

## The Fascination of Butterflies

*by Liz Gibbons*

I believe that one of the most fascinating creatures on earth is the butterfly. Butterflies range in size from 1/8 inch to almost 12 inches and are found worldwide except for Antarctica. There are 15,000 to 20,000 species of butterflies. How a caterpillar can be transformed into a beautiful butterfly is one of the marvels of nature.

The life cycle of a butterfly encompasses a complete metamorphosis from egg to larva to pupa to adult. Because caterpillars will only eat a single species of plant the female butterfly is very picky about where she lays her eggs. It has to be laid on the host plant for that species of butterfly. To aid this process butterflies have chemoreceptors on their feet for tasting which aids in determining that it is the plant their offspring will feed upon. When the larva hatches it is very small. This young caterpillar's one job is to eat. As it eats, it grows, but it faces a challenge that befalls all insects. Its skin cannot grow. So a new skin begins to form under its present skin. When the new skin is ready the caterpillar sheds its old skin. This process, called molting, is repeated four times as the caterpillar grows. Now the caterpillar is ready for the pupa stage. It spins a silk "girdle" to attach itself to the plant. Then it molts one more time, but this time the skin forms the outer shell of the chrysalis, which is usually referred to as the pupa. Some mistakenly call this a resting stage, but a lot is going on inside. The caterpillar body is being transformed into a butterfly. This process actually began before the last molt as the wings were beginning to form under the skin of the caterpillar. Also during the chrysalis stage antennae are created and the chewing mouth of the caterpillar is reconfigured into the sucking mouth of a butterfly.

The butterfly emerges from the chrysalis after ten to fourteen days, depending on the species. Its wings are wet and small. Fluid is pumped from the abdomen of the butterfly through the veins of the wings which expands them to their full size. Still, the butterfly is not ready to fly. When the wings are dry the butterfly has to exercise the muscles in the wings before it can fly. The lifespan of an adult butterfly ranges from a week to a year, depending upon the species.

Butterflies are cold-blooded insects. They cannot fly if they are cold. Many species migrate to warmer climates as winter approaches. They also need a source of food so they cannot stay where there are no flowers. Some of them migrate 2,500 miles. Because the food plants that support the larva stage do not grow in the wintering sites the butterflies fly back north to locations where these plants are plentiful. Butterflies in tropical climates also migrate. They do so to form new colonies. If they stayed in one location the larva would consume all their host plants, and that species would not be able to produce new generations.

I appreciate all a butterfly goes through to reproduce itself so that we can enjoy its beauty. I only wish I possessed the transformative powers of a caterpillar so that I could eat a lot, sleep for awhile and wake up beautiful.