

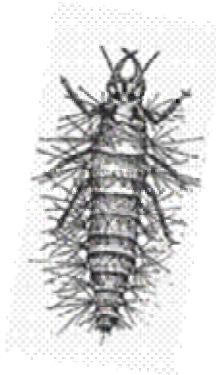
Lacewings and Related Neuropterans

Neuropterans are not well known but they are important beneficials in the landscape. Most of the various members of this insect order are predators as larvae (the hellgrammite in streams is one well-known member) and some, such as lacewings, are beneficial predators both as larvae and adults.

Larval shape and size varies widely in neuropterans- adults are elongate and usually have large membranous wings with a large network of veins (hence the name). Neuropterans fold the wings over the body, unlike dragon and damselflies, which they somewhat resemble.

Green Lacewings. Lacewings are very common, naturally-occurring predators in many crops, on landscape plants and in the home garden. They are predators both as larvae and adults. Adult green lacewings have soft, slender, green bodies, large membranous wings (green veins), long hair-like antennae, and prominent compound eyes, some golden in color. The eggs are small and distinctive as they are laid on hair-like stalks about 1/3 inch off the vegetation surface. Larvae are elongate (alligator-like), broad set in the middle and tapered towards the rear; the head has noticeable sickle-shaped mouthparts. Development takes 4 to 6 weeks.

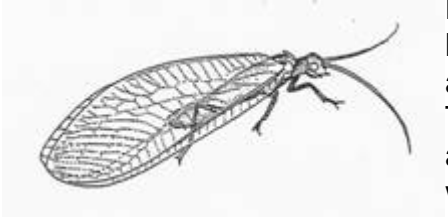
Green lacewings tend to specialize on feeding on aphids and mites. adults lay their eggs on vegetation near aphid colonies or on mite-infested plants, They also feed on other types of soft-bodied insects, including mealybugs, scale insects, leafhoppers, thrips, and even small caterpillars. Some can apparently detect leafminer larvae within their mines and will pierce the leaves in order to feed on them. They are excellent predators of tiny spider mites.



Different lacewing species tend to search in different habitats; some prefer low-lying herbaceous plants or grasses whereas others tend to be more arboreal. They are weak flyers but are mobile - some come to lights at night. Green lacewings are available commercially for purchase. Eggs, larvae, and adults can be purchased. Adult lacewings all require carbohydrate-rich foods such as aphid honeydew or flower nectar.

Brown Lacewings. Brown lacewings resemble green lacewings, but are generally smaller and brown, not green. Larvae are similar to those of green lacewings with the mandibles are not so prominently developed. The eggs are

not stalked as in green lacewings.



Brown lacewings are less known but can be found in many habitats, especially within tree canopies. They are much less appreciated as predators compared to their green cousins. They feed primarily on various types of Homoptera, such as aphids, mealybugs, scale insects, and the nymphs of whiteflies. They are not commercially available.

Dusty-Wings. Dusty-wings are among the smallest of the neuroptera; adults are about $\frac{1}{4}$ inch or less. the common name of the family is derived from the presence of a white to grayish powdery wax that covers the wing surfaces; otherwise, they resemble lacewings. Dusty-wings are not common. They feed on small prey such as aphids, scale insects, and spider mites. Occasionally, they are abundant when there is an outbreak of their prey.