

Beneficial Insects

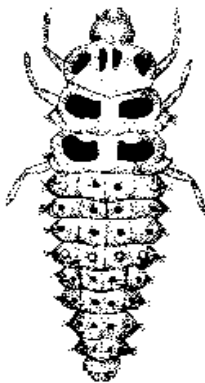
In the past few years there has been considerable interest in using beneficial insects to control insects that damage plants. The use of natural enemies against important insect pests is nothing new. Entomologists have practiced this kind of control for many years.

As humankind's ecological mistakes become more apparent, it's reassuring to know that nature has ways to keep some destructive insects from overpopulating. By maintaining conditions favorable to insect predators and parasites, farmers and homeowners can help beneficial insects be more effective pest control agents.

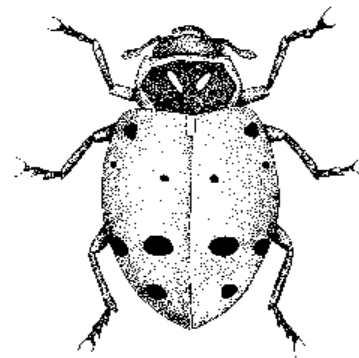
Among the most important beneficial insects native to this area are ladybird beetles (ladybugs), lacewings, ground beetles, praying mantids, dragonflies, wasps, syrphid flies (flower flies), antlions (doodlebugs), lightning bugs, tiger beetles and honey bees. To take full advantage of helpful insects, you have to identify and protect them from indiscriminate pesticide use. Except in severe outbreaks, many plant pests can be controlled by natural predators.

Ladybird beetles (or Ladybugs)

These small, bright orange-red (or yellow) beetles (order *Coleoptera*) with black elytra spots are familiar to almost everyone. However, they can also be tan, black, or red. They can be solid colors, have spots or marked with other colors which contrast with tan, black or red. Many people don't recognize the immature or larval stage of the insect, which is just as voracious as the adult in eating



Ladybug larva



Ladybug adult

pest insects. Larvae of most ladybug species are alligator-shaped, and blue-black with orange spots in color. An introduced species (Multicolored Asian Lady Beetle) has become a winter household pest because it congregates in numbers to overwinter in our homes in wall voids; in spring it accidentally ends up in living quarters.

Eggs are yellowish-orange and spindle-shaped. Females lay from 300

to 1,500 eggs during their lifetime, depositing them in compact clusters on foliage or in ground litter. Both adults and larvae feed, chiefly on aphids, but they also eat scale insects, mealybugs, spider mites and small egg masses of other insects. A single beetle can consume more than 5,000 aphids in its life.

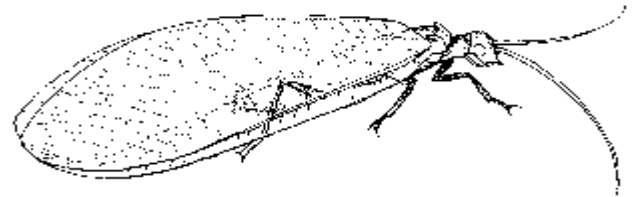
Lacewings

Named for its gauzy green (sometimes brown) wings, this insect (order *Neuroptera*) has jewel-like gold eyes and produces aphid-devouring larvae. The grayish-brown larva, often called aphid lion, is 3/8 inch long, with sharp curved jaws that extend beyond its head. It feeds on aphids, scales, thrips mealybugs, mites, and insect eggs. It



Lacewing larva

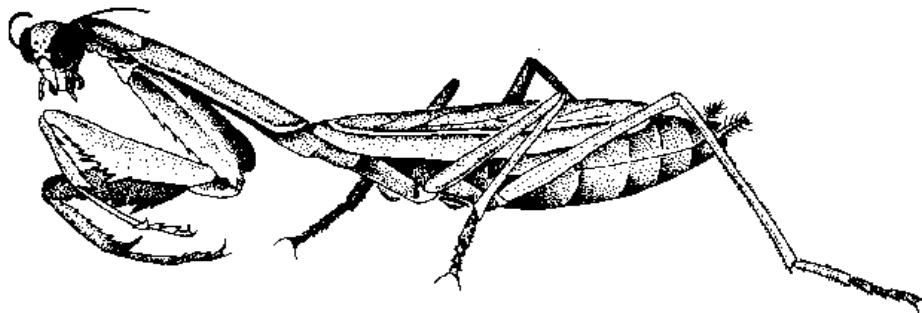
can eat 100 or more insects a day.



Lacewing adult

Praying mantids

These exotic-looking insects (order *Mantodea*) will feed on a variety of pests, but they don't discriminate and will also eat beneficial insects. They wait to ambush their prey with front legs held in the raised position (hence the name). They're also cannibalistic if food is in short supply. Although they've been observed on field and garden crops, their primary value as predators appears to be controlling harmful meadow and pasture insects such as crickets and grasshoppers. Contrary to popular belief, they are not protected by law and are not endangered. Their coloration protects them from being seen.



Dragonflies

These large insects (order *Odonata*) dart and hover over ponds and streams with a freedom that daredevil pilots might envy. Dragonflies catch and eat their prey in flight. Mosquitoes and other flies make up a large part of their diet. They are sometimes called mosquito hawks.

Braconids and other wasps

There are many species of parasitic wasps (order *Hymenoptera*). Some are so tiny they are seldom seen. They lay eggs in the bodies of other insects, including caterpillars, aphids, thrips, and borers. Once hatched, larvae of parasitic wasps feed on the body fluids of the hosts. Some of the most common of these wasps parasitize tomato hornworms and Mexican bean beetles. The white sacks sometimes seen on the back of caterpillars are the pupal cases of wasps, which hatch out to attack more caterpillars.

Syrphid flies

Commonly called flower flies (order *Diptera*); adults are brightly colored, resembling wasps and bees as they hover over flowers. They don't sting. Larvae of most species feed on aphids, as well as the young of social insects like termites and ants.

Ant lions

Also called doodlebugs, these queer-looking creatures (order *Neuroptera*) have long, sickle-shaped mouth parts. They're more common in the southern and southwestern United States, but a few species are found locally. The adults are attracted to lights and can be found resting near them. The larvae construct and hide in cone-shaped pits in the ground (mostly in sandy soils) and wait for ants to stumble in. Once inside the pit, the ants slide on the sloping wall and fall to the bottom, where they are quickly gobbled up.

Ground beetles

The beetles (order *Coleoptera*) contains hundreds of species. Though they greatly vary in size, shape, and color, most are flat, dark and shiny. They hide under stones, logs, bark, and debris, and rarely fly, preferring to run on the ground surface. Most hide during the day and feed at night. Most ground beetles prey on insects or snails. On warm summer evening they can become uninvited indoor visitors because they are attracted to lights.

Lightning bugs

During early summer evenings, adult lightening bugs (order *Coleoptera*) are a familiar sight as they fly about flashing their yellow lights. Most larvae are luminescent, too--hence the name "glow worm." The larvae live in the soil and feed on various small insects and snails.

Buying beneficial insects

Some predatory insects such as ladybird beetles and praying mantids are sold commercially to control plant pests. Unfortunately it seldom pays to buy beneficial insects to release on your own property as most will quickly disperse upon release and fly to other crop plantings some distance away. It is best to vary plant diversity and use pesticides sparingly to encourage their reproduction and visitation on your property.

Plant growers will be better satisfied with natural control if they conserve the beneficial insects already present in the area. Use insecticides carefully and learn to recognize eggs and immature stages of beneficial species. In home gardens, remove the ants that tend aphids, scales, and mealybugs, since ants interfere with the natural enemies of many pests.