OXFORD BROOKES UNIVERSITY

Adaptations in caterpillar movement behaviour

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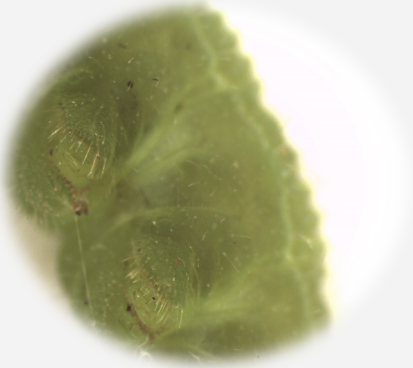
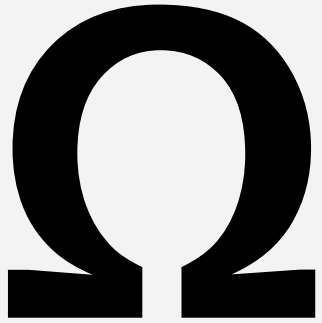
- They have lots of muscles in their body to help them move
- Caterpillars have six legs with tiny claws that they use for gripping onto things like leaves
- They also have some structures that look like legs; called prolegs
- Prolegs are not real legs, but the caterpillars can use them to grip tightly onto things
- Caterpillars move around using their legs and prolegs

Caterpillar legs



Caterpillar prolegs

- Different types of caterpillars move in different ways
- Some types of caterpillars move using **inching behaviour:**
  - When caterpillars move in this way their body shape looks like a loop
- Larger types of caterpillars move using a **crawling behaviour**
- Caterpillars have 12 eyes, but they cannot see very well. When moving a caterpillar might lift its head and move it from side-to-side. They do this to help them to judge depth and distance



Inching behaviour: Caterpillar body shape

Caterpillar eyes

- The length of time that a caterpillar can survive without food can depend on how large it is:

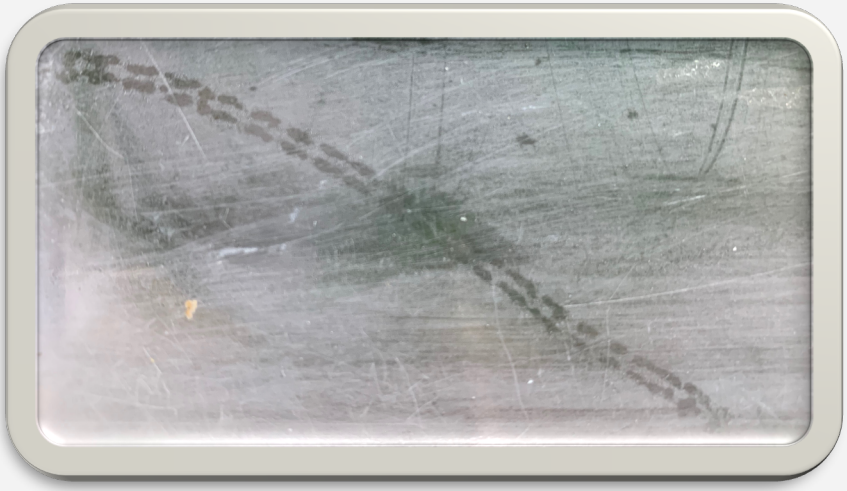
  - Larger caterpillars tend to move faster than smaller caterpillars

  - Larger caterpillars can therefore travel longer distances more quickly, and find a new food plant faster.

- Insecticides can have unwanted side-effects such as:

  - Affecting how well the caterpillar can move to find food, or a safe place

  - These unwanted side-effects can cause a drop in the number of caterpillars that survive to become adult moths or butterflies



Caterpillar footprints!

- Scientists have found that caterpillar food searching behaviour changes depending on:

  - how the caterpillar's food plants are positioned in the habitat
  - how far the caterpillars need to travel to reach new plants
  - how easy it is for the caterpillars to find these plants

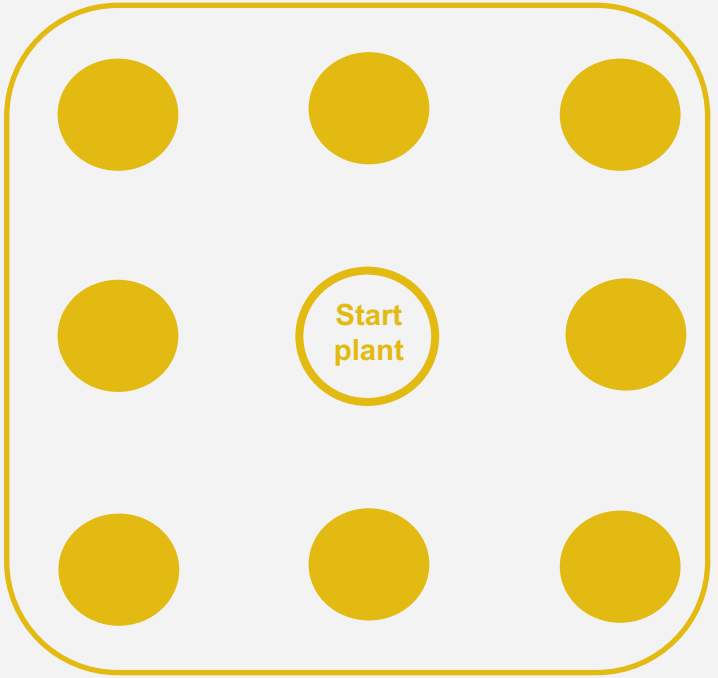
- This is a behavioural adaptation to help caterpillars to find new plants to eat, grow and survive to become adult butterflies or moths

- When caterpillar types live in habitats like Habitat A in the picture:

- There are plenty of plants available for them to eat

- The plants are easy to reach because they are not too far away for the caterpillar to move to

- The plants are easy for the caterpillar to find quickly



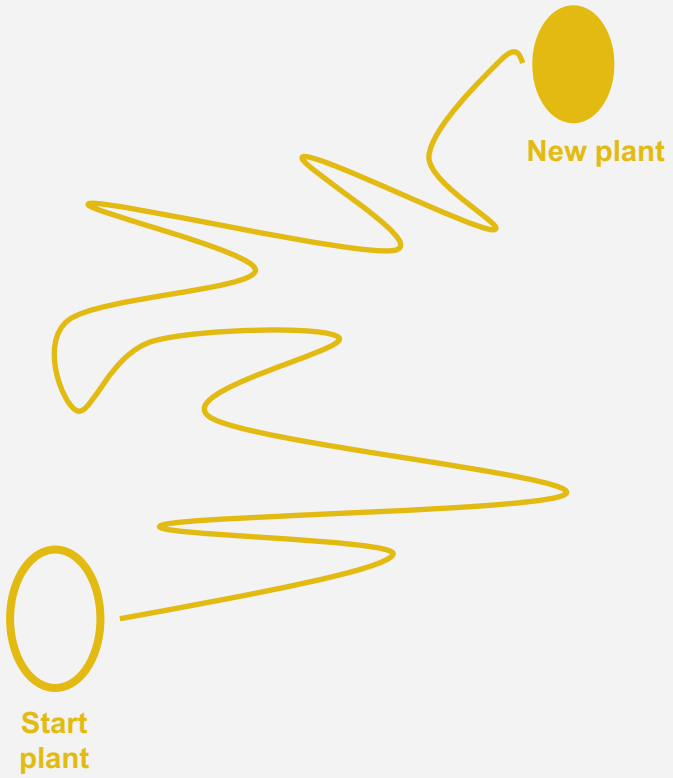
Habitat A

- These caterpillar types have a searching behaviour where they:

- move slowly, turn to change direction often, and do lots of head waving

- This type of slow careful moving helps the caterpillar to very carefully search a small area, and find a new plant that is close by

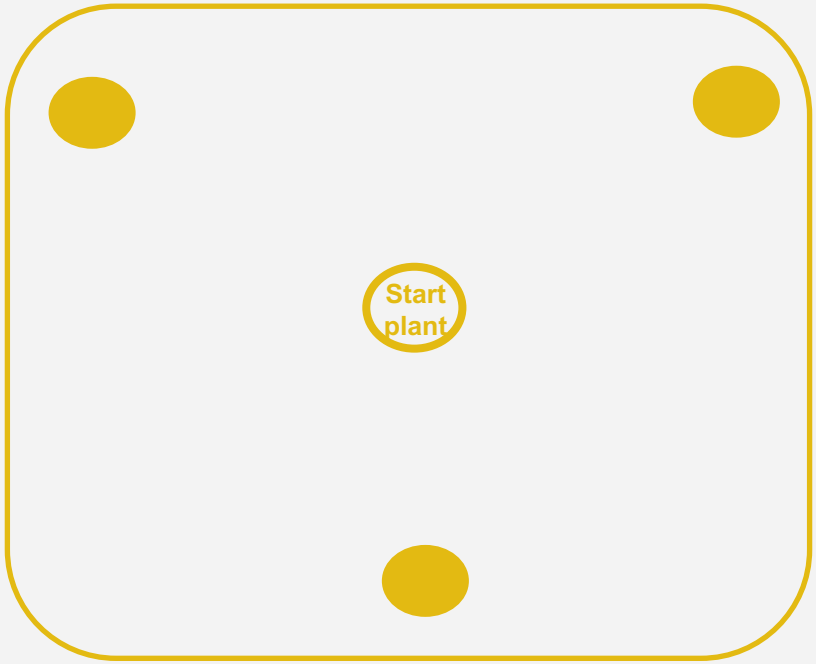
- Some types of caterpillar also use this type of searching behaviour when they are not hungry and do not need to rush to find food



Caterpillar searching behaviour in Habitat A

- When caterpillar types live in habitats like Habitat B shown in the picture:

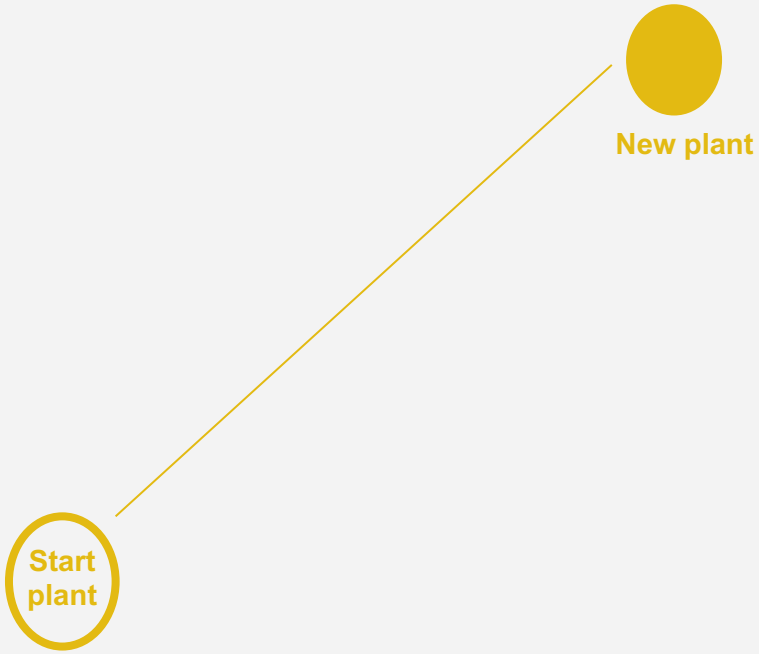
- There are not many plants available to eat that are close by
- Plants are far away and take a long time to reach
- They are not easy to find quickly



Habitat B

- These types of caterpillars have a searching behaviour where they:

- Move quickly
- Turn and change direction less often
- Move in straighter lines, and don't do head waving
- This searching behaviour helps caterpillars to move faster, cover longer distances and quickly find a new food plant that is far away
- Some types of caterpillar also use this type of searching behaviour when they are hungry and need to find food quickly



Caterpillar searching behaviour in Habitat B

All images by Melanie Gibbs and Casper Breuker