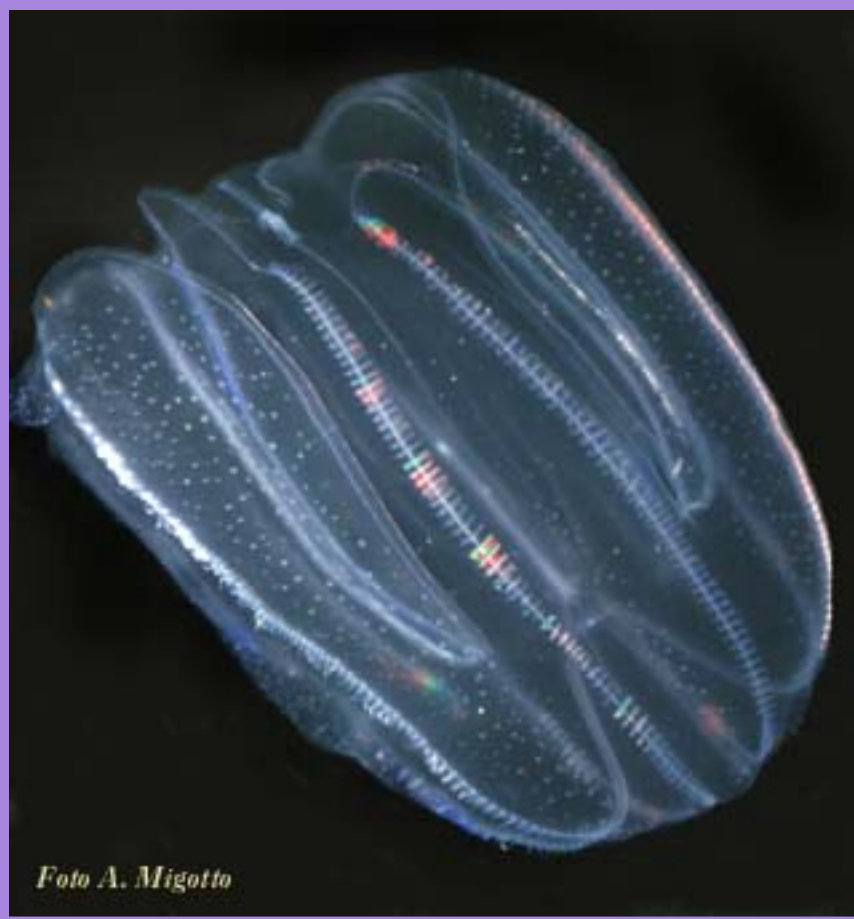
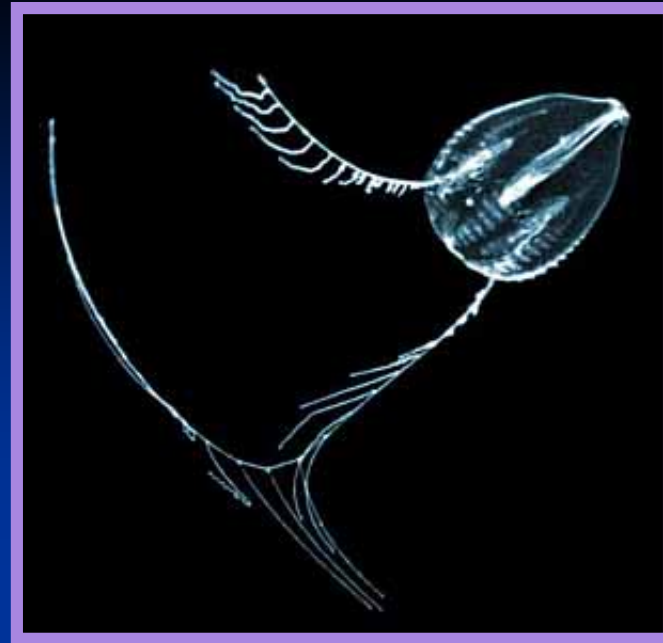


Ctenophores and Marine Worms

Phylum Ctenophora



Ctenophores

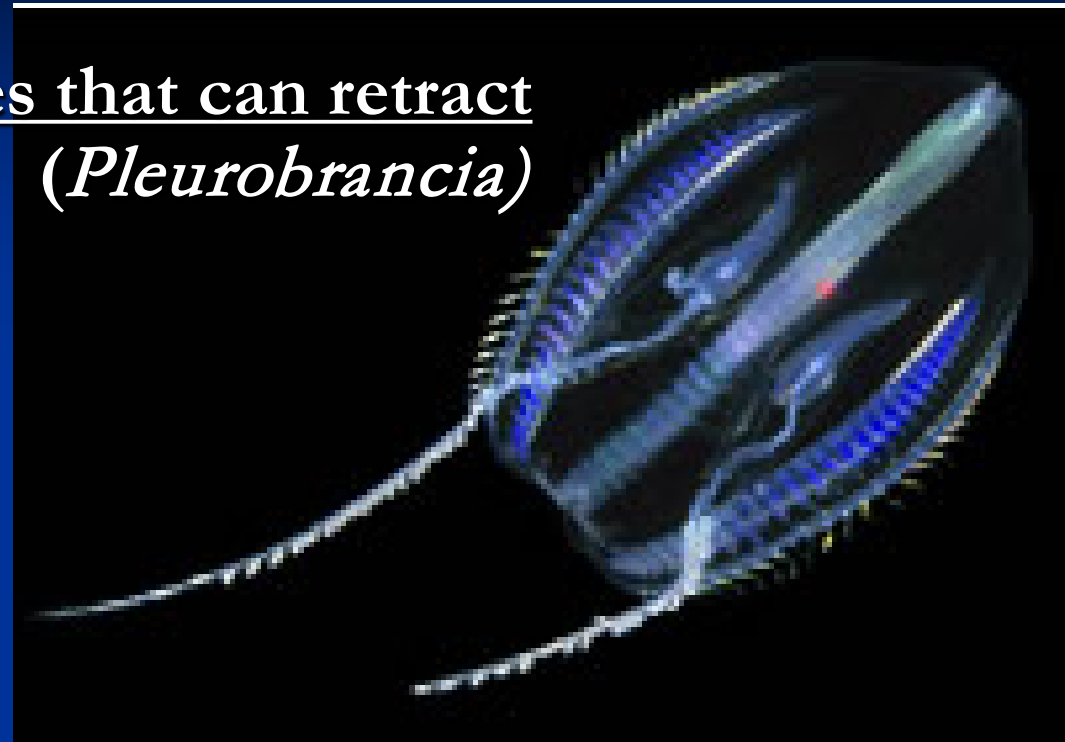
- Common name: Comb Jellies
- Planktonic, nearly transparent, radial symmetry
- Appear similar to jellyfish, but with no stinging cells
- Bioluminescent- give off flashes of light
- 8 rows of comb plates, made of very large cilia, that make the animal move forward (mouth first)
- Colloblasts (adhesive structures)
- Nerve net
- True muscle cells w/ in mesoglea

Ctenophores

- More Characteristics
 - Diploblastic-2 germ layers (some have 3)
 - Cellular Mesoglea
 - Gastrovascular cavity
 - No cnidocytes
 - Apical organ for orientation

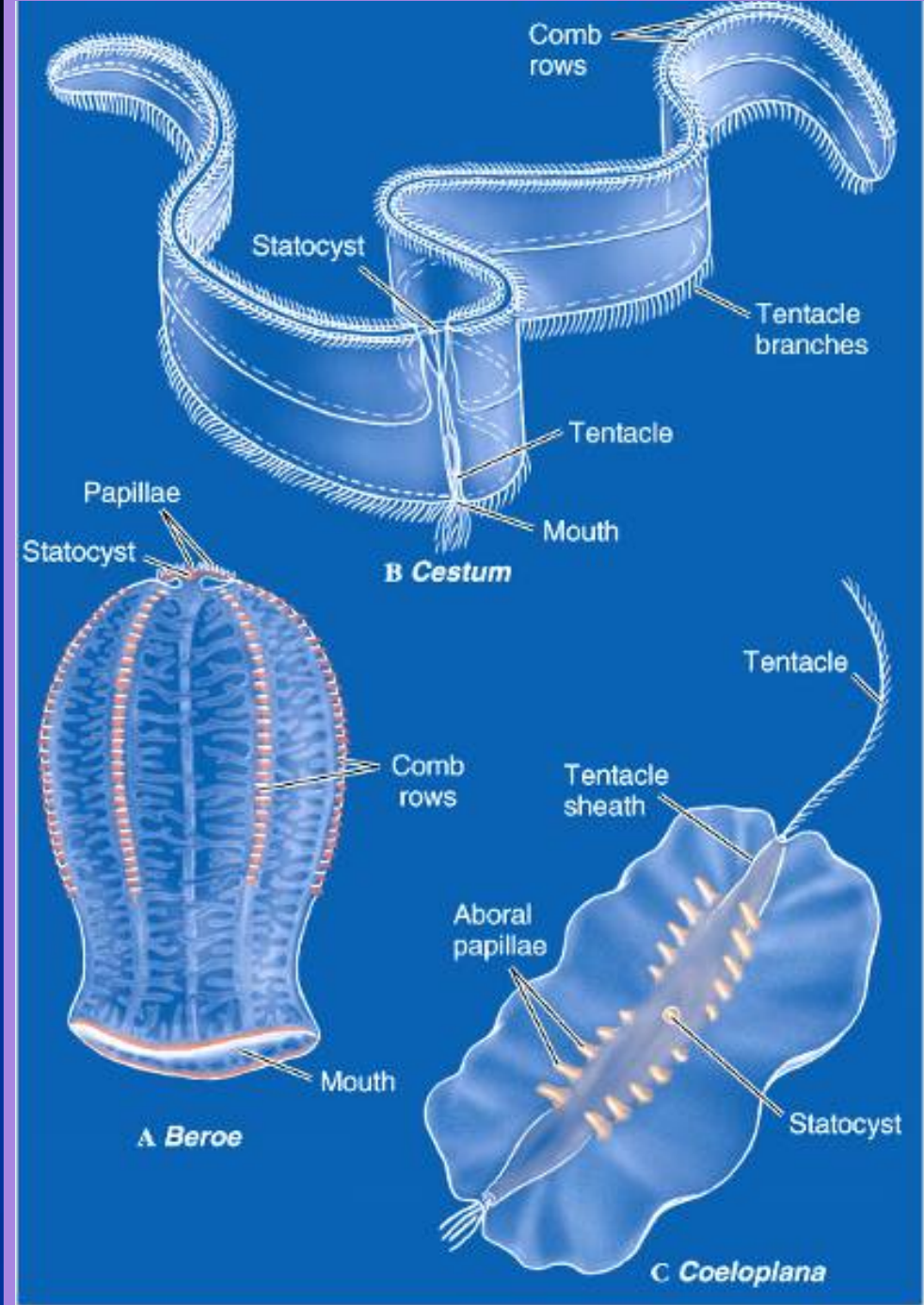
Phylum Ctenophora

Class Tentaculata-tentacles that can retract
(*Pleurobrancia*)



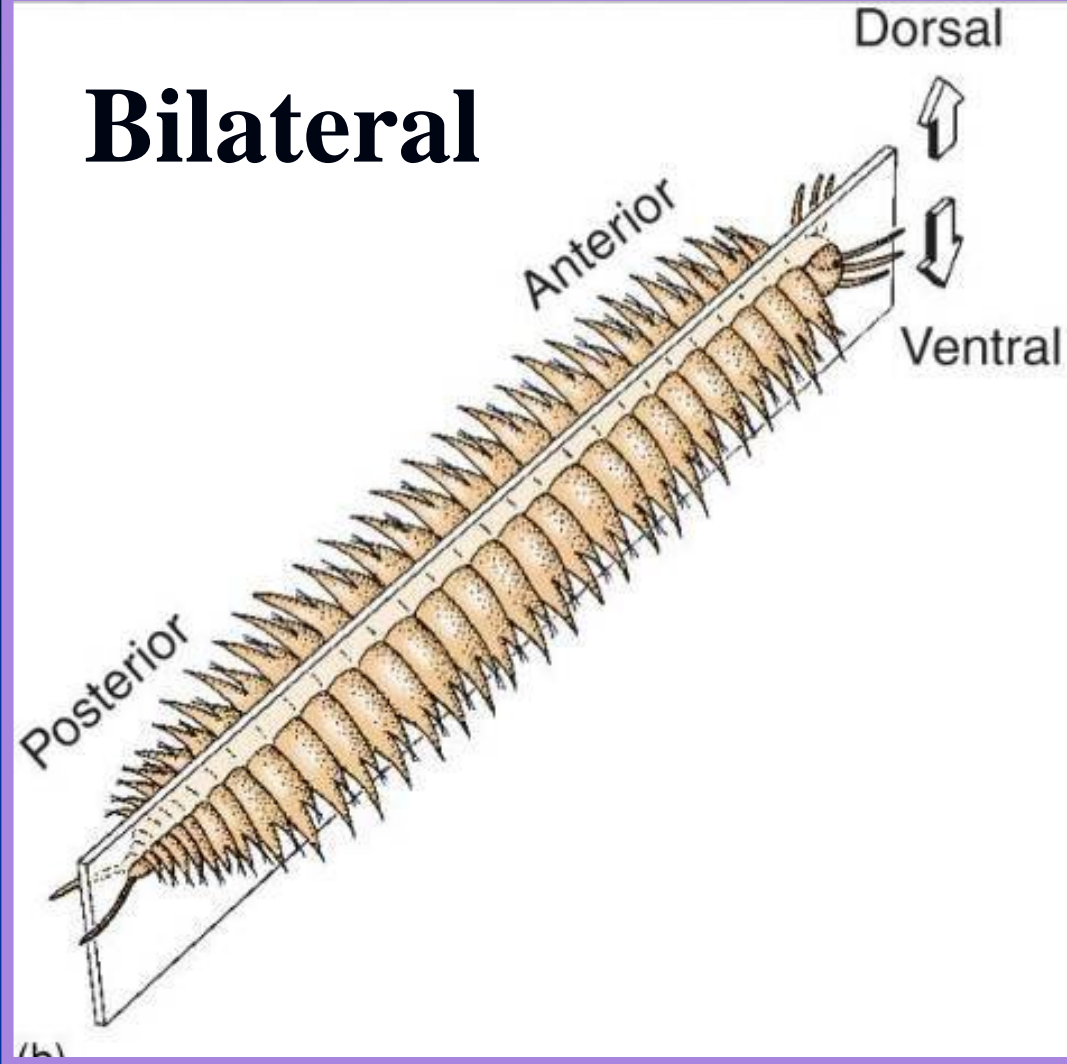
Class Nuda-Without tentacles but
highly branched gastrovascular cavity
(*Beroe*)

Comb jellies

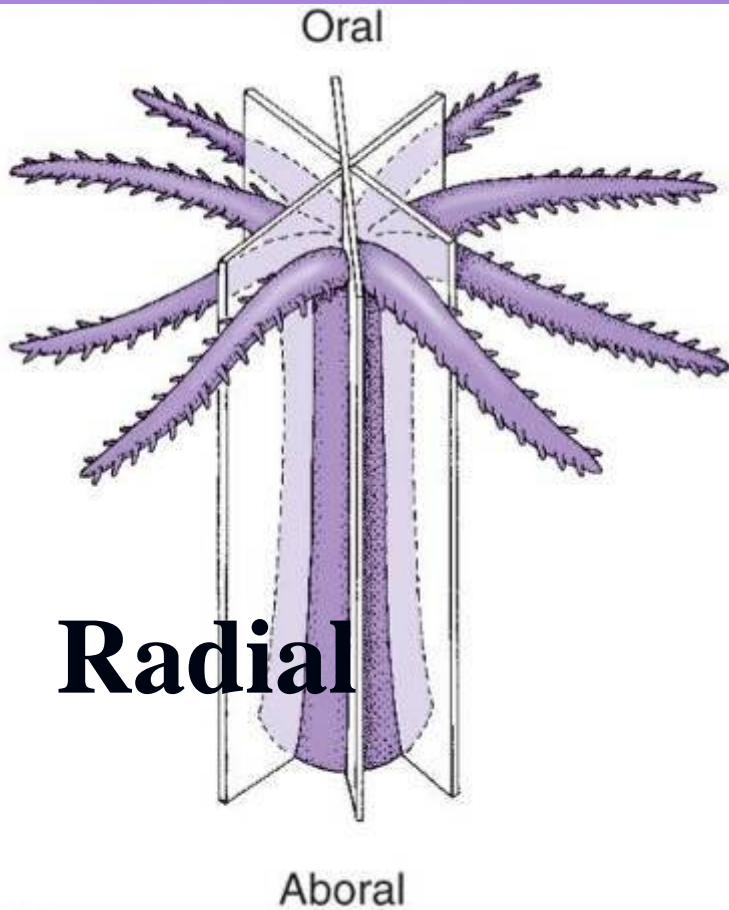


Symmetry

Bilateral



Radial



Marine Worms

(Flatworms, Tapeworms,
Segmented Worms, Roundworms,
and Giant Tube Worms)

General Stuff About Worms...

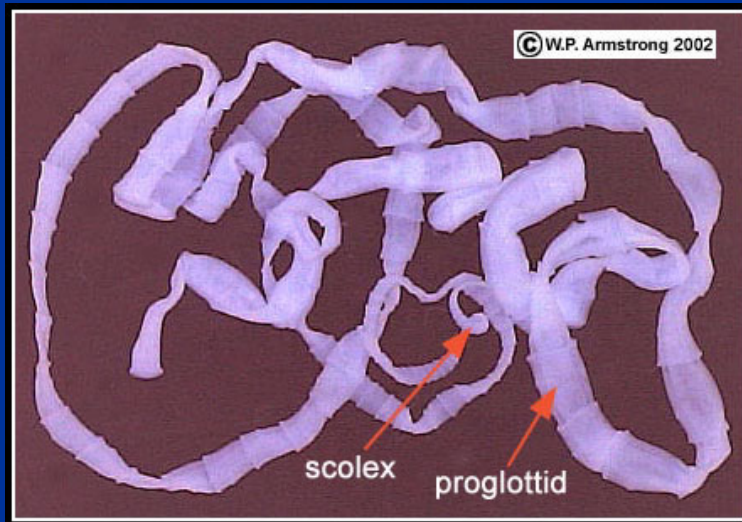
- Worms are found pretty much everywhere in the ocean.
- Most worms tend to live near the seafloor.
- Some of the worms we will be discussing are parasitic.
- There are a number of different phylums, each having it's own distinctive characteristics.

Phylum- Platyhelminthes (Flatworms)

- Flat bodies
- Found in both fresh and salt water
- Can range in size from microscopic to nearly 20 meters (60 feet!)
- Bilateral symmetry with cephalization
- Move by contracting muscles and beating cilia
- Simple nervous system and digestive system
- Reproduce asexually (regeneration) or sexually (hermaphrodite)

Form and Function

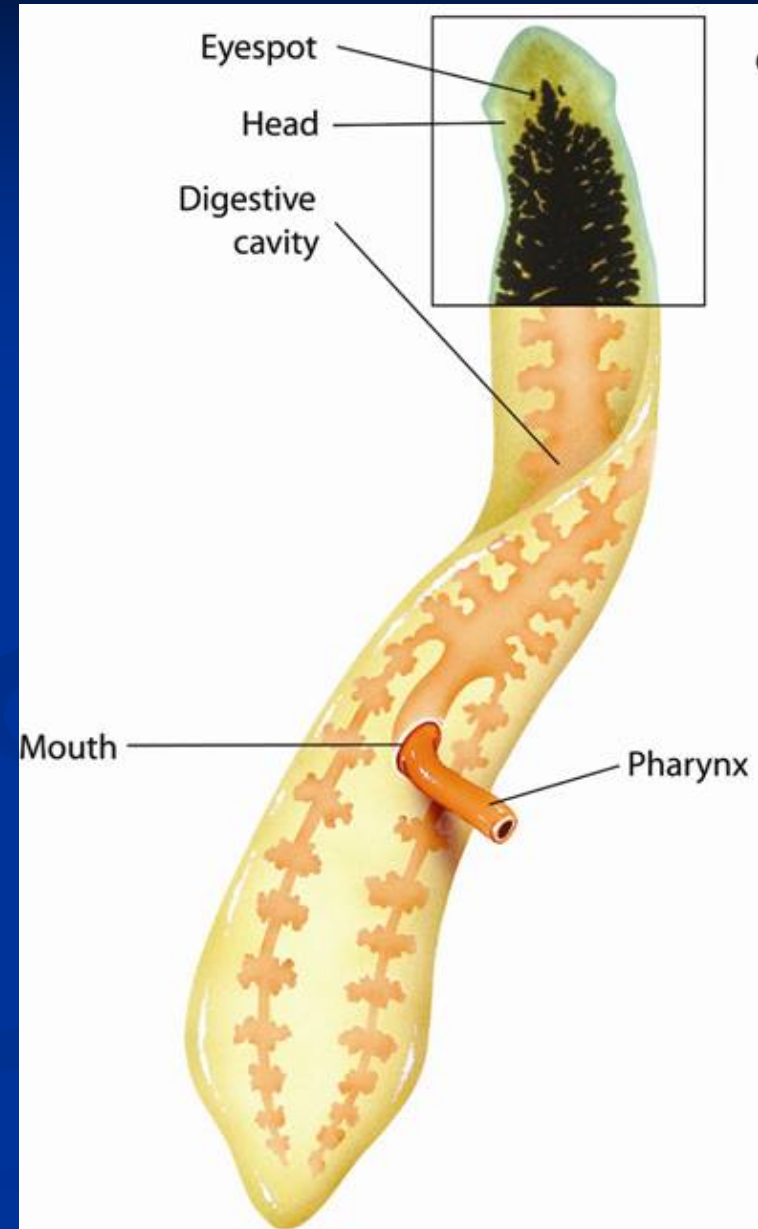
- Extreme variation
- Two life styles
 - Free living
 - Parasitic



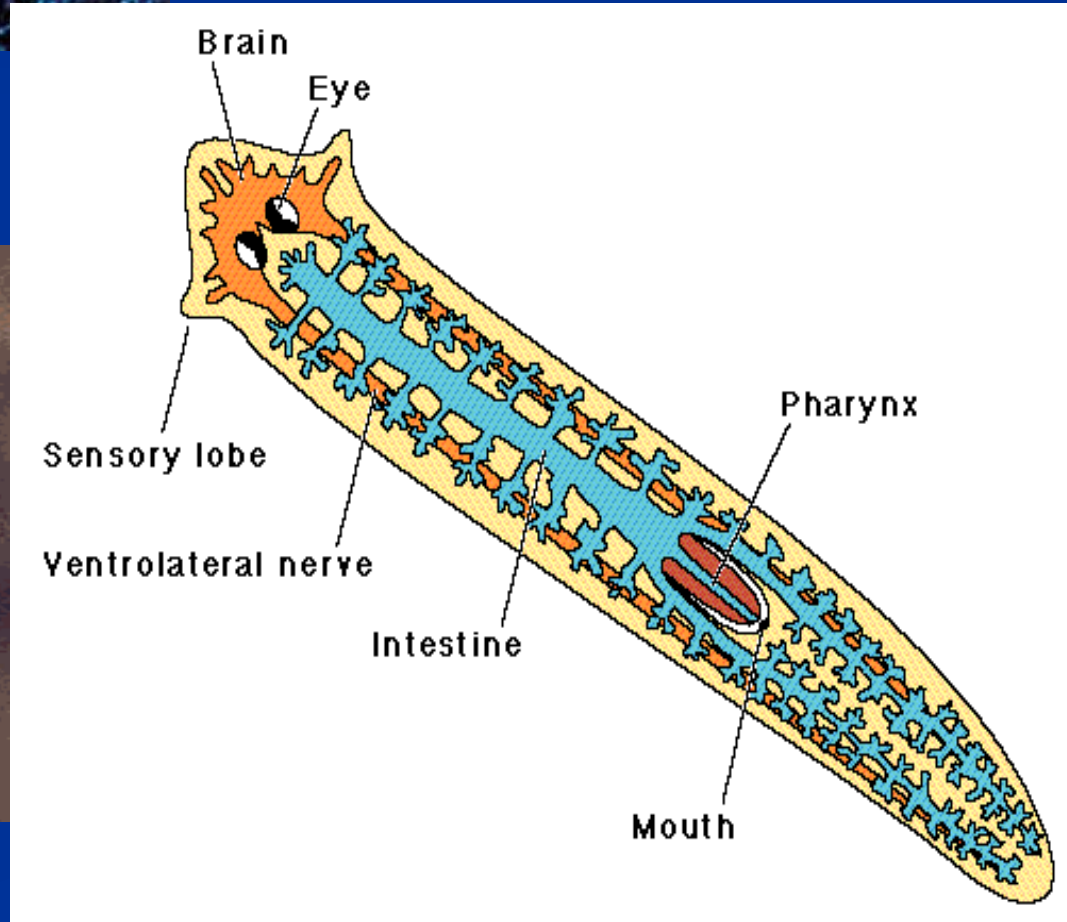
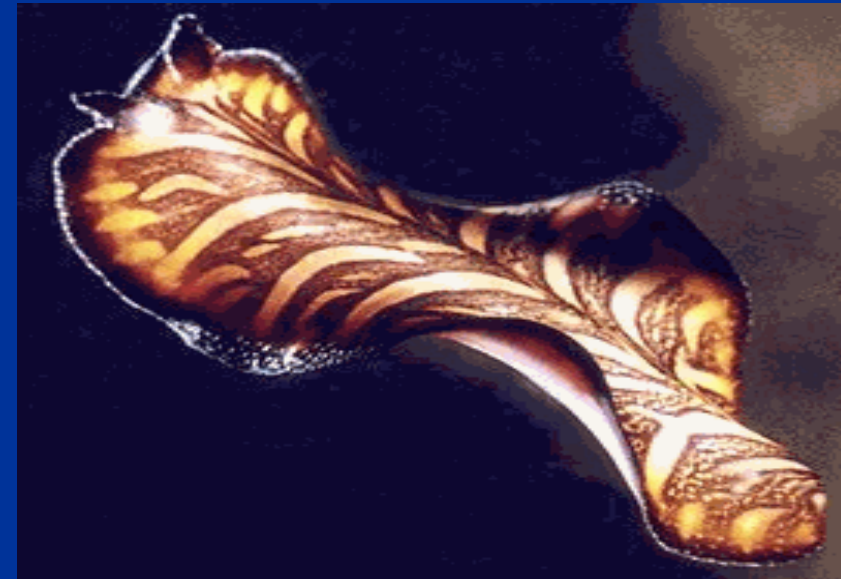
Form and Function-Feeding

■ Free living :

- Pharynx extends out of mouth
- Pumps food into digestive cavity
- Food digested by cells of the gut – nutrients absorbed into cells.
- Digested food diffuses to other body tissues
- Waste goes out the mouth.



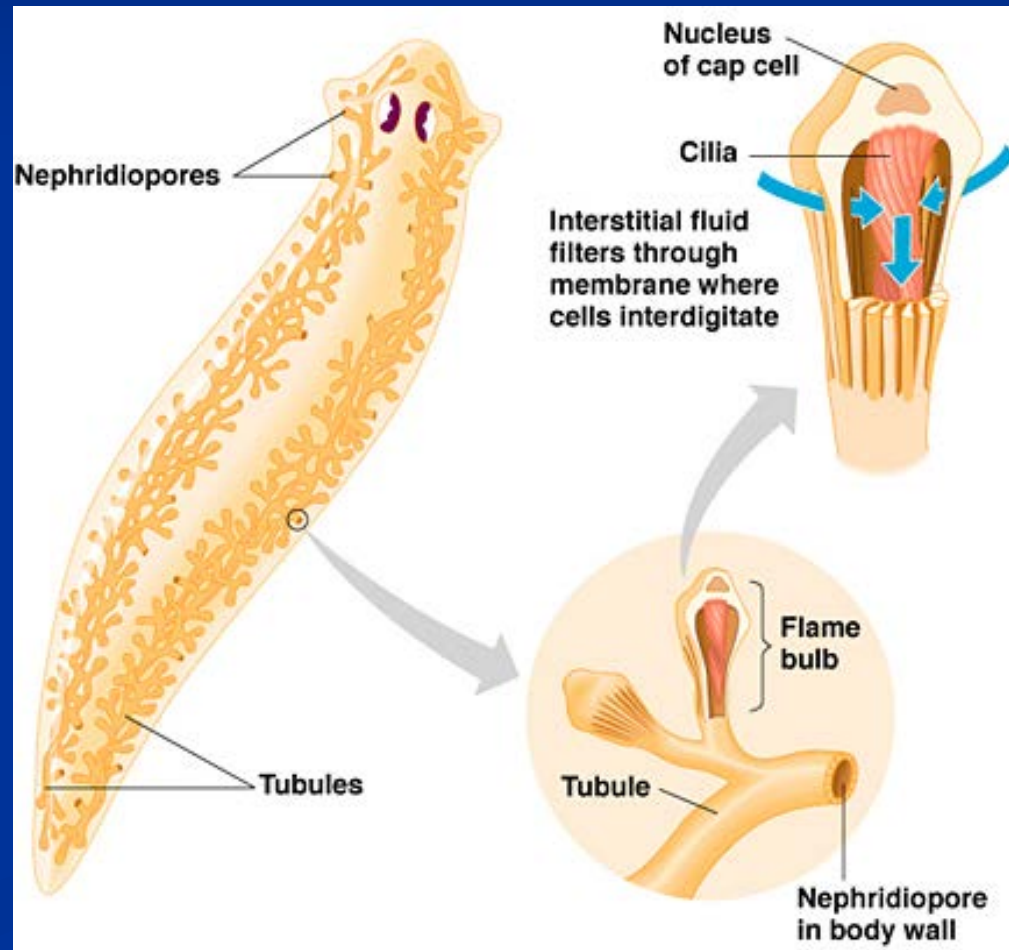
Flatworms



Form and Function-Excretion

- Flame cells – specialized cells that remove excess water from body

- May remove metabolic wastes like ammonia and urea
- Like kidney
- Joined together by system of tubes that exit from pores in skin.



Form and Function-Reproduction

- **Sexual:**

- Hermaphrodites – both male and female parts

1) worms “pair” – and exchange sperm and fertilizes eggs – internally

2) lay eggs – hatch few weeks later.

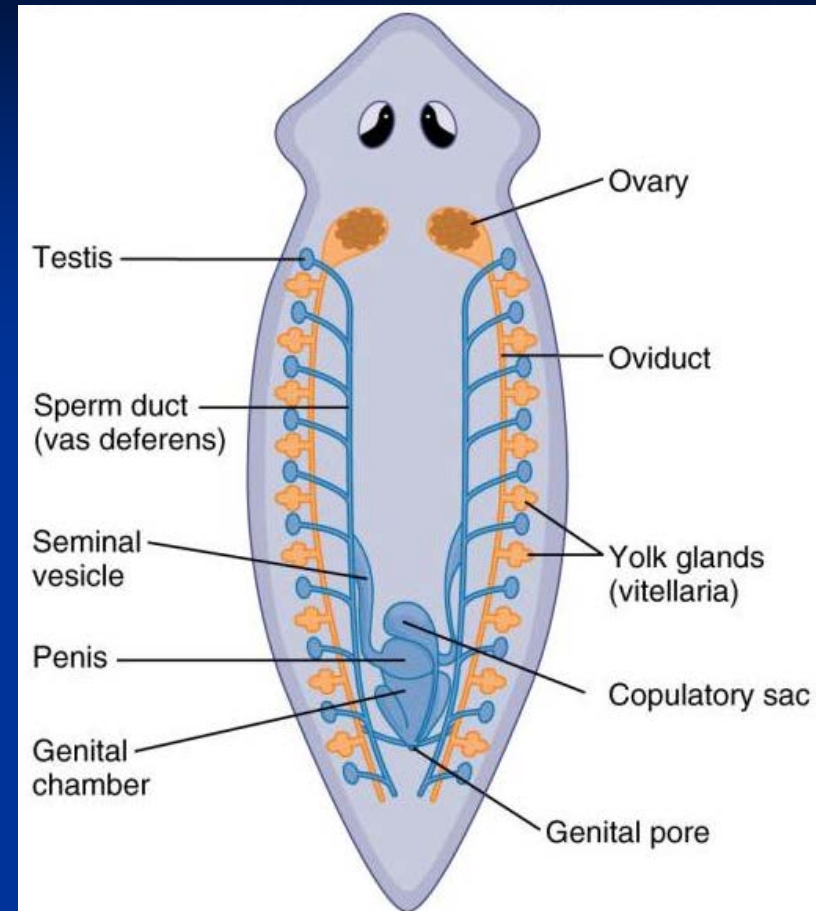
3) Larva develop to adult flatworm.

- **Asexual**

- Fission – organism splits in two

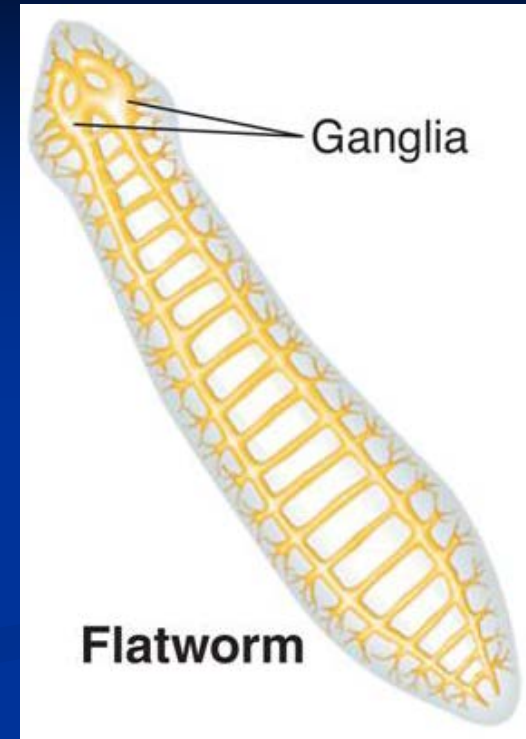
Both regenerates missing parts and live as individuals.

Parasites – more complex life cycles that involve both asexual and sexual reproduction.



Form and Function-Response

- **Free living**
- Head encloses Ganglia – group of nerve cells that control other nerve cells
- Not complex enough to be a brain
- 2 long nerve cords down each side w/ shorter nerve cords across body.
- Eyespot – group of cells that can detect the change in light-Found at anterior end
- Cells develop for chemoreception – detect external stimuli like odor and taste.
- **Parasites**
 - Less developed nerve system



Phylum Platyhelminthes

Class: Turbellaria- *

Most common

Free living

Hermaphrodite

Carnivore



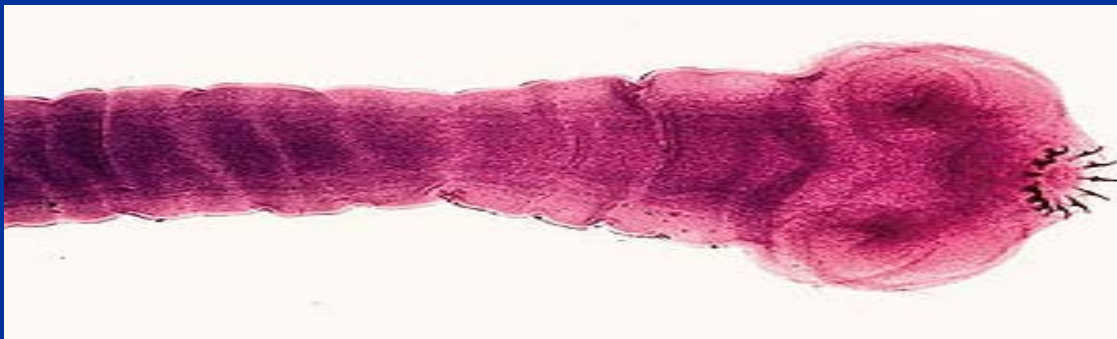
Class Cestoda-Tapeworms

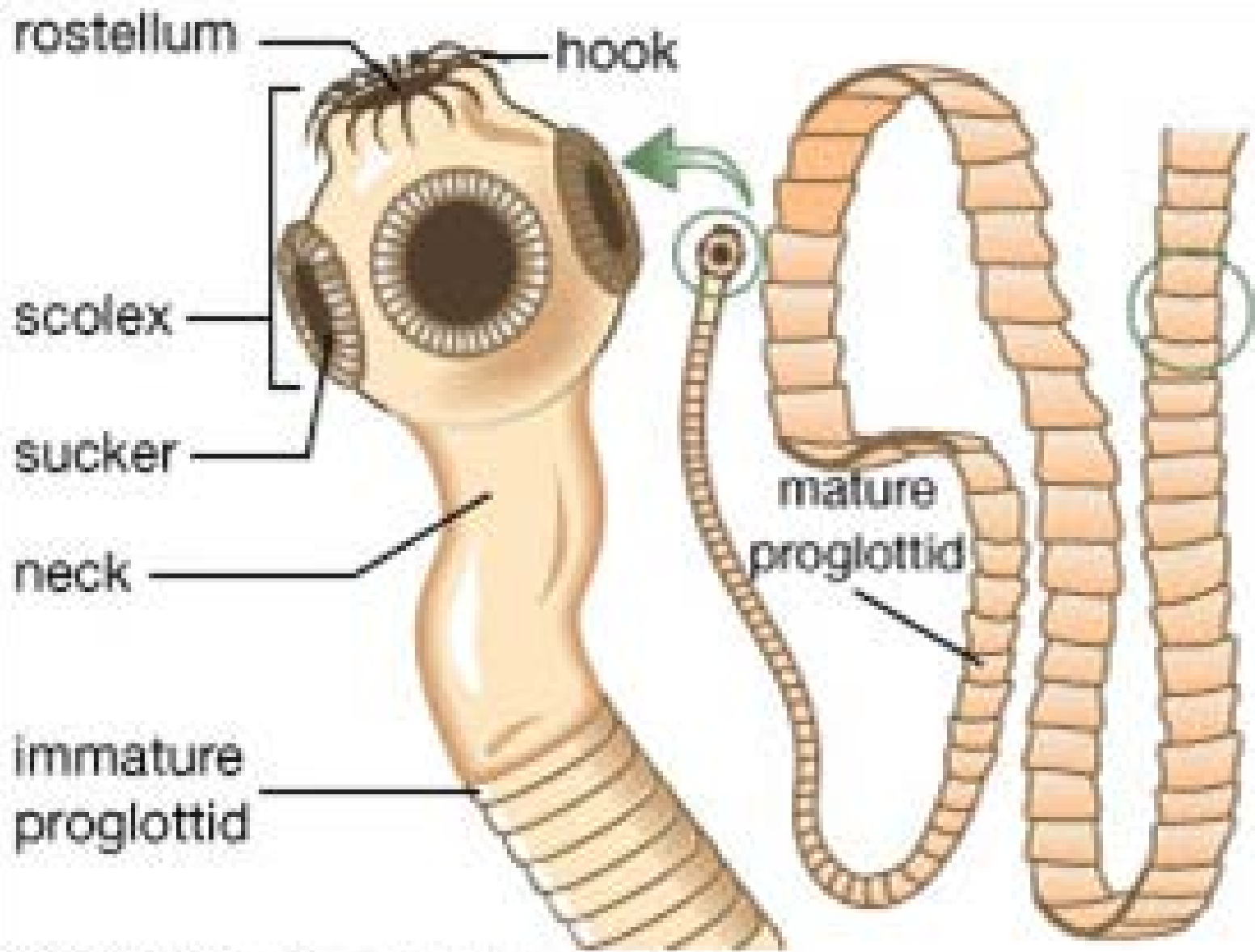
- These worms are parasites.
- They live in or on the body of a host organism.
- They do not need digestive systems because they absorb nutrients directly from the host into their own bodies.

Class Trematoda-Flukes

- Some examples are: Blood fluke, Liver Fluke
- Nearly all trematodes are parasites of mollusks and vertebrates.

Tapeworms





Phylum Nemertea-Ribbon Worms

- 650 species – mainly marine
- Distinct **proboscis** – long hollow tube – used:
- Capture prey, defense, locomotion, and burrowing
- Bilateral symmetry
- Acoelomate



Phylum Nematoda-Roundworms*



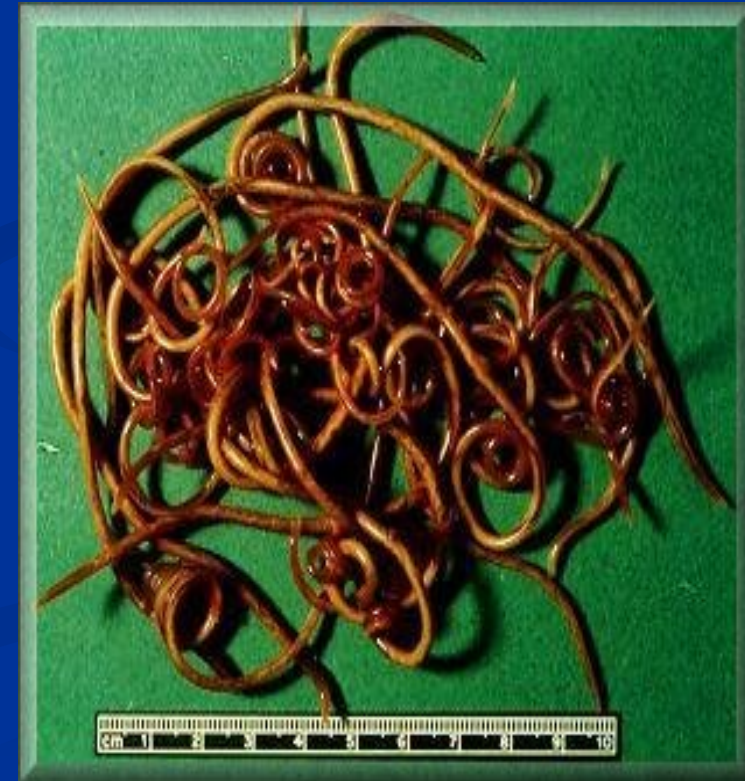
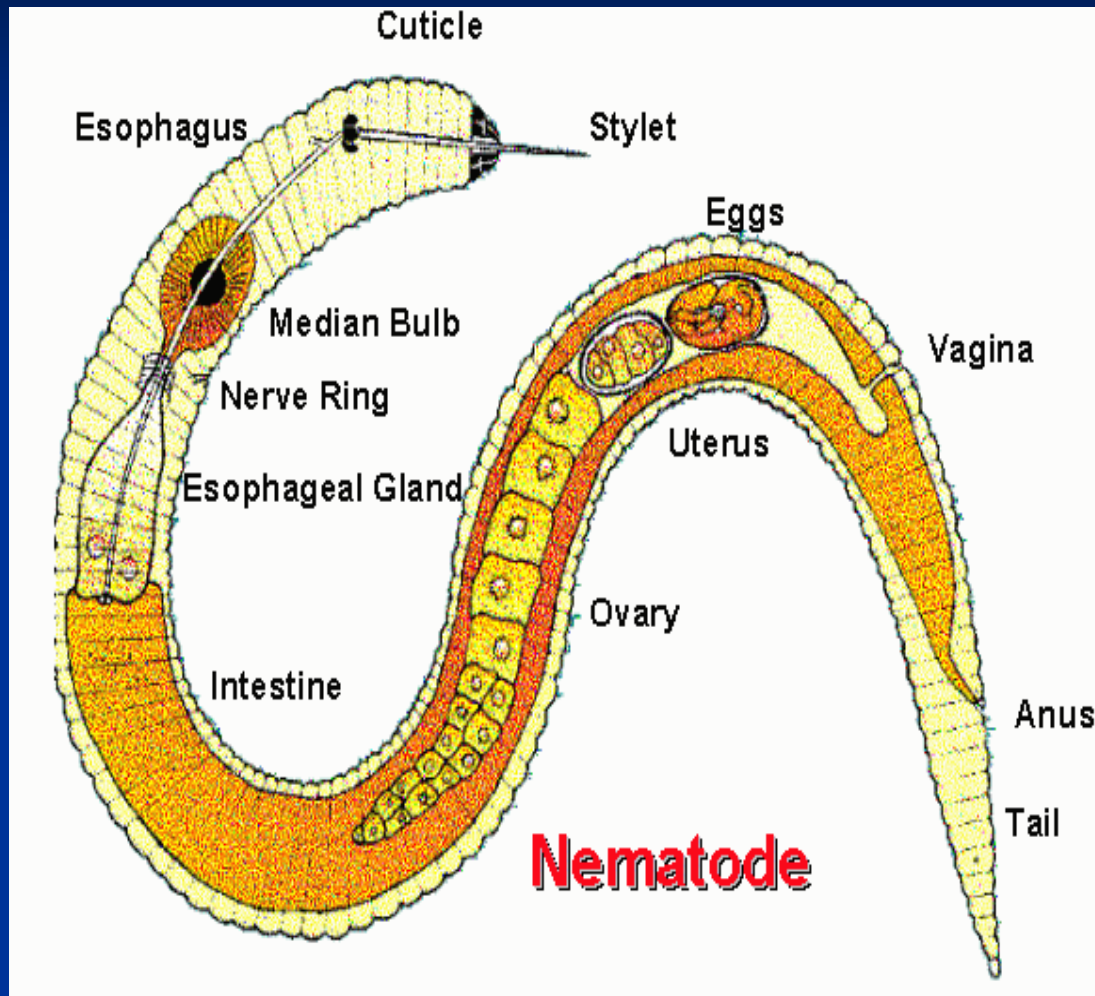
Phylum Nematoda-Roundworms

- Unsegmented-Most common type of worm, about 10,000 different species
- Generally live at bottoms of oceans, and burrow in sand and mud.
- Bilateral Symmetry-Round, slender, elongated, tapered at both ends- whip bodies back and forth to move, some can swim.
- Muscles extend length of body
- Hydrostatic skeleton

Phylum Nematoda-Roundworms

- Pseudocoelomate – “tube w/in tube” 2 opening digestive tract, anus – posterior end opening
- Respiration, Circulation, and Excretion -no structures (rely on diffusion)
- Simple nervous system with several ganglia control movement and transmits sensory info (nerves run length of body).
- There are two sexes, but some are still hermaphroditic.
- Internal fertilization-deposit sperm into reproductive tract

Roundworms



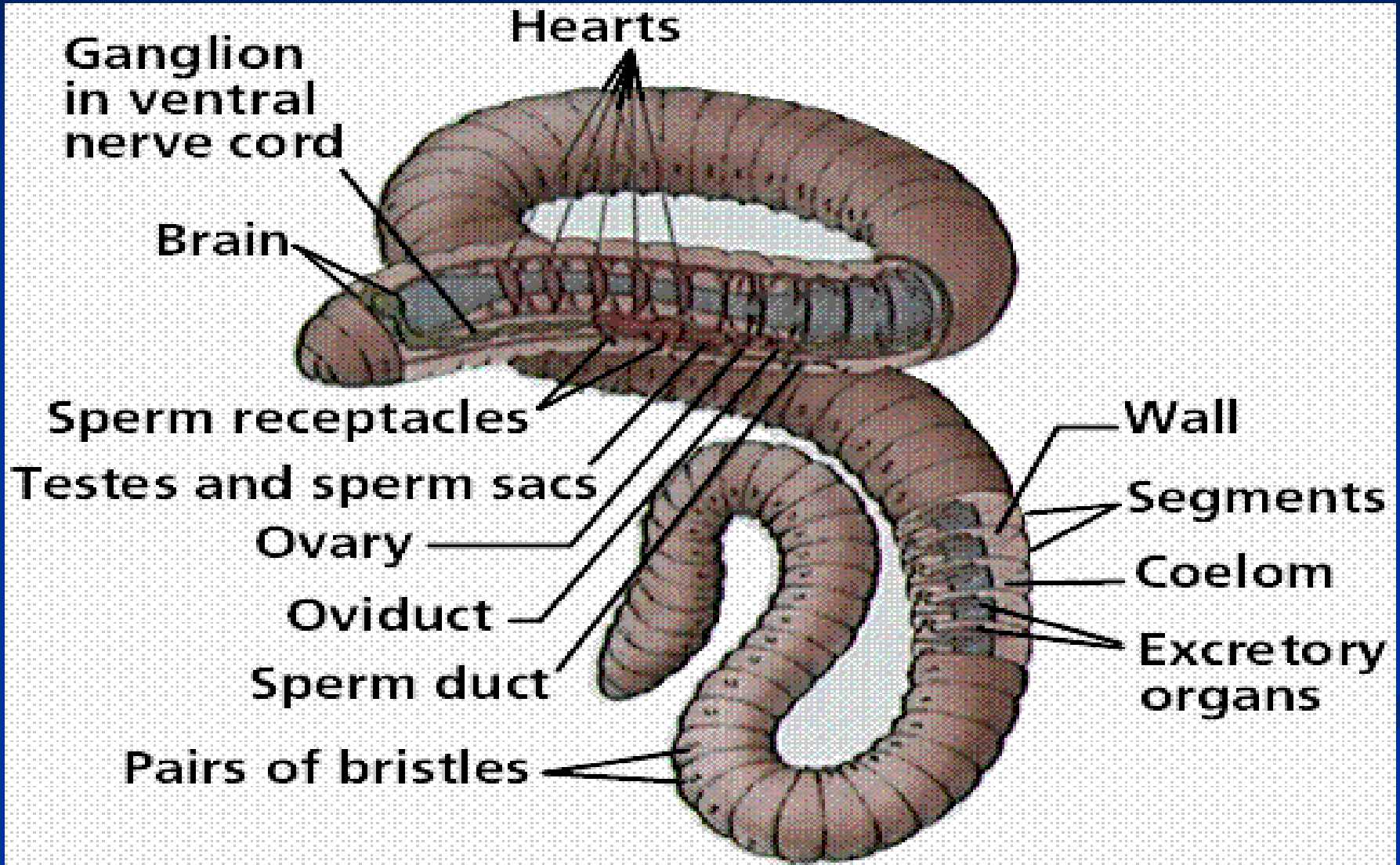
Phylum Annelida- Segmented Worms



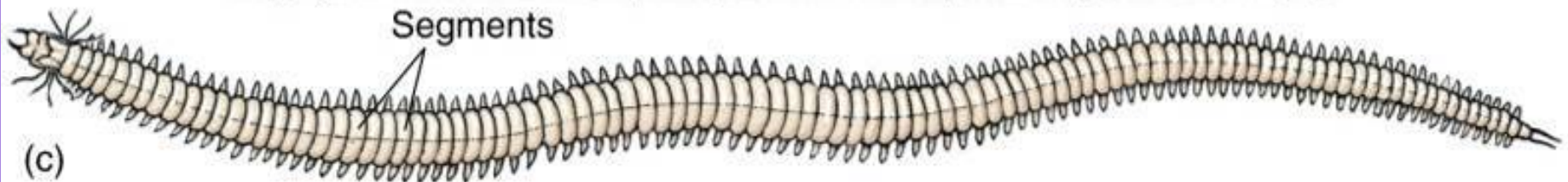
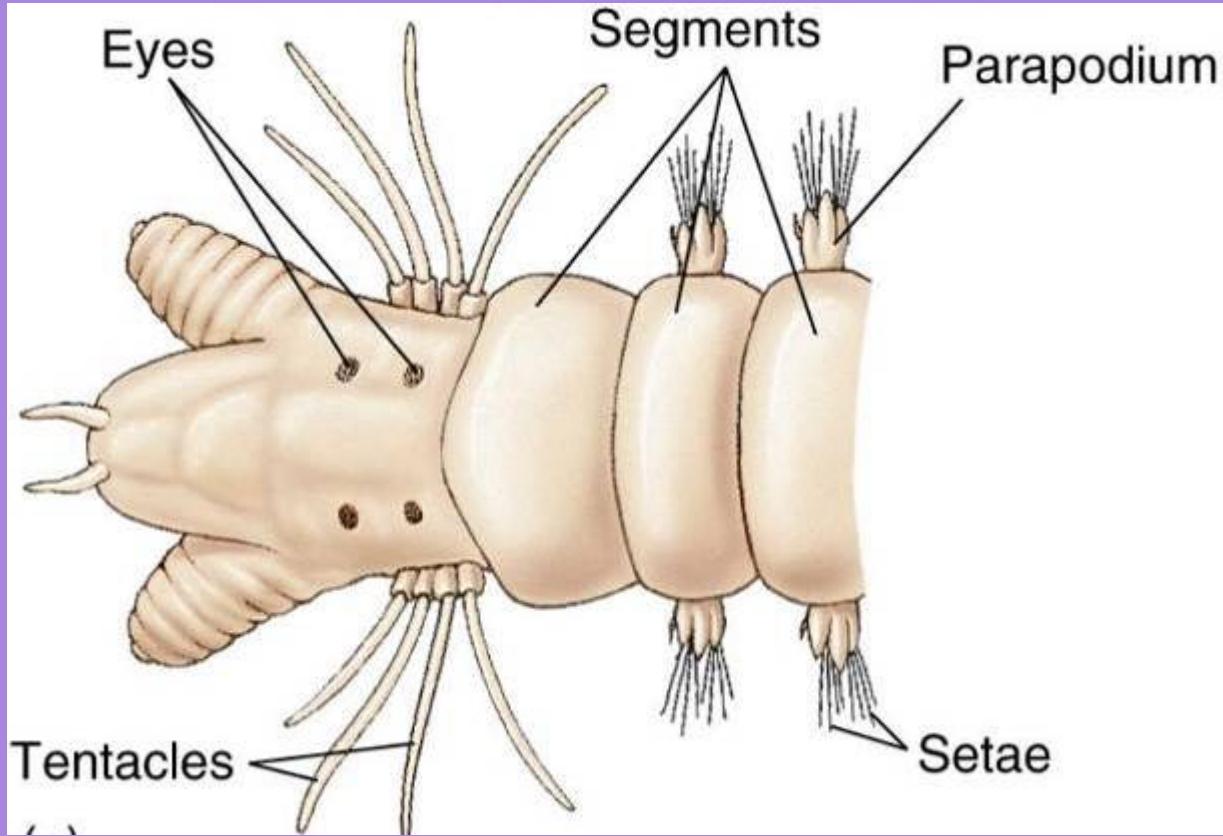
Segmented Worms

- Typically found in moist soil or sand.
- Belong to the Phylum “Annelida”.
- More than 10,000 species of segmented worms.
- Well developed digestive, circulatory, and nervous systems.
- Breathe (O_2 and CO_2 diffuse) through the skin.
- Divided internally and externally into segments that allow them to be more mobile by enhancing leverage
- Longitudinal and circular muscles, allowing them to crawl, swim and burrow efficiently
- Bilateral symmetry

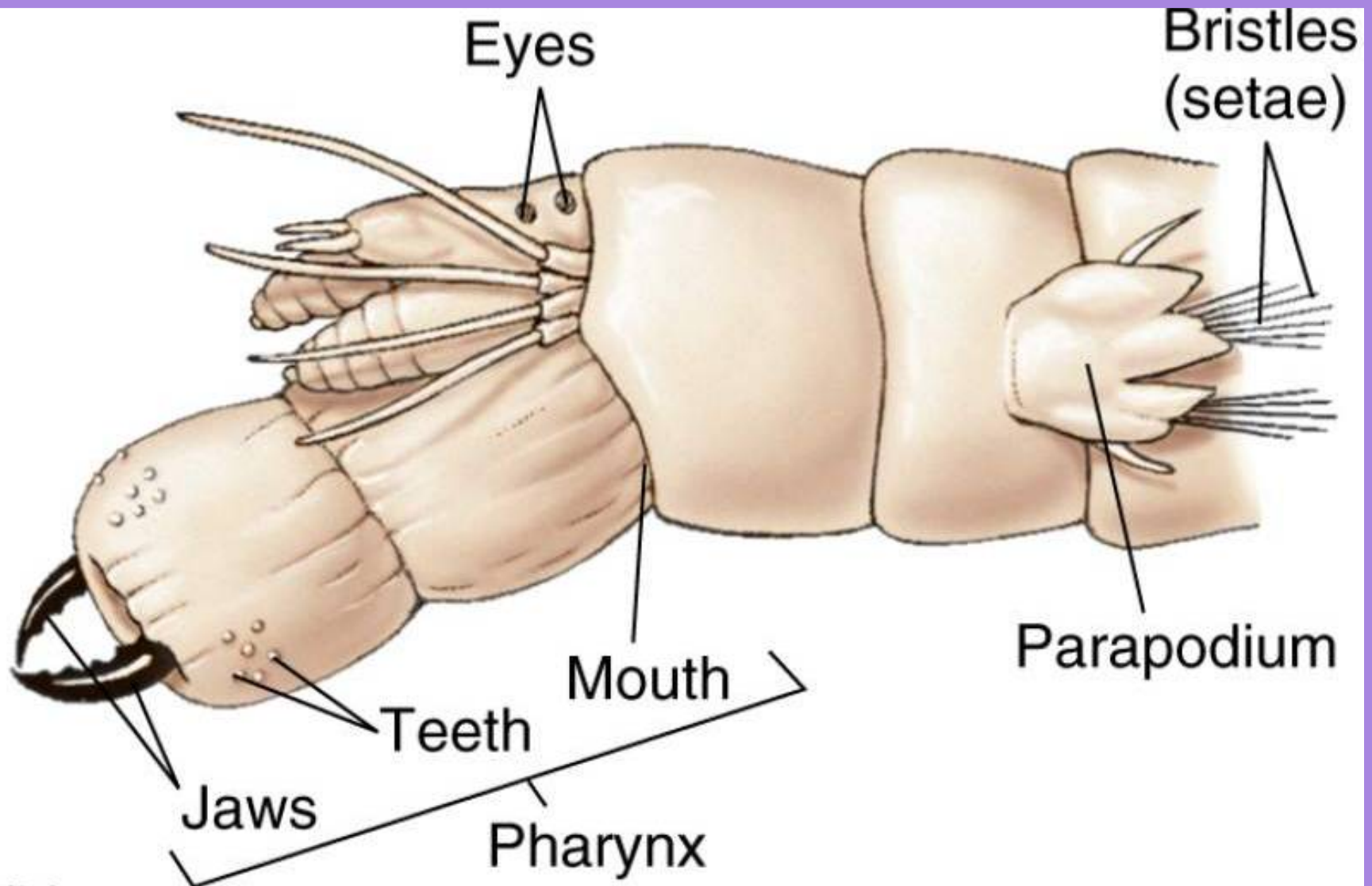
Segmented Worms



Segmented worms



Segmented worms



Segmented worms Class Polychaeta

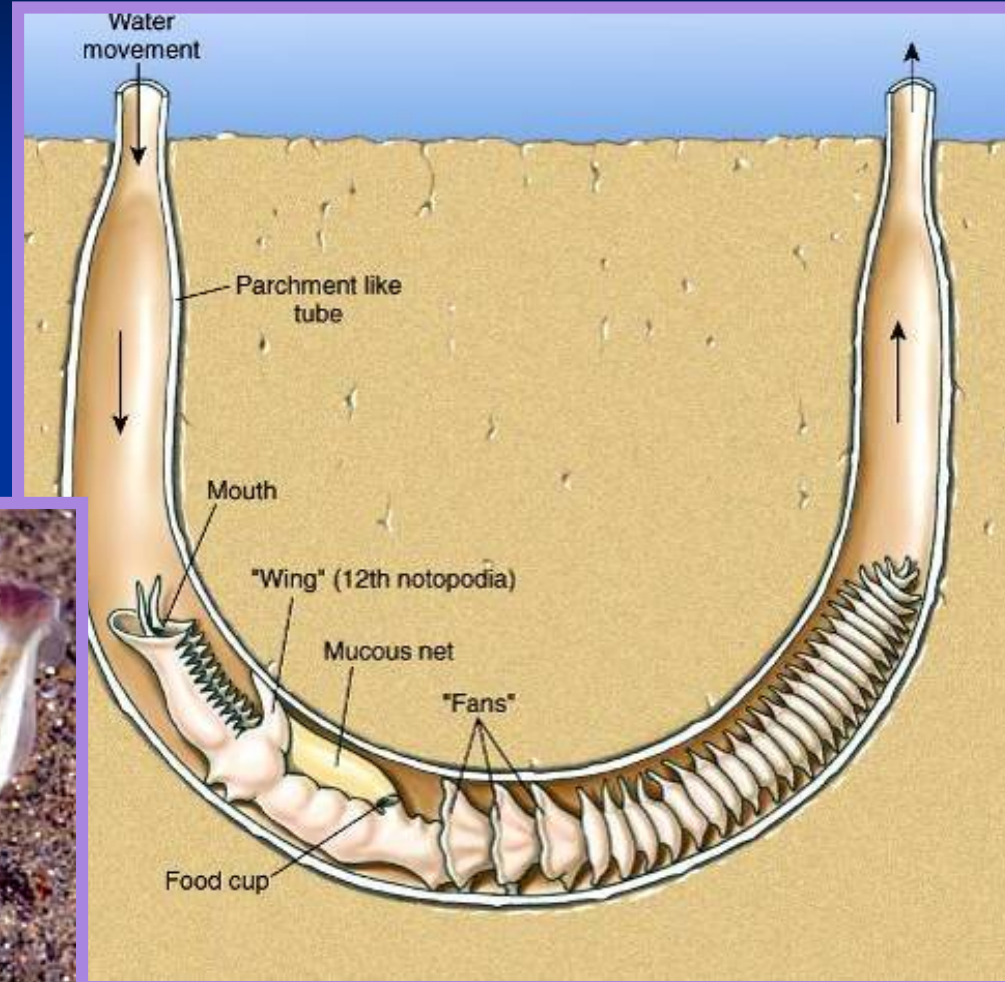


Segmented worms Class Polychaeta

Echiurans

U-Shaped tubes in mud

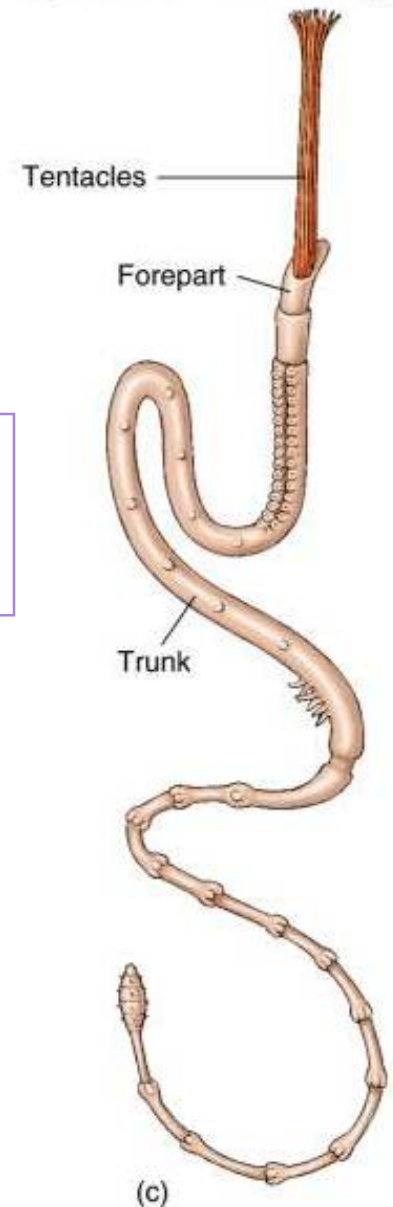
Chaetopterus



Segmented worms Class Polychaeta



**Pogonophora –
bearded worms**

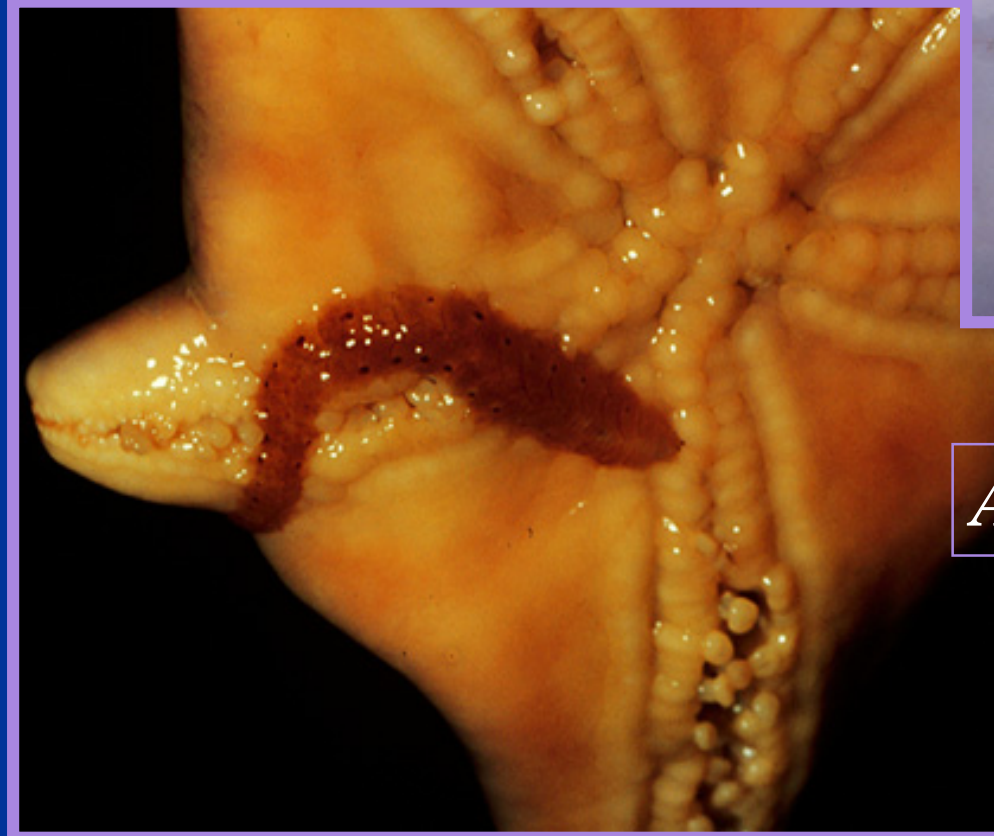


Segmented worms Class Polychaeta

Halosynda brevisetosa



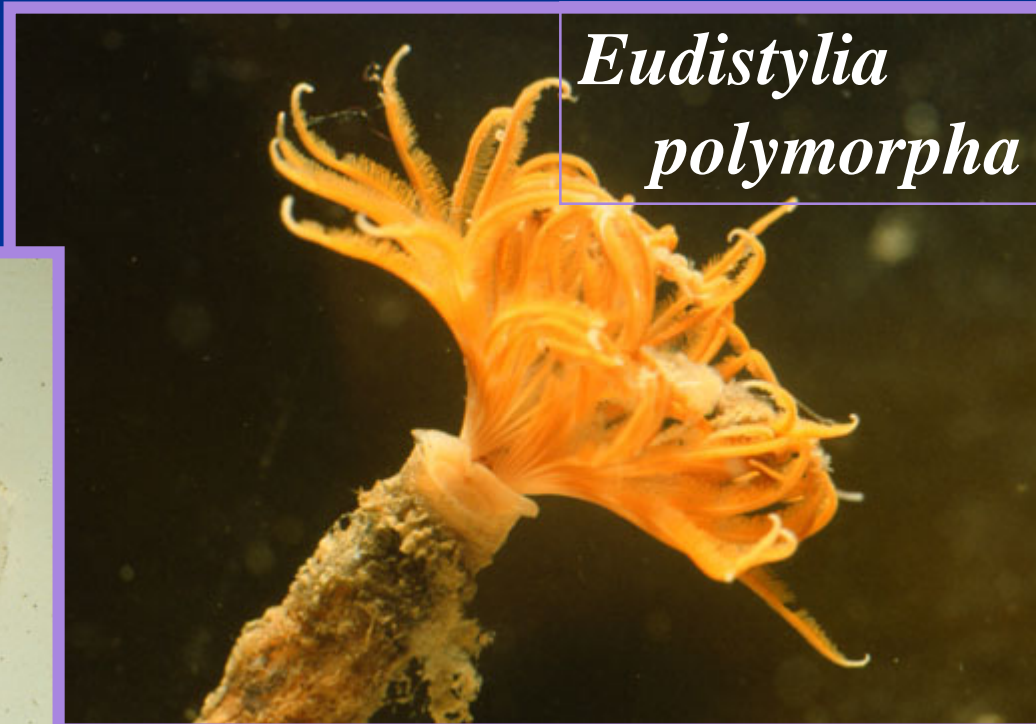
Arctonoe pulchra



Segmented worms Class Polychaeta



Segmented worms Class Polychaeta



*Eudistylia
polymorpha*

Nereis *vexillosa*

Segmented worms Class Oligocheata

- Lack parapodia
- Marine “earthworms”
- Found in mud and sand



Segmented worms

Class Hirundinea

- Leeches
- Bloodsucking
- No parapodia
- Found attached to fishes and invertebrates
- Suckers on each end of body

