

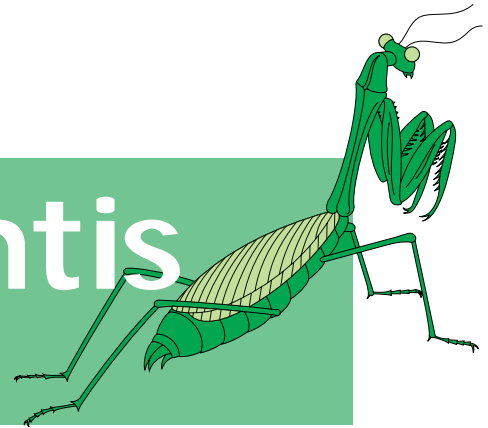


EC 1605 • April 2007  
\$1.00

# Praying Mantis

*Stagmomantis californica*

by J.M. Loomis and H. Stone



**P**raying mantids look like something out of a horror movie, and they truly are something to be feared—by insects at least. They are harmless to people, though, and often are raised as pets. Gardeners love them due to their appetite for harmful insects. Most types (species) of mantids can fly, and all blend in with their surroundings.

There are more than 2,000 species of mantids in the world. One species, the California mantis, is native to the west coast and is found in Oregon. Another species found in Oregon is the Chinese praying mantis. It was introduced to the eastern United States in 1895 in a shipment of plants. Mantids now are common everywhere in the U.S., and eggs can be easily purchased.



Photo: Teresa Welch

Gardeners love praying mantids due to their appetite for harmful insects.



## Where they live and why

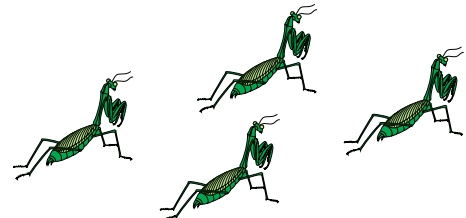
Praying mantids live in many tropical and temperate regions. They are found in North America, southern Europe, and southern Africa.

Mantids are ambush predators, meaning they wait for food to come to them. Therefore, they must hide from their food.

A mantis needs plants for habitat. The plants must be similar to the mantis's coloring so it won't be easily seen by its prey. For example, the California mantis usually is green and looks like a leaf. It blends in very well in a green leafy bush, meaning it is camouflaged. Other types of mantids require different plants, similar to their color and shape.

During bad weather, mantids seek shelter in plants, bushes, and other woody places. When it is very hot, they seek shade to keep from dehydrating (losing water).

*Jason M. Loomis and Hanna Stone, students in fisheries and wildlife, Oregon State University.*



## Species description

Mantids are insects and are diurnal, which means they are active during the daytime.

Praying mantids usually are between 2 and 2½ inches (50 to 65 mm) long from head to wingtip, but some are larger. They have large eyes. The body is long and green to brown in color, depending on the species and location.

Praying mantids have six legs and two antennae. The front legs are spiny, making it easy for mantids to hold onto their prey. A mantis's body often looks like the leaves of the plant on which it lives.

Mantids are polyphagous predators, meaning they eat more than one type of living thing. They feed on beetles, leafhoppers, flies, caterpillars, each other, and any other insect they can catch. They wait quietly on

a plant for an insect to come by.

When an insect wanders past a wait-

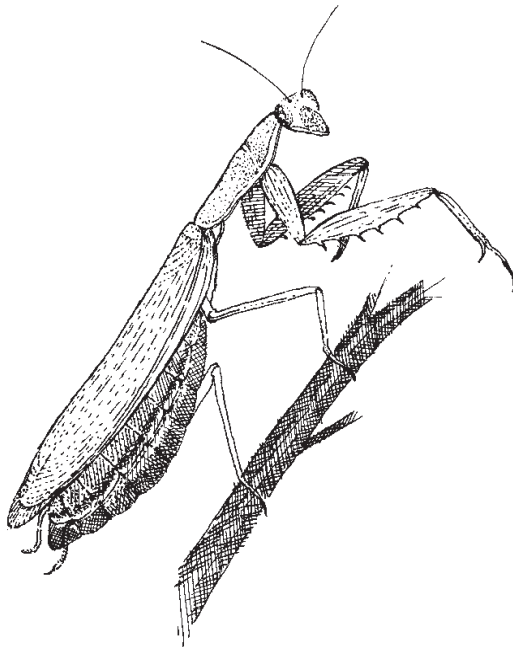
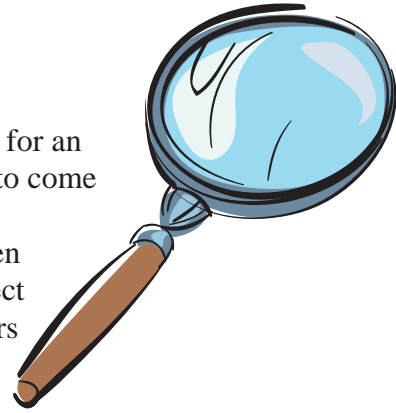
ing mantis, the mantis strikes out with its strong forearms. The spikes on its arms stick to the insect so it can't get away. Because the mantis looks like a plant leaf, the insect never knows what hit it. The mantis usually eats the head first and then the rest of the body.

Since mantids are territorial, only one mantis will be on a single plant. A mantis usually stays on the same plant as long as food is available.

In the wild, mantids get all the water they need from the insects they eat and from dew collected on leaves.

Mantids go through a life cycle called incomplete metamorphosis. This means the baby looks like a miniature adult; mantids do not have a larval stage like lady beetles or butterflies. Their lifespan is short; most mantids live less than a year.

A female mantis lays 12 to 400 eggs in the fall. The eggs are surrounded by a liquid that hardens and protects the eggs. The adult mantids die before winter, but the eggs survive the winter in this hardened egg case, called an ootheca. When spring arrives, baby mantids, called nymphs, hatch and look for food.



## Creating habitat



The best way to attract praying mantids is to plant shrubs and trees. Possible plants include maples, hazel shrubs, pine trees, and any green, leafy, flowering shrub. Flowering shrubs attract insects, which become food for mantids, so they are a good choice. Make sure insect poisons (pesticides) are not used where you are trying to attract mantids because some pesticides can kill mantids.

It often is hard to get praying mantids to move in where you want them. One solution is to purchase eggs. Ootheca egg cases can be easily purchased on the Internet. Mantids will hatch from the purchased oothecae and can be released outside.

If you purchase mantids, it's fun to save one or two and set up a cage to learn about them. A cage can be as simple as a milk carton. Cut off the top and cover the carton with a screen. Be careful when handling mantids. Their legs have sharp points that can pierce skin when they pinch.

A fish aquarium can be turned into a cage that allows easy viewing. Any size larger than 5 gallons is fine; 10 gallons is most common. A sketch of a praying mantis cage is shown at the right.

Provide water in a small dish. Mist the inside of the cage with water to keep the humidity high is also a good idea. Spread leaves, twigs, and other natural litter on the bottom of the cage. Don't forget

to put some type of screen over the top, or your mantis might not stay home! Room temperature—about 70°F (21°C)—is adequate.

Do not put more than one mantis in the cage at a time. Mantids are cannibalistic, meaning they eat each other.

You will have to provide food for your mantis, or it will die. Small mantids will eat aphids, and you often can find aphids on flowers, roses, and fruit trees. Larger mantids will need larger food. Grasshoppers, beetles, and crickets work fine. Pet stores often sell live crickets and grasshoppers.

Raising a mantis in a cage is a great way to watch how it kills prey. Try writing down as many observations as you can. This is a good way to practice being a scientist.

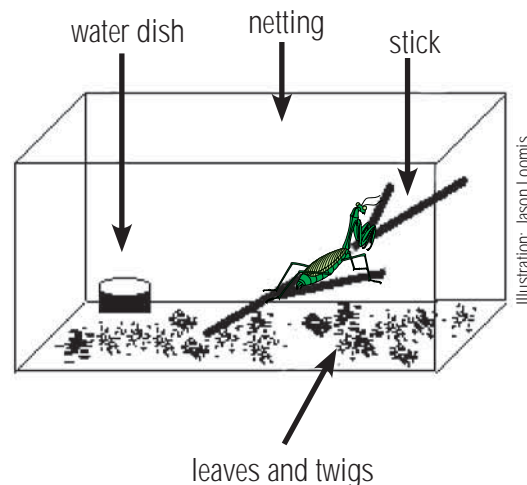


Photo: Gene Whitaker, U.S. Fish and Wildlife Service



A mantis needs plants for habitat that are similar to the mantis's coloring so it won't be easily seen by its prey.

## Learn more!

Earth's Birthday Project. <http://www.earthsbirthday.org>

Earth-Life Web Productions. <http://earthlife.net/insects/mantodea.html>






Enchanted Learning. <http://www.enchantedlearning.com/subjects/insects/mantids/Prayingmantidprintout.shtml>

The Ohio State University. <http://ohioline.osu.edu/hyg-fact/2000/2154.html>

*The Praying Mantids*. F.R. Prete, H. Wells, P.H. Wells, and L.E. Hurd. 1999. The Johns Hopkins University Press, Baltimore, MD.

Additional wildlife publications in this series are available on the OSU Extension Service website at <http://extension.oregonstate.edu> (choose "Publications and Multimedia").

## Fun facts

-  Female praying mantids sometimes eat males after mating.
-  Mantids have five eyes—two compound (with multiple lenses) and three simple.
-  Mantids are successful hunters 85 percent of the time.
-  Praying mantids got their name because it looks like they are praying when they rub their front legs together.
-  Mantids are the only insects that can look over their shoulder. A praying mantis can turn its head more than 180 degrees and can see movement up to 60 feet away.



Oregon  
4-H  
Wildlife  
Stewards

© 2007 Oregon State University.

This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties. Oregon State University Extension Service offers educational programs, activities, and materials without discrimination based on age, color, disability, gender identity or expression, marital status, national origin, race, religion, sex, sexual orientation, or veteran's status. Oregon State University Extension Service is an Equal Opportunity Employer.

Published April 2007.