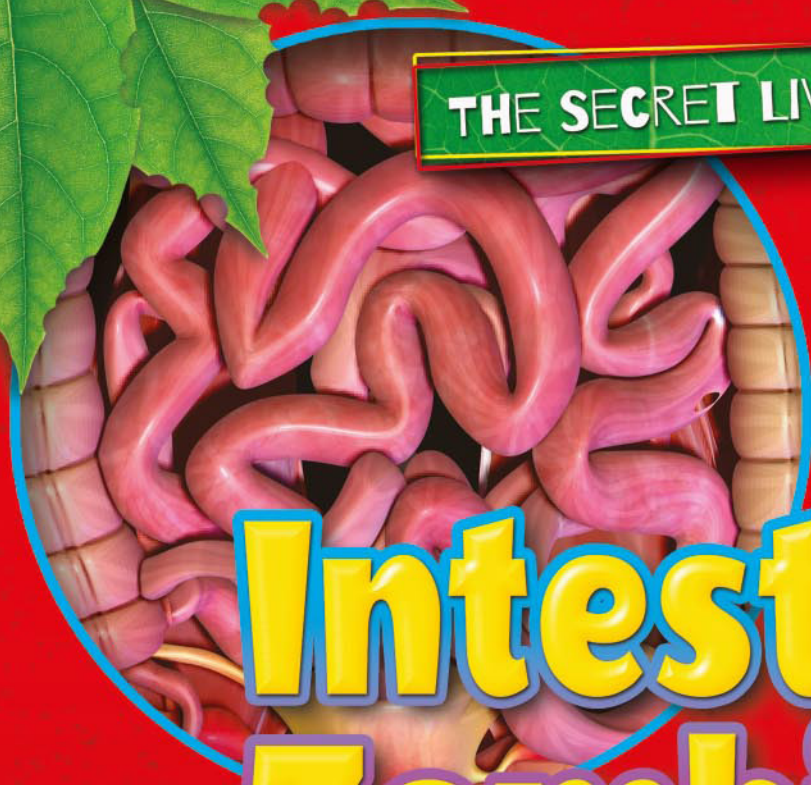


THE SECRET LIVES OF INSECTS



Intestines, Zombies, & Jumping Beans



Extraordinary
Insect Life Cycles

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Intestines, Zombies, & Jumping Beans



**Extraordinary
Insect Life Cycles**

by Ruth Owen and Ross Piper

Ruby Tuesday Books

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Words shown in **bold** in the text are explained in the glossary.



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Extraordinary Insect Life Cycles

Insects are tiny animals that have life cycles in three or four stages.

Almost all insects begin life as an egg. Some insects, such as cicadas and dragonflies, hatch from their eggs as a **nymph**. Insects such as wasps and butterflies hatch from their eggs as a **larva**, or caterpillar.



An emperor dragonfly nymph

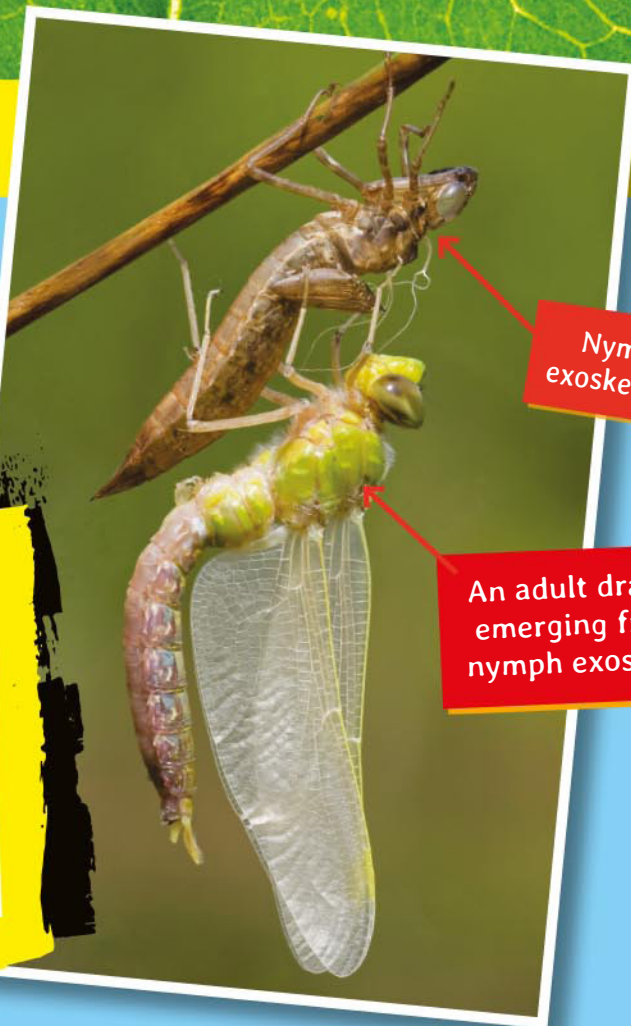
A swallowtail butterfly caterpillar



Growing and Molting

All insects have a tough outer covering called an **exoskeleton**. As a nymph or larva grows bigger, its exoskeleton becomes too small. The young insect sheds its old, tight shell. Underneath there is a new, larger exoskeleton. This process is called **molting** and can take place several times as the insect grows.

As a nymph grows, its wings start to form. Finally, a nymph goes through its final molt and emerges as an adult.



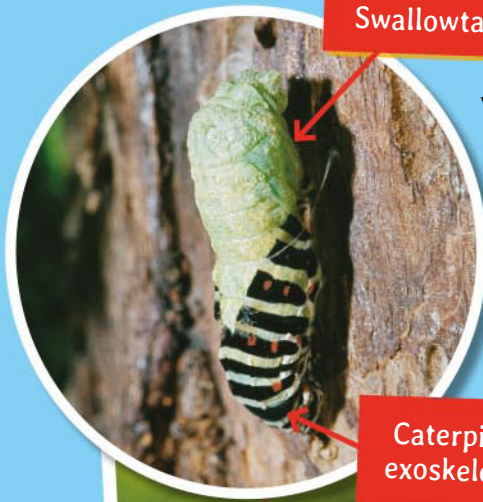
Nymph exoskeleton

An adult dragonfly emerging from its nymph exoskeleton

What Is an Insect?

An insect has a body in three main parts—the head, **thorax**, and **abdomen**. It has six legs and a pair of **antennae**. Most insects have wings.

Swallowtail pupa



Caterpillar exoskeleton

When a larva is fully grown, it becomes a **pupa** and goes through a life stage called **pupation**. The adult insect emerges from the pupa.

What Is Pupation?

Inside its exoskeleton, a larva's body undergoes huge changes to form the insect's adult body. Some insects pupate inside a protective **cocoon**. A larva might spin a cocoon using silk from its body. Other larvae build cocoons from soil or chewed-up wood.



Pupa case

A newly emerged swallowtail butterfly

GIRAFFE-NECKED WEEVIL

Rumble in the Jungle

In the branches of a tree, in the steamy rain forest of Madagascar, there's going to be a fight!

The two competitors approach each other. The first to knock his opponent from the tree will be the winner.

The bizarre-looking insects are giraffe-necked weevils. During the mating season, males do battle by beating their long, giraffe-like necks together. And what does the victorious weevil win?

He earns the right to mate with a female who waits close by, watching the fight.



A male giraffe-necked weevil

Giraffe-necked weevils only live on the island of Madagascar.

The Science Stuff

Once a male and female giraffe-necked weevil have mated, the female gets busy.

Female giraffe-necked weevil



The female weevil's neck is much shorter than the male's.

She uses her powerful legs to fold a leaf in half. Then she starts to roll up the end of the folded leaf.

Once she's made a tube-like leaf roll, she lays one tiny yellow egg inside the tube. Then she keeps rolling.



A leaf nest containing an egg

Finally, using her mouthparts, she strips the leaf from the tree. The rolled-up leaf nest falls to the forest floor. Then the female starts work on another leaf for another egg.

A male giraffe-necked weevil's body, including its neck, is just under 1 inch (2.5 cm) long.



A Home and a Meal

A larva hatches from the egg and feeds on the leafy nest built by its mother. In time, the larva pupates and becomes an adult weevil.