



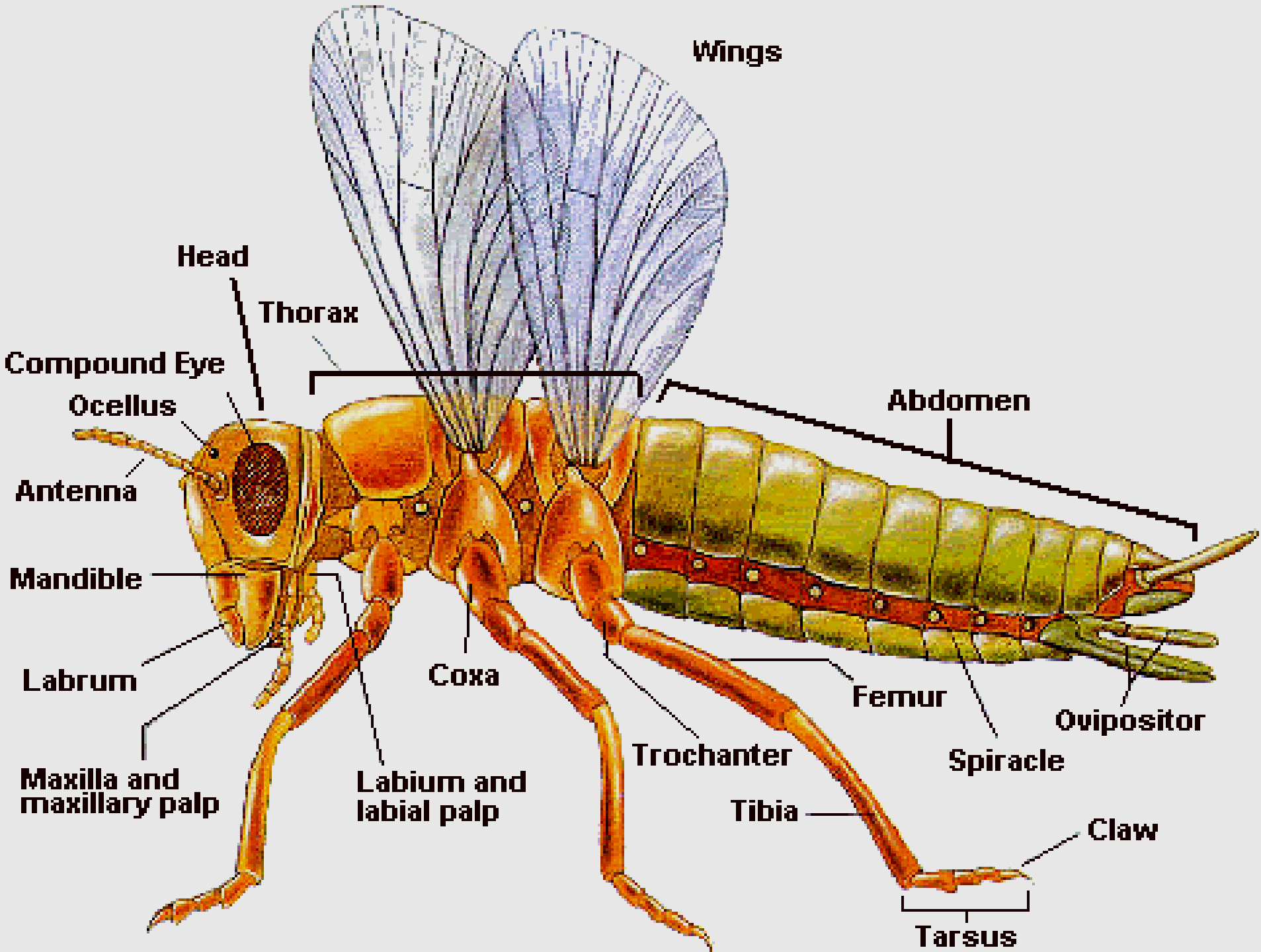
INSECT ANATOMY

EXTERNAL STRUCTURES OF THE INSECT BODY



DIRECTIONAL TERMS FOR INSECT ANATOMY

- **VENTRAL** - lower surface
- **DORSAL** - upper surface
- **LATERAL** - side
- **MEDIAL** - center
- **ANTERIOR** - toward the head end
- **POSTERIOR** - toward the abdomen
- **DISTAL/APICAL** - toward the tip
- **PROXIMAL/BASAL** - toward the body



THE INSECT BODY

➤ Three Body Regions

➤ Head

➤ Thorax

➤ Abdomen

➤ Two Antennae

➤ Three Pairs of Legs

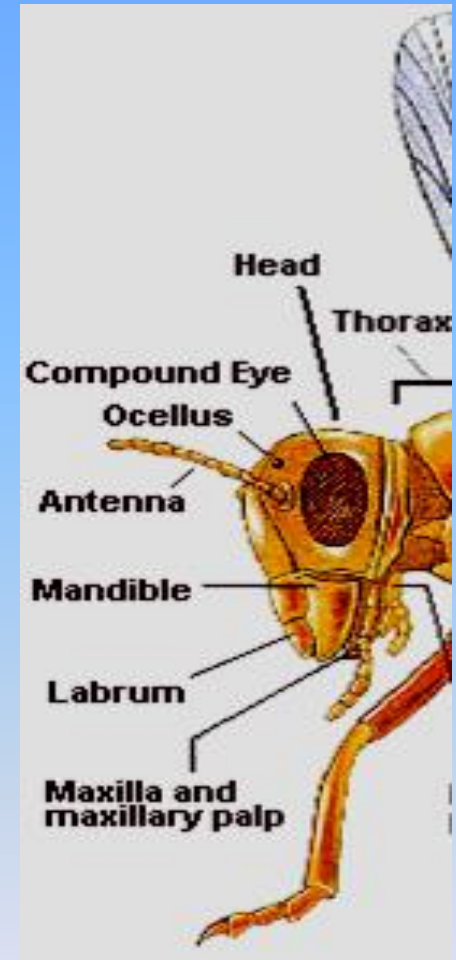
➤ Winged or Wingless



HEAD AND THORAX

- Compound eyes
- Antennae
- Mouthparts

- Legs
- Wings



ABDOMEN

► Reproductive Structures

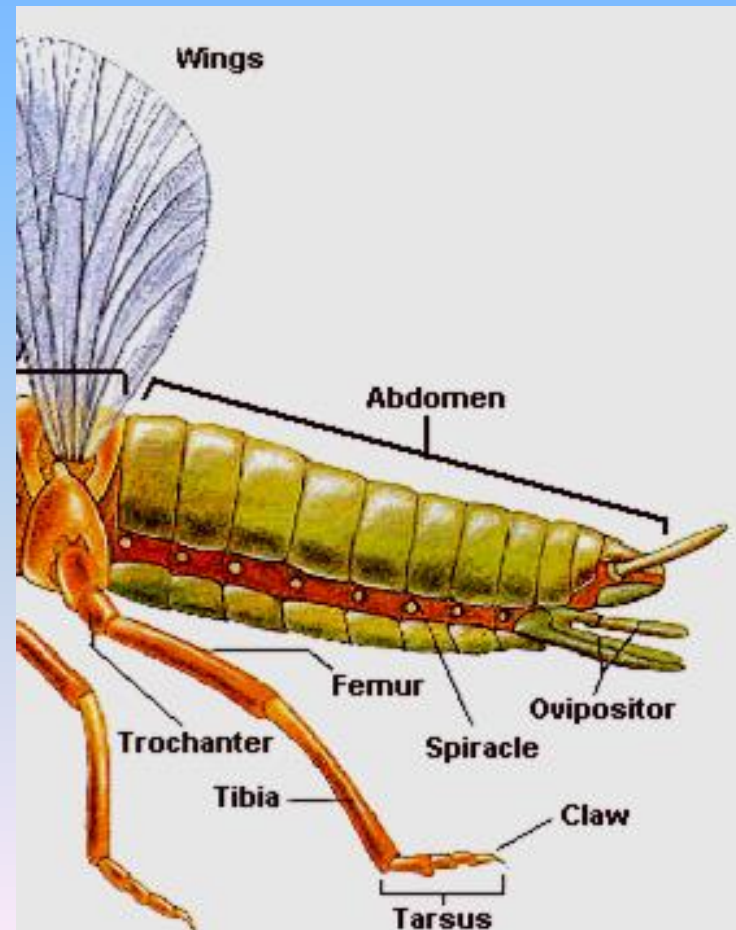
► Ovipositor

► Non-reproductive structures

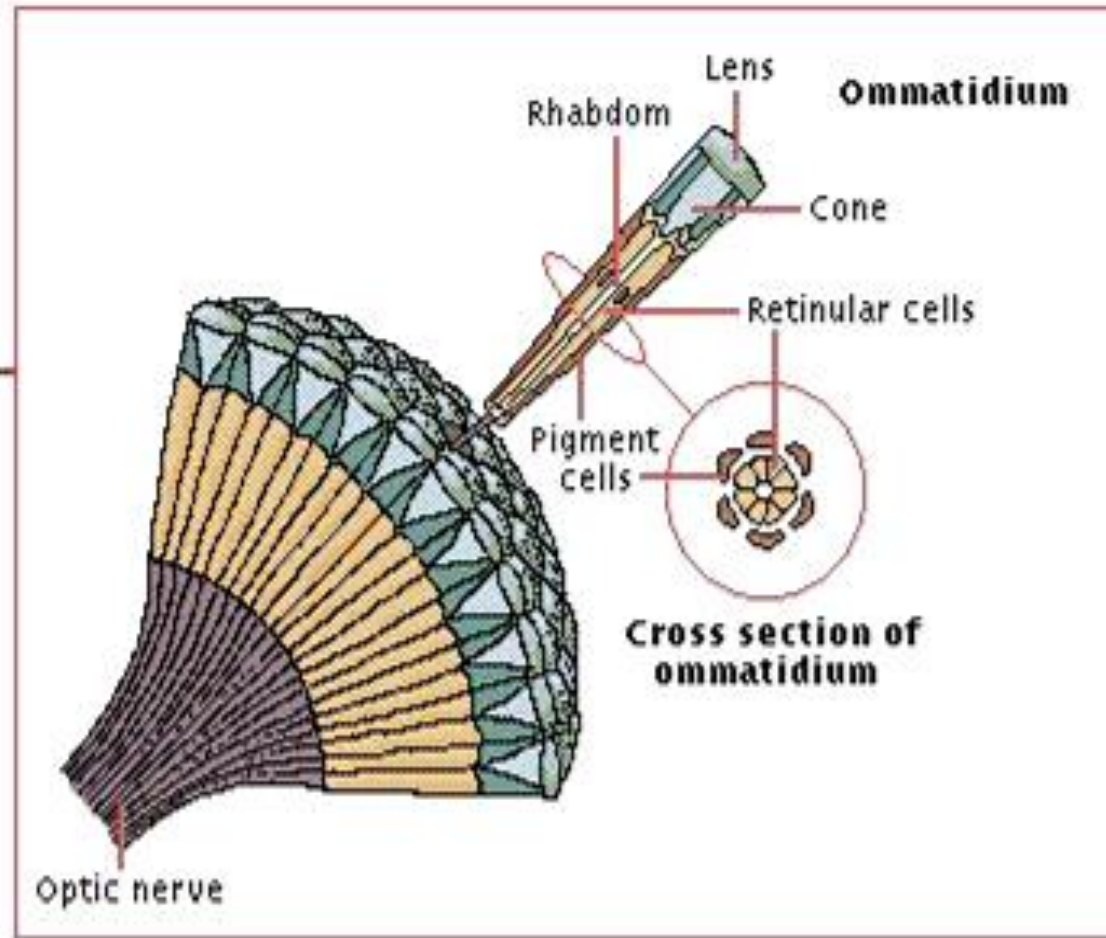
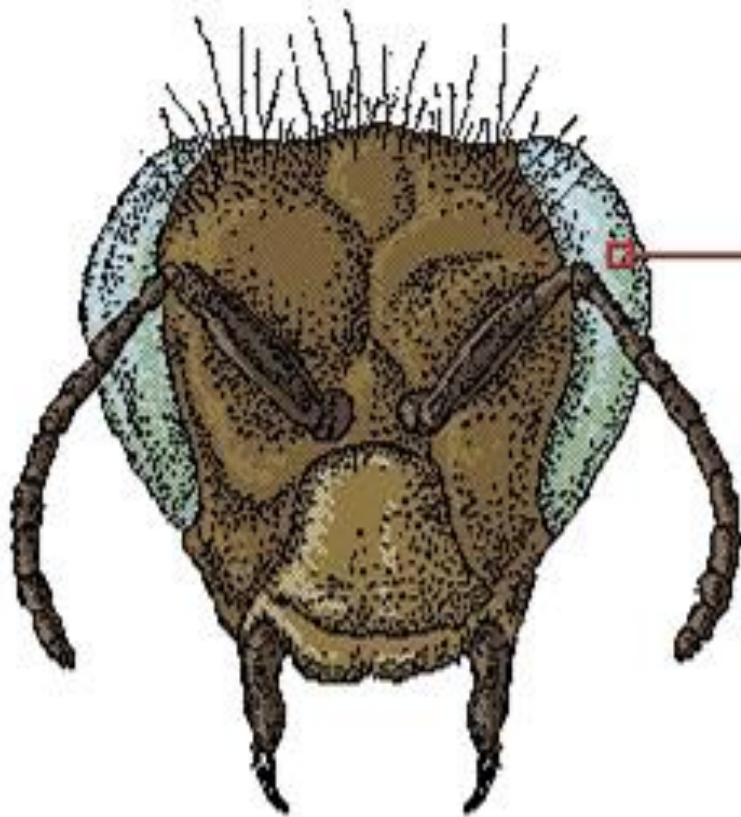
► Spiracles

► Prolegs

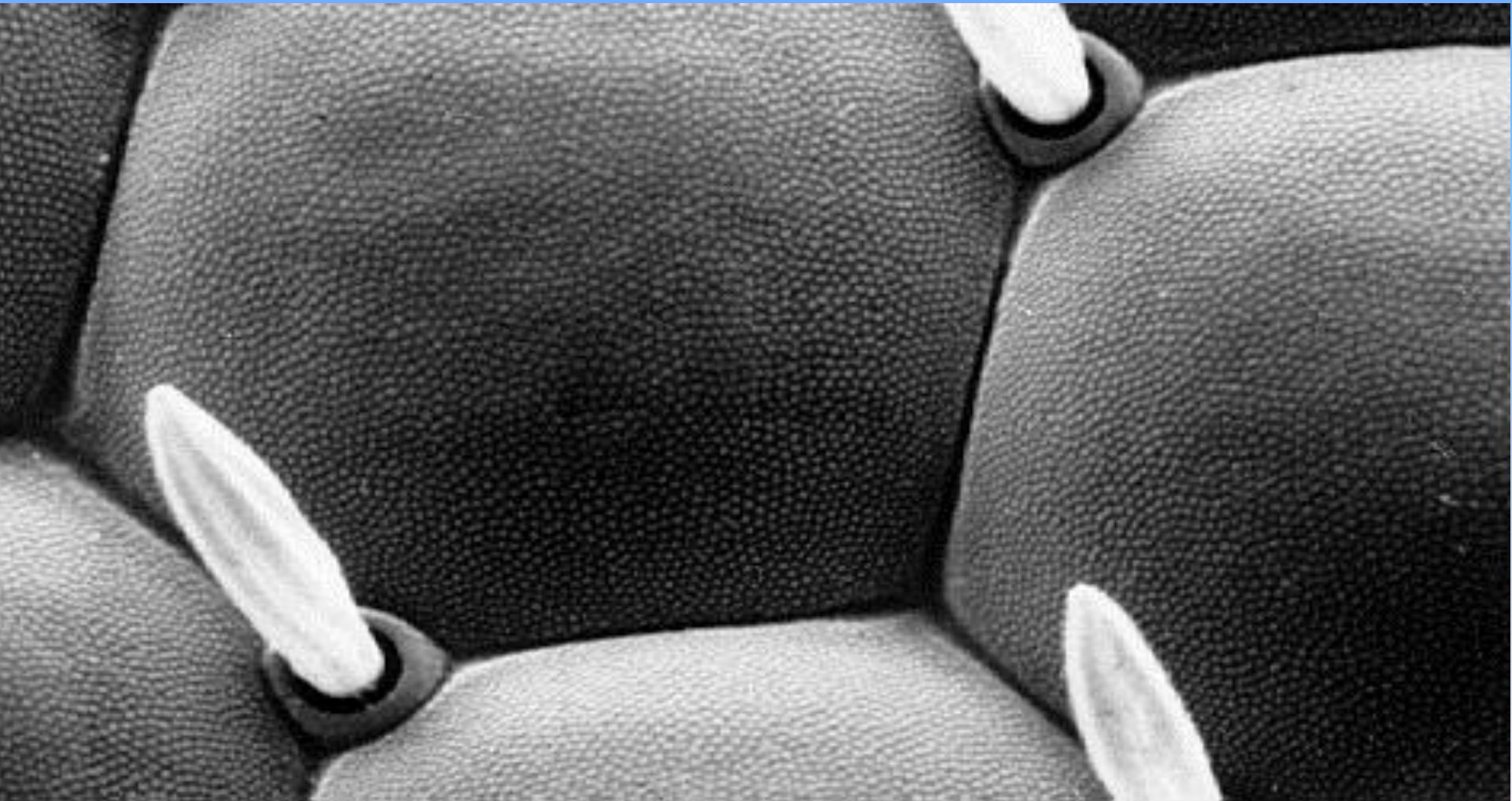
► Cornicles



COMPOUND EYE AND OMMATIDIA



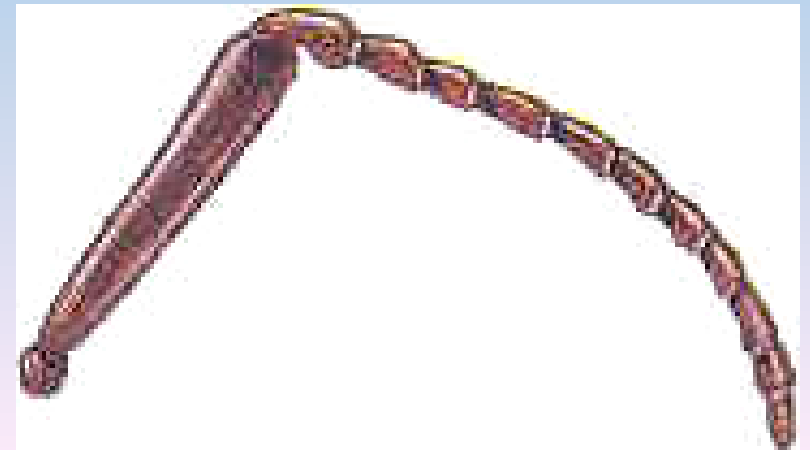
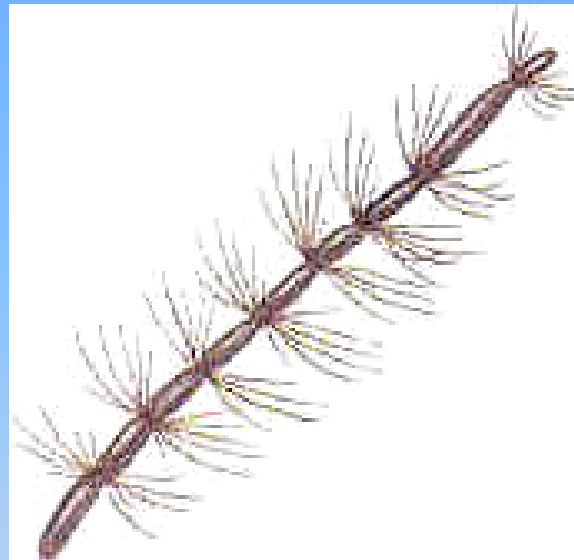
Compound Eye of *Drosophila* Fruit Fly



SIMPLE EYES

- **Ocelli**-simple eyes that do not perceive images, but are sensitive to small changes in light intensity
- **Stemmata**-clusters of simple eyes found larval stages of insects

TYPES OF INSECT ANTENNAE

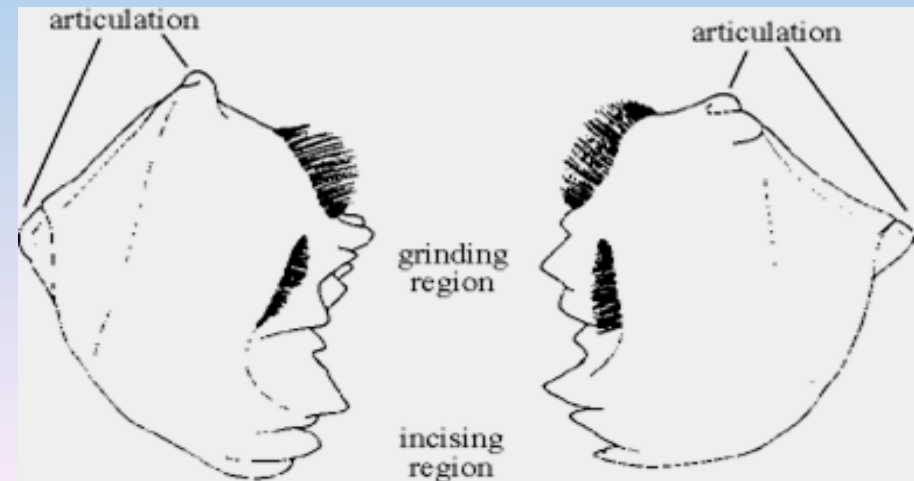
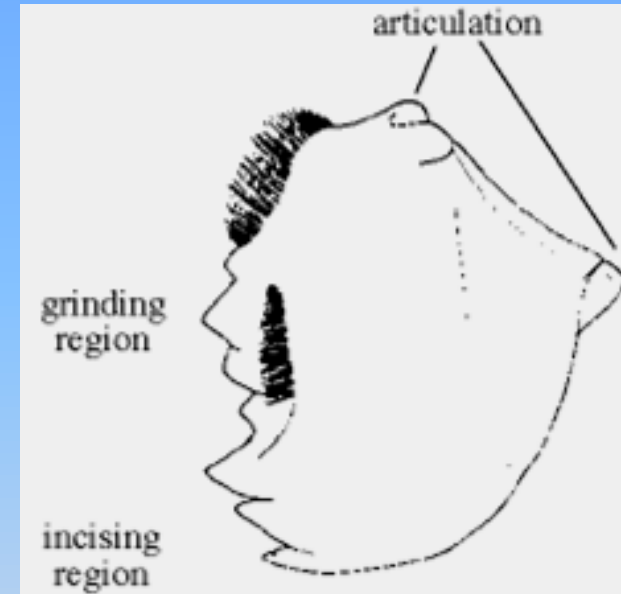


CHEWING MOUTHPARTS OF PREDATORS AND LEAF-FEEDERS

➤ Mandible

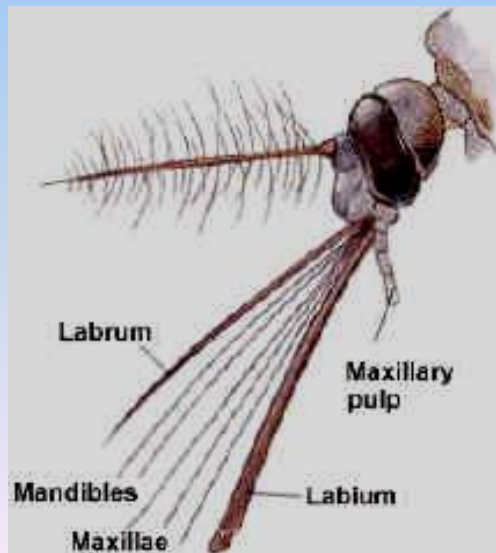
➤ Labrum

➤ Palps

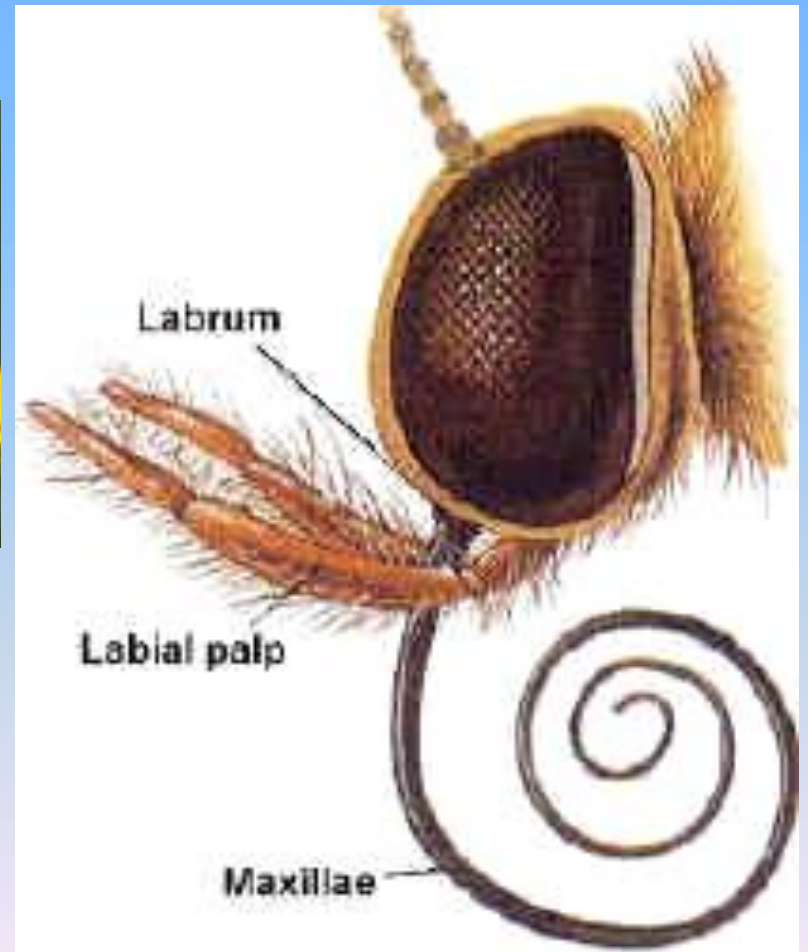


PIERCING-SUCKING MOUTHPARTS OF SAP-FEEDERS

- **Proboscis** or “beak” and **stylets**
- Sap-feeding and blood-feeding insects



SIPHONING MOUTHPART OF A MOTH OR BUTTERFLY



THE THORAX

➤ PROTHORAX

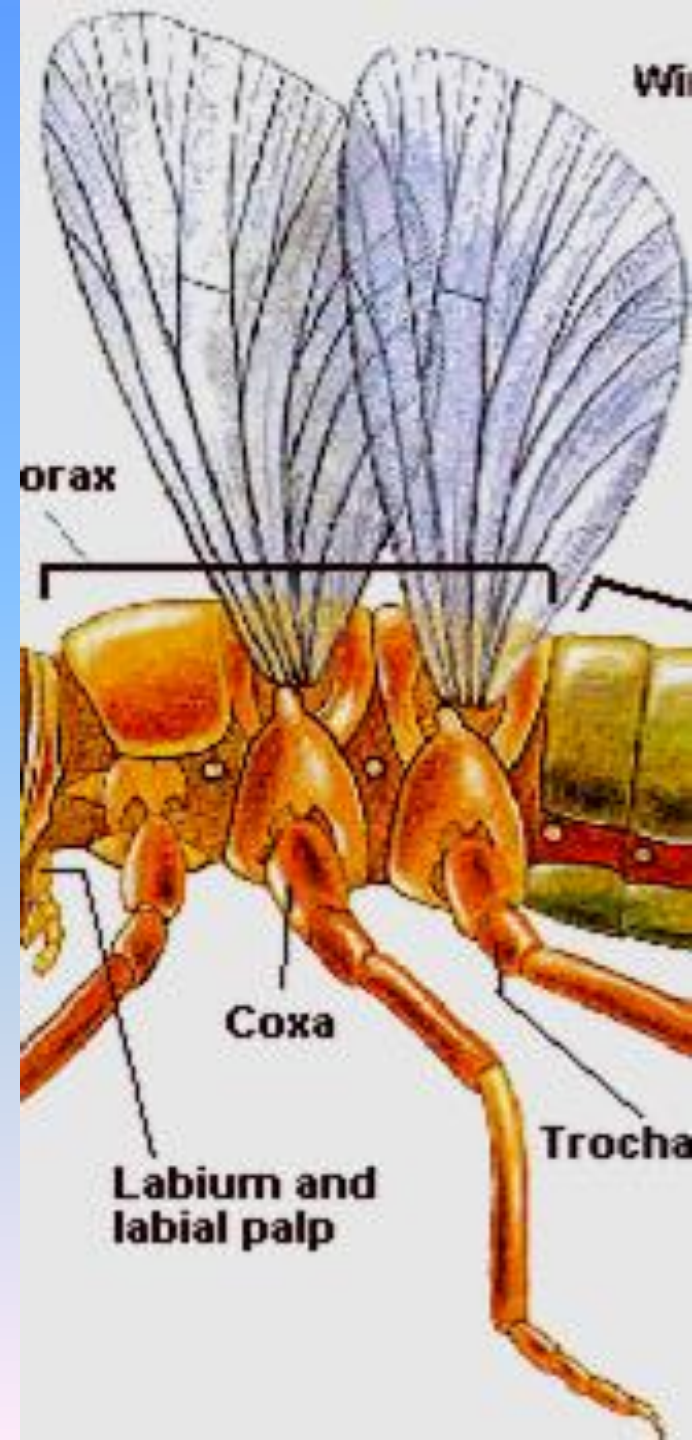
- First pair of legs

➤ MESOTHORAX

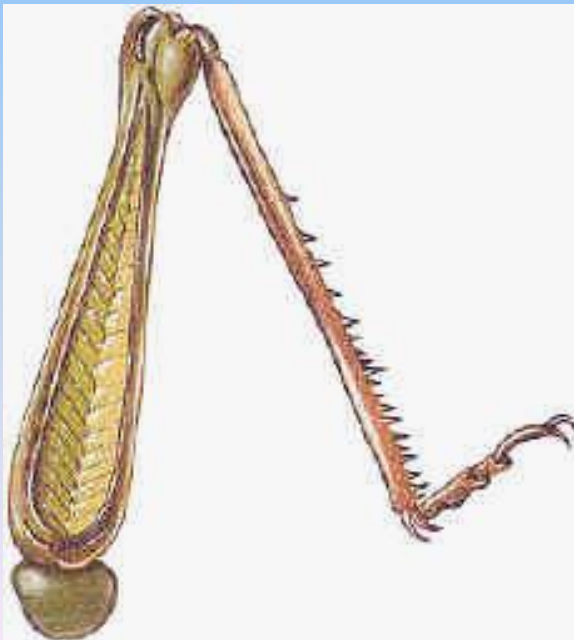
- Second pair of legs
- First pair of wings

➤ METATHORAX

- Third pair of legs
- Second pair of wings

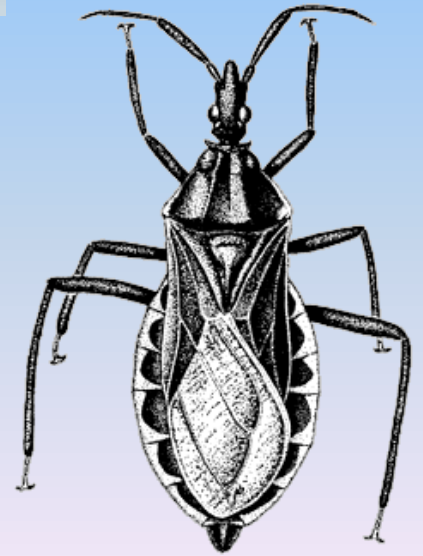
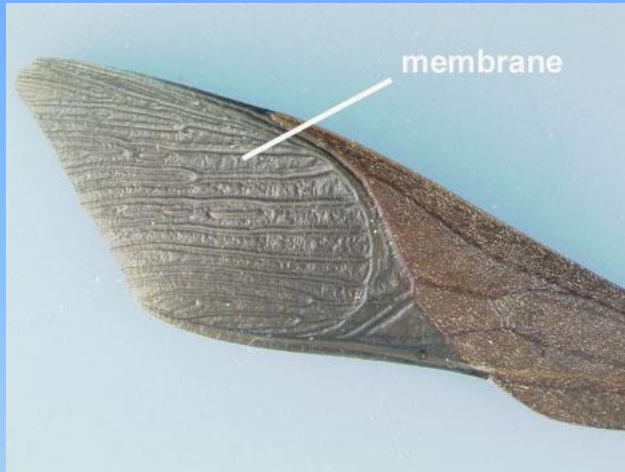


INSECT LEG TYPES



INSECT WING TYPES

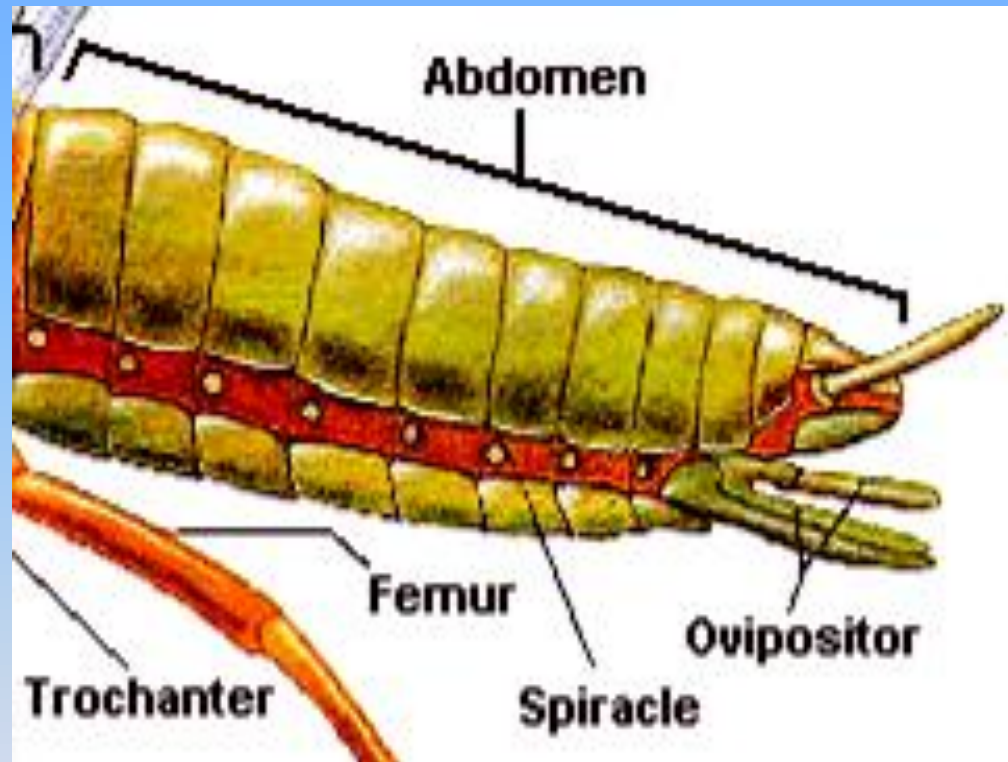
("Half Wing" or Hemelytra)



INSECT WING TYPES (Elytra, Membraneous, Scale)



INSECT ABDOMEN

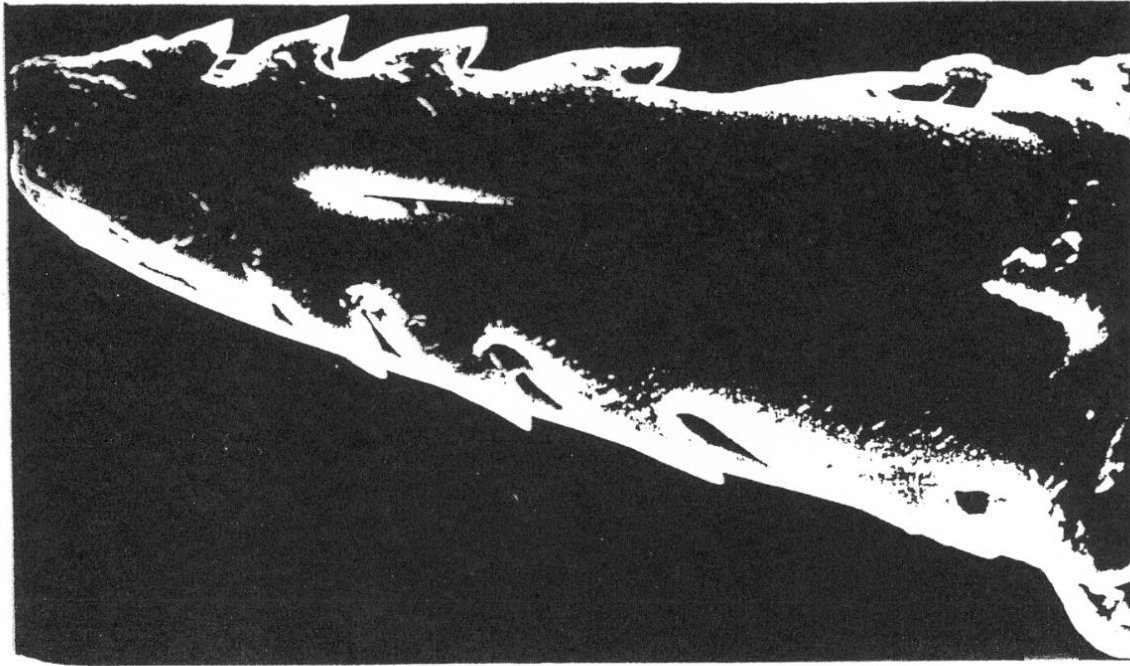


REPRODUCTIVE STRUCTURES

➤ Ovipositor or “Egg Positioner”



HONEYBEE STINGER (Modified Ovipositor)



STINGER OF THE WORKER HONEYBEE

WASP STINGER

(Modified Ovipositor)

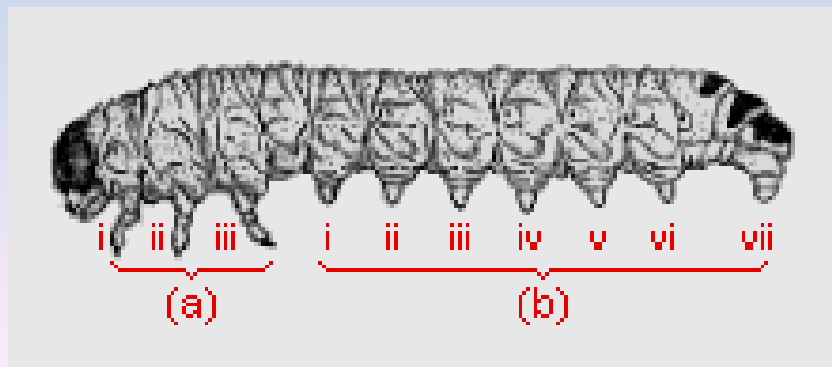


STINGER OF A VESPID WASP



NON-REPRODUCTIVE STRUCTURES

- Cornicles
- Prolegs
- Crotchets



PROLEGS ON CATERPILLARS

(Five or less pairs with crotchets)



PROLEGS ON SAWFLY LARVAE

(Six or more pairs without crotchets)





QUESTIONS

ANSWERS