

NOTE

A LIST AND PRELIMINARY OBSERVATIONS ON NATURAL ENEMIES OF THE
LEAF MINER, *LIRIOMYZA TRIFOLII* (BURGESS) (DIPTERA: AGROMYZIDAE) IN
ISRAEL³

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The following data were compiled during a recent study (1981-1984) on the biology and natural enemies of *Liriomyza trifolii* (Burgess) in Israel. This study was conducted in some greenhouses in the Coastal Plain, approximately 15 km north-east of Tel Aviv, as well as in the laboratory. The ornamentals grown in these greenhouses, *Gerbera*, *Gypsophila*, and to a lesser extent *Chrysanthemum*, were all infested by the pest. Most of the hymenopterous parasitoids were reared from *L. trifolii* larvae infesting *Gypsophila*. The parasitoids were identified by M.J.G. and the Diptera by A.F.

HYMENOPTERA *Eulophidae*

1. *Chrysocharis* sp.
2. *Chrysonotomyia* sp.
3. *Diglyphus isaea* (Walker)
4. *Diglyphus crassinervis* Erdos
5. *Ratzeburgia incompleta* Boucek
6. *Hemiptarsenus dropion* (Walker)
7. *Hemiptarsenus* sp. near *semialbiclavus* Girault
8. *Pnigalio soemias* (Walker)
9. Unidentified eulophine *Braconidae*
10. Unidentified

DIPTERA *Empididae*

11. *Drapetis subaenescens* (Collin).
12. *Tachydromia annulata* Fallen? *Muscidae*
13. *Coenosia attenuata* (Zetterstedt)?

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The first 5 eulophids were the most abundant parasitoids. The first 4 species already occurred in early samples (January), however, a considerable increase of the parasitoid populations (especially in *Gypsophila*) took place in spring and early summer (April-June). This fact does not render these parasitoids as potential bio-control agents for *Gypsophila* in the Coastal Plain, because growers usually do not harvest after April, when the parasitoids become numerous and possibly effective.

The dipteran predators occur in and around greenhouses, especially in the cooler season (October to February), corresponding with the main growing season. Preliminary experiments with the two Empididae species have been conducted in the laboratory (Tel Aviv University), by offering food to field collected adults placed in 10x2 cm glass tubes. *Drapetis subaenescens* was found to kill an adult of *L. trifolii* about every hour during daytime. Four specimens lived 1 month in the laboratory and each consumed between 64 and 81 *L. trifolii* during this period. Most predators survived up to 3 days without food. *Tachydromia annulata* (?) preferred *L. trifolii* adults over parasitic wasps of the same average size offered in the same vials. One of the *Gypsophila* growers claimed that he had achieved satisfactory control of the pest without using insecticides, by keeping his greenhouse closed during most of the winter. This infested greenhouse contained at least 2 of the predator species. These preliminary observations suggest that the predators may prove to be good bio-control agents. However, we are still facing great difficulties in using these species because of our complete ignorance of their life cycle and how to rear them.