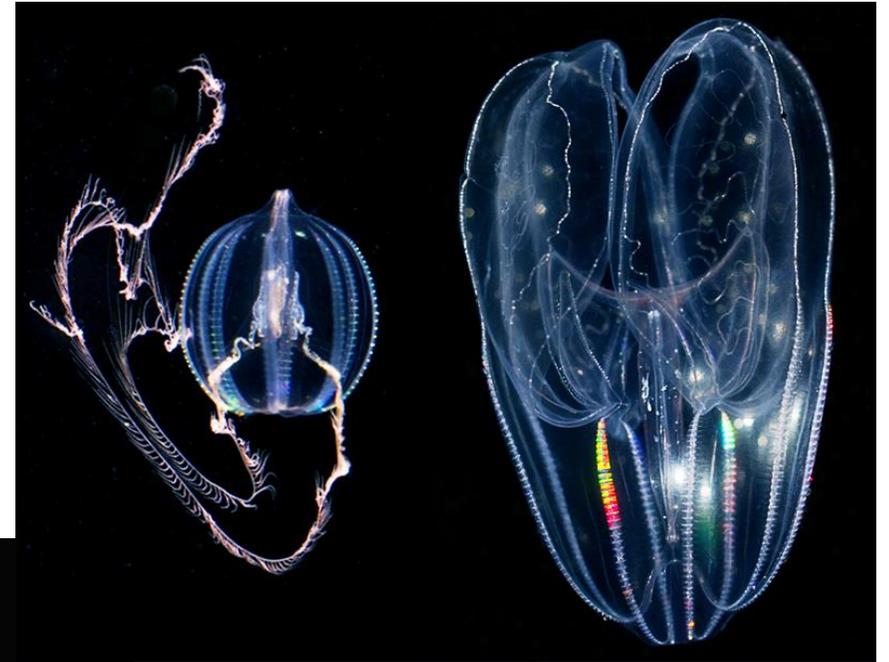
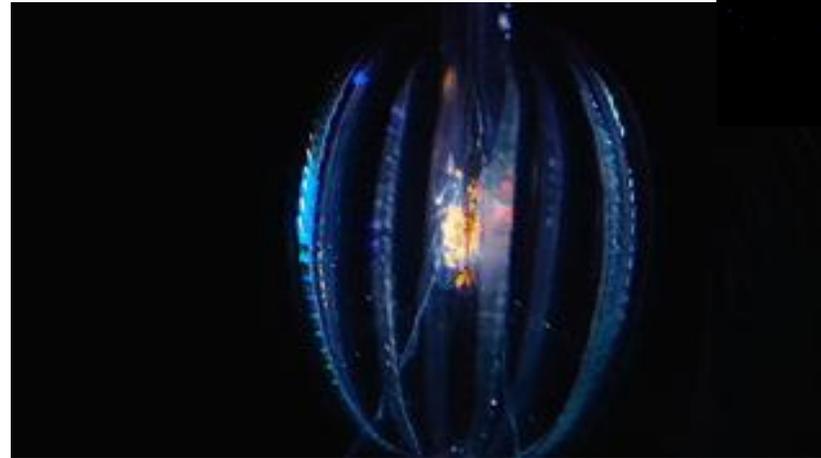


Cnidaria, Ctenophora, and Annelida

Lab 4

Phylum Ctenophora

- ▶ **Comb jellies**
 - ▶ Approx: 100 species
- ▶ **Marine**
- ▶ **Radial symmetry**
- ▶ **Eight “combs” of cilia**
- ▶ **Diploblastic**
- ▶ **Colloblasts**
 - ▶ Adhesive cells



Phylum Cnidaria

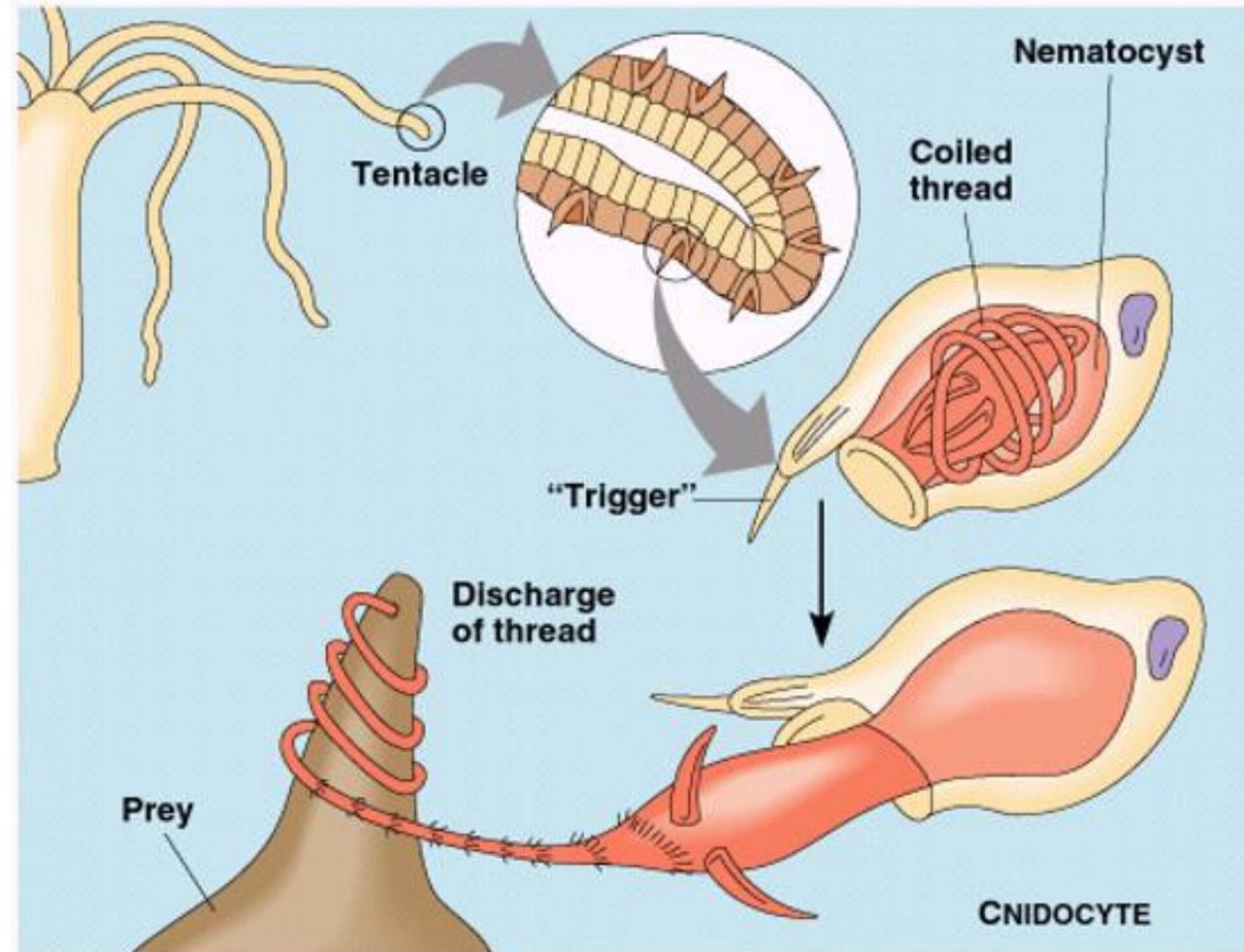
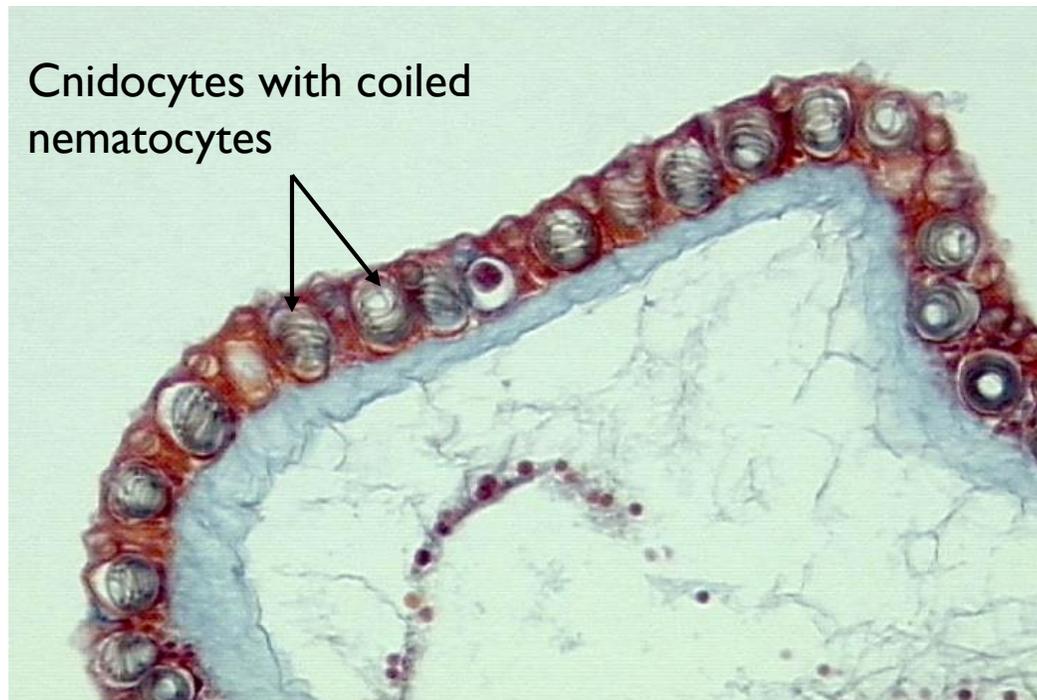
- ▶ Sea jellies, sea anemones, coral
 - ▶ Approx.: 10,000 species
- ▶ Radial symmetry
- ▶ Two life forms (some)
 - ▶ Polyp and Medusa
- ▶ Two tissue layers
 - ▶ Diploblastic
- ▶ Gastrovascular cavity



Cnidocytes and Nematocysts

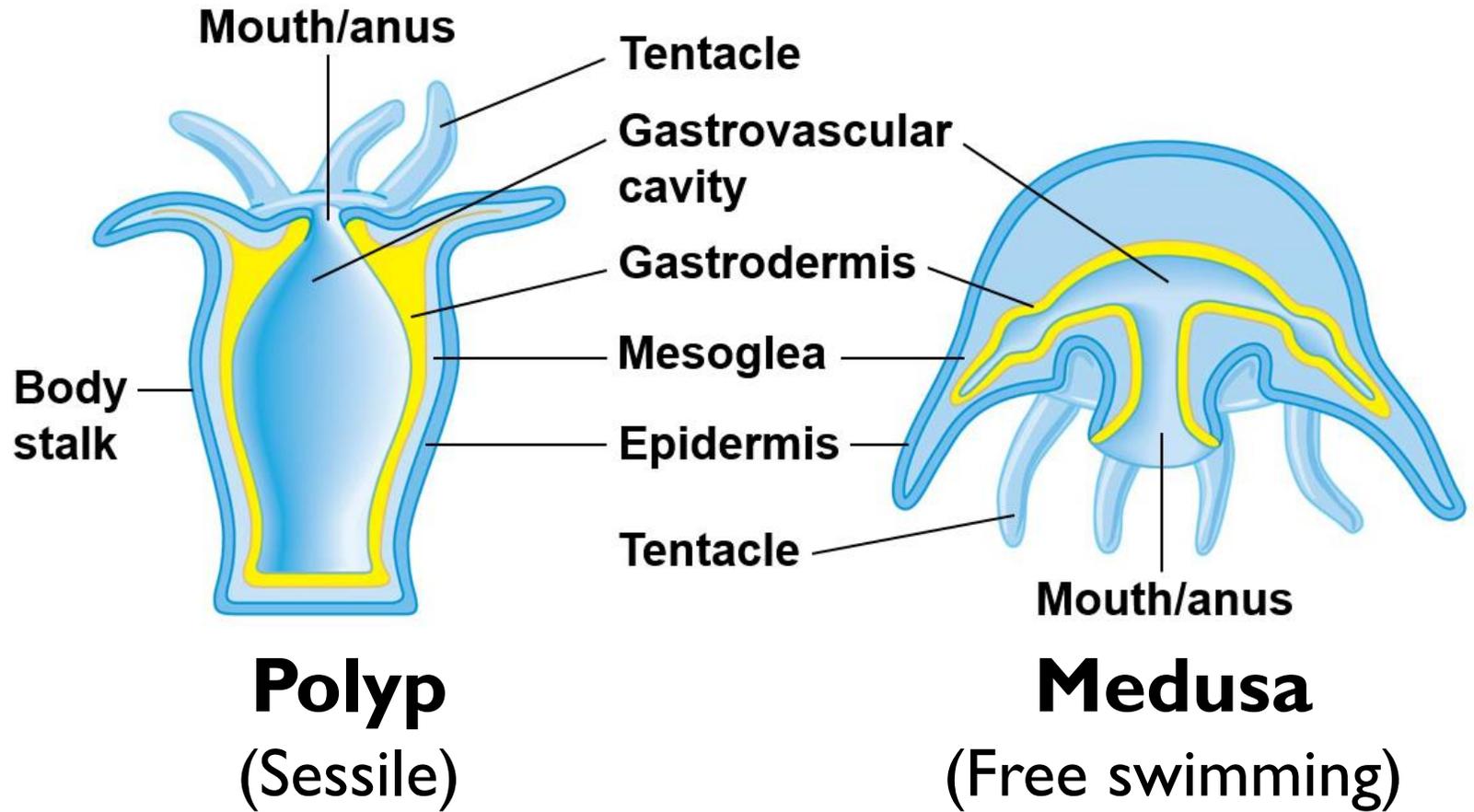
Cnidocytes: specialized cells used in feeding and defense

- ▶ Nematocysts (stinging organelle)



Cnidaria Body Forms

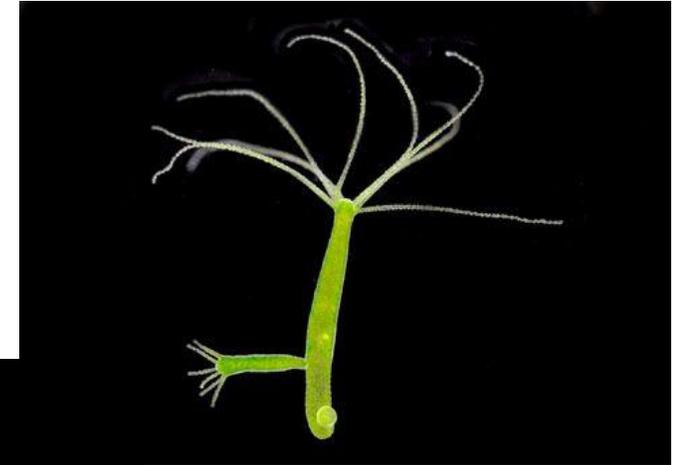
- ▶ **Gastrovascular cavity:** central cavity where gas exchange and digestion occurs
- ▶ **Gastrodermis:** cells lining gastrovascular cavity
- ▶ **Mesoglea:** jelly-like tissue layer that forms hydrostatic skeleton



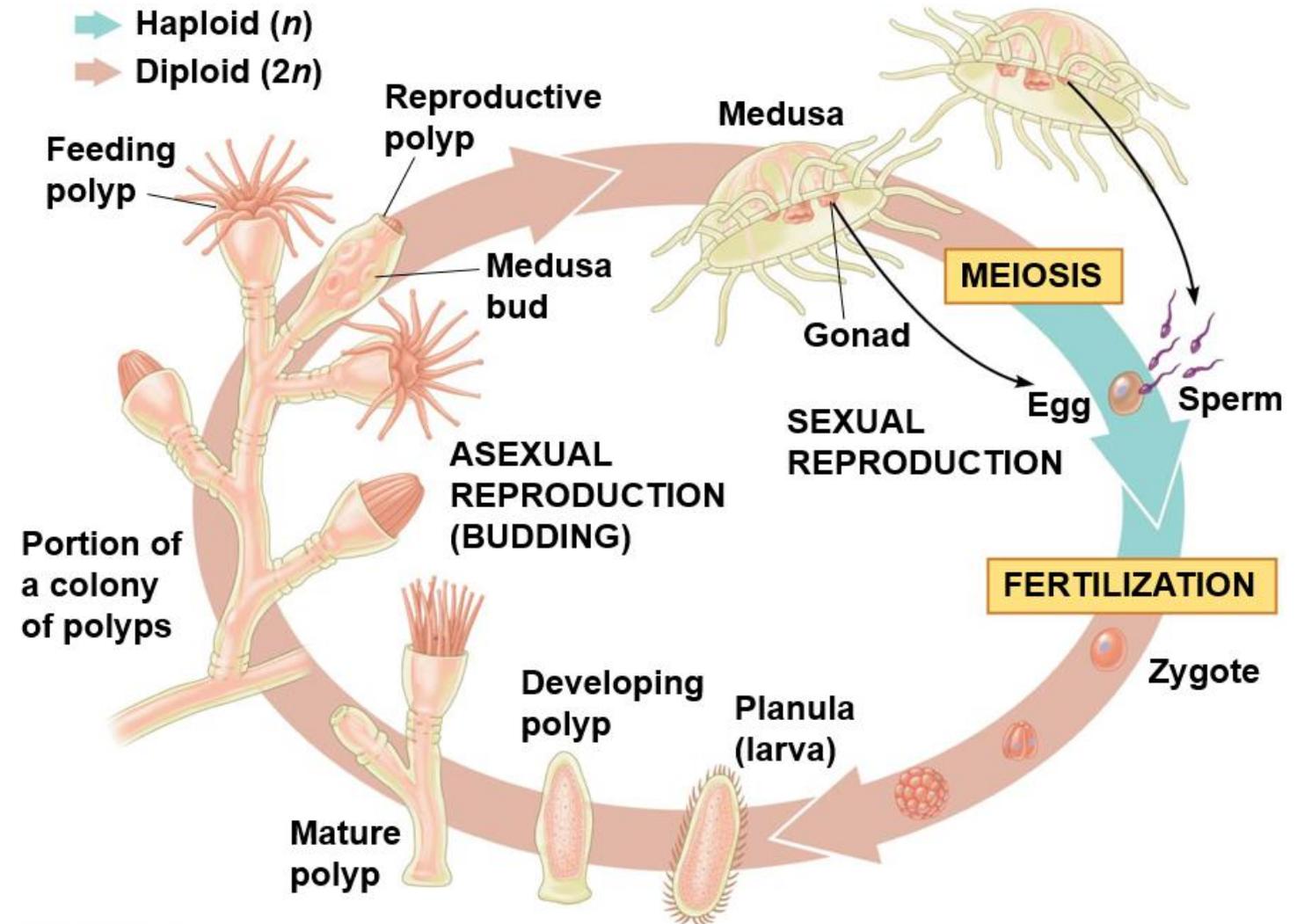
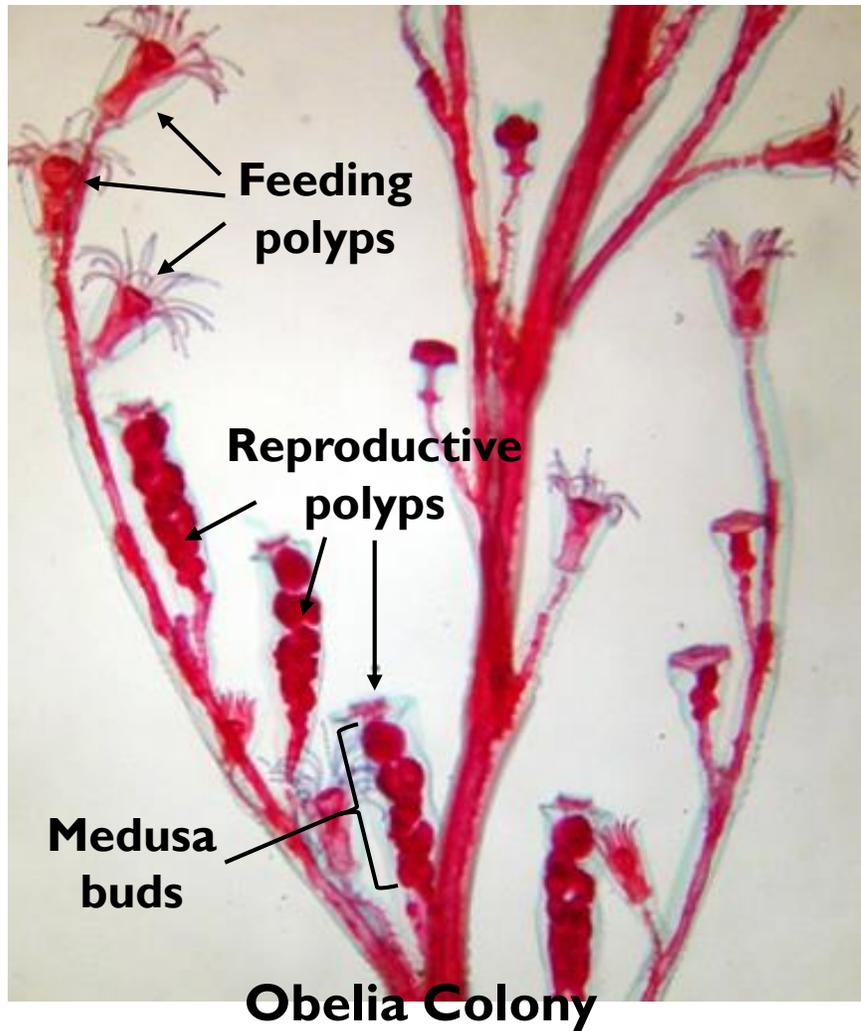
Cnidarian Classification

Class Hydrozoa

- ▶ Most are marine
- ▶ Most species contain both a polyp and medusa stage
- ▶ Medusa usually small with velum
- ▶ Polyp stage often colonial
- ▶ Reproduction
 - ▶ Asexual: budding
 - ▶ Sexual: zygotes and larvae (planula)

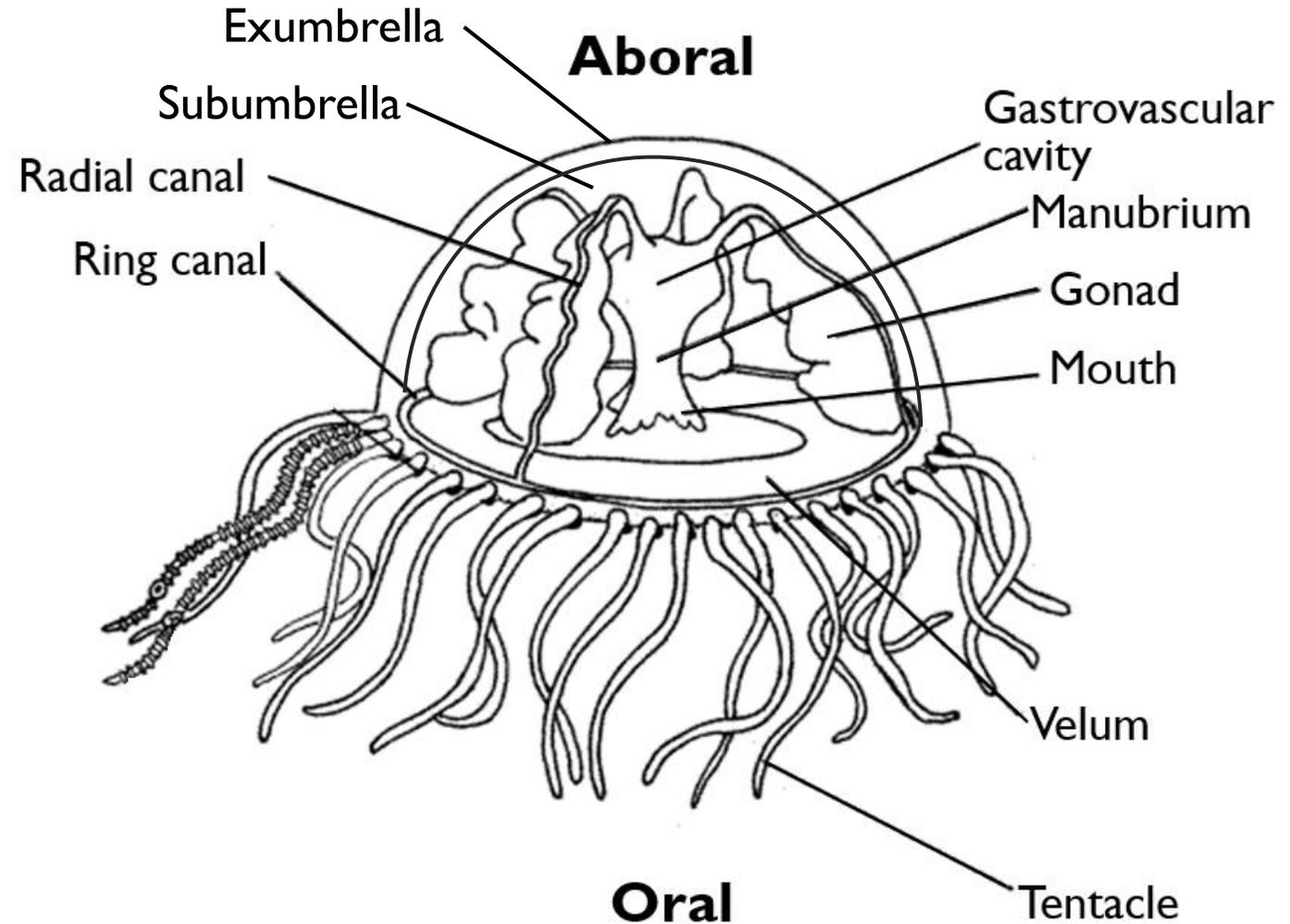


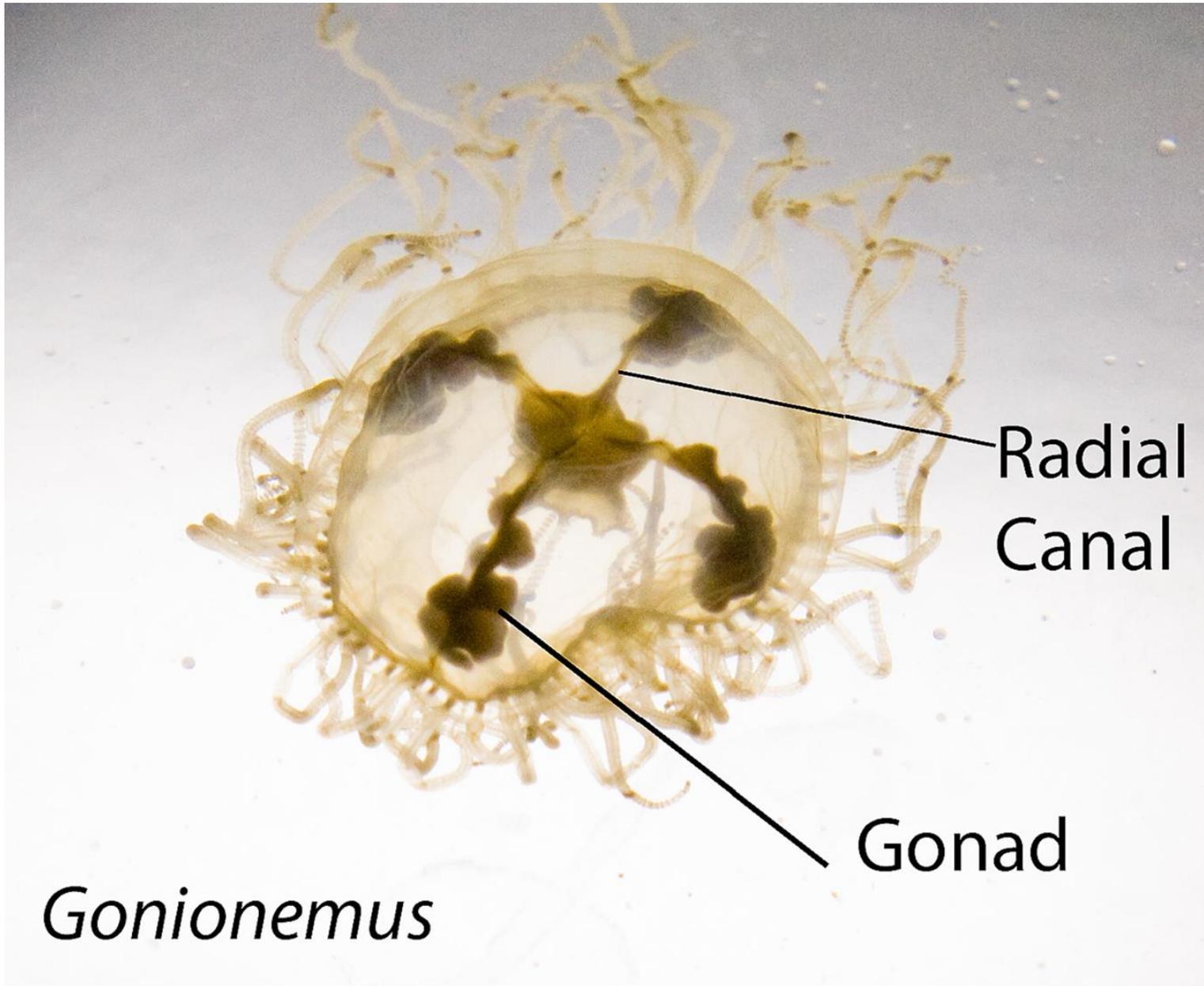
Cnidarian Life Cycle (Obelia)



Hydrozoan Medusa Anatomy

- ▶ **Velum:** Shelf-like structure at base of subumbrella
- ▶ **Manubrium:** tubular structure that contains the mouth
- ▶ **Radial canals:** connect stomach (gastrovascular cavity) to ring canal

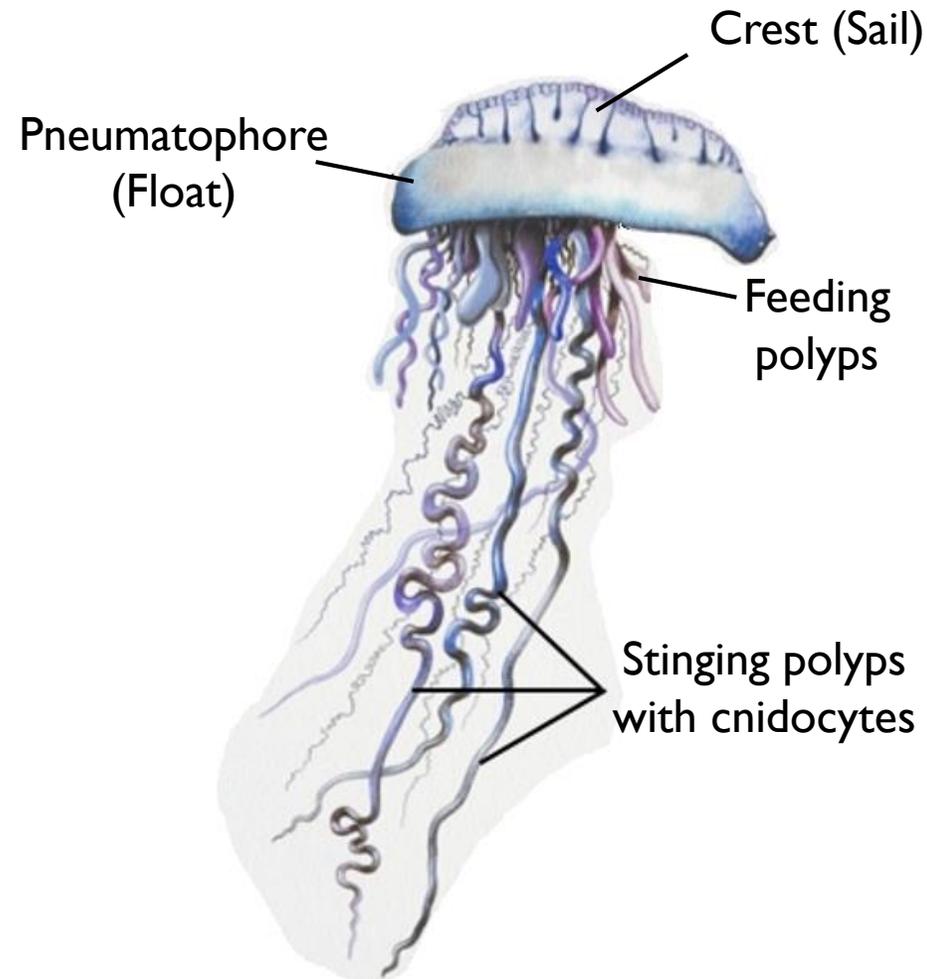




Portuguese Man of War (*Physalia*)



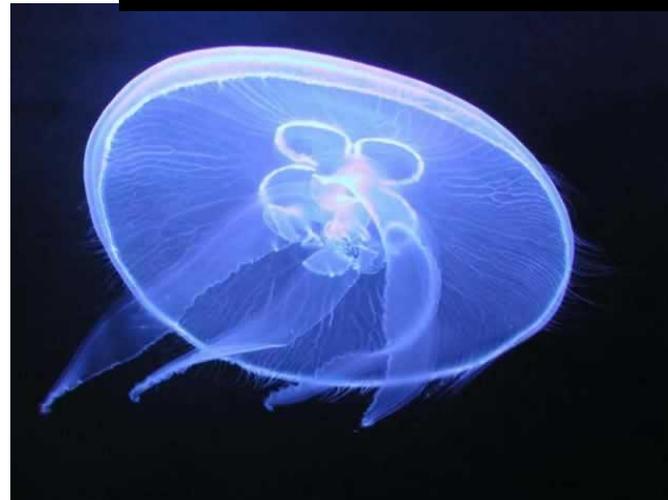
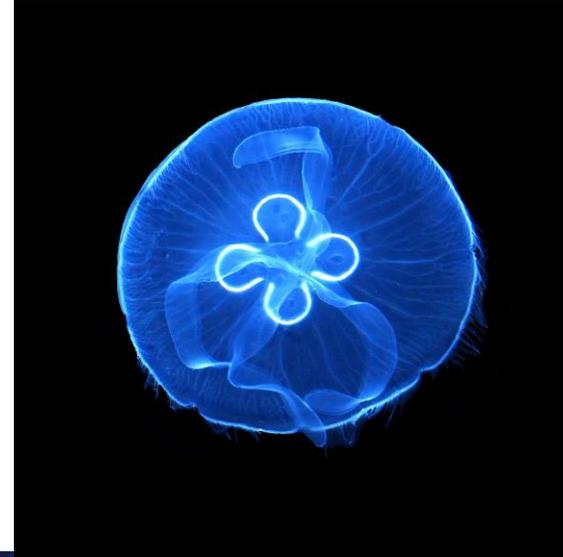
Siphonophores: colonies of specialized polyps



Cnidarian Classification

Class Scyphozoa

- ▶ Sea jellies or “true” jellies
- ▶ All are marine
- ▶ Polyp stage reduced or absent
- ▶ Medusa stage is free living



Cnidarian Classification

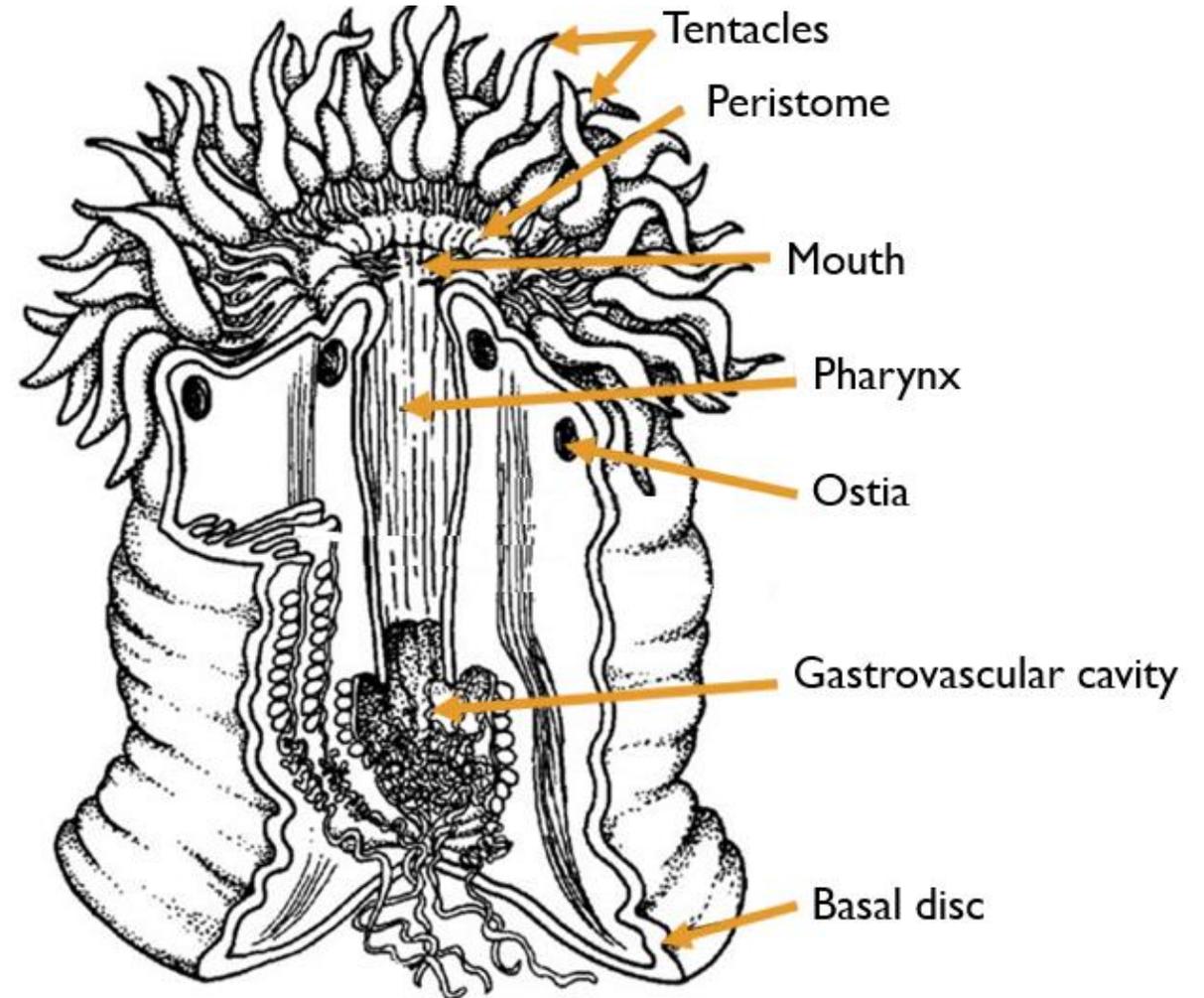
Class Anthozoa

- ▶ Corals and anemones
- ▶ All marine
- ▶ Polyp stage dominant
- ▶ No medusa stage
- ▶ Calcium carbonate external skeleton
- ▶ Symbiotic relationship with zooxanthellae



Anthozoan Anatomy

- ▶ **Peristome:** the space between the tentacle and the mouth
- ▶ **Ostia:** small openings where water enters
- ▶ **Basal disc:** structure where the anemone attaches to the substrate



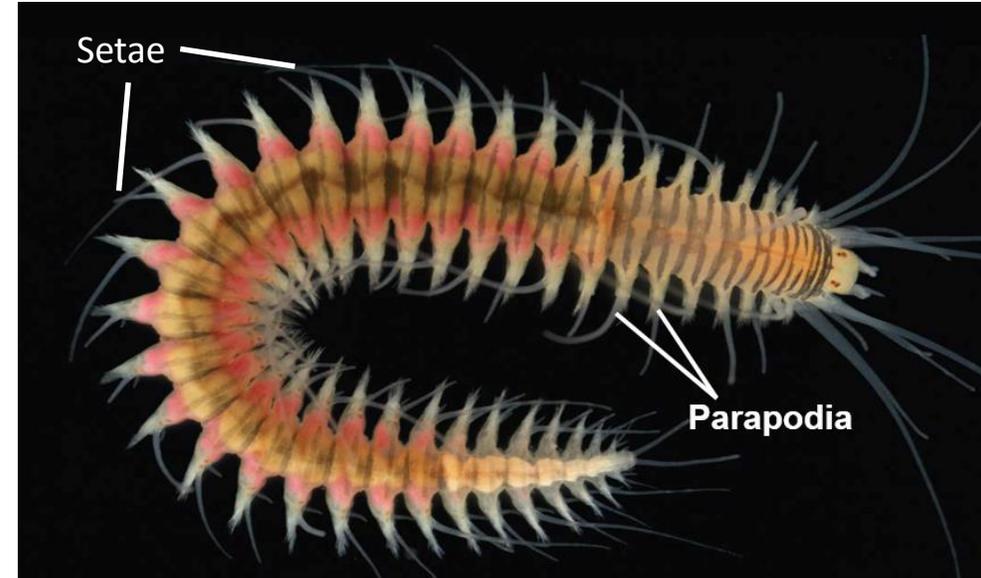
Phylum Annelida

- ▶ Soft, segmented worms
 - ▶ ~ 15,000 species
- ▶ Marine, freshwater and terrestrial
- ▶ Hydrostatic skeleton

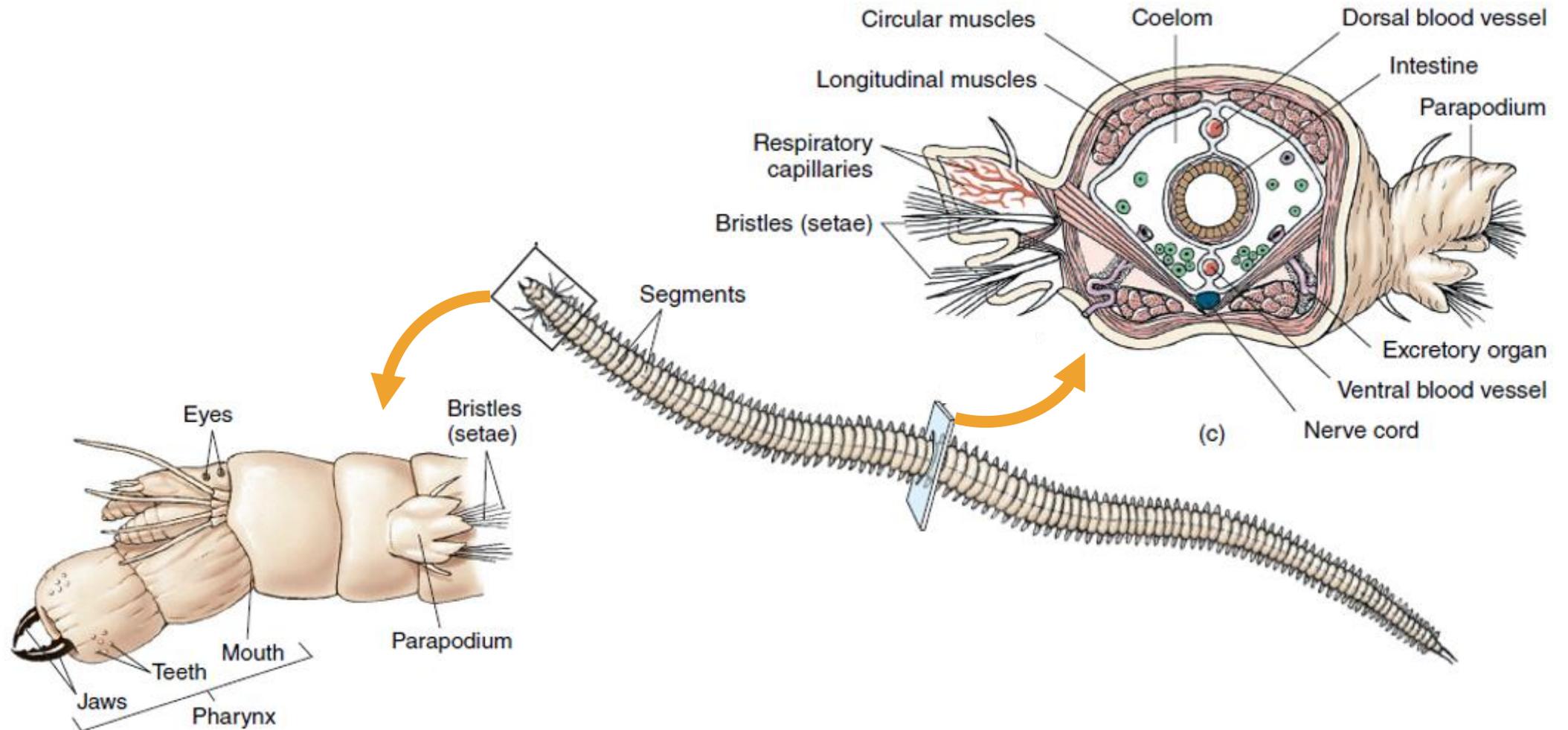


Phylum Annelida, Class Polychaete

- ▶ Mostly mobile species
- ▶ Mostly marine
- ▶ Well developed head and jaws
- ▶ Sensory organs
- ▶ Predators and grazers
- ▶ Parapodia
 - ▶ **Setae**

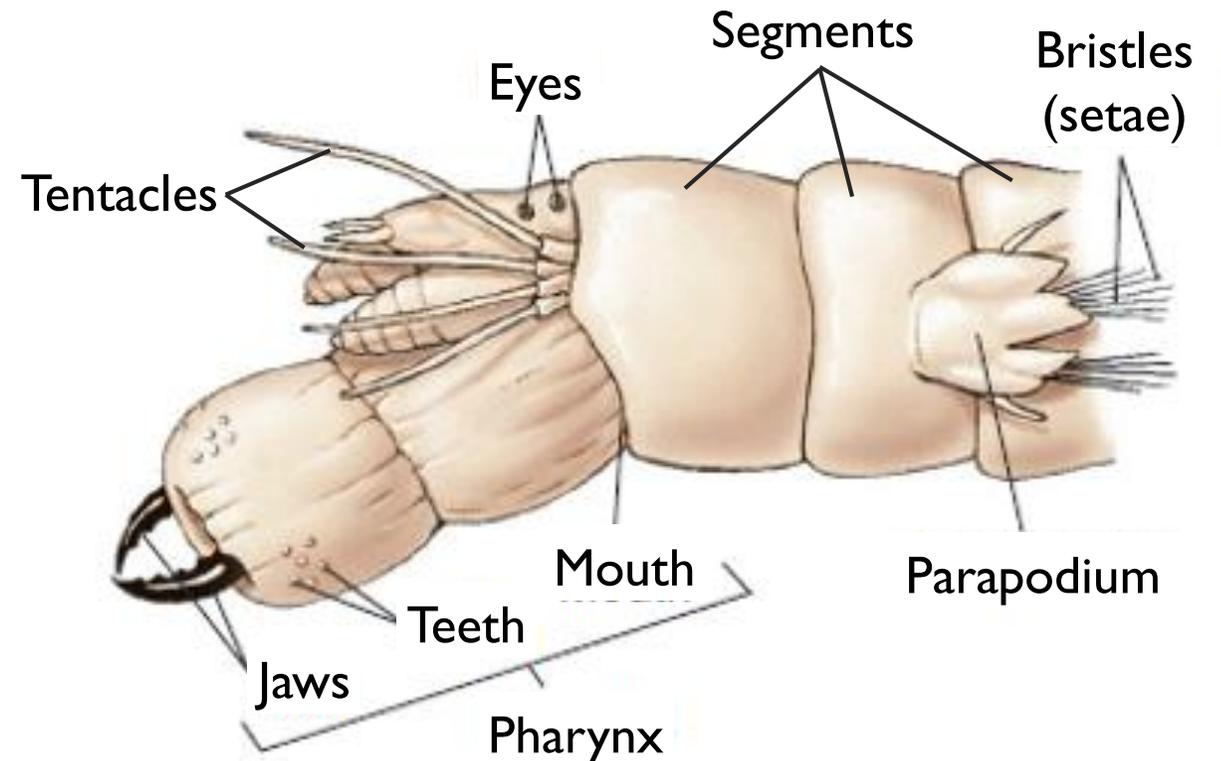


Phylum Annelida, Class Polychaete



Phylum Annelida, Class Polychaete

- ▶ **Parapodia**: paired, unjointed outgrowths that bear chaeta, often used in locomotion
 - ▶ Parapodia on each body segment serve as gills, as well as a means of locomotion
- ▶ **Setae**: stiff bristles made of chitin on the body



Gonionemus Medusa Anatomy

