

ANIMAL

KINGDOM



# CHARACTERISTICS OF ALL ANIMALS

- ▶ They are made of cells, which form tissues, which form organs which form organ systems.
- ▶ They obtain food by eating other organisms (herbivores, carnivores or omnivores).
- ▶ Most animals reproduce sexually but some can reproduce asexually.



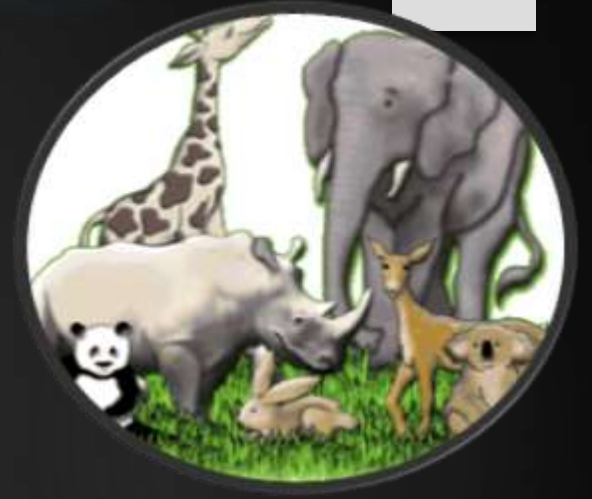
# TYPES OF FOOD EATERS



**Carnivore**  
**They are**  
**meat**  
**eater**



**Omnivore**  
**They eat**  
**plants and**  
**meat**



**Herbivore**  
**They are**  
**plant**  
**eater**

# DIVISION OF ANIMALS



**VERTEBRATES**



**Animals with backbones**



**INVERTEBRATES**



**Animals without backbones**

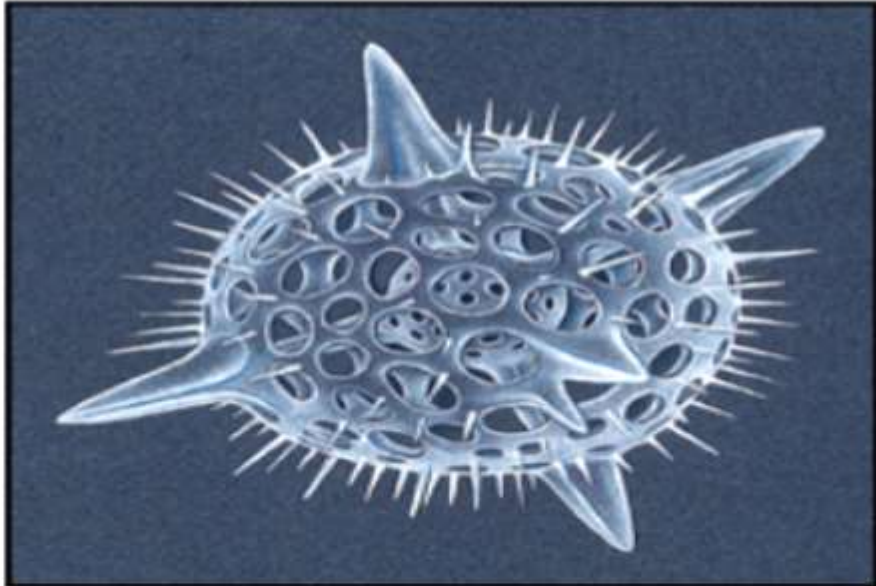
# TYPES OF SYMMETRY

- ▶ **Animals have bilateral symmetry (1 line that can divide the animal into 2 identical parts)**
- ▶ **or radial symmetry**
- ▶ **( many lines that can divide the animal into equal parts).**

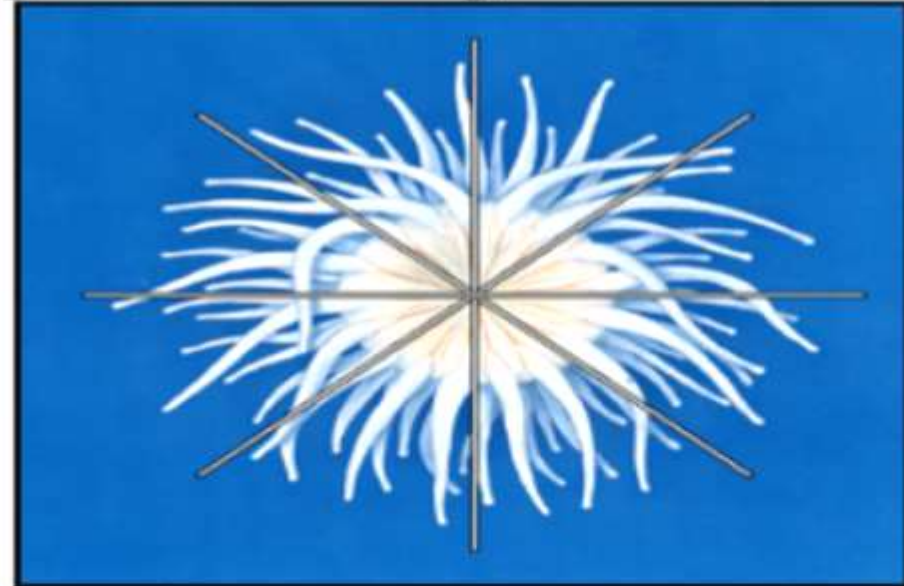


# ANIMAL SYMMETRY

## Animal symmetry



**Spherical symmetry**



**Radial symmetry**



**Bilateral symmetry**

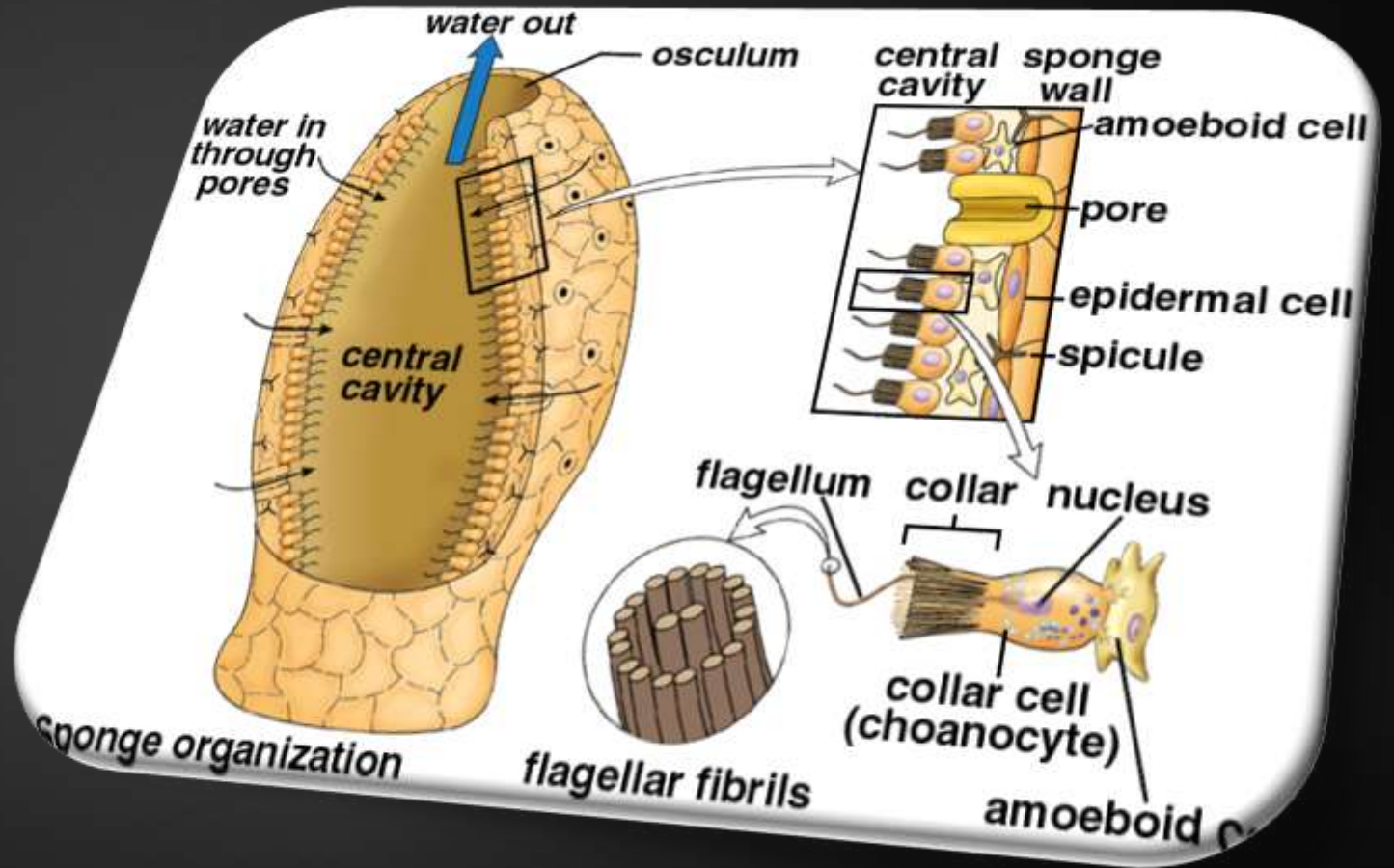
# PORIFERA

- ▶ Simplest form of animal
- ▶ No tissues or organs
- ▶ heterotrophic & cells that have specialized jobs
- ▶ Bodies pierced all over with openings called pores



# HOW DO SPONGES EAT & BREATHE?

- ▶ Collar cells on the inside of central cavity trap bacteria & protists & digest them.
- ▶ Sponges get O<sub>2</sub> by diffusion.





- ▶ Soft bodies have network of spikes.
- ▶ Made of tough material, but food for some types of fish.
- ▶ Can reproduce asexually (budding) and sexually. Fertilized eggs go through larvae stage.



# PHYLUM COELENTERATA

- ▶ Carnivores use stinging cells to capture prey & defend selves.
- ▶ Specialized tissues - no organs.
- ▶ Radial symmetry



**2 body types:  
polyp (like a  
vase with a  
mouth opening  
at the top)  
and medusa  
(bowl shaped).**



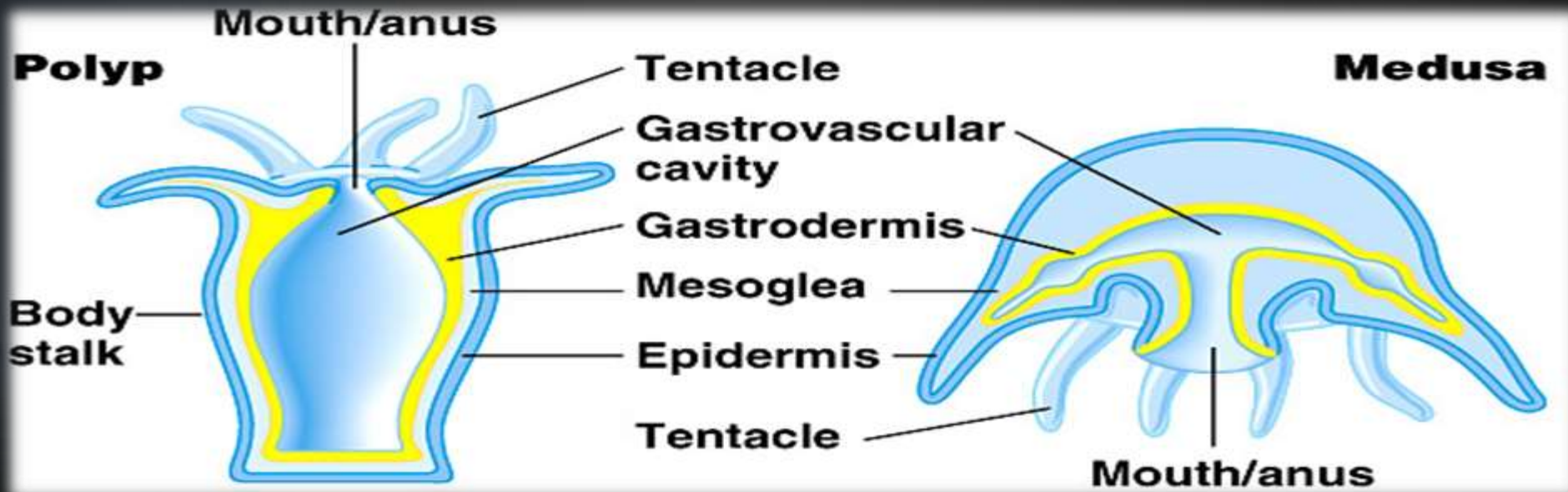
**(a) Sea anemone: a polyp**



**(b) Jelly: a medusa**

# Digestion

- ▶ Capture prey using stinging cells to inject venom - paralyzes prey
- ▶ Pull prey into mouth, digest in body cavity digestive system: 1 opening - expel food from mouths also.



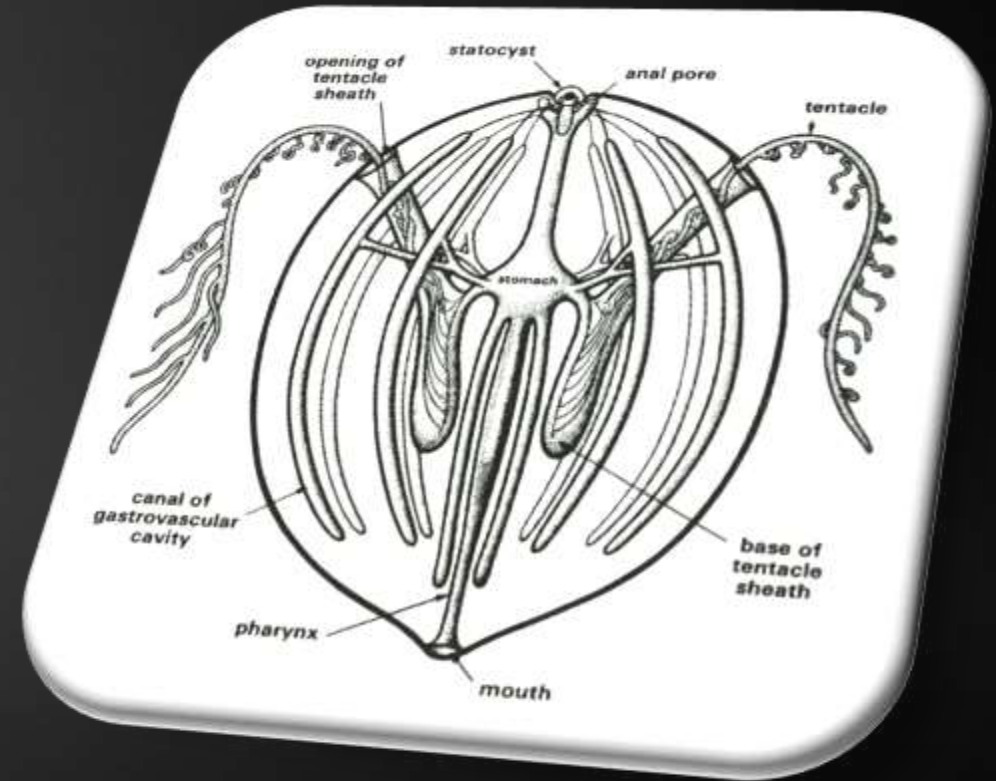
# PHYLUM CTENOPHORA (COMB BEARERS)

- ▶ Defining Characteristics
  - ▶ Plates of fused cilia arranged in rows
  - ▶ Adhesive prey capturing cells (colloblasts)
- ▶ Comb jellies are delicate, transparent, non-stinging predators

# CTENOPHORA STRUCTURE

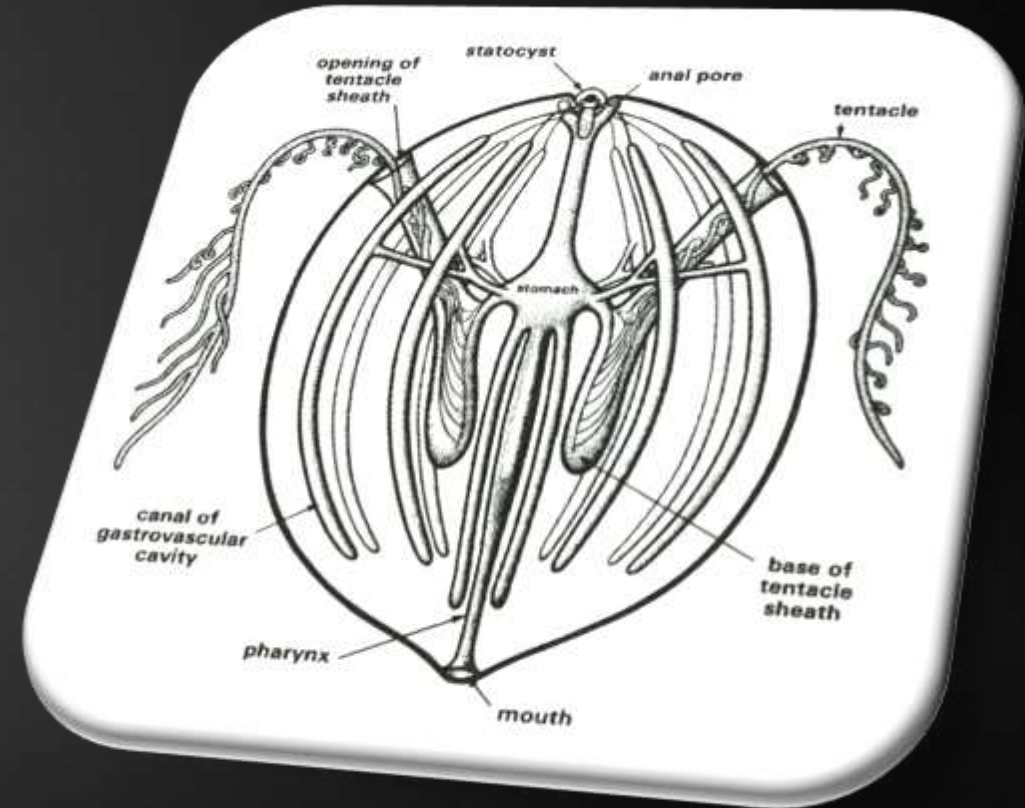
▶ Similar in structure to Cnidaria medusa

▶ Poorly studied due to fragile nature



# DIGESTION

- ▶ Feed on plankton, other ctenophores and other Cnidarian jellies
- ▶ Gut extends through the entire body; mouth is at the oral end
- ▶ Anal pore is at the aboral end



# CTENOPHORE DIVERSITY

- ▶ Most species live in the open ocean and are not well studied
- ▶ New studies use submersibles and divers to collect specimens, eliminating specimen destruction by fast towed nets
- ▶ Phylum Ctenophora
- ▶ Order Lobata
- ▶ Order Beroida



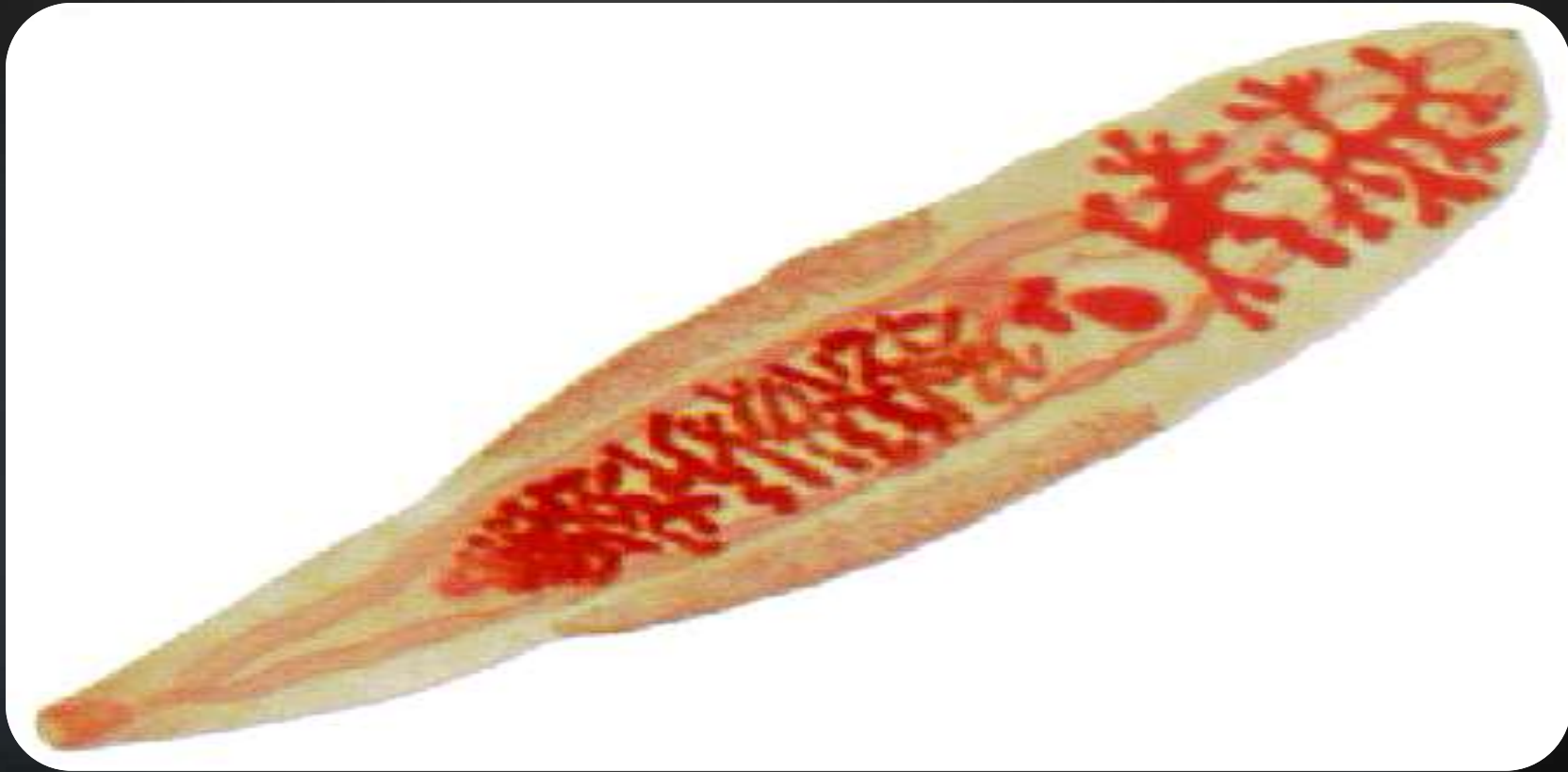
# PHYLUM PLATYHELMINTHES



# PHYLUM PLATYHELMINTHES

- ▶ **The flatworms**
- ▶ **They are triploblastic and have bilateral symmetry**
- ▶ **no body cavity (acoelomate)**
- ▶ **These animals are the first to exhibit a head.**
- ▶ **Many flatworms are parasites of chordates (fish, reptiles, mammals, etc..) These are the tapeworms and flukes**

The worms in this phylum are all very thin and flat, like this parasitic liver fluke.



All flatworms, including this planarian, have bilateral symmetry.



Flatworms are the first animals to have a head. Note the hooks and suckers on the head of this tapeworm.

