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SYNOPSIS OF THE AGROMYZIDAE (DIPTERA) OF SRI LANKA

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ABSTRACT

Agromyzidae of Sri Lanka were studied using locally collected specimens and the material available in the insect collection of the Lund University, Sweden. Prior to this study, 34 agromyzid species had been recorded from Sri Lanka. During the present study, four additional *hitherto* unrecorded species *Melanagromyza rotata* Spencer, *Ophiomyia cornuta* De Meijere, *Ophiomyia centrosematis* De Meijere and *Cromatomyia syngenesiae* Hardy, were documented. *Lasia spinosa* and *Scaevola taccada* were recorded as host plants of *Tropicomyia polyphaga* and *Ophiomyia cornuta* respectively, for the first time. Diagnoses for all 38 species of agromyzids recorded from Sri Lanka are given.

Key Words

Agromyzinae, hosts, leaf miners, new records, Phytomyzinae.

INTRODUCTION

In his study of Oriental Agromyzidae, Spencer (1961) listed 15 species of agromyzids from Sri Lanka. Prior to this, records of Sri Lankan agromyzids were mostly scattered in the taxonomic literature. After studying some agromyzids collected by the 1966 Lund University Expedition to Sri Lanka, Spencer (1975) added 12 previously unknown species including seven from Sri Lanka. This was the first comprehensive study of Sri Lankan Agromyzidae. Since then, Sasakawa (1980) recorded five agromyzids, which confirmed the presence of *Melanagromyza metallica* (Thomson), *Pseudonapomyza asiatica* Spencer and *Ophiomyia atralis* (Spencer) in Sri Lanka. In the early 1990s, there were two epidemics of leaf miner outbreaks in Sri Lanka, both involving unrecorded species from the country, *Liriomyza sativae* (Blanchard) and *Liriomyza huidobrensis* (Blanchard). Difficulty in controlling the pest outbreaks using insecticides drew attention to native parasitoids of agromyzids. Field collection of native parasitoids and a literature survey indicated a substantial lack of knowledge of Sri Lankan agromyzids and their natural enemies. This induced the present study of Sri Lankan Agromyzidae. A research project was initiated in 1997 with the intention of collecting Sri Lankan agromyzids for a taxonomic revision of the group. This paper summarizes the current knowledge of agromyzid species diversity of Sri Lanka.

MATERIALS AND METHODS

Leaf-miner infested plants collected from all provinces (except Northern and Eastern provinces) of Sri Lanka, were brought to the laboratory and adults were reared using methods described by Spencer (1976). Field collections were mainly confined to the areas where crops are grown. In addition, Sri Lankan agromyzids in the Lund University Zoological Museum collection were also studied. All measurements were made using an ocular micrometer on a WILD-M5 microscope. Morphological terms used herein follow Spencer & Steyskal (1986). The following abbreviations are used in the text: for morphological terms-- *ori* = orbital bristles, *dc*= dorsocentral bristles, *prs* =, prescutellar bristles, *vte* = outer vertical bristle, *vti* = inner vertical bristle. For agromyzidae reference collections-- HORDI = Horticultural Crops Research and Development Institute, Peradeniya, Sri Lanka, LU = Lund University, Sweden.

Sub-family Agromyzinae

The sub-family Agromyzinae is identified by the complete sub-costa which reaches vein R1 before it joins the costa. Sub-family is represented in Sri Lanka by five genera.

Agromyza Fallen, 1810
Agromyza Fallen, 1810:21, Type *Agromyza reptans* Fallen, 1823
Domomyza Rondani 1856:121, Type *Domomyza cincta* Rondani, 1856; Handel, 1927

Diagnosis: Halters yellow or white, 3 or more dorsocentrals (*dc*); outer cross vein present, costa extending to M 1+2; prescutellar bristles (*prs*) present.

Agromyza has about 170 species in the world and a single species is recorded from Sri Lanka.

1. *Agromyza ceylonensis* Spencer, 1961
Agromyza ceylonensis Spencer, 1961: 60, Type: male from Peradeniya Botanical Gardens in author's collection.

I have not seen specimens of this species. However, it should be possible to distinguish this uniformly black species from all other Sri Lankan agromyzids from the characters given in the generic diagnosis and description by Spencer (1961). According to Spencer (1961), the midtibia of this species has two strong posterolateral bristles. The squamae are dark gray with a black fringe. This was not recorded after its description.

Distribution: Sri Lanka (Peradeniya).

Hosts: Unknown.

Melanagromyza Handel, 1920

Melanagromyza Handel, 1920: 120, Type: *Agromyza aeneoventris* Fallen, 1823.

Diagnosis: Wing length 2.5-3.5 mm.; black species with metallic greenish bluish or coppery colouration; halters black; only two pairs of post-sutural dosocentrals, middle tibia with a pair of strong lateral bristles; posterior spiracles of pupae on a flat plate with numerous bulbs surrounding a horn like structure.

Absence of the following characteristics can also be used to confirm the diagnosis: raised facial keel separating the antennae; and fused vibrissal fasciculus in males (present in many *Ophiomyia*); pair of prescutellar bristles (present in most *Japanagromyza*).

Over 300 species are described worldwide. In Sri Lanka it is represented by seven species. Larvae of all known species are miners of plant stems, flower heads or roots. Their pupation occurs within the plant.

2. *Melanagromyza albisquama* (Malloch, 1927)

Agromyza (*Melanagromyza*) *albisquama* Malloch, 1927: 423
Melanagromyza compositarum Spencer: Spencer, 1962: 669

Spencer (1961) recorded *M.. albisquama* from Labugama and Peradeniya (as *M.compositarum*) on *Chromolaena odorata* (=*Eupatorium odoratum)* and *Tithonia diversifolia.*

This species has not been recorded from Sri Lanka since the original description. According to Spencer, this species is black with shining greenish tinge, the eyes are bare in both sexes, and both the squamae and fringe are white.

Distribution: Australia, Fiji, Formosa, India, Indonesia, South Africa, and Sri Lanka (Labugama, Peradeniya).

Hosts: Unknown (Spencer recorded this species from adult specimens collected on *Chromolaena odorata* (=*Eupatorium odoratum)* and *Tithonia diversifolia* and hence cannot confirm them as hosts).

3. *Melanagromyza cleomae* Spencer, 1961

Melanagromyza cleomae Spencer, 1961: 70

Diagnosis: Wing length about 2.1-2.4 mm; mesonotum, scutellum and abdomen black with greenish tinge; squamae and fringe white; eyes of the males with a patch of short hairs; lunule in a form of semicircle; ocellar triangle can easily be recognized but not distinctly enlarged.

Distribution: Singapore, Sri Lanka

Hosts: Leaf miner on *Brassica juncea, Brassica oleracea* and *Raphanus sativus.*

Specimens examined: 2 ♀♀ Sri Lanka Centr. Prov. Gannoruwa Ag. Res. Station, 10.IX.99 on *Brassica oleracea,* 3 ♀♀Gannoruwa reared from *Brassica oleracea,* 28.VIII.99, 1.II.99, 4.II.98, 9 ♂♂and 6 ♀♀Sri Lanka, Centr. Prov. Gannoruwa, reared from *Brassica oleracea,* 28.VIII.99 (all in HORDI collection). ; 2 ♀♀. Sri Lanka Gannoruwa Agri. Res. Station 4.VIII.97 on radish (*Raphanus sativus*), 4 ♂♂ and 1 ♀. Sri Lanka Gannoruwa Agri. Res. Station reared from *Brassica oleracea* 28.VIII.1999 1 ♂ Sri Lanka Centr. Prov. Gannoruwa Agri. Res. Station 10.IX.99 on *Brassica oleracea* (deposited in LU Collection).

4. *Melanagromyza hibisci* Spencer, 1961

Melanagromyza hibisci Spencer, 1961: 73

Diagnosis: Wing length 2.4-2.8 mm.; mesonotum scutellum and abdomen black with greenish metallic sheen; lunule narrow and conspicuously high; male eyes with a patch of short hairs.

Distribution: India, Sri Lanka.

Hosts: *Abelmoschus esculentus.*

Specimens examined: 1 ♀Female Sri Lanka, Centr. Prov. Gannoruwa, Agri. Res. Station, 8.IX.97, on *Abelmoschus esculentus* (=*Hibiscus esculentus*) 3 ♂♂ and 1 ♀ Sri Lanka, Southern Prov. Agri. Res. Station Angunakolapelessa, 8.IX.97. (HORDI collection).

Remarks: *Melanagromyza hibisci* is a serious pest of okra in Sri Lanka. Attack by the pest during the seedling stage severely retards plant growth. The adult female lays eggs on okra leaves close to main vein. Larvae mine through the leaf, enter the leaf petiole through the mid-rib and pupate inside the petiole.

5. *Melanagromyza obtusa* (Malloch, 1914)

Agromyza obtusa Malloch, 1914
Melanagromyza obtusa (Malloch): Hennig, 1941

Diagnosis: Wing length 2.8- 3.0 mm.; mesonotum scutellum and abdomen black with metallic bluish green; squamae and fringe yellowish; ocellar triangle large and distinct, apical margin reaching lunule.

Distribution: Formosa, India, Indonesia, Java, Sri Lanka.

Hosts: *Cajanus cajan*, *Flemingia* sp., *Vigna radiata* (*Phaseolus radiatus*).

Specimens examined: 3 ♀♀ Sri Lanka, Centr. Prov. Gannoruwa, Ag. Res. Station on *Cajanus cajan* 26.X.98, 21.IX.98, 1.IX.98, 1 ♀ Sri Lanka Sou. Prov. Ag. Res. Station Angunakolapelessa, 8.IX.97, 1 ♀, Sri Lanka, NCP, Mahailluppallama, Ag. Res. St. 4.VII.97 on *Cajanus cajan* (HORDI collection).

Remarks: This species is a major pest of pigeon pea especially during the dryer season (April-August) in Sri Lanka. Eggs are laid inside immature pods by adult females. Larvae feed on the seeds and pupate inside the pod.

6. *Melanagromyza piliseta* (Malloch, 1914)

Agromyza piliseta Malloch, 1914
Melanagromyza piliseta (Malloch): Hennig, 1941

Spencer (1961) recorded this species from Peradeniya. There are no records of this species from Sri Lanka since then. I have not seen specimens, but according to Spencer, it is a greenish species with wing length of at least 2.6 mm., arista is conspicuously pubescent and males with patch of hairs on eyes. This species is larger than *M. metallica*, otherwise not distinguishable externally. Distiphallus of the male genitalia has a black chitinized process.

Distribution: Formosa, Indonesia, Sri Lanka (Peradeniya).
Hosts: Unknown

7. *Melanagromyza metallica* (Thomson, 1896)

Agromyza metallica Thomson, 1869: 609
Melanagromyza metallica (Thomson): Spencer, 1959: 672, Sasakawa, 1980: 192

Diagnosis: Wing length 1.7–2.3 mm.; mesonotum, scutellum and abdomen black with mostly metallic greenish sheen, legs are dark brown; lunule raised filling about 2/3 of the antennal depression; ocellar triangle distinct extending to middle lower orbital bristles (*ori*); male eyes with a patch of short hairs.

Distribution: Africa, Indonesia, Philippines, Sri Lanka (widespread).

Hosts: *Ageratum conyzoides, Bidens pilosa* (India).

Specimens examined: 1 ♂ and 1 ♀ Sri Lanka Centr. Prov. Manickwalla Ela, 4 ♂♂ NW Hatton, 18.III.62, Loc 156 1 ♂, Sri Lanka S. Prov. Malala Oya 5 ♂♂ NE Hambantota 18.III.62, Loc. 154, 1 ♀Sri Lanka Sabaragamuwa Prov. Stream at 2500 ft 5 ♂♂ NNW Balangoda 22.II62 Loc 108, 6 ♀♀Sri Lanka Centr. Prov. Diagama West at 4200 ft 8 ♂♂ S. Nuwara Eliya 19.III.62, Loc. 160, 1 ♂and 1 ♀. Sri Lanka W. Prov. Ratmalana 9 ♂♂ S. Colombo 7.III.62 Loc 6, 2 ♂♂ Sri Lanka Sabara. Prov. Rakwana at light 27.II.62 Loc 100 11 ♂♂ and 13 ♀♀. Sri Lanka Centr. Prov. Masskeli Oya 6 ♂♂ SW. Hatton 18.III.62 Loc 156 1 ♀. Sri Lanka S. Prov. Malala Oya 5 mls NE Hambantota 22.III62 Loc. 170, 21 ♀♀, Sri Lanka Cent. Prov. Rangala, Knuckles mts. 12 mls ENE Kandy 11.III.62 Loc. 130, 1 ♀. Sri Lanka Cent. Prov. Knuckles mts. alt 1500 ft 14 mls NE Kandy 11.III.62 Loc 131, 1 ♀. Sri Lanka Sabaragamuwa Prov. Hetherleigh 1ml S. Rakwana 1700 ft. 28.II.62 Loc. 101, 2 ♂♂ Sri Lanka Sab. Prov. stream from Mantalawa mnt 9mls NNE Belihul Oya. 1.II. & Loc. 107, 1 ♀, Sri Lanka Cent. Prov. Foothills of Knuckles mnt 10 miles ENE Kandy 2.III.62 loc 129, 2 ♂♂ Sri Lanka Cent. Prov. Kandy 12.I.62, 9 ♀♀Cey. Centr. Prov. Madugoda 16 mls E Kandy 11.III.62 Loc 133, 1 ♂ Sri Lanka Cent. Prov. Hakgala 5 mls NE Nuwara Eliya 3.III. 62 Loc 114, 1 ♂ Sri Lanka NCP Habarana 11.II.62 Loc 99, 1 ♂and 1 ♂. Sri Lanka Sab. Prov. Kitulgala 21 mls N Ratnapura 17.III.62 Loc 152, 1 ♂ 4 ♀♀. Sri Lanka Sab. Prov. Karagal Oya 1900 ft 3 mls ENE Belihul Oya 2.III.62 Loc 110, 1 ♂ (more specimens from various locations in above provinces). Sri Lanka W. Pro. Labugama 24 mls ESE Colombo 21.I.62 Loc 17:1 (more specimens from Alawala, Yakkala), 3 ♂♂ and 4 ♀♀. Maduru Oya 15 mls NNW Polonnaruwa 13.III.62 Loc 138, 1 ♂ and 3 ♀♀ Sri Lanka Uva Prov. Yalakumbura alt. 1300 ft 5 mls SSW Bibile 13.III.62 Loc 140 (9 more specimens from the same province) (in LU collection).

Remarks: Larvae are stem miners (Seghal, 1965).

8. *Melanagromyza rotata* Spencer, 1965b

Melanagromyza rotata Spencer, 1965b: 4

Diagnosis: Wing length about 1.8 mm; with shining black mesonotum scutellum and abdomen; squamae yellowish with fringe black; ocellar triangle prominent, shining , with apex extending to lunule as a narrow line; no strong bristles on mid or fore tibia; no hair patch on male eyes; basiphallus of males distinctly asymmetrical; gena narrow; frons not projecting above eyes.

Distribution: Philippines, Sri Lanka (new record).

Hosts: Unknown.

Specimens examined: 2 ♂♂ and 1 ♀. Sri Lanka N. Prov. Sandy beach 2 mls W Point Pedro 13.II.62 Loc. 69, 1 ♂ Sri Lanka N. Pro. Pali Aru 20 mls NE Mannar 15.II.62 Loc 87, 1 ♂. Sri Lanka E. Prov. Nilaveli 8 mls NNW Trincomalee 10. II.62 Loc 61, 14 ♂♂ and 11 ♀♀ Sri Lanka NW. Prov. 7 ls NE Puttalam 1.II.62 Loc 43 (in LU cllection).

Ophiomyia Braschnikov, 1897

Agromyza Fallen Sub-genus *Ophiomyia* Braschnikov, 1897: 40 Type: *Agromyza maura.*
Ophiomyia Braschnikov: Handel, 1920

Over 160 species are known in the world. Sri Lanka has seven species. Larvae of most *Ophiomyia* form shallow external stem mines (some are leaf miners. *O. aberrans* was reared from flower heads (Spencer, 1990). Pupation occurs at the end of the tunnel with anterior spiracles projecting through the epidermis.

Diagnosis: Uniformly black without metallic coloration; halters black except in *Ophiomyia aberrans*; males normally have a raised facial keel dividing base of the antennae and fused vibrissal fasciculus; only two pairs of postsutural dorsocentrals (*dc*) present; basal sclerites of male genitalia are long.

9. *Ophiomyia aberrans* (Spencer, 1959)

Melanagromyza aberrans Spencer, 1959: 259
Ophiomyia aberrans (Spencer): Spencer, 1975: 210

Diagnosis: Wing length about 1.9 mm.; halters of both sexes yellow; squamae and fringe yellowish white; uniformly black; ocellar triangle not distinct; no distinct bristles on tibia.

Distribution: South Africa, Zaire and Sri Lanka.

Hosts: Flower heads of unidentified Lamiaceae (Spencer, 1990 and reference therein).

Specimens Examined: 1 ♂. Sri Lanka N. Prov. 2 mls E Paraiyanalankulam, 20 mls W Vavunia 15.II.62 Loc. 82, 1 ♂ Sri Lanka N. Prov. Sandy beach 2 mls W Point Pedro 13.II.62 Loc. 69 (specimens identified by Spencer in Lund collection), 1 ♂and 1 ♀. Sri Lanka NW Prov. 7 mls NE Puttalam 7.II.62 Loc. 43 (HORDI collection)

10. *Ophiomyia atralis* (Spencer, 1961)

Melanagromyza atralis Spencer, 1961: 69
Ophiomyia atralis (Spencer): Sasakawa, 1980: 192

Spencer described this species as a *Melanagromyza* from Indonesia and in the same paper stated that it belongs to *Ophiomyia.* I have not seen any specimens. According to Spencer it has white squama and fringe, a weak midtibial bristle and wing length of about 1.3 - 1.6 mm.

Distribution: Indonesia, Sri Lanka.

Hosts: *Vernonia cinerea* (India).

11. *Ophiomyia conspicua* (Spencer, 1961)

Melanagromyza conspicua Spencer, 1961: 71
Ophiomyia conspicua (Spencer): Sasakawa, 1980: 192

Diagnosis: Wing length 2 mm.; midtibia with a strong posterolateral bristle; ocellar triangle distinct with its apex at mid *ori*; third antennal segment pubescent; vibrissae not atypical of the genus; male genitalia distinct, elongated sack like process with tiny process; squamae ash color with dark brown fringe.

Distribution: Formosa, Singapore, Sri Lanka.

Hosts: Unknown.

Specimens examined: 1 ♂. Sri Lanka NW Prov. 5 mls NNE Puttalam at light, 1.II.62 Loc. 42, 1 ♂Sri Lanka NW Prov. 7 mls NE Puttalam 1.II.62 Loc. 43 (LU collection).

12. *Ophiomyia cornuta* De Meijere, 1910

Ophiomyia cornuta De Meijere, 1910: 161
Ophiomyia cornuta De Meijere: Spencer, 1959: 892

Diagnosis: Wing length about 1.5 mm; head mesonotum and abdomen black; squamal fringe white; ocellar triangle distinct, shining and the apex narrowly extend to the lunule; no distinct spurs on any of the tibiae; last segment of the M 4 shorter than penultimate.

Distribution: Fiji, Hawaii, Indonesia, Sri Lanka (new record), Australia

Hosts: *Scaevola koenigii, S. frutescens* (Pacific Islands), *Goodenia ovata* (Australia, Spencer, 1990) *S. taccada* (Sri Lanka, new host plant)

Specimens examined: 4 male and 3 female. Sri Lanka S. Prov. Usangoda reared from *Scaevola taccada* 28.IX.98. (HORDI collection).

Remarks: *Ophiomyia cornuta* larvae make irregular mines in *S. taccada* leaves. Shiao & Wu (1996) described *Ophiomyia scaevolana* from *Scavevola sericea* in Taiwan, although they considered the host range of this species to be much wider. I have not surveyed these plants adequately in Sri Lanka. Careful examination of these plants in Sri Lanka may show a much wider distribution and even new species.

13. *Ophiomyia centrosematis* De Meijere, 1940

Melanagromyza centrosematis De Meijere, 1940: 128
Ophiomyia centrosematis (De Meijere): Spencer, 1973: 56

Diagnosis: Wing length 1.7-2.0 mm; squamae gray with dark margin and fringe; mesonotum and abdomen shining black; ocellar triangle distinct, shining, apex slightly beyond the level of mid *ori*, not extended as a narrow line; male vibrissa not fused; basiphallus of male genitalia asymmetrical.

Identified from specimens collected on bean plants.

Hosts: Not known in Sri Lanka; *Glycine soja* (Formosa), *Phaseolus vulgaris, Vigna unguiculata, Phaseolus lunatus, Crotalaria mucronata* (East Africa), *Calopogonium mucunoides, Centrosema pubescens* (Malaysia), *Tephrosia candida* (India) (Spencer, 1973).

Distribution: Australia, Formosa, India, Indonesia, Kenya, Malaysia, Sri Lanka (new record), Tanzania, and Uganda.

Specimens examined: 3 ♂♂, 4 ♀♀. Sri Lanka Centr. Prov. Gannoruwa on *Phaseolus vulgaris* 20.VIII.1999.

14. *Ophiomyia lantanae* (Froggatt, 1919)

Agromyza lantanae Froggatt, 1919: 665
Ophiomyia lantanae (Froggatt): Spencer, 1959: 358, 1973: 358

Diagnosis: Wing length 1.9-2.2 mm; Squamae grayish with black fringe; mid tibia with pair of strong postero lateral bristles; both sexes have raised facial keel which is bulbous between base of the antennae; ocellar triangle distinct with its apex is sunken below the surface of fronts.

Hosts: *Lantana camara*

Distribution: Africa, Burma, Fiji, India, Kenya, Malaysia, Singapore, South America, Sri Lanka, and USA.

Specimens examined: 3 ♂♂, 4 ♀♀. Sri Lanka Cent. Prov. Uva Paranagama reared from *Lantana camara* 15.XI.99, 7 ♂♂, 15 ♀♀, Sri Lanka Cent. Prov. Gannoruwa reared from *Lantana camara* 5.V.1999 (HORDI collection), 6 ♂♂, 6 ♀♀Sri Lanka Cent. Prov. Uva Paranagama reared from *Lantana camara* 15.XI.1999 (Deposited in LU collection).

Remarks: The larvae eat the pulp of lantana fruit making silvery mines when fruits are green. This species is native to the New World tropics and has been introduced as a biocontrol agent for *Lantana camara*. However it has never been deliberately introduced into Sri Lanka.

15. *Ophiomyia phaseoli* (Tyron, 1895)

Oscinis phaseoli Tyron, 1895: 4
Melanagromyza phaseoli Coquillett: Spencer, 1959: 283
Melanagromyza phaseoli (Tyron): Spencer, 1959: 283
Ophiomyia phaseoli (Tyron): Spencer, 1973: 61

Diagnosis: Wing length 1.6–1.9 mm. Squamae whitish with dark margin and fringe; ocellar triangle large and shining black, apex extending almost to the level of upper *ori;* mesonotum and abdomen shining black; male vibrissae not fused.

Hosts: *Phaseolus vulgaris, Vigna unguiculata* and many other legumes (Spencer, 1973).

Distribution: Throughout Old World tropics.

Specimens examined: 1 ♂, 2 ♀♀. Sri Lanka Cent. Prov. Gannoruwa Agric. Res Station, 18.VIII.98, on *P. vulgaris*. 1 ♀Cent. Prov. Udukinda 2.X.98, on *P. vulgaris*. 1 ♀Sri Lanka Cent. Prov., 10.VII.2000 on *P. vulgaris* (HORDI collection).

Remarks: This species is one of the most troublesome pests of bean and cowpea cultivation in Sri Lanka. Larvae mine the stems during the early seedling stage and pupate inside the stem near the base of the plant (Wijesekara and Abeytunge, 1983).

Tropicomyia Spencer, 1973

Tropicomyia Spencer, 1973: 180 type: *Melanagromyza flacourtiae* Seguy, 1951.

Diagnosis: Relatively small species; wing length less than 2.3 mm; black or brown in color with dark halters; squamal fringe dark brown; two pairs of dosocentrals (*dc*); mid tibia without strong posterolateral bristles or with a single weak bristle; frons in profile not projecting above eye margin; anterior spiracles of the pupae on long stalks; basiphallus of male genitalia broadly U shaped.

16. *Tropicomyia atomella* (Malloch, 1914)

Agromyza atomella Malloch, 1914: 331
Melanagromyza atomella (Malloch): Hennig, 1941: 174, Spencer, 1961: 67
Tropicomyia atomella (Malloch): Spencer, 1973: 181

This species is the smallest of three *Tropicomyia* species recorded from Sri Lanka with wing length 1.6 mm. It has been reared from leaf mines on *Passiflora foetida* and *Passiflora suberosa* from Colombo (Spencer, 1961). I have not seen any specimens of this species. All effort to rear adults from *Passiflora* failed mainly due to parasitoids. However empty mines were found on *Passiflora*.

Hosts: Polyphagous (Spencer, 1973).

Distribution: Formosa, India, Japan, Philippines Indonesia, Australia, and Sri Lanka.

17. *Tropicomyia polyphaga* (Spencer, 1961)

Melanagromyza polyphagha Spencer, 1961: 75
Tropicomyia polyphaga (Spencer): Spencer, 1973: 189

Diagnosis: Wing length 1.6 - 1.8 mm; midtibia with a single strong posterolateral bristle; costa strongly extend to M 1+2; pupal case black in color.

Hosts: *Cryptolepis buchananii*, *Simplex* sp. (India), *Tylophora indica* (*T. flava*), *Symplocos cochinchinensis* (*S. spicata*) (Sri Lanka), (Spencer, 1973), *Lasia spinosa* (Sri Lanka) New host record. Spencer (1973) stated that mines found on *Allamanda cathartica* and *Dregea volubilis* at Peradeniya could be of *T. polyphaga*.

Distribution: India, Sri Lanka.

Specimens examined: 1 ♀ Sri Lanka Uva Prov. Badulla reared from *Lasia spinosa* 2.III.98 3 ♀♀. Sri Lanka Cent. Prov. Gannoruwa reared from *Lasia spinosa* 18. VIII.1999 1 ♀.
Sri Lanka Cent. Prov. Pallekele reared from *Lasia spinosa* 4.X.1999 (HORDI collection).

Remarks: Larvae mine the leaves making irregular leaf mines and pupation occurs inside the mine.

18. *Tropicomyia theae* (Cotes, 1896)

Oscinis theae Cotes, 1896: 28
Tropicomyia theae (Cotes): Spencer, 1973: 194
Melanagromyza theae (Cotes): Sasakawa, 1980: 192

Diagnosis: Wing length about 2.0 mm.; costa appears to end at R 1+2; midtibia with a single weak posterolateral bristle; puparium yellow.

Hosts: *Camellia sinensis,* (polyphagous, according to Spencer 1990).

Distribution: Sri Lanka.

Specimens examined: 5 ♀♀Sri Lanka Cent. Prov. Talawakele, Tea Res. Inst. 7.IX.97 (HORDI collection).

Remarks: Spencer (1973) restricted the name *thea* to the species attacking tea in Sri Lanka. The name was incorrectly attributed to Green (Spencer 1961) and it was corrected by Spencer (1973). Spencer (1966) considered that *Tropicomyia atomella* and *T. styricicola* Sasakawa as junior synonyms of *T. thea* but it was later withdrawn (Spencer, 1973). Larvae mine the young tea leaves making irregular mines.

Japanagromyza Sasakawa, 1958
Japanagromyza Sasakawa, 1958: 138 type: *Japanagromyza duchesneae* (Sasakawa, 1954)

Diagnosis: Prescutellars present; only two pairs of dorsocentals (*dc*); halters yellow; ocellar triangle inconspicuous not extending beyond front ocellus; single strong foretibial bristle present.

This genus can be separated from *Agromyza*, which also has white or yellow halters and prescutellars, by having only two pairs of dc.

19. *Japanagromyza perplexa* Spencer, 1975

Japanagromyza perplexa Spencer, 1975: 211

Diagnosis: Wing length about 2.5 mm; halters yellow on top and brown on sides and below; squamae ash color with black margin and fringe; *prsc* equal to second *dc*; foretibia with a weak bristle; midtibia with two strong bristles.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens examined: Holotype ♂Sri Lanka Sabaragamuwa Prov. Deerwood, Kuruwita 6 mls NNW Ratnapura 18-21.II.62 Loc. 90 (genitalia on slide), Paratype ♂with same data (in LU collection).

20. *Japanagromyza tristella* (Thomson, 1869)

Agromyza tristella Thomson, 1869: 609
Japanagromyza variihalterata (Malloch, 1914): Spencer, 1965a: 25

Japanagromyza tristella (Thomson): Spencer, 1973: 81, 1975: 211

Diagnosis: Wing length 2.4 - 3.0 mm; two strong *dc* and *prsc* present; *prsc* much shorter than second dc; fore tibia with a single lateral bristle and mid tibia with two; ocellar triangle not shiny; squamae gray with margin and fringe black: halters white on top and black below the knob including the stalk.

It is not possible to distinguish *tristella* and *perplexa* from external morphology, however their specific status is established by the differences in male genitalia.

Hosts: *Pueraria hirusta*, *Pueraria phaseoloides*, *Pueraria thunbergiana*, *Glycine max* (Spencer, 1973).

Distribution: China, Formosa, India, Indonesia, Japan, Nepal, Singapore and Sri Lanka.

Specimens examined: 3 ♀♀, Sri Lanka Sabaragamuwa. Prov. Arandara reared from *Pueraria* sp. 6.X.98, 1 ♀♀, Sri Lanka Cent. Prov. Gannoruwa reared from *Pueraria* sp. 25.X.98 (In HORDI collection).

Remarks: Larvae of this species make blotch mines on young *Pueraria* leaves.

Sub-family Phytomyzinae

Species can be identified by the subcosta directly joining the costa (at least as a fold) instead of joining R1 as in Agromyzinae.

Amauromyza Hendel, 1931
Dizygomyza (*Amauromyza*) Handel, 1931: 39 type: *Agromyza lamii* Kaltenbach, 1858
Amauromyza (Hendel): Nowakowski, 1962: 97

Diagnosis: Costa extending to vein M 1+2 which ends at wing tip; three pairs of presutural *dc* often strongly developed; second cross vein present; halters often black; orbital setulae reclinete; sperm pump with enlarged bowl shaped base.

Three subgenera are recognized (Spencer & Steyskal, 1986). In Sri Lanka there is, however, only a single species belonging in the subgenus *Cephalomyza*.

21. *Amauromyza* (*Cephalomyza*) *flavida* Spencer, 1975

Amauromyza (*Cephalomyza*) *flavida* Spencer, 1975: 213

Diagnosis: Wing length 1.4 - 1.7 mm; frons and halters yellow, mesonotum blackish, scutellum abdomen and legs brown, antennae orange squamae yellow fringe dark; no strong bristles on legs; three pairs of *dc*; rm closer to end of discal cell; arista swollen at base; ocellar triangle black, frons projecting above eyes in lower half. Known only from type material.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens examined: Holotype ♂Sri Lanka Colombo District Ratmalana 9 mls S. Colombo 7-13.I.62 Loc. 6 on sandy beach (LU collection).

Chromatomyia Hardy, 1849
Chromatomyia Hardy, 1849: 385. Type *Phytomyza periclymeni* Meijere, 1924 (as *P. obscurella* Fallen, 1823)

Chromatomyia and *Phytomyza* cannot be distinguished from each other using external morphology. *Chromatomyia* was first established for species with a distinct 'slipper shaped' puparium, which remain in the leaf. Majority of *Phytomyza* have a barrel shaped puparium, which normally drops to the ground for pupation.

Diagnosis: Orbital setulae proclinate; costa ending at vein R 4+5; outer cross vein absent; very few acrostichals; distal section of the male ejaculatory duct simple; color grayish with some yellow on abdomen; halters yellow; squamae fringe dark; no strong bristles on fore or midtibia.

22. *Chromatomyia syngenesiae* Hardy, 1849

Chromatomyia syngenesiae Hardy, 1849: 385
Phytomyza syngenesiae (Hardy): Spencer 1973: 233
Chromatomyia syngenesiae Hardy: Spencer, 1981

Diagnosis: Mesonotum and scutellum ash gray with few (4-5) acrostichals; frons yellow; third antennal segment black; coxa and femora black with joints yellow; abdomen brownish with posterior margin of abdominal tergites yellow; four pairs of well developed dc; ocellar triangle small and black.

Hosts: *Chrysanthemum* (Sri Lanka).

Distribution: Europe North America, Australia, Sri Lanka (new record).

Specimens examined: 1 ♂, 2 ♀♀ Sri Lanka, Cent. Prov. Sita-Eliya reared from *Chrysanthemum*, 25.IX.98, 1 ♂, 4 ♀♀ Sri Lanka Cent. Prov. Sita-Eliya Agri. Research station 29. IX. 98 on *Chrysanthemum*, 2 ♂♂, 3 ♀♀ Sri Lanka, Cent. Prov. reared from composite weed 7.II.99, 2 ♂♂ Sri Lanka, Nuwara-Eliya reared from *Chrysanthemum*, 8.XII.99 (In HORDI collection), 4 ♀♀Sri Lanka Cent. Prov. Nuwara-Eliya reared from *Chrysanthemum* 8.XII.99 (deposited in LU collection), 1 ♂ SK. Halsinborg 3.9.1923 Coll. N.S. Ryden, 1 ♂SK. Halsinborg ep. 18.7.1923 coll. N.S. Ryden (LU collection).

Remarks: Larvae make irregular mines on leaves and pupation take place inside the leaf mine.

Phytomyza Fallen, 1810
Phytomyza Fallen 1810: 10. Type *Musca ranunculi* Schrank, 1803 (as *P. flaveola* = *flava* Fallen 1823)

Diagnosis: Orbital setulae proclinate; costa ending at vein R 4+5; outer cross vein lacking; male genitalia distal section of the ejaculatory duct bifid; halters yellow.

23. *Phytomyza ceylonesis* Spencer, 1975

Phytomyza ceylonensis Spencer, 1975: 218

Diagnosis: Wing length 2.1 mm; lower third of arista swollen; upper ors smaller half the size of lower ors ; third antennal segment yellow; four pairs of strongly developed dc; two rows of acrostichals with 5-6 in each raw; squamae fringe brown; legs yellow; ocellar triangle brown.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens examined: Holotype ♀ Sri Lanka Cent. Prov. Horton Plains alt. 200 m. 11 mls SSE Nuwara-Eliya 19-20.III.62 (in LU collection)

Pseudonapomyza Hendel, 1920
Pseudonapomyza Hendel, 1920: 115. Type: *Phytomyza atra* Meigen, 1830.

Diagnosis: Second costal segment less than 1.5 times the length of fourth segment; costa extending only to R 4+5; M1+2 ending near the wing tip; four pairs of *dcs*; orbital setulae absent or reclinate; outer cross vein lacking; lower basal cell and discal cell united and second cross vein is basal to first; halters white or yellow

24. *Pseudonapomyza alternantherae* (Seguy, 1951)

Phytomyza alternantherae Seguy, 1951
Pseudonapomyza alternantherae (Seguy): Spencer, 1961: 91

Diagnosis: Wing length about 1.7 mm; completely black species; costa ending just beyond R 4+5; third antennal segment rounded; squamae gray, fringe black; halters yellow; mid tibia with two distinct strong bristles; puparium with rows of distinct papillae; apex of aedeagus black, divided into two tubules.

Spencer (1961) recorded this species from Sri Lanka from empty leaf mines collected in Colombo. Therefore the record was somewhat doubtful. During this study I was able to rear adults from *Achyranthes aspera* for the first time in Sri Lanka.

Hosts: *Achyranthes aspera* (India, Sri Lanka), *Alternanthera sessilis* (Madagascar).

Distribution: India, Madagascar, Sri Lanka, and West Africa.

Specimens examined: 3 ♂♂, 4 ♀♀, Sri Lanka, Uva Prov, Badulla, 18. iii. 1998. Reared from *Achyranthes aspera* (HORDI collection).

25. *Pseudonapomyza asiatica* Spencer, 1961

Pseudonapomyza asiatica Spencer, 1961: 92, Sasakawa, 1980: 192

Diagnosis: Wing length 1.5-1.7 mm; third antennal segment angulate at upper corner; costa ending at R 4+5; squamae, fringe and halters white; apex of ocellar triangle at the level of upper orbital bristles; completely black species.

Spencer described this species from specimens collected in Singapore and India. Sasakawa (1980) recorded this species from Kandy, Sri Lanka.

Hosts: Rice (Formosa, Taipei), *Cynodon dactylon* (Singapore), *Zea mays*, *Eragrostis* sp. (India).

Distribution: India, Singapore, Formosa, Taipei, Philippine Islands (Barrion and Litsinger, 1979), Ethiopia and Sri Lanka.

Specimens examined: 3 ♂♂ Sri Lanka W. Province, Colombo, Colpetty, 5-13. I. 1962. Loc 2. 1 ♀ Sri Lanka W. Prov. Labugama, 24 mls ESE Colombo, 21. II. 1962 Loc. 17. (Deposited in HORDI collection).

Liriomyza Mik, 1894
Liriomyza Mik, 1894: 284. Type: *Liromyza urophorina* Mik1984

Diagnosis: Frons and scutellum yellow; orbital setulae recline; costa extending to M1+2; outer cross vein present; males have a stridulating mechanism with a 'file' on central membrane of abdominal segments and 'scraper' on the hind femur.

Only two *Liriomyza* species were known from Sri Lanka until 1990. Since then three more species have been identified. A new tomato leaf-miner was identified as *Liriomyza trifolii* (Abewarne & Wijegunasekara, 1993). Wijesekara (1997) identified *L. sativae* and *L. huidobrensis* from various vegetables, including tomato.

26. *Lirimyza brassicae* (Riely, 1884)

Oscinis brassicae Riley, 1884: 322
Liriomyza brassicae (Riley): Frick, 1952: 402, Spencer, 1961: 87

Diagnosis: Wing length 1.2- 1.5 mm: frons yellow with the eye margin black; antennae yellow; mesonotum shining black; mesopleuron yellow with black area along front and lower margins; legs yellow; squamae yellow with dark margin; aedeagus; both *ve* on dark back ground; sperm pump blade broad.

Hosts: Many Capparaceae species including *Gynandropsis speciosa*, *Cleome graveolens* (recorded from Sri Lanka).

Distribution: Cosmopolitan.

Specimens examined: 1 ♂ Sri Lanka Centr. Prov. Dayagama West at 4800 ft. 8 mls. S. Nuwara-Eliya 19.III.62., 1 ♀ Sri Lanka Uva Prov. 2 mls. SW Haldummulla 2.II.62 loc 111. (in Lund collection).

27. *Liriomyza pusilla* Meigen (1830)

Agromyza pusilla Meigen, 1830
Liriomyza pussilla Malloch: Hennig, 1941:173
Liriomyza compositella Spencer: Spencer, 1990:398.

I have not seen specimens of *pusilla*. However according to Spencer it can be distinguished from *brassicae* by its entirely yellow orbits and having only *vte* on black background.

Hosts: *Tithonia diversifolia, Gynura lycopersicifolia* (Sri Lanka), *Solidago canadensis* (India).

Distribution: Europe, India, Formosa, and Sri Lanka.

28. *Liriomyza huidobrensis* (Blanchard, 1926)

Agromyza huidobrensis Blanchard, 1926: 10
Liriomyza huidobrensis (Blanchard): Blanchard 1938: 356

Diagnosis: Wing length 1.7-2.2 mm; face and scutellum yellow; mesonotum matt black; femora yellow darkened with black striations; both *vti* and *vte* on black background; mesopleuron more than 50% black; squamae yellow, fringe black.

Hosts: Polyphagous. In Sri Lanka hosts include *Solanum tuberosum,* carrot, leek, bean and beet.

Distribution: Widely distributed due to human introduction including Europe, Indonesia, South America, USA and Sri Lanka.

Specimens examined: Many specimens from Nuwara Eliya district, Sri Lanka (HORDI collection).

Remarks: Apparently this species has been inadvertently introduced to Sri Lanka (probably by the floriculture trade) in 1996. It has been established in the Nuwara Eliya District in the central hills of Sri Lanka and has become a troublesome pest of vegetables and potato grown in the area. It is one of the most dangerous leaf miner pests in the world.

29. *Liriomyza sativae* Blanchard, 1938

Liriomyza sativae Blanchard, 1938: 354

Diagnosis: Wing length 1.3-1.7 mm; face and scutellum yellow; mesopleura mostly yellow with lower black area less than 50%; four pairs of *dc*; hind margin of eye black; *vte* on black back ground *vti* on yellow background or at the margin between yellow and black; coxae and femora yellow; squamae yellow margin and fringe dark; male aedeagus; posterior spiracles of puparium with three distinct bulbs.

Hosts: Polyphagous. In Sri Lanka, the main hosts are cucurbits, bean and tomato.

Distribution: South America, Sri Lanka, USA and Africa.

Specimens Examined: Many specimens from Southern and Central provinces of Sri Lanka (HORDI collection).

Remarks: This species has also been inadvertently introduced to Sri Lanka in the early 1990s. Unlike *L. huidobrensis, sativae* has spread through out the island in all agroecological areas. It is also one of the most dangerous leaf miner pests of vegetables in the world.

30. *Liriomyza trifolii* (Burgess, 1880)

Ocinis trifolii Burgess, 1880: 201
Liriomyza trifolii (Burgess): Frick, 1952: 405

Diagnosis: Wing length 1.2 1.9 mm; both *vte* and *vti* on yellow background; mesonotum grayish yellow; small patches at hind corner of mesonotum adjoining scutellum and mesopleuron black; coxae and femora yellow; larval posterior spiracles with three bulbs.

Hosts: Polyphagous.

Distribution: Almost worldwide due to human introduction,? Sri Lanka.

Specimens examined: 5 ♀♀; Cal. Yolo. Co. Univ. Calif. Davis Lab Colony 1.v111.1999. M. A. Parella (HORDI collection).

Remarks: I have not found any specimens of *L. trifolii* within the past two years of collecting for the present study. The common leaf miner on vegetables considered as *Liriomyza trifolii* was found to be *Liriomyza sativae*. It is possible that tomato leaf miner had been misidentified. However, *L. trifolii* is another serious pest species in the world.

Phytoliriomyza Hendel, 1931
Liriomyza (*Phytoliriomyza*) Hendel, 1931: 205. Type: *Agromyza perpusilla* Meigen, 1830
Phytoliriomyza Hendel: Frey, 1941: 19

Diagnosis: Costa ending at M 1+2; rm frequently present; orbital setulae sometimes proclinate; pale yellow and grayish in color; males with characteristic arrangement of spines on surstylus or within the epandrium; squamae fringe brownish or black; male aedeagus greatly extended; halters dark.

Some are known as leaf miners of ferns and some species form inconspicuous stem mines.

31. *Phytoliriomyza arctica* (Lundbeck, 1900)

Agromyza arctica Lundbeck, 1900: 304
Phytoliriomyza arctica (Lundbeck): Shewel, 1953: 469, Spencer, 1975: 216

Diagnosis: Wing length 1.2-2.1 mm; frons, jowls, antennae, mesopleuron, coxa and femur yellow; abdomen yellow except middle of the tergites; mesonotum and scutellum grayish brown with yellowish striations; first cross vein before mid point of the discal cell.

Specimens examined: 1 ♂ Sri Lanka Prov. of Uva, Uragala 10 mlas. ENE Badulla 13:III.62 Loc. 142. 1 ♂ Sri Lanka N. Prov. Kuddattanai 6 mls. SE Point Pedro 13.II.62 Loc 70 (LU collection).

Hosts: Unknown.

Distribution: Sri Lanka. Cosmopolitan, except Australia.

32. *Phytoliriomyza australensis* Spencer, 1963

Phytoliriomyza australensis Spencer, 1963: 335

Diagnosis: Wing length 1.2-1.5 mm; antennae, frons, jowls legs and pleura yellow, mesonotum and scutellum grayish; squamae fringe black; acrostichals absent; abdomen brownish on dorsal surface, yellow on sides and ventrally; first cross vein before mid point of discal cell antennae, pubescent.

Hosts: Unknown.

Distribution: Australia, Nepal and Sri Lanka

Specimens Examined: 1 ♂ Sri Lanka (Lund expedition Loc. 111) Det. K.A. Spencer, 2 ♂♂, 2 ♀♀ Sri Lanka Lund Loc. 111. Det. K.A. Spencer, 1 ♂, 1 ♀ Sri Lanka Cent. Prov. Kandapola 5 mls ENE Nuwara-Eliya 4.III.62. Loc. 115 (LU Collection).

33. *Phytoliriomyza nigriantennalis* Spencer, 1975

Phytoliriomyza nigriantennalis Spencer, 1975: 217

Diagnosis: Wing length 1.2-1.4 mm; mesonotum and scutellum gray with posterior end of the scutellum yellow; third antennal segment and arista black; first and second segments yellowish; mesopleura yellow femur and tibia brownish; acrostichals present; last section of M 3+4 twice longer than penultimate section.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens examined: Holotype ♂ Sri Lanka Prove. of Uva Stream Alt 3600 ft. 2 mls. NW Haldummulla 2.III.62. Loc 111. Paratypes 1 ♂ with same data as holotype, 1 ♂, 1 ♀ with no collection data.

34. *Phytoliriomyza rangalensis* Spencer, 1975

Phytoliriomyza rangalensis Spencer, 1975: 217

Diagnosis: Wing length 1.8 mm; frons jowls, pleura, legs, antennae yellow; mesonotum black in front yellow from second *dc* to scutellum, scutellum medially yellow grayish at sides; acrostichals present; first cross vein beyond mid point of discal cell.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens Examined: Holotype male Sri Lanka Cent. Prov. Rangala, Knuckles mountain 12 mls. ENE Kandy alt. 1200 m. 11.II.62. Loc. 130 (Lund collection).

A key for identification of Sri Lankan *Phytoliriomyza* has been published by Spencer (1975).

Cerodontha Rondani, 1861

Cerodontha Rondani, 1861: 10. Type: *Chlorops denticornis* Panzer

This genus was erected for species possessing a spine on the third antennal segment, and only one pair of bristles on the scutellum. However these characteristics are found only in subgenera *Cerodontha* and *Xenophytomyza,* which are both not represented in Sri Lanka. Three subgenera, *Icteromyza*, *Poemyza*, and *Dizygomyza* present in Sri Lanka have rounded antennae and two pairs of bristles on the scutellum.

Diagnosis: Halters distinctly yellow; squamae fringe black or brown; upper margin of notopleuron yellow; mesonotum and scutellum without yellow coloration; costa ending at M 1+2; second segment of costa more than three times the fourth (Nowakowski, 1973)

35. *Cerodontha (Poemyza) flaviorbitalis* Spencer, 1975

Cerodontha (Poemyza) flaviorbitalis Spencer, 1975: 212

Diagnosis: Wing length 1.5 mm; orbits distinctly yellow and broaden near lunule; lunule higher than semicircle and narrow at the upper margin; two *ori* closer to inner margin of orbit; first two antennal segments orange and third black; 3rd antennal segment broader than long; eyes distinctly pilose; ocelli both *vts* on black back ground; legs brownish.

Hosts: Unknown. Distribution: Sri Lanka.

Specimens Examined: Holotype ♂ Sri Lanka W. Prov. Yakkala 18 mls. NE Colombo 20.I. 62 Loc. 16:I (Lund collection).

36. *Cerodontha (Icteromyza) hardyi* Sasakawa, 1963

Cerodontha (Icteromyza) hardyi Sasakawa, 1963

Diagnosis: Second and third antennal segments black; femora tibia and tarsi black; femur and tibial joint yellow; both pairs of bristles on scutellum well developed; squamae fringe black; lunule semicircular and yellow.

Hosts: Unknown.

Distribution: New Guinea, Sri Lanka.

Specimens Examined: 1 ♂, 1 ♀ Sri Lanka Uva Prov. Hedaoya 29 mls. SE. Bibile Loc 120 7.III.62., 1 ♀ Sri Lanka Sabaragamuwa Prov. Hetherleigh 1 mls. S. Rakwana 28.II.62 Loc 101 , *C. hardyi* det K.A. Spencer (LU collection).

37. *Cerodontha (Dizygomyza) meridionalis* Spencer, 1975

Cerodontha (Dizygomyza) meridionalis Spencer, 1975: 213

Diagnosis: Wing length 1.7; third antennal segment of male pubescent, kidney-shaped and distinctly enlarged; head mesonotum scutellum black; legs brown with yellowish tarsi; upper margin of notopleuron yellow; second segment of costa three times the fourth; frons broader than eyes; ocellar triangle short.

Hosts: Unknown.

Distribution: Sri Lanka.

Specimens Examined: Holotype ♂ Sri Lanka Cent. Prov. Rambukpath-Oya 10mls NW Hatton 18.III.62 Loc. 153 (LU collection)

38. *Cerodontha (Icteromyza) piliseta* (Becker, 1903)

Agromyza piliseta Becker, 1903: 190
Cerodontha (Icteromyza) piliseta (Becker): Spencer, 1975: 211

Diagnosis: Wing length 1.2 mm; first and second antennal segments yellow third darker; eyes pilose; ocellar triangle distinct extending to lower ors; mesonotum, scutellum, and abdomen black; jaws yellow; femur mostly yellow with black area near coxal joint; tarsi and tibia darker.

Hosts: Unknown.

Distribution: Old World Tropics, Australia, Sri Lanka.

Specimens examined: 1 ♂ Sri Lanka NW prov. Madampe 12 ms N Negombo 31.I.62 loc. 22. 3 ♂♂, 2 ♀♀ Sri Lanka W. Prov. Labugama 2 mls ESE Colombo 21:I.62 Loc 17:X, 1 ♀ Sri Lanka S. Prov. Hikkaduwa 11 mls NW Galle 25:I.62., 1 ♂ Sri Lanka Cent. Prov. Katumana, 3 mls NE Nuwara-Eliya 21.III.62. Loc 164, 3 ♂♂ Sri Lanka E. Prov. Kanniyai 5 mls NW Trincomalee 10.II.62 loc 62. 1 ♀ Sri Lanka Cent. Prov. Kurundu Oya alt. 2900 ft. 11 mls NE Nuwara-Eliya 15.III.62 loc 147. 1 ♀ Sri Lanka Prov. of Uva Gampaha Estate 9 mls W. Badulla 14.III.62. Loc 145 1 ♀ Sri Lanka Sabaragamuwa Prov. Stream at 3000 ft. 6 mls NNW Balangoda 22.II.62 loc. 97 (LU collection).

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