A Thorough Guide to Sexing Mantises

Despite their extreme variety in shape and color, all praying mantis species can be sexed using the same features. In this guide, we will first describe general differences that are easy to see in adult mantises. Then, we'll go in-depth on how to verify the sex of almost any mantis.

Adult mantises show much more pronounced sexual dimorphism (differing appearances between males and females) than nymphs. At maturity, a male's body has been considerably specialized for finding and mating with a female, whereas a female's body is adapted to produce and protect eggs. This table describes general differences which are present in all or most mantis species at adulthood:

Male	Female
Slim body, especially the abdomen. Last segment of the abdomen is flat and scoop-like. Genitalia visible from above.	Robust body, abdomen typically much wider than thorax. Last segment of abdomen is deep, down curved lobe separated by crease.
Larger eyes and longer antennae with thickened bases.	Smaller eyes and shorter antennae of uniform width.
Easily visible ocelli (three simple eyes on the forehead.)	Ocelli small, often almost unnoticeable.
Longer wings.	Shorter wings.

Proportional differences are also visible in older nymphs. If you have multiple individuals or access to photos of your species, you may be able to sex them with these differences alone.

If you only have one mantis, or if the animal is a younger nymph, these proportional differences won't be helpful. It takes an extremely experienced keeper to sex medium-sized nymphs at a glance. **The most important region for sexing a mantis is the final couple of visible segments at the end of the abdomen.** Every mantis species can be sexed using the underside of the abdomen, though some develop these differences earlier in life than others.

Many guides explain that a male has eight visible lower segments and a female has six. This is true in adults, but in nymphs, the seventh and eighth segments of females are also slightly visible. This confusion leads to many young nymphs being sexed as males. **Looking closely at the sixth segment of a female (under magnification is best) reveals a small, v-shaped notch in the center of their sixth segment** on the distal (away from the head) edge. On either side of this notch will typically be a slight lobe. The sixth segment will also be proportionally larger than that of a male of the same age. **A male's sixth segment will be a perfectly straight rectangle with no notch or wavy edge.** These differences are extremely subtle in the youngest mantises, but become increasingly apparent with every molt. Be at least

a little cautious of any nymphs sexed before the fourth instar – even I make mistakes every now and then.

The sixth lower segment is the most important and conclusive method of sexing a mantis, but at ages when the seventh and eighth are visible, they can also be used to help. A female's seventh and eighth segments will have a groove or line running lengthwise, giving the segments the appearance of being divided in half. A male's will look flat with no central line. The eighth segment of a male mantis looks like an intact triangle or trapezoid and possesses two thin, hairlike projections from the rear edges (called "styli.")

The following table describes other sex differences of particular species and groups of mantises.

Mantis	Male Feature	Female Feature
Phyllocrania paradoxa	Crown thin, "zig-zagging" Shield narrower, spiky-edged	Crown wide, 1-kinked rectangle Shield wider, flares up at middle
Hymenopus coronatus	Noticeably smaller starting i3 Narrow leg petals, no horn	Noticeably larger Wider leg petals, horn on head
Popa spurca	Smooth dorsal surface of abdomen	Bumpy dorsal surface of abdomen
Deroplatys spp.	Thinner, fairly diamond-shaped shield	Wider shield with species-specific shape
Pseudocreobotra wahlbergii	Six center spines on ventral surface of abdomen	Five center spines on ventral surface of abdomen
Family Empusidae	Thick, comb-like antennae	Shorter, very thin antennae
Metallyticus spp.	Long styli project downward	No styli
Stenophylla lobivertex	Thin horn, thinner cerci	Horn with wide, flared base Wider cerci
Choeradodis spp.	Narrower shield	Wider shield with species-specific shape
Brancsikia freyi	Rectangular shield and narrower abdomen, visible at i1	Triangular shield and wider abdomen, visible at i1