

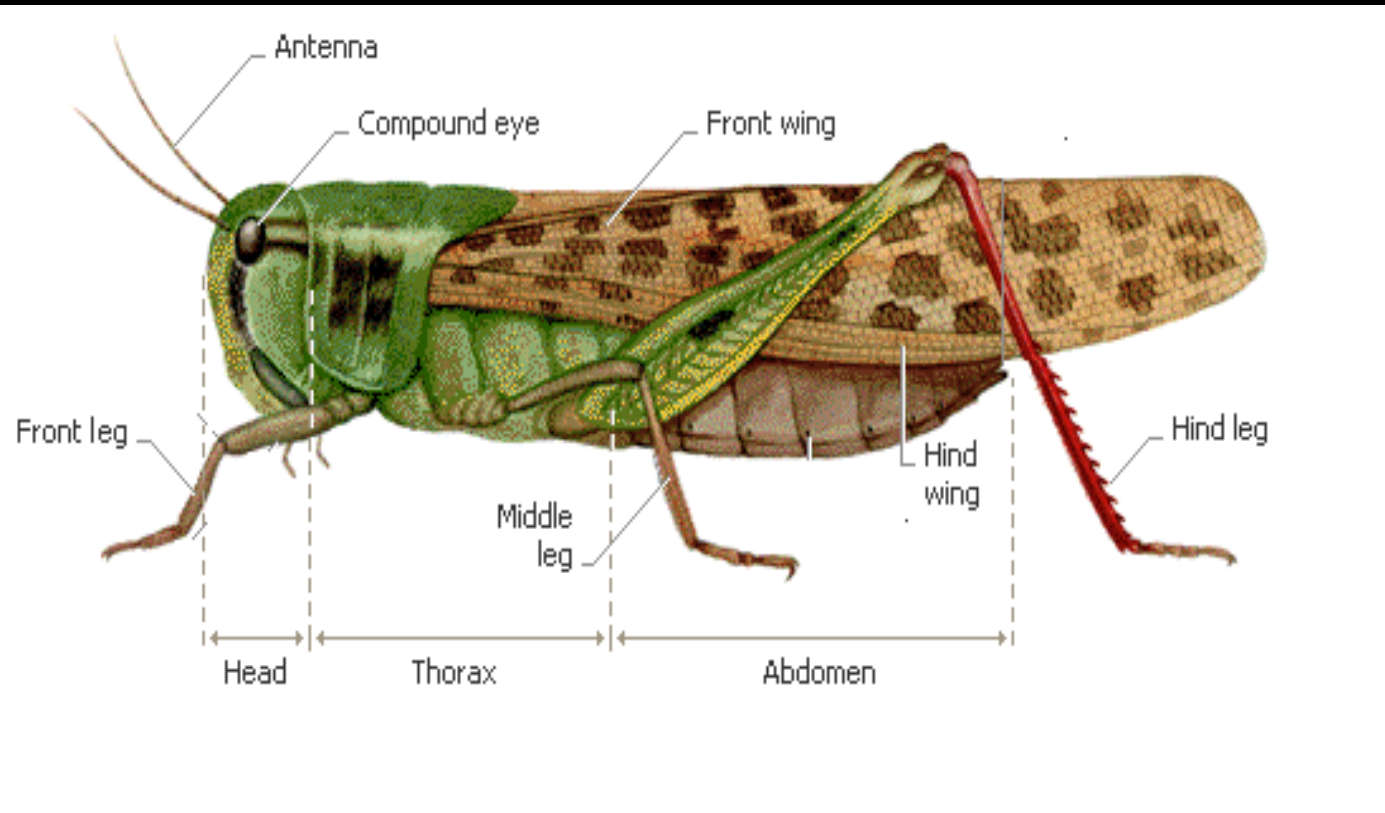


Entomology for Beginners

General Entomology ENT 100

INSECT MORPHOLOGY

All adult insects have three body parts: **head**, **thorax** and **abdomen**.



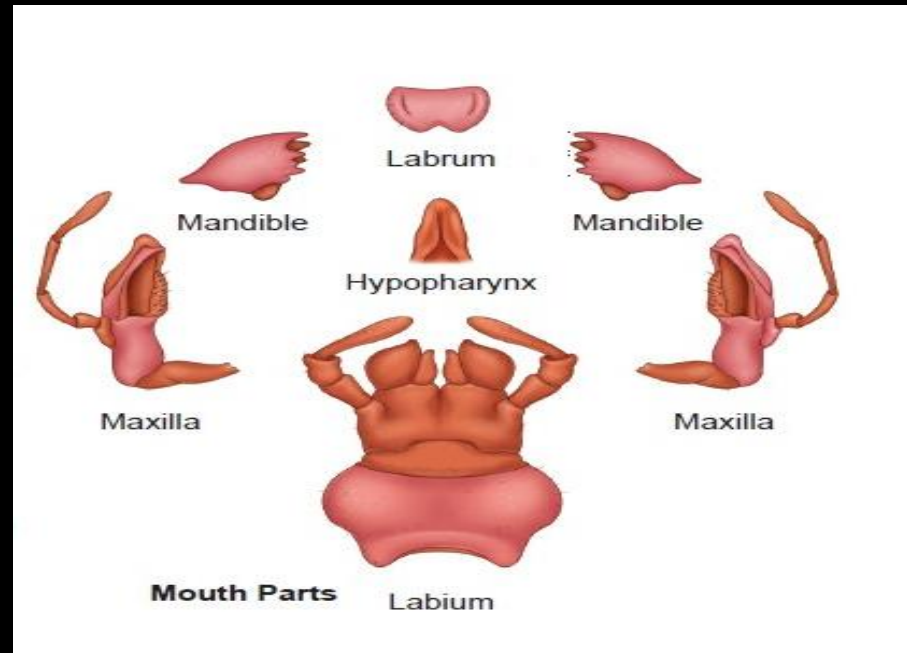
INSECT MOUTHPARTS

Insect mouthparts differ in structure because **the diets** of insects are different.



Chewing mouthparts:

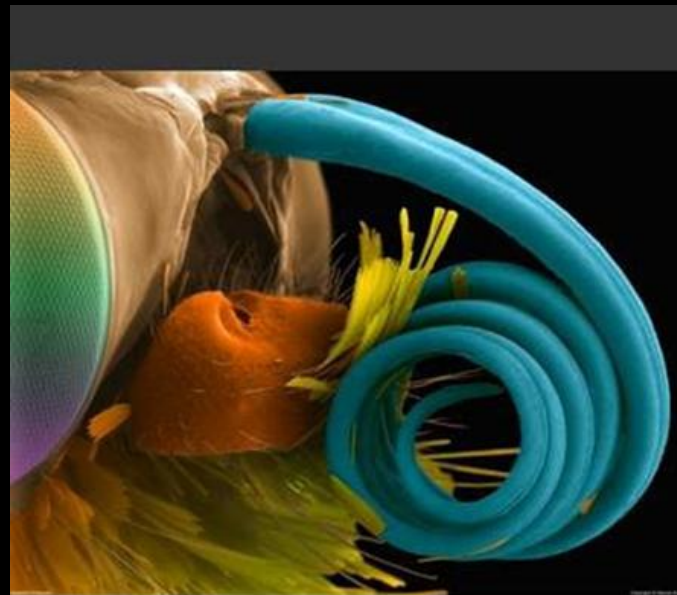
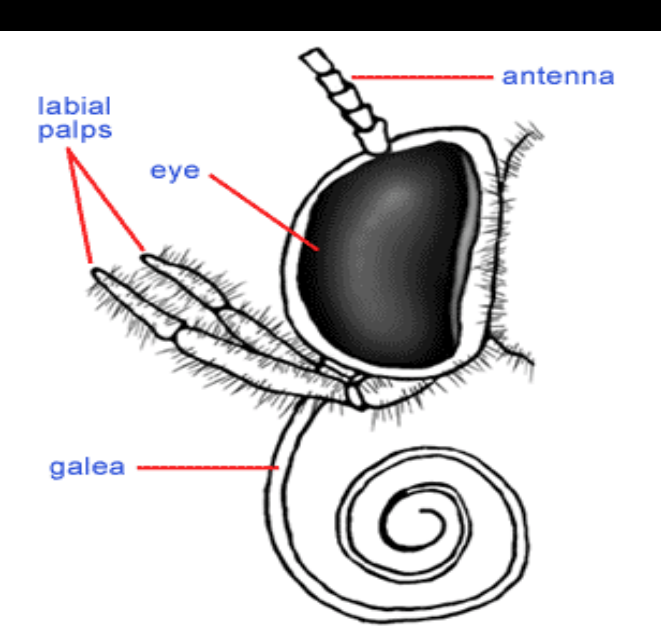
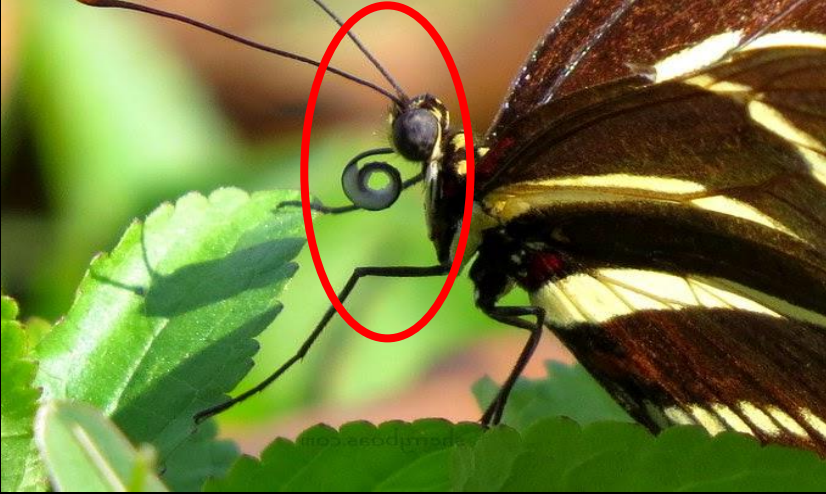
- ✓ **The Insect mouth consists of several parts.**
- ✓ **The basic chewing mouthparts are found in cockroaches and locusts**



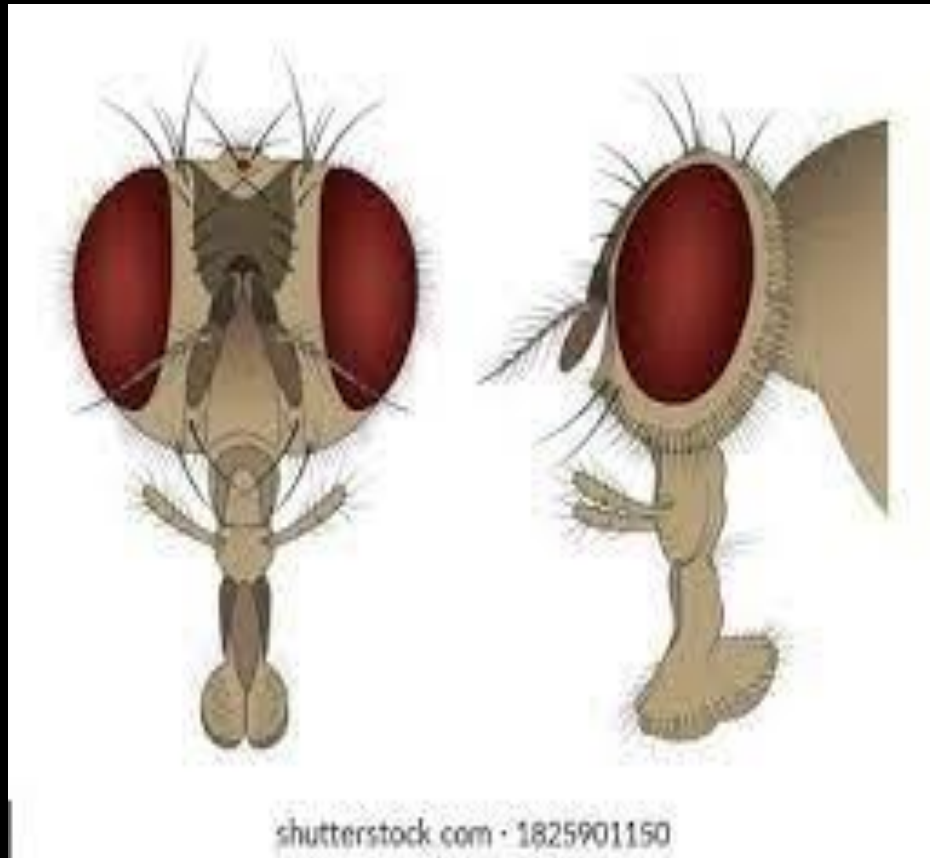


**Chewing mouthparts
of mantis**

Siphoning MP in butterflies and moths



Sponging MP in housefly



Piercing sucking MP in
Blood and sap sucking
insects such as female
mosquitoes.



Some adult insects such as mayflies do not eat at all. Therefore, they do not have mouth parts



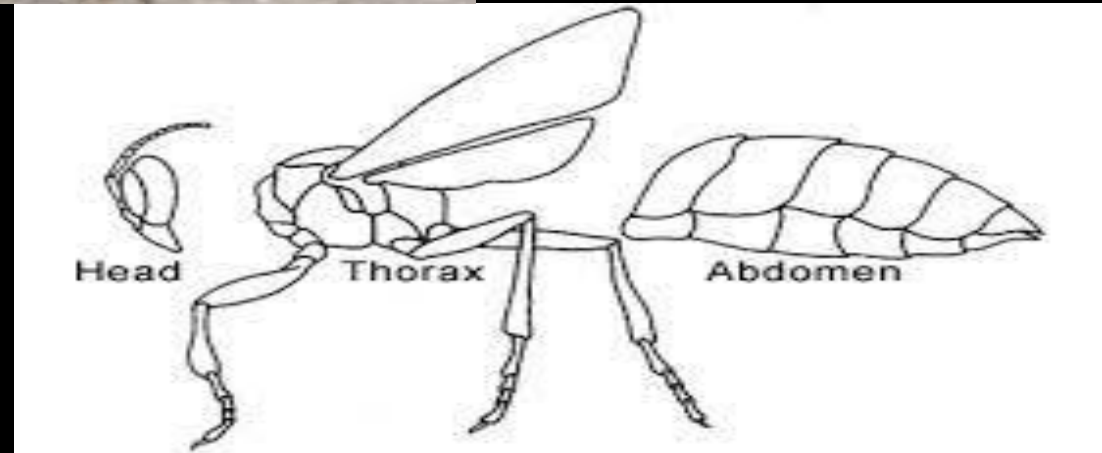
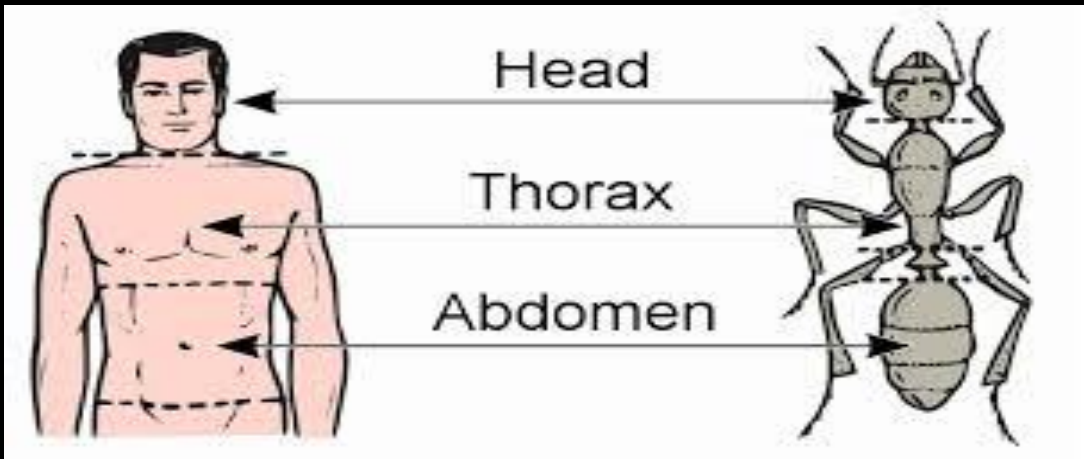
Mayflies

The Thorax

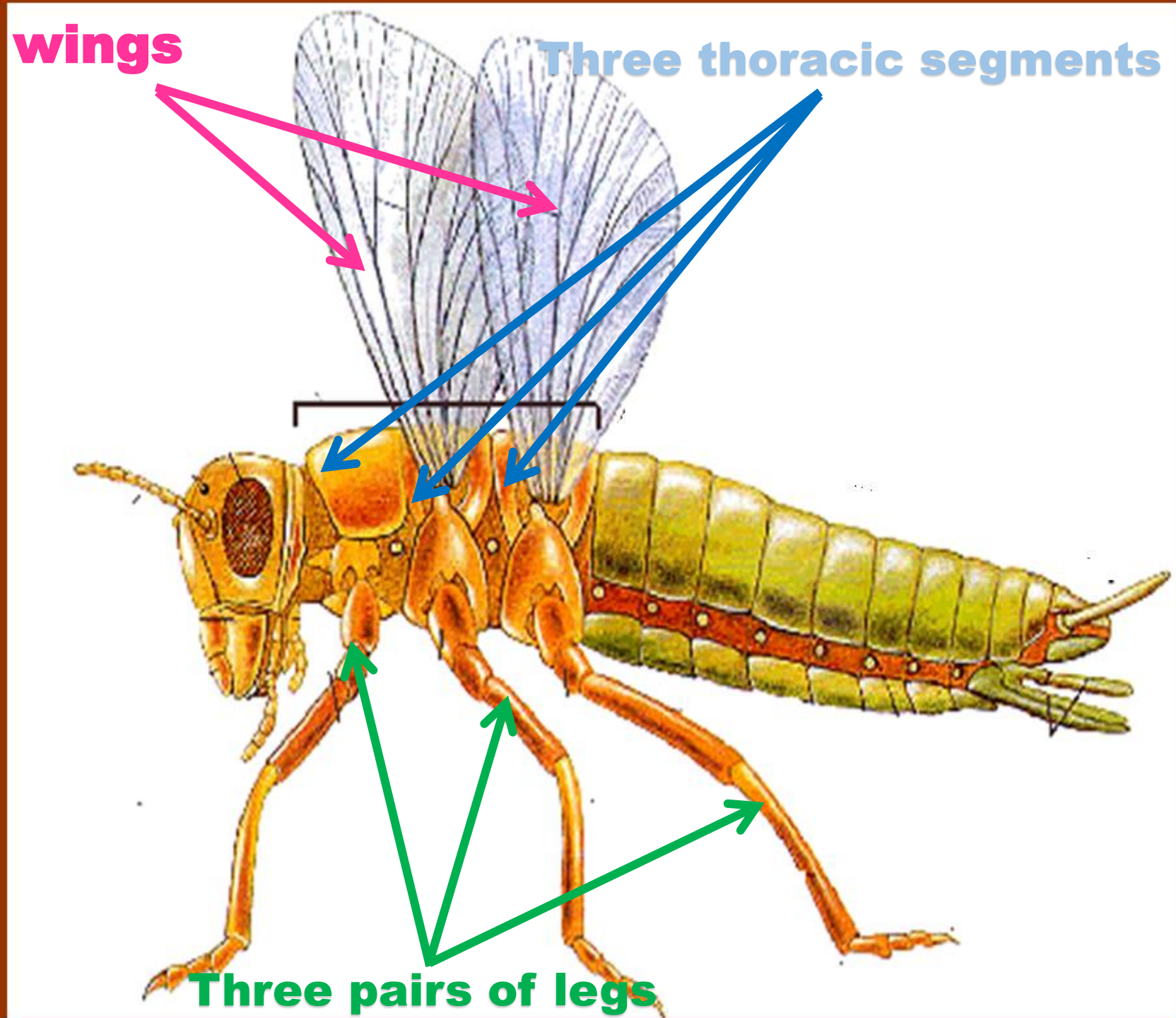


The thorax

- ✓ The thorax is the second (middle) part of an insect's body .
- ✓ It is composed of three segments.

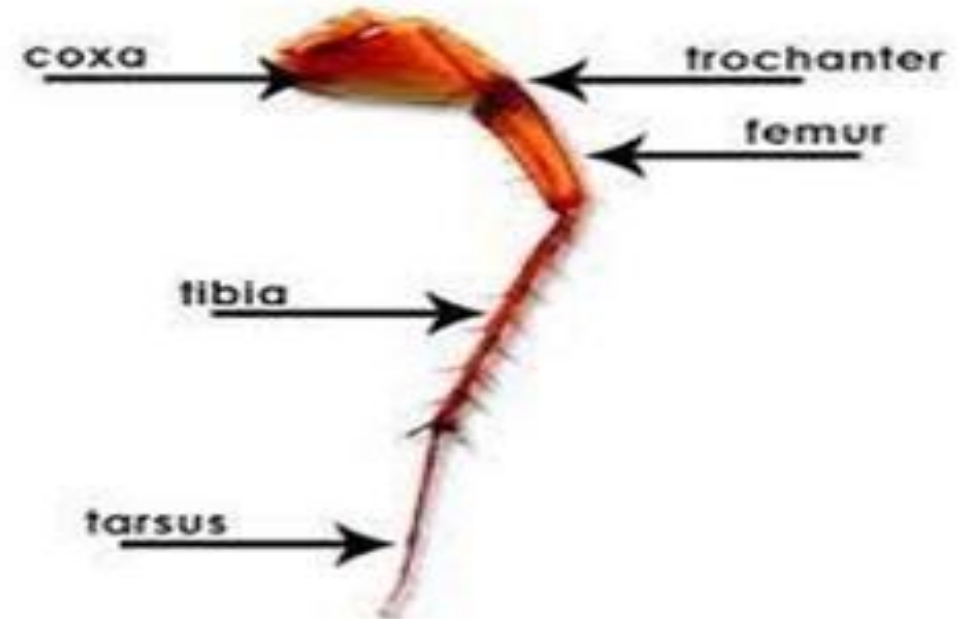


- ✓ The thorax is adapted for locomotion.
- ✓ It carries 3 pairs of legs.
- ✓ Many adult insects have one or two pairs of wings.



Insect legs

- ✓ All insects have 6 legs (Hexapoda).
- ✓ Each leg contains five segments (coxa, trochanter, femur, tibia and tarsus).

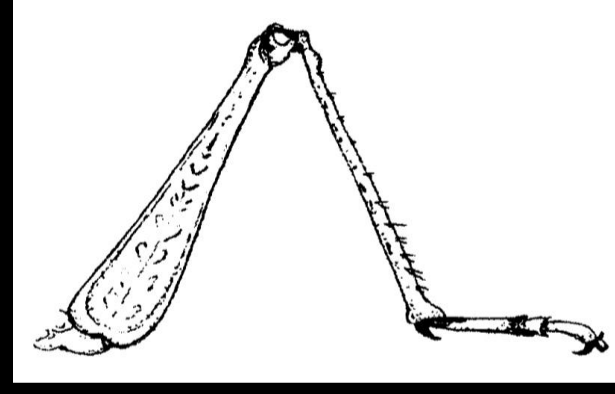


There are many types of insect legs according to their function

1) Walking or **Running legs** Ex: **Cockroaches**

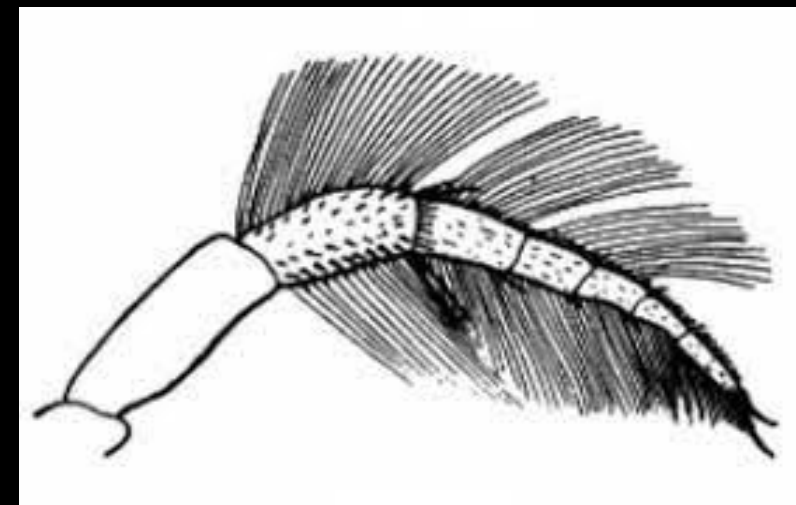
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Digging leg
as in **Gryllotalpa**,

Jumping leg
as in **locusts**



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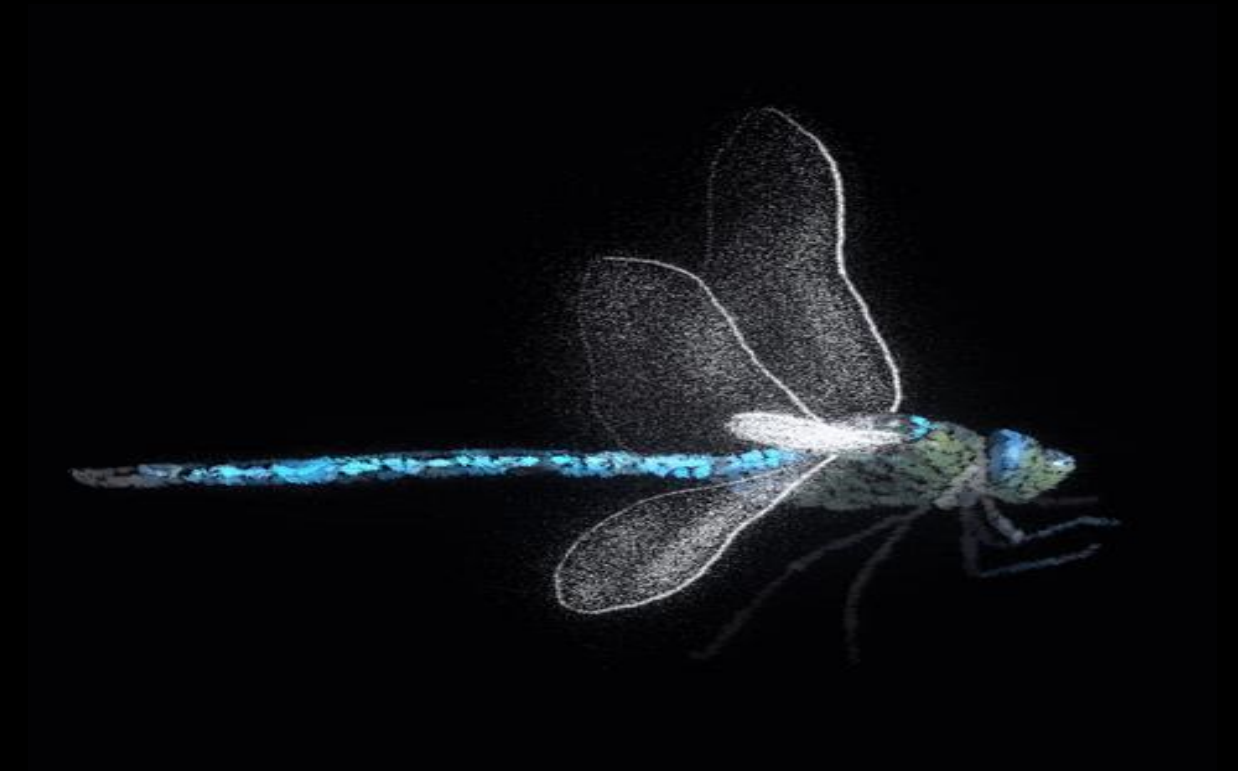
Swimming leg
as in water beetles



Seizing leg
as in mantis

Insect Wings

- ✓ **Most insects have two pairs of wings.**



Wings of insects have different shapes and structures. The wings may be:

- ✓ **Membranous as in bees,**
- ✓ **Sclerotized as in beetles, or**
- ✓ **Covered with scales as in butterflies and moths.**



In most cases, a characteristic network of **veins runs throughout the wing.**

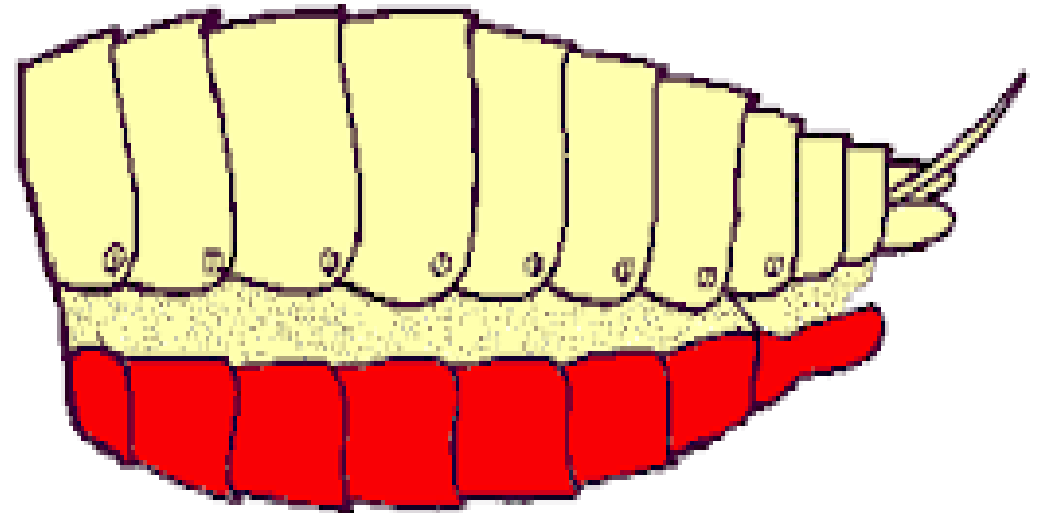
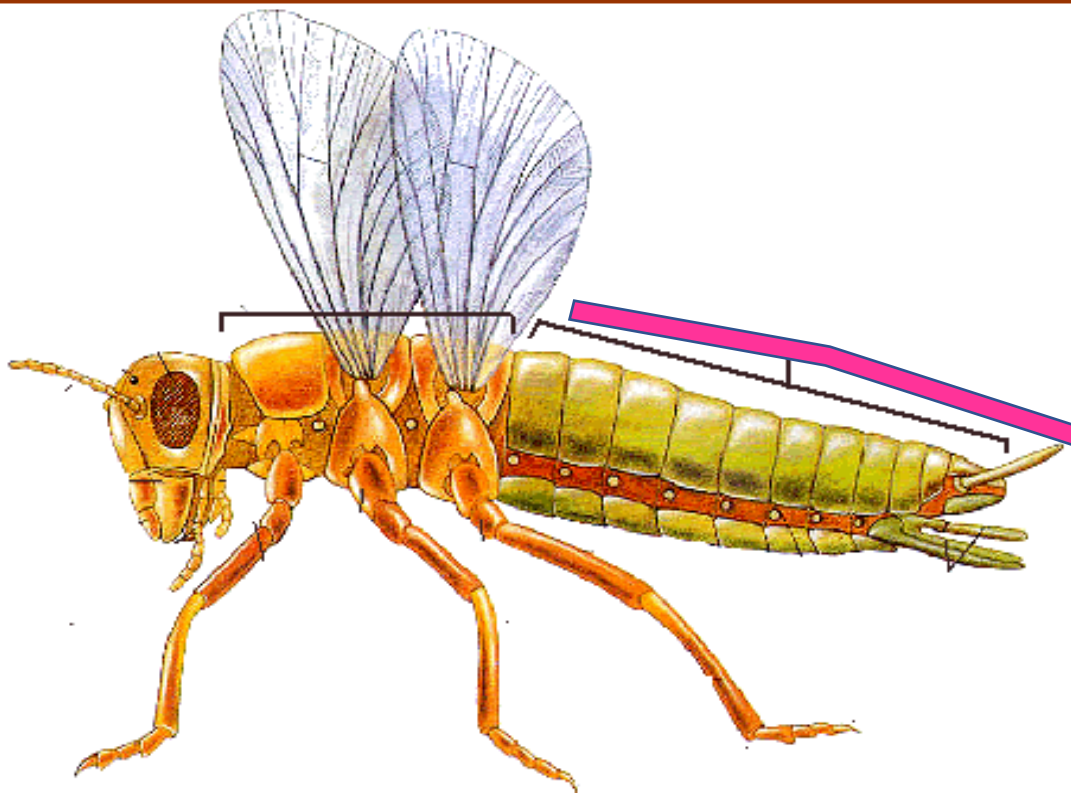


The Abdomen



Insect abdomen

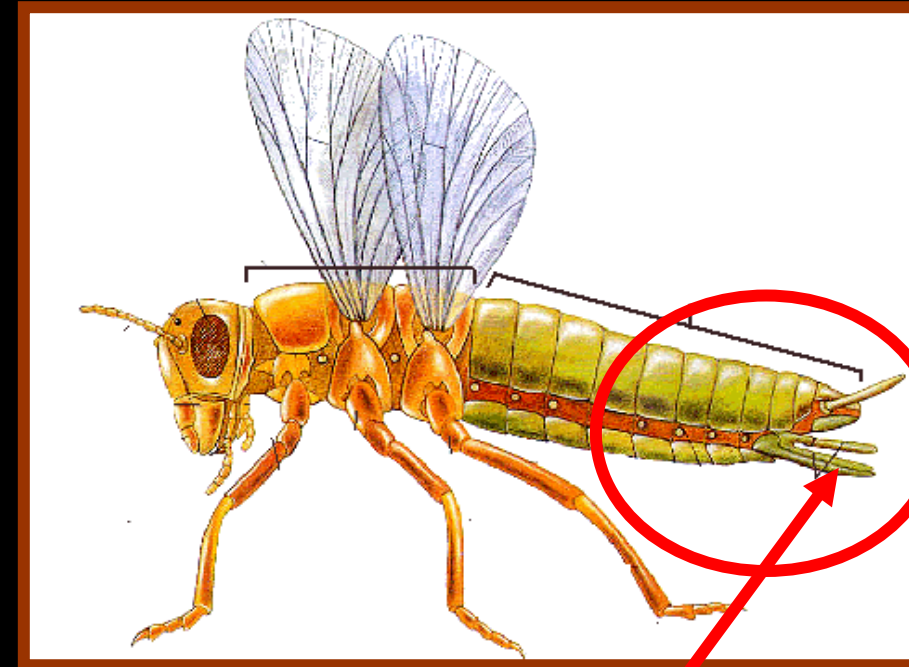
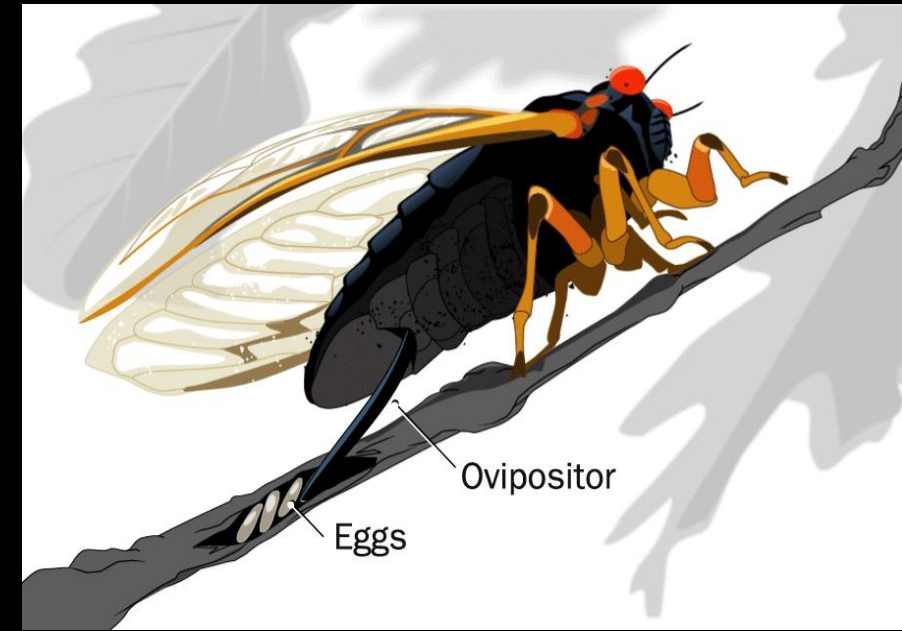
- ✓ Insect abdomen is the third region of insect's body.
- ✓ It consists of several segments.



- ✓ Segments often "telescope" inside each other, allowing the abdomen to expand and contract.



- ✓ At the end of the abdomen there are the **anus and genital opening.**
- ✓ In some insects there are **structures for egg laying or stinging**



Abdominal appendages

In many adult insects, there is a **spiracle** (opening to the **respiratory system**) on each side of most abdominal segments.

