



**University of New Hampshire Extension.*

Mantids/Mantises (Order Mantodea)

Classic and Colorful Ambush Hunters

Mantids, or mantises are an extremely large and diverse group of carnivorous, predatory insects consisting of over 2,400 species overall! Mantids are extremely diverse in size, shape, color, and pattern, as well as their biology, habits, and natural history depending on the species. Many species of mantids can have extremely cryptic coloration and/or appearances, lending many to resembling tree bark, while others may resemble sticks, leaves, or even colorful flowers! Most species of mantids are ambush predators of other insects and other invertebrates, and use these cryptic disguises to both remain undetected to prey, as well as render them much more difficult to detect to predators. Some, however, are more active predators in seeking out prey. Some mantids can also fly, while others may be either wingless, or have wings but seldom fly. There is also often sexual dimorphism among many mantid species in regards to their size, colors, patterns, or other appearances between males and females, and cannibalism can also be common, particularly during times of limited resources or following mating (i.e. sexual cannibalism).

All mantids, however, have large triangular heads, bulging eyes, and a pair of specialized, distinctively modified fore limbs and stationary upright postures used for capturing, grasping, and consuming prey. Mantids also possess keen stereo eyesight, compound eyes, and vision for locating prey. The folded forearms and statured upright appearances of these insects have often lent them the common name of “praying” mantises. Furthermore, when threatened, many species will either remain cryptic and behave in manners as to mimic a leaf, twig, or other piece of vegetation in the wind, or will rear themselves up while displaying their fore limbs and often spreading their hind wings as well to appear larger, with the hind wings often having bright colors and/or patterns as a further warning display. Mantids are among the largest and most intriguing group of insects to keep as pets, and an entire ancillary sub-group of dedicated mantid keepers and enthusiasts has formed as a result.

Taxonomy

Life: All living, physical, and animate entities

Domain: Eukaryota

Kingdom: Animalia

Phylum: Arthropoda

Class: Insecta

Order: Mantodea

Family: Mantidae

Commonly Kept Species

Mantids, or “praying” mantises, as they are commonly known, are an extremely large and diverse group of insects comprising of at least 2,400 different species in over 430 genera found in temperate to tropical areas throughout most of worldwide.

As one could expect, these distinctive and unusual insects come in nearly all shapes and sizes, colors, and patterns, many of which have attracted a dedicated subset of invertebrate, and exotic pet keepers interested in keeping and breeding these amazing insects. When it comes to keeping them in captivity, most mantid species are highly predatory, or solitary, likely predating upon one another if housed together. However, at least a few species can be more peaceful and can be kept safely in group housing.

Considering how there are dozens, or even hundreds of species available from throughout the world, there are relatively few species guides out there, aside from a few forum and blog posts, covering the most well-known, familiar, and most widely available species one is most likely to see when it comes to keeping them in captivity. Some species are quite hardy and easily kept, making them good “beginner’s” species, while others can be much more sensitive and difficult to keep and breed in captivity.

With that said, here is a guide to the most commonly kept and seen species, although this list certainly is not intended to come even close to covering all of the species out there which may be available.



African Mantis (Sphodromantis lineola): The African mantis is a large and fierce, predatory species of Mantid from sub-Saharan Africa. Usually easily identified by their upturned abdomens, these mantids usually range from green to brown or beige in color, and with the brown color varieties having purplish eyes. A large and easily kept species, it reaches 3.14 inches, although males are somewhat smaller at 2.36 to 2.75 inches. Suitable Temperatures can range from 71 to 86 deg. F., and does not have overly high humidity requirements, being 50 to 60%. Young nymphs can be housed together, but otherwise group housing not recommended for this species.



Chinese Mantis (Tenodera sinensis): The Chinese mantis is a large, very common species of mantis which is a native of Asia. However, due to widespread international trade and commerce, it has accidentally been widely introduced into North America. The Chinese mantis is a stereotypical mantis in body shape, ranging from brown or greenish-brown, and reaches a size of

up to 3 to 4 inches as adults, with females being larger than the males. Another easy mantis species to maintain, the Chinese mantis is oftentimes the only species of mantis one can oftentimes find outside locally, although they are technically “non-native”. Suitable Temperatures can range from 71 to 86 deg. F., and does not have overly high humidity requirements, being 50 to 60%. Young nymphs can be housed together, but otherwise group housing not recommended for this species.



Orchid Mantis (*Hymenopus coronatus*): The Orchid mantis is a beautiful and popular species of mantis ranging in color from pink and/or white with lobes on the front legs resembling flower pedals, hence their common name. A native of Malaysia, the Orchid mantis is an excellent cryptic, or camouflaging ambush hunter, and also are known to have some color changing abilities. Adult females are larger than males, at 2.36 to 2.75 inches, whereas males are much smaller at 0.78 to 1.96 inches. Orchid mantis are a bit more of a challenging species to maintain, preferring a relatively high humidity of 60 to 80 %, and 77 to 95 deg. F. Group housing is not recommended, except for young nymphs.



Ghost Mantis (*Phyllocrania paradoxa*): The Ghost mantis is another popular and cryptically camouflaging species of mantis in captivity, which are named for their leaf-like legs and bodies. Their color usually ranges from a dark brown, but can also be a lighter tan, lighter brown, or sometimes greenish. Indigenous to Madagascar and continental Africa, The ghost mantis also can be distinguished by their tall, vertical or asymmetrical cone or crest on tops of their heads which help to distort their body outline while becoming camouflaged amongst the fallen leaves and debris. Males and females are similar in size, at about 1.96 to 2.0 inches, but males are more thinner or more slender bodied. Ghost mantids prefer flying prey such as flies over other food. Ghost mantids can be kept from 68 to 86 deg. F. and require moderate to high humidity at 60 to 80%. A quiet and non-aggressive species, the ghost mantis can also be housed in groups.



European Mantis (*Mantis religiosa*): The European Mantis is another archetypical mantis species originally native to Europe, but has been widely introduced into North America and elsewhere around the world in the 1600's to control insect plant pests. Coloration usually is a light or pale green, and can be distinguished from other mantis species by the clear patterning on

the insides of their fore-legs consisting of a black spot with a white center, which are displayed in order to startle potential predators. Female European mantids become somewhat larger than males, reaching up to 3.14 inches, while males reach about 2.75 inches and are more slender bodied. Temperatures can range from 73 to 83 deg. F., and this species does not have difficult humidity requirements of about 40 to 65%. European mantids are a fierce species, and cannot be housed together unless they are young nymphs.



Giant Shield Mantis (*Rhombodera* spp.): Shield mantises are large and robust species of mantids from Asia (from southern China to Thailand) which consist of about 29 different species, and with several different species in the genus being kept in captivity. Usually ranging in color from light or pale green, or sometimes brownish green, the shield mantis is so-named for their widened or expanded sections of their thoraxes and/or wings over their abdomens, giving them a shield-like appearance. Shield mantids can reach up to 3.75 to 4.75 inches, and females are larger than males. Shield Mantids can be kept from about 75 to 85 deg. F., and are also a higher humidity mantid at 60 to 80% humidity depending on the species. Group housing not recommended unless for young nymphs.



Spiny Flower or "Figure 9" Mantis (*Pseudocreobotra wahlbergii*): The Spiny Flower Mantis is another popular and sought after cryptic, and camouflaging mantis species from sub-Saharan Africa. Ranging in color from tan or white with reddish, orange, to greenish stripes or bands, the Spiny Flower Mantis also can easily be identified by their greenish and white "bullseye" shaped pattern on their wings, which also give this popular species the name of "Figure 9" mantis. Males and females are similar in size and appearance, ranging from about 4 to 5 inches in length. The Spiny Flower mantis can be kept from about 77 to 86 deg. F. and requires moderate humidity levels of about 60%. Like most mantids, this species is cannibalistic, and group housing is not recommended unless for young nymphs.



Dead Leaf Mantis (*Deroplatys desiccata*): The Deaf Leaf Mantis is a large, cryptic and camouflaging mantis species from Malaysia from Southeastern Asia. This species almost always ranges in varying shades of light to dark brown, and have a very enlarged thorax shield resembling that of a dead leaf, which enable this species to blend in very well to the forest floor

debris and dead leaves. Females reach larger sizes than males, reaching up to 3.75 inches whereas males are usually 2.75 to 3.14 inches and have smaller shields on their pro-thoraxes. The Dead Leaf Mantis is a more placid and docile species of mantis which may also death-feign as a defense, or “play dead”. One of the more difficult mantid species to keep, temperature and humidity-wise, the Dead Leaf mantis prefers 78 to 95 deg. F., and 50 to 80% humidity under well ventilated conditions. Not a very aggressive species, the Dead Leaf Mantis may be able to be housed in groups, although it may still be safer to avoid group housing for this species.



Budwig Mantis (*Parasphendale affinis*) and (*Parasphendale argrionina*): The Budwig Mantis is another popular species of mantid to keep in the U.S., Europe, and Japan. Native to East Africa (Ethiopia, Kenya, Somalia and Tanzania), the Budwig mantis comprises of several different species, although two species tend to be the most commonly kept are the *Parasphendale affinis* and *Parasphendale argrionina*. These mantid species usually range in color from a light to dark brown, or beige. Females are much larger than males, reaching about 2.75 inches in length, while males reach about 1.57 inches. Females also have shorter wings, and cannot fly. The undersides of the legs and wings are a brightly colored yellow or orange, and are used in a display to frighten would-be predators. Budwig mantises require about a 75 to 86 degree F. temperatures, but do not have high humidity requirements, at 50 to 60% humidity. Budwig mantids are aggressive, and housing in groups is not recommended unless for young nymphs.



Carolina Mantis (*Stagmomantis carolina*): The Carolina Mantis is a native species of mantis from the Carolinas (hence its name), eastern and southeastern United States, but also occurs in Mexico and Central America. Male and female Carolina mantises are very dimorphic in their sizes and appearances, with females being much larger and heavier bodied than the males. Varying in color from green to brown, the Carolina mantis is another stereotypical mantis species in overall appearance and body form. Males range from about 1.75 to 1.96 inches, and females are about 1.96 to 2.36 inches. Males also have longer sets of wings than females, and can fly unlike females. The Carolina mantis is an undemanding species to maintain, and can do well at room temperature anywhere from 66 to 80 deg. F., but this species requires moderate to high humidity from about 60 to 80%. As with most mantids, group housing is not recommended unless for young nymphs.



Giant Asian Mantis (Hierodula membranacea): The Asian Giant mantis is another commonly kept mantis species due to its large size and relative ease of keeping. Ranging from Southeastern Asia, this large species ranges from about 2.8 to 3.5 inches, and can range in color from green, brown, yellowish, to brown or sometimes pinkish. Females are larger than males, and males are also thinner and more slender bodied than the females, and also have wings which extend past the abdomen and are longer than the wings in females, as with many mantid species. Temperatures for this species can be about 68 to 75 deg. F., and does not have high humidity requirements, being about 45 to 65%. Group housing is not recommended for this species, as with most mantids, except for young nymphs, and this species are also usually not fussy eaters when it comes to food and prey.

Lifespan and Longevity

Depending on the species, as well as sex, longevity for mantids can range anywhere from 4 to 8 weeks up to approximately 1 year.

Distribution and Habitat

Mantids are an extremely large and diverse group of insects, with distribution and species occurring most of worldwide in temperate, tropical, and sub-tropical areas of most continental areas except Antarctica. Different genera and species can be found in a tremendous array of habitats and micro-environments, from deciduous forests, woodlands, and woodlots, to meadows, prairies, fields, and grasslands, to more humid, tropical to sub-tropical rainforests, agricultural areas, gardens, residential areas, and just about every niche and habitat in between. Due to the diversity of mantid species in general, more specific and detailed distribution and habitat preferences and requirements for each species in particular can also be provided upon request.

Experience Level Required

Novice/Beginner to Advanced (depending on species).

Size

Mantids vary greatly in size depending on age, sex, and species. They can range from 1 ½ to 5 ½ inches depending on the species.

Housing and Enclosure

Enclosure System: Primarily Arboreal. Housing must be sealed and escape proof, as well as adequately ventilated. A secured 2 to 10 gallon aquarium, terrarium or similar sized tub or container with an appropriate lid is recommended, and should be least 3 times the width of the mantis, and at least 2 times wider. Several of the acrylic displays and enclosures that are now manufactured for housing arachnids, insects, and other invertebrates can also be used. Nearly any substrate can work for mantids if it is non-toxic and not treated with chemicals or pesticides. In addition, furnishings for allowing these insects climbing and hiding opportunities should also be provided, and can include artificial or live foliage, branches, twigs, or other cage decor. For water and hydration, misting at least once every few days is also recommended, or more frequently in areas of drier humidity. Mantids are typically aggressive toward one another, and

can oftentimes be cannibalistic, and should therefore not be housed in multiples unless for breeding attempts.

Temperature, Lighting, and Humidity

Temperature and humidity requirements vary greatly depending on the species of mantid being maintained. Some species require damper, higher humidity environments, while others may require drier setups with lower to moderate humidity. For most temperate to semi-tropical species, humidity of at, or around 60 to 65% is recommended, although this may vary with some, more tropical or arid dwelling species of mantids. Further research into these requirements for the specific species of mantid of interest is best recommended. More specific lighting, heating, and humidity product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well. Spot clean the enclosure for wastes, feces, or uneaten food at least once per week. Be sure to periodically replace the substrate, clean, and disinfect the enclosure and its furnishings at minimum every 2 to 3 months.

Feeding, Diet, and Nutrition

Insectivorous to Carnivorous; Mantids tend to be insectivorous, feeding on smaller insects and other invertebrates they can capture and consume using their specialized pair of front forelimbs. Some species can even capture and consume small vertebrates as well. In captivity, a variety of live feeder insects can be offered either in the enclosure or via tongs including crickets, fruit flies, roaches, caterpillars, spring tails, waxworms, superworms, mealworms, moths, and butterflies. Do not provide any food items which may be too large for your mantid, or are venomous or toxic. Feeding frequency depends on the age, sex, and size of your mantid, and can be every 1 to 4 days depending on these factors. Mantids also do not typically require any additional calcium vitamin D3, or other nutritional supplementation, but providing it can help with their exoskeleton growth and development. More specific dietary and supplementary product suggestions and recommendations that can best suit one's needs, as well as those of one's animals can be given as well.

Handling

Most mantids are fragile animals that should be handled quite carefully, if at all. Always scoop or cup them gently, and allow them to sit/walk freely without restraint if handling these insects is absolutely necessary.

****Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens****

Contact

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Disclaimer: Note that the information provided in these, or any care sheets, are not intended to be all-exhaustive, and further research and care should always be sought and provided when it comes to any species one may prospectively be interested in. These care sheets are also not intended to serve as substitutes for professional veterinary medical care and husbandry should any animal require it. Always seek proper and professional veterinary care for any animal should the need arise, and be prepared ahead of time for any and all husbandry costs and expenses that may occur with any animal beyond the initial purchase. Any animal owned is ultimately a matter of personal/individual care and responsibility. We cannot make any claims or guarantees regarding any information in this care sheet therein. This care sheet may be reprinted or redistributed only in its entirety.

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