

## Summer Reading Program

### Butterflies: My How we have Changed

Butterflies are insects they belong to the order of Lepidoptera. Moths also belong to this order.

So, is a butterfly a moth or is a moth a butterfly? They are their own species within the order. Most butterflies are colourful while moths are not. Butterflies have thin antennae and most moths have antennae that are thick, feathery and look like a fern. Butterflies and moths are cold blooded. Butterflies need to spread their wings in the warm air of the daytime to warm them. Moths are nocturnal (night-time dwelling), they shake their wings to warm them. Butterflies fold their wings vertically when resting. A moth folds its wings horizontally like a roof. Of the 170,000 types of Lepidoptera 90 % of them are moths.

Butterflies flutter from plant to plant looking for the best to lay their eggs on. This plant must provide the food for the little caterpillar once it hatches. Female butterflies can lay several hundred to one thousand eggs. They may lay them on several plants. Not all the eggs will hatch and become caterpillars (then butterflies). Some butterflies lay their eggs in patterns others lay them in rows. Each type of butterfly has a special way of depositing their eggs. Once the eggs are laid, they will hatch in a few days (about 4-7 days). The larvae or caterpillar is exceedingly small. It can be as tiny as a pin head. The first thing most caterpillars (larva) do is eat the shell they hatched out of. The shell contains some important nutrients to help the caterpillar grow. Then the caterpillar will start to eat the leaf that it is on. This is why the mother butterfly chooses the plant carefully to lay her eggs on. If the plant is not healthy or has enough leaves for the caterpillar to eat it will not become a butterfly.

Certain types of butterflies eat only one type of plant, others will eat anything and everything. The caterpillar will continue to eat and grow. As it grows it will shed or molt its skin several (4 to 5) times. Caterpillar can grow to 100 times their original size. This may take 10 to 14 days. When development is complete the caterpillar will choose a branch or leaf and attach itself to it. It will then start to molt or shed its final skin. The new underneath skin will form the pupa or chrysalis. The chrysalis will harden with exposure to air. The butterfly is already starting to form. The caterpillar's body is breaking down and parts are forming into new legs and wings. This is called metamorphosis. The newly forming butterfly will stay in its chrysalis around 7 to 10 days depending on the type of butterfly. (Some butterflies stay in the chrysalis stage for as long as 2 years.) Once the butterfly matures it will break out of the chrysalis. It will be wet and cold. Blood will flow to the wings and so the butterfly must wait for them to dry and harden. After they dry then the butterfly can fly away to look for its first meal. A few weeks later the butterfly is ready to mate and lay eggs. Starting the process all over again.

**How long does a butterfly live?** Around 2 weeks on the average. Some only live two days. Some live up to 40 days other can live almost a year. No adult butterfly has been known to live more than a year.

**Why do I see so many of the same type in one area?** Butterflies have a range or area that they are native to so that type is the one you see most often.

**Do Butterflies migrate?** Yes, some do (there are 17 species that migrate). The monarch butterfly travels 2500 miles to Mexico each year. This take four generations to complete this task. Each generation knows where to go and which trees to live in.

**Are some poisonous?** Yes, some are but only to things that may eat them. Usually the just taste bad.

**How big can they get?** The Queen Alexandra Birdwing butterfly can have a wingspan of 12 inches. A rare butterfly that lives in the rainforest of New Guinea. Biggest moth is the Atlas Moth found in Southeast Asia.

**How small can they be?** The Western Pygmy Blue butterfly is the smallest at just .5 inches. It is native to western part of the U.S. The smallest moth is Stigmella Maya it measures about 1.2 mm. It found in Yucatan in Mexico.

**Is there a place with no butterflies?** Antarctica and some deserts will not have any butterflies. But butterflies live in every country of the world and every state in the U.S.

**How fast can a butterfly fly?** Some can fly as fast as 30 miles per hour for the larger ones. Small butterflies fly around 5 miles per hour.

**Do Butterflies always flutter?** Butterflies can fly in a straight line when the are migrating otherwise the flutter from plant to plant as they are looking for food.

### **Parts of a Caterpillar**

Head, eyes, true legs (three pairs), abdominal segment, false legs (five pair)

Caterpillars move by walking on their six front legs, the back false legs have suction cups that help them hang on the leaves and branches. Some Caterpillars have six front legs but only two pair false legs. The caterpillars move by arching their body (inching along). So, they are called inch worms.

### **Parts of a Butterfly**

Antennae, Compound eyes, Head, Proboscis (tongue), Thorax, Abdomen, Legs,

Front wings, Rear wings

All insects have a head a thorax and an abdomen.

**Head** of a butterfly have the sense organs, sight and smell.

Antennae are used to detect odours.

Compound eyes are made up of many facets. They see the ultraviolet range of light.

Proboscis is a tube-like tongue that the butterfly uses to drink nectar of flowers.

**Thorax** is the upper body part of the butterfly. The legs and wings are attached to this part. The muscles of the thorax help the butterfly fly.

**Abdomen** of a butterfly contains the heart, Malpighian tubes (sort of like our kidneys), reproductive organs and the digestive system.

**Wings**, there are two pair of wings. The forewings and the hindwing. The wings are covered in scales.

### **Enemies of a Butterfly**

#### **Bugs that eat a Butterfly**

Wasps, ants, parasitic flies, dragonflies and spiders are some of the predators that will eat butterflies, the eggs and caterpillars. There are many stages where the butterfly is in danger of being eaten. Eggs are the first stage. If the eggs survive then when the caterpillar is small and growing it is in danger. Even when the butterfly is fully grown it can be caught in a spider web. There are a lot of animals that eat butterflies, caterpillars and the eggs. Birds, bats (eat moths at night) and frogs are just a few of them.

Some Butterflies have adapted their colouring to warn off a predator. They may emit a bad smell, or they are brightly coloured, warning that they are not a good meal stay away.

### **Books Used as Reference**

*The Fascinating world of Butterflies and Moths* by Angels Julivert

*Butterfly & Moth* by Paul Ernest Sutton (Eye Witness Books)