



WHAT IS THE DIFFERENCE BETWEEN A BUTTERFLY AND A MOTH?

Butterflies vs Moths



- Usually colorful
- Hard chrysalis
- Thin body
- Day active
- Long straight or clubbed antennae
- Wings rest upright
- Wings rest closed
- No wing hinges

- Usually dull
- Silky pupa
- Thick body
- Night active
- Short feathery antennae
- Wings rest along body
- Wings rest open
- Upper and lower wings attached

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There are several key differences between butterflies and moths. However, there are exceptions to most of these rules!

Butterflies and moths are amazing flying insects belonging to the order Lepidoptera. They share similar life cycles and look so much alike, it can be hard to tell them apart. Yet, if you look closely, you can identify them. Here are several differences between butterflies and moths.

1. Butterflies are active during the day (diurnal), while most moths are active at night (nocturnal). Moths often use moonlight to navigate, which is why they may become confused by outdoor lights.
2. Butterfly antennae are long and either knobby on the end or else straight. Moth antennae tend to be short and feathery.
3. Butterflies rest with their wings folded upright above their bodies. Moths rest with wings open alongside their bodies.

4. Butterflies and moths have different wing structures. In moths, the fore wing and hind wing on each side are connected by a joint called a frenulum. In contrast, butterflies have four unconnected wings.
5. Butterflies have thin bodies, while moths have thicker bodies.
6. Most butterflies are colorful, while most moths display duller, earthy hues. There are dramatic exceptions. Some butterflies are brown or have transparent wings, while some moths show vivid colors. Butterfly wings aren't actually colored, but the tiny scales on the wings scatter light, making them appear colored. Moth wings also scatter light, but may contain some pigment molecules, too.
7. Both butterflies and moths start life as an egg, which hatches into a larva (caterpillar). Moth larvae spin a silken cocoon, while a butterfly undergoes metamorphosis within a hard chrysalis. When adult moths and butterflies emerge from the cocoon or chrysalis, they pump fluid into their wings to spread them before they harden. They must assemble their straw-like proboscis to feed. However, some moths lack a proboscis and never feed as adults.

Exception to the Rules – Usually, it's easy to tell the difference between a butterfly and a moth. But there are exceptions. While butterflies aren't mistaken for moths, some moths resemble butterflies.

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Baltimore Checkerspot Butterfly



Baltimore Checkerspot Butterfly (*Euphydryas phaeton*). Photo credit: D. Gordon E. Robertson, CC BY-SA 3.0.

The Baltimore Checkerspot gets its name from the orange and black colors of the heraldic shield of George Calvert who was the first Lord Baltimore. It's also the state insect of Maryland.

The range of these butterflies is very local, and some populations are thought to be declining. As the Baltimore Checkerspot prefers wetland habitats, the loss and degradation of these habitats is causing significant declines in Checkerspot populations and other beloved species.

The most common host plant for Checkerspots is the White Turtlehead (*Chelone glabra*) which also contains a defense opportunity. White Turtlehead contains chemicals called iridoid glycosides, so when the Checkerspot feeds on this plant, they become bad tasting to birds. As habitat shrinks, the Baltimore Checkerspot has had to expand its host plant preferences to include English Plantain (*Plantago lanceolata*), which grows in dry fields. It's been observed that in some regions where English Plantains grow, the Baltimore Checkerspot is found in massive concentrations.

In adulthood, the Checkerspots nectar on Common Milkweed (*Asclepias syriaca*) and Spreading Dogbane (*Apocynum androsaemifolium*), another plant that is toxic to humans, dogs, livestock, and some other mammals but not for the Checkerspot. In fact, milkweeds and dogbanes are closely related!

The Baltimore Checkerspot is univoltine, meaning that it only has one brood per year. In its southern range, the brood flies from May to June and in the northern range, the brood flies from July to August. Univoltine species often evolve to coincide their life cycles with the host plant they depend on. This life history strategy makes this butterfly species at a higher risk for population declines due to their specific requirements.

Source: U.S. Department of Agriculture Forest Service



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