



Natural History Notes



Eastern Tiger Swallowtail (*Papilio glaucus*)

Eastern tiger swallowtail butterflies are members of the insect order Lepidoptera (butterflies and moths). These large black and yellow butterflies, like most of their relatives, are adapted to feeding on flower nectar through long proboscises that uncoil and act like straws. They evolved about 65 million years ago during the time when dinosaurs were dying out and mammals and flowering plants were rapidly increasing in number.

These beautiful flying insects are found throughout the United States east of the Rocky Mountains from the Canadian border south to the Gulf of Mexico, and they are the official state butterfly or insect in five of them (Delaware, Virginia, South Carolina, Georgia, and Alabama). These large, easily recognizable butterflies have wingspans that average about 5 inches (13 centimeters). They have two close, similar-appearing, but smaller and paler relatives that inhabit the more northern and western environments of North America: the Canadian tiger swallowtail (*P. canadensis*) found in southern Canada and Alaska, and the western tiger swallowtail (*P. rutulus*) found in the western United States.

Eastern tiger swallowtails are relatively easy to identify because of their large size, bright black and yellow color, and long black “tails” on their hindwings. While most of these butterflies are black and yellow, some females are almost completely black, a color phase that mimics the pipevine swallowtail (*Battus philenor*), a more distant cousin that tastes bad to predators. When birds and small mammals eat pipevine butterflies, they often get sick. They remember these unpleasant experiences and almost always quit preying on dark, dusky-colored butterflies, including the black phase eastern tiger swallowtail females (most birds and mammals like the taste of tiger swallowtails).

Tiger swallowtails, including the male of the eastern variety shown in this mobile, are often seen flying or feeding in flower gardens and yards, or sailing across roads and clearings. They also frequent river valleys and the edges of deciduous forests, and take nectar from a variety of flowers. Favorite sources of nectar include blossoms of milkweed, thistle, honeysuckle, red clover, black-eyed susan, lilac, spicebush, and sassafras. These butterflies also visit carrion and wet patches of mud to obtain moisture.

Adult eastern tiger swallowtails lay small, round, yellow-green eggs on the leaves of a variety of host plants, including willow, poplar, birch, American elm, red maple, black cherry, basswood, magnolia, apple, and tulip trees. They also feed on the flowers of some of these host plants. The tender young foliage of these host plants serves as food for the emerging larvae. When the larvae hatch, they eat their eggshells first, and then begin feeding on leaves. The tiny larvae, or caterpillars as they are commonly called, are brown and white and look like bird droppings, a strategy that helps protect them from predators, particularly birds.

The growing caterpillars shed their smooth, supple skins several times and eventually turn green. They reach lengths of about 2 inches (5 centimeters) and have two large, distinctive yellow and black spots that mimic eyes on their enlarged third thoracic segments. These large, imposing false eyespots and their green (sometimes brown) coloration help protect them against avian predators (eastern tiger swallowtail caterpillars often turn brown, a color mimicking tree branches, shortly before their last molt). The developing caterpillars also protect themselves from predators and bad weather by spinning soft silken mats on leaves, and then pulling (curling) the edges of the leaves over themselves with strong strands of silk.

When the caterpillars mature, they seek out sheltered places where they attach themselves to small branches or pieces of bark with strands of silk and molt for the last time, turning into pupae or chrysalises (the butterfly equivalent of a moth’s silken cocoon). While they’re in this hard, dark-colored, mummy-like form, their body tissues reorganize and metamorphose until they eventually emerge as beautiful, brightly colored flying adults. In the warm, southern parts of their range, tiger swallowtails produce two or three generations (flights) per year, but in northern environments, only one. In regions where only one generation occurs, they overwinter as chrysalises and emerge the following spring. However, in regions where more than one generation is the rule, adults also emerge during the summer months, and only individuals from the last generation to hatch usually spend the winter in chrysalis form.

Observing butterflies is an enjoyable and fast-growing hobby. Search for butterflies on calm, warm sunny days in open areas where flowers grow. Field guides with good color photographs and low power binoculars with close-focus capabilities are helpful. Most butterflies are easy to approach, particularly if you move slowly and quietly, and don’t let your shadow touch them.

Small butterfly farms and large elaborate butterfly houses can be found in many parts of the United States and other parts of the world. They are wonderful places for the whole family to visit.

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