

Painted Lady Butterfly Migration: Many Questions Remain Unanswered

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It is a common phenomenon to observe the annual migration of monarch butterflies every spring and fall in Illinois. Not so common was the massive migration of the painted lady butterflies (*Cynthia cardui*) into central Illinois and other parts of the country. Many observers noted that the numbers of this pinkish-orange and black butterfly increase dramatically in some years. During August, large clusters of thousands of painted lady butterflies can sometimes be seen in the central one-third of the state. Near highways they appear as large dense clouds of butterflies and are distracting to motorists.

The causes of sporadic population explosions and associated migrations have intrigued biologists since the beginning of scientific research. Few biologists work solely on migration studies. Still fewer are fortunate to be in an area where a migration is taking place. Since we are unable at this time to predict when or where sporadic increases will take place, most field investigations are conducted during or after the migration.



The painted lady is one of the most widely distributed of all butterflies. It is found on every continent during some part of the year except in South America, where the species is rare or absent.

This species seems best adapted to dry and open land and is unable to survive freezing temperatures in any of its stages. In Western Europe and northern Africa the painted lady does not overwinter north of the Mediterranean. Each spring there is an annual migration of butterflies from more southern regions of Africa, sometimes in small, sometimes in massive numbers.

In North America the annual migration is thought to originate in the warm temperatures and subtropical regions of northwestern Mexico where they are present every month of the year. In some years when seasonal rains have been heavy in that region, the butterflies appear in large numbers and migrate north and northeast, establishing the bulk of the spring brood.

The breeding success of these individuals and their migration may be responsible for the millions of butterflies in Illinois. In some years the biotic potential (maximum number of offspring per female) seems to be realized in Mexico and central Illinois, indicating that the environmental resistance (limiting environmental factors that prevent the biotic

potential from being realized) was low. The environmental factors that could contribute to their high populations are unknown. One can only speculate that the dry period during the summer came at the proper time for survival; food sources were good, and parasites, predators, and diseases were at a low level.

The yellowish-green and black caterpillars of the painted lady have been recorded on over 100 food plants over the world, mostly from the mallow, composite, and legume families. In temperate climates a preference for thistle has been shown. In Europe, they are sometimes serious pests of maize, Lucerne beans, sunflowers, and soybeans.

In North America they generally are not considered to be pests; however, some years they cause apprehension among soybeans farmers in central Illinois. According to Illinois Natural History Survey biologists, the caterpillars show a preference for cocklebur, but when farmers spray to control cocklebur, the caterpillars move onto the soybeans. Defoliation has been localized in spots in most fields and generally has caused no serious losses.

Observations indicate that painted lady butterflies fly southward during August and later.

(See this Iowa State University Web site for maps and other information about painted lady butterflies.) <http://www.public.iastate.edu/~mariposa/homepage.html>