



The Life of a Butterfly

The life cycle of a butterfly consists of four different stages: egg, caterpillar, pupa, and adult. The length of the cycle, from egg to adult, varies enormously between species. It may be as little as a few weeks to several years. Sometimes most of the life cycle of a butterfly is hidden from sight. Other species pass their entire life cycle much more exposed. These are usually either well camouflaged, or distasteful to predators. There are many variations on the life cycle. Some species, for example, have fewer molts in the caterpillar stage than others. Below we illustrate the life cycle of a South American Owl butterfly, *Caligo beltrao*.



EGGS

The eggs of the Owl butterfly have delicate ribs that meet at the top. The ribbing and the structure of the shell (a tough coating like an insect's body, not a brittle one like a hen's egg) are designed to protect the egg from water loss while allowing it to breathe.



Head

PUAPING

By this stage the caterpillar has darkened slightly and, using the silk from the spinneret under its head, has applied a small silken pad to the plant. It attaches its hind claspers firmly to this and hangs, head down, from the stem. Underneath its skin, the skin of the next stage, the chrysalis, is forming. Gradually, with much wriggling and twisting, it will shed its caterpillar skin and shake it away. Legs, head, and all do so that the completed chrysalis is revealed.



Silk pad

Spiracle allows pupa to breathe

Head

CHRYSALIS

The chrysalis, now completely formed, does not have any outside legs or antennae. Inside the chrysalis, the body of the caterpillar is broken down, special cells take over the insect's development, and gradually the adult is formed. The change from the caterpillar to the butterfly that finally emerges is one of the most remarkable events in the natural world. The oval structure on each body segment is called a spiracle and allows the chrysalis to breathe. Although inactive on the outside, it needs energy for all the changes taking place inside.



ADULT

The adult butterfly, so totally unlike the early feeding stages, has emerged, spread its wings, and is ready to fly. Adult butterflies often live for only a few weeks, although a few species may survive for a year. After a time, their wings often become noticeably tattered from general wear and tear; they can still fly with ragged wings, but not as well as they could before. The adult's role in the life cycle is to reproduce and scatter its eggs where they will be most likely to survive. Adult butterflies seek out new areas to live in and many can fly long distances. They usually mate as soon as possible after they emerge.



Aging owl butterfly with ragged wings feeding on fruit



Young caterpillar with new, green skin

Older caterpillar with brown skin is about to pupate

CATERPILLARS

Once the caterpillar hatches, it feeds and grows very rapidly. It molts its skin and develops a new one underneath, which stretches and allows new growth after the molt. Some species of *Caligo* are pests on bananas in Central and South America. The long slender shape of the caterpillar helps to conceal it against the midrib of the leaves on which it feeds.