

Colorado Insect of Interest

European Mantid ("Praying Mantid")

Scientific Name: *Mantis religiosa* L.

Order: Mantodea (Mantids)

Family: Mantidae

Identification and Descriptive Features:

Adults are large insects, about 2.5-3.2 inches when full-grown. Generally coloration is variable but is either some shade of green or brown. The European mantid can be distinguished by the presence of bulls'-eye patterns on the inside coxae ("armpit") of the front legs.

Distribution in Colorado: The European mantid is an introduced species, native to Europe, that has become widely adapted to the northern US and Canada. In Colorado it is most commonly seen along the northern half of the Front Range and in the Tri-River counties of western Colorado.

Four species of native mantids occur in Colorado, most commonly associated with prairie sites and along waterways. In addition egg masses of the **Chinese mantid** (*Tenodera aridifolia sinensis*) are commonly sold through garden catalogs and by some nurseries, although this species rarely, if ever, survives winter within the state. The mantids of Colorado are discussed in Extension Fact Sheet 5.510.

Life History and Habits: Winter is spent as the egg stage, within an egg mass (ootheca) that is attached to rocks, logs, and other solid surfaces. Eggs hatch late the following spring and the newly emerged mantids are tiny (ca. 1/3-inch). Very soon they disperse (perhaps after a bit of sibling cannibalism) and begin to hunt on their own. Small flies and midges probably comprise



Figures 1, 2. Adult female, brown form (top) and adult male, green form (bottom).



Figure 3. Egg cases (oothecae) of the European mantid.



Figure 4. European mantid feeding on grasshopper. Note the bulls'-eye pattern under the forelegs that characterize this species.

The European mantid grows in a series of stages, each punctuated by a molt, and the developing nymphs increasingly resemble the size and general features of the adult. Wing pads may be observed in late-stage nymphs but only adults have fully developed wings. Adults are usually observed beginning in late July and can be found throughout August and September.

Adult males are somewhat shorter (2-2.5 inches) and considerably thinner than are females (2.5-3.2 inches), particularly when the latter begin to swell with maturing eggs. Males are active fliers and females only very rarely, if ever, fly. Mating occurs in late summer. Occasionally the males are consumed during the course of mating, particularly if the female has not recently fed.

Females subsequently lay a mass of eggs that is covered with a frothy substance from their accessory glands; this material soon hardens to protect and insulate the eggs. An egg mass is about 1 inch long, light brown and attached to a solid surface. Under optimum conditions with adequate food, females may produce 2 or even 3 egg masses. Most egg laying is completed by mid-October or when the first hard frost occurs, whichever is sooner. Eggs have a cold period requirement and will not hatch if kept indoors during the cool season.

much of the diet of young mantids but as they grow they are capable of capturing increasingly large insects, including grasshoppers and bees.

Mantids are ambush hunters that will only feed on live insects that move. Their large, widely spaced eyes provide keen vision (for an insect) that can detect depth of field - useful for assessing potential prey. The head is also capable of turning so that they can scan a 360° field without moving the rest of the body.



Figure 5. European mantids recently hatched from eggs in the egg mass.



Figure 6. Late stage nymph of a European mantid, brown form.

The European mantid is *the* original “praying mantid”, a term reflected in its scientific name, and praying mantid is the name for *Mantis religiosa* that is used in Europe. In the United States, this term is often now applied generally to other species of mantids.



Figure 7. Male (brown form) mating with green form female while the female is feeding on a grasshopper.