



HOME & GARDEN

Mantids of Colorado

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Quick Facts...

Mantids are large, distinctive insects that feed on other insects, including some pests.

The most commonly encountered mantids, the European mantid and Chinese mantid, are introduced species. Native mantids are common in the eastern plains and southern areas of the state.

The Chinese mantid is commonly sold through nurseries and garden catalogs. Few, if any, survive winters in Colorado.

Mantids are some of the most distinctive and well-recognized of all the insect groups. The most striking feature about mantids is the grasping front legs which are well-designed for grabbing and holding prey. The prothorax of mantids is very elongated to support these prominent forelegs. Mantids also have the remarkable ability to easily turn their triangular heads in order to see in all directions. Most mantids produce winged adult stages and the males frequently fly.

All mantids are predators feeding on various insects, including some pest species. At least six species of mantids are found in Colorado (Table 1).

General Life History

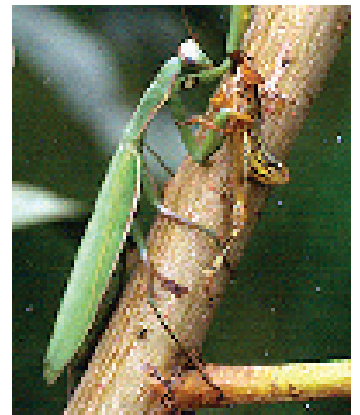
Mantids survive winter as eggs. The eggs are laid in masses, sometimes including hundreds of eggs. These egg masses, known as oothecae are often insulated with a foamy material that gives them the appearance of a "packing peanut." They are attached to solid surfaces such as rocks, buildings, and dried plant stems.



European mantid egg case.

Eggs hatch in late spring (or earlier if kept in the warmth of a building). The small, young mantids feed on gnats and other insects, sometimes cannibalizing other mantids emerging from the same egg mass. As they grow, they are capable of capturing increasingly larger prey including grasshoppers, large flies, and bees.

Following several molts, development is complete by late-summer and the adults are present. Adult males are smaller and more slender than females. Among winged species, males are much more likely to fly; females are incapable of flying once they begin to swell with eggs.



European mantid, green form adult.

During mating it is sometimes reported that the female eats the male. This does occasionally happen and the male may even continue to mate more vigorously after decapitation. However, this cannibalistic behavior occurs infrequently and usually only if the female is starved.

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Mantids for Biological Control

Egg cases of the Chinese mantid are commonly sold for control of garden pests. Although release of eggs may result in several of these statuesque predators developing within the garden, little pest management benefit can be expected.

There are several reasons why little pest management benefit can be expected. The first is related to their non-selective feeding habits because essentially any moving arthropod of the right size is suitable prey. Although this may include an occasional grasshopper or other pest insect, most of what mantids feed on are various flies, gnats, bees, and other non-injurious species. Secondly, since mantids only have a single generation each year they can not sufficiently increase in numbers if a pest insect outbreak occurs. Finally, the Chinese mantid rarely, if ever, successfully survives our cold, dry winters in Colorado.



Carolina mantid.



Ground mantid.

Rearing Mantids

Egg cases of the Chinese mantid are commonly sold via mail order and the young can be reared easily. However, they should be kept in separate containers because of their cannibalistic habits. Small active insects, such as leafhoppers and fruit flies, are suitable to feed the younger mantids. Midges and other small flies that gather around porch lights are another good source of food for the newly emerged mantids. As they get older larger foods such as grasshoppers or crickets can be used. Mantids do need some additional water, which can be provided by misting the inner surface of the rearing container once a week.



Chinese mantid egg case.



Chinese mantid.

If fertilized adult females are being reared, provide a stick or rock on which to lay the egg case. When overwintering egg cases, they do require a cold period and are best stored in a cold, protected site such as in outbuildings or on the north side of homes.

Table 1. Mantids Found in Colorado

Common Name	Scientific Name	Comments
European mantid	<i>Mantis religiosa</i>	The most commonly encountered mantid. The European mantid is “the” praying mantid, a European native that is now well established in much of Colorado. These are quite large insects, exceeding three inches when full grown, and come in either green or brown forms. A characteristic “bull’s-eye” under the fore leg is useful for distinguishing this species. They are somewhat marginally adapted to Colorado conditions and tend to be most abundant following mild winters.
Chinese mantid sinensis	<i>Tenodera aridifolia</i>	The largest mantid, reaching over four inches when full grown. These are brown, with green or yellow stripes along the side of the wings. The Chinese mantid is widely sold through garden catalogs and some garden centers. However, few, if any survive winters in Colorado.
Carolina mantid California mantid	<i>Stigmomantis carolina</i> <i>Stigmomantis californica</i>	These are two closely related species found primarily in the warmer, southern areas of the state. The California mantid predominates west of the Continental Divide; the Carolina mantid to the east. They are slightly smaller than the European mantid, are green and tend to have short wing covers that fail to cover the tip of the abdomen.
Ground mantids	<i>Litaneutria minor</i> <i>Yersiniops solitarium</i>	The smallest mantids, rarely exceeding 1.5 inches in length. Native to the shortgrass prairies of eastern Colorado they can most often be found running and jumping across rocks and soil, their gray-brown coloration blending well with the background. Life history of ground mantids is generally similar to that of other mantids, although some may produce a second generation. All females, and most males, are flightless.



European mantid, brown form adult.

Mantis or Mantid?

The terms mantid and mantis are often used interchangeably. Technically, Mantis is properly applied to a genus of mantids, the most widely recognized being “the” praying mantid, *Mantis religiosa*. Mantid is the best term applied to members of this order, Mantodea.



European mantid nymph.