule mat black; mesonotum only slightly shining from behind, more mat from front; legs and abdomen entirely black; squamae grey, margin and fringe black; halteres largely blackish-brown, paler on inside of knobs, stalks yellowish.

Male genitalia: Aedeagus as in Figs. 3, 4; surstyli as in Fig. 5, cerci enormously elongated (Fig. 6); ninth sternite with extremely narrow side-arms, only slightly fused at apex, without extended hypandrial apodeme; spermal sac with large blade, stalk without lateral process.

Holotype ♂, MUSSAU: Boliu, 13.ii.1962, in Zoological Museum, Copenhagen.

This species has entirely distinctive genitalia and is also recognisable by the unusually short last section of vein m 3+4.

Sasakawa has produced two partial keys of Oriental-Pacific

Japanagromyza species. In the first (1963b: 25), *J. scelesta* can be included in an extension to couplet 15:

15 Fore-tibia without lateral bristles; last section of vein m3+4 only one-third length of penultimate ..... *scelesta* sp. n.
— Fore-tibia with one or two bristles; last section of m4 longer 15a
15a as existing couplet 15

In the second (1963c: 799), *J. scelesta* can be included in an extension to couplet 4:

4 Knob of halteres largely brown, slightly paler on inside; last section of vein m3+4 short, one-third penultimate . *scelesta* sp. n.
— Knob of halteres white or yellow above; last section of m4 longer 4a
4a as existing couplet 4.

Japanagromyza trispina (Thomson), 1869.

Japanagromyza variihalterata (Malloch), Spencer, 1965a: 25.

NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 1 ♂ (genitalia examined), 1 ♀, 9-15.iv.1962. — MANUS: Lorengau, 1 ♀, 24.vi.1962.

This species occurs widely throughout the Oriental Region to Japan. New to Bismarck Archipelago.

Genus **Ophiomyia** Braschnikov.

Ophiomyia centrosematis mussauensis subsp. n.

Male genitalia: aedeagus as in Figs. 7, 8.

Holotype ♂ of subspecies, MUSSAU: Boliu, 4.vi.1962; paratypes: 4 ♂, 1 ♀, same data; NEW BRITAIN: South of Cape Hoskins Aerodrome, 1 ♂, 6.vii.1962; NEW IRELAND: Kalili Bay, Danu, 1 ♂, 30.iv.1962; DYAUL: Sumuna, 1 ♂, 9.iii.1962. Holotype and 5 paratypes in Zoological Museum, Copenhagen; 3 paratypes in author's collection.

O. centrosematis occurs widely in the Oriental Region as a stem-miner on Leguminosae; the aedeagus of a paralectotype from Java was recently illustrated by Spencer (1966a: Fig. 3), when the species was transferred from *Melanagromyza* to *Ophiomyia*. Reviewing my material I find specimens with identical genitalia from Formosa, India and Malaya.

Although the adults of *mussauensis* appear identical with the typical subspecies, the genitalia—although of similar general form,

particularly of the characteristic basiphallus—are sufficiently distinct to warrant sub-specific status. The illustration of the aedeagus of a specimen from New South Wales (Spencer, 1963b: Fig. 12) suggests that this represents not typical *centrosematis* but subspecies *mussauensis*.

Ophiomyia tremenda sp. n.

Head: Frons exceptionally narrow, slightly less than half width of eye, not projecting above eye in profile; orbits well-differentiated, with deep pits of the four orbital bristles; upper three equal, lower slightly weaker; orbital setulae sparse, relatively long, those in front incurved, those behind reclinate; ocellar triangle extended, narrow, a line from apex continuing to margin of lunule; lunule distinctly higher than semicircle; jowls narrow, deepest in centre below eye, one-thirteenth vertical height of eye; third antennal segments splayed out laterally, arista distinctly pubescent, four-fifths height of eye.

Mesonotum: 2 strong dorso-centrals, with a minute third close to second; acrostichals irregularly in 8 rows, ending in 2 rows at level of first dc.

Legs: Fore-tibia with 1, mid-tibia with 2 strong lateral bristles.

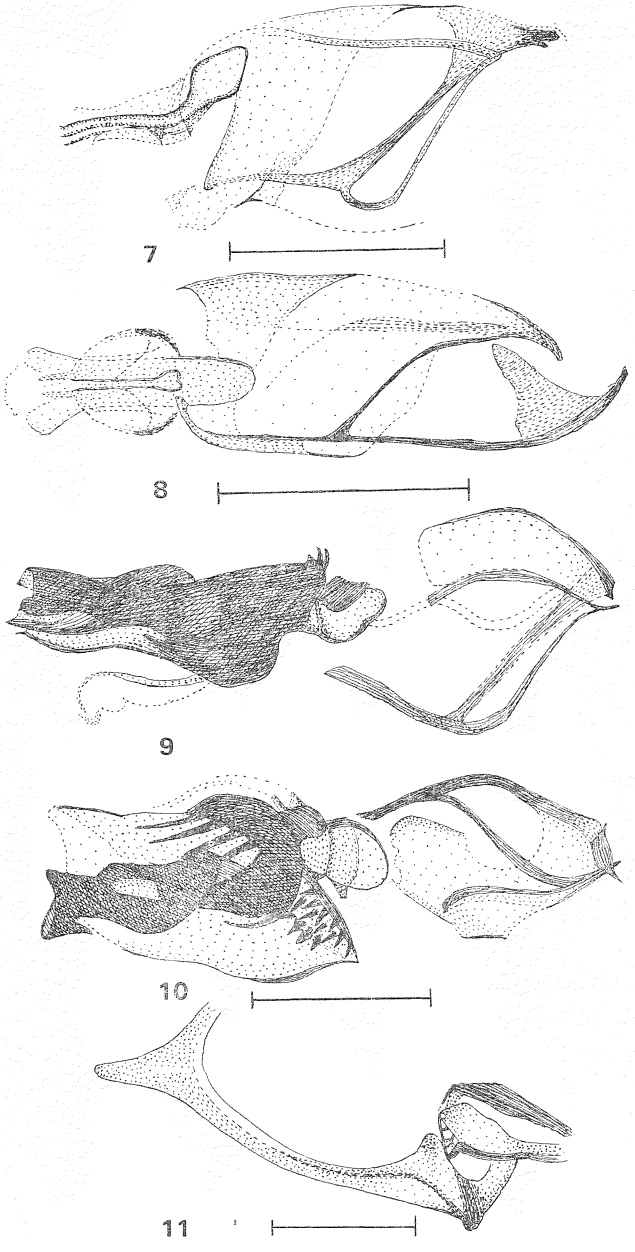
Wing: Length in male 2.3 mm, costa extending strongly to vein m 1+2, first cross-vein at midpoint of discal cell, last section of m4 half penultimate.

Colour: Frons mat black, orbits and ocellar triangle conspicuously shining; mesonotum shining black, only slightly more mat viewed from front; legs entirely black, abdomen with faintest metallic tinge; squamae grey, fringe black; halteres entirely black.

Male genitalia: Aedeagus black, strongly chitinized, as in Figs. 9, 10; phallophore distinctly bowl-shaped (as illustrated for *O. centrosematis* (de Meij.) by Spencer, 1961a: Fig. 2c), basiphallus with characteristic lines of chitinization; ninth sternite with only short hypandrial apodeme (Fig. 11), with slight ventral curvature; spermal sac large, blade narrow, with stalk strongly developed through centre of blade.

Holotype ♂, NEW IRELAND: Kalili Bay, Danu, 29.iv.1962, in Zoological Museum, Copenhagen.

This species has the superficial habitus of a *Japanagromyza* species; the male genitalia, however, indicate a close relationship with the *centrosematis-orbiculata* group of *Ophiomyia*. The presence of the fore-tibial bristle has not been encountered before in



Figs. 7-8. *Ophiomyia centrosematis mussauensis* ssp. n.: 7) aedeagus, side view; 8) same, ventral view. Figs. 9-11. *Ophiomyia tremenda* sp. n.: 9) aedeagus, side view; 10) same, ventral view; 11) ninth sternite.

Scale line = 0.1 mm.

this genus but this—like the mid-tibial bristles—is clearly a plesiomorph character, which is now in process of being lost; it is only retained in some species of *Japanagromyza* and *Melanogromyza* in the Agromyzinae and in *Nemorimyza* in the Phytomyzinae.

The exceptionally narrow frons could lead this species to be mistaken for *Japanagromyza angustifrons* Spencer from Formosa or *J. yanoi* (Sasakawa) from Japan. The genitalia of *J. angustifrons* were illustrated by Spencer (1962b: Fig. 5), confirming that this species is not directly related to *O. tremenda.*

This species, together with *O. centrosematis* (de Meij.) and *O. gressitti* Sas., which Sasakawa failed to incorporate in any key, can be included in the following additions to the author's (1961b) key to Oriental-Pacific *Ophiomyia* species:

00 Male without vibrissal fasciculus 0
— Male with vibrissal fasciculus 1
0 Fore-tibia without bristle ..... *centrosematis* (de Meij.)
— Fore-tibial bristle present ..... *tremenda* sp. n.

2a Jowls broad, in ratio 7:25 with height of eye; very large species, wing length in ♀ 3.8 mm ..... *ingens* Spencer
— Jowls narrower, at most ¼ eye height 2b
2b Mid-tibia with 1 bristle ..... *gressitti* Sasakawa
— Mid-tibia without bristles 2c
2c Jowls ¼ eye height; vibrissal horn entirely fused; ocellar triangle conspicuously shining ..... *cicerivora* Spencer
— Jowls narrower, 1/9 eye height; vibrissal horn differentiated into 2 or 3 distinct bristles; ocellar triangle scarcely shining ..... *negrosensis* Spencer

Genus **Melanagromyza** Hendel.

Melanagromyza clavata (Sasakawa), comb. nov.

Japanagromyza clavata Sasakawa, 1963d: 802. Holotype ♂ in Bishop Museum, Honolulu.

Melanagromyza tawiensis Spencer, 1965b: 6 (sub-species of *clavata*). Holotype ♂ in Zoological Museum, Copenhagen.

NEW BRITAIN: Gazelle Peninsula, Komgi, 1000 m, 1 ♂, 14.v. 1962.

This specimen agrees exactly with a paratype of *clavata* from New Britain, described by Sasakawa in the genus *Japanagromyza.*

The male genitalia in no way resemble those of *J. duchesneae* Sasakawa, the type of the genus *Japanagromyza* but conform in all details with typical *Melanagromyza* species. The sperm sac is

particularly characteristic of *Melanagromyza.* It is believed that the presence of the fore-tibial bristle may have misled Sasakawa into placing this species in *Japanagromyza.*

While *M. tawiensis* Spencer agrees closely with *M. clavata,* the distiphallus of the specimen from the Philippines is distinctly more elongated than in the New Britain specimens (Spencer, 1965b: Fig. 2a) and I therefore propose to reduce *tawiensis* to the status of sub-species of *M. clavata.*

Melanagromyza conspicua Spencer.

NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 1 ♂, 2 ♀, 8.v.1962; 1 ♂, 21.v.1962. — DUKE OF YORK: Manuan, 1 ♂, 18. vii.1962. — LAVONGAI: Banatam, 1 ♀, 25.iii.1962. — MUSSAU: Boliu, 9 ♂, 2 ♀, 13.ii.1962.

This species was recently confirmed as a stem-feeder in Compositae (Spencer, 1966a), widespread in Oriental region; New Caledonia (as *M. joycei* Sasakawa, 1963b); Australia (Spencer, 1963b: 315).

Melanagromyza cordiophoeta Spencer.

NEW BRITAIN: South of Cape Hoskins Aerodrome, 3 ♂, 8 ♀, 6.vii.1962. — NEW IRELAND: Kalili Bay, Danu, 6 ♂, 9.iv.1962.

Previously recorded from New Britain (Spencer, 1962a: 655).

Melanagromyza insignita sp. n.

Head: Frons slightly wider than eye, not projecting above eye in profile; four orbital bristles (detectable only from basal pits); orbits and ocellar triangle only moderately differentiated; jowls rather flat below, about one-seventh height of eye; (antennae missing).

Mesonotum: Two strong, normal dorso-centrals, with a weak additional bristle between, nearer to 1st dc; acr arranged irregularly in some 8-10 rows.

Legs: Fore-tibia with one, mid-tibia with two lateral bristles.

Wing: Length in male 3.3 mm, costa extending strongly to vein m1+2, first cross-vein at centre of discal cell, last section of m4 two-thirds penultimate.

Colour: Entirely black, frons mat, orbits and ocellar triangle weakly shining; mesonotum brilliantly shining; squamae dark-grey, fringe black.

Male genitalia: Aedeagus ending in form of simple tubule (Fig. 12), basiphallus largely membranous, only slightly chitinized at base, ninth sternite without hypandrial apodeme, but side-arms somewhat fused at apex; surstyli projecting inwards, rounded at end, with some 15 stout hairs around inner margin; spermal sac typical of the genus.

Holotype ♂, NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 14.iv.1962, in Zoological Museum, Copenhagen.

Morphologically this species is a typical *Melanagromyza* but the aedeagus is aberrant, resembling that found in some *Japanagromyza* species; however, no other features link the species with *Japanagromyza.*

In Sasakawa's (1963d) key to Papuan *Melanagromyza* species, *M. insignita* runs to couplet 14, where it is similar to *M. papuensis* Spencer from New Guinea in having a fore-tibial bristle; it can be included in the key by the addition of the following couplet: Couplet 14, for *papuensis,* read 14a:

14a Mesonotum distinctly purplish; last section of vein m4 less than half penultimate ..... *papuensis* Spencer
— Mesonotum entirely shining black; last section of m4 two-thirds penultimate ..... *insignita* sp. n.

Melanagromyza metallica (Thomson).

NEW BRITAIN: South of Cape Hoskins Aerodrome, 1 ♂, 6 ex., 6.vii.1962; Kwalakessi, 2 ♂, 3.vii.1962; Valoka, 2 ♂, 4, 7.vii.1962; Yalom, 1000 m, 19 ex., 8-18.v.1962. — DUKE OF YORK: Manuan, 2 ♂, 18.vii.1962. — NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 19 ex., 6-23.iv.1962. — DYAUL: Sumuna, 5 ex., 9.iii.1962. — LAVONGAI (New Hanover): Banatam, 2 ♀, 16, 18.iii.1962. — MUSSAU: Boliu, 7 ex., 13.ii.1962; 28 ex., 5-7.vi.1962; Schadel Bay, 1 ♀, 3.vi.1962; Talumalaus, 2 ♂, 2 ♀, 24.i. and 7.ii.1962. — MANUS: Lorengau, 9 ex., 21, 24.vi.1962.

Melanagromyza phaseoli (Tryon).

NEW BRITAIN: South of Cape Hoskins Aerodrome, 1 ♂, 6.vii. 1962. — LAVONGAI: Banatam, 1 ♂, 1 ♀, 18.iii.1962. — MUSSAU: Schadel Bay, 1 ♀, 3.vi.1962.

Widespread in Oriental region. New to Bismarck Archipelago.

Melanagromyza pseudometallica sp. n.

Closely resembling *M. metallica* (Thomson), with following

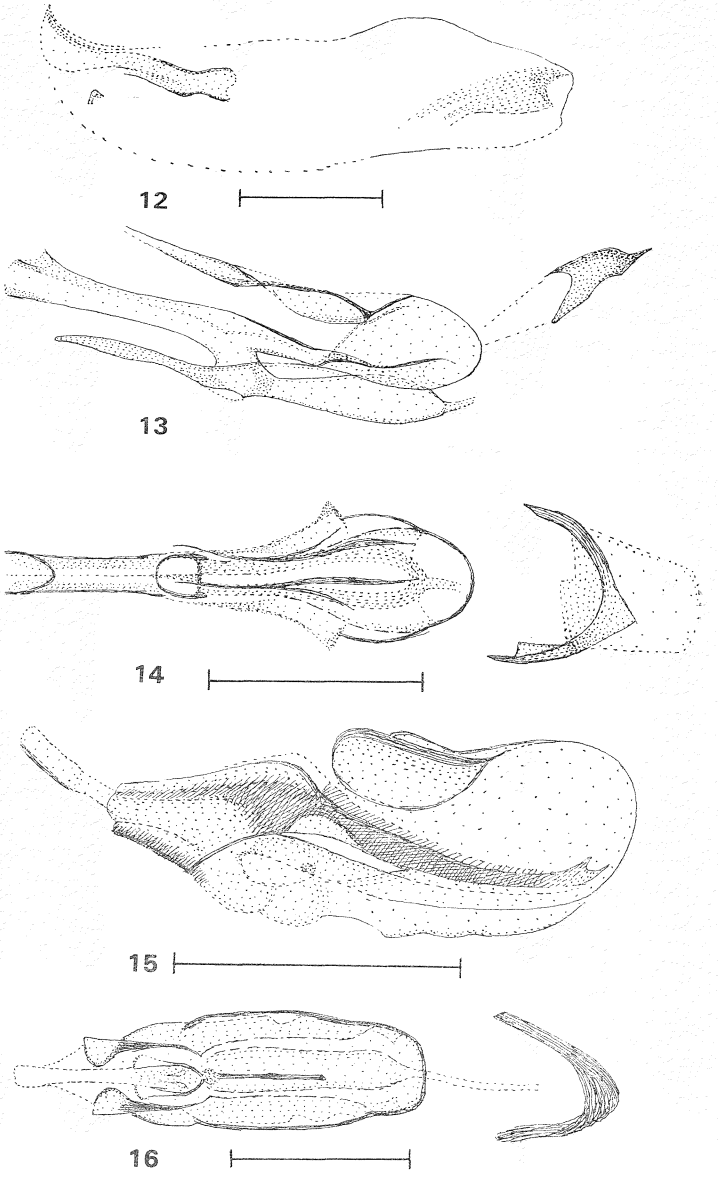


Fig. 12. *Melanagromyza insignita* sp. n.: aedeagus, side view. Figs. 13-14. *Melanagromyza pseudometallica* sp. n.: 13) aedeagus, side view; 14) same, dorsal view. Figs. 15-16. *Melanagromyza trepida* sp. n.: 15) aedeagus, side view; 16) same, ventral view.

Scale line = 0.1 mm.

points of difference: Fore-tibia with one strong lateral bristle; orbital bristles somewhat stronger; jowls slightly deeper, one-sixth vertical height of eye; male genitalia: aedeagus distinctive, as in Figs. 13, 14, basiphallus widely spaced from distiphallus complex.

Holotype ♂, NEW IRELAND: Lelet Plateau, 900 m, 9.iv.1962; paratypes: Lamkamin, 1 ♂, 11.iv., 1 ♀, 22.iv.1962. Holotype and one paratype in Zoological Museum, Copenhagen; one paratype in author's collection.

In Sasakawa's (1963d) key to Papuan *Melanagromyza* species *M. pseudometallica* would run to *M. sensoriata* Sas., described from N.W. New Guinea and the Solomon Islands. The genitalia of the two species are entirely distinct.

M. metallica was briefly redescribed and the genitalia illustrated by Spencer (1963c: 148 and Fig. 6).

Melanagromyza sojae (Zehntner).

NEW BRITAIN: Cape Hoskins, Valoka, 1 ♂, 8.vii.1962. — DUKE OF YORK: Manuan, 1 ♂, 18.vii.1962. — NEW IRELAND: Kalili Bay, Danu, 1 ♀, 1.v.1962.

Widespread in Oriental region. New to Bismarck Archipelago.

Melanagromyza surrufa Sasakawa, 1963d.

NEW BRITAIN: Cape Hoskins, Valoka, 1 ♀, 11.vii.1962.

This specimen is tentatively identified as *surrufa,* agreeing closely with the description and in particular having the distinctive brown squamal fringe. The mesonotum is largely shining black with only a weak greenish tinge. The abdomen is largely greenish with faint coppery reflections; in my experience the colour of the abdomen can vary considerably from greenish through coppery to reddish and it does not always prove reliable as a specific character.

Melanagromyza trepida sp. n.

Head: Very large, frons one and a half times width of eye, not projecting above eye in profile; 4 strong orbital bristles (all missing, detectable from basal pits); orbital setulae irregular, mainly reclinate but some in front proclinate; ocellar triangle large, apex extending to upper ori; lunule large, slightly higher than semi-circle; jowls conspicuous, one-seventh vertical height of eye; eye

in male with patch of whitish hairs above; arista conspicuously pubescent.

Mesonotum: Two strong dc, acrostichals in 10 rows, a few hairs extending almost to margin of scutellum.

Legs: Fore-tibia with one, mid-tibia with two strong lateral bristles.

Wing: Length 3.1 mm, first cross-vein at midpoint of discal cell, last section of m4 two-thirds penultimate.

Colour: Frons mat black, orbits and ocellar triangle distinctly shining; mesonotum and abdomen shining coppery-greenish; squamae and fringe white, margins pale to yellowish-brown.

Male genitalia: Aedeagus as in Figs. 15, 16; ninth sternite triangular, without elongated hypandrial apodeme, but side-arms fused at apex; sperm sac with fairly broad blade, typical of genus.

Holotype ♂, NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m., 10.v.1962, in Zoological Museum, Copenhagen.

This species closely resembles *M. lasiops* (Malloch) from Formosa but the jowls are distinctly broader. I have recently examined the holotype of *lasiops* and have confirmed that the genitalia are entirely distinct (cf. Appendix below).

Melanagromyza sp. (New Britain).

NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 1 ♀, 16.v. 1962.

A positive identification of this single female is not possible. Essential characters are as follows: Squamal fringe whitish, mesonotum shining blackish but with distinct greenish and reddish reflections, abdomen entirely dull reddish-coppery; jowls narrow, arista distinctly pubescent; mid-tibia with 2 strong bristles; wing length 2.6 mm.

Melanagromyza sp. (New Ireland).

NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 1 ♀, 11.iv. 1962.

This specimen very closely resembles *M. papuensis* Spencer, 1962a, described from New Guinea: Owen Stanley Range but has the following points of difference; frons equal to width of eye (not $1^1/_2$ times), jowls narrow, 1/15 eye height (not 1/5), squamal fringe ochreous-brown (not black). On these differences I am satisfied it is distinct from *papuensis,* although having the same overall shining black coloration and the significant fore-tibial bristle.

With only a single female available, however, it is clearly preferable not to describe the species formally at this time.

Genus **Phytobia** Lioy.

Phytobia inusitata sp. n.

Head: Frons slightly wider than eye, not projecting above eye in profile; orbits and ocellar triangle not greatly differentiated; four orbital bristles, upper three equal, lower slightly weaker; orbital setulae very short, sparse, reclinate; third antennal segment small, rounded, arista short; jowls exceptionally narrow, one-eighteenth height of eye.

Mesonotum: 3+1 dc, fourth very small, third only slightly shorter than second on one side, small, equal to fourth on other; acrostichals in four rows.

Legs: Mid-tibiae with 1 strong lateral bristle.

Wing: Length 1.9 mm., costa extending strongly to vein m1+2, first cross-vein slightly before midpoint of discal cell, last and penultimate sections of m4 equal.

Colour: Frons mat black, lunule greyish; mesonotum moderately shining black, abdomen duller brownish-black; legs entirely black; squamae brownish-grey, margin and fringe black; halteres yellow.

Male genitalia: Aedeagus asymmetrical, as in Figs. 17, 18; ninth sternite somewhat elongated, rounded at end (Fig. 19); postgonites black, elongated, club-shaped, with a conspicuous tooth at end; surstyli oval, separated by entire suture from epandrium, bearing some 15 hairs along inner margin (Fig. 20).

Holotype ♂, MUSSAU: Malakata, 10.vi.1962, in Zoological Museum, Copenhagen.

This species does not conform exactly to any existing generic concepts and is only tentatively placed in *Phytobia*.

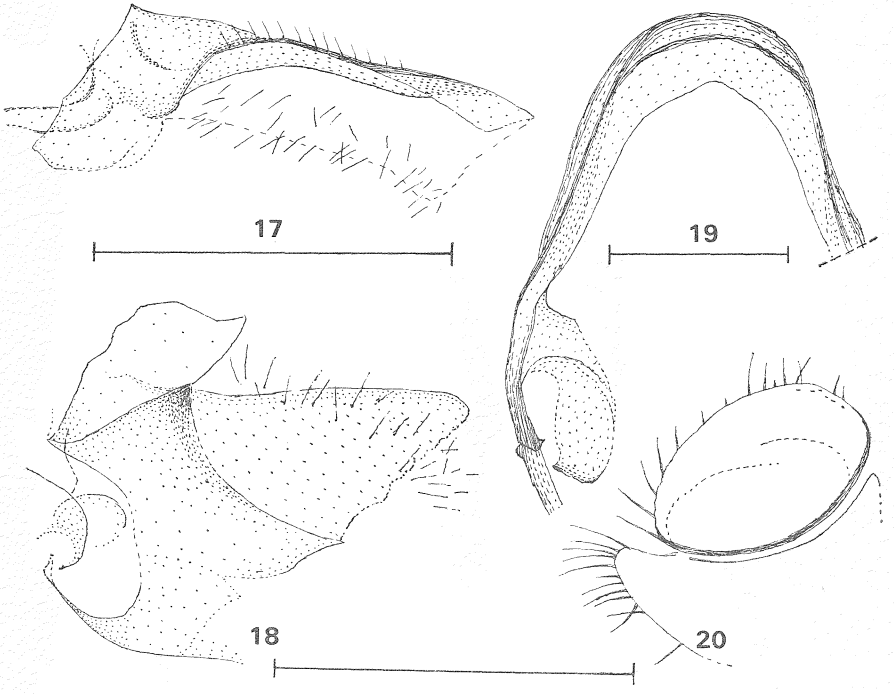
The sub-costa appears definitely to join vein r1 buth this frequently appears to be the case in a number of *Phytobia* species and misled Sasakawa into erecting the invalid genus *Shizukoa* with this character and other obvious characteristics of the Phytomyzinae.

The genitalia definitely place this species in the Phytomyzinae. The surstyli are separated from the epandrium by a complete suture. The ninth sternite is entirely rounded at the apex, without any trace of a hypandrial apodeme; but it is elongate rather than

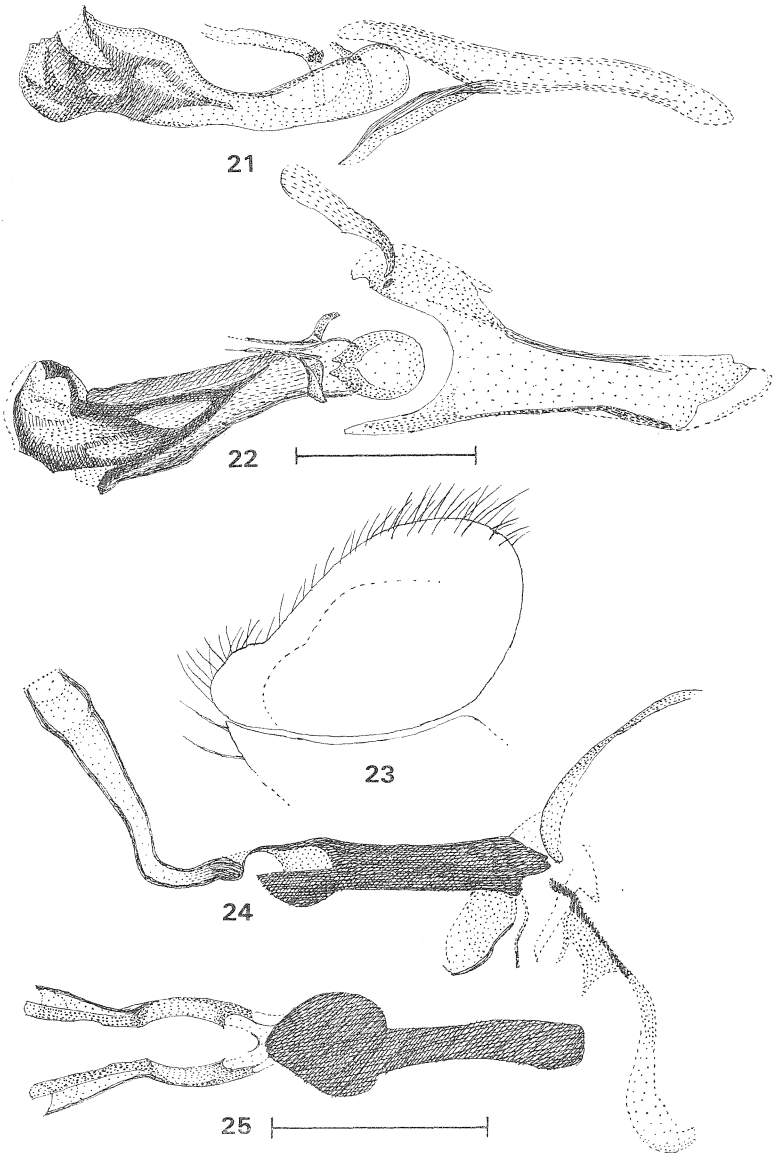
round, differentiating it from typical *Phytobia* species. The form of the head, the aedeagus, the type of surstyli and the presence of the mid-tibial bristle differentiate the species from *Praspedomyza* species.

P. inusitata may well represent a distinct genus but it seems desirable to delay its formal description until additional material, including if possible larvae, is available. It can in the meantime be included in Sasakawa's (1963c) partial key of Oriental-Pacific *Phytobia* (=*Shizukoa*) species by the addition of the following couplet:

0 Very small species, wing length 1.9 mm ..... *inusitata* sp. n.
— Larger species, wing length at least 2.6 mm 1



Figs. 17-20. *Phytobia inusitata* sp. n.: 17) aedeagus, side view; 18) same, ventral view; 19) ninth sternite; 20) surstylus.
Scale line = 0.1 mm.



Figs. 21-23. *Phytobia yalomensis* sp. n.: 21) aedeagus, side view; 22) same, dorsal view; 23) surstylus. Figs. 24-25. *Cerodontha (Diz.) laetifica* sp. n.: 24) aedeagus, side view; 25) same, ventral view.
Scale line = 0.1 mm.

Phytobia yalomensis sp. n.

Head: Frons broad, twice width of eye, not projecting above eye in profile; orbits and ocellar triangle not greatly differentiated; four strong orbital bristles with well-marked basal pits; orbital setulae sparse, in single row, all reclinate; lunule approximately in form of semi-circle; jowls deepest at rear, one-eighth vertical height of eye, cheeks linear; third antennal segment relatively small, arista long, only slightly pubescent.

Mesonotum: 3+1 strong dc; acrostichals irregularly in some 6 rows; prescutellars well-developed, equal to 4th dc.

Legs: Mid-tibia with 2 strong lateral bristles (3 on one side in female).

Wing: Length in male 3.2, in female 3.8 mm; costa extending strongly to vein m1+2, first cross-vein distinctly beyond midpoint of discal cell in male, only slightly so in female, last and penultimate sections of m4 equal.

Colour: Frons mat black, lunule grey; mesonotum brownish-black, scarcely shining, distinctly mat from front; legs entirely black; margins of thoracic pleura slightly brownish; abdomen black, only weakly shining; wing base brownish; squamae brownish-grey, fringe black; halteres yellowish.

Male genitalia: Aedeagus distinctive, as in Figs. 21, 22; ninth sternite broad, rounded, typical of genus; surstyli with numerous hairs but without bristles (Fig. 23).

Holotype ♂, NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 14.v.1962; ♀ paratype, same locality, 24.v.1962 (both caught in Malaise trap), in Zoological Museum, Copenhagen.

Sasakawa (1963c) prepared a partial key of Oriental-Pacific *Phytobia* species, omitting *P. albohalterata* (de Meij.), *P. nigrita* (Mall.) [cf. Spencer, 1966a] and *P. diversata* Spencer. This key was presented as a world key of *Shizukoa* species. The genus *Shizukoa* Sasakawa, 1963a: 38 was synonymised with *Phytobia* Lioy by Spencer, 1965b: 8. However, it seems desirable to include *P. yalomensis* even in this partial key. It runs to couplet 6 which is now amended and extended as follows:

6 Gena narrow, 1/16 eye height; endophallus with a pair of lateral processes ..... *hirticula* (Sas.)
— Gena broader, 1/8 to 1/12 eye height 7
7 Distiphallus weakly sclerotized, postgonites unusually large ..... *maai* (Sp.)
— Distiphallus black, strongly sclerotized 8

8 Aedeagus, as illustrated by Sasakawa (1963c: Fig. 13e) .... *terminalis* (Sas.)
— Aedeagus as in Figs. 21, 22 ..... *yalomensis* sp. n.

Genus **Cerodontha** Rondani.

Cerodontha (Dizygomyza) laetifica sp. n.

Closely resembling *Diz. omissa* Spencer, described from Formosa and Lombok, with following points of difference:

Two ori (female) or three (male); frons distinctly projecting above eye at base of antennae; orbits widest at level of upper ors, one-quarter width of frons, narrowing below; jowls rather flat below, relatively broad, one-fifth vertical height of eye; wing length in male and female 2.2 mm (male of *omissa* 1.8). Frons uniformly dark brownish-black, orbits distinctly shining black; legs almost uniformly black, fore-knee only slightly paler; male genitalia: aedeagus as in Figs. 24, 25, distal tubules almost straight in side view, long, distinctly diverging laterally.

Holotype ♂, NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 11.iv.1962; paratype, LAVONGAI: Banatam, 1 ♀, 25.iii.1962, both in Zoological Museum, Copenhagen.

This species is readily recognisable from *Diz. omissa* by its shining black orbits and distinctive aedeagus. *Diz. omissa* is briefly discussed in the Appendix below. From our knowledge of European species it is clear that both *laetifica* and *omissa* are leaf-miners on Caricaceae.

The author's (1961b) key to Oriental *Phytobia* species (sensu Frick, 1952) includes *Cerodontha* s. lat. (sensu Nowakowski, 1962) in couplets 6-9. *Diz. laetifica* can be included in an extension to couplet 6 as follows: second alternative for *omissa* read 6a; add new couplet:

6a Orbits pale, yellowish brown ..... *omissa* Spencer
— Orbits shining black ..... *laetifica* sp. n.

Cerodontha (Icteromyza) floresensis Spencer, comb. nov.
Phytobia (Icteromyza) hardyi Sasakawa, 1963d: 828, syn. nov.

NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 1 ♂, 10.v. 1962 (genitalia examined).

Sasakawa attempts to differentiate *Icteromyza hardyi* from *I. floresensis* on trivial characters of no specific significance; his

illustration (1963d: Fig. 18) of the aedeagus is identical with that of *floresensis* (Spencer, 1961b: Fig. 45).

The species is known from Flores, Mindanao and now New Britain and its occurrence in N.W. New Guinea, the type locality of *hardyi,* is not surprising.

Cerodontha (Icteromyza) piliseta (Becker), comb. nov.

NEW BRITAIN: Cape Hoskins, Valoka, 1 ♀, 6.vii.1962. — MUSSAU: Talumalaus, 1 ♀, 7.ii.1962.

This species occurs widely from the Canary Islands eastwards to the Pacific. I recently examined the male genitalia of the holotype from Tenerife and confirmed that they are identical in all respects with those of specimens from Micronesia. New to Bismarck Archipelago.

Genus **Amauromyza** Hendel.

Amauromyza papuensis sp. n.

Closely resembling *A. aliena* (Malloch), 1914 from Formosa and Thailand, with following essential characters:

Head: Frons equal to width of eye, not projecting above eye in profile; two equal ors; two ori, the upper equal to ors, the lower significantly weaker; orbital setulae weak, sparse, reclinate; jowls narrow, one-tenth vertical height of eye, deepest at rear; arista long, distinctly pubescent.

Mesonotum: Only 3 developed pairs of dorso-centrals; acrostichals in some 4 or 5 rows.

Wing: Length in male 2.3 mm, costa extending strongly to vein m1+2, first cross-vein just before mid-point of discal cell, last section of m4 twice length of penultimate.

Legs: Mid-tibia without detectable bristles on single available specimen.

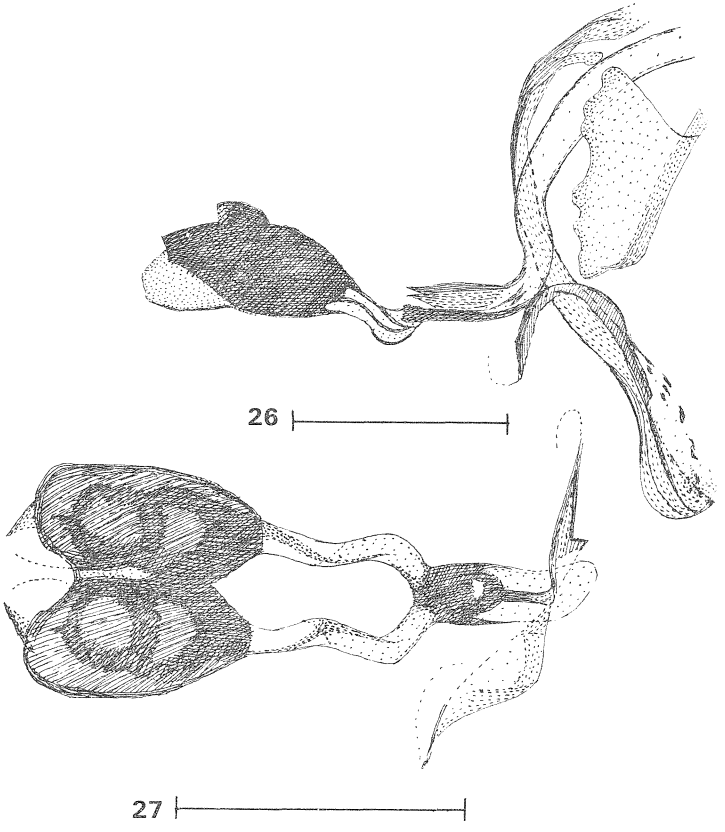
Colour: Frons dull black, slightly brownish in centre, orbits distinctly shining; mesonotum shining black, abdomen more brownish; legs black; squamae and fringe black; halteres black above, stalk paler, brownish-yellow.

Male genitalia: Aedeagus as in Figs. 26, 27; spermal sac and ninth sternite typical of the genus.

Holotype ♂, NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 11.iv.1962, in Zoological Museum, Copenhagen.

The genitalia immediately confirm the distinctness of this species from *A. aliena* (Malloch). The type series of *A. aliena* consisted of three females but the aedeagus of a male from Thailand was illustrated by Spencer, 1962b: Figs. 20a, b.

In his description of *Agromyza aliena,* Malloch (1914: 328) writes "last section of fifth vein two thirds as long as penultimate". This is an error, the last section being approximately double the penultimate. In *A. aliena* the acrostichals are described as being in about 10 rows. This character would suffice to distinguish *A. papuensis* where there are not more than 5 rows.



Figs. 26-27. *Amauromyza papuensis* sp. n.: 26) aedeagus, side view; 27) same, ventral view.
Scale line = 0.1 mm.

Genus **Phytoliriomyza** Hendel.

Phytoliriomyza arctica (Lundbeck).

NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 1 ♀, 12.v. 1962. — NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 1 ♀, 17.iv.1962.

A positive identification of these specimens is difficult in the absence of males but they are tentatively referred to *P. arctica*. They agree closely with this species, apart from their somewhat smaller size, having wing length of 1.5 mm. *P. arctica* was discussed in some detail by Spencer (1963d: 377) with illustrations of the male genitalia and also by Spencer (1965c: 659).

I do not consider the species represents *P. australensis* Spencer, 1963b, known from Australia, Tahiti (Sasakawa, 1963a: 503) and Nepal (Spencer, 1965a: 30), in which the third antennal segment is significantly smaller.

Genus **Pseudonapomyza** Hendel.

Eleven Oriental-Pacific species are known in this genus, for which a key is given below.

I have studied the African species in some detail (Spencer, 1961c, 1961d, 1963a, 1966b) and have established that the genus includes two distinct but closely-related groups—the one feeding as leaf-miners on Gramineae and the other on Acanthaceae. Both groups are well represented in the Oriental-Pacific region; the male genitalia of the 11 known species have been examined and these conform very closely to the pattern familiar from Africa.

Two new species are described below and both are almost certainly leaf-miners on Acanthaceae.

Key to Oriental-Pacific *Pseudonapomyza* species.

1 Third antennal segment with conspicuous angle at upper corner 2
— Third antennal segment rounded, normal 7
2 Squamal fringe black ..... *cingulata* Sasakawa
— Squamal fringe white 3
3 Third antennal segment with fine point at upper corner, mesonotum shining black ..... *spicata* (Malloch)
— Angle on third antennal segment more obtuse 4
4 Wing base conspicuously white 5
— Wing base darker, brownish 6

5 Aedeagus as in Spencer, 1961b: Fig. 46; larvae mining singly, entirely without papillae; puparium mat, without conspicuous segmentation ..... *asiatica* Spencer
— Aedeagus as in Sasakawa, 1963b: Fig. 17 (larva and puparium unknown) ..... *quatei* Sasakawa
6 Aedeagus as in Spencer, 1961b: Fig. 47 and Fig. 32 below; numerous larvae in the mine, with short, stout tubules on each segment; puparium shining, with pronounced segmentation ..... *philippinensis* Spencer
— Aedeagus as in Sasakawa, 1963b: Fig. 17; (larva and puparium unknown) ..... *trilobata* Sasakawa
7 Second cross-vein lacking ..... *alternantherae* (Séguy)
— Second cross-vein present 8
8 Second cross-vein well beyond first ..... *kraussi* (Sasakawa)
— Second cross-vein in continuation of first 9
9 Large species, wing length 2.7 mm; discal cell small, last section of vein m3 + 4 8 times penultimate ..... *fabulosa* sp. n.
— Smaller species, wing length about 2 mm; discal cell larger, last section of m4 at most 6 times penultimate 10
10 Squamal fringe brownish, mesonotum moderately shining .. .. *atrata* (Malloch)
— Squamal fringe black, mesonotum entirely shining black .... *multimoda* sp. n.

Pseudonapomyza fabulosa sp. n.

Closely resembling *P. multimoda,* so that only following points of difference need be noted:

Substantially larger, wing length 2.7 mm; costal ratio 40:20:12, discal cell small, with second cross-vein almost forming straight line in continuation of first, last section of m4 eight times penultimate; mid-tibiae with one bristle on one leg, three on other; male genitalia: aedeagus entirely distinctive, as in Figs. 28, 29.

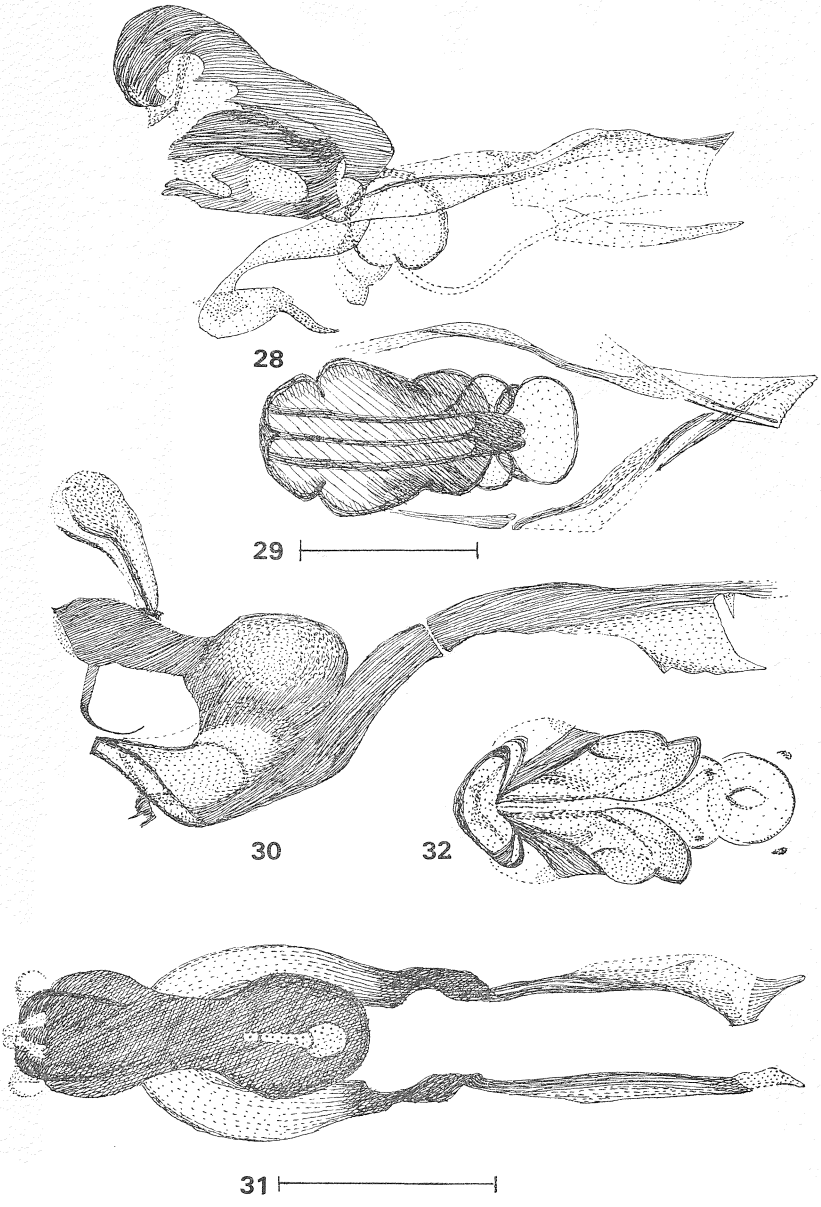
Holotype ♂, NEW BRITAIN: Gazelle Peninsula, Yalom, 1000 m, 18.v.1962, in Zoological Museum, Copenhagen.

The only species of comparable size to *P. fabulosa* is *P. grandiosa* Spencer (1961e: 284) from Madagascar.

Pseudonapomyza multimoda sp. n.

Head: Frons narrow, equal to width of eye, not projecting above eye in profile; two strong ors, two ori, the upper similar to ors, the lower weaker; orbital setulae sparse, reclinate; jowls narrow, one-fifteenth vertical height of eye; arista long, conspicuously pubescent.

Mesonotum: 3+0 strong dorso-centrals, acrostichals in some six to eight rows.



Figs. 28-29. *Pseudonapomyza fabulosa* sp. n.: 28) aedeagus, side view; 29) same, dorsal view. Figs. 30-31. *Pseudonapomyza multimoda* sp. n.: 31) aedeagus, side view; 32) same, dorsal view. Fig. 32. *Pseudonapomyza philippinensis* Sp.: distiphallus, ventral view.

Scale line = 0.1 mm.

Wing: Length from 1.75 to 2 mm, costa extending strongly to vein r4+5, costal segments in ratio 32:16:9; second cross-vein normally in continuation of first but at distinct angle, slanting towards wing base, last section of m4 five or six times penultimate.

Legs: Mid-tibiae consistently with two lateral bristles.

Colour: Entirely black; frons mat, orbits distinctly shining; mesonotum and abdomen strongly shining; legs almost uniformly black, tarsi sometimes slightly paler; squamae greyish-brown, margin and fringe black.

Male genitalia: Aedeagus distinctive, as in Figs. 30, 31.

Holotype ♂, MUSSAU: Boliu, 4.vi.1962; 8 paratypes — 1 ♂, same data as holotype; Boliu, 2 ♂, 2 ♀, 13.ii.1962; LAVONGAI: Banatam, 1 ♀, 28.iii.1962; NEW IRELAND: Danu, Kalili Bay, 1 ♀, 29.iv.1962; DUKE OF YORK: Manuan, 1 ♂, 18.vii.1962. Holotype and 5 paratypes in Zoological Museum, Copenhagen, 3 paratypes in author's collection.

This species closely resembles *P. atrata* (Malloch), known from Formosa and Thailand but is readily recognisable by the black squamal fringe, darker tarsi, more shining mesonotum, more pubescent arista, narrower jowls and the entirely distinct genitalia.

Pseudonapomyza philippinensis Spencer.

NEW IRELAND: Lelet Plateau, Lemkamin, 900 m, 3 ♂, 3 ♀, 11-22.iv.1962.

This is the second record of this species, which was described from the Philippines: Luzon.

A further illustration of the aedeagus is given in Fig. 32.

Pseudonapomyza spicata (Malloch).

DYAUL: Sumuna, 2 ♀, 9.iii.1962.

Widespread in Pacific area. New record for Bismarck Archipelago.

APPENDIX.

Clarification of some related species from the Oriental region.

Five species are briefly discussed here. The identity of two—*Melanagromyza lasiops* (Malloch) and *Pseudonapomyza atrata* (Malloch), both from Formosa—is clarified following examination of the genitalia of types. Three new synonymies are established and one species from Thailand is transferred from the genus *Phytagromyza* Hendel to *Pseudonapomyza* Hendel.

Agromyza graminivora Spencer.

Agromyza graminivora Spencer, 1960: 16; 1963a: 95.
Agromyza papillata Sasakawa, 1963a: 24, syn. nov.

Agromyza papillata Sasakawa was described from Vietnam. The essential characters differentiating it from *A. papuensis* are the paler, more brownish antennae and the smaller number of bristles on the surstyli (Sasakawa, 1963a: Fig. 1a).

A. graminivora occurs both in West and South Africa and I have recently confirmed a male from India: Namkum, 29.ii.1962 (Sehgal). It is clear that *A. papillata* is synonymous with *A. graminivora,* which no doubt occurs widely throughout the Oriental Region. The aedeagus of *A. graminivora* was illustrated by Spencer (1963a: Fig. 2); this is distinctly shorter and broader than that of *A. papuensis.*

Melanagromyza lasiops (Malloch).

Agromyza lasiops Malloch, 1914: 324. Holotype ♂ in Hungarian Natural History Museum, Budapest.
Melanagromyza lasiops (Malloch), Hennig, 1941: 173.

I have examined the male holotype and the distinctive aedeagus is shown in Fig. 33. Wing length is 3 mm, not 3.5 mm, as stated by Malloch.

This species very closely resembles *M. trepida* Spencer (cf. p. 502) from New Britain and also *M. seneciocaulis* Spencer, 1960 from South Africa, differing primarily in the narrower jowls, which are one-twelfth the vertical eye height; the genitalia are also entirely distinct. Sasakawa (1963a: 34 and 1963d: 809) identified four females from Vietnam and New Guinea as *M. lasiops.* However, in his brief redescription Sasakawa did not mention the fore-tibial bristle, which is a distinctive character in this species; this was possibly an oversight but it is to be hoped that in due

course males from these two areas can be examined to confirm Sasakawa's identifications.

Cerodontha (Dizygomyza) omissa (Spencer), comb. nov.

Phytobia (*Dizygomyza*) *omissa* Spencer, 1961b: 86. Holotype ♀ in Deutsches Entomologisches Institut, Eberswalde.
Phytobia (*Dizygomyza*) *ochreata* Sasakawa, 1963d: 827, syn. nov. Holotype ♂ in Bishop Museum, Honolulu.

Sasakawa (1963d: 828) comments on the similarity of the species he describes as *ochreata* sp. n. and *omissa* Spencer, stating that *ochreata* "may be easily distinguished by the darker fringe on the calypter, paler tarsi, more matt mesonotum and the broader gena." The actual descriptions of these characters in *omissa* Spencer and *ochreata* Sasakawa are as follows:

omissa Spencer	*ochreata* Sasakawa
squamae yellowish, margins brown, fringe ochreous	calypter white, with margin pale brown and fringe brown
tarsi and tibiae brownish	fore tibia brownish, all tarsi pale brownish yellow
jowls narrow	genae 1/6 eye height
mesonotum largely shining black, more matt from front	thorax black, matt, densely dusted with grey

These differences are slight and cannot themselves be considered of specific significance.

I have now examined the genitalia of the male of *omissa* from East Lombok and the aedeagus agrees exactly with that of *ochreata* as illustrated by Sasakawa (1963d: Fig. 17); a further illustration of this species in ventral view is shown in Fig. 34. I therefore synonymise *ochreata* Sasakawa with *omissa* Spencer herewith.

Experience with the numerous palaearctic species in this group has shown that in a number of cases they can only reliably be distinguished by the male genitalia, larval characters or biology. Differences in external morphology and colour can be extremely small and not satisfactory for identifying single caught specimens.

Pseudonapomyza atrata (Malloch), comb. nov.

Napomyza atrata Malloch, 1914
Phytagromyza atrata (Malloch), Hennig, 1941
Phytagromyza tibialis Sasakawa, 1963c, syn. nov.

I have examined the holotype, allotype and paratype designated by Malloch and also two further females also collected by Sauter

in Formosa and now in the Deutsches Entomologisches Institut, Eberswalde.

The aedeagus of the allotype is shown in Fig. 35.

Sasakawa (1963c: 46) described *Phytagromyza tibialis* from Thailand. He rightly noted the similarity with *atrata* (Mall.) but cited as the main differences the smaller size and the presence of 3 strong dorso-centrals and 3 strong mid-tibial bristles in *tibialis*. The wing length of the five specimens of *atrata* I have seen is between 1.75 and 2.3 mm (not 3 mm in the female holotype as

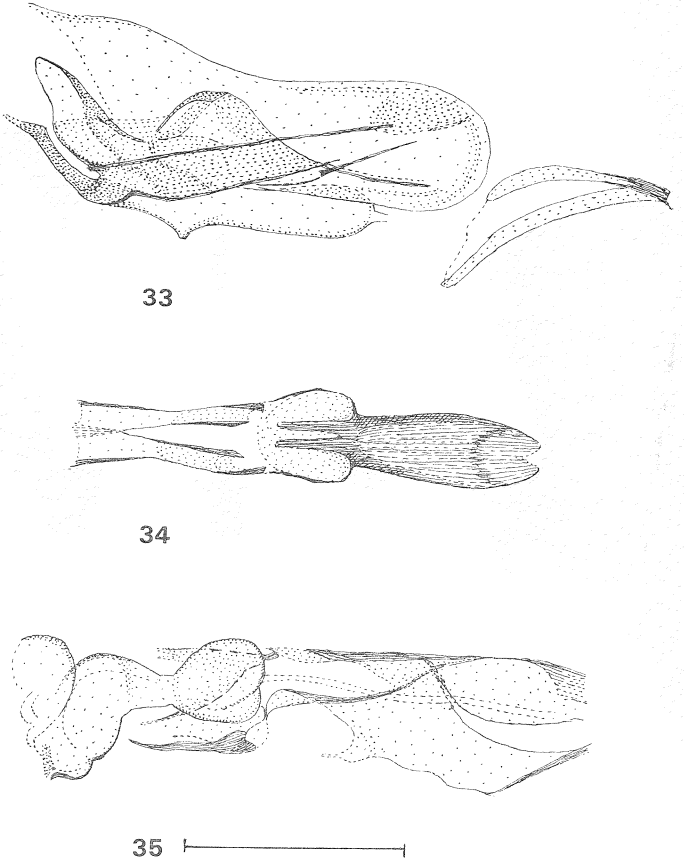


Fig. 33. *Melanagromyza lasiops* (Malloch): aedeagus, side view. Fig. 34. *Cerodontha (Diz.) omissa* (Spencer): aedeagus, ventral view. Fig. 35. *Pseudonapomyza atrata* (Malloch): aedeagus, side view.
Scale line = 0.1 mm.

stated by Malloch), there are in all specimens 3 strong dc present and the mid-tibial bristles are found to be highly variable, even on the two legs of the same specimen.

The actual numbers are as follows:

Holotype	♀, Kosempo	:	1 + 4
Allotype	♂, Tainan	:	3 + 3
Paratype	♀, Tainan	:	2 + 3 (not ♂ as stated by Malloch)
	♀, Paroe	:	4 + 5
	♀, Paroe	:	2 + 3

There are thus no valid differences between *tibialis* Sasakawa and *atrata* and the synonymy of these two species is established herewith.

Sasakawa (loc.cit.) suggested that *tibialis* is a leaf-miner on bamboo. On the available evidence from Africa I think it is almost certainly a leaf-miner on Acanthaceae.

P. atrata is most easily distinguishable from *P. multimoda* from the Bismarck Archipelago by the paler squamae and fringe and the variable number of bristles on the mid-tibiae.

Pseudonapomyza kraussi (Sasakawa), comb. nov.

Phytagromyza kraussi Sasakawa, 1963c: 832.

This species, described from S.E. New Guinea, clearly belongs in the genus *Pseudonapomyza* and is included in the key given on p. 511.

The genus *Phytagromyza* was restricted by Nowakowski (1962: 102) to the *populi* (Kalt.)-group of leaf-miners on Salicaceae known only in Europe.

Summary.

The material of the Noona Dan Expedition listed here includes 27 species (plus 2 not positively identified), of which 11 and one subspecies are described as new. Six new synonyms are also established as well as some new combinations. The distribution of the Agromyzidae known from the Bismarck Archipelago is given.

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