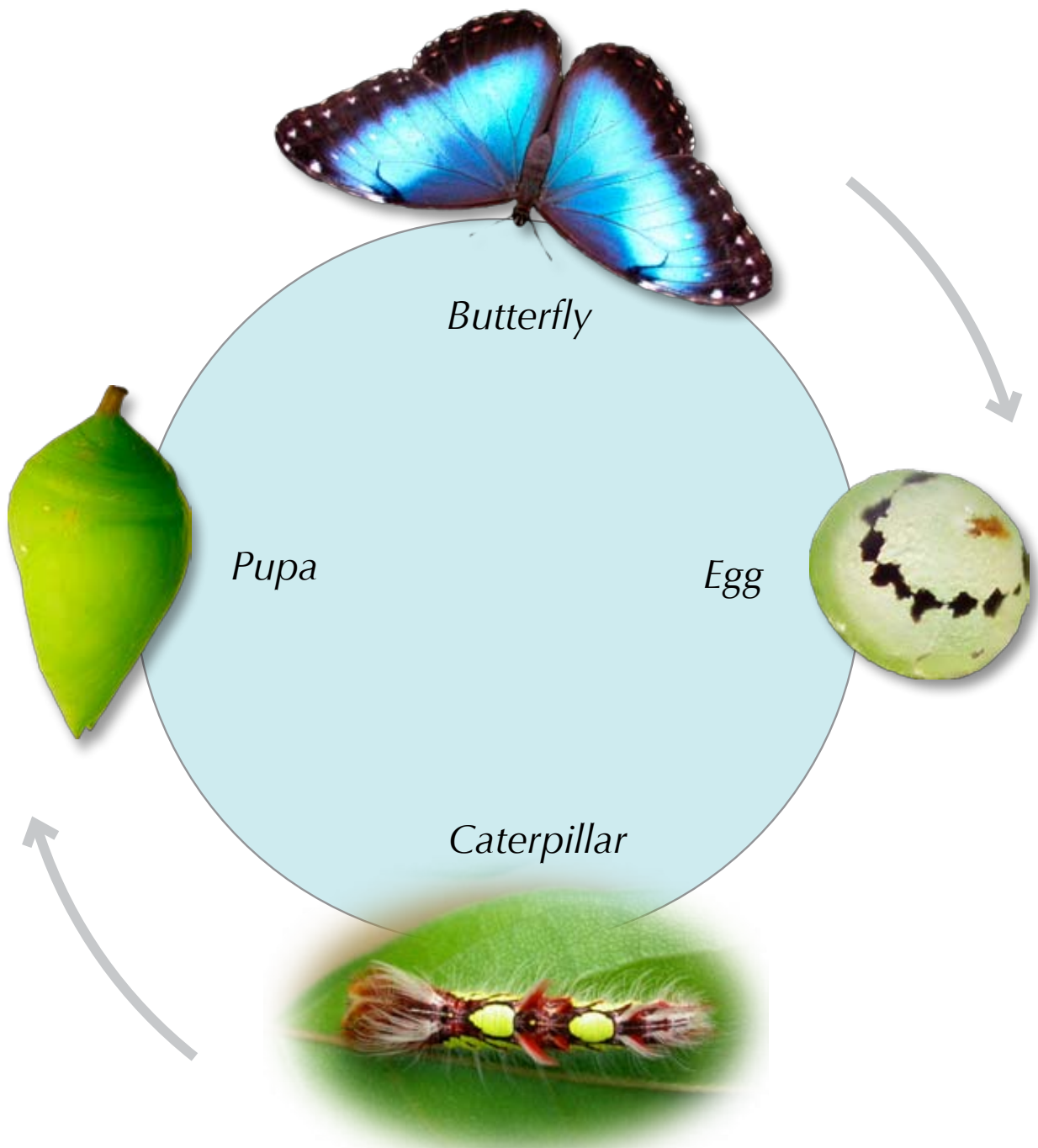


Life Cycle - Butterflies & Moths

A butterfly goes through four stages in its life. All animals change as they grow and mature but butterflies and moths undergo the biggest change of all.



Life Cycle of the Blue Morpho Butterfly from Costa Rica.

The Egg

Eggs are the first stage in the Butterfly Life Cycle. They are filled with nutritious fluid that the developing caterpillar uses for its growth. Some caterpillars wait till the Spring to hatch, others hatch in just two weeks.



The egg is usually laid under a leaf so birds don't find it. It is glued on hard to prevent predators walking off with them.

Butterflies lay from 50 - 100 eggs. On average, only two will survive to maturity to start a new cycle.



Some caterpillars eat their egg cases. The female covers the eggs with a nutritious coating as she lays them.

When the caterpillars hatch they are just a few millimetres long.

The Caterpillar

The caterpillar is like an eating machine, only resting to digest its food. They are racing against the other caterpillars on the plant as well the armies of ants, birds and parasitic wasps that search them out.

Caterpillars don't have a skeleton. In order to be able to grow they have to shed their skins four or five times in their life.



A freshly-hatched caterpillar will grow a 1000 times its own weight in three weeks.

If a butterfly was a person, it would still be a caterpillar at 60. Many insects are juveniles for most of their life.

This Brahmeid caterpillar (right) from India has strange outgrowths on its back. This species is one of the fastest growing caterpillars reaching full size in under three weeks.



Callista silkmoth



Pupa, chrysalis or cocoon?

The pupa or chrysalis stage is when the miraculous transformation into a butterfly or moth occurs. Inside, huge changes take place; the wings, eyes, proboscis (tongue) and antennae all develop as entirely new structures.



Much of the original caterpillar is turned into a 'soup' inside the pupa. This nourishes the growth of the new butterfly parts.

All butterflies and moths have a pupa or chrysalis, as it is also known.

A cocoon is the silk wrapping that protects many moth pupae (right). It keeps them safe from the rain and hides them from predators.

No butterfly species has a cocoon. Many moths have cocoons but not all of them.



This Atlas cocoon has been cut open to reveal the pupa inside.

Some pupae, like this Mechanitis (above), are coloured like precious jewels.

Pupa or Chrysalis?

The words 'pupa' and 'chrysalis' have the same meaning. The word chrysalis derives from the Greek word for gold 'khrusos' whereas the word pupa comes from the Latin word for puppet.



Cocoons are spun by the caterpillar before it changes into a pupa. The spinning process takes two days.

The Emergence of a Butterfly



The day before emergence, enzymes digest the pupal skin making it fragile and brittle.

The next morning, the butterfly can be seen through the transparent pupal skin. The butterfly starts its emergence by pushing a wedge-shaped panel out with its legs.

This is the only time a butterfly grows and it is all over in 15 minutes.

The emergence of the butterfly is called 'eclosion'.

The wings then flop out followed by its body in a matter of seconds.



Its wings are softer than silk at this moment and still very small. Notice the fat body which is filled with fluid.



This fluid is then pumped into very thin veins in the wings. Like blowing up a balloon, the wings grow in front of your eyes.



In just ten minutes, the wings are full size. They are still very soft and need two to three hours to harden off.

The Adult Butterfly

The adult butterfly stage lasts, on average, just one to two weeks. In terms of the life cycle, the female butterfly's main task is to find a mate and lay eggs.



The adult butterfly feeds on flower nectar or fruit. One of the advantages of the insect life cycle is that the adults don't compete with their own caterpillars for food.



Pairing enables the eggs to be fertilised starting the cycle all over again.

Life spans

Many adult butterflies live for only a week or two. Unlike us they have no parental care so once the eggs are laid there is no need for them to live longer. Remember that the same individual has been an egg, caterpillar and pupa - the butterfly stage is just but one part of its life.

Difference between moths and butterflies

Biologically there is not much difference between a moth and a butterfly. We generally think of moths as being nocturnal and butterflies being diurnal. Moths are often viewed as being brown and drab but many rival butterflies in their beauty.

The best way to tell ..

Butterflies have thin antennae with a club on the end (left); moths have anything from thin antennae with no clubs, to thick feathery ones like this Atlas moth (right).



There are nearly ten times as many moths as there are butterflies.

Moth Myths: Moths are drab, brown and fly at night! The African Sunset moth (right) is one of the most colourful of all Lepidoptera. It flies in the day and is often mistaken for a swallowtail.

