

Butterflies - an introduction



What Butterfly is that?

It's *Hesperilla chrysotricha*. It's what! Has it got a common name? We call it the Chrysotricha Skipper, but others call it the Golden-haired Sedge-skipper and in Tasmania people know it as the Shoreline Skipper.

But why so many names?

People in different areas have given many butterflies their own local names. However scientists need to agree on one name so that no one is confused about which butterfly is being studied. Scientists classify living things into groups. The groups of similar animals are subdivided into smaller groups until a genus and species name is given. Animals in the same genus are very similar. Animals in the same species can interbreed to produce fertile offspring.

Within the animal kingdom, butterflies are classified as: -

Phylum ARTHROPODA

Arthropods are jointed-limbed animals with hardened exoskeletons (the skeleton is on the outside of the body).

Class INSECTA

Insects have three major body regions, three pairs of legs, one pair of antennae and one or two pairs of wings.

Order LEPIDOPTERA

Butterflies and moths. All have scales on the wings and body.

There are about 20,000 butterfly species in the World. About 400 of these live in Australia and of these, 77 species are presently known from South Australia. The South Australian butterflies are grouped into five families.

Family HESPERIIDAE 20 species commonly called skippers.

These are small and drab coloured butterflies that have a rapid 'jerky' flight.

Family PAPILIONIDAE

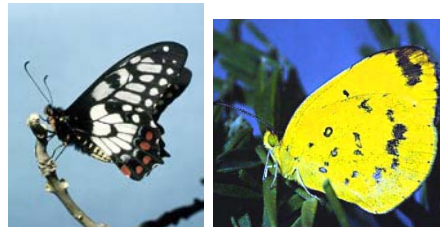
3 species commonly called swallowtails. These are medium to large butterflies that are generally colourful. Some of these butterflies have tails on the hindwings.



Trapezites phigalia
Fam. HesperIIDae
Photo: Lindsay Hunt

Family PIERIDAE

9 species commonly called whites or yellows. These medium sized butterflies are usually either plain white or yellow.



Left *Papilio anactus* Fam. Papilionidae Photo: Roger Grund
Right *Eurema smilax* Fam. Pieridae Photo: Lindsay Hunt

Family NYMPHALIDAE 17 species commonly called browns (satyrids), danais, and nymphs. These are small to large butterflies that are usually dark in colour and often have eyespots on the wings.

Family LYCAENIDAE 28 species commonly called blues, coppers and hairstreaks. These are very small to medium sized butterflies. They are blue or copper-orange above and sometimes have a metallic lustre to their colour. They are often associated with ants.



Left, *Vanessa itea* Fam. Nymphalidae
Right *Lampides boeticus* Fam. Lycaenidae Photos: RHFisher

Immature stages

Butterflies have 3 pre-adult immature stages: egg, larva (caterpillar) and pupa (chrysalis). The larvae metamorphose by way of the pupa to the flying adult butterfly stage.

Structure of an adult butterfly

Butterflies have three major body regions: the head, thorax and abdomen.

On the **head** are: -

A pair of antennae. These are used, like our nose, to 'smell' chemicals and also to sense temperature, humidity and orientation.

A pair of compound eyes, made up of many small light receptors called ommatidia. The light receptors can see colour like our eyes

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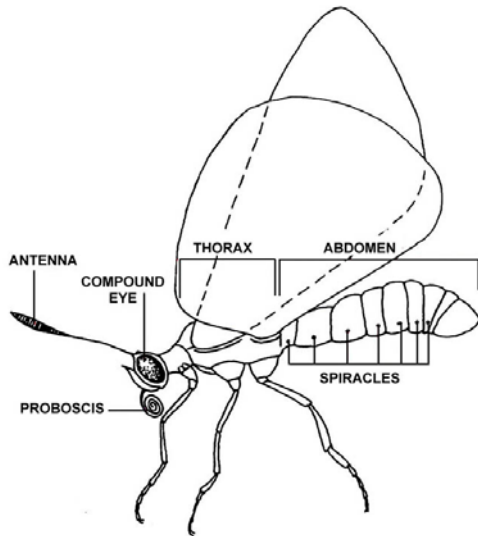
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BUTTERFLY CONSERVATION SA Inc. FACT SHEET

as well as ultra-violet light. They are very good at detecting movement.

The proboscis, a tongue like organ, shaped like a straw used to suck nectar from flowers. When not feeding, the butterfly keeps the proboscis coiled.

Butterflies don't have ears as we do. They listen through special sensory hairs.



On the **thorax** are: -

Two pairs of wings which give the butterfly the ability to fly. The wings are covered with overlapping scales; some of these scales have natural coloured pigments, while others may have microscopic ridges, which give the wings a metallic or iridescent colouration due to light refraction.

Three pairs of legs used mainly for support and holding onto flowers while feeding, since butterflies don't walk much. The legs have special sense organs associated with egg laying in the females, and other sense organs for tasting food.

Inside the thorax there is: -

A heart which pumps a green blood-like substance (haemolymph) around the body. A butterfly's blood is not red because it does not have haemoglobin (which carries oxygen to cells and carbon dioxide away from cells) like our blood has.

Spiracles; are special holes which allow oxygen to enter the body of the butterfly. The spiracles lead to tubes, called tracheae, inside the body of the butterfly.

Muscles for flying and walking are attached to the inside of the hard exoskeleton.

The **abdomen**: contains the stomach, digestive system and reproductive organs. It is where the female keeps her eggs. Females have two genital openings; one (copulatory) opening for receiving sperm and another opening for egg laying.



Males have a backward pointing penis and a pair of claspers to hold the female during mating. The structure of the genitalia is often used in grouping butterflies into genus and species.

Is it a Butterfly or a Moth?

Butterflies

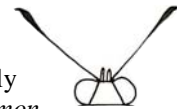
Usually brightly coloured
Usually fly during the day.

Antennae are usually clubbed on the ends.

The forewing and hind-wing are not joined by an interlocking mechanism. (except for one butterfly called the Regent Skipper, *Euschemon rafflesia*).

The pupa is usually not in a silken cocoon.

The butterfly usually rests with the wings folded together and upright above the body.



Moths

Usually dull coloured.

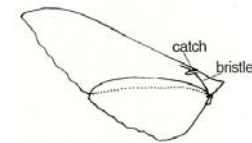
Usually fly during the night.

Antennae are usually either thread-like or comb-like.

Have an interlocking mechanism between hind and forewings.

The pupa is usually enclosed in a silken cocoon.

The moth usually rests with the wings folded back along the body like a tent.



About 95% of Lepidoptera (scaly wings) are moths!

BUTTERFLY CONSERVATION SA Inc.

is a non-profit organisation comprised of individuals interested in the conservation of butterflies and their habitats.

Anyone may join. Membership is \$10 per annum payable on 1st July each year.

Several newsletters are produced each year. Newsletter articles promote the conservation of butterflies and include information on how you can help to preserve their native habitat.

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