

Eyespots

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We find things in the garden: lots of things. Many are sap-sucking insects, some eat holes in leaves, the spiders eat insects, and there are birds! If you were a tasty day-feeding leaf-muncher without sharp fangs or claws how might you defend yourself? You could hide in the open by looking like the leaf you're on. That helps: we have more to say about *Camouflage* later, but what other things might help? What if you looked like something else: something big or dangerous. If you were a caterpillar that looked a bit like a snake, would birds leave you alone?



They might, if they saw the two big fake eyes like those on this *Daphnis nerii*, an oleander hawk-moth caterpillar. The real eyes are tiny and out of sight in this image. If you were a bird and saw that, what would you think?

Here is another one, *Pergesa acteus*: a green hawk-moth caterpillar.



Same defence. The two eyespots make it look like a snake.

The slow process of evolution has been at work. The caterpillars didn't paint those on, they didn't *decide* to look like this. Over time caterpillars that looked a more bit like a snake survived longer, enough to pupate and then breed as moths. Over time the eyes became more convincing.

It's not just caterpillars that employ this strategy. Butterflies and moths often have eyespots like targets on the wings. The spots are thought to deter predators.



This is the small common butterfly *Leptotes plinius*, known as the Zebra blue. It's widely distributed and commonly found on shrubs in gardens.

Note the two eyespots on the rear end of the wing and the false antennae. The two odd wing extensions wave about in a light breeze and possibly distract attention from the stationary antennae up front.

Another variation is present on the hind wings of this butterfly: *Amathusia-phidippus* known as the Palm king.



There are two standard-issue circular eyespots on the hind wing, but note the small head with two upturned open eyes marked on the horizontal extension, along with what look like little legs and a connected dark band across the wing. The dark brown band gives the impression of long body. We wonder whether a predator might mistake the markings for a centipede?

The next example we find on wild passion-fruit leaves. It's a tiny (4-5 mm) sap-sucking leaf hopper with a false head and reverse body markings.



From here it looks to have a whiskery mouth, six legs and two long wings.



The real eyes blend into the real head.

Leaf hoppers escape potential predators by jumping. Two questions: what exactly is the most common threat, and how might this false rear-end head help?

There are more false rear-end heads that we find occasionally.

A spittle bug



You might miss the eyes on the head (left) but the fake rear-end eyes look upwards and are more obvious. Our guess is that a predator like a jumping spider sneaking up “behind” these creatures would be in full view and make it easier to escape. Any other ideas out there?

A leaf beetle



This tiny beetle looks more impressive than it really is. We wonder what predator might avoid it as a consequence, or if there is some other advantage to having the false eyes?