

## How are moths and butterflies different?

Butterflies are part of the Order Lepidoptera, latin for “scale wing” which refers to the beautiful feathery scales which coat their wings giving them colours and patterns. Lepidoptera also includes the moths, and it can be hard at times to work out how to tell moths and butterflies apart. This fact sheet will show you some simple guidelines (and more complicated points of biology) that help, but there are exceptions as well that can be confusing.

### Clubbed vs. fuzzy antennae

One of the most reliable features that can help tell a butterfly from a moth is their antennae. Most butterflies have long thin antennae with a kink or bulb/club shape at the end, while many (but not all) moths have feathery or fuzzy antennae. However this doesn't always work, as you can see with this Joseph's Coat Moth (*Agarista agricola*) that its antennae are neither fuzzy nor feathery. They do lack a club though, which is a subtle hint that this species is not a butterfly.



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Moth antennae are often “feathery” or “fuzzy” like this, but many are not.

Butterfly antennae bulge at the end in a club, but this can be hard to see sometimes.



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### Flying at night or in the day?

Most butterflies fly during the day, and most moths fly at night. However there are many day-flying moths, and a small number of butterflies that fly at night so be aware that this isn't always a great feature to use. For example, the Eastern Dusk-flat (*Chaetocneme beata*) pictured to the left is a butterfly that mostly flies in the early morning and late afternoon, but also flies at night.

### Brightly coloured or dull?

Many butterflies are very brightly coloured or patterned, and many moths are not. On the other hand, there are a lot of butterflies that are dull, and a lot of moths with strong colours or patterns, so this is not a good feature at all to rely on. For example, this Dingy Skipper (*Toxidia peron*) to the right is a butterfly, despite its wings almost entirely lacking both colour and pattern.



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### Presence of a frenulum

A frenulum in moths is a row of bristles on the lower or hind wing that attaches it to the forewing. This is a feature that butterflies lack, except for just one species, the Regent Skipper (*Euschemon rafflesia*, pictured to the left), the only butterfly in the world with a frenulum (Note also how similar they look to the Joseph's Coat Moth at the top of the page in terms of colour and shape). This is probably the most accurate feature to tell moths and butterflies apart, however because it's impossible to see without catching the animal it isn't very useful to most observers.

In the end, the distinction between moths and butterflies is somewhat arbitrary. It's a line that was drawn by naturalists hundreds of years ago that we now know was flawed. While we focus on butterflies in this project, we still love moths and hope eventually to be able to record all *Lepidoptera* sightings!