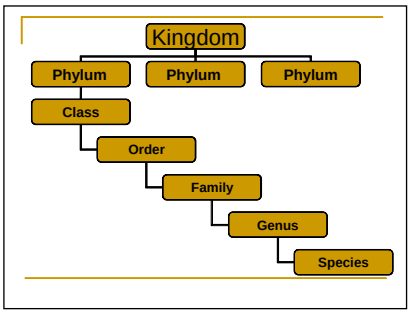
Phylum Arthropod

Silvia Rondon, and Mary Corp, OSU Extension Entomologist and Agronomist, respectively
Hermiston Research and Extension Center, Hermiston, Oregon

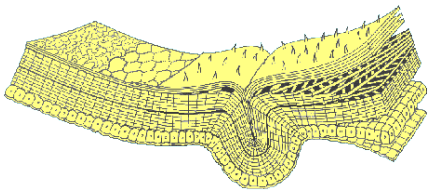
Member of the Phyllum Arthropoda can be found in the seas, in fresh water, on land, or even flying freely; a group with amazing differences of structure, and so abundant that all the other animals taken together are less than 1/6 as many as the arthropods. Well-known members of this group are the lobsters, crayfish and crabs; scorpions, spiders, mites, ticks, the centipedes and millipedes; and last, but not least, the most abundant of all, the insects.



The Phylum Arthropods consist of the following classes: arachnids, chilopods, diplopods, crustaceans and hexapods (insects).

All arthropods possess:

- Exoskeleton. A hard protective covering around the outside of the body (divided by sutures into plates called sclerites). An insect's exoskeleton (integument) serves as a protective covering over the body, but also as a surface for muscle attachment, a water-tight barrier against desiccation, and a sensory interface with the environment. It is a multi-layered structure with four functional regions: epicuticle (top layer), procuticle, epidermis, and basement membrane.

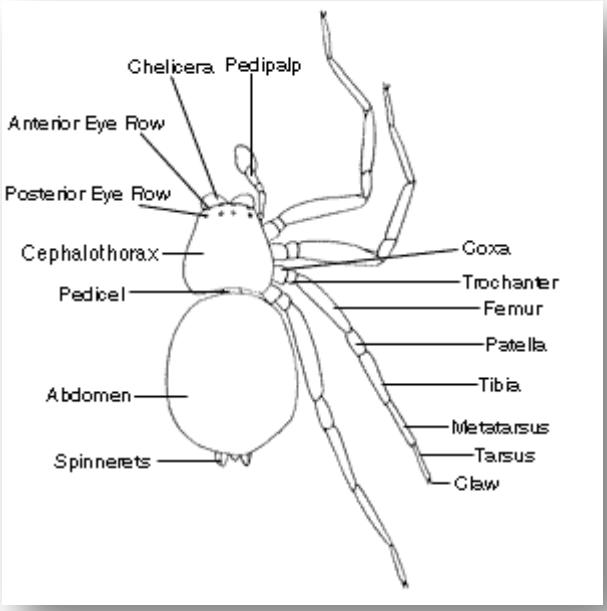


Insect molting or removing its exoesqueleton

- Segmented body
- Jointed limbs and jointed mouthparts that allow extensive specialization
- Bilateral symmetry, whereby a central line can divide the body into two identical halves, left and right
- Ventral nerve cord, as opposed to a vertebrate nerve cord which is dorsal
- Dorsal blood pump

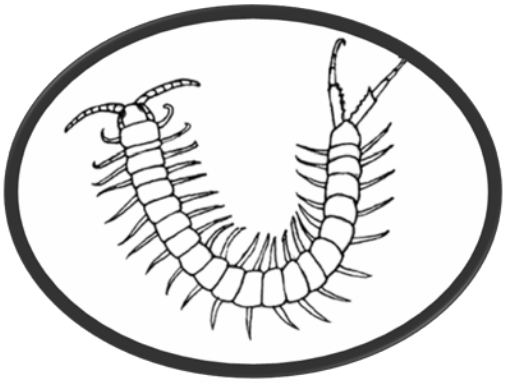
Class Arachnida (arachnids): spiders, scorpions, ticks, mites, etc.

- Two body segments – cephalothorax and abdomen
- 8 legs
- 1 pair of chelicerae
- no antennae



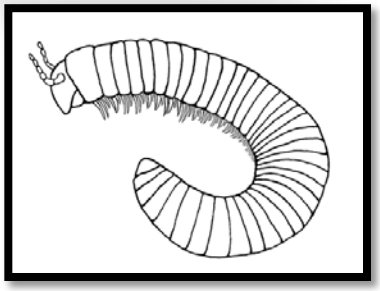
Class Chilopoda (centipedes)

- many body segments (1 pair of legs per body segment)
- 1 pair of antennae
- 1st pair of legs modified into venomous fangs

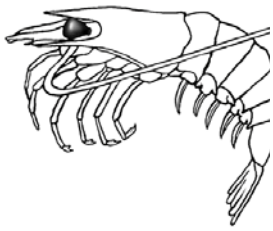


Class Diplopoda (millipedes)

- Many body segments (2 pair of legs per body segment)
- 1 pair of antennae



Class Crustacea (crustaceans): crabs, shrimp, barnacles, sowbugs, etc.



- Several body segments - head, thorax and abdomen
- Segments may be fused
- Varied number of legs
- 2 pairs of antennae

Class Insecta (Insects); beetles, bugs, wasps, moths, flies, etc.

- 3 body segments
- 6 legs
- 1 pair of antennae, 2 pair of wings
- Diverse modifications to appendages

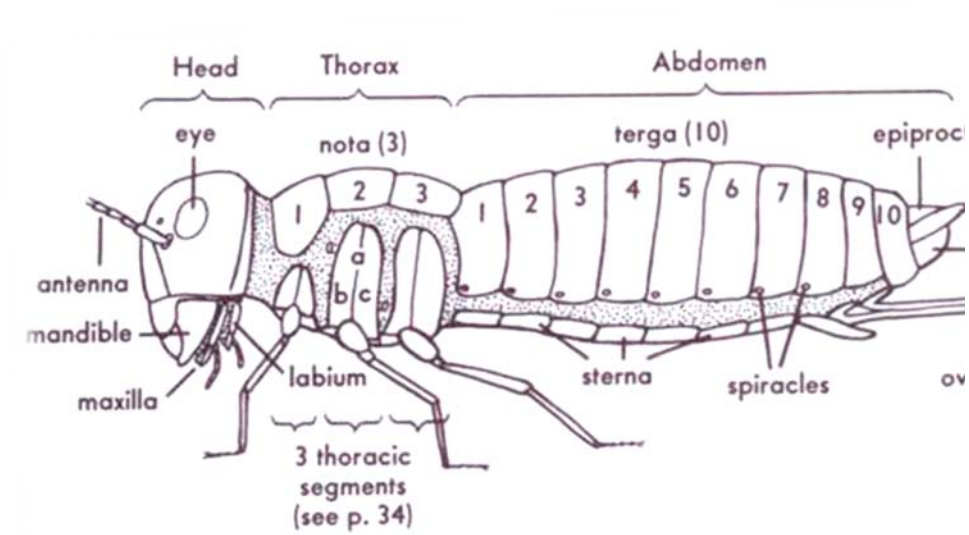


Diagram of an insect

Each thoracic segment typically has 2 lateral sclerites separated by a pleural suture (a)—an anterior episternum (b) and a posterior epimeron (c)