

**TISHK INTERNATIONAL UNIVERSITY**  
**Faculty of Education**  
**Biology Department**  
**2019-2020**



***Lab. 1***

**Introduction to Entomology**

**(Entomology)**

**2<sup>nd</sup> Grade**

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# Objectives

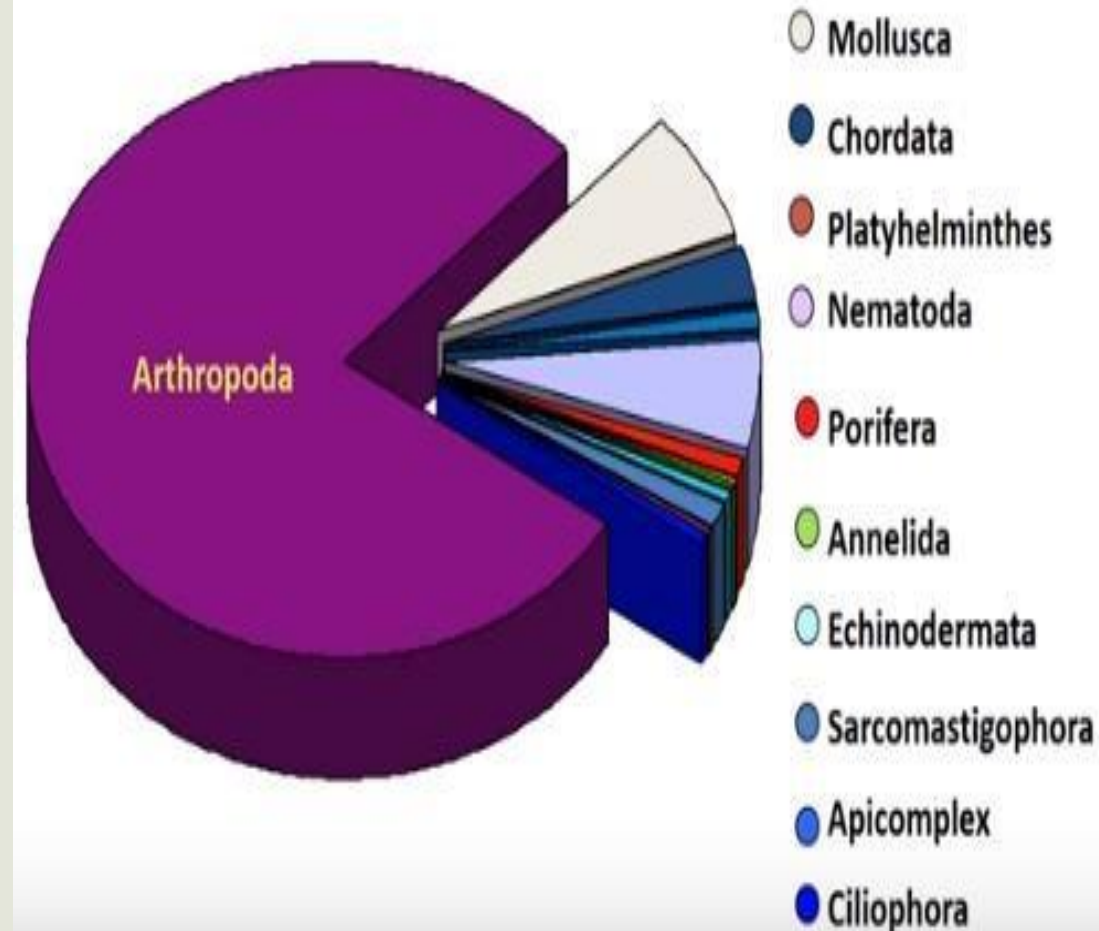
To define phylum **Arthropoda** with its general characteristics.

To identify the diverse groups of Phylum **Arthropoda**.

To Explain what's **Entomology** and what it deals with.

# Phylum Arthropoda “Jointed Foot”

- ❖ Arthropods are the most successful Animals due to the **number of species** it possesses, **diversity**, **distribution** and **longevity**.
- ❖ Arthropods is the largest phylum in the Animal Kingdom with more than **one million** described species.
- ❖ They exist in **all habitat**, almost everywhere in the world.



# Phylum Arthropoda diversity

- **Phylum** Arthropoda posses 5 subphylum.

- **Subphylum Myriapoda**

- Centripedes, millipedes



- **Subphylum Chelicerata**

- Horseshoe crabs, spiders, ticks, mites , and some extinct groups



- **Subphylum Crustacea**

- Crabs, Lobsters, Shrimps.



- **Subphylum Uniramia**

- Insects



- **Subphylum Trilobia**

- Extinct Trilobites.

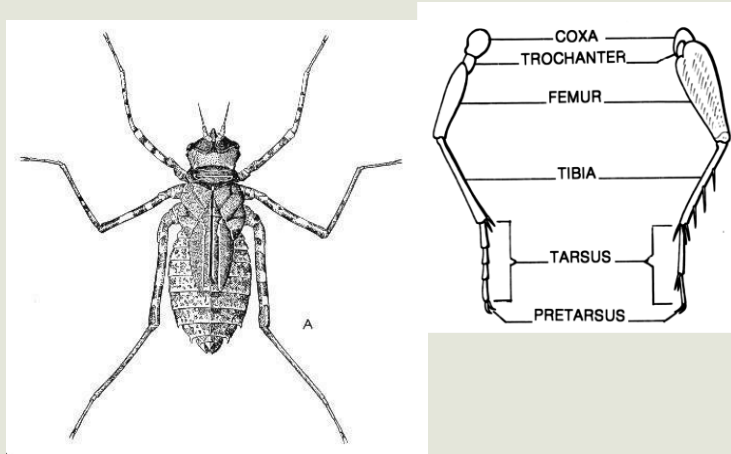


# All Arthropods share the following characteristics:

1. Arthropods have segmented body



2. All Arthropods have jointed, paired appendages



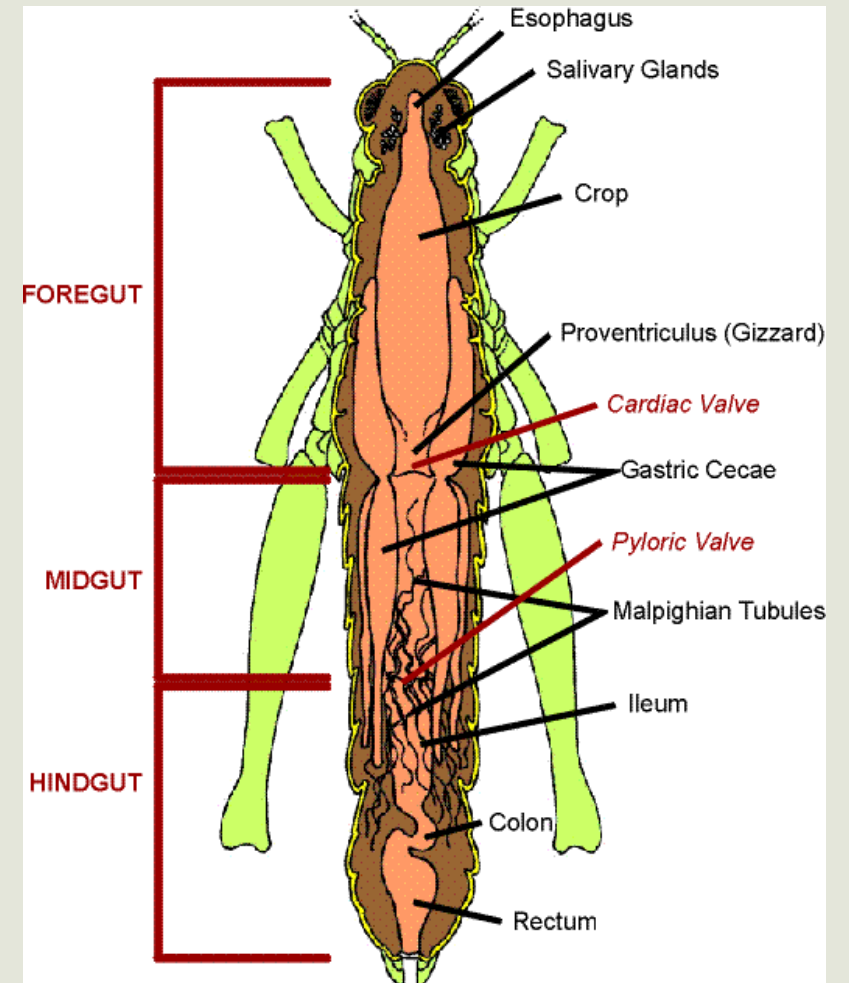
# All Arthropods share the following characteristics:

3. All arthropods have a chitinous exoskeleton (which is periodically shed and renewed as the animal grows)



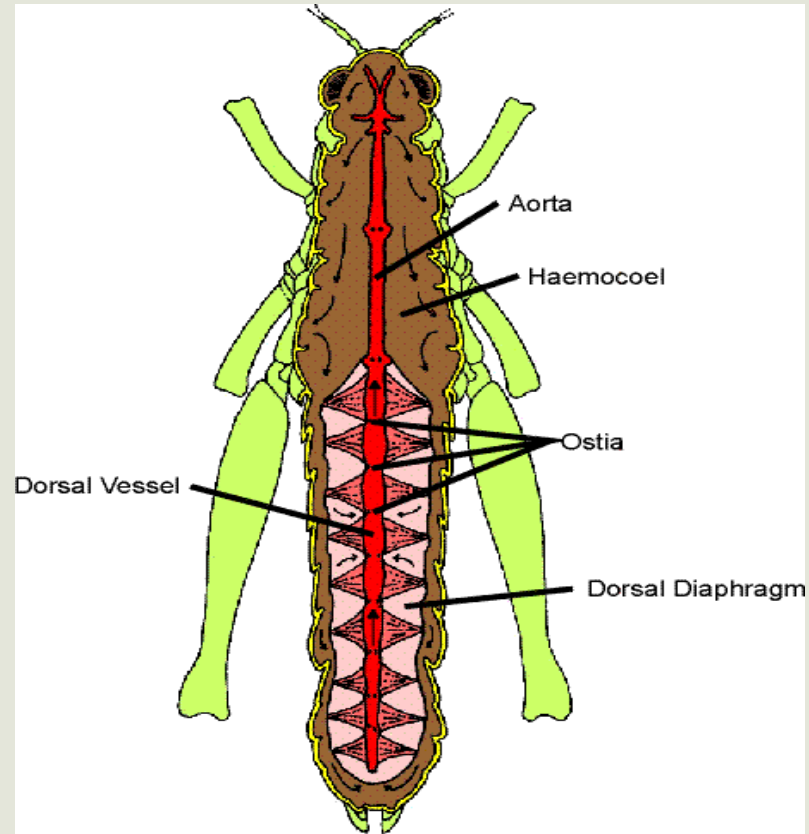
# All Arthropods share the following characteristics:

4. All arthropods have a digestive system (tube that runs from head to tail)



# All Arthropods share the following characteristics:

5. All arthropods have an “open” circulatory system, no veins, arteries etc.

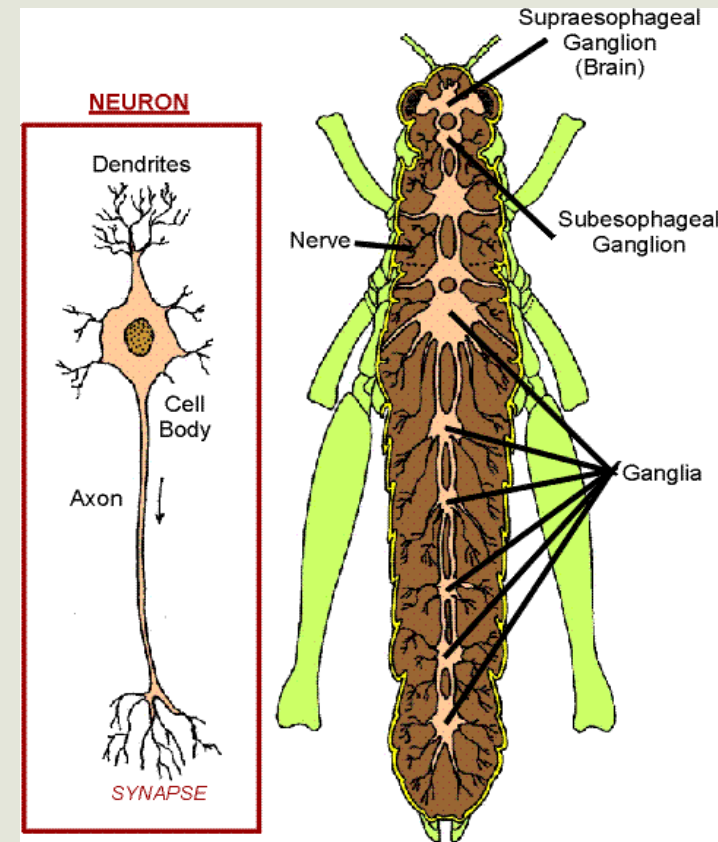




# All Arthropods share the following characteristics:

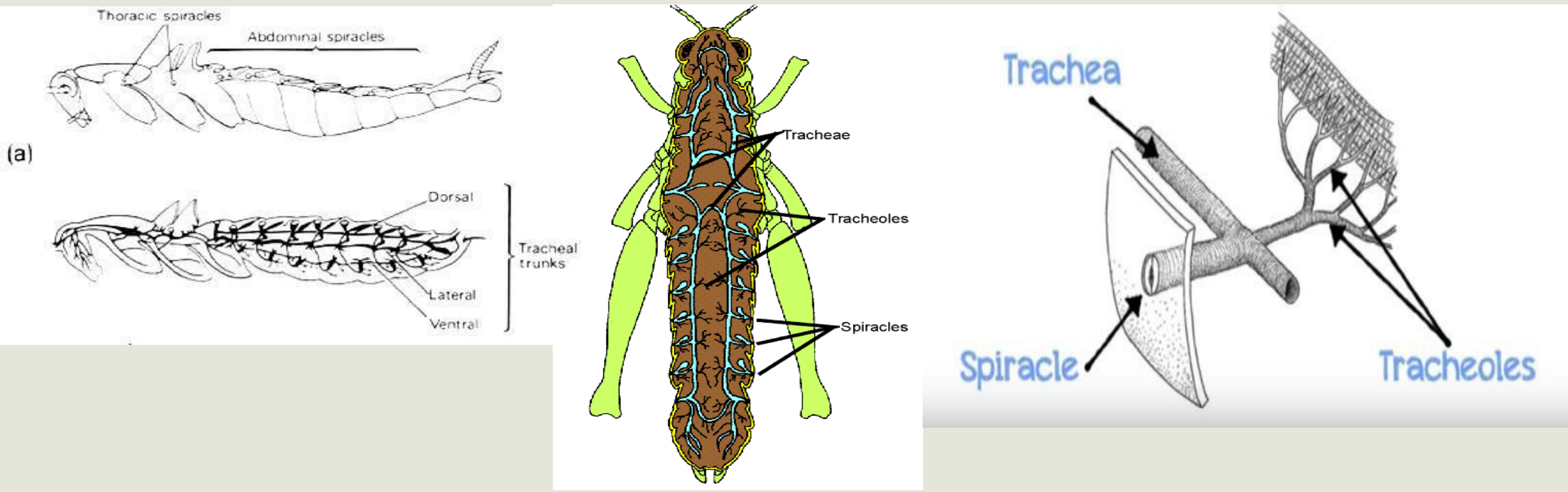
6. All arthropods have a ventral nervous system which consists of a tiny brain, paired nerve cords which extend from the brain backward, and nerve centers called ganglia.

7. Separate sexes (nearly always)



# All Arthropods share the following characteristics:

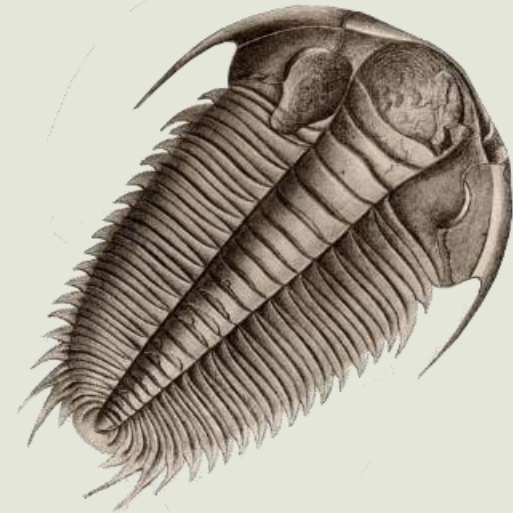
8. All arthropods breathe by means of gills, or tracheae and spiracles.



# Arthropods diversity

## Subphylum: Trilobita

- Extinct
  - They were live 200 million years ago.
- One pair of antenna.
- Biramous appendages.



## Subphylum Myriapoda

- One pair of legs per body segment



# Subphylum Chelicerata

- **Chelicerae** (Jaw)
  - Pincher- like mouthparts.
- No antenna.
- No mandibles (Lower jaw).
- Two body regions, usually
- **Cephalothorax** and **Abdomen**.
- 4 pairs of walking legs.
- One pair of Pedi palp.



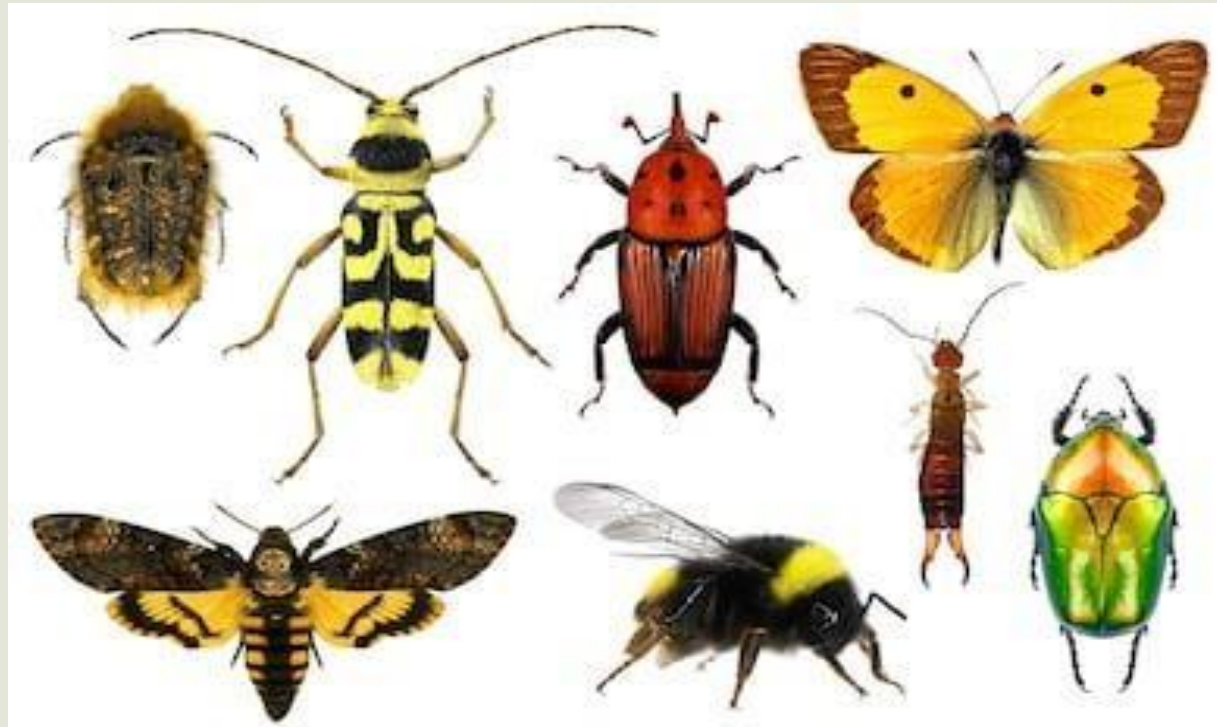
# Subphylum Crustacea

- Two pairs of antennae
  - A pair of mandibles
  - A pair of compound eyes
  - A pair of appendages on each body segments
- (They usually are made up of head, thorax and abdomen).



# What's Entomology

- the branch of **Zoology** concerned with the study of **insects**.

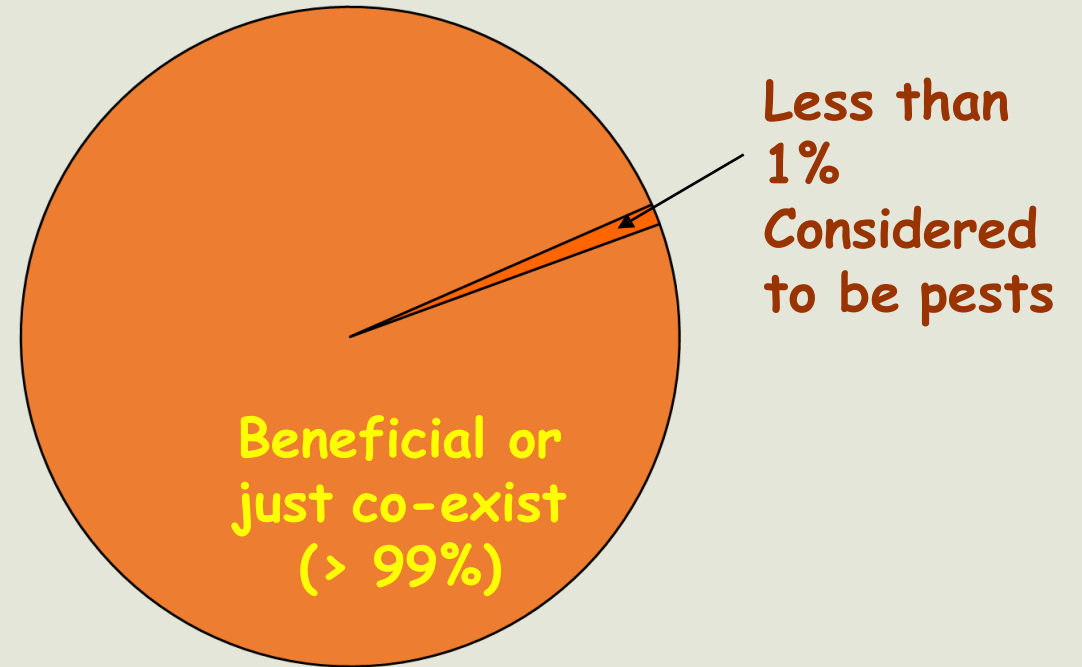


# The class Insecta

- Kingdom: **Animalia**
- Phylum: **Arthropoda**
- Subphylum: **Uniramia**
- Class: **Insecta**

# Some facts about Insects

- 1,000,000+ species identified.
  - Some Entomologists believe there may be as many as 30 million species of insects.
- More than all other animals combined.





# The Insects

1. Three, usually distinct body regions (**head**, **thorax**, and **abdomen**)
2. One pair of segmented **antennae**.
3. Usually have one pair of compound eyes.
4. Three pairs of legs.
5. Two pair of wings usually (some have only one pair(i.e., flies) or no wings at all).
6. They are **cold blooded** organisms.

**Head**

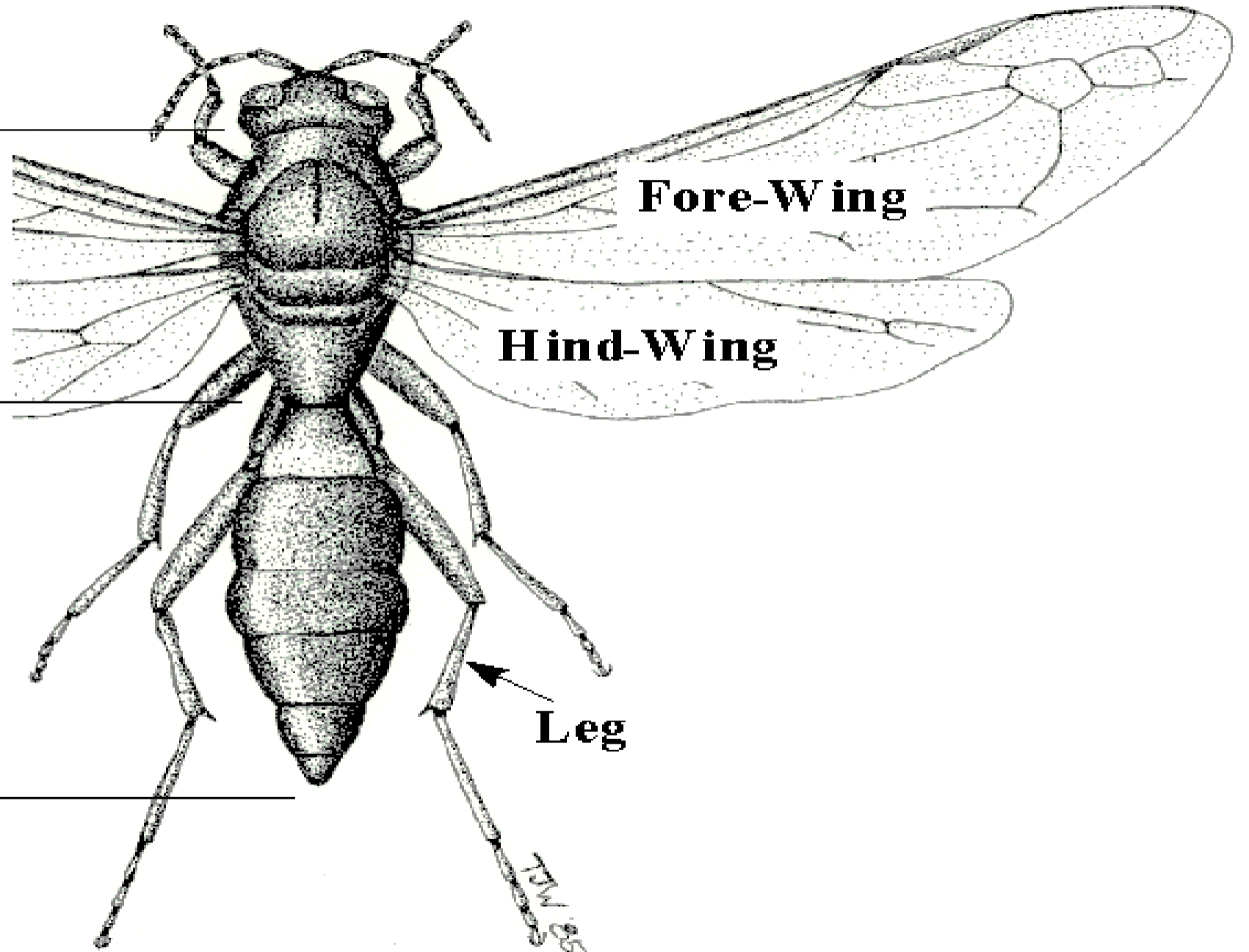
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**Thorax**

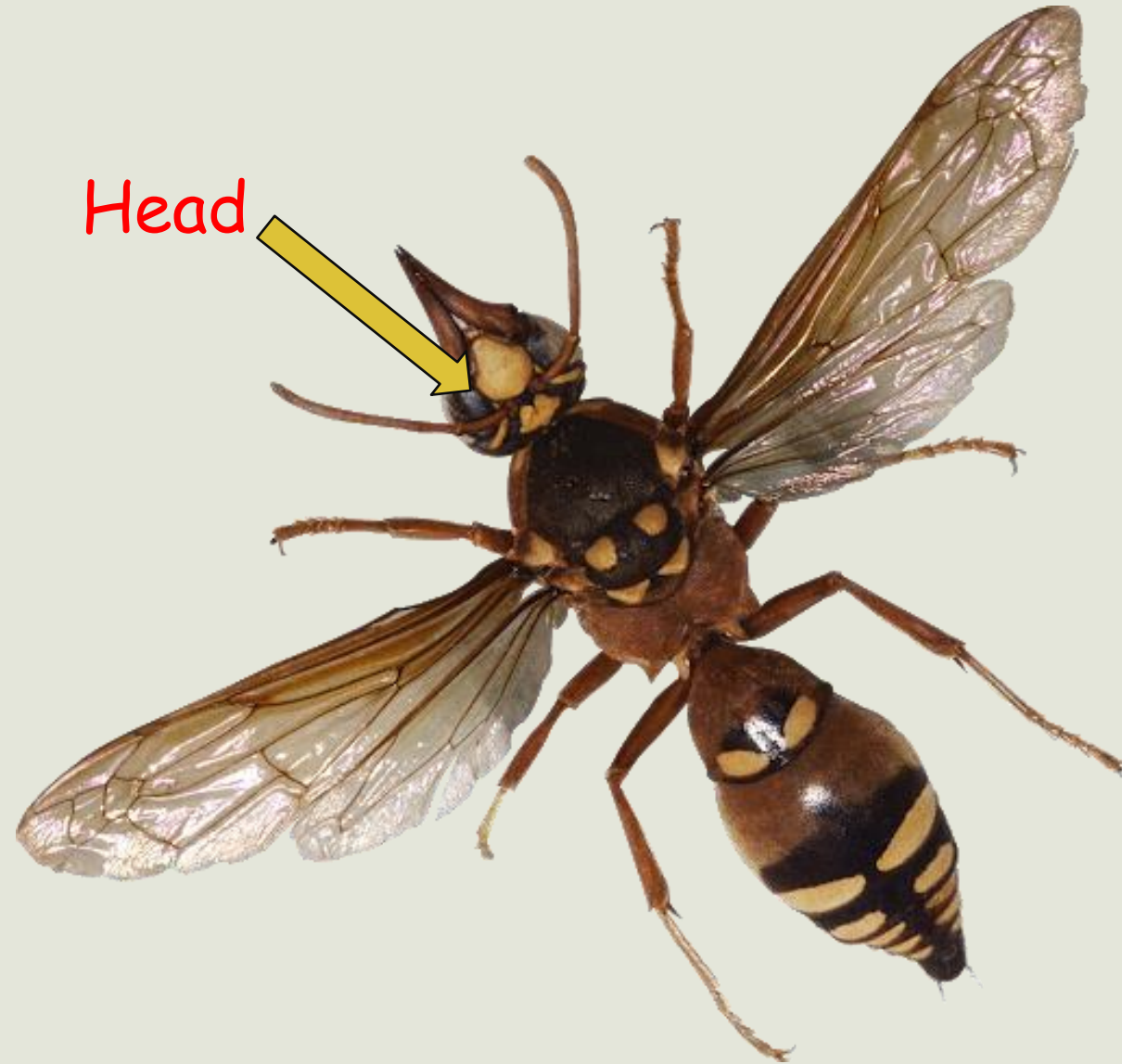
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**Abdomen**

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**The Head:** Functions mainly for feeding and sensory perception.



## The Thorax:

- Responsible for locomotion.
- Made up of 3 segments.
- A pair of legs arise from each segment.
- Wings, if present, arise from 2nd and 3rd segment.

Thorax



The **Abdomen** is responsible for excretion and reproduction.



Thank you