HYPERPREDATORS OF THE PEAR PSYLLA, *Psylla pyricola* Foerster[1] (HOMOPTERA: CHERMIDAE)

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Torre-Bueno (1950) defines a hyperparasite as "a form parasitic upon another parasite." Hence a hyperpredator may be defined as a predator that attacks another predator. This note concerns hyperpredators in relationship to the pear psylla, *Psylla pyricola* Foerster. Hyperpredators were observed in a bionomics study of the pear psylla started in the Kootenay Valley of British Columbia in 1960 and continued in the Okanagan Valley in 1961, 1962, and 1963.

In the Kootenay Valley larval and adult lacewings (*Chrysopa oculata* Say) were found entrapped in spider webs in the crotches of pear trees and spiders (*Philodromus* spp.) were seen with lacewing adults in their mandibles.

In the Okanagan Valley, hyperpredation was observed between anthocorid nymphs (*Anthocorus melanocerus* Reut.) and lacewing larvae. Success in this type of predation was reversible, and depended on the relative sizes of the predators. The larger predator always emerged victor, e.g., a fifth instar anthocorid nymph could overcome a first or second instar neuropteran larva (Fig. 1A) but a third instar neuropteran larva could easily overcome a second third or even a fifth instar anthocorid nymph (Fig. 1B). Spiders were also observed feeding on anthocorid nymphs and adults and on lacewing larvae and adults. As well, anthocorids and lacewings were observed entrapped in spider webs in tree canopies.

The role of ants (*Lasius sitkaensis* Pergande) in relation to the pear psylla is unclear. On two occasions ants were seen threatening and molesting lacewing larvae that were feeding on second, third, and fourth instar psyllid nymph. On three occasions ants were noted in close proximity to sluggish or semiparalyzed lacewing larvae. Observations in July and August indicate that ants protect psyllid nymphs but in late September and October ants were observed carrying freshly killed psyllid nymphs along the limbs and down the trunks of pear trees.

Raphidians (*Agulla* sp.) were observed in six orchards and on test trees in the laboratory feeding on anthocorid nymphs and adults. This was the only predator observed in four years that caught flying pear psyllids.

Hyperpredators discussed here were identified by the Entomology Research Institute, Canada Department of Agriculture, Ottawa, Canada.

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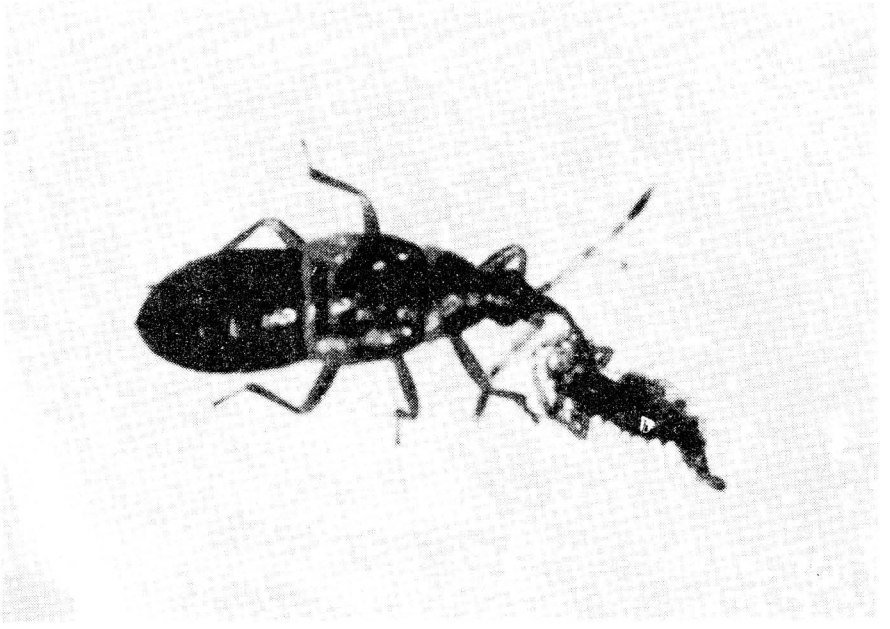
Reference

1 Torre-Bueno, J. R. de la. 1950. A Glossary of Entomology. Brooklyn Ent. Soc., Brooklyn, New York, U.S.A.



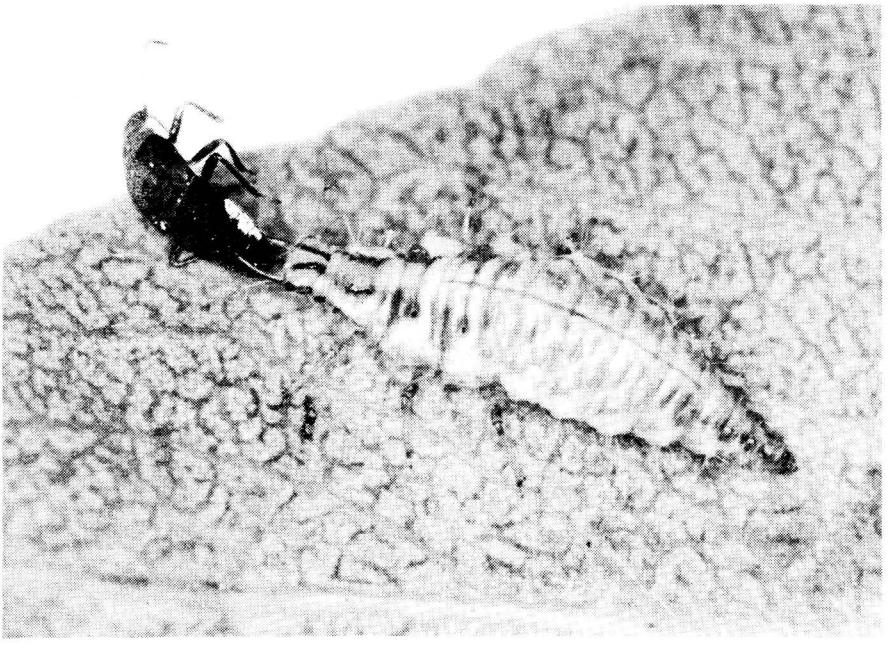


Figure 1A—Fifth instar anthocorid nymph feeding on a 1st instar lacewing larva. About 20X.

Figure 1B—Third instar lacewing larva feeding on a 5th instar anthocorid nymph. About 8X.