



**JBSP MANDAL'S  
ART & SCIENCE COLLEGE,  
DEPARTMENT OF ZOOLOGY**

**TOPIC: ARTHROPODS**

**PROF : INGOLE C.R.**

# Arthropods



By nearly any measure, the most successful animals on the planet are the arthropods. They have conquered land, sea and air, and make up over three-fourths of all currently known living and fossil organisms, or over one million species in all.

In biology, if a group has many different forms and types and appearances, we say they have a great amount of.....

# DIVERSITY

How many different kinds of arthropods can you name?

# Main Characteristics

- Jointed appendages \*
- Segmented body
- Exoskeleton (skeleton on outside)



The word “arthropoda” means... **joint foot**

*\*An appendage is any extension from the body*

Exoskeletons provide support and protection

The skeleton does not grow and must be shed as the animal grows - MOLTING

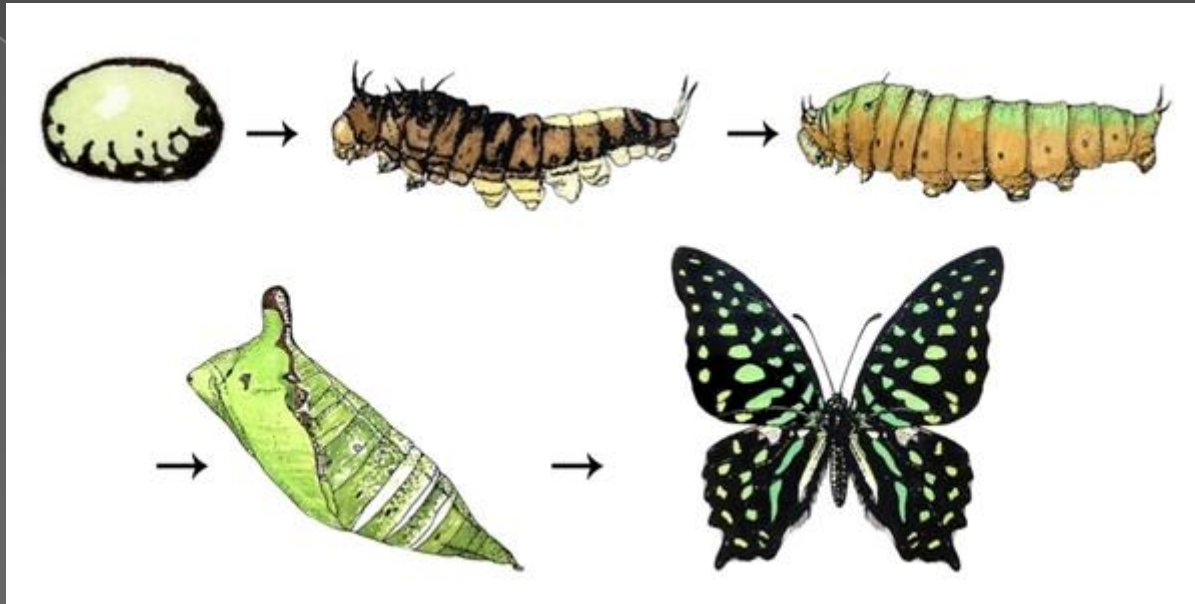


- Mandibles – chewing mouthparts
  - open side-to-side



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- Metamorphosis ( egg - larva - adult)



# How are maggots used in medicine?





# Classification

Kingdom Animalia

Phylum Arthropoda

Subphylum



1. **Chelicerates** (spiders and scorpions)
2. **Crustaceans** (lobsters, crabs, shrimp, crayfish)
3. **Uniramia** (insects, millipedes, centipedes)

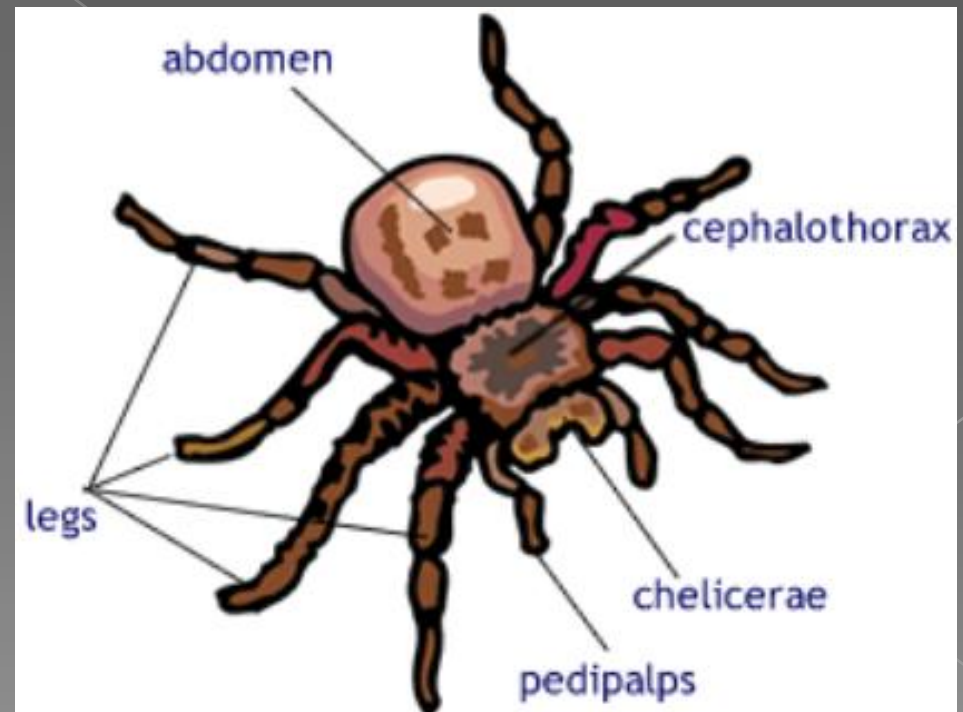
# Chelicerates

- Spiders, ticks and scorpions
- 2 body segments

cephalothorax, abdomen

- 8 legs
- No antenna

Spiders belong to a special group called **\*Arachnids**



# Spider Parts

**Chelicerae** - specialized mouthparts used for biting

**Pedipalps** - appendages near the mouth used to manipulate prey

**Spinnerets** - used to secrete a web



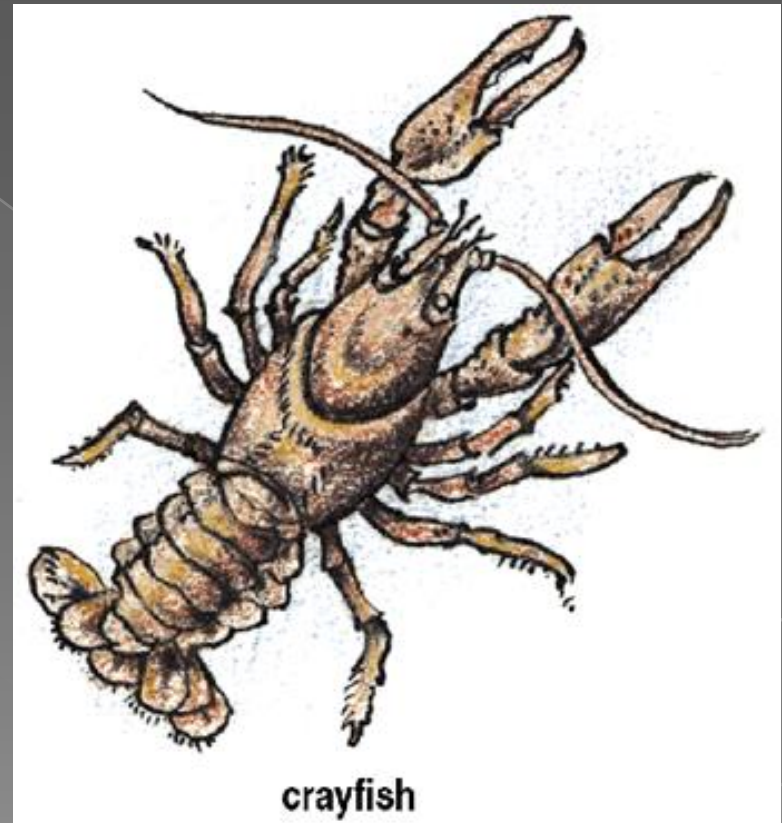
# Crustaceans

Shrimp, lobsters, crabs, crayfish

4 pairs of legs

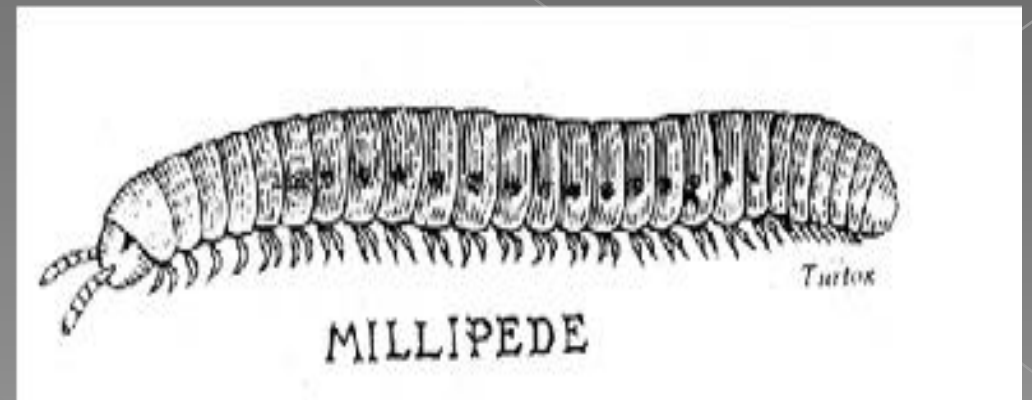
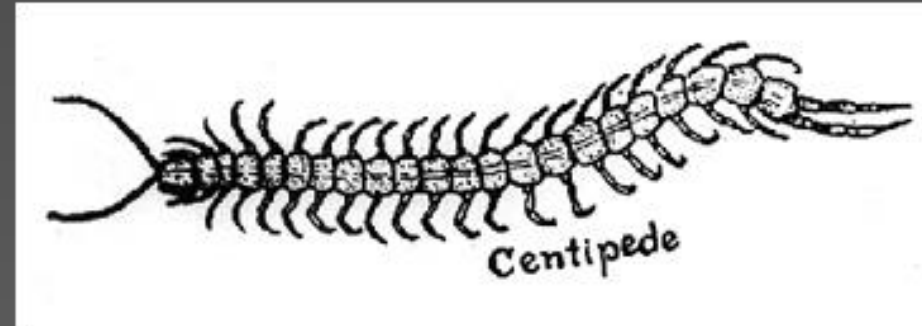
2 claws (chelipeds)

2 pair of antennae



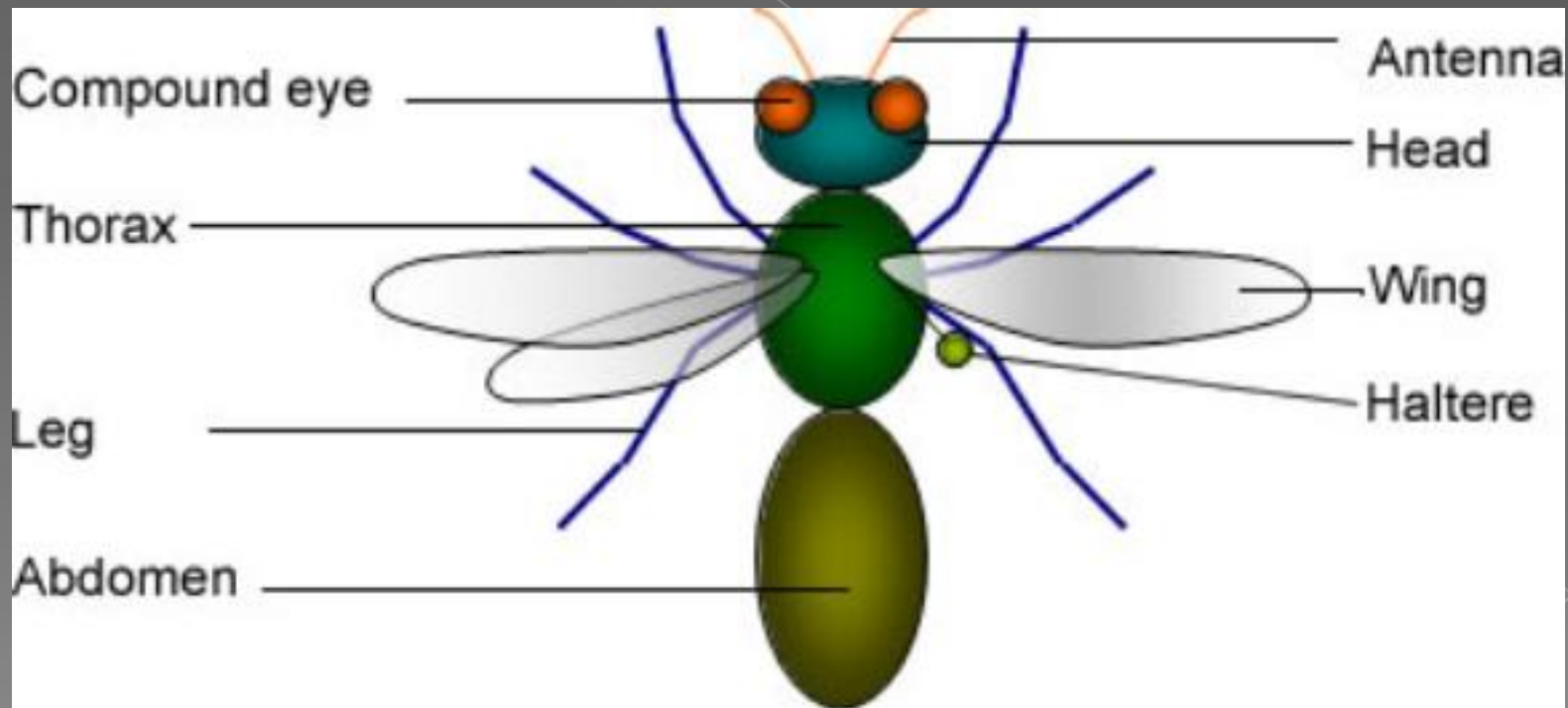
# Centipedes & Millipedes

- Centipedes
  - Predators, venomous
  - 1 pair of legs per segment
- Millipedes
  - Herbivores
  - 2 pair of legs per segment



# Insects

- 3 pairs of legs
- 1 pair of antennae
- 3 body segments (head, thorax, abdomen)



# Insects belong to the CLASS INSECTA

There are many insect orders, some examples...

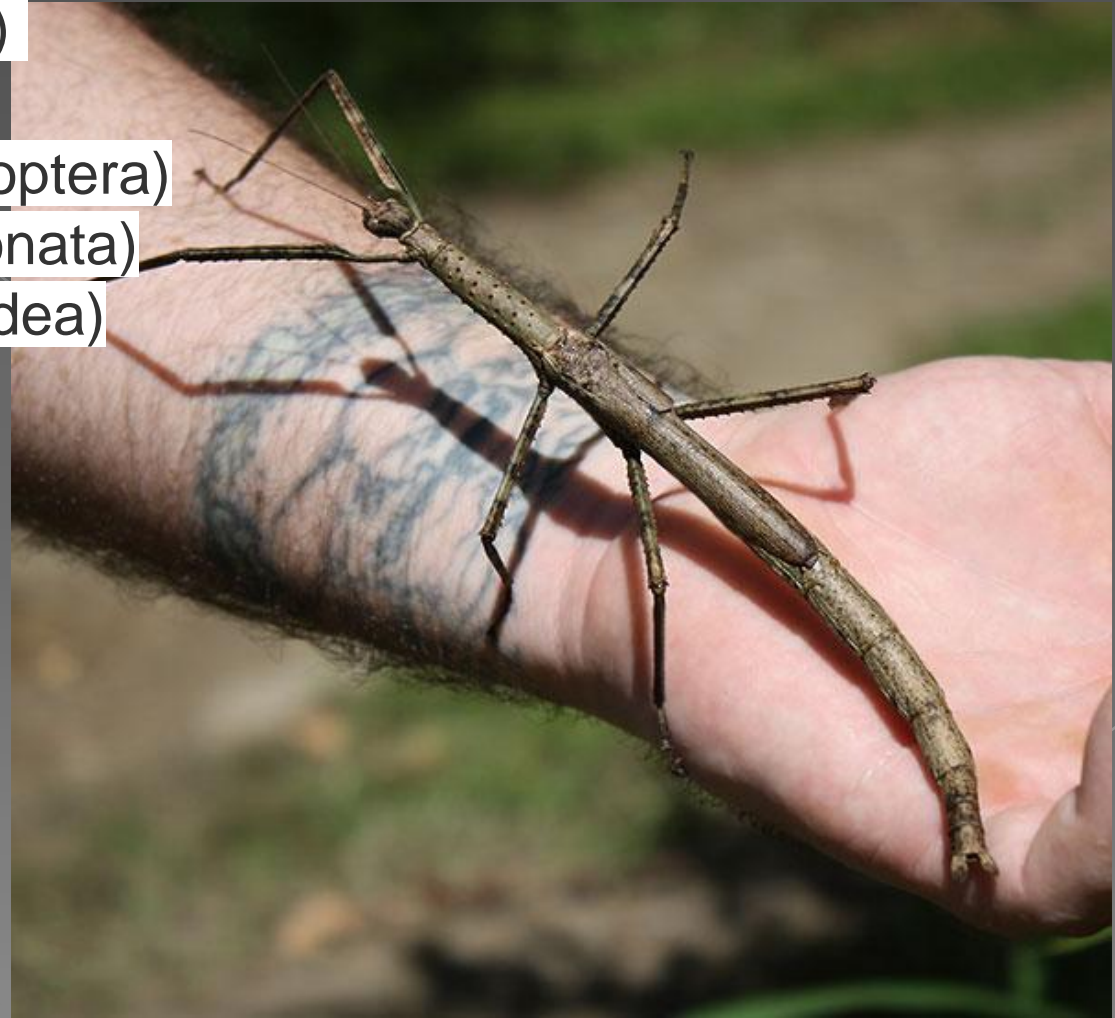
Bees, ants, wasps (Hymenoptera)

Beetles (Coleoptera)

Crickets and grasshoppers (Orthoptera)

Damselflies and dragonflies (Odonata)

Stick and leaf insects (Phasmatodea)



# Random Facts about Arthropods







Ticks can carry lyme disease



Some centipedes are venomous.



Tarantulas are venomous, but most are docile and can be handled gently.



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Some insects use MIMICRY to trick predators into thinking they can sting. This is a fly, not a wasp.



What is the difference between a moth (1<sup>st</sup> picture) and a butterfly (2<sup>nd</sup>) ?

Moth antennae end in clubs, they're bodies are often furrer and when at rest, their wings are flat (butterflies rest with the wings pointing up.



Brown recluse bites cause necrosis (death of tissue).

These spiders are common in U.S. homes



Black widows are also dangerous.





Termites are social insects.





Head lice are a parasitic species of insect.

Don't share hats and brushes!

A female flea can consume 15 times its body weight (in blood) on a daily basis.



Fleas were carriers of the black plague.





Beetles have the most diversity.



