

What Is That Huge Thing on the Milkweed? (aka Tarantula Hawk Wasp)

by UCCE Master Gardener Rebecca Miller-Cripps

We've all heard about plummeting populations of Monarch butterflies and their arduous multi-generational migration journeys. In our area of the Mother Lode, the Xerces Society (<https://xerces.org/western-monarch-call-to-action>) recommends protecting and planting pesticide-free native milkweed and nectar plants to support Monarch future generations.

After years of "editing" milkweed volunteer locations in my backyard, two substantial patches now attract an occasional butterfly or two. However, the great surprise to me is the complex ecosystem represented by these tall (but not particularly attractive, in my humble opinion) flower heads. There are shiny black carpenter bees crawling over the blossoms. Tiny, light-reflecting sweat bees zip around. Orange and black milkweed bugs mate on the stems. And, later in the season, the seed pods are covered by yellow-orange milkweed aphids. Even small orange butterflies and honey bees are in attendance.

The biggest surprise, especially this summer, is the appearance of iridescent bluish-black two-inch-long "things" with bright orange, see-through wings. Fascinating to watch as they explore and eat from the prolific blossoms, they send me running for my phone (to take photos), field guides (to identify) and computer (to research). Of course, my go-to is always to Google-search the attributes I can most easily identify. After typing in "large black wasp-like thing with orange wings," the first response to my search is the National Park Service website (<https://www.nps.gov/articles/tarantula-hawk.htm>) identifying Tarantula Hawk *Pepsis thisbe* as a two-inch wasp in the Grand Canyon

Tarantula hawks are found on every continent except Europe and Antarctica. According to the "Laws Guide to the Sierra Nevada" our local species is *Pepsis pallidolimbata* that preys on large spiders. *Pepsis formosa* prefers hot, dry habitats such as the Sonoran Desert where their favorite baby food, the Tarantula spider, is found. In 1989, the New Mexico legislature adopted *P. formosa* as the State Insect after an elementary school class mailed "favorite insect" ballots to all elementary schools in the state.

Adults are gentle-giant nectarivores, deriving their energy from the high sugar content nectar of flowers, especially milkweed. Non-aggressive, only the females can sting. But here's where it gets really interesting (or gruesome), ladies and gentlemen!

Females use that excruciating sting (purportedly a 4 out of 5 on the Schmidt Sting Pain Index, <https://www.britannica.com/science/Schmidt-sting-pain-index>) to paralyze a tarantula spider without killing it. They drag the unresisting spider into its den, lay an egg on its abdomen and seal the chamber. Once the egg hatches, the baby tarantula hawk eats its way through its host, avoiding vital organs in order to keep its food supply alive and fresh until no longer needed.

A true parasitoid (in contrast, predators capture their food source and eat it), these gorgeous creatures have the bright orange and black warning coloration of so many species that feed on milkweed. Only road runners and bullfrogs are willing to eat them. So, the next time you have a chance, check out a milkweed flower for the presence of a tarantula hawk wasp. They're worth your awe and respect.

Rebecca Miller-Cripps is a University of California Cooperative Extension Master Gardener of Tuolumne County.

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