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DIGLYPHUS POPPOEA WALKER (HYM: EULOPH.) AS AN IMPORTANT NATURAL CONTROL AGENT OF *LIRIOMYZA HUIDOBRENSIS* (BLANCHARD) (DIPT.: AGROMYZIDAE) IN PORTUGAL

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Recent studies on leafminers in Portugal, conducted in some greenhouses in the Oeste region, aproximately 40-50 Km north of Lisbon, allowed the characterization and evaluation of the leafminers parasitoids population.

The hymenoptorous parasitoids were reared from *Liriomyza huidobrensis* (Blanchard) larvae sampled from greenbeans, lettuce, tomato and pepper.

In 1993 about 39% of the samples revealed the presence of *Diglyphus poppoea* Walker. During 1994 and 1995 this species had similar representativity and was present all over the year. The relative importance as natural control agent is presented and its abundance is discussed, taking into account the differences between the greenhouses where the samples were taken.

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SYNTHESIS OF A TERATOCYTE-SPECIFIC PROTEIN IN THE BRACONID WASP, *PERILITUS COCCINELLAE* SCHRANK (HYMENOPTERA: BRACONIDAE)

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During parasitism, *Perilitus* teratocytes became hypertrophic and enlarged about ten-fold in diameter from 50 to 500 um on average. The increase in protein content of the teratocytes mirrored the increase in protein synthesis rate. Non-denaturing-PAGE revealed that the teratocytes contained a major polypeptide with a high molecular weight of about 540 kDa. The teratocytes were cultured in vitro in a medium containing ^{35}S-methionine. Both the proteins from the incubated teratocytes and the medium were subjected to PAGE followed by fluorography. The fluorogram revealed that the teratocytes synthesized the 540 kDa protein. The teratocytes had a tendency to accumulate the synthesized teratocyte proteins without release. We clarified the possibility of the active secretion by a pulse-chase experiment. Finally, we discuss a possible function of the teratocytes in *P. coccinellae*.

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DISTRIBUTION AND DORMANCY OF THE PARASITOIDS ATTACKING *CHROMATOMYIA FUSCULA* (ZETTERSTEDT) (DIPTERA : AGROMYZIDAE) IN NORWAY

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The larvae of *Chromatomyia fuscula* mine the leaves of cereals and other grasses, and the species is a cereal pest in parts of Norway. It pupates in the leaf, and has one generation per year (adults overwintering). It is attacked by chalcid (Eulophidae and Pteromalidae) and braconid (Braconidae) parasitoids.

In July - Sept. 1994, barley leaves with mines were collected from 18 fields, ranging from 58 to 69.5°N and from 5 to 540 m above sea level. The parasitoids emerging from the leaves were identified and counted, followed by an inspection of each mine. The number of species in a sample of 45 leaves ranged from 1 to 9 (mean=4.6) and decreased with the latitude and increased with the number of specimens (mean number=48). The most numerous parasitoid was *Cyrtogaster vulgaris* (Walker) (Pteromalidae), a pupal parasitoid overwintering as an adult. It was not found in the three highest (>300m), nor in the three northernmost (>65°) localities.

The mine inspection revealed dormant parasitoid larvae in 80% of the localities north of 60° (N=11). These larvae were kept at about 5°C over winter, and adults of at least 6 different species, both larval and pupal parasiotids, emerged the following spring. Further south these species emerge in the late summer. North of 60° they seem to have a mixed strategy (i.e. they were found both as newly emerged adults and as larvae in the autumn under lab conditions).

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MALAISE CATCHES OF CHALCID PARASITOIDS OF THE LEAFMINER *CHROMATOMYIA FUSCULA* (ZETTERSTEDT) (DIPTERA: AGROMYZIDAE) DURING FOUR YEARS IN AN ORGANIC BARLEY FIELD AND ITS SURROUNDING VEGETATION .

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The leafminer *Chromatomyia fuscula* is an annual pest in cereals and grasses in Norway. Malaise traps were placed in an organically managed barley field and in the surrounding vegetation at Ås, southern Norway, in 1992-95. The chalcid parasitoid species which we previously had reared from *C. fuscula* on barley were sorted out.

The total number of chalcid parasitoid specimens in the traps varied considerably from year to year. Each year the traps collected about 9-14 of the ca 15 species totally reared from the leafminer. The dominant species alternated between the pupal parasitoid *Cyrtogaster vulgaris* (Walker) (1993, 1995) and the larval parasitoid *Diglyphus begini* (Ashmead)(1992 in the field, 1994). *D. begini* had a higher relative frequency in the field compared to the edge area, whereas the opposite was the case for *C. vulgaris*. Each year, at least one of these two species also dominated the parasitoid complex that emerged from barley samples infested with the leafminer.

The phenology and sex ratio are shown for some dominant species.