

FACT SHEET

Southern African Butterflies

Butterflies and moths belong to the insect order, “Lepidoptera”, which means, “Scaly Wings”. The wings are covered in minute scales, rather like the tiled roof of a house.

Collecting Butterflies

Keeping a butterfly and moth collection can provide many hours of enjoyment as well as expanding your knowledge of these fascinating insects. One of the most important things to remember when starting your collection is to maintain accurate records of all your specimens, including when and where the specimen was collected. By keeping this information on a data label that will stay with your specimen, you can provide valuable information for yourself and future researchers. Without a data label all you have is a "pretty bug" that holds no scientific value.

A well-formed collection of butterflies possesses both educational value and aesthetic appeal. It must also be pointed out that forming a butterfly collection entails a moral obligation. Butterflies are living creatures of great beauty, not inanimate objects like postage stamps. The following code of principles should therefore be adopted by all those who contemplates collecting:

1. Collect in moderation, taking only a few perfect specimens of each species, releasing all those that are damaged.
2. Ensure that all the specimens are properly mounted.
3. That every specimen is correctly labelled. The data label should contain the scientific name, collection date, locality and the name of the collector.
4. That all the specimens are properly housed in entomological trays, and that they are properly curated, and protected.

It should be the aim of all butterfly collectors to add to scientific knowledge. Useful knowledge can be obtained by breeding butterflies in captivity; from the egg, recording the descriptions of the early stages and preserving specimens of these. The eggs, larvae and pupae of our Southern African species even the common ones, are still unknown. By breeding butterflies you can obtain perfect specimens for your collection, and the ones that you don't need can then be released to increase the local population.

The Difference between butterflies and moths

The upper and lower wings of a moth are connected with an apparatus known as a frenulum. Butterfly wings are not connected, they have a humeral lobe which takes the place of the frenulum.



Fig 1. The wings of a butterfly and moth, showing the *humeral lobe* and *frenulum*.

The antennae of butterflies are clubbed at the tip, whereas those of moths are feathered or slender.



Fig 2. Antennae of *butterflies* and *moths*.

The vast majority of butterflies are *diurnal*, which means that they fly during daylight, especially when the sun is shining as they need the heat of the sun to warm the blood in their wings. There are however a few exceptions as some of the skippers do fly at dusk. I.e. The Banana Night-Fighter (*Moltena fiara*). Moths on the other hand are mainly nocturnal, which means that they fly at night. Although there are some species which do fly during the day.

When butterflies are at rest they hold their wings together above the body, and Moths usually rest with their wings folded flat over the back with the upper surface of the wing visible, the hind wing is always hidden from view.

The Life Cycle of a Butterfly

Butterflies, from egg to adult insect, pass through four distinct stages, which is termed complete metamorphosis. In simple terms this means that there is a change in the body from the egg to the adult stage. These are; Egg (*Ovum*), the caterpillar (*Larvae*), the chrysalis (*pupae*) and adult insect (*imago*). Some species of butterflies lay their eggs singly, others deposit them in batches. The eggs are usually laid on the larval food plant (*host plant*), or in the close vicinity.

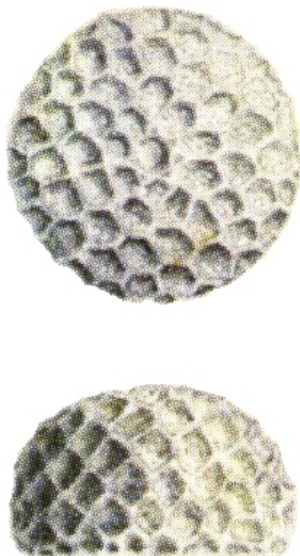


Fig 3. The egg (*ovum*) of the “Fig Tree Blue Butterfly” (*Myrina silenus ficedula*).

Butterfly eggs normally hatch, not less than seven to eight days after they are laid, and in most instances the young larvae eat the egg shell for the nutrients.

The butterfly larvae or caterpillars are sexually immature and have no adult features, excepted for jointed legs. The larvae are normally divided into fourteen segments. The first of these is the head, with two groups of simple eyes on each side, a pair of strong jaws and silk-producing organs. Segments two, three and four represent the thorax of the perfect insect and each bears a pair of true legs. Segments five to fourteen correspond to the abdomen of the adult butterfly. Segments seven to ten each possess a pair of fleshy, unjointed “false legs”, and a similar pair of the last segment which are called claspers. All the false legs are lost in the perfect insect. As the larva grows it changes in both size and form, and the full grown caterpillar may differ greatly from its first appearance. To achieve this the larvae skin is moulted, usually four times during the larval period. The stages between moults are known as instars, and the process of molting is termed “ecdysis”. Larvae of the different butterfly species vary greatly in both shape and size.

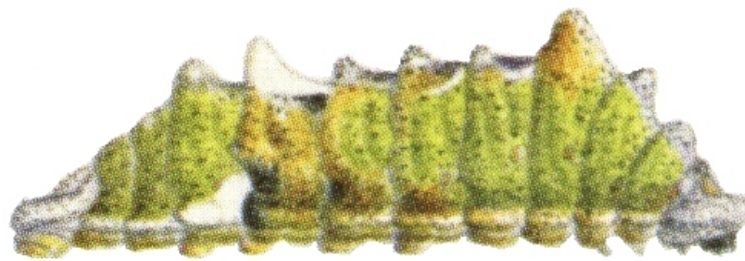


Fig 4. Side view of the final instar larvae of the Fig Tree Blue butterfly (*Myrina silenus ficedula*), highly magnified.

As soon as the larvae is fully grown it will crawl away to pupate. It will wander away from the food plant to find a suitable place for pupation to take place. It will then spin a silken pad to which it will attach itself by the claspers. In some families of butterfly, for example the swallow-tails and the whites, the pupae will also support its body with a silken girdle. After resting for a while the larvae will then moult and shed its skin, to emerge as a pupae. The discarded skin is worked backwards to form a wrinkled mass around the tail. The pupae will then draw its abdomen out of the old skin and will then attach itself to the silken pad by means of minute hooks at the tip of the abdomen. Some of the blues (*Lycaenidae*), do not attach themselves to a silken pad but pupate on the ground amongst leaves. When the pupa first emerges from its larval skin it is still soft, very light in colour and capable of considerable movement. Later it contracts somewhat, hardens and becomes completely immobile, as with the larvae, you will notice that butterfly pupae vary greatly in shape and colour.

Butterfly pupae are therefore very vulnerable. Inside the pupae, the body of the larvae breaks down into a “soup” of fats, proteins and other substances. The adult butterfly is created by the reorganization of these substances within the pupa case. The butterfly remains in the pupal stage for greatly varying periods, sometimes for as long as two years, although the more usual time is a few weeks. When the perfect insect is ready to emerge the pupal case splits behind the head. The butterfly then crawls out to rest upside down, often on or near the empty pupal case. The wings at this stage are soft and flabby and are only a fraction of their ultimate size. Fluid is pumped from the body of the butterfly to expand them to their full size. As soon as the wings have fully expanded and dry the adult butterfly is then ready for its first flight. The life-span of a butterfly is between two weeks to several months for the larger species.



Fig 5. Side view of the pupae of the Fig Tree Blue butterfly (*Myrina silenus ficedula*), highly magnified.

Many species of butterflies are constant in their general appearance, exhibiting only minor variations in colour, pattern and size. Others however, exhibit considerable variation, in some cases specimens of the same species being widely dissimilar. Amongst the latter are those in which the male and female are strikingly different, a variation known as sexual dimorphism; in others there may be more than one type of female, sexual polymorphism. Examples of these are the Diadem (*Hypolimnys misippus*), and also the Mocker Swallowtail (*Papilio dardanus*). Other butterflies may also differ greatly in their wet season and dry season forms, a phenomenon termed seasonal dimorphism for example, the Gaudy Commodore (*Precis octavia*), and the Club-tailed Charaxes (*Charaxes Zoolina*).

Many species of butterflies exhibit what is termed geographical or sub-specific variation, in which the individual population of a species, usually those isolated by some natural barrier, have developed slight differences which distinguish them from populations of the same species. An example of this is the Emperor Swallowtail (*Papilio ophidicephalus*). Some butterflies possess distinctive wing shapes and colour patterns which blend into the surroundings when the insect is settled. This is termed cryptic colouration. A good example of this is the Pearl Charaxes (*Charaxes varanes*), which has an underside pattern and shape closely resembling a dead leaf, so that when it is resting on a leaf or branch it is difficult to detect.

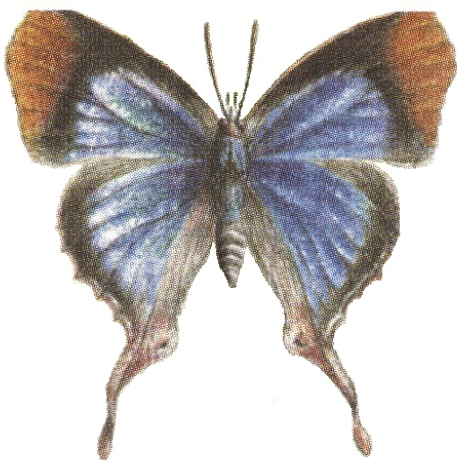


Fig 6. Adult Fig tree Blue butterfly (*Myrina silenus ficedula*).

Many of the family of “Blue” butterflies possess long slender tails and hindwing lobes. When the butterfly is settled, usually head downwards with the wings closed, it moves its hindwings so that the tails resemble antennae and the lobes an insects head. A bird of lizard is attracted by this movement, and seizes what it thinks is the preys head and so the butterfly escapes.

Where to look for butterflies

One of the best places to look for butterflies is around flowering plants where they drink the nectar. Although it is very unpopular with conservationists, butterflies love Lantana for its high nectar content. A good coastal plant to explore for butterflies is the, “Water Berry or Umdoni” (*Syzigium cordatum*) which is also very high in nectar. Groups of swallowtails and whites can often be seen gathered around a mud puddle or on the damp soil near a stream. These and other butterfly species need the extra minerals and other nutrients found in the mud.

The purpose of this information fact sheet is to help you to learn about and to conserve our butterflies; not to kill and collect them. Many people who are interested in butterflies have large collections of dead specimens, but nobody can disagree that a live, free butterfly is much more beautiful.