

INTRODUCTION

What is a moth?

Moths are insects with four wings and a long, coiled proboscis with which they suck nectar. If an insect has a coiled sucking proboscis then it must be a moth or butterfly. However, the most primitive moths, the Micropterigidae and Agathiphagidae, have chewing mouthparts inherited from their ancestors before the coiled proboscis was evolved. Many other moths have secondarily lost the proboscis (their ancestors had one but lost it) and have no functional mouthparts at all.

Moths and butterflies all have small, broad, flattened scales (like dust) on their wings and broad or hair-like scales on their bodies. These scales are often brightly coloured. A few have lost most of these scales from the wings but there are always some present. These features characterise the great insect order Lepidoptera (meaning ‘scaly wings’ in classical Greek)—the moths and butterflies. The caddisflies

(Trichoptera, meaning ‘hairy wings’) are the order of insects most closely related to moths and some of these have small hairs on the wings but never broad, flattened scales.

What is the difference between a moth and a butterfly?

Both moths and butterflies have a coiled proboscis and scaly wings. On the family tree of Lepidoptera about 140 branches are moths and five are butterflies. The five butterfly families arise from a single branch within the moths, meaning they had a common ancestor that did not also lead to another moth group. However, even this is contested as one Central American moth family (Hedylidae) has so many butterfly-like features it may have arisen from within the butterfly line. So the difference between butterflies and moths is not great, and is comparable with the differences between moth families.



The broad, flattened wing scales of the scribbly gum moth, *Ogmograptis* sp. (Bucculatricidae).

Photo: Natalie Barnett



Most moths have antennae that are thread-like or feathery, such as this Hercules moth.