



Monarch Butterfly

Danaus plexippus

With its brilliant orange and black coloring and large wings, the monarch butterfly attracted the notice of the early English settlers of North America, who nicknamed it “King Billy” after William of Orange.

History and Status

During the last Ice Age the monarch lived only in tropical Mexico where milkweed thrived. Scientists speculate that as the climate warmed, milkweed spread northward into Canada. Thus began the expansion of the monarch’s range, and the annual pattern of winter migration south to its home ground.

Monarchs are plentiful throughout North America, though populations may vary widely from year to year. Threats to their wintering grounds may affect the migrating population.

Description

The monarch has four wings, front and back wings on each side. Spread out, they span three and a half to four inches, with panels of orange divided by black veins, and a black outside border with a double row of white spots. Males can be distinguished from females by the presence of a small black dot on their hind wings.

The upper side of the wings, visible when wings are spread open, are brighter in color than the underside. The wing color resides in microscopic flat scales that overlap like shingles. The scales rub off like a colored powder when the wings are touched, but the wing remains intact.

The black body of the butterfly consists of head, thorax and abdomen, and six legs. The back four feet taste what they touch—they are 2,000 times more sensitive than human taste-buds. The monarch’s compound eyes see ultraviolet light, which helps them identify nectar flowers and members of the opposite sex. The long tongue, or proboscis, kept coiled in two separate maxillae under the head when not in use, zips together and extends to draw nectar from deep inside flowers.

Habitat and Habits

The adult monarch butterfly is typically seen along the sides of roads and railways, in pastures, meadows and sunny flower gardens. On cool days, monarchs must bask in the sun to warm their wings enough to fly. The eggs, caterpillars and pupae are found only on milkweed plants.

During the summer months, three generations of monarchs breed, reproduce and die, each in the course of a four-week period. In the fall, the fourth generation’s adult monarchs must migrate southward and overwinter before they are able to mate and reproduce. This generation lives up to six months.

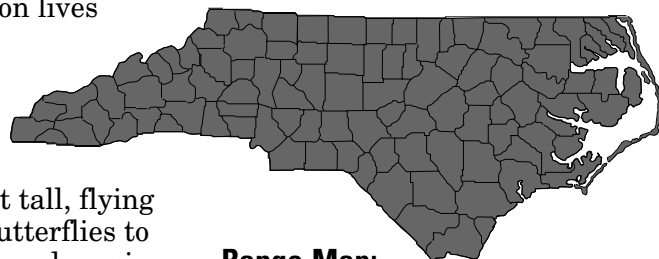
When seeking a mate, male monarchs perch in the sun on the tips of weeds five to 15 feet tall, flying out to all passing butterflies to determine their sex and species. If a female is found ready to



mate, a long, spiraling flight follows, after which the male grasps the female from above, gliding with her to the ground. The male carries the female to dense cover where they mate.

Females deposit single, white, pinhead-size eggs on the undersides of milkweed leaves. The larvae emerge within four days, eating milkweed leaves voraciously and molting four times in 12 days, emerging each time larger and more brightly striped in black, yellow and white.

When the larval stage is complete, the caterpillar attaches itself by the hind end to a button



Range Map:
Found statewide ■

of silk on the underside of a milkweed leaf. The head end of the caterpillar curls up, making a U-shape. The caterpillar's skin splits near the head and a new pupal shell emerges, forming a pale new exoskeleton around the living pupa. A jade-green chrysalis hardens and protects the metamorphosing pupa for 15 days while it turns into a butterfly.

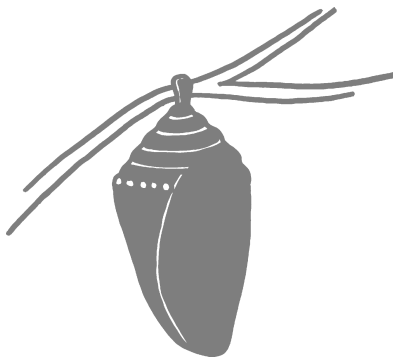
When the monarch emerges, its wings are wet and crumpled. It cannot fly until it pumps fluids into its wings to stiffen them.

Monarchs have few predators, as birds have learned their bodies may contain a distasteful substance from the milkweed they ingest. The main dangers they encounter are during their long, arduous migrations. Monarchs can be blown off course by hurricanes and storms, and they have been found clinging to the masts and decks of ships at sea.

Range and Distribution

The monarch butterfly is found throughout North Carolina and North America, wherever milkweed and nectar plants are plentiful. In autumn, migrating populations may congregate along the edges of large lakes or bays, awaiting favorable winds to cross. Traveling at 210 to 220 degrees south, monarchs are so faithful to their route that they fly over mountains and skyscrapers rather than taking an easier route.

Fall migration takes the monarchs that live east of the Rockies 2,000 miles south at speeds of up to 20 miles per hour, up to 80 miles a day, to a range of mountains in central Mexico. Here, at an elevation of 10,000 feet, the monarchs cling to groves of trees by the millions, closing their wings on cool days to conserve energy, and feeding on plentiful nectar plants on sunny, warm days. West of the Rockies, monarchs migrate to coastal California.



Monarch chrysalis

People Interactions

Once captured and chloroformed for collections, butterflies these days are enjoyed while they live. Garden clubs promote the planting of favorite nectar flowers, including purple coneflower, joe-pye weed, butterfly bush and, of course, milkweed. Some companies sell "butterfly kits" that contain a monarch chrysalis.

If its few wintering grounds in Mexico and California are destroyed, the migration of the monarch to North America will be endangered.

References

- Herberman, Ethan. *The Great Butterfly Hunt: The Mystery of the Migrating Monarchs* (New York, N.Y.: Simon & Schuster, Inc., 1990).
 Stokes, Donald and Lillian. *The Butterfly Book* (Boston, Ma.: Little, Brown, 1991).
 Urquhart, F.A. *The Monarch Butterfly: International Traveler* (Chicago, Ill.: Nelson-Hall Publishers, 1987).

Credits

- Written by Marjorie Hudson.
 Illustrated by J. T. Newman.
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MONARCH BUTTERFLY

Classification

Class: Insecta
 Order: Lepidoptera

Average Size

Wingspan: 3½ to 4 in.

Food

Milkweed (larval stage) and nectar (adults).

Breeding

The male carries the female to dense cover, and mating takes place there. Eggs hatch a few days after they are laid, and larvae emerge. Larvae transform into pupae, and mature adults emerge in several weeks.

Young

Larvae feed on milkweed, molting 4 or 5 times in several weeks. After the chrysalis forms, it takes 15 days for a monarch to emerge.

Life Expectancy

Summer hatchlings live 4 to 5 weeks. Autumn hatchlings live 6 months or more, migrating south and reproducing in spring.