



THE GREAT OUTDOORS

All-Aflutter in Autumn

Resident and migrating butterflies are fall pollinators in the author's garden – and maybe yours, too.

By J. Morton Galetto, CU Maurice River

As mornings have gotten progressively cooler, I find myself reaching for a fuzzy beanie cap before heading out. By midday things have warmed up and short sleeves are comfortable enough. It's October and we are having a week of Indian Summer weather. The leaves are at their height of color and dropping to the ground; enough have fallen to have coated the forest floor in a single layer of oranges, reds, yellows, and browns.

Butterflies are solar-powered and each day when the temperature rises the garden becomes all aflutter with migrant butterflies, bees, wasps, and their comrades. Today a large Chinese stalked along the ground looking for would-be prey. Monarch butterflies were hanging on to some Mexican sunflower blooms that still blazed orange. Buckeye butterflies were clinging to blue salvia. Cabbage white butterflies feasted on the asters and a few northern crescents appeared to be using smartweed. The

cloudless sulphurs were heading to anything red, primarily Texas salvia.



Fall asters were covered in pollinators. Photo Author

Monarchs, cloudless sulphurs, variegated fritillary, and buckeyes are all migrating butterflies, while northern crescents and cabbage white butterflies do not leave this area. So some were passing through and others were likely taking their final flutter.



Migrating buckeye butterfly in author's garden. Its hindwings were likely attacked by a bird but it is still able to fly. Photo: Author



This variegated fritillary is one of the migrants that passed through the garden in late October. Photo Author.



A cabbage white butterfly nectars on some hyssop. Author



A northern crescent, phycoides selenis, finds a bit of smartweed. Photo Author

A pair of cloudless sulphur butterflies were dancing their way up to thirty feet as if they hadn't a care. Eventually they parted company and one lit on some salvia in the garden. When it landed to rest its wings were closed, and since its undersides are chartreuse, it was a challenge to find it perched among the leaves. Luckily for a photo op it lit at one point on a red salvia where I could pick it out. The upperside of the wings are more yellow and it's large for a sulphur, with a 2.5 - 3-inch wingspan. When you are looking for it among light green leaves it blends in, and then, by contrast, when it flushes the bright yellow startles you.

Talking photographs, I was a predator of sorts. When I was hunting down a sulphur with my lens, each time it took flight it was rapidly beyond my frame. Between its speed and my flinch I was hopelessly incompetent. Perched wasn't a problem but to capture the upperside of the wings was nearly impossible.

The males and females are sexually dimorphic. Males are generally solid yellow and females have a subtle black border on their wings and a dark spot at the center of each forewing. There are some seasonal changes in males; winter forms are typically

larger and have darker markings (USDA, US Forest Service factsheet).

Cloudless sulphur butterflies migrate similar to the well-known monarch butterflies. But they do not travel in large numbers and they do not travel as far. They abandon their breeding sites and travel south to Florida, other gulf states, and Mexico. They winter there and return north to the same breeding areas previously inhabited. They are considered strong fliers. Their travels extend to New England's coastal states and New Jersey (except for the northwest part." In our state they are most common in the coastal plain. They are neotropical, with their range extending through central America into Argentina.

Gochfeld and Burger describe cloudless sulphurs as a southern species that often reaches the northern extent of its range too late to be successful at breeding. Even if late arrivals manage to breed, the brood will likely be eliminated by cold weather.

Entomologists in Florida consider the migration one of the easier ones to observe, as clusters of sulphurs congregate in numbers mid-peninsula. Entomologists at the University of Florida note, "The seasonal migrations of cloudless sulphurs and monarchs are similar in that each species is

abandoning large and favorable summer breeding areas that have lethally low winter temperatures for more favorable climates to the south. In the spring, surviving adults head northward and soon repopulate the summer breeding areas. In both species, the northward migration is evidenced by the reappearance each summer in the breeding areas they abandoned the previous fall.” When temperatures fall below 20 degrees Fahrenheit it is likely a death knell to this species.

Determining the paths of migratory butterflies has been a challenging task. Scientists employ technology to uncover their mysteries. Stable isotopes are sometimes used for tracing animals’ movements. In the case of butterflies a rare isotope of hydrogen called deuterium is found in rainwater and acts as a fingerprint of an animal’s origins. Deuterium is harvested from the butterfly’s wing and can allow scientists to determine where the creature was born. This gives insights into its travels.

The cloudless sulphur caterpillar’s preferred foodplants are sennas and cassia genus. Thus their scientific name *Pheobis sennae* pays homage to their larval food source. Pheobis comes from Phoebe – the Greek god Apollo’s sister. The famous Swedish biologist and physician Linnaeus classified and named

the butterfly in 1767. He is known for the modern-day nomenclature used for naming organisms.

Both senna and cassia are poisonous and enable caterpillars to accumulate toxics that are a deterrent to predators. Farmers often tear out these plants because of their noxious nature, thereby limiting a food source of the caterpillars.



The underwing of this cloudless sulphur nearly looks like a leaf, enabling it to escape detection by predators. Photo: Author.

Cloudless sulphur caterpillars camouflage well; when eating green leaves they turn green and when eating yellow flowers they are yellow. Caterpillars grow thousands of times their hatchling size before pupating.

Their chrysalis looks either green or pink-and-yellow striped. In either case it resembles a folded leaf, the pink one looking like distressed foliage.



This is the chrysalis of the cloudless sulphur. Photo: Heather Stiltner iNaturalist.

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Cloudless sulphur caterpillars resemble what they eat. If they have eaten yellow flowers they are yellow, and green foliage gives them a green color. Top Photo: Eadamo iNaturalist. Bottom pic: Bob Cammarata, Maryland Biodiversity website.

They use diverse habitats: wooded edges, abandoned lots, roadsides, thickets, pinelands, watercourses, wetlands, and swamps. They are especially common along the Atlantic and Gulf coasts. Cloudless sulphurs are year-round residents from South Carolina to Texas.

Adult butterflies are especially attracted to red blooms; in fact the USDA reports that they will dive into car tail lights covered with red lenses. Because of their lengthy proboscis/tongues they can nectar on long tubular-shaped blossoms, explaining their attraction to salvia.



Cloudless sulphurs are attracted to red colors. This orange Mexican sunflower's nearly red coloration attracted this one to stop for nectar. Note the long proboscis. Photo: author.

The amount of pollinator activity in our garden in late October turns out to be most fascinating. The more I watched the more I saw, and I'm still certain to have missed a great deal!

Sources

Cloudless Sulphur Butterfly, *Phoebis sennae*, USDA, U.S. Forest Service, fact sheet.

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