

The California Tortoiseshell butterfly in flight this summer

BY LINDA KAPPEN



California Tortoiseshell butterfly

The California Tortoiseshell (*Nymphalis californica*) is of the Nymphalidae family of butterflies. It is dark brown with a reddish-orange tinge and big and small black spots on the middle of the upper side. A dark brown to greyish pattern, which resembles a dead leaf or tree bark, appears on the underside of the wings. The butterfly's wingspread can be up to 2.5 inches.

As with most species, the male perches looking for females. The females will lay their eggs in bunches on the host plants. As the young caterpillar grows, it feeds on the leaves in a close group with other caterpillars.

Adults overwinter and will fly early in the day, coming out on warm days through late winter and spring. In mid-spring, the Tortoiseshells mate and lay eggs for another brood. In southern Oregon, these butterflies may have up to two or three broods some years.

The overwintering adults feed on fir-needle exudate in early spring. Exudate is a substance excreted by fir needles. Adults will later use nectar for food and visit mud puddles or damp spots in roadways.



Tortoiseshell underside

They can be seen in flight from January to November. April through August are peak months for this butterfly.

Host plants are species of *Ceanothus* (wild lilac). Breeding occurs in the *Ceanothus* zones of the mountains. This butterfly lives in lower elevations in clearings and at edges of forests and in woodlands, canyons, river corridors, and brushy areas. They have a wide range on the western side of the Rockies from British Columbia, on the Pacific Coast, to Baja, and east to Colorado, New Mexico, Montana, and Wyoming.

The California Tortoiseshell is known to have irruptions or "outbursts" in

population. They hibernate, reproduce, and live here throughout the summer. In fall they will overwinter here again with some emigrating south to live. There is still much to learn about the reasons for the large irruptions of the California Tortoiseshell. One reason may be the health and optimal conditions for specific predators of the butterfly, e.g., a parasitic wasp. Thus a good year for parasitic survival results in lower numbers for the butterfly, and vice versa.

The last large population irruption of this butterfly that I witnessed locally was around 2001, when hundreds of California Tortoiseshells flew around Applegate School and were seen in large groups puddling on the track, which is decomposed granite. There may have been a smaller irruption in 2009 in our mountains, including the Cascades. After witnessing an irruption, folks sometimes mistake the butterflies for migrating Monarchs, only to find out they are indeed California Tortoiseshells. It would be awesome to witness another irruption of this beautiful insect!

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Butterfly photos by Linda Kappen.

Notes from a Rogue entomologist

Insects on milkweed—more than just monarchs

BY RICHARD J. HILTON

Monarch butterflies are always a welcome sight, and finding caterpillars with their bright yellow and black bands feeding on a milkweed plant is inevitably a delight. Add in a chrysalis that is adorned with gold trim and it is easy to see why such a spectacular species is the focus of so much attention.

The fact that monarch butterflies engage in an annual migration covering thousands of miles is remarkable. Unfortunately, the overwintering sites in Mexico for the population of monarchs that migrate into the Eastern and Great Plains states have been under threat, and while they are now largely protected, climate change and habitat destruction loom as very real concerns for this charismatic species.

Our western monarchs overwinter in California and while the threat there is not as severe, the western population has declined over the last 20 years. In response to the reduced numbers of monarchs, there has been a nationwide effort to plant milkweed and monarch waystations to encourage them in their migration. Milkweed plants contain toxic chemicals that the monarch sequesters and uses to deter predators, accounting for its dramatic coloration that acts as a warning sign to potential predators.

However, monarchs are not the only insects that can live on milkweed and survive the toxins produced by the plant.

Locally, there are three insect species other than monarchs that you will often find when you are out searching milkweed plants for monarch caterpillars. The oleander aphid is probably the most

commonly seen. The oleander plant is in the same botanic family as milkweed and also produces some similar toxins. The oleander aphid is bright yellow with dark legs, feeds on the plant sap with a sucking mouthpart, and can reproduce rapidly. You often find milkweed plants whose pods are completely covered with these small insects. Gardeners growing milkweed often consider these aphids a pest and unwanted competition for the desired monarchs. Look for articles on the web, like the one titled "10 Good Ideas for Keeping Milkweed Aphid-free...and 1 Bad One" at monarchbutterflygarden.net/control-aphids-milkweed-plants.

Another milkweed-sucking insect is the small milkweed bug, which is extremely common in our region. (There is also a large milkweed bug that has distinct red coloration and, while it is reported to be in Oregon, I have never observed it here in the Rogue Valley.) The small milkweed bug is often confused with the boxelder bug as they are both "true bugs" and have a similar size and shape. In addition, both insects have some orange to red coloration. You can tell the difference—the small milkweed bug's markings are more pronounced, making an X shape on the insect's back, and the small milkweed bug can also have two white spots towards the rear end.

The last of my trio of local milkweed insects other than monarchs does not have any yellow, orange, or red warning coloration, but it is, to my mind, the most striking of the bunch. It is popularly known as the cobalt (or blue) milkweed beetle. This metallic-blue beetle is found in

the western US and is fair-sized (between a quarter-inch and a half-inch long). Occasionally you can find quite large populations feeding on milkweeds, and when that happens they are hard to miss.

Both the cobalt beetle and the monarch have evolved the same physiological mechanism for dealing with the toxin produced by the milkweed plant. Additionally, the adult cobalt beetle and the final stage of the monarch caterpillar have also developed an interesting adaptive behavior whereby the insect cuts the stem or mid-vein of the leaf prior to feeding on it. This reduces the sap flow and lessens the amount of toxins moving into the leaf that is being consumed.

The monarch butterfly is one of our most recognizable insect species, but this summer when you see a milkweed plant, please keep an eye out for some of the lesser-known insect inhabitants that can survive on this poisonous host.

One of the pleasures of studying insects is their immense diversity, and the group of insect species that can thrive on milkweed plants is no exception.

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Top photo: Oleander aphids (wildernesscenter.org).

Middle photo: Small milkweed bug (commons.wikimedia.org).

Bottom photo: Cobalt milkweed beetle (thoughtco.com).

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