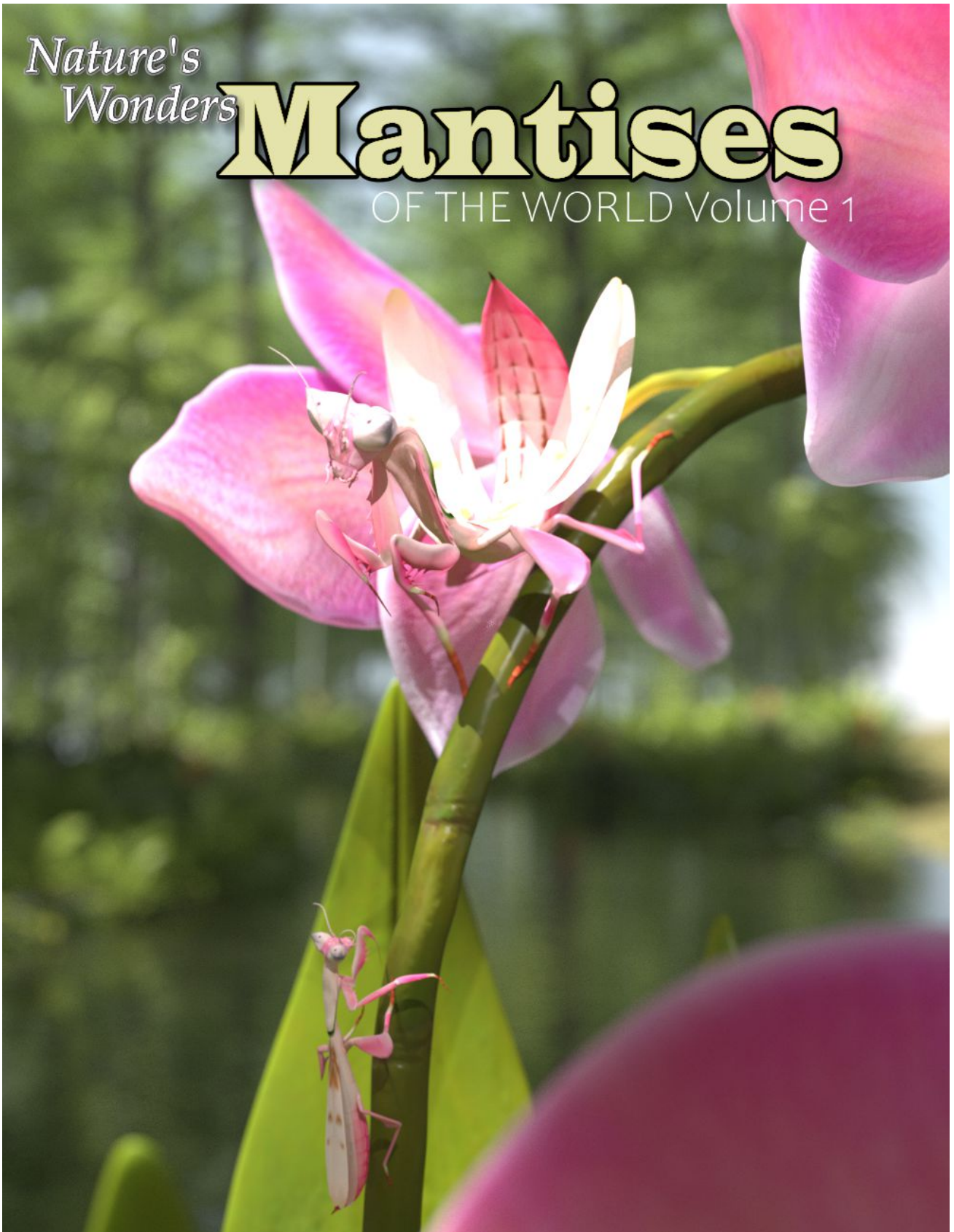


*Nature's
Wonders*

Mantises

OF THE WORLD Volume 1



3D model set by Ken Gilliland

Nature's Wonders

Mantises

of the World Volume 1

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Introduction

Mantises are in the order, Mantodea, of insects which contains over 2,400 species in about 460 genera in 33 families. Mantises are distributed worldwide in temperate and tropical habitats. They have triangular heads with bulging eyes supported on flexible necks. Their elongated bodies may or may not have wings, but all Mantises have forelegs that are greatly enlarged and adapted for catching and gripping prey. Their upright posture, while remaining stationary with forearms folded, has led to the common name of “praying” mantis.

This Mantises Add-on set comes with 8 different species of Mantidae. It does require the “Nature’s Wonders Mantis” base set which is sold separately. It includes the spectacular Pink Orchid Mantis, as well as popular mantises within the pet trade such as the Shield Mantis, Ghost Hopper Mantis and Giant Asian Mantis. Regional favorites such as the California and Bordered Mantises, and the spectacular Beautiful Peruvian Leaf Mantis, are also included..

It comes in both Poser and DAZ Studio native versions and support Firefly, 3Delight, Superfly and Iray render engines.

Overview and Use

This set uses a common model to recreate digitally the lizard species included in this volume. Each species uses specific morphs from the generic model to single-out its unique features.

- **Models included in this volume:**
 - **None.** The “Nature’s Wonders Mantis” base set is required for this set to function and is sold separately.

The set is located within the **Animals : Nature’s Wonder** folder. Here is where you will find a number of folders, such as **Manuals**, **Resources** and **Fauna Libraries**. Let’s look at what is contained in these folders:

- **Fauna Libraries:** This folder holds the actual species and poses for the "premade" fauna. The fauna for this set can be found in the following folder(s):
 - **Insects/Mantises of the World**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your fauna included in the set

Creating a Specific Mantis using Poser

1. For this example, we'll create the Carolina Mantis.
2. Load Poser, select the FIGURES library and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Insects folder.
3. Go to the Mantises of the World folder and select the Firefly or Superfly sub-folder.
4. Select the Carolina Mantis (or a Mantis of your choice) and load it by clicking the mouse.

Creating a Specific Mantis using DAZ Studio

1. For this example, we'll create the Carolina Mantis.
2. Load DAZ Studio and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Insects folder.
3. Go to the Mantises of the World folder and select the Iray or 3Delight sub-folder.
4. Select the Carolina Mantis (or a Mantis of your choice) and load it by clicking the mouse.

Using the Poses

The poses were designed for the default model. The base or "hip" section of the model is MetaThorax1. Since different individual species may use body scaling, it may alter the expected ground level of the species model. Some adjusting may be necessary (e.g. the "ytran" dial may need to be used to raise or lower the model).

Wings and Torso Bending

There's likely to be some overlap issues with the wings and bending the lower half of the torso. The problem arises from having a bendable torso with a relatively linear appendage such as wings. I've tried to resolve the issue by chopping the wings into 9 or 10 body parts and adding in hidden controls that bend the wings with the torso. It helps, but the more you bend the torso the more likely additional manual corrections will be needed as well.

There are a set of 4 corrective dials with the "Adjustment Controls" section that should help correct most issues.

Flight Restrictions

While most mantises have wings, for the most part, only males are the frequent fliers. Most females fly only short distances or not at all. Consult the Field Guide for more information on this topic.

Nature's Wonders

Mantises

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FIELD GUIDE

Asian Shield Mantis

Large Brown Mantis

Giant Asian Mantis

Bordered Mantis

California Mantis

Pink Orchid Mantis

Beautiful Peruvian Leaf Mantis

Avocado Praying Mantis

Asian Shield Mantis

Asiadodis squilla

It is native to Asia (Thailand and India) and can grow up to 8 cm (3 inches) The male is slightly smaller at 7 cm. It has such common names such as shield mantis, hooded mantis, and leaf mantis (or leafy mantis) because of its extended, leaf-like thorax.



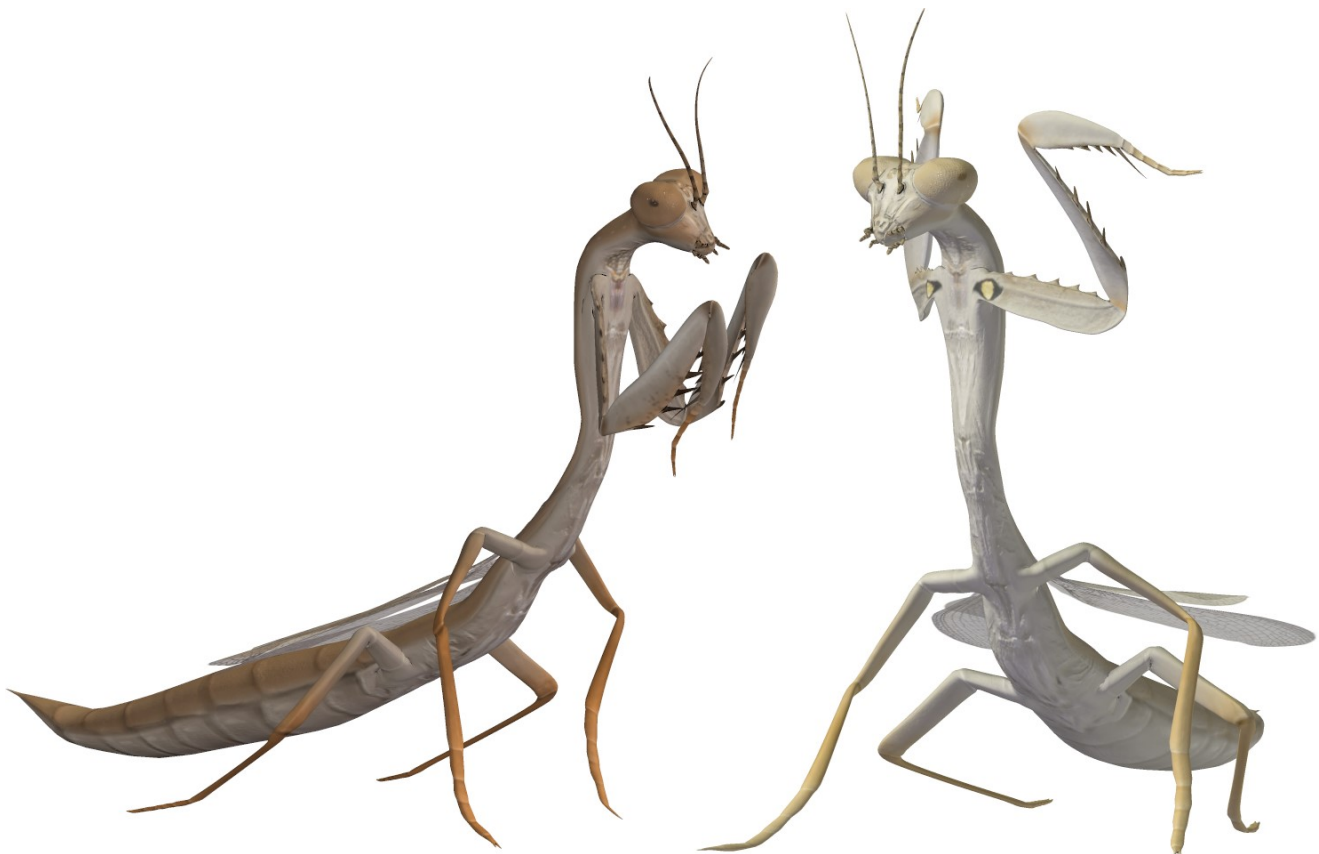
This species is popular within the pet trade. They are docile and easily will walk around on its owner and likes to be held. They are considered excellent pets, but have voracious appetites. They are partial to grasshoppers and cockroaches.

Large Brown Mantis

Archimantis latistyla

It is a species native to Australia, Papua New Guinea, and New Caledonia. It has two subspecies; a widespread subspecies (known as the “Large Brown” or “Bunny” Mantis) and the “Ghost Hopper” Mantis (from Bundaberg’s Turtle Sands). The male stick mantis is about 3.5 cm (1.4 inches) while the female is 11 cm long (4.3 inches).

Large brown mantids are light brown with short winged female and a long winged male. The subspecies from Bundaberg is a pale cream white with a yellow and black eye in between the arms. It is significantly larger than the nominate subspecies as well (up to 1.5 times)



The large brown mantis female is short winged - her wings reach only half her abdomen and she is not able to fly— but the long winged male has wings that cover the entire abdomen. They have two pairs of wings - the top pair are the wing covers and the bottom wings enable the mantis to fly.

They are aggressive as adults and are known to attack large prey, such as small birds, and rarely, fish, frogs, and lizards. Their diets typically consist

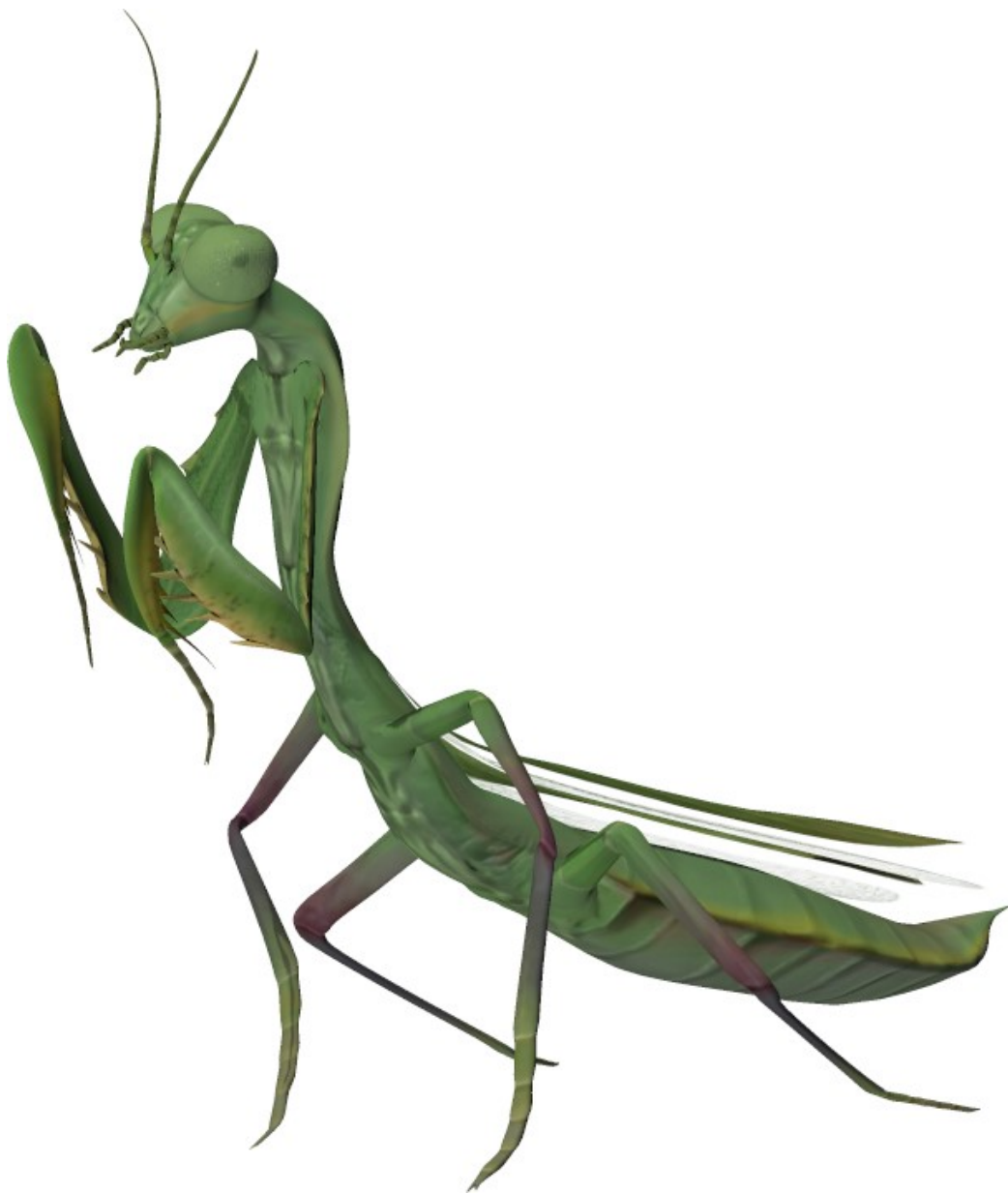
primarily of spiders and crickets, though they will occasionally supplement them with small ants, moths, butterflies, cocoons, and caterpillars. They are cannibalistic and are known to attack humans defensively if disturbed or not handled properly. These insects can leap up to one meter from a stationary location in order to evade potential predators or engage prey. The stick mantis ghosts are not as aggressive as the widespread species but have a defense display used to make the mantis appear larger by flinging its front legs into the air and putting its head down along with its antennae.

Giant Asian Mantis

Hierodula membranacea

It is a large praying mantis. As the name suggests, it originates from south-eastern Asia and is among the largest of mantises. Male and female adults reach around 7–9 cm (2.8–3.5 inches), excluding extended forelegs. Its colors vary from green to yellow-green, or even brown to reddish-brown, similar to those of the giant Indian mantis and the giant Malaysian mantis. It is a cannibalistic species, with the females sometimes eating the males after mating.

It inhabits in shrubs and tree areas. It lives in hot and humid climates of temperatures of 22 to 30 °C (72 to 86 °F) with a humidity of 60% to 70%.



Bordered Mantis

Stagmomantis limbata

It is also called the “Bosque” mantis, Arizona mantis, or New Mexico praying mantis, is a species of praying mantis native to North America, most prevalent in the south-western United States. This beneficial insect is green or beige in color and grows up to around 7.3 cm (3 inches) long.

They are attracted to lights, and males often fly to lights in numbers, but females are unable to fly.



It is one of the largest mantids native to North America, though it is much smaller than some African and Asian mantids. The facial plate (below and between antennae) is about twice as wide as it is long, typical of the genus, though the eyes are not as protruding as the Carolina Mantids. Females are most often fairly plain green (often with a yellowish abdomen), but sometimes gray, or light brown, with dark spot in middle of the tegmina, which do not completely cover the wide abdomen. Hind wings may be checkered or striped yellow.

Males are slender, long-winged, and variable in color, but most often green

and brown with the sides of the folded tegmina green and top brownish (may be solid gray, brown, green, or any combination of these). Abdomen without prominent dark spots on top. The wings are transparent, usually with cloudy brownish spots on outer half.

It is often in open semi-arid areas in tall shrubs, or trees, but more abundant in lush, often riparian and wooded areas of streamsides, roadsides, canyons, in towns, etc. Its range is Texas to Southern California, north into Colorado and Utah, south into Mexico

California Mantis

Stagmomantis californica

Within California, this common insect occurs throughout the warmer and drier regions of the southern part of the state below elevations of 10,000 feet. They prefer chaparral and desert environments with sufficient vegetation (the creosote bush is a favorite) in which they can climb, hide, and hunt. Their range extends from all of southern California north into the Central Valley and then eastward into Arizona, New Mexico, Colorado, and western Texas, as well as Mexico. In the late 1980s, they began showing up in southern Idaho, and appear to be migrating northward, adapting to the colder winters along the way.



Adult members of this species range in size from 5.1-7.6 cm (2–3 inches) in body length. There are green, yellow, and brown varieties, with sub-adults and adults tending to have dark transverse bands on the top of the abdomen. The wings of both sexes are mottled or suffused with dark brown or black and the hind wings are purplish. The inner forelegs are orange-brown, and there are some black spots near the mandibles. In most other physical respects they closely resemble other members of their mantid order, two of which are also native to the state of California; the Carolina and Bordered Mantises.

Like all mantids, the California mantis is carnivorous, consuming virtually any other insect it perceives as small enough to be eaten, including other members of its own species. This mantis will even try to hunt and eat hummingbirds by climbing on to their feeders and perching above a feeding port.

Males and females come together to reproduce but otherwise the adults are strictly solitary. Nymphs hatch in the spring from hard egg cases laid the previous fall. Adults do not overwinter—lifespan is seldom more than one year and usually less than nine months, with females sometimes surviving longer into the winter season than males, presumably allowing the females more time to lay their oothecas on suitable vegetation or rocks before dying.



Though fast runners, both sexes have wings and are capable of flight (though this form of movement is energy intensive and seldom utilized). Males are especially good fliers: the wings of the male extend well beyond the end of the abdomen, whereas those of the female do not extend more than half this distance. Males are often attracted to bright lights at night and can sometimes be found swarming around them along with other insects, though as ambush

hunters, they fly at night primarily for dispersal and not in search of food--those swarming around lights are disoriented, behaving as though the light is actually the moon and attempting to fly in a straight line.

Pink Orchid Mantis

Hymenopus coronatus

It is a mantis from the tropical forests of Southeast Asia. They are found in the rain forests of Southeast Asia, including Cambodia, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam and the Philippines, as well as Singapore. They can be also found in the Western Ghats of India. The female has an overall body length of 6-7 cm (2.5-2.8 inches, while the male is half the size (about 3 cm; 1.2 inches). It shows some of the most pronounced size sexual dimorphism of any species of mantis.



It is known by various common names, including the "walking flower mantis", the "orchid-blossom mantis" and the "pink orchid mantis". It is actually only one of several species known as a "flower mantis". It is reference to their unique physical form and behavior, which often involves moving with a "swaying" motion, as if being "blown" in the breeze. Several species have evolved to mimic orchid flowers as a hunting and camouflaging strategy, "hiding" themselves in plain view and preying upon pollinating insects that visit the blooms. They are known to grab their prey with blinding speed.

This species mimics parts of the orchid flower. The four walking legs resemble flower petals, and the toothed front pair is used as in other mantises for grasping prey.

The female predatory selection is the likely driving force behind the development of the extreme sexual size dimorphism. Prior to development of its camouflage, the female mantis implements ambush predation to allow it to hunt larger pollinating insects. An example of this ambush predation is the orchid mantis's ability to ambush foraging butterflies, a fairly large prey, which it captures using its pair of toothed arms and powerful bite. As the female mantis continues to develop, much of its dramatic increase in size can be attributed to predatory selection and ambush predation.

This mantis can change its color between pink and brown, according to the color of the background it finds itself in.

*In an early-20th-century account by Nelson Annandale, he detailed how the mantis hunts on the flowers of the "Straits rhododendron" (*Melastoma polyanthum*). The nymph has, what Cott calls, "special alluring coloration", where the animal itself acts as a "decoy". The insect is pink-and-white (like many orchid blooms), possessing flattened limbs which feature "that semi-opalescent, semi-crystalline appearance that is caused in flower-petals by a purely structural arrangement of liquid globules or empty cells". The mantis climbs up-and-down the twigs of the plant until it finds a cluster of flowers. It holds-on to these with the claws of its two rearmost pairs of legs. It then sways from side-to-side, mimicking the wind; soon, various small flies and insects will land on and around the flowers, attracted by nectar as well as the small, black spot on the end of the mantis's abdomen, which resembles a fly. When a larger Dipteran fly—as big as a house fly—was observed landing nearby, the mantis at once seized and ate it.*

While the orchid mantis is successful at catching its prey through its color mimicry alone, recent research shows that orchid mantises attract a greater number of natural pollinators when compared to actual flowers, labeling these mantises as 'aggressive mimics' with their ability to turn pollinators into prey. In a concurrent study, the spectral reflection of orchid mantises was measured using a spectrometer to determine how their colour may be perceived by other animals. Adult and juvenile orchid mantises primarily reflected UV-absorbing white and, based on visual modeling, their color is indistinguishable from actual flowers (from the perspectives of the pollinating insects).

Beautiful Peruvian Leaf Mantis *Pseudoxyops perpulchra*

It is found in Peru, Ecuador, Bolivia and Brazil. Females are approximately 8 cm (3.5 inches) in length, while males are 5 cm (2 inches). The Latin name, "Perpulchra" means "Beautiful". Its wings mimic a leaf creating good camouflage for hunting.

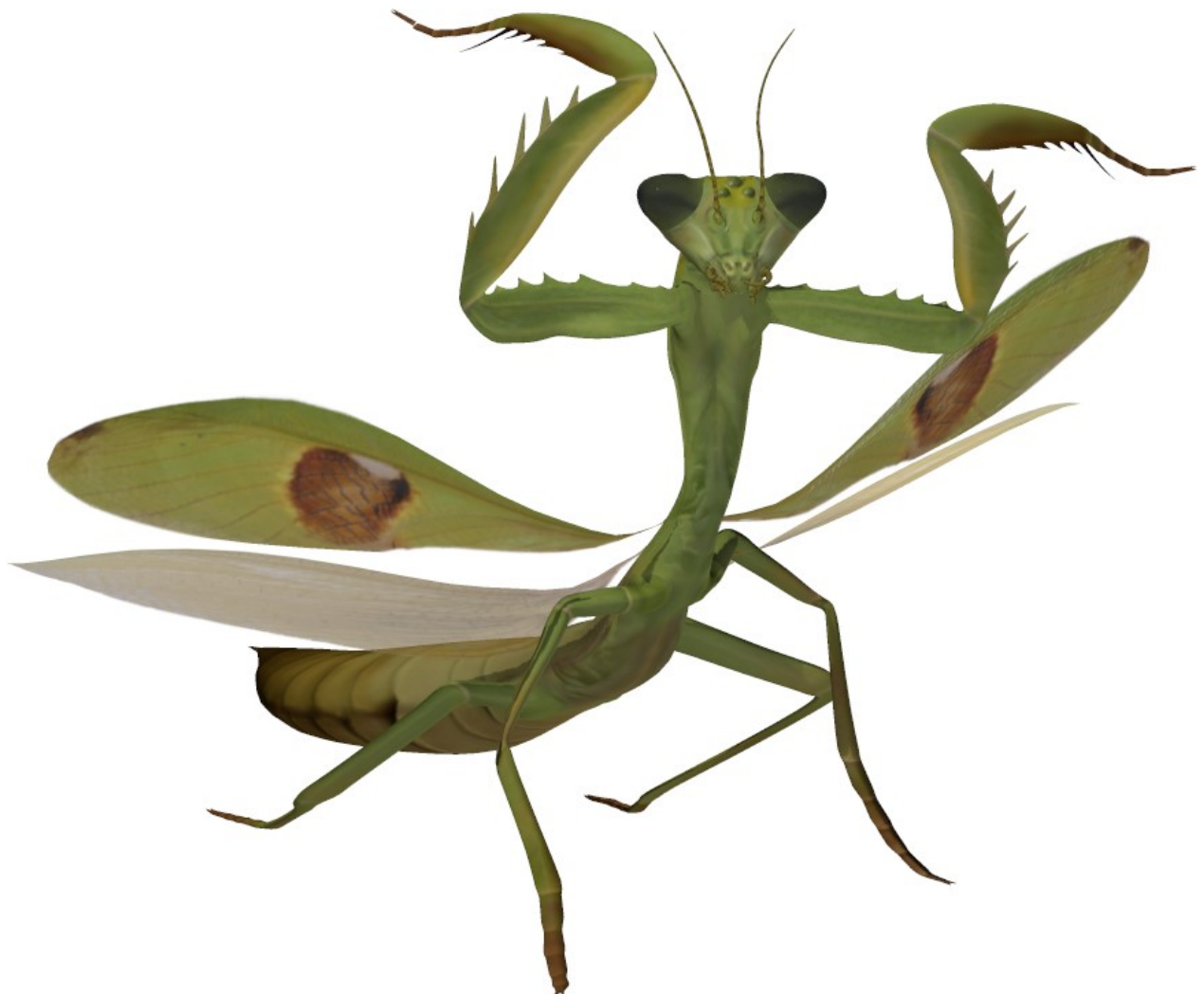
Adults easily prey on adult crickets and blue bottle flies. The adult instar is a fearsome opponent for the leafcutter ants that overlap its range. They are found in the temperature in the range of 23 - 28c with humidity approximately at 70%.



Avocado Praying Mantis *Stagmatoptera supplicaria*

This mantis was formerly known as the Amazon Spot Wing Mantis. Native to the northern half of the South American continent, the species was discovered by Burmeister in 1838 and is noted for the particularly large 'eyes' on the wings as adults. The female is 7.2 to 9.3 cm in length. The male is 10-20% smaller. Spot on the Pterostigma (top outward edge of the wing) of males has a brown stripe and a small brown spot; on the female, it is a large oval spot almost reaching the margin of the discoidal area.

This species is becoming very popular within the insect pet trade.



Special Thanks to...

....my betatesters Alisa and FlintHawk

Species Accuracy and Reference Materials

The author-artist has tried to make these species as accurate to their real life counterparts as possible. Phasmids of the same species vary considerably, as do all other animals in nature. These Phasmids were created using the correct field markings and the most common similarities.

With the use of one generic model to create dozens of unique Phasmid species, some give and take is bound to occur. In addition, 3D-models have many technical challenges, which make exact representations difficult, if not impossible. It's best to think of these Phasmids represented as resembling the particular species, and they may not, in some cases, be 100% scientifically accurate.

The model and morphs were created using Luxology's Modo. The texture maps were created in Corel's Painter. The model was rigged and materials were created in Smith-Micro's Poser and DAZ's DAZ Studio.

Internet Sources:

- **Wikipedia** (<http://www.wikipedia.com>)
- **USMantis** (<https://www.usmantis.com>)
- **North Carolina State University**
(<https://entomology.ces.ncsu.edu/biological-control-information-center/beneficial-predators/carolina-mantid/>)
- **Mantis Universe** <https://www.mantisuniverse.com/>