

If No Caterpillars, Then No Butterflies

by Vera Strader

The U.S. Secretary of Agriculture has proclaimed June 17-23, 2013 as national Pollinator Week. According to <http://www.pollinator.org> Pollinator Week has grown to be an international celebration of the valuable ecosystem services provided by bees, birds, butterflies, bats and beetles.



In honor of Pollinator Week, let's talk about the role of butterflies, those lovely flying pollinators, in our gardens. The Conservatory of Flowers in San Francisco's Golden Gate Park is showcasing "Butterflies and Blooms" through October 20. If you're visiting the Bay Area, stop by to see up to twenty species of North American butterflies, including monarchs, admirals and western swallowtails, some just emerging from their chrysalis. How can it be that the crawly, worm-like creature—a caterpillar—can create that chrysalis and then turn into a graceful, soaring butterfly?

Start with a good butterfly book with pictures of butterfly larvae and when possible identify the caterpillars in your garden. Put away your pesticides! Even Bt (*Bacillus thuringiensis*), often recommended for caterpillar control, will kill butterfly larvae. If no caterpillars, then no butterflies.

Watch the butterflies in your garden. When you see one flitting restlessly from flower to flower, you may be looking at a female searching for just the right plants for laying her eggs. Some butterflies lay their eggs in clusters, some singly. The tiny eggs may be round, oval, ribbed, green, orange, or opalescent, but all are laid on plants the mother butterfly believes will be a suitable munching haven for her voracious caterpillar offspring.

Some caterpillars aren't finicky but others, like a picky toddler, will dine only on very specific plants. Its preferred food is called its "host plant" or "larval plant." It is well known that the larvae of the beautiful pipevine swallowtail eat only leaves of the California pipevine (*Aristolochia californica*) and offspring of the elegant monarch will eat only milkweeds (*Asclepias*). Without appropriate food, the caterpillars die. No caterpillars, no butterflies!



The eastern milkweed (*Asclepias tuberosa*) with bright orange flowers, often sold in our nurseries, isn't the monarch's favorite host plant, says Pat Reh of the California Native Plant Society's local chapter.

Butterflies often rely on plants native to the areas in which both evolved. Not surprisingly, monarch larvae prefer California native milkweeds, especially those called narrowleaf (*Asclepias fascicularis*), purple (*A. cordifolia*), and showy (*A. speciosa*). These can usually be purchased only in native plant nurseries or grown

from seed. California milkweeds develop more toxins says Pat, and bestow the caterpillars with protection from predators.

Caterpillars are potential dinner to birds and other hungry critters, but they are not without defense. Some, like the colorful monarch caterpillars, are toxic when eaten or have a foul taste or smell; others mimic the appearance of toxic caterpillars. Yet others sport fake, fierce-

looking eyes to deter predators. Some are just “little green worms,” well camouflaged on their green leaves.

The chrysalis too may be hard to see, sometimes-drab brown to blend into fall foliage, or rolled up in a green leaf. Adult butterflies also rely on toxicity and bad taste (monarch), mimicry, fake eyes (buckeye), or fake antennae on the rear (swallowtails) to lure predators away from their head. Even so, butterflies at all stages are vulnerable to predators, pesticides, climactic catastrophe, and habitat loss.

Planting for butterflies can help. Most butterflies will feed on nearly any flower that offers both nectar and a broad platform of blossoms on which to alight. Common garden plants include butterfly bush, marigolds, zinnias, asters, daisies, yarrow, and verbena. Some butterflies also feed on fresh fruit, sap, or even animal dung. Butterflies prefer a cluster rather than single plants in an open sunny area; a shallow source of water may also be appreciated.

Wild and undeveloped areas, roadsides, and creeks can be butterfly nurseries with both nectar and host or larval plants. Host plants are often less showy and are frequently natives such as oaks, California lilac, buckeye, violets, penstemon, pines, monkey flowers, thistles, grasses, and of course, milkweeds and the California pipevine.

Don't be surprised if you find larvae feeding on some of your non-native garden plants as well. Leaves chewed along the edges (rather than in the middle) often signal caterpillars at work. Hungry caterpillars can munch an amazing number of leaves, but plants usually recover quickly.

Vera Strader is a Tuolumne County Master Gardener who uses very few pesticides. Her Sonora area garden is certified as a National Wildlife Habitat garden.

