

# Scarlet-bodied Wasp Moth

(*Cosmosoma myrodora*)

The Scarlet-bodied Wasp Moth is a beautiful example of Batesian mimicry, an evolutionary defense mechanism where a species that is harmless evolves to resemble a dangerous one. Although the Scarlet-bodied Wasp Moth is unable to sting or bite, it resembles a wasp in both appearance and behavior. Unlike most moths, which are nocturnal, the Scarlet-bodied Wasp Moth is diurnal, active during the day. Its fast-moving flight pattern also more closely resembles a wasp than a gentle moth. In nature, bright colors, especially those that contrast with each other, serve as a warning to predators that the species is poisonous or unpalatable. Although it is neither poisonous nor unpalatable, the Scarlet-bodied Wasp Moth is bright red, deep black, and metallic blue! It is about 0.6 inches long and has a metallic blue head, large black eyes and black antennae with white tips. Its thorax and legs are bright red. Its abdomen appears to have eight segments, the first four of which are bright red with a black stripe and metallic blue dots down the middle of the dorsal side, and the last four segments are black with three metallic blue spots. The underside of males' abdomens has two pouches and white spots. The Scarlet-bodied Wasp Moth has a 1.2-inch wingspan. Its wings are transparent with black veining and thick black edges. Batesian mimicry helps protect these moths from their predators - spiders, birds, bats, and parasitic flies and wasps.



<https://www.inaturalist.org/photos/248423519>

Scarlet-bodied Wasp Moths also have a chemical deterrent to their predators. Before mating, males visit dog fennel (*Eupatorium capillifolium*) to collect its toxins, pyrrolizidine alkaloid, which is poisonous to humans and animals. It can cause nausea and vomiting and, in larger doses, liver damage. The males store this toxin on fine cottony fibers in the pouches under their abdomen. When mating, the male dusts the female with those fibers, giving the mated female an odor that is offensive to spiders. They also pass on this chemical protection to their eggs.



*Scarlet-bodied Wasp Moth Larva*

<https://www.inaturalist.org/photos/170261428>

The larvae emerge about a week later and eat their egg case before attaching to the host hempvine. Larvae have a yellow body and whitish, black-tipped hairs with a sprinkling of black hairs.



*Cocoon of the scarlet-bodied wasp moth larval hair*

<https://www.inaturalist.org/photos/196578509>

After about a week, the larvae form cocoons out of their hair. The cocoons are transparent yellow with black specks. The scarlet-bodied Wasp Moth larvae and pupae are vulnerable to predators, especially parasitic insects, during those stages. Adults emerge in about eleven days and feed on the nectar of a variety of plants, especially plants with white flowers. In doing so, they are inadvertent pollinators. The entire life cycle spans between 50 and 70 days, with multiple broods occurring during a lifetime.

The Scarlet-bodied Wasp Moth is widespread throughout most of Florida and is also found in a narrow strip along the coastal regions of South Carolina, Georgia, Alabama, Mississippi, Louisiana, Texas, and in a few areas in Mexico and Central America. Its range is limited by two factors: tropical or subtropical climate and the presence of its host plants. Both must be present for the Scarlet-bodied Wasp Moth to exist.

The host plants, Florida Keys hempvine (*Mikania cordifolia*) and climbing hempvine/climbing hempweed (*Mikania scandens*), only flourish in wet areas, but can be found farther north than the Scarlet-bodied Wasp Moth. In the northern parts of the moth's range, the moth enters a dormant phase called a diapause to overwinter in the pupal stage. In the southern parts of its range, such as Florida, it is active year-round but more prevalent in warmer weather. Even though its range is limited, the Scarlet-bodied Wasp Moth enjoys a varied habitat - coastal plains, pine flatwoods, oak hammocks, swamps, and canal banks.



*Mikania cordifolia - Hempvine*

<https://loranativadeunguay.blogspot.com/2011/06/mikania-cordifolia-asteraceae.html>

Submitted by Mary Jo Davis, Chair of the BBB&B Committee - Birds, Butterflies, Bats, & Bees Committee.