

EXTERNAL FEATURES AND LIFE CYCLES OF SOME OF THE SELECTED INSECTS

A biological presentation by Emmanuel Kiganda



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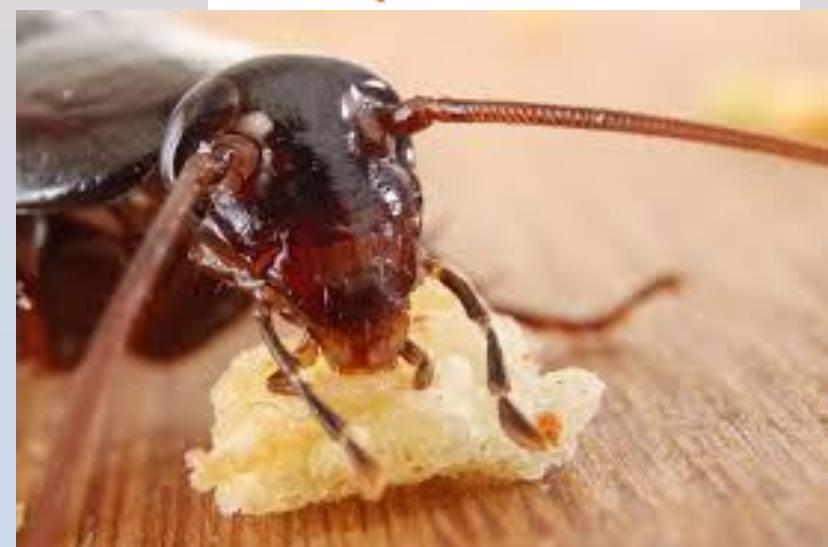
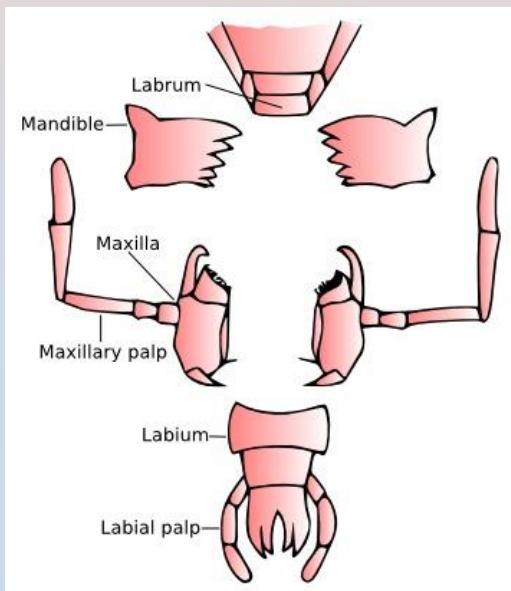
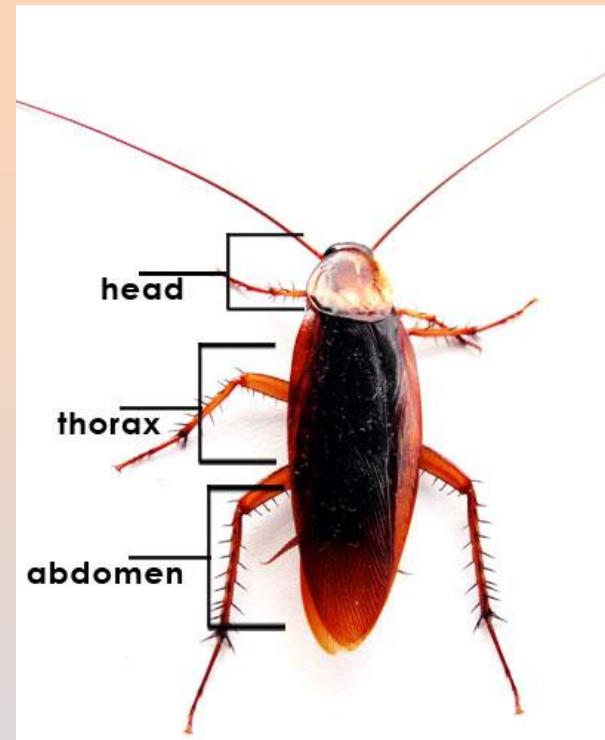
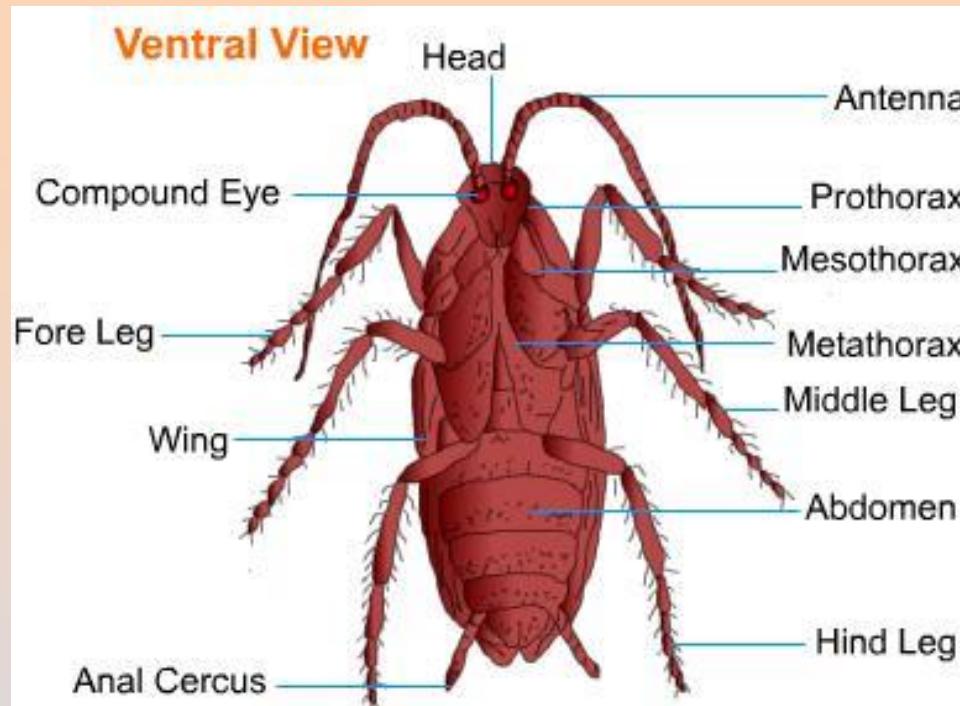
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Note: Most of the images are generated from a ppt with GIFs(Graphical interchange formats) to form a pdf

EXTERNAL FEATURES AND LIFE CYCLES



COCKROACH(*Periplaneta americana*)



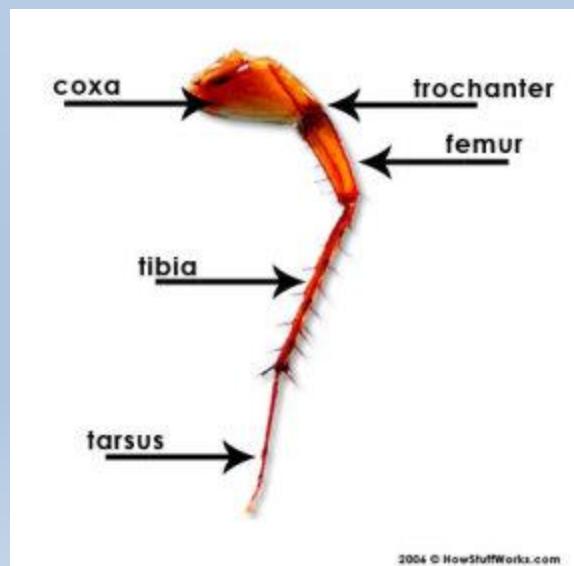
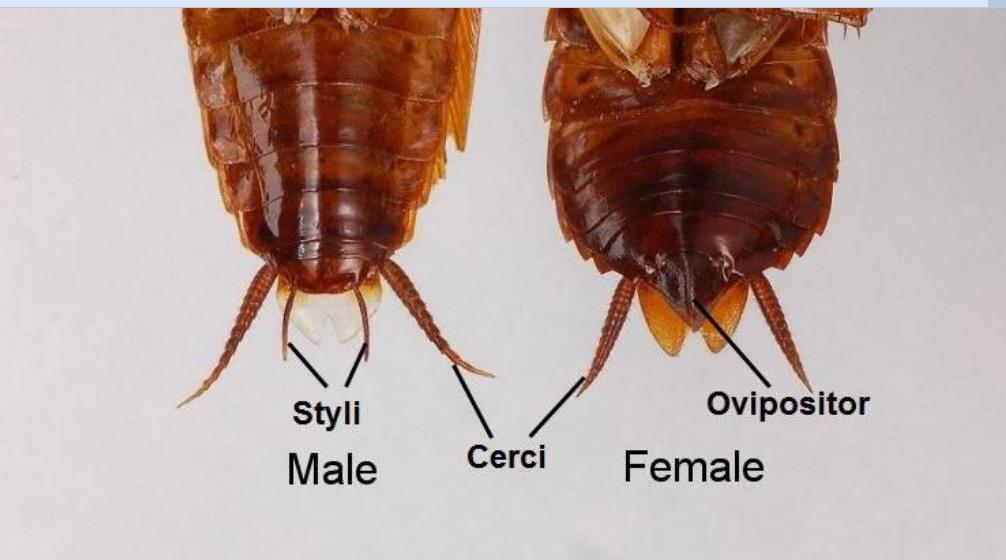
Hind & fore wing



The hind leg



Differences between male & female(abdomen)



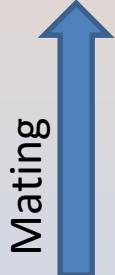
LIFE CYCLE OF A COCKROACH

Eggs in ootheca carried by female



Eggs hatch into white nymphs

After 6 weeks



Nymphs turned brown after 2 weeks and undergoes a series of moulting until they become an adult

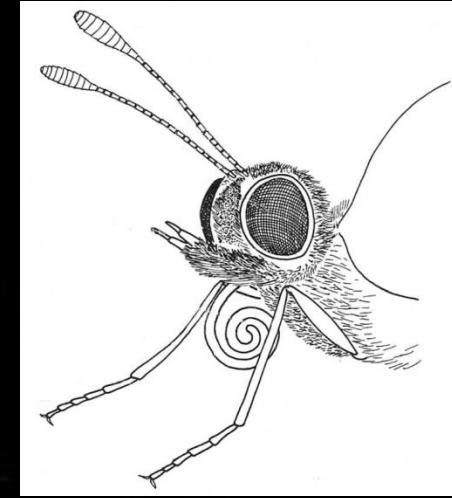


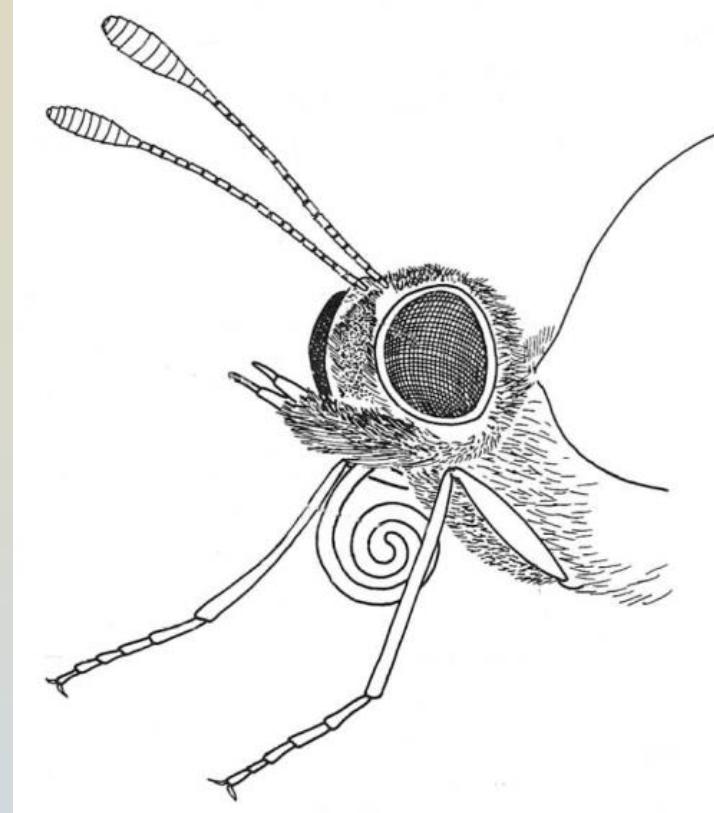


Life Cycle of a Cockroach

A

CITRUS BUTTERFLY(*Papilio demodocus*)

**D****B****E****F**



Observe the following special parts

- **Long proboscis coiled while at rest**
- **Antenna broad at the tip(clubbed)**

DIFFERENCES BETWEEN A BUTTERFLY AND A MOTH



Diurnal(active during day)



Wings held upright at rest



Clubbed antennae(enlarged at tip)



Small body

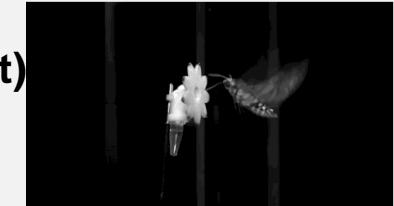


Brightly colored



Pupate above ground

Nocturnal(active during night)



Wings held horizontally at rest



Feathery antennae



Large body



Dull colored



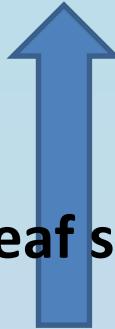
Pupate in cocoons in soil



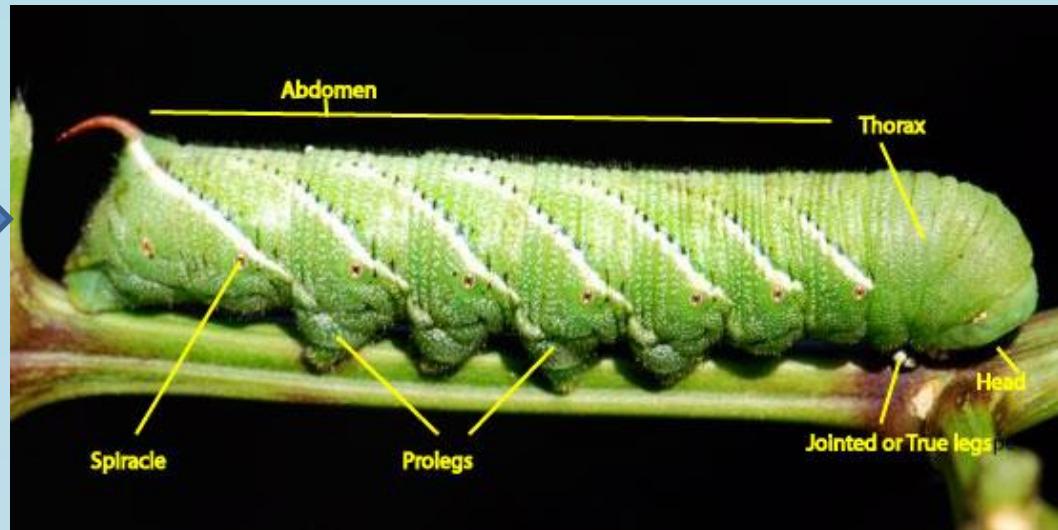
LIFE CYCLE OF A CITRUS BUTTERFLY



3 days



laid under leaf surfaces



weeks
3



7-10 days



Chrysalis

©Horace Tan

ECONOMIC IMPORTANCES OF BUTTERFLIES AND MOTHS

Army worm moth is a crop pest



Cotton from silkworm moth



Caterpillar eats flies(biological pest controller)



Butterflies pollinate flowers



CONTROL OF CARTERPILLARS

a) Introducing a parasitic wasp(Biological pest control)



b) Hand picking

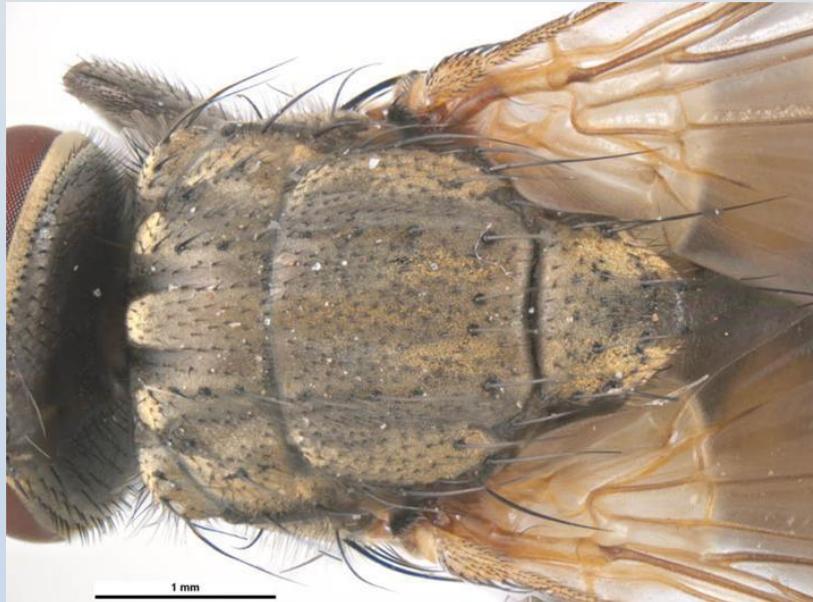
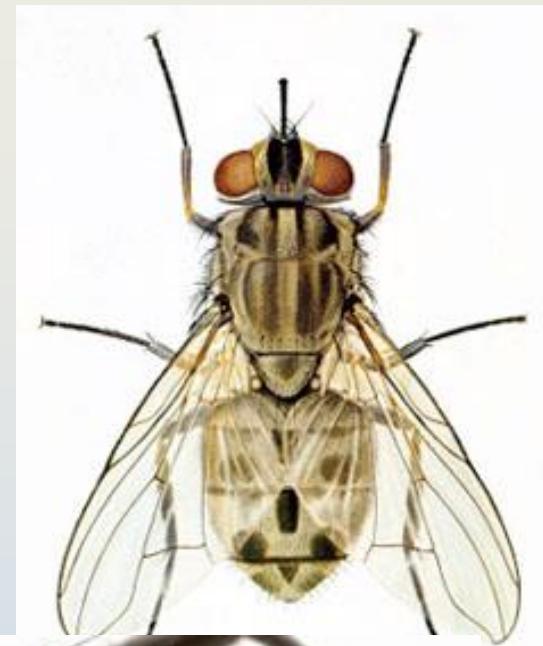
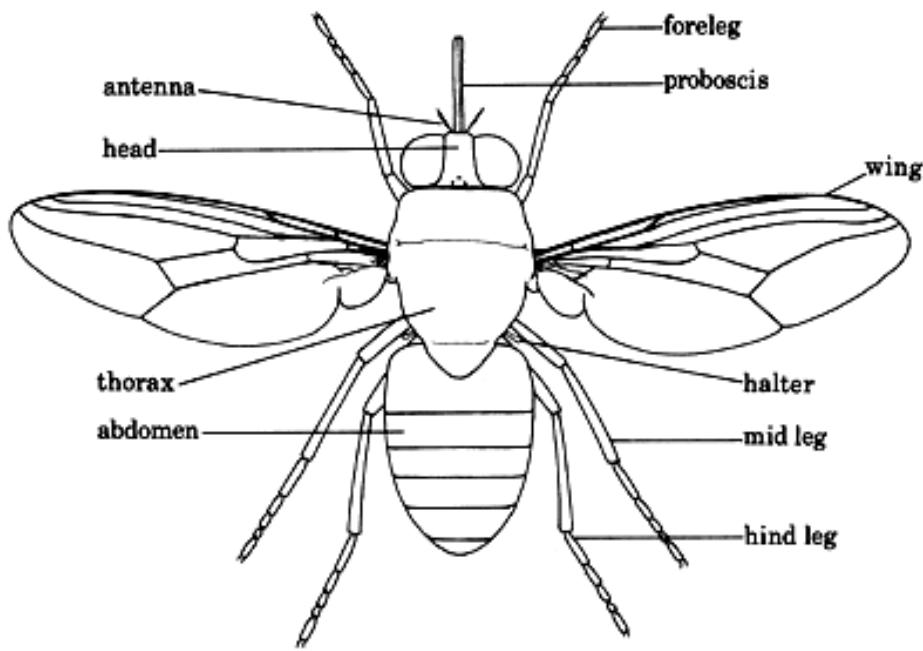


c) Spraying using insecticides



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HOUSE FLY (*Musca domestica*)

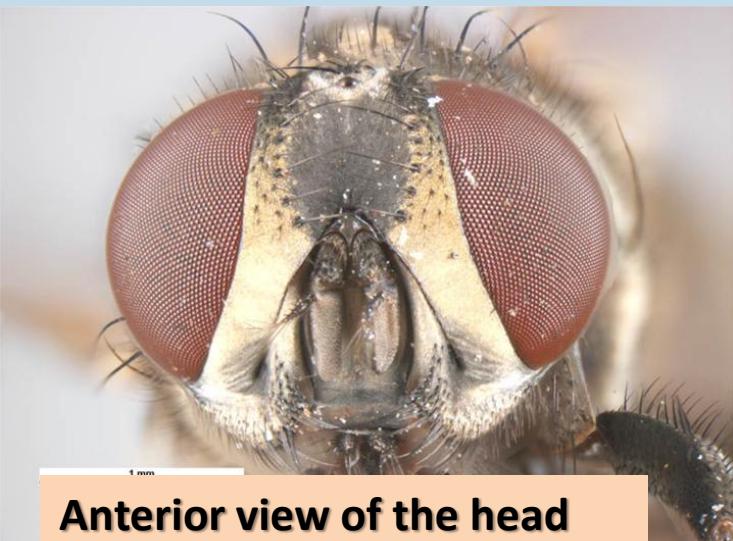


THE HEAD(under high power microscope)

Compound eyes under
a microscope



Dorsal view

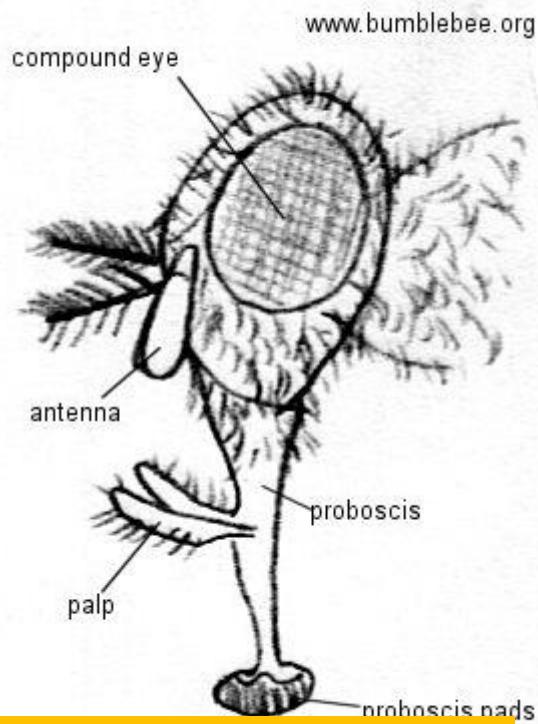


Anterior view of the head

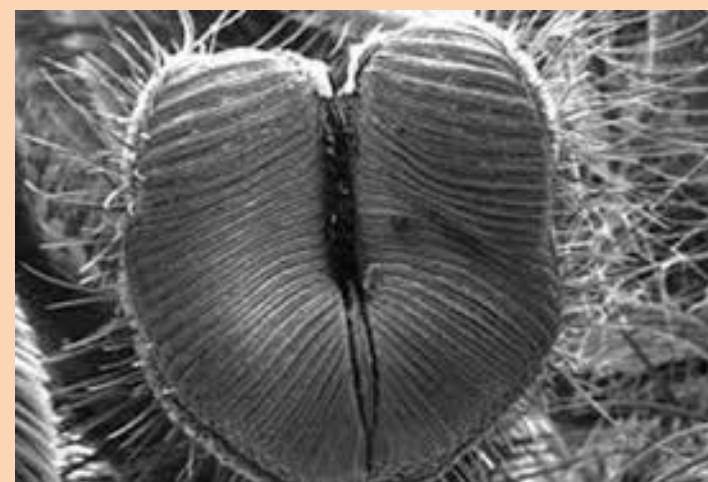
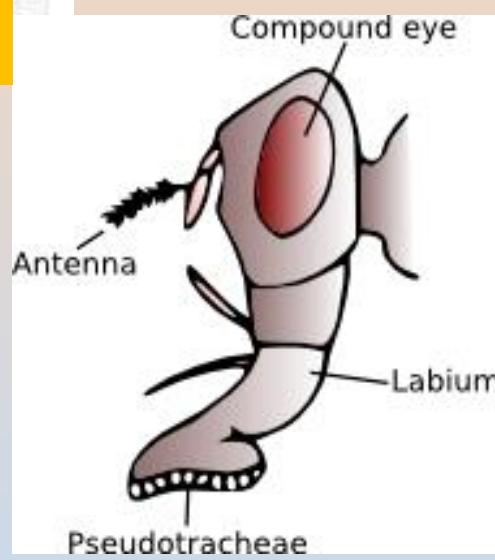


Lateral or side view

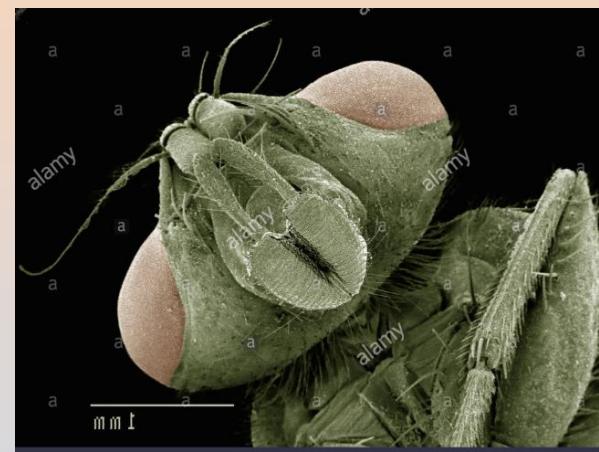
THE MOUTH PARTS(under high power microscope)



**Lateral or side view
of the head**



The view of the spongy probosis



Has only sucking mouth parts

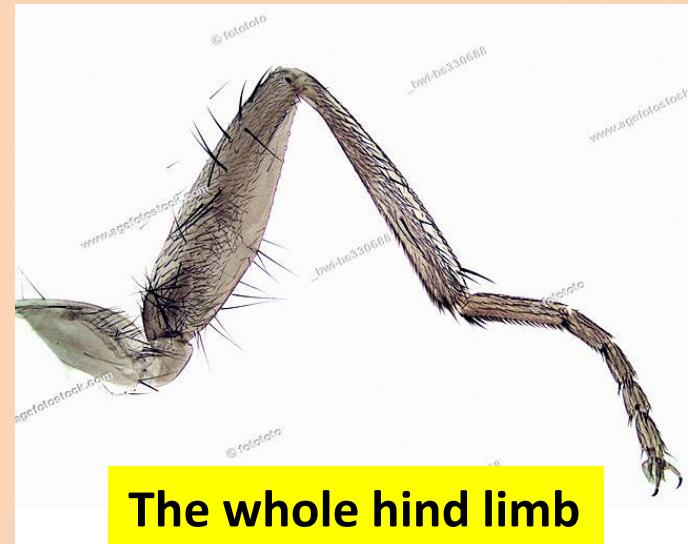
Hind leg of a housefly



The distal end of the foot



The tarsal region foot

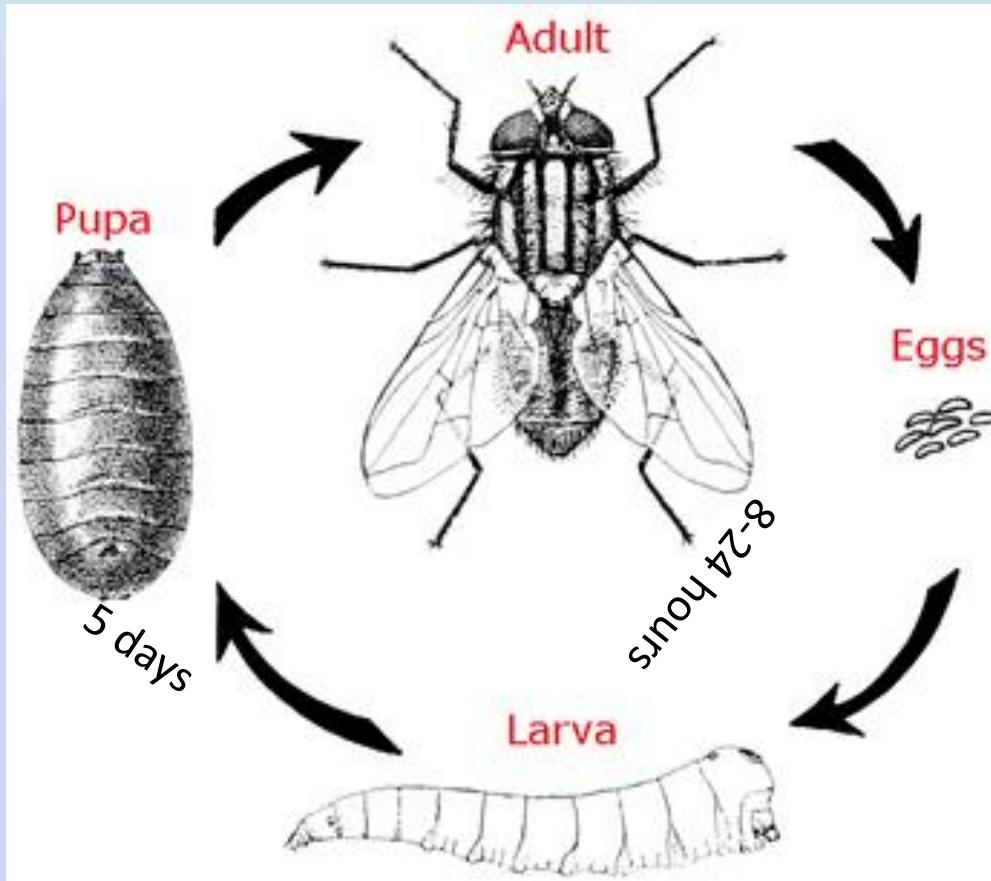


The whole hind limb

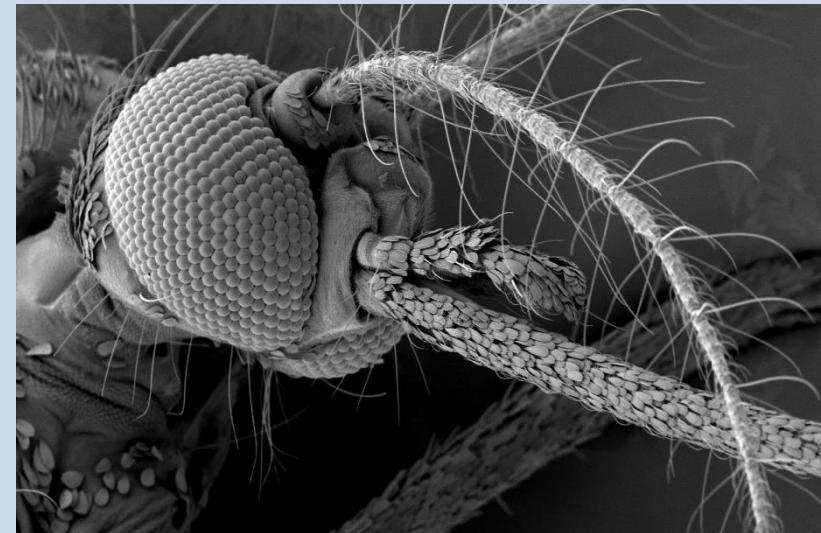


The femur & tibia

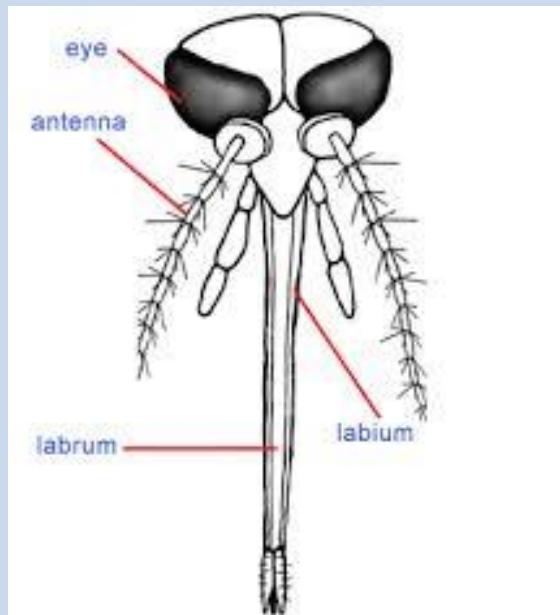
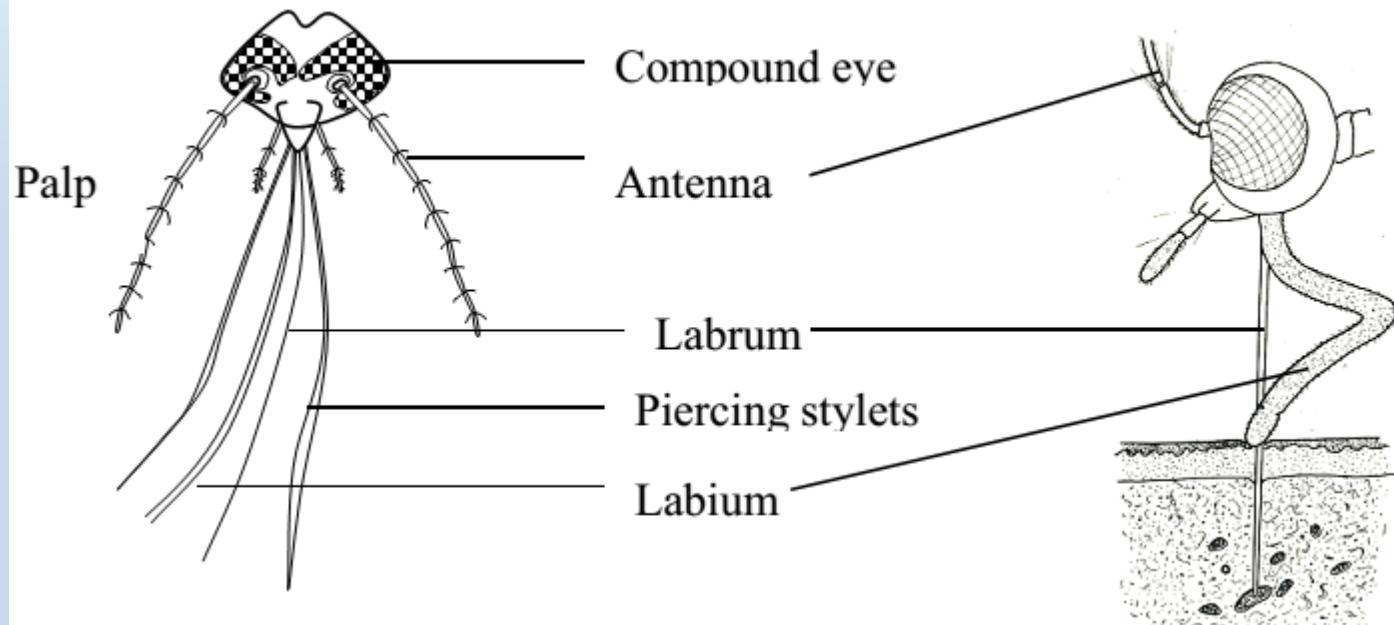
Life cycle of a housefly



THE MOSQUITO



The head of a mosquito



**Has both piercing and sucking mouth parts
(Stylets and labrum)**

Anopheles Vs Culex

LIFE CYCLE

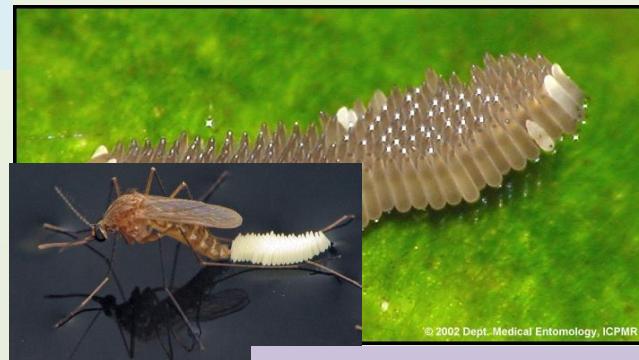


✓ Laid singly with an air float

A

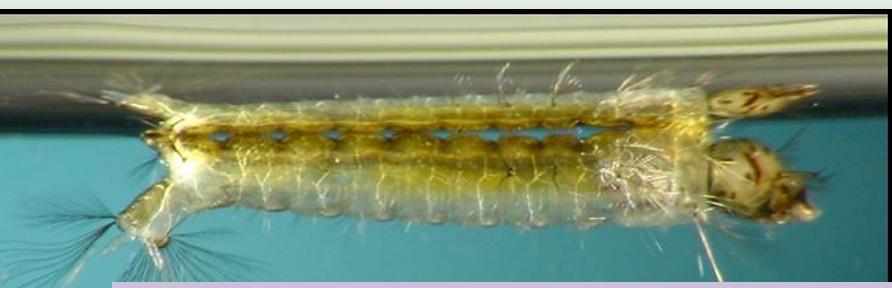


Egg



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✓ Laid in a batch



- Larvae lies parallel the water surface
- Breathes in a spiracle

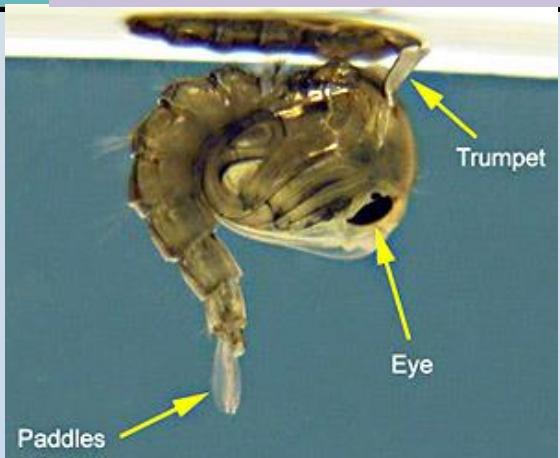
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Larvae



- Larvae lies at an angle to the water surface

➤ Breathes in a siphon

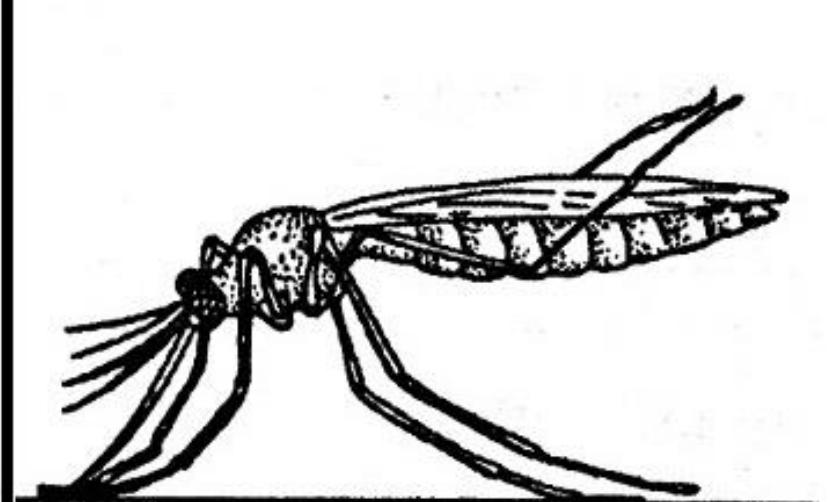
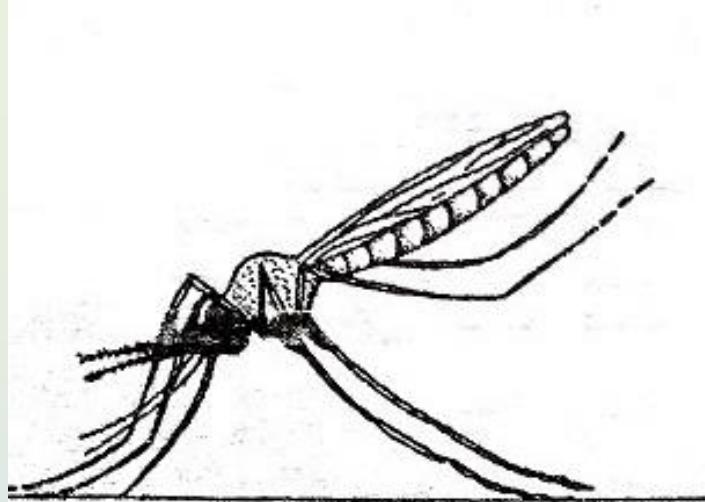


Pupa



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ADULT



Lies at an angle to the resting surface

Anopheles

Anopheles Adult



Lies parallel the resting surface

Culex

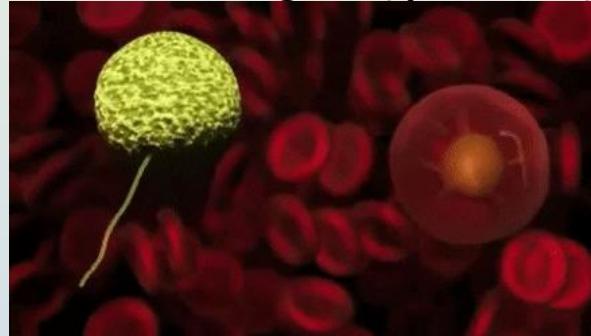


MOSQUITO GERMS AND DISEASES

Anopheles



Plasmodium germ(protozoa)



Malaria



Culex



Filarial worm(nematode)



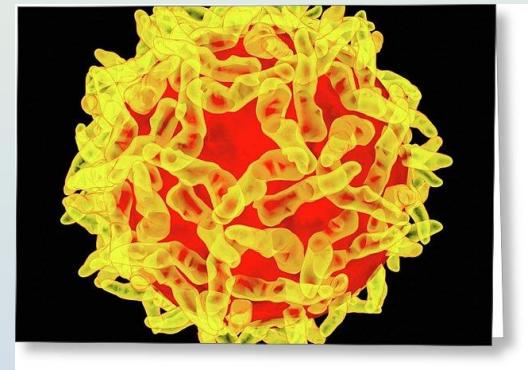
Elephantiasis



Aedes/ Tiger



Flavivirus(virus)



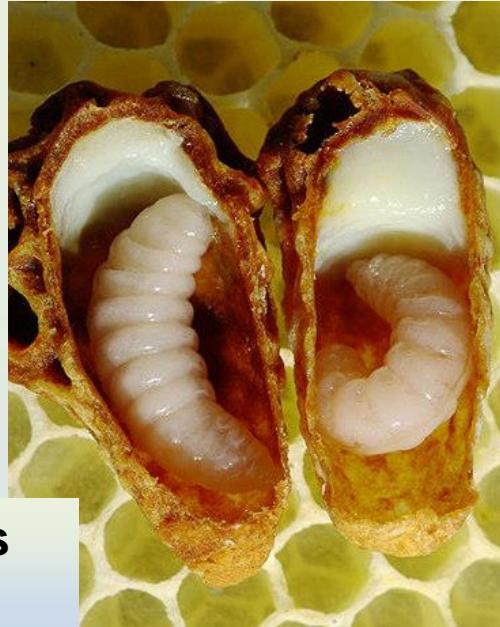
Yellow fever/ Dengue



HONEY BEE (*Apis mellifera*)

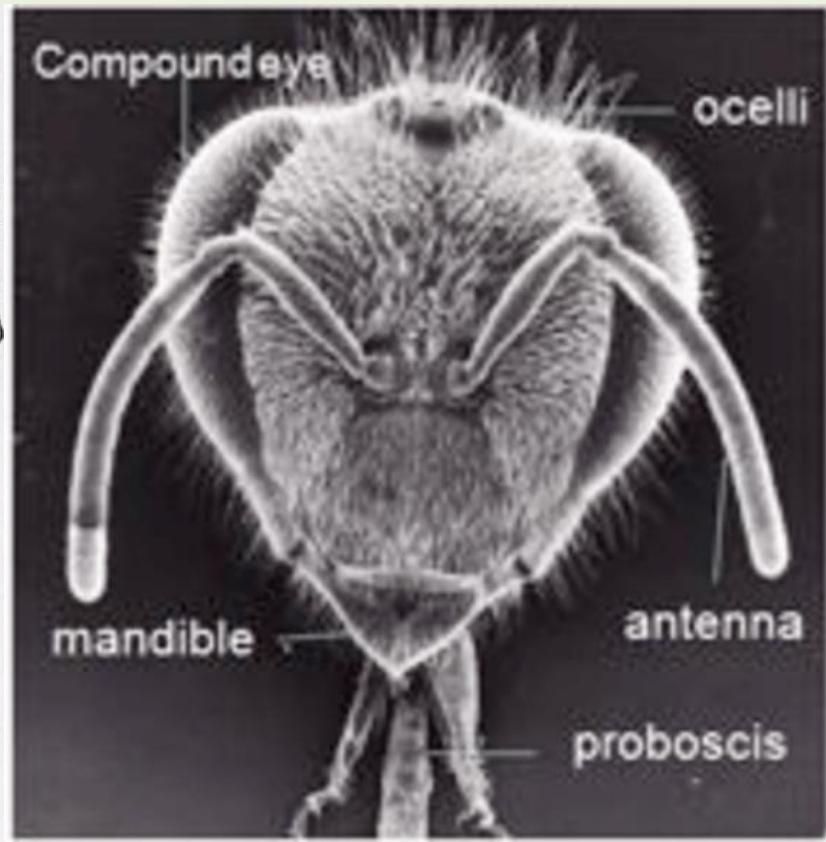
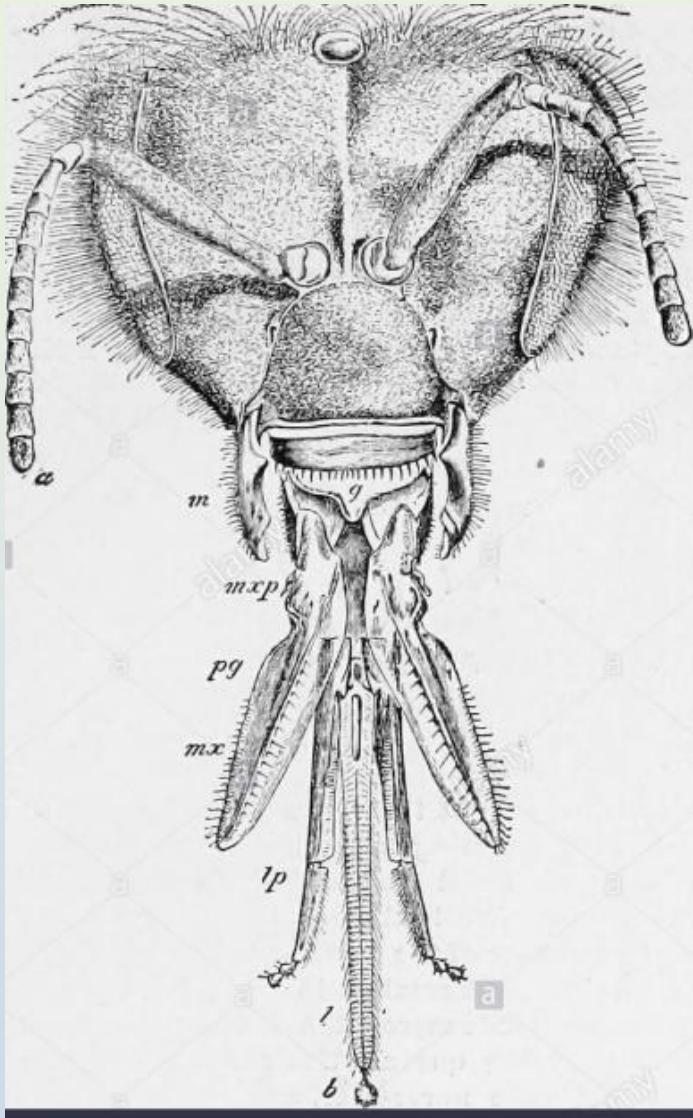


Queen bee surrounded by worker bees



Bee sting

BEE MOUTH PARTS



**Has both mandibles and proboscis
(Both biting and sucking mouth parts)**

BEE LIMBS

FORE LEG



MIDDLE
LEG

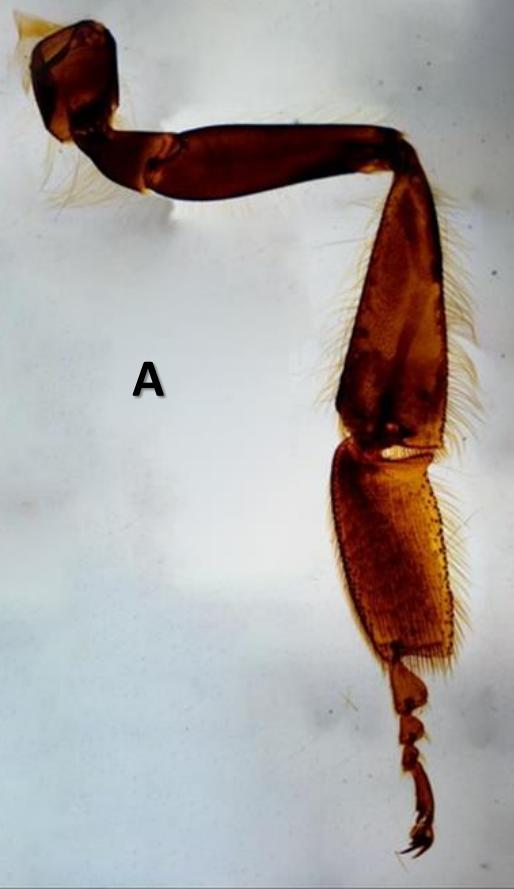


HIND LEG



Can you identify the;
pollen comb on fore leg, **A**?
Prong on middle leg, **B**?
Pollen basket on hind leg **C**

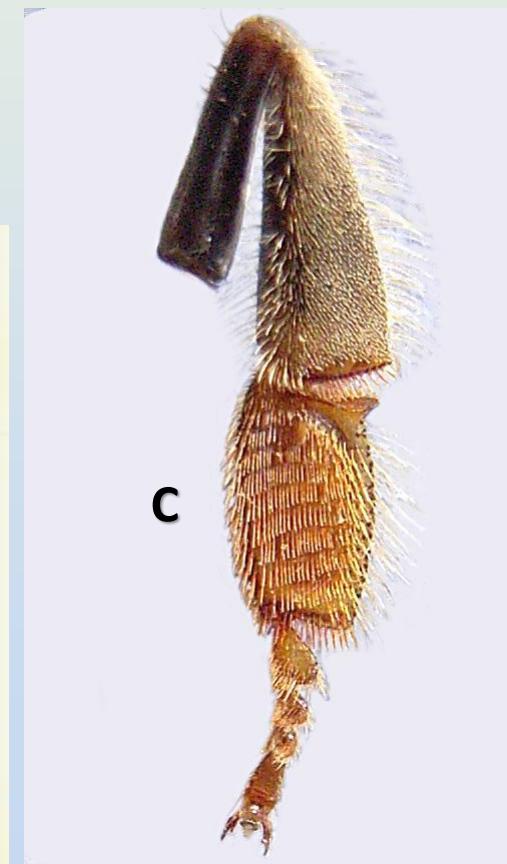
A



B



C



FLOWERING PLANTS

(Plants which bear flowers)



**FLOWERING PLANTS TO BE
CONTINUED.....**