# General Entomology

# Lecture (5)

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# Lecture Topics

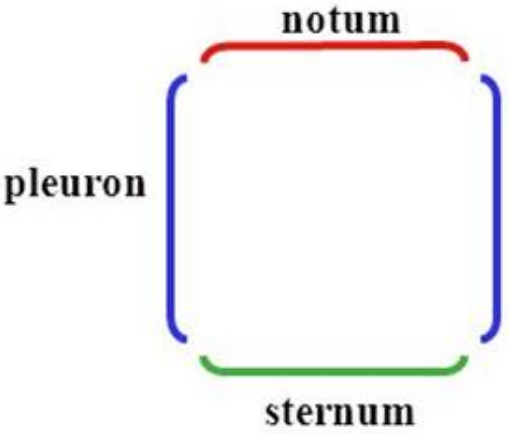
- **Insects Body parts**

II. **Thorax**

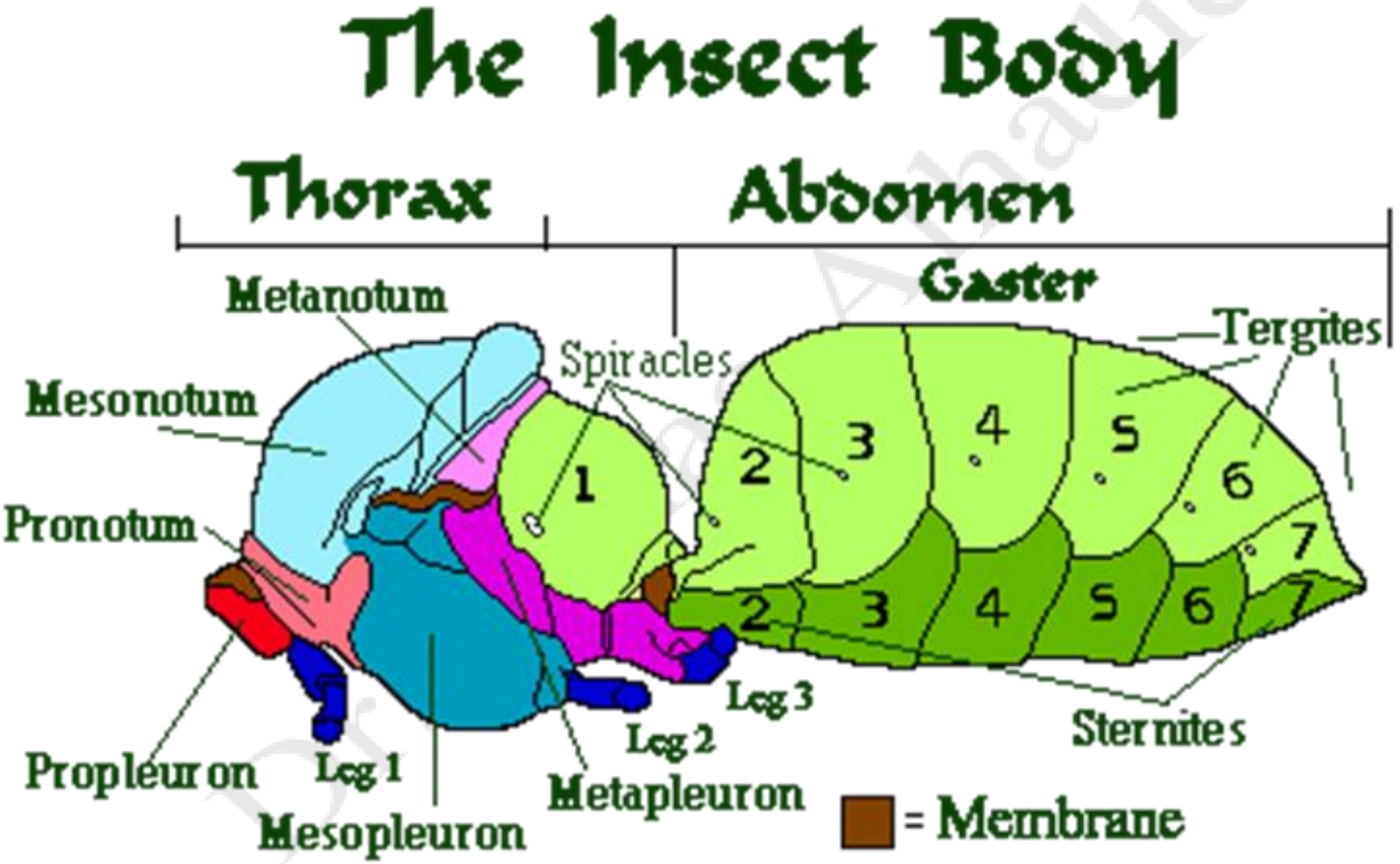
- **Legs**
- **Wings**

# Thorax

- Second insect body part
- Consists of 3 segments (Prothorax, Mesothorax, Metathorax).
- The thorax contains the locomotive musculature and trachea to supply the muscles with oxygen.
- Each segment consist of notum, sternum and pleuron.
- Pair of legs attached to each segment (total 6).
- Pair of wings attached to each of segment 2&3, or just pair of wings on segment 2 or none.



# Thorax


The Insect Body
Thorax
Abdomen
Gaster
Metanotum
Mesonotum
Pronotum
Spiracles
Tergites
Sternites
1
2
3
4
5
6
7
Leg 3
Leg 2
Leg 1
Propleuron
Mesopleuron
Metapleuron
= Membrane

# Legs

- An insect leg consists of six main parts

**1) Coxa** > basal part of the leg.

**2) Trochanter** > small & joint between the 'coxa' and the 'femur'.

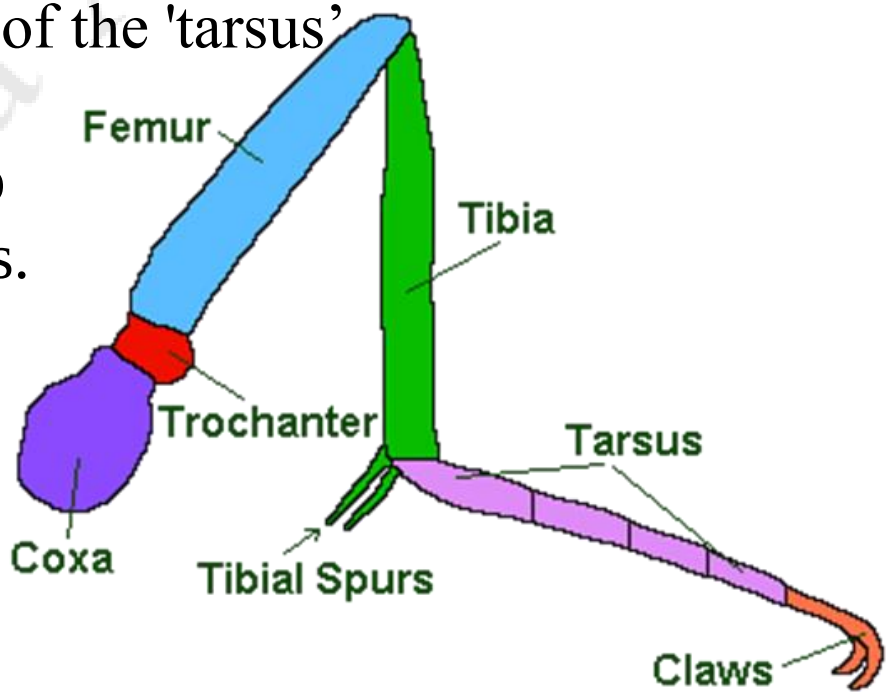
**3) Femur** > long & contains muscles.

**4) Tibia** > long increase the length of the leg.

**5) Tarsus** > the foot & consist (1-5) segments.

**6) Pretarsus (the Claws** > at the end of the 'tarsus'

- Assist in holding the prey
- Have pad with tubular hairs to help hold the insect to smooth substrates.

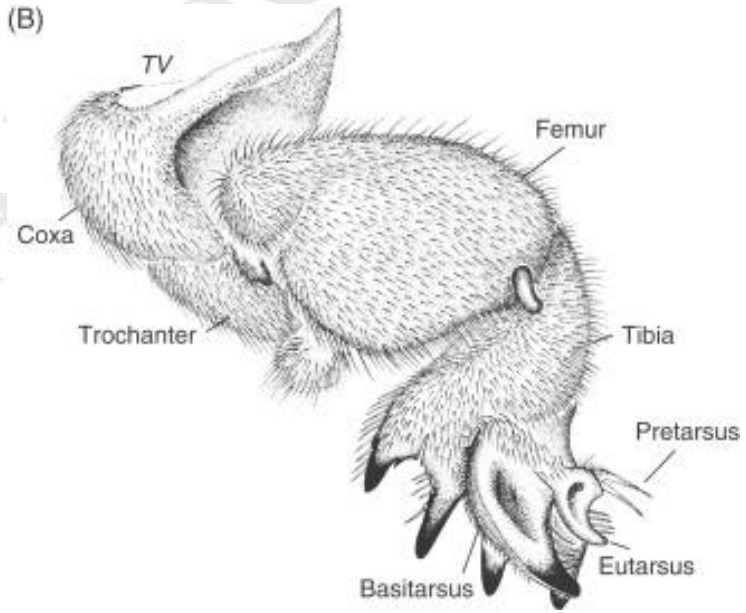


# Types of legs

Insects legs perform varied functions and are modified accordingly.

## 1. Digging or Fossorial type

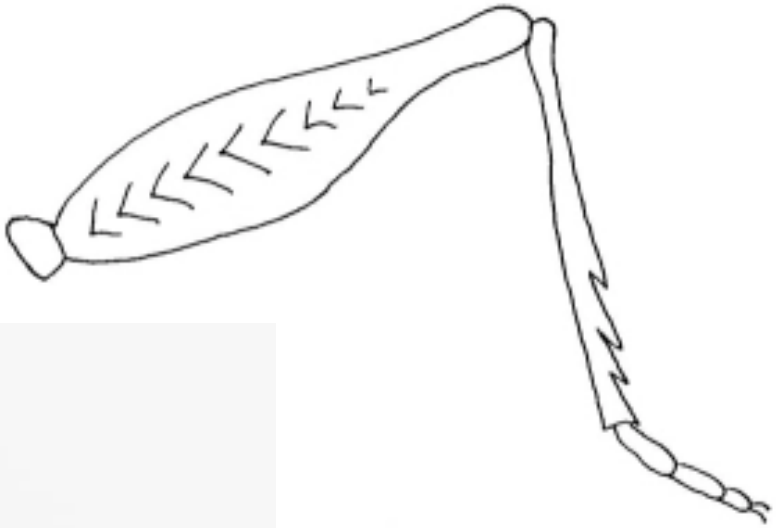
- Legs parts are reduced and flatted.
- Tibia has finger like projections.
- Tarsus has 3 finger like processes.
- Legs are used for digging soil.
- E.g. prolegs of Mole cricket.




# Types of legs

## 2. Jumping or Saltatorial type:

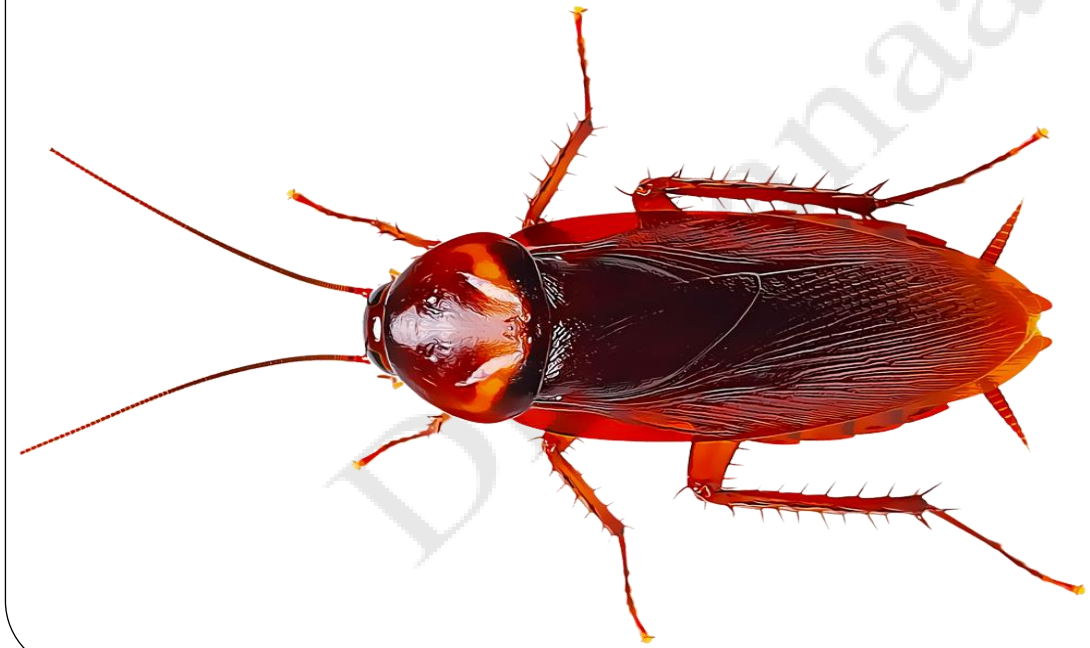
- Femur is greatly enlarged > has muscles.
- Tibia is very long.
- e.g. hindlegs of Grasshopper.



# Types of legs

## 3. Walking or running type:

- All three pairs of legs are equal in size and long.
- Trochanter is two segmented.
- E.g. Cockroach.



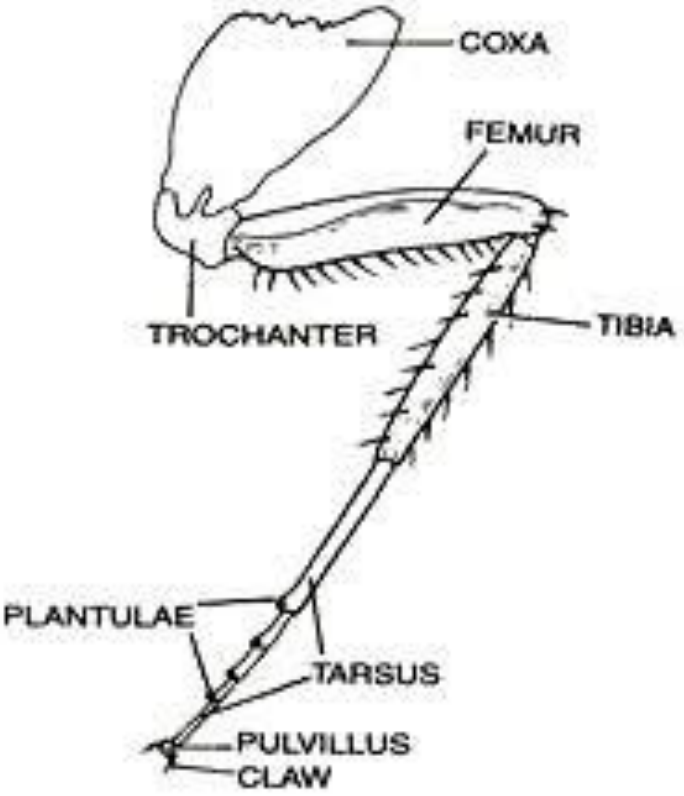
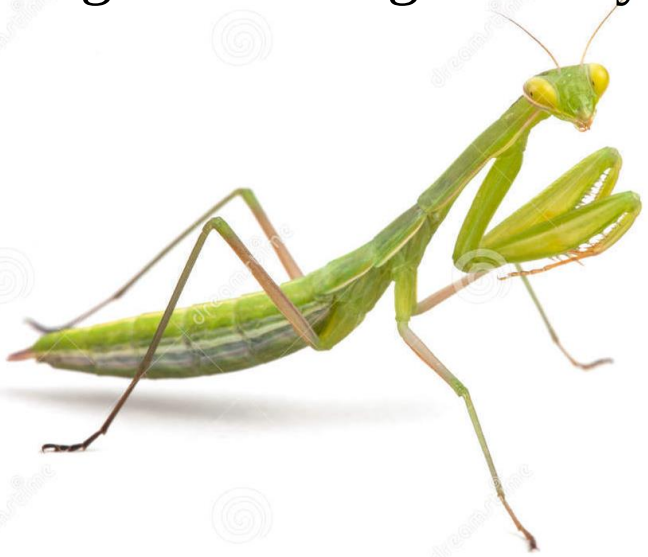


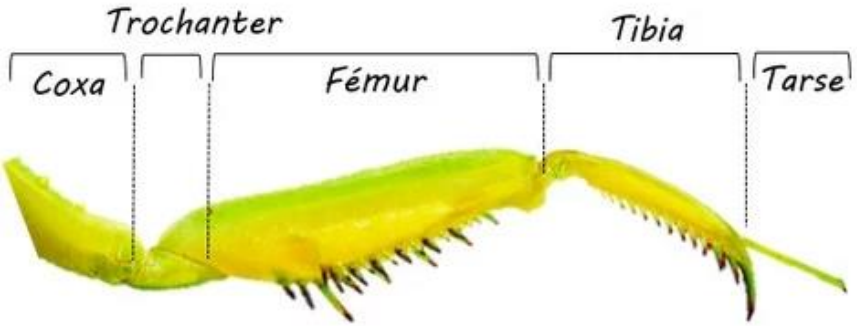

Fig. 7A.19. Leg of cockroach.

# Types of legs

4. **Grasping or Raptorial type:**

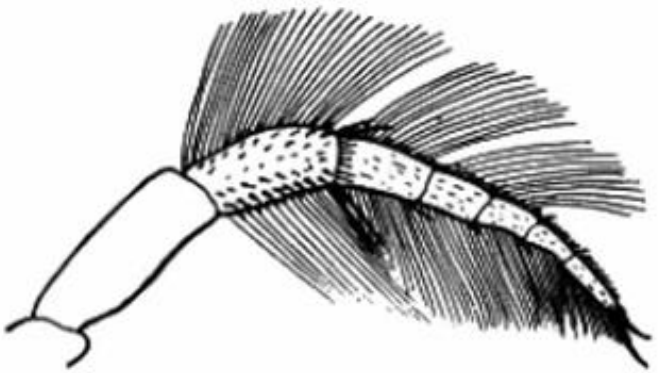
- Coxae are elongate and moveable.
- Femora is spiny and grooved along the lower side.
- Tibia is spiny and fit into the groove along the femur.
- Tarsus is five segmented.
- E.g. the forelegs of Preying mantids.



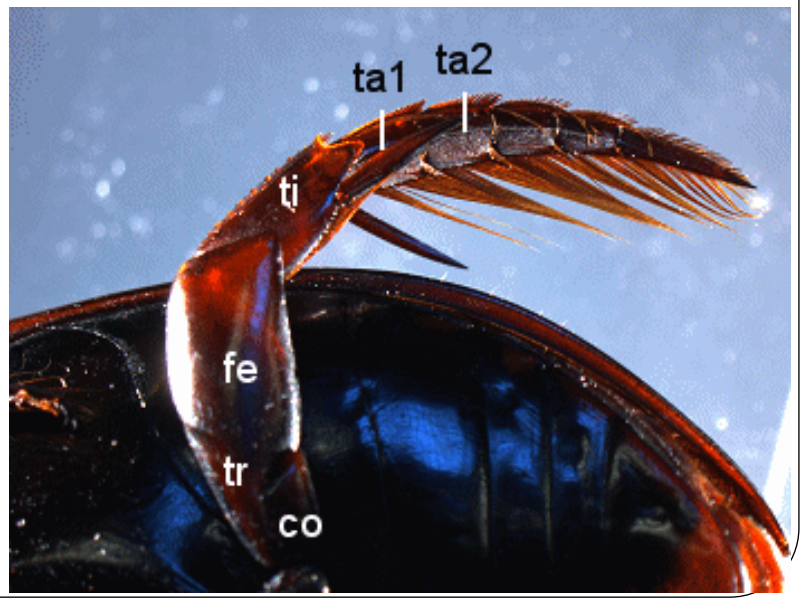


# Types of legs

**5. Swimming or Natatorial type:**



- Modified for swimming.
- Hind coxae are flat and fixed to the body.
- Numerous long stiff hairs are present on the lateral aspects of the tibia and tarsus.
- E.g. the hind legs of diving beetles.



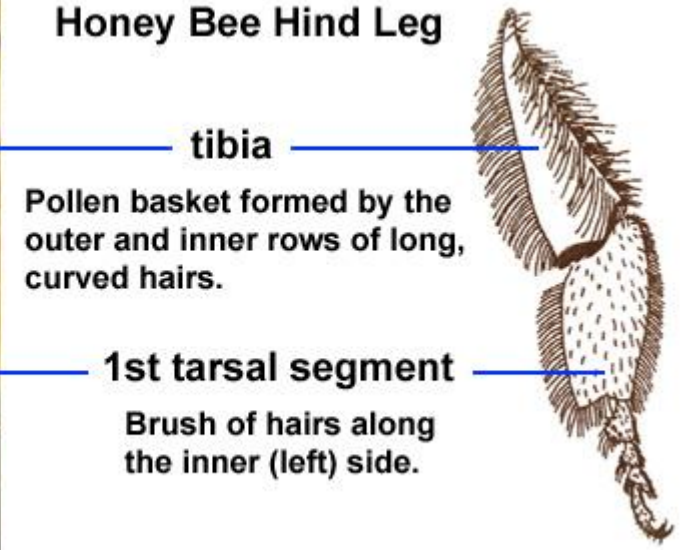
# Types of legs

**6. Pollen carrying type:**

- Modified for carrying pollen.
- A cavity guarded by hairs is present at the junction of tibia and basitarsus > used for carrying pollen.

E.g. The hind legs of worker honeybee.

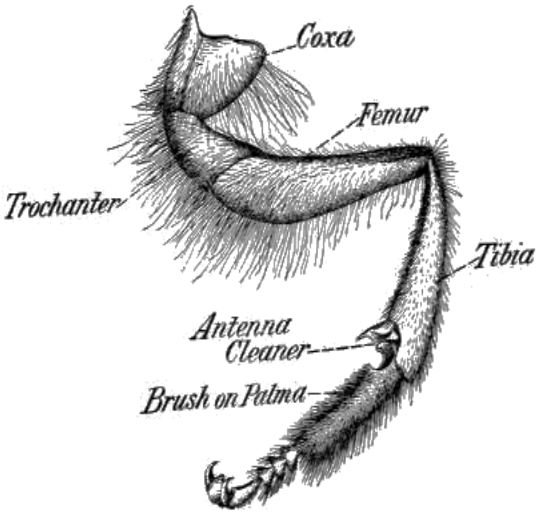


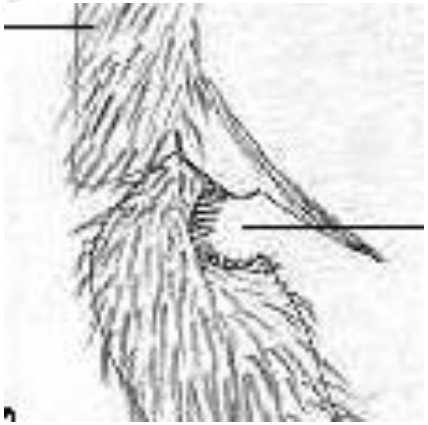


# Types of legs

**7. Antenna cleaner:**

- Modified for cleaning antenna.
- The first segment of tarsus has a notch with fine hairs.
- The notch can be closed by the flat tibial spur.
- E.g. the forelegs of worker honeybees.

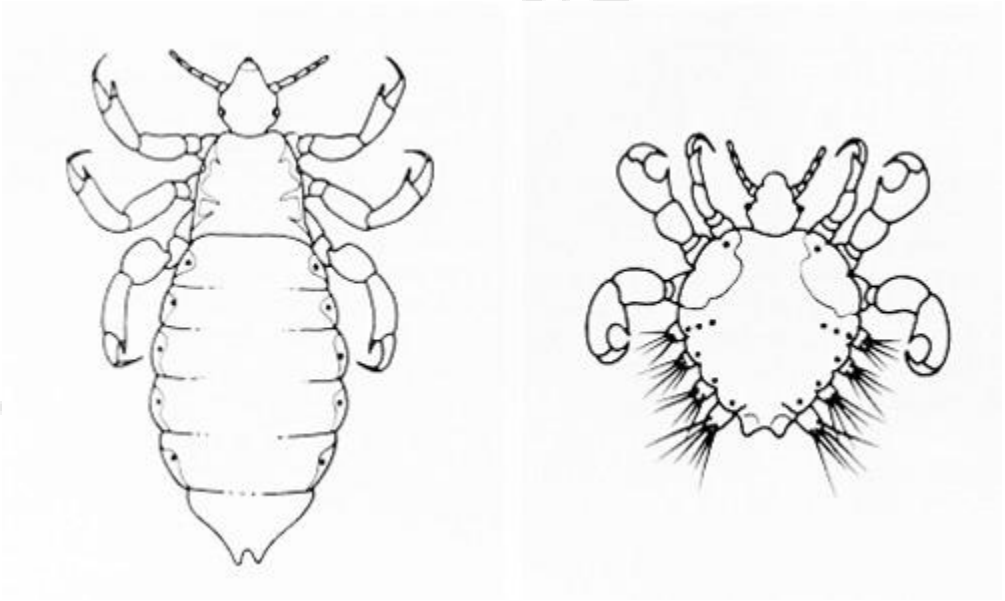


# Types of legs

**8. Clinging type:**

- For maintaining a strong and firm hold on the host.
- Tarsi are single segmented and terminate in a single sickle shaped claw.
- E.g. head louse (head lice) and body louse.

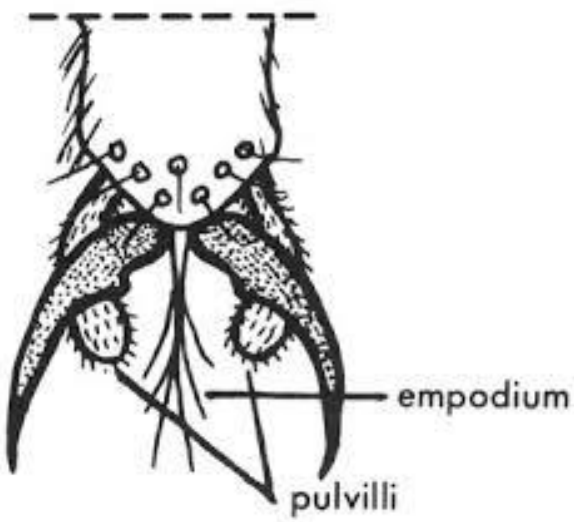


# Types of legs

**9. Climbing type:**

- The terminal segment of the leg, pretarsus, bears two claws.
- Beneath the claws are two lobes called pulvilli.
- Between the pulvilli is an elongate spine called empodium.
- The empodium and pulvilli help the insect to climb smooth surfaces.

E.g. housefly.




# Types of legs

## 10. Skating legs

- Long legs with hydrophobic tarsal hairs and anteapical claws for skating on the surface of water.
- Examples: Found in water striders (Gerridae).


# Usfel links

https://projects.ncsu.edu/cals/course/ent425/library/tutorials/external_anatomy/wings.html
https://www.amentsoc.org/insects/fact-files/wings.html
https://www.amentsoc.org/insects/glossary/terms/thorax
https://www.britannica.com/animal/insect/Thorax
http://ecoursesonline.iasri.res.in/mod/page/view.php?id=10779
http://insect-varity.blogspot.com/p/insect-legs.htm

# THANK YOU

FOR LISTENING