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Beneficial Insects - Nature's Pest Control

With the ecological mistakes of humans becoming more apparent, it is reassuring to know that nature can establish certain controls that prevent some destructive insects from overpopulating the environment. We can encourage and prepare the conditions for an increase in insect predator populations. The first step is to be able to identify the beneficial insects.

Some predatory insects such as ladybird beetles and praying mantids are available for sale. Ladybird beetles purchased in the spring have likely been collected during their winter hibernation, and upon release will soon fly away, often far from their release site. Buying predatory insects for releasing in the home garden in order to control insect pests is likely to result in disappointment. It may be more useful to attempt to conserve the natural predators already present in the area.

Lady Beetles (Ladybird Beetles; Ladybugs)

Family: Coccinellidae

Adult.

Larva.

Lady beetles are small, oval, convex and often brightly colored. Most of this family are predaceous both as larvae and adults, and feed chiefly on aphids. They also eat scale insects and mealybugs. Ladybird Beetles are found frequently on vegetation where aphids are numerous. They hibernate as adults, commonly under leaves and debris in large aggregations. One of the native species is the Two-spotted Lady Beetle, which is orange-red, with one black spot on each wing cover.

A species often seen on houses in the autumn and indoors over winter is the Multicolored Asian Lady Beetle, which varies in color and number of spots.

Ground Beetles

Family: Carabidae

The family Carabidae (Ground Beetles) has many hundreds of species that vary in size, shape and color. Most of these insects are somewhat flattened, dark brown or black, and shiny. They may be found under stones, logs, bark, debris or running about on the ground. Most of them hide during the day and feed at night.

Nearly all are predaceous on other insects and many are beneficial by feeding on pest insects. There are also some Ground Beetles that feed on slugs and snails.

Adult.

Praying Mantids

Family: Mantidae

Nymph.

Egg case.

Adults and the immature (nymph) stages of the praying mantis look similar. These are highly predaceous insects that feeds on a variety of other insects. The mantids wait to ambush their prey with the front legs in an upraised position that gives them their name.

Praying mantis egg cases may be found on tree twigs and in fields, and for some fun, you may wish to watch them hatch in your own garden next spring. Eggs cases may be gathered by cutting the twig you find them on, then tying the case to a branch in your garden. The young come tumbling out of their case by the hundreds in the spring. Praying mantids are cannibalistic and will eat one another. Only a few will survive under home garden conditions.

Dragonflies

multiple Families in the Order Odonata

Adult.

Nymph.

Adult dragonflies can be seen actively hunting flying insects, but tend to be more common closer to water. The adults hunt for insect prey using their large eyes and scoop it up with their spiny legs, all while flying. Many small midges, gnats, and mosquitos are eaten, but generally not enough to fully control their populations. Sometimes larger prey are captured, such as butterflies.

The immature dragonfly stages (the nymphs) live underwater, and feed on whatever they can catch, including aquatic insects and sometimes even small fish.

Hover Flies

Family: Syrphidae

Adult.

Larva, with aphids.

Hover Flies are also known as Syrphid Flies or Flower Flies. They may be brightly colored, and many resemble wasps and bees hovering over flowers. However, these flies do not sting. The larvae of most species are predaceous, feeding on aphids or the young of termites, ants, or bees.

Not all Hover Flies are beneficial: the Narcissus Bulb Fly has larvae that damage bulbs of daffodil and related garden flowers.

Lightningbugs; Fireflies

Family: Lampyridae

Adult.

Larva.

The Fireflies or Lightningbugs are neither flies nor bugs, but are beetles. During the early summer the adults fly about in the evenings and are conspicuous by their blinking yellow light. The larvae are beneficial by feeding on various smaller insects, slugs, and snails.

Antlions

Family: Myrmeliontidae

Larva.

Pits made by larvae.

Adult.

Also known as doodlebugs, antlion larvae have long sickle-shaped mouthparts which they use to grab their prey. The larva makes a pit in sandy soil and lies in wait underground at the center. When an ant stumbles in, the ant lion larva flicks sand at it until it slides down the pit into its jaws. Antlions are most common in dry sandy soils.

Lacewings

Families: Chrysopidae and Hemerobiidae

Larva, with aphids.

Adult.

Lacewing adults are about three-quarters of an inch or less in length, with delicate, gauzy, green or brown wings. Some species have jewel-like golden eyes.

The larvae are grayish brown, with sharp curved jaws that extend beyond the head. Larvae crawl along the leaf surface in search of aphids, scales, mealybugs, thrips, mites, and insect eggs. Full-grown larvae can consume 100 or more insects a day.

Parasitoid Wasps

Families: Brachonidae, Ichneumonidae, and others

Braconid wasp pupae on a caterpillar.

Ichneumon wasp adult.

There are hundreds of species of parasitoid wasps that can be important in controlling populations of other insects. The most commonly noticed ones are Braconid and Ichneumonid wasps. Many other parasitoid wasp species are much smaller, only a few millimeters long.

The wasps typically have a larval stage that feeds on the inside of the host insect, and the larvae slowly devour the host, which eventually dies. Some of the wasps emerge to pupate on the outside of the host, others develop into pupae inside and emerge from the host as adults.

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