

A REVIEW OF RECENT LITERATURE ON THE HOST
PLANT RANGE OF THE GENUS *LIRIOMYZA* MIK
(DIPTERA: AGROMYZIDAE) IN THE CONTINENTAL
UNITED STATES AND HAWAII, EXCLUDING ALASKA¹

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ABSTRACT

Recent literature on the host plant range of 18 *Liriomyza* species (Diptera: Agromyzidae) indigenous to the United States and Hawaii is reviewed. Species differ in distribution with some overlapping in certain localities. All but 2 species are cited from the mainland of the United States and 3 species occur in Hawaii.

The review shows 4 that economically important *Liriomyza* species (*brassicae* (Riley), *munda* Frick, *langei* Frick, and *trifolii* (Burgess)) are present on the mainland of the United States. *L. brassicae* (Riley), *L. minutiseta* Frick, and *L. pullata* Frick are found in Hawaii. *L. langei* Frick, formerly a synonym of *L. bryoniae* (Kaltenbach), is a resurrected species.

Almost all of the known larval host plants for the genus *Liriomyza* are cited with synonymies and distributions for the various *Liriomyza* species. The synonyms, recently established, are given as a literature source throughout the text.

The present paper is based almost entirely on a review of recent literature on the host plant range of the serpentine leaf miners or the genus *Liriomyza* Mik in the United States and Hawaii, excluding Alaska. The purpose of the paper is to coordinate the recent published literature into a ready reference for those entomologists confronted with serpentine leaf miner problems.

Frick (1952a) reported that the genus *Liriomyza* was erected for *urophorina* n. sp., (Type . . . *Liriomyza urophorina* Mik, 1894, monobasic) which has the basic segment of the female ovipositor nearly as long as the abdomen. Larvae of *L. urophorina* mine in the flowers of *Lilium martagon* L. Frick reasoned that the elongation of the female's ovipositor might be needed for her to deposit her eggs into flower tissue.

Steyskal (1964) stated, "Sasakawa (1961), Spencer (1961), Nowakowski (1962), and Griffiths (1963) have recently shown that the characters in the male postabdomen must be used in order to adequately distinguish species in the Agromyzidae, as in many other families." Spencer (1965a), using this technique, clarified much of the confusion of certain *Liriomyza* species in the United States.

An exception to this technique of using the male postabdomen was recently published by Spencer (1965b). Spencer mentioned that he had synonymised *L. langei* Frick with *L. bryoniae* (Kaltenbach) (see Spencer 1963)

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and that *L. bryoniae* infests tomatoes as well as other plants in a very extensive host range. Spencer (1965b) reported, "Prof. H. Lange of the University of California, Davis, has recently informed me (private communication) that *L. langei* cannot be reared on tomato. Faced with this biological evidence it has to be concluded that despite similarity in genitalia between European *bryoniae* and American *langei* in fact distinct species are represented. I therefore propose that *langei* Frick be resurrected for the species occurring in California, Brazil, and the Juan Fernandez Islands and that *bryoniae* (Kalt.) be restricted to the palaearctic species."

Frost (1924) compiled a long list of host plants for *Agromyza pusilla* Meigen (for the most part, *pusilla* Meig. is a synonym of *L. munda* Frick). Subsequent determinations have shown that Frost's host plant range includes more than one *Liriomyza* species. Steyskal (personal communication) said that the leaf miner in *Asclepias* (milkweed) is an undescribed species and that further information on the species can be obtained from Aldrich (1918) and Weiss and Dickerson (1921).

Frick's papers on the Hawaiian and North American Agromyzidae were instrumental in the preparation of this paper. His papers helped to formulate the style for the manuscript besides contributing a wealth of information on the host plant ranges for the various *Liriomyza* species cited herein.

The literature review indicates that four economically important *Liriomyza* species (*L. brassicae* (Riley), *L. langei* Frick, *L. munda* Frick, and *L. trifolii* (Burgess)) occur on the mainland of the United States. The host plant ranges of some of the *Liriomyza* species overlap in some localities in the United States.

AN ANNOTATED CHECKLIST OF THE *Liriomyza* SPECIES AND DISTRIBUTIONS

- L. archboldi* Frost, No host plant known.
Distribution: Florida.
- L. assimilis* (Malloch).
Distribution: Pennsylvania and Illinois.
- L. baptisiae* (Frost)
Distribution: Pennsylvania; also Montana and Alberta, Canada (Spencer, in press).
- L. brassicae* (Riley), Frick (1952a).
L. hawaiiensis Frick, Spencer (1963:356).
Distribution: Cosmopolitan.
- L. commelinae* (Frost).
L. bahamondesi Blanchard, 1954, Spencer (1963:361).
Distribution: Florida, Argentina, Brazil, and the West Indies.
- L. felti* (Malloch).
Distribution: New York and Illinois.
- Liriomyza* n. sp. as *L. flaveola* (Fallén).
Spencer (personal communication) stated that the species he has seen in North America described as *L. flaveola* is in fact a new species. Mr. Spencer is currently describing this species in his forthcoming paper on the Canadian Agromyzidae.
Distribution: California; also Alberta, Canada (Spencer, in press).

L. fricki Spencer

L. congesta (Becker) in part; Frick (1953a:72), Frick (1956), and Frick (1959:410).

L. trifolii (Burgess) in part; Frick (1953a:72), Frick (1956), and Frick (1959:410).

L. fricki Spencer (1965a:35-36). Spencer (1965a) clarified the status of *L. congesta* (Becker) and *L. trifolii* (Burgess) as distinct species.

Distribution: Washington.

L. langei Frick, Frick (1951).

L. dianthi Frick (1964:11-12), Frick (1951), and Frick (1958).

L. bryoniae (Kaltenbach) in part; Spencer (1963); Spencer (1965b).

Distribution: California, Oregon, and Washington. *L. langei* Frick is widespread throughout South America.

L. minutiseta Frick.

Distribution: Hawaii.

L. munda Frick

L. guytona Freeman, 1958, Spencer (1963:362) and Steyskal (1964:388).

L. eupatorii (Kaltenbach) in part; Stegmaier (1966b) reported that Steyskal (private communication) stated that *L. eupatorii* (Kaltenbach) of Washington in the Frick collection is a synonym of *L. munda* Frick.

L. pictella (Thomson) in part; Spencer (1965a) stated that Steyskal reported that *L. pictella* (Thomson), in all cases, previously recorded as reared from many plant families proved to be *L. munda* Frick. For further information consult Oatman (1959) and Stegmaier (1966b).

L. pusilla (Meigen) in part; Stegmaier (1966b) stated that Steyskal (private communication) reported that *L. munda* Frick covers most of the old records of *L. pusilla* (Meigen); however, those records from *Asclepias* (milkweed) are an undescribed species of *Liriomyza*.

L. propepusilla Frost, 1954, Spencer (1965a:36) stated that Steyskal (private communication) suggested that *L. munda* Frick may be synonymous with *L. propepusilla* Frost.

Distribution: Alabama, California, Florida, South Carolina, and Texas, and Jamaica, B.W.I.

Liriomyza species on *Asclepias* sp. (milkweed). The leafminer on milkweed is a new species being described by Spencer (in press).

Distribution: New Jersey and New York. Frick (private communication) reported that the species is found in the Yakima Valley of Washington.

L. phaseolunata (Frost).

Distribution: New Jersey.

L. pictella (Thomson).

L. munda Frick, in part; Oatman (1959), Spencer (1965a) stated that Steyskal (private communication) reported that examinations of all specimens previously determined by Frick as *L. pictella* (Thomson), reared from a number of plant families, proved to be in all cases the leaf miner, *L. munda* Frick. Spencer (1966) reported the host plants for *L. pictella* (Thomson) as *Trifolium incarnatum* L. (crimson clover) and *T. repens* L. (Dutch white clover).

Distribution: California and Florida.

- L. pullata* Frick.
Distribution: Hawaii.
- L. schmidti* (Aldrich)
Distribution: Florida, Costa Rica, and Jamaica, B.W.I.
- L. sorosis* (Williston).
L. marginalis (Malloch), Spencer (1963:370-371).
Distribution: Throughout the United States occurring east of the Rocky Mountains. Venezuela, St. Vincent Island, British Guiana, and Jamaica, B.W.I.
- L. trifolii* (Burgess).
L. archboldi (Frost, 1962, in part; Spencer (1965a) reported that no host plant is known for *L. archboldi* Frost. The distribution for *L. archboldi* is Florida.
L. allioavora Frick, Spencer (1965a) and Stegmaier (1966a).
L. fricki Spencer, in part; Spencer (1965a:35-36).
Distribution: Florida, Indiana, Iowa, and Washington. Throughout the Caribbean Islands.
- L. veribenicola* Hering.
Distribution: Utah and New Mexico.

LARVAL HOST PLANT INDEX TO THE *Liriomyza* SPECIES
Pteridophyta

Polypodiaceae

- Asplenium pinnatifidum* Nutt. SPLEENWORT: *L. felti* (Malloch), Frick (1952a) and Frick (1959).
Camptosorus rhizophyllus (L.) Link, WALKING FERN or WALKING LEAF: *L. felti* (Malloch), Frick (1952a) and Frick (1959).
Spermatophyta (Angiospermae).

Monocotyledoneae

Gramineae

- Bromus carinatus* Hook and Arn., MOUNTAIN BROME: *Liriomyza* sp. as *L. flaveola* (Fallén), Frick (1952a) and Frick (1959). Spencer (in press).
Digitaria sanguinalis (L.) Scop., HAIRY CRABGRASS: *L. sorosis* (Williston), Stegmaier (1967a).
Eleusine indica (L.) Gaertn., GOOSEGRASS: *L. sorosis* (Williston), Stegmaier (1967a).
Euchlaena mexicana Schraud, TEOSINTE: Apparently *L. sorosis* (Williston), Stegmaier (1967a).
Hordeum murinum Huds., MOUSE BARLEY: *Liriomyza* sp. as *L. flaveola* (Fallén), Frick (1952a) and Frick (1959). Spencer (in press).
Lolium multiflorum Lam., ITALIAN RYEGRASS: *Liriomyza* sp. as *L. flaveola* (Fallén), Frick (1952a) and Frick (1959). Spencer (in press).
Panicum milaceum L., BROOMCORN MILLET: *L. sorosis* (Williston), Stegmaier (1967a).
Paspalum ciliatifolium Michx., FRINGELEAF PASPALUM: *L. sorosis* (Williston), Stegmaier (1967a).
Paspalum dilatatum Poir., DALLIS GRASS: *L. sorosis* (Williston) as *L. marginalis* (Malloch), Frick (1952a) and Frick (1959).

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Paspalum fimbriatum H.B.K., PATA DE CONEJO: *L. sorosis* (Williston), Stegmaier (1967a).

Paspalum longepedunculatum LeConte, BARESTEM PASPALUM: *L. sorosis* (Williston), Stegmaier (1967a).

Commelinaceae

Commelina diffusa Burm., DAYFLOWER: *L. commelinae* (Frost), Stegmaier (1966d).

Commelina elegans H.B.K., DAYFLOWER: *L. commelinae* (Frost), Frick (1959).

Commelina longicaulis Jacq., BABY DAYFLOWER: *L. commelinae* (Frost), Frick (1959).

Commelina virginica L., VIRGINIA DAYFLOWER: *L. commelinae* (Frost), Frick (1959).

Liliaceae

Allium cepa L., GARDEN ONION: *L. langei* Frick, Frick (1959); *L. trifolii* (Burgess) as *L. alliovora* Frick, Frick (1959); *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a). Infestations cited as onion: *L. trifolii* (Burgess) as *Agromyza pusilla* Meigen, Harris and Tate (1933); *L. trifolii* (Burgess) as *L. alliovora* Frick, Frick (1955).

Dicotyledoneae

Acanthaceae

Blechnum pyramidatum (Lam.) Urban, YERBA DE PAPAGAYO: *L. sorosis* (Williston), Stegmaier (1967a).

Amaranthaceae

Amaranthus retroflexus L., ROUGH PIGWEED: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Asclepiadaceae

Asclepias spp., MILKWEED: *Liriomyza* n. sp., Aldrich (1918) and Weiss and Dickerson (1921).

Boraginaceae

Heliotropium curassavicum (L.), SALT or SEASIDE HELIOTROPE: *L. sorosis* (Williston), Unpublished data. Rearing records are as follows: Miami, Florida, 29 Apr. 1966 (F.D. Matthews and C.E.S.); North Miami, Florida, 24 July 1966 (C.E.S.). New host record for *L. sorosis*, det. K. A. Spencer.

Capparidaceae

Cleome sp., SPIDERFLOWER: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Frick (1953b); *L. brassicae* (Riley), Stegmaier (1967b).

Gynandropsis pentaphylla DC., AFRICAN SPIDERHERB: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Frick (1953b).

Caryophyllaceae

Dianthus caryophyllus L., CARNATION: *L. langei* Frick as *L. dianthi* Frick, Frick (1958) and Frick (1959); *L. langei* Frick (1964).

Gypsophila sp., BABYBREATH: *L. trifolii* (Burgess), Stegmaier (1966a).

Chenopodiaceae

Beta vulgaris L., BEET: *L. langei* Frick, Frick (1952a) and Frick (1959); *L. trifolii* (Burgess), Stegmaier (1966a). Cited as sugar beet: *L. langei* Frick, Frick (1956).

Chenopodium album L., LAMB'S QUARTERS: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. trifolii* (Burgess), Stegmaier (1966a).

Spinacia oleracea L., SPINACH: *L. langei* Frick, Frick (1952a) and Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. trifolii* (Burgess), Stegmaier (1966a). Cited as spinach: *L. langei* Frick, Frick (1956).

Compositae

Aster spp., ASTER: *L. pullata* Frick, Frick (1952b) and Frick (1953b); *L. langei* Frick, Frick (1952a), Frick (1956), and Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Frick (1959) and Oatman (1959); *L. trifolii* (Burgess), Stegmaier (1966a).

Baccharis halimifolia L., GROUNDSEL TREE: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Baccharis sp., GROUNDSEL TREE: *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).

Bidens pilosa L., SPANISH NEEDLE, BUR MARIGOLD: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Bidens sp., *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).

Calendula officinalis L., POT-MARIGOLD: *L. munda* Frick, Stegmaier (1966b).

Callistephus chinensis (L.) Nees., CHINA ASTER: *L. trifolii* (Burgess), Stegmaier (1966a).

Chrysanthemum leucanthemum L., OXEYE DAISY: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959). Cited as chrysanthemum: *L. munda* Frick, Smith, Boswell, and Wave (1962).

Dahlia pinnata Cav., DAHLIA: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959).

Dahlia spp., cult. vars., DAHLIA: *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963); *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Emelia sonchifolia (L.) DC., TASSEFLOWER: *L. pullata* Frick, Sasaki (1964).

Erechtites hieracifolia (L.) Rafin., FIREWEED: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Erechtites sp., FIREWEED: *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).

Eupatorium coelestinum L., MISTFLOWER, EUPATORIUM: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Eupatorium serotinum Michx., LATE EUPATORIUM: *L. trifolii* (Burgess), Stegmaier (1966a).

Felicia bergeriana O. Hoffm., CINERARIA: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Flaveria trinervia (Spreng) C. Mohr.: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Flaveria sp.: *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).

Gaillardia aristata Pursh., GAILLARDIA: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Galinsoga ciliata (Raf.) Blake, QUICKWEED: *L. trifolii* (Burgess), Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b).

- Gerberia jamesoni* Bolus, TRANSVAAL DAISY: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).
- Gerbera* sp., *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).
- Gnaphalium spathalium* Lam., CUDWEED: *L. trifolii* (Burgess), Stegmaier (1966a).
- Helianthus annuus* L., COMMON SUNFLOWER: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a), Frick (1959) and Oatman (1959); *L. trifolii* (Burgess, Stegmaier (1966a). Cited as sunflower: *L. munda* Frick, Steyskal (1964).
- Helianthus* sp.: *L. assimilis* (Malloch), Frick (1959).
- Hymenopappus scabosaeus* L. Her.: *L. trifolii* (Burgess), Stegmaier (1966a).
- Lactuca canadensis* L., CANADA WILD LETTUCE: *L. trifolii* (Burgess), Stegmaier (1966a).
- Lactuca sativa* L., GARDEN LETTUCE: *L. langei* Frick, Frick (1959); *L. trifolii* (Burgess), Stegmaier (1966a).
- Lactuca* sp.: *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).
- Melanthera deltoidea* Michx.: *L. trifolii* (Burgess), Stegmaier (1966a).
- Senecio glabellus* Poir.: BUTTER-WEED: *L. trifolii* (Burgess), Stegmaier (1966a).
- Senecio vulgaris* L., COMMON GROUNDSEL: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Silybium marianum* Gaertn., BLESSED MILK THISTLE: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Solidago elongata* Nutt., CREEK GOLDENROD: *L. munda* Frick as *L. eupatorii* (Kaltenbach), Frick (1959).
- Solidago gigantea* Aiton, GIANT GOLDENROD: *L. munda* Frick as *L. eupatorii* (Kaltenbach), Frick (1953a).
- Solidago* sp., GOLDENROD: *L. munda* Frick as *L. eupatorii* (Kaltenbach), Frick (1956).
- Sonchus asper* (L.) Hill, PRICKLY SOW THISTLE: *L. trifolii* (Burgess), Stegmaier (1966a).
- Sonchus* sp.: *L. munda* Frick as *L. pusilla* (Meigen), Frick (1956).
- Synedrella nodiflora* L.: *L. trifolii* (Burgess), Stegmaier (1966a).
- Tagetes erecta* L., AZTEC (AFRICAN) MARIGOLD: *L. trifolii* (Burgess), Stegmaier (1966a).
- Tagetes patula* L., FRENCH MARIGOLD: *L. trifolii* (Burgess), Stegmaier (1966a).
- Tagetes* spp., MARIGOLD: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).
- Tridax procumbens* L., TRIDAX: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).
- Verbena* spp., VERBENA: *L. verbenicola* Hering, Frick (1953) and Frick (1956).
- Verbesina helianthoides* Michx., CROWNBEARD, GRAVELWEED: *L. munda* Frick, Stegmaier (1966b).
- Verbesina virginica* L., WHITE CROWNBEARD: *L. munda* Frick, Stegmaier (1966b).
- Xanthium* sp., COCKLEBUR: *L. trifolii* (Burgess), Stegmaier (1966a).
- Zinnia* spp., cult. vars., ZINNIA: *L. munda* Frick as *L. pictella* (Thom-

son), Oatman (1959) and Frick (1959); *L. trifolii* (Burgess), Spencer (1965a), and Stegmaier (1966a).

Cruciferae

Brassica arvensis (L.) B.S.P., CHARLOCK: *L. brassicae* (Riley), Frick (1952a) and Frick (1959).

Brassica campestris L., BIRD RAPE, COMMON YELLOW MUSTARD: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. brassicae* (Riley), Frick (1959) and Stegmaier (1967b). Cited as rape: *L. munda* Frick, Stegmaier (1966b).

Brassica napus L., RAPE: *L. brassicae* (Riley), Frick (1959) and Stegmaier (1967b).

Brassica nigra (L.) Koch., BLACK MUSTARD: *L. brassicae* (Riley), Frick (1952a) and Frick (1959).

Brassica oleracea L. var. *botrytis* L., BROCCOLI, CAULIFLOWER: *L. brassicae* (Riley), Frick (1952a), Frick (1959), and Stegmaier (1967b); *L. langei* Frick, Frick (1959). Cited as cauliflower: *L. munda* Frick, Steyskal (1964); *L. minutiseta* Frick, Frick (1952b) and Frick (1953b). Cited as broccoli: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Sasakawa (1964).

Brassica oleracea L. var. *capitata* L., CABBAGE: *L. brassicae* (Riley), Frick (1959) and Stegmaier (1967b); *L. munda* Frick, Stegmaier (1966b). Cited as cabbage: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Frick (1953b) and Sasakawa (1964). Cited as Chinese cabbage or Won Bok: *L. minutiseta* Frick, Frick (1953b). Cited as mustard cabbage: *L. brassicae* (Riley), Frick (1952b) and Frick (1953b).

Brassica rapa L., TURNIP: *L. brassicae* (Riley), Frick (1959) and Stegmaier (1967b); *L. munda* Frick, Stegmaier (1966b).

Brassica spp.: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959). *Cardamine konaensis* St. John, BITTERCRESS: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Sasakawa (1964).

Erysimum inconspicuum (S.Wats.) Mac M. (*E. parviflorum*), BLISTERCRESS, SMALLFLOWER *ERYSIMUM*: *L. brassicae* (Riley), Frick (1959). Stegmaier (1967b) erroneously cited *E. inconspicuum* as *Brassica inconspicuum* as a host plant for *L. brassicae*.

Lepidium virginicum L., FIELD CRESS, POOR MAN'S PEPPER, PEPPER GRASS: *L. brassicae* (Riley), Stegmaier (1967b).

Nasturtium spp.: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Radicula palustris (L.) Moench. (*Rorippa palustris*) BOG MARSHCRESS: *L. brassicae* (Riley), Frick (1959).

Raphanus activus L. var. *longipennatus* Bailey, CHINESE RADISH: *L. brassicae* (Riley), Frick (1952a) and Frick (1959).

Raphanus sativus L., GARDEN RADISH: *L. brassicae* (Riley), Frick (1952a) and Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Sisymbrium altissimum L., HEDGEMUSTARD: *L. brassicae* (Riley), Frick (1959).

Cited as daikon: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Frick (1952b).

Cucurbitaceae

Citrullus vulgaris Schrod., WATERMELON: *L. munda* Frick as *L. pic-*

- tella* (Thomson), Oatman (1959). Cited as watermelon: *L. munda* Frick, Steyskal (1964) and Harding (1965).
- Cucumis melo* L., cult. vars., CANTALOUPE, MUSKMELON: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a), Frick (1959), and Oatman (1959); *L. trifolii* (Burgess), Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b). Cited as cantaloupe: *L. munda* Frick, Steyskal (1964) and Harding (1965). The scientific name of cantaloupe is *C. melo* L. var. *cantaloupennis* Naud.
- Cucumis melo* L. var. *reticulatus* Naud., NETTED or NUTMEG MELON: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Cucumis sativus* L., CUCUMBER: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Stegmaier (1966b); *L. trifolii* (Burgess), Stegmaier (1966a).
- Cucumis* spp., *L. trifolii* (Burgess), Spencer (1965a).
- Cucurbita maxima* Duschene, WINTER SQUASH: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Cucurbita pepo* L., PUMPKIN, VEGETABLE-MARROW: *L. trifolii* (Burgess), Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b).
- Cucurbita* spp., *L. trifolii* (Burgess), Spencer (1965a). Cited as squash: *L. munda* Frick, Harding (1965) and Stegmaier (1966b); *L. trifolii* (Burgess), Stegmaier (1966a).

Euphorbiaceae

- Ricinus communis* L., CASTORBEAN: *L. munda* Frick, as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Stegmaier (1966b). Cited as castor bean: *L. munda* Frick, Steyskal (1964).

Labiatae

- Stachys bullata* Benth., HEDGENETTLE, PUFFNETTLE BETONY: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959).
- Stachys californica* Benth., HEDGENETTLE, CALIFORNIA BETONY: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a).

Leguminosae

- Albizzia lebek* Benth., WOMAN'S TONGUE: *L. schmidti* (Aldrich), Spencer (1963) and Stegmaier (1966c).
- Baptisia tinctoria* (L.) R. Br., FALSE INDIGO: *L. baptisiae* (Frost), Frick (1952a) and Frick (1959).
- Bauhinia purpurea* L., ORCHID TREE, BAUHINIA: *L. schmidti* (Aldrich), Stegmaier (1966c).
- Bauhinia* spp.; *L. schmidti* (Aldrich), Spencer (1963) and Stegmaier (1966c); *L. munda* Frick, Stegmaier (1966b).
- Canavalia microcarpa* (DC.) Piper, JACKBEAN: *L. minutiseta* Frick, Sasakawa (1964).
- Cajanus cajan* (L.) Millsp., PIGEONPEA: *L. munda* Frick, Stegmaier (1966b).
- Cassia occidentalis* L., COFFEE SENNA: *L. munda* Frick, Stegmaier (1966b).
- Cassia tora* L., SICLE SENNA: *L. munda* Frick, Stegmaier (1966b).
- Crotalaria incana* L., RATTLEBOX: *L. trifolii* (Burgess), Stegmaier (1966a).
- Crotalaria retusa* L., RATTLEBOX: *L. minutiseta* Frick, Sasakawa (1964).

- Lupinus* spp., LUPINE: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Stegmaier (1966b).
- Medicago lupulina* L., BLACK MEDIC: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a) and Frick (1959); *L. trifolii* (Burgess), Stegmaier (1966a).
- Medicago sativa* L., ALFALFA, LUCERNE: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959); *L. fricki* Spencer as *L. trifolii* (Burgess), Frick (1959); *L. fricki* Spencer, Spencer (1965a); *L. trifolii* (Burgess), Spencer (1965a).
- Medicago* spp., MEDIC: *L. fricki* Spencer as *L. congesta* Becker, (in part; Washington) Frick (1956).
- Melilotus alba* Desr., WHITE MELILOT, WHITE SWEETCLOVER: *L. fricki* (Spencer) as *L. trifolii* (Burgess), Frick (1959); *L. munda* Frick, Stegmaier (1966b); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Melilotus indica* All., YELLOW MELILOT, YELLOW SWEETCLOVER: *L. fricki* Spencer as *L. trifolii* (Burgess), Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Melissa officinalis* L., GARDEN BALM: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Phaseolus aureus* Roxb., MUNG BEAN: *L. trifolii* (Burgess), Stegmaier (1966a).
- Phaseolus limensis* Macf., LIMA BEAN: *L. phaseolunata* (Frost), Frick (1952a), Frick (1957b), and Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Frick (1959) and Oatman (1959). Cited as lima bean: *L. phaseolunata* (Frost), Frick (1956); *L. munda* Frick, Harding (1965).
- Phaseolus lunatus* L., SIEVA or CIVET BEAN: *L. munda* Frick, Stegmaier (1966b).
- Phaseolus* spp., BEANS: *L. trifolii* (Burgess), Spencer (1965a), and Stegmaier (1966a); *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963); *L. munda* Frick, Stegmaier (1966b). Cited as greenbeans: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Harding (1965) and Stegmaier (1966b); Cited as stringbeans: *L. trifolii* (Burgess), Stegmaier (1966a); Cited as polebeans: *L. munda* Frick, as *L. pictella* (Thomson), Oatman (1959); *L. minutiseta* Frick, Frick (1953b); Cited as beans: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959), *L. munda* Frick, Steyskal (1964), and Stegmaier (1966b).
- Phaseolus vulgaris* L., KIDNEY BEAN, COMMON GARDEN BEAN: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959).
- Pisum sativum* L., GARDEN PEA: *L. langei* Frick, Frick (1952a) and Frick (1959); *L. trifolii* (Burgess) as *L. archboldi* Frost, Frost (1962); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959). Cited as garden pea: *L. langei* Frick, Frick (1956); *L. munda* Frick, Harding (1965).
- Pisum* spp.; *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).
- Stizolobium deeringeanum* Bort., (*Mucuna deeringianum* (Bort.) Meer., FLORIDA VELVET BEAN: *L. schmidli* (Aldrich), Stegmaier (1966c).

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- Trifolium frageriferum* L., STRAWBERRY CLOVER: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Trifolium hybridum* L., ALSIKE CLOVER: *L. fricki* Spencer as *L. trifolii* (Burgess), Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. fricki* Spencer, Spencer (1965a).
- Trifolium incarnatum* L., CRIMSON CLOVER: *L. munda* Frick, Stegmaier (1966b); *L. pictella* (Thomson), Spencer (1966).
- Trifolium pratense* L., RED CLOVER: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Trifolium repens* L., WHITE CLOVER: *L. fricki* Spencer as *L. trifolii* (Burgess), Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a); *L. pictella* (Thomson), Spencer (1966).
- Trifolium* spp., CLOVER: *L. fricki* Spencer as *L. congesta* Becker (in part, Washington), Frick (1956).
- Vicia gigantea* (Hook, GIANT VETCH: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a) and Frick (1959).
- Vigna repens* Baker, COWPEA: *L. munda* Frick, Stegmaier (1966b).
- Vigna sinensis* (Torner) Savi, BLACK-EYED PEA, COMMON COWPEA: *L. trifolii* (Burgess), Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b). Cited as black-eyed peas: *L. munda* Frick, Steyskal (1964).
- Vigna villosa* Roth., COWPEA: *L. fricki* Spencer as *L. trifolii* (Burgess), Frick (1959); *L. fricki* Spencer, Spencer (1965a).
- Vigna* sp.; *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).

Loganiaceae

- Spigelia anthelmia* L., WEST INDIAN PINKROOT: *L. sorosis* (Williston), Stegmaier (1967a).

Malvaceae

- Anoda cristata* Schlecht., ANODA: *L. munda* Frick, Stegmaier (1966b).
- Gossypium hirsutum* L., UPLAND COTTON: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Gossypium* spp., COTTON: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959).
- Hibiscus esculentus* L., OKRA: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a). Cited as okra: *L. munda* Frick, Steyskal (1964) and Harding (1965); *L. minutiseta* Frick, Frick (1953b).
- Malva borealis* Wallm., MALLOW: *L. munda* Frick as *L. pictella* (Thomson), Frick (1957a).
- Malva nicaeensis* All., (*borealis*) MALLOW: *L. munda* Frick as *L. pictella* (Thomson), Frick (1959).
- Malva rotundifolia* L., DWARF MALLOW, RUNNING MALLOW: *L. munda* Frick, Oatman (1959).
- Sida acuta* Burm., SIDA: *L. munda* Frick, Stegmaier (1966b).

Nyctaginaceae

- Bougainvillea spectabilis* Willd., BOUGAINVILLEA: *L. schmidti* (Aldrich), Stegmaier (1966c).

Passifloraceae

- Passiflora caerulea* L., BLUECROWN PASSION FLOWER: *L. schmidti* (Aldrich), Stegmaier (1966c).

Passiflora pallens Poepp., PASSION FLOWER: *L. munda* Frick, Stegmaier (1966b).

Passiflora pallida L., CORKY-STEMMED PASSION FLOWER: *L. munda* Frick, Stegmaier (1966b).

Passiflora suberosa L. (*P. pallida* L.): *L. minutiseta* Frick, Sasakawa (1964).

Plantaginaceae

Plantago major L., BROAD-LEAVED PLANTAIN, RIPPLE SEED PLANTAIN: *L. sorosis* (Williston), Frick (1959); *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Plantago media L., SWEET PLANTAIN: *L. sorosis* (Williston), Frick (1959).

Plantago spp., PLANTAIN: *L. sorosis* (Williston), Frick (1959); *L. munda* Frick, Stegmaier (1966b); *L. sorosis* (Williston), Stegmaier (1967a).

Polygonaceae

Polygonium aviculare L., KNOTWEED, WIREGRASS: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Ranunculaceae

Aquilegia spp., COLUMBINE: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Ranunculus spp., BUTTERCUP: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Sapindaceae

Cardiospermum microcarpum H.B.K., HEARTSEED: *L. minutiseta* Frick, Sasakawa (1964).

Scrophulariaceae

Antirrhinum majus L. SNAPDRAGON: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Solanaceae

Capsicum frutescens L. var. *grossum* Bailey, BELL PEPPER: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).

Capsicum spp., PEPPER: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a). Cited as pepper: *L. munda* Frick, Harding (1965).

Cestrum diurnum L., DAY CESTRUM, DAY JESSAMINE: *L. minutiseta* Frick, Sasakawa (1964); *L. munda* Frick, Stegmaier (1966b).

Cestrum nocturnum L., NIGHT BLOOMING CESTRUM, NIGHT BLOOMING JESSAMINE: *L. munda* Frick, Stegmaier (1966b).

Datura metalooides DC., TOLGAUCHA, SACRED *DATURA*: *L. munda* Frick, as *L. pictella* (Thomson), Frick (1959) and Oatman (1959).

Datura sp., *DATURA*: *L. pullata* Frick, Frick (1952b).

Lycopersicum esculentum Mill., TOMATO: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Frick (1959) and Stegmaier (1966b); *L. trifolii* (Burgess), Stegmaier (1966a). Cited as tomato: *L. munda* Frick, Frick (1957a), Steyskal (1964), and Harding (1965); *L. munda* Frick as *L. guytona* Freeman, Freeman (1958); *L. pullata* Frick, Frick (1953b); *L. minutiseta* Frick, Frick (1953b).

Lycopersicum pimpinellifolium Dunal, CURRANT TOMATO: *L. minutiseta* Frick, Frick (1953b).

- Petunia* spp., **PETUNIA**: *L. langei* Frick, Frick (1959); *L. trifolii* (Burgess), Stegmaier (1966a).
- Physalis lanceifolia* Nees., **LANCE-LEAFED GROUND CHERRY**: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Physalis* sp., **GROUND CHERRY, HUSK TOMATO**: *L. trifolii* (Burgess), Stegmaier (1966a).
- Solanum melongena* L. var. *esculentum* Nees., **EGGPLANT**: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959).
- Solanum melongena* L. **EGGPLANT**: *L. trifolii* (Burgess), Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b). Cited as eggplant: *L. munda* Frick, Steyskal (1964) and Harding (1965); *L. minutiseta* Frick, Frick (1952b) and Frick (1953b).
- Solanum nigrum* L., **BLACK NIGHTSHADE**: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a); *L. munda* Frick, Stegmaier (1966b).
- Solanum* sp.; *L. trifolii* (Burgess) as *L. archboldi* Frost, Spencer (1963).
- Solanum tuberosum* L., **GARDEN POTATO**: *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. munda* Frick, Frick (1959); *L. trifolii* (Burgess), Stegmaier (1966a). Cited as potato: *L. munda* Frick, Steyskal (1964), Frick (1957a), and Harding (1965).
- Note: *L. langei* Frick, formerly a synonym of *L. bryoniae* (Kaltenbach) and synonymised as such by Spencer (1963) and resurrected as *L. langei* Frick, by Spencer (1965b) is represented as a leaf miner only on *Petunia* sp. within the family Solanaceae.

Tropaeolaceae

- Tropaeolum* spp., **GARDEN NASTURTIUM**: *L. brassicae* (Riley), Frick (1959), Frick (1957a), and Stegmaier (1967b). Cited as nasturtium: *L. brassicae* (Riley) as *L. hawaiiensis* Frick, Frick (1952b) and Frick (1953b).

Turneraceae

- Piriqueta caroliniana* (Walt.) Urban., **CAROLINA PIRQUETA**: *L. trifolii* (Burgess), Unpublished data. Rearing records are as follows: Hialeah, Florida, 13 July 1966 (C.E.S.). New host plant record for *L. trifolii* (Burgess), det. K.A.Spencer.

Umbelliferae

- Apium graveolens* L. var. *dulce* Pers., **CELERY**: *L. langei* Frick, Frick (1952a) and Frick (1959). *L. munda* Frick as *L. pictella* (Thomson), Oatman (1959); *L. trifolii* (Burgess), Stegmaier (1966a).
- Daucus carota* L. var. *sativa* LC., **CARROT**: *L. trifolii* (Burgess), Stegmaier (1966a).
- Hydrocotyle umbellata* L., **PENNYWORT**: *L. munda* Frick, Stegmaier (1966b).
- Hydrocotyle verticillata* Thumb., **WHORLED PENNYWORT**: *L. minutiseta* Frick, Sasakawa (1964).

Verbenaceae

- Lippia nodiflora* (L.) Michx., **CAPE WEED, FOG FRUIT, MATCH-STICK WEED**: *L. sorosis* (Williston), Stegmaier (1967a).
- Verbena* sp., **VERBENA**: *L. verbenicola* Hering, Frick (1959).

Zygophyllaceae

Kallstroemia maxima (L) T. and G., CALTROP: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

Tribulus terrestris L., CALTROP, PUNCTURE VINE: *L. trifolii* (Burgess), Spencer (1965a) and Stegmaier (1966a).

CITATIONS OF COMMON PLANT NAMES

Common plant names were obtained from the following references: Small (1933), Kelsey and Dayton (1942), and from Lakela and Craighead (1965). Dr. Kenneth R. Langdon, Florida Department of Agriculture, kindly helped to complete a long list of common plant names which the author could not locate in published literature.

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LITERATURE CITED

- Aldrich, J. M. 1918. Notes on Diptera. *Psyche* 25: 30-35.
- Freeman, C. C. 1958. *Liriomyza guytona*, a new species of agromyzid leaf miner. *Ann. Entomol. Soc. Amer.* 51 (4): 344-345.
- Frick, K. E. 1951. *Liriomyza langei*, a new species of leaf miner of economic importance in California. *Pan.-Pac. Entomol.* 21: 81.
- Frick, K. E. 1952a. A generic revision of the family Agromyzidae with a catalogue of New World Species. *Univ. Calif. Publ. Entomol.* 8 (8): 339-452.
- Frick, K. E. 1952b. Four new Hawaiian *Liriomyza* species and notes on other Hawaiian Agromyzidae (Diptera). *Proc. Hawaii Entomol. Soc.* 14 (3): 509-518.
- Frick, K. E. 1953a. Some additions and corrections to the species list of North American Agromyzidae (Diptera). *Can. Entomol.* 85 (2): 68-76.

- Frick, K. E. 1953b. Further studies on the Hawaiian Agromyzidae (Diptera) with descriptions of four new species. Proc. Hawaii Entomol. Soc. 15 (1): 207-215.
- Frick, K. E. 1955. Nearctic species in the *Liriomyza pusilla* complex, No. 3. *L. allivora* a new name for the Iowa onion miner. J. Kans. Entomol. Soc. 28 (3): 88-92.
- Frick, K. E. 1956. Nearctic species in the *Liriomyza pusilla* complex, No. 1. Introduction. (Diptera: Agromyzidae). Pan.-Pac. Entomol. 32 (1): 11-18.
- Frick, K. E. 1957a. Nearctic species in the *Liriomyza pusilla* complex, No. 2, *L. munda* and two other species attacking crops in California. Diptera: Agromyzidae). Pan.-Pac. Entomol. 33 (2): 59-70.
- Frick, K. E. 1957b. Nomenclatural changes and type designations of some New World Agromyzidae (Diptera). Ann. Entomol. Soc. Amer. 50 (2): 198-205.
- Frick, K. E. 1958. *Liriomyza dianthi* n. sp., a new pest of carnations in California. Proc. Entomol. Soc. Wash. 60 (1): 1-5.
- Frick, K. E. 1959. A synopsis of the species of Agromyzid leaf miners described from North America. (Diptera). Proc. U. S. Nat. Mus. 108: 347-465.
- Frick, K. E. 1964. *Liriomyza dianthi*, a new synonym of *L. langei* Frick. Pan.-Pac. Entomol. 40 (1): 11-12.
- Frost, S. W. 1924. A study of the leaf-mining Diptera of North America. Mem. Cornell Univ. Agr. Expt. Sta. 78. 228p.
- Frost, S. W. 1962. *L. archboldi*, a new species (Dipt., Agromyzidae). Entomol. News. 73 (2): 51-53.
- Griffiths, G. C. D. 1963. A revision of the Palaerctic species of the *nigripes* group of the genus *Agromyza* Fallen (Diptera, Agromyzidae) Tijdschr. Entomol. 106: 113-168.
- Harding, J. A. 1965. Parasitism of the leaf-miner, *Liriomyza munda*, in the Winter Garden Area of Texas. J. Econ. Entomol. 58 (3): 442-443.
- Harris, H. M. and H. D. Tate. 1933. A leaf-miner attacking the cultivated onion. J. Econ. Entomol. 26: 515-516.
- Kelsey, H. P. and W. A. Dayton. 1942. Standardized plant names. J. Horace McFarland Co. 675p.
- Lakely, O. and F. C. Craighead. 1965. Annotated checklist of the vascular plants of Collier, Dade, and Monroe Counties of Florida. Fairchild Tropical Garden and the Univ. of Miami Press. 95p.
- Nowakowski, J. T. 1962. Introduction to a systematic revision of the family Agromyzidae (Diptera) with remarks on the host plant selection by these flies. Ann. Zool. (Polska Akad. Nauk., Inst. Zool.). 20 (8): 67-183.
- Oatman, E. R. 1959. Host plant range studies of the melon leaf miner, *Liriomyza pictella* (Thomson) (Diptera: Agromyzidae). Ann. Entomol. Soc. Amer. 52: 739-741.
- Sasakawa, M. 1961. A study of the Japanese Agromyzidae (Diptera). Part 2. Pac. Insects 3 (2-3): 307-472.
- Sasakawa, M. 1964. A revision of the Hawaiian *Liriomyza*. Proc. Hawaii Entomol Soc. 18 (3): 429-433.
- Small, J. K. 1933. Manual of the southeastern flora. Chapal. Hill. Univ. of N. C. Press. 1554p.
- Spencer, K. A. 1961. Notes on the African Agromyzidae. -3. J. Entomol. Soc. So. Afr. 24: 322-324.

- Spencer, K. A.* 1963. A synopsis of the Neotropical Agromyzidae (Diptera). *Trans. Roy. Entomol. Soc., London.* 115: 291-389.
- Spencer, K. A.* 1965a. A clarification of the status of *Liriomyza trifolii* (Burgess) and some related species (Diptera: Agromyzidae). *Proc. Entomol. Soc. Wash.* 67 (1): 32-40.
- Spencer, K. A.* 1965b. Agromyzidae (Diptera) from the Azores and Madeira. *Boletim Do Museu Municipal Do Funchal.* 19 (85): 104-110.
- Spencer, K. A.* 1966. New and interesting Agromyzidae (Diptera) from Florida. *Stutt. Beitr. Zur. Natur.* 158: 1-20.
- Stegmaier, C. E., Jr.* 1966a. Host plants and parasites of *Liriomyza trifolii* in Florida (Diptera: Agromyzidae). *Fla. Entomol.* 49 (2): 75-80.
- Stegmaier, C. E., Jr.* 1966b. Host plants and parasites of *Liriomyza munda* in Florida (Diptera: Agromyzidae). *Fla. Entomol.* 49 (2): 81-86.
- Stegmaier, C. E., Jr.* 1966c. Host plants and parasites of *Liriomyza schmidti* in Florida (Diptera: Agromyzidae). *Fla. Entomol.* 49 (2): 119-122.
- Stegmaier, C. E., Jr.* 1966d. *Liriomyza commelinae*, a leaf miner on *Commelina* in Florida (Diptera: Agromyzidae). *Fla. Entomol.* 49 (3): 147-149.
- Stegmaier, C. E., Jr.* 1967a. Notes on new host plant records and parasites of *Liriomyza sorosis* in Florida (Diptera: Agromyzidae). *Fla. Entomol.* 50 (2): 133-136.
- Stegmaier, C. E., Jr.* 1967b. Host plants of *Liriomyza brassicae*, with records of their parasites from south Florida (Diptera: Agromyzidae). *Fla. Entomol.* 50 (4): 257-261.
- Steyskal, G. C.* 1964. Descriptive and synonymical notes on *Liriomyza munda* (Diptera: Agromyzidae). *Ann. Entomol. Soc. Amer.* 57 (3): 388-389.
- Weiss, H. B.* and *E. L. Dickerson.* 1921. Notes on milkweed insects in New Jersey. *J. New York Entomol. Soc.* 29: 123-45.