

The Life of a Butterfly

BUTTERFLIES



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 of 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

- 1 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".

Caterpillars

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

Pupating

- 3 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 - so that the completed chrysalis is revealed.

Young caterpillar with new, green skin

Older caterpillar with brown skin is about to pupate

Spiracle allows pupa to breathe

Silk pad

Head

Aging owl butterfly ragged wings feeding on fruit

Chrysalis

- 4 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. Although appearing inactive to the outside world, there are many cellular transformations taking place to form the adult butterfly. Because it cannot feed during this phase the insect must rely on the fat stored during the caterpillar or larval stage.

Adult

- 5 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 and many can fly long distances. They usually mate as soon as possible after they emerge.

