

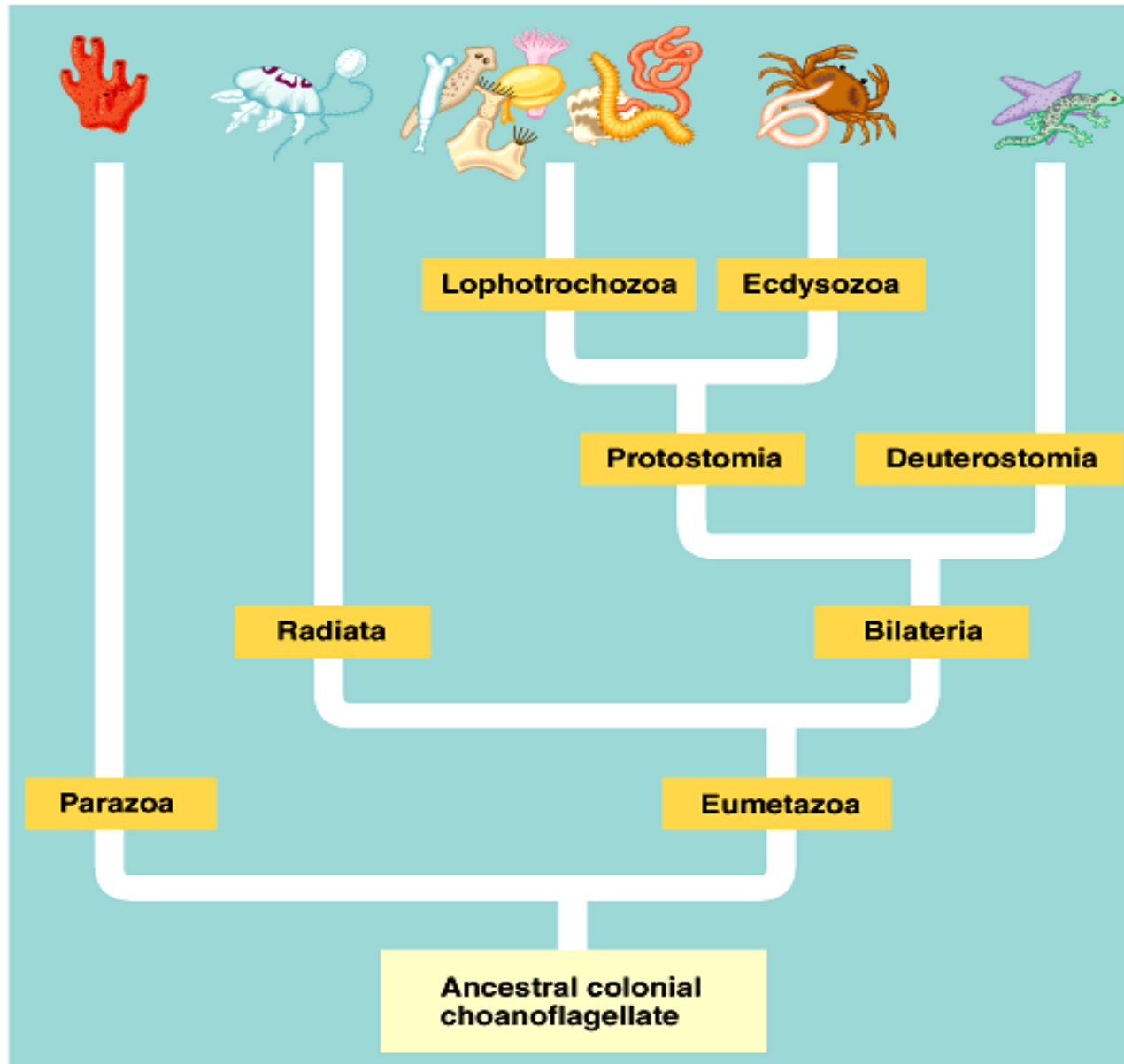
# Pre AP Biology

Animal Kingdom – Invertebrates

(8.14)

Part 1

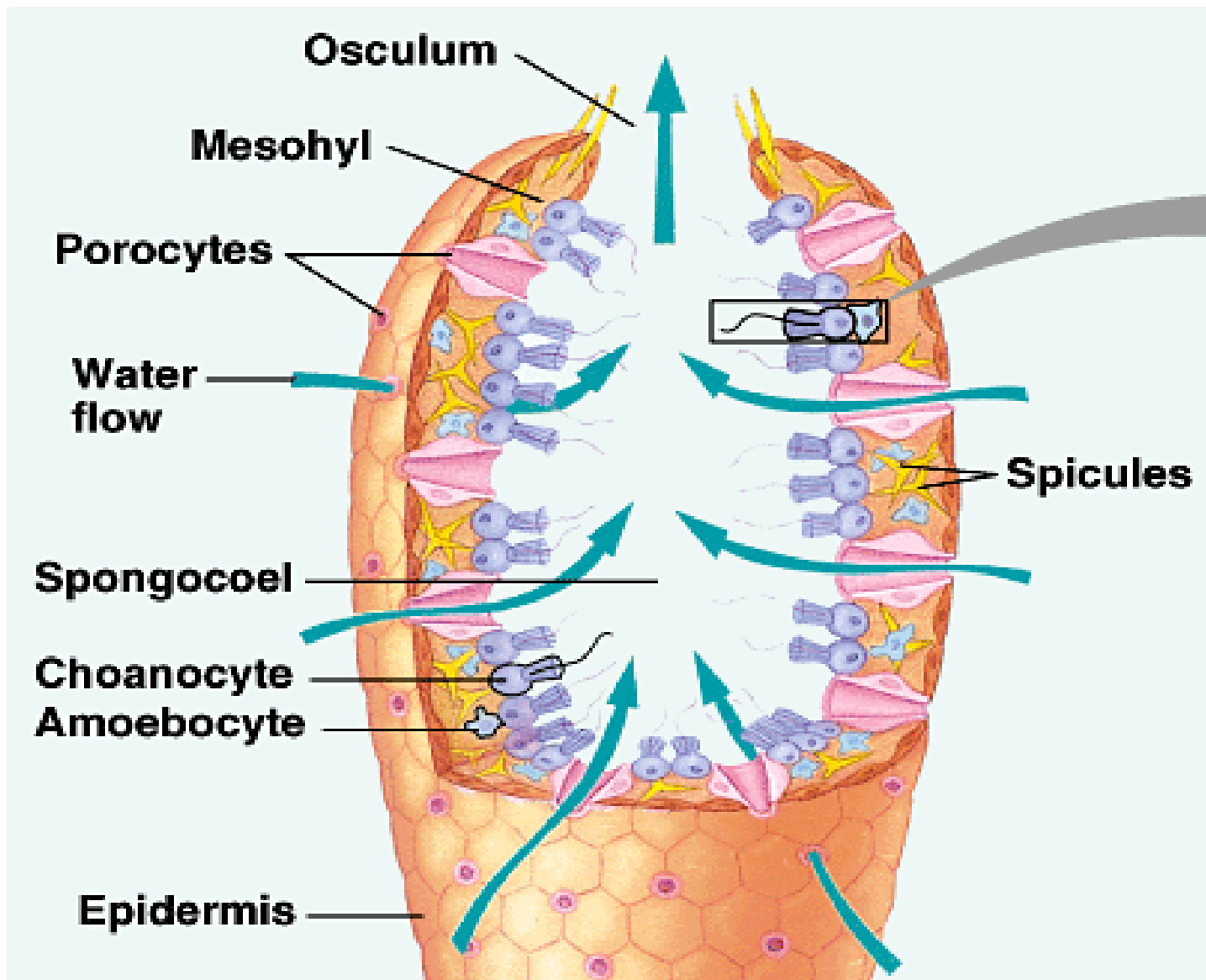
# Invertebrate Evolutionary Path



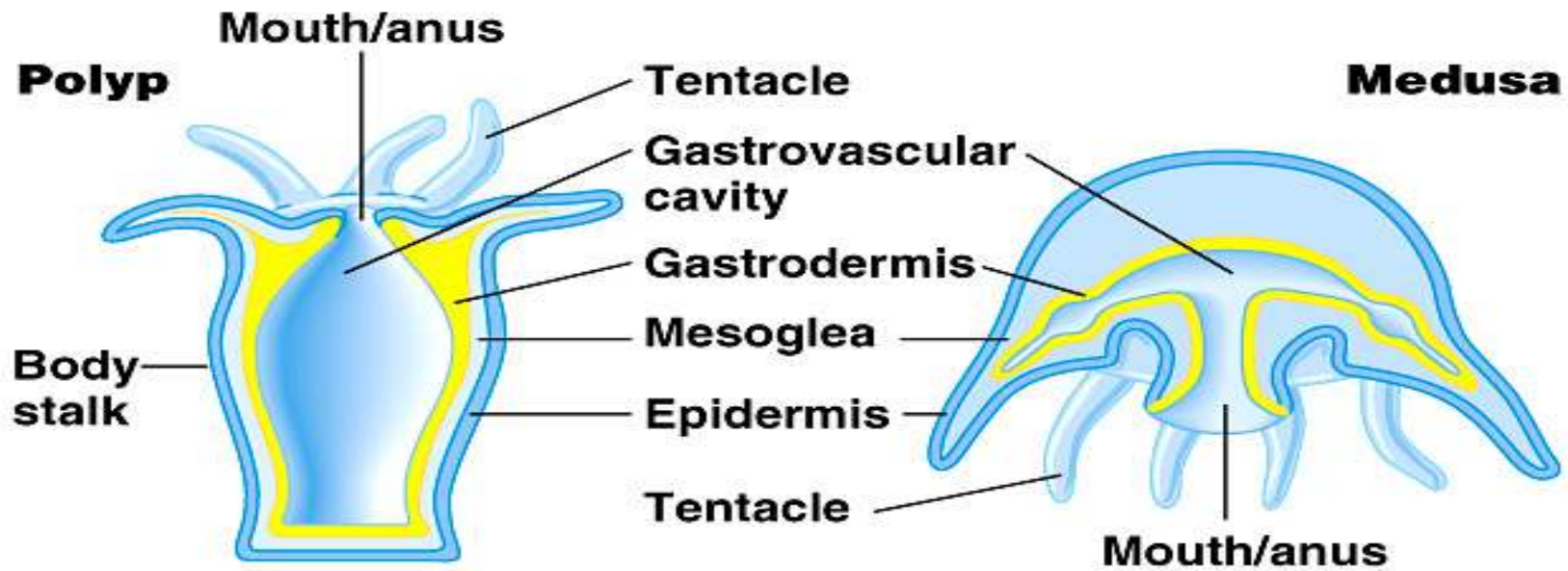
# Porifera



# Porifera Body Structure



# Cnidaria Body Structure



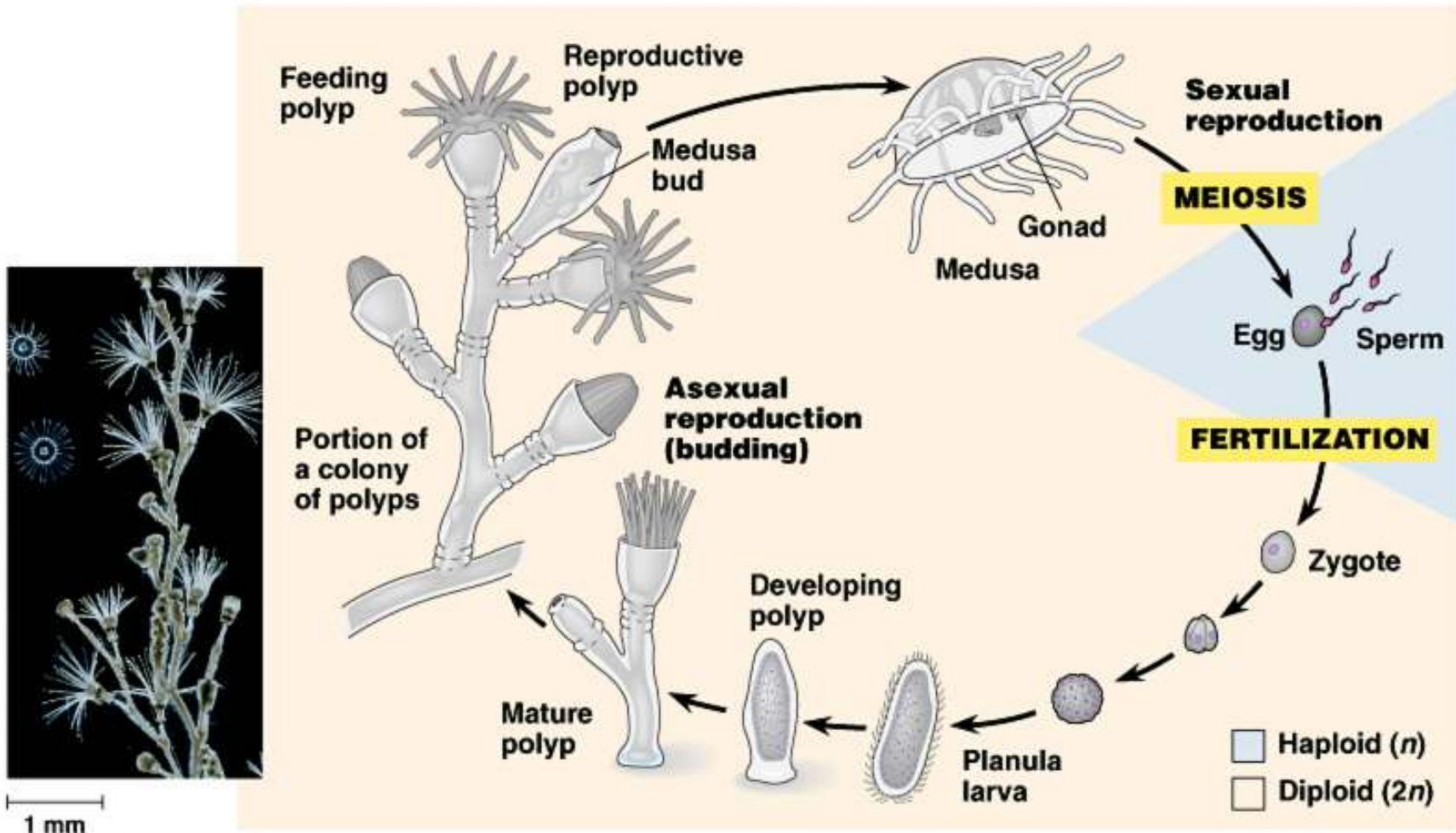
**(a) Sea anemone: a polyp**



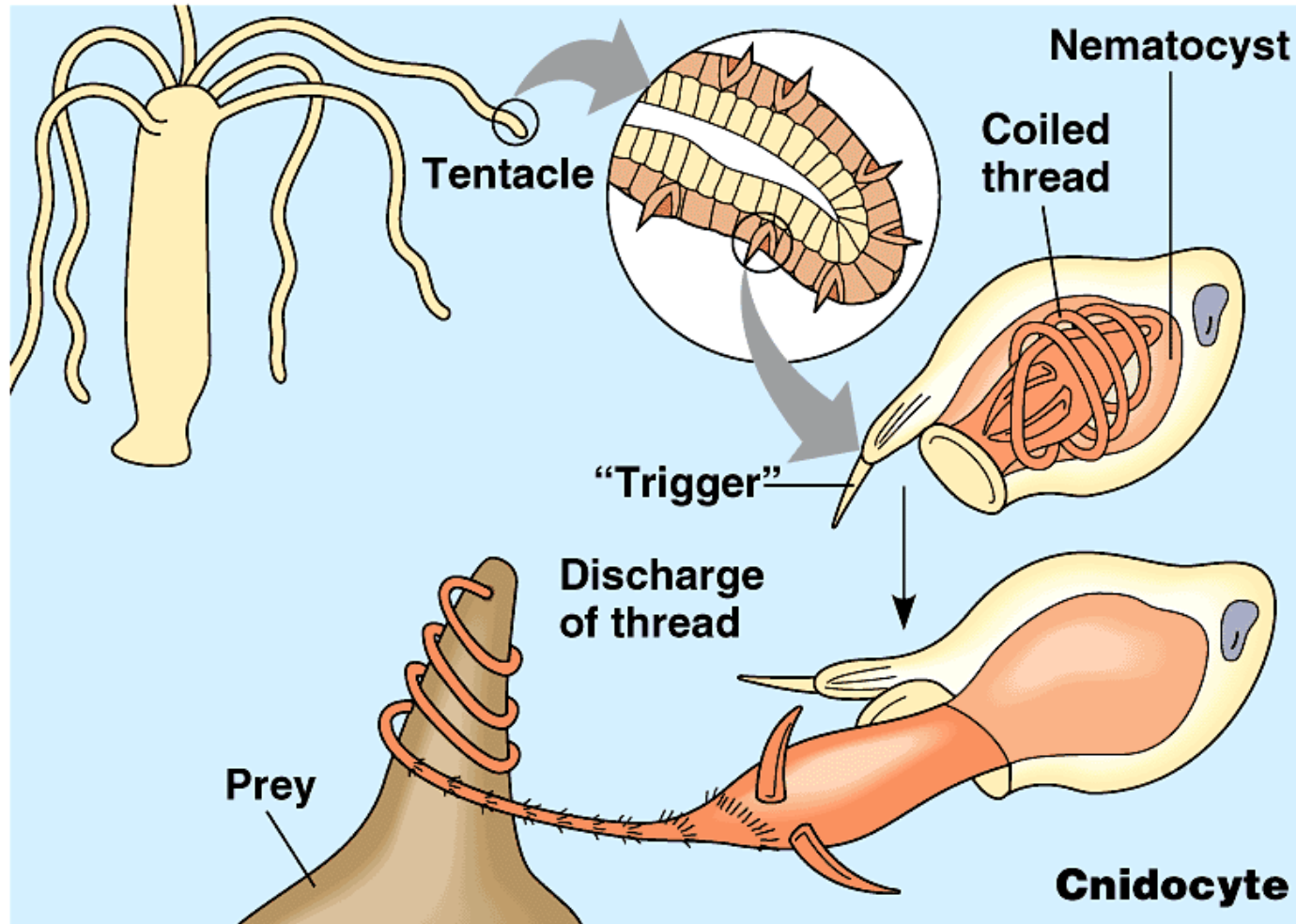
**(b) Jelly: a medusa**



# Life Cycle showing both forms



# Cnidocytes on Tentacles

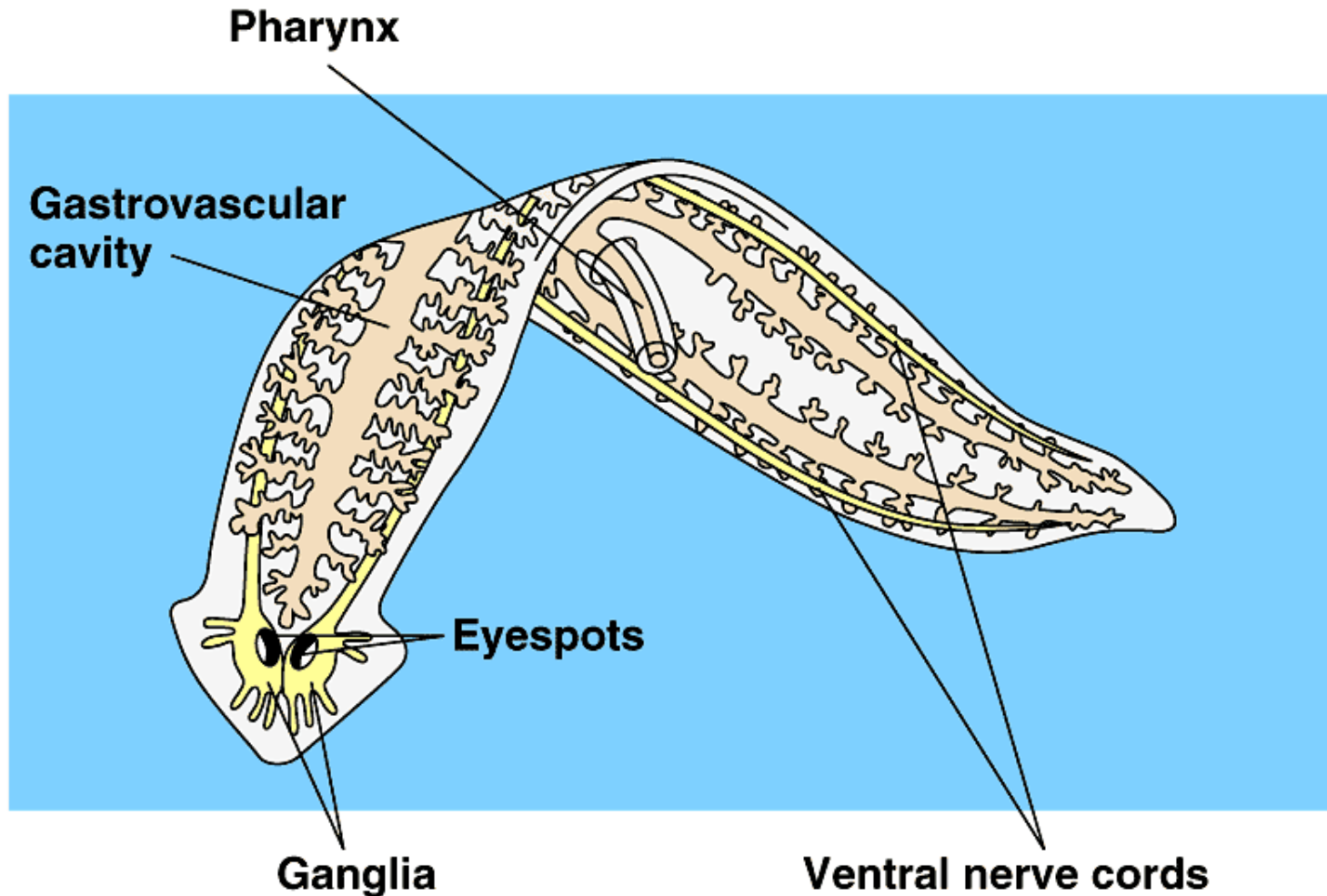


# Platyhelminthes

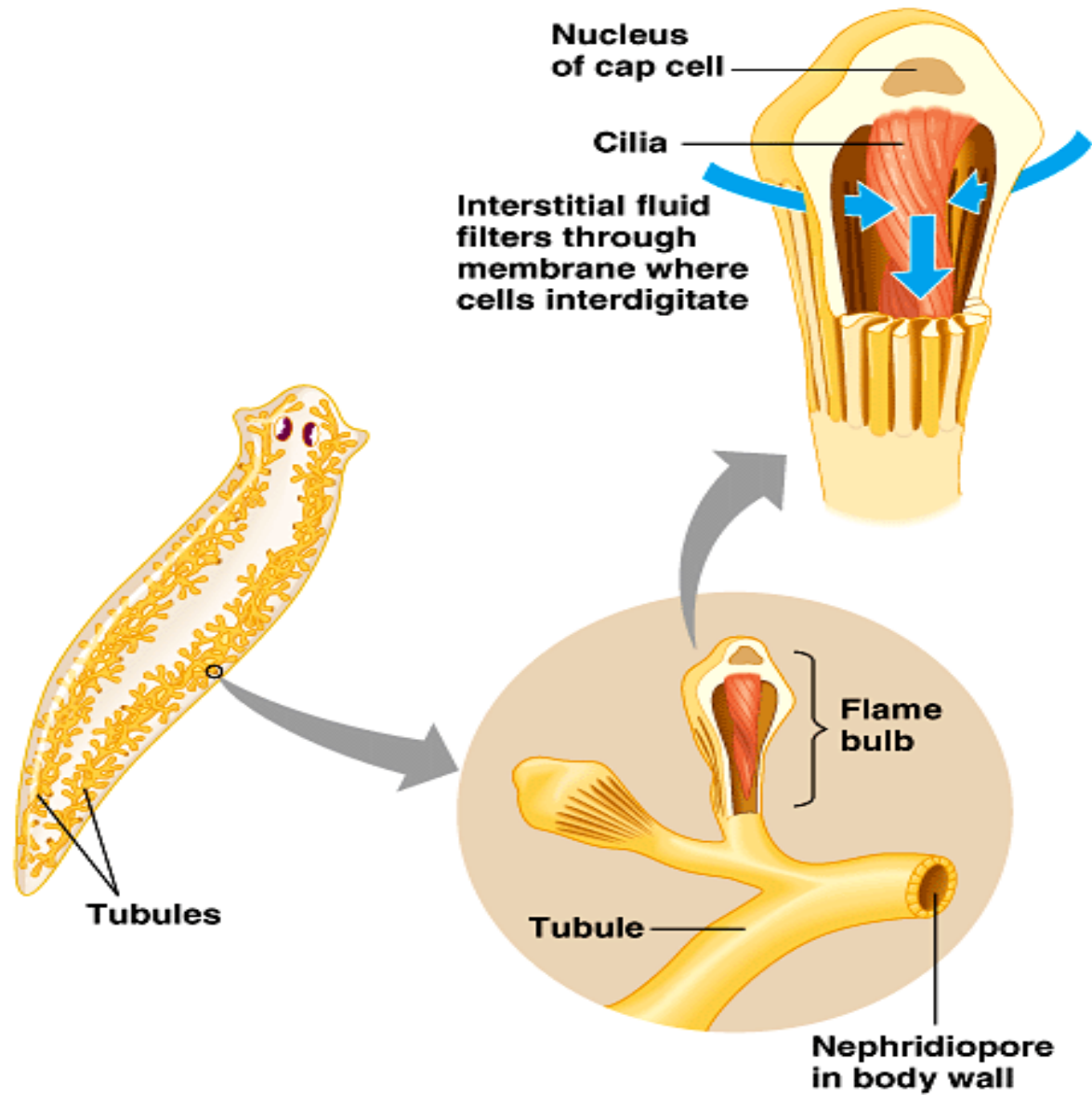




# Platyhelminthes Body Structure



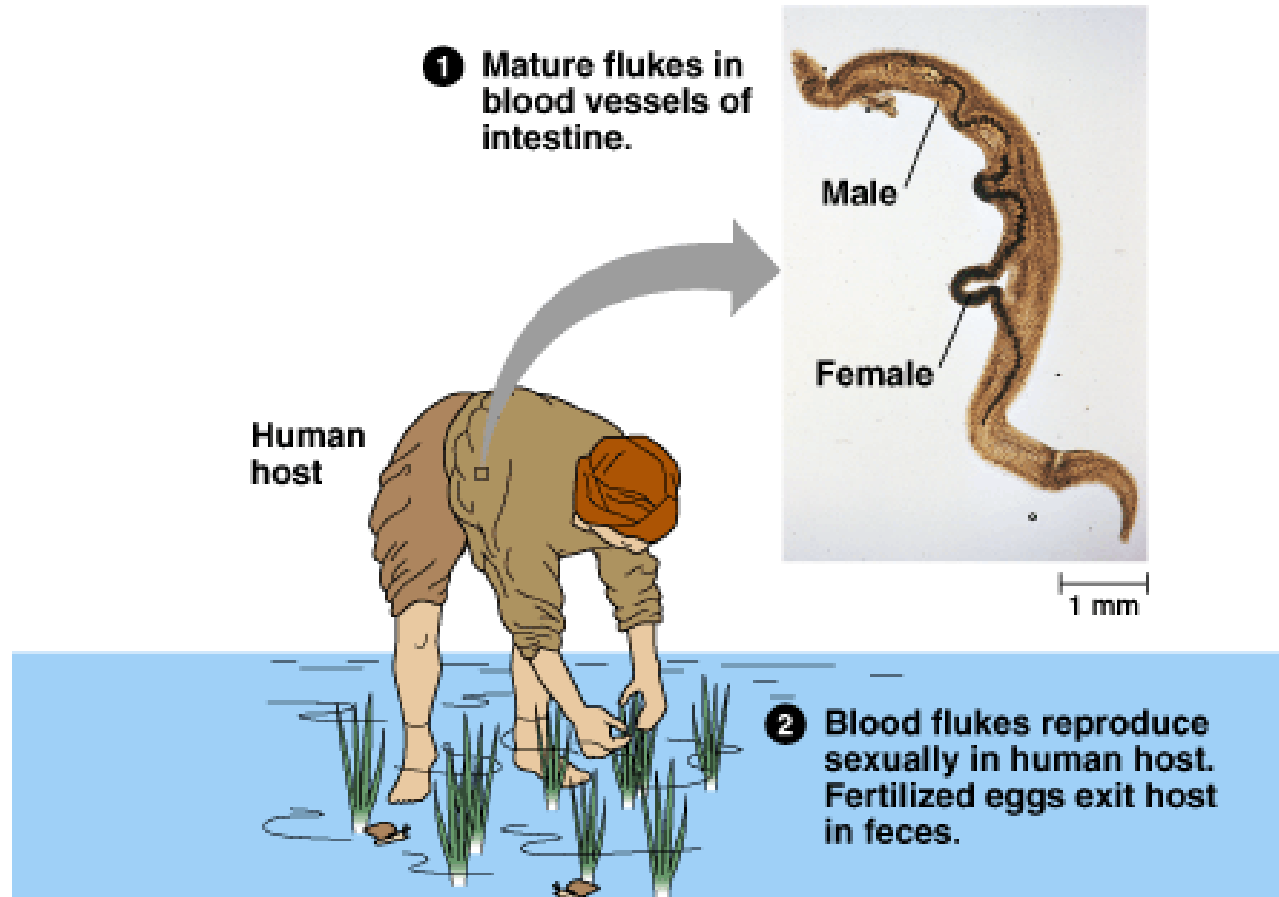
# Flame Cells



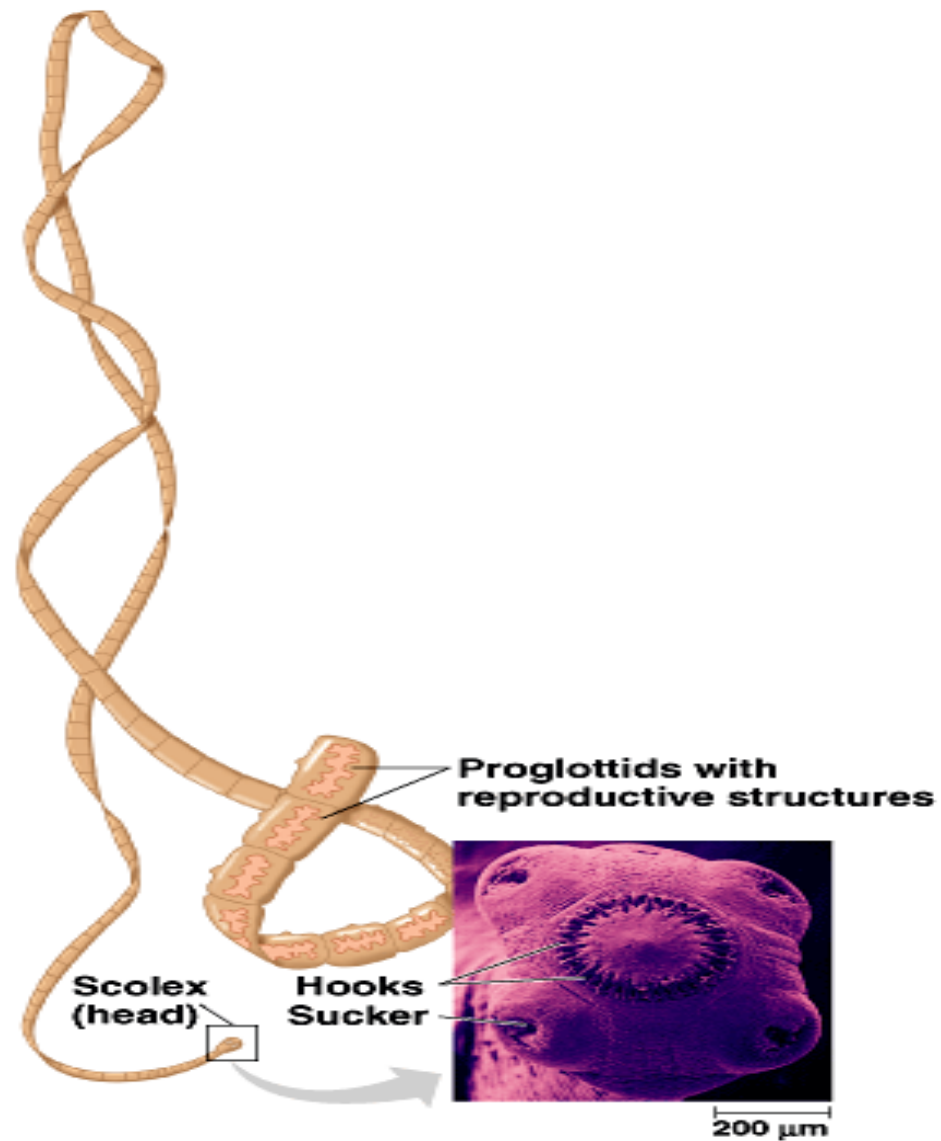
# Turbellaria



# Trematodes (Flukes)



# Cestoidea (Tapeworms)





# Pre AP Biology

Animal Kingdom – Invertebrates

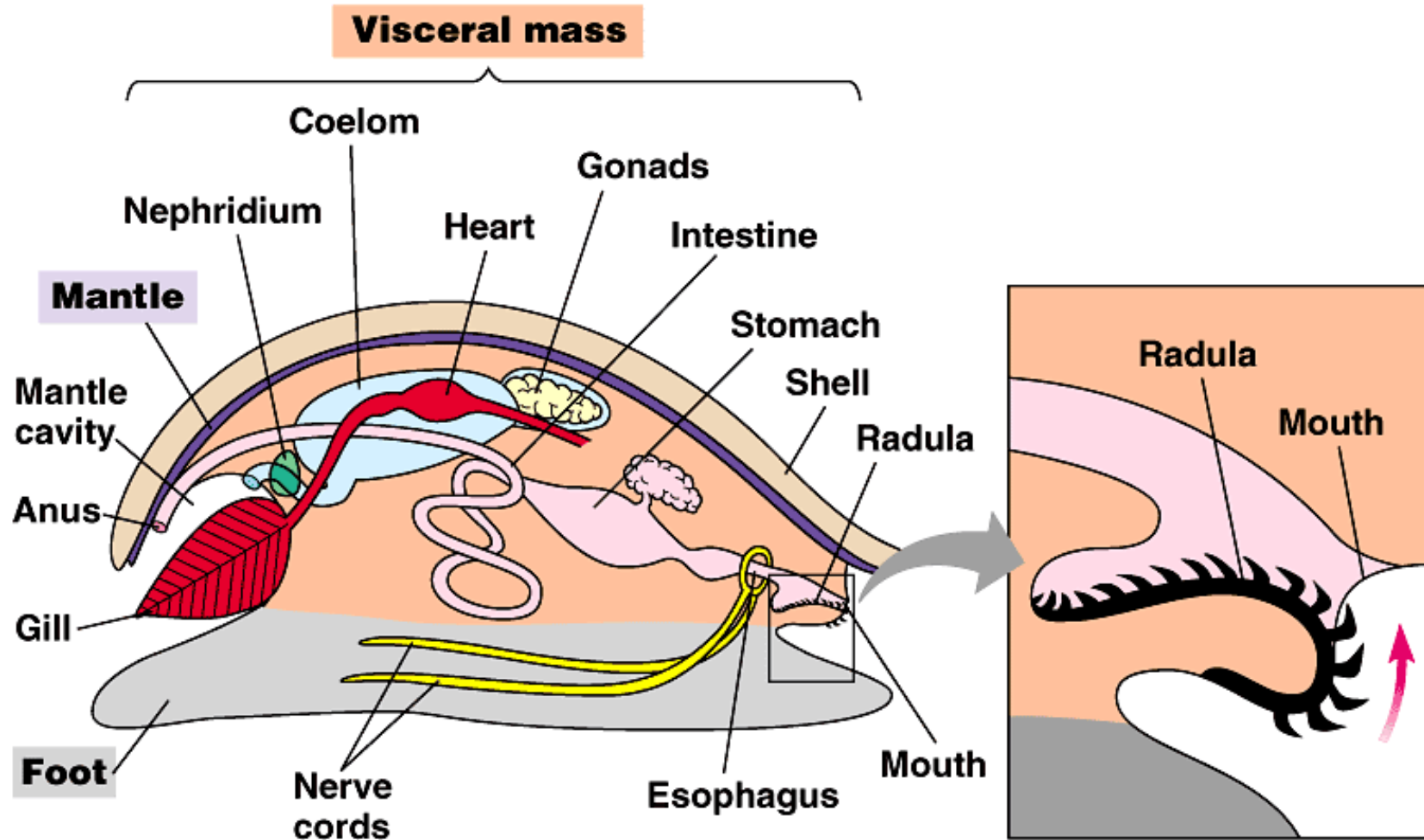
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Part 2

# Mollusks



# Basic Mollusk Structure





# Polyplacophora (“many plates”)

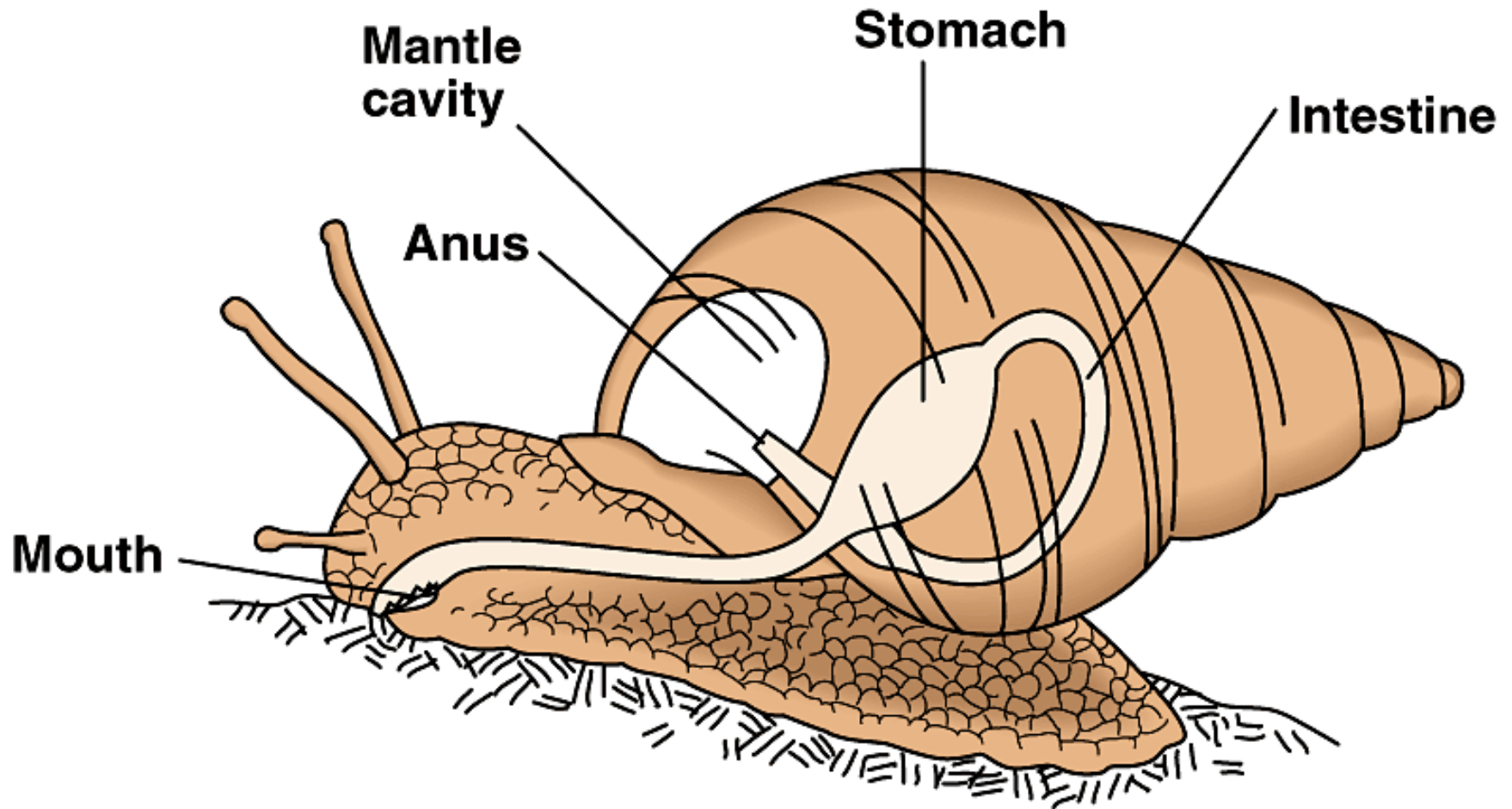


# Gastropoda (“stomach foot”)





# Basic Snail Body Structure

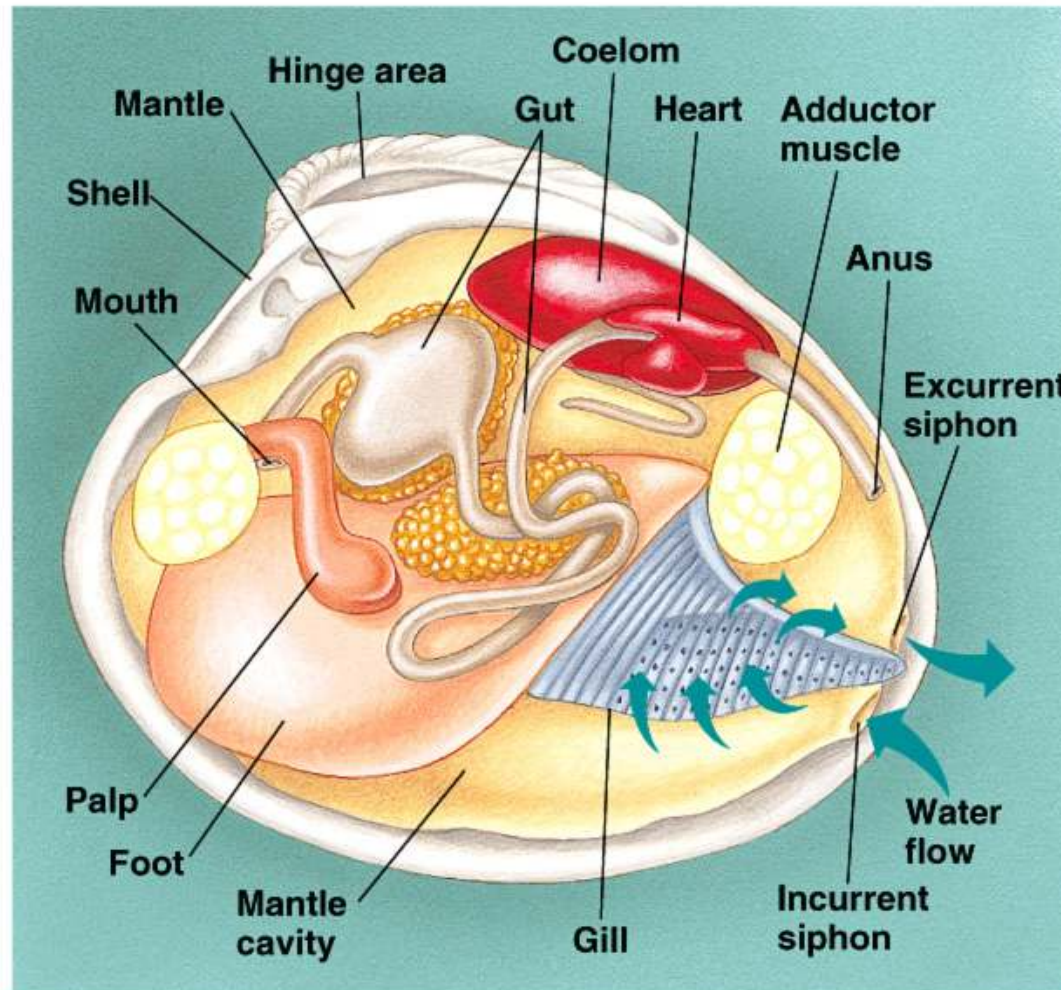


# Bivalvia



Benjamin  
Cummings

# Basic Bivalve Body Structure



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# Cephalopoda (“head foot”)



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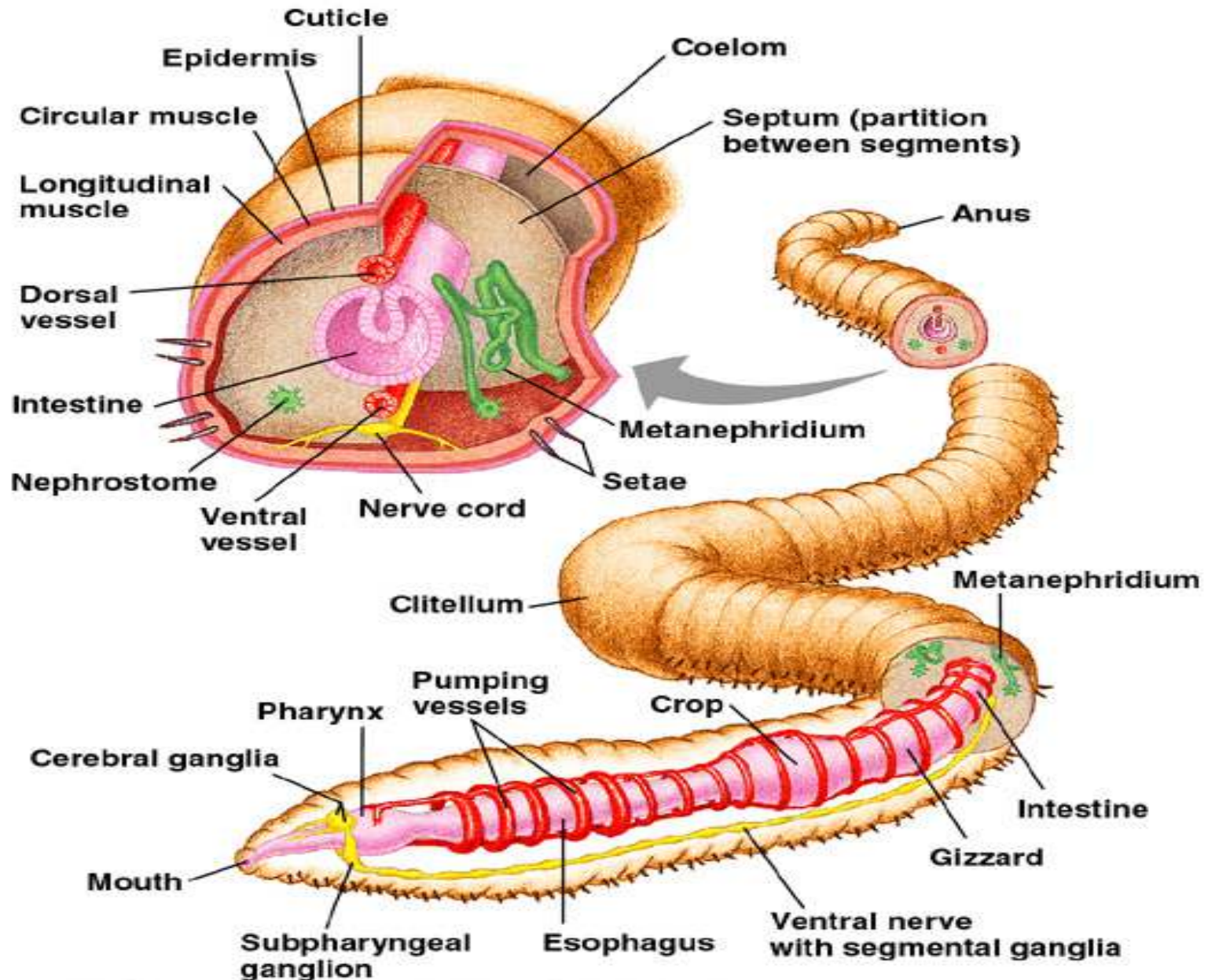
Part 3



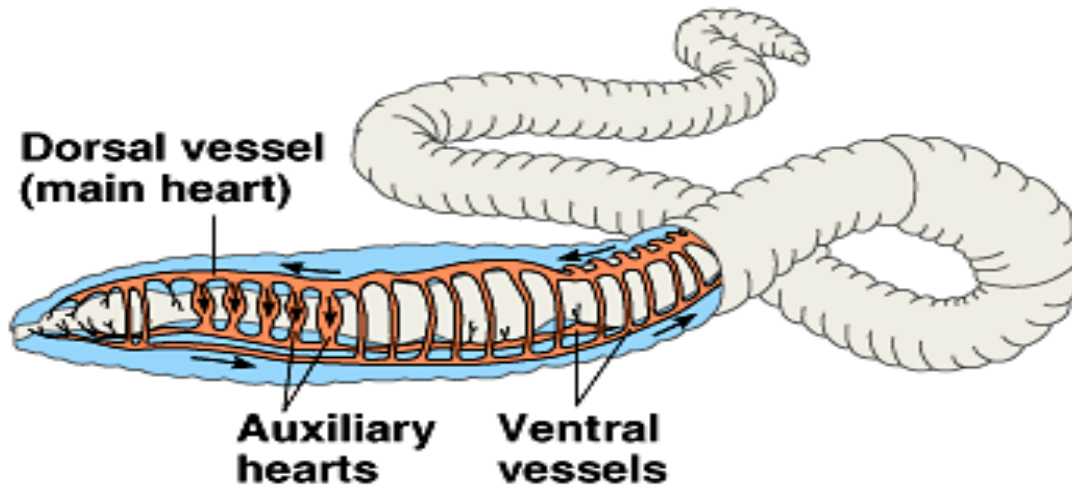
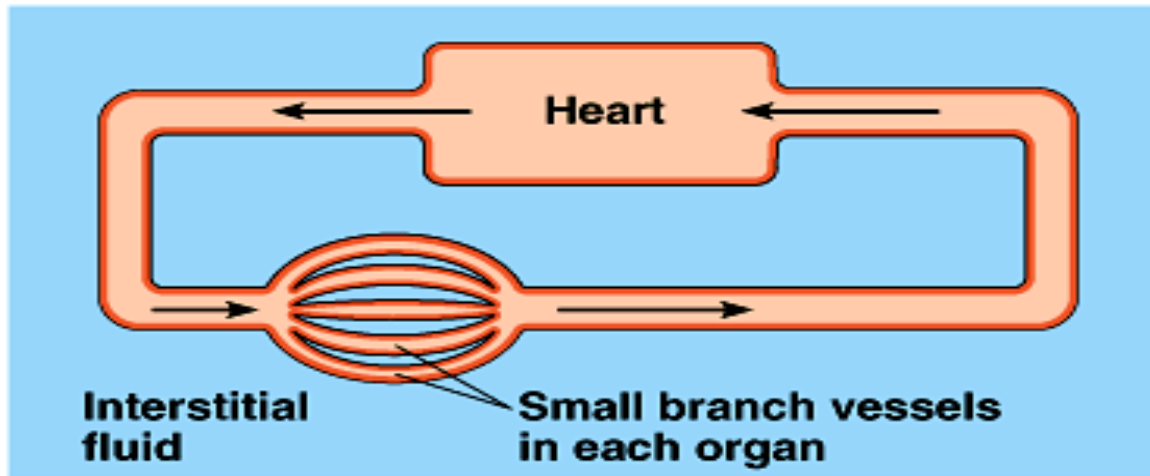
# Annelids (“segmented worms”)



# Annelid Body Structure



# Closed Circulatory System



**(b) Closed circulatory system**

# Oligiochaeta (Earthworm)





# Polychaeta (Marine Worms)



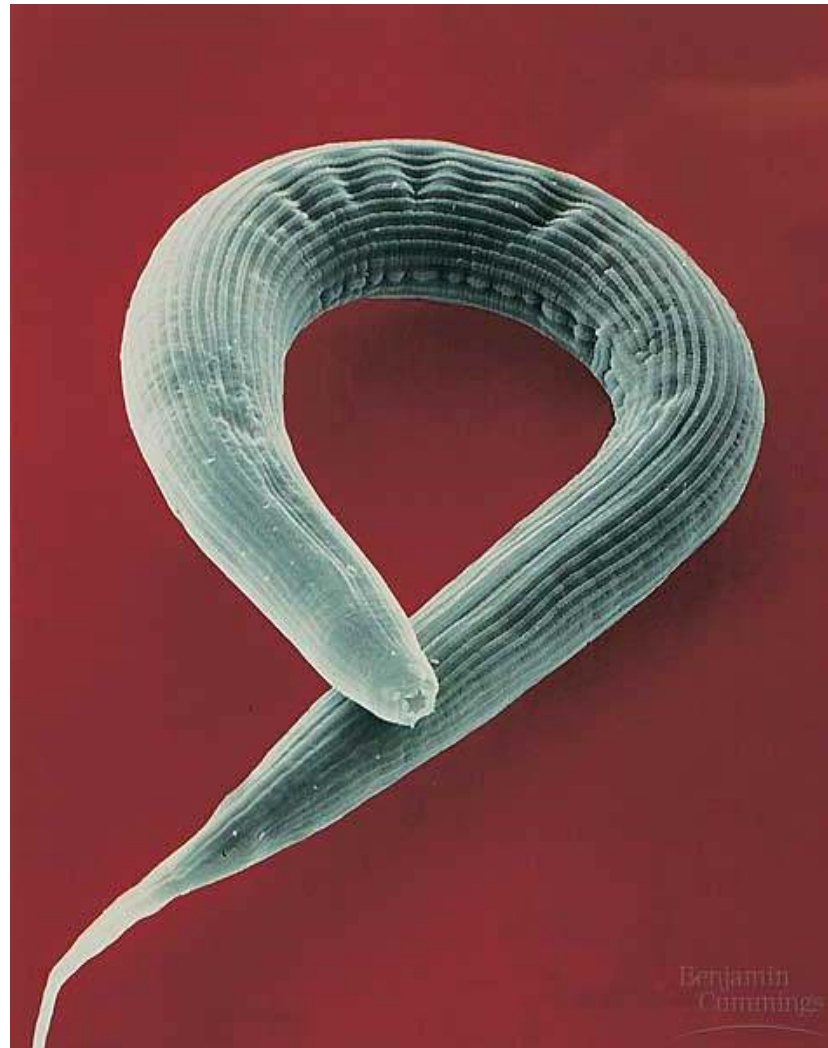


# Hirudinea (leach)

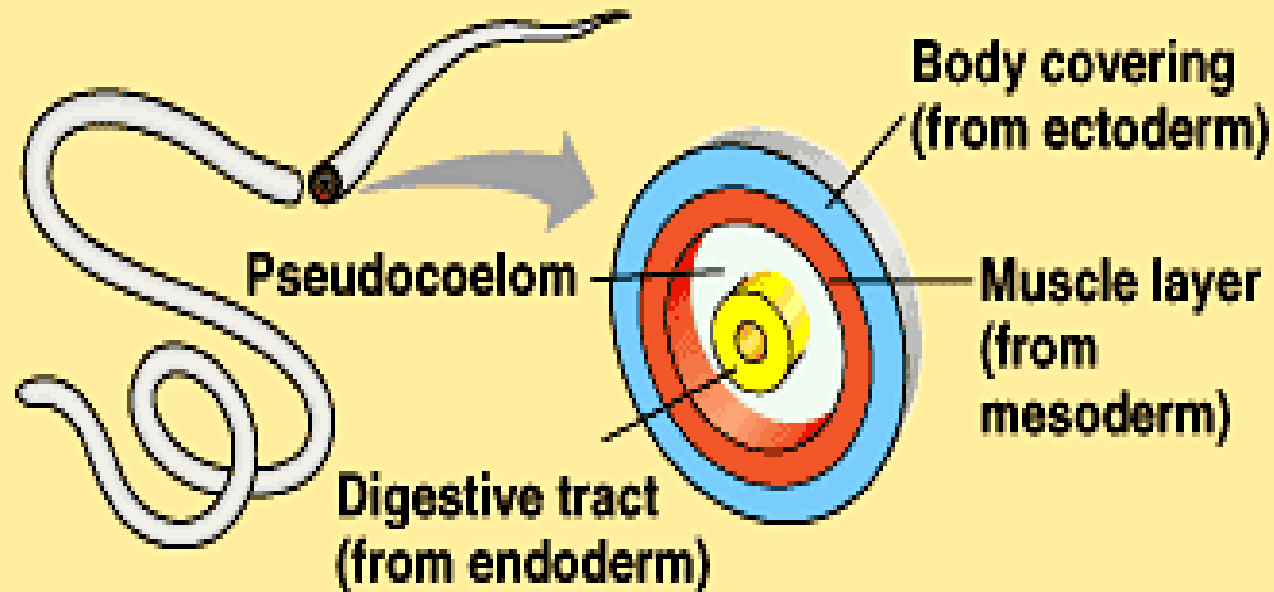


# Nematoda

(Round, unsegmented worms)



# Pseudocoelomates



(b) Pseudocoelomate

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Part 4



# Arthropods (Jointed animals)



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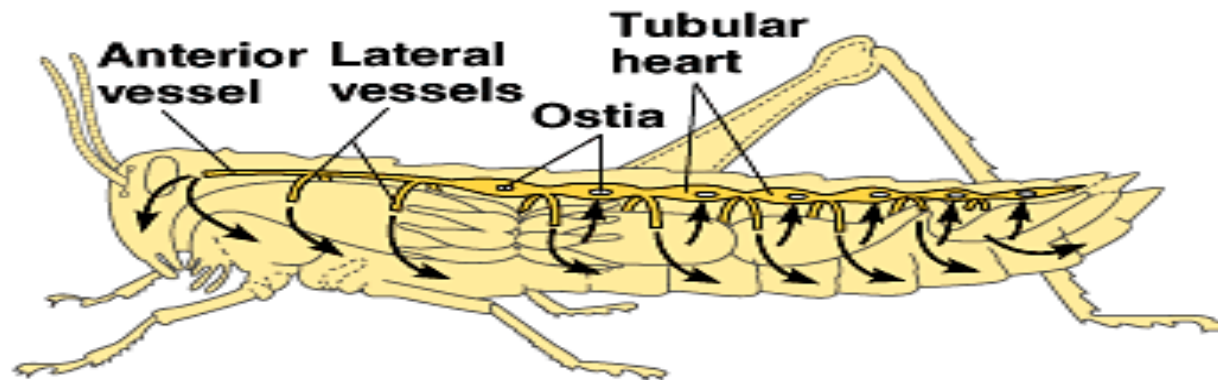
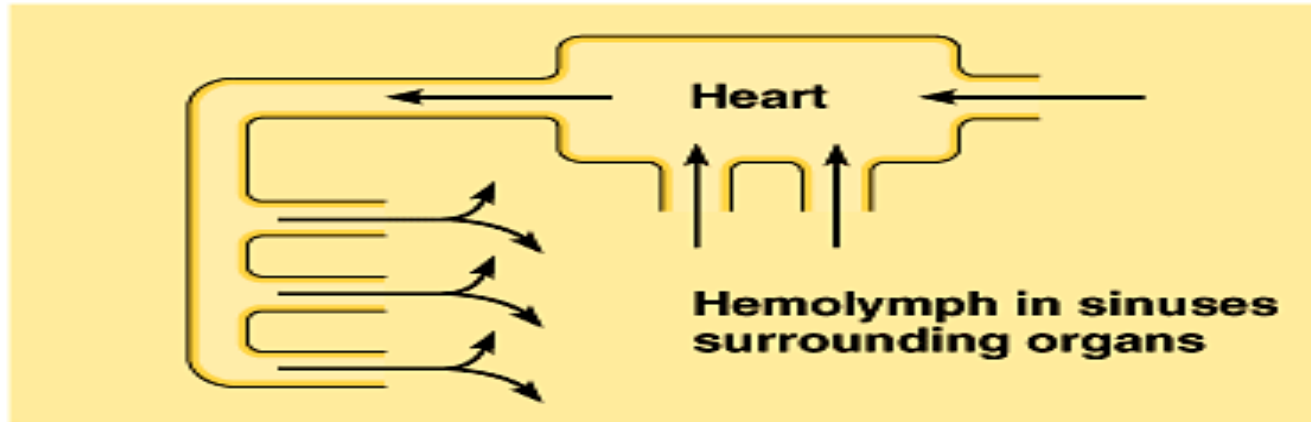
# Arthropods



High Degree of Cephalization **Sensory**  
**Organ accumulation in the anterior**



# Open Circulatory System

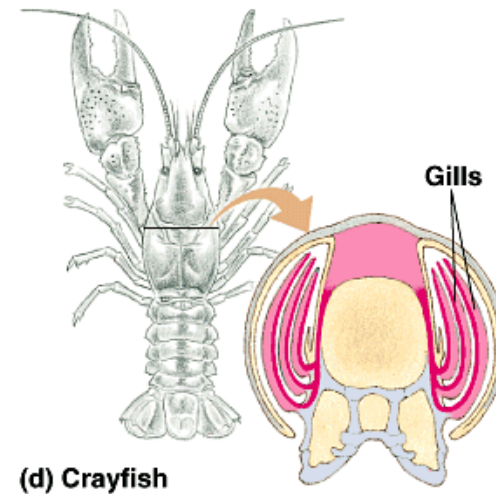
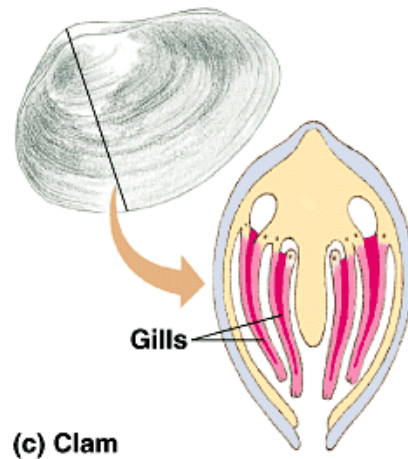
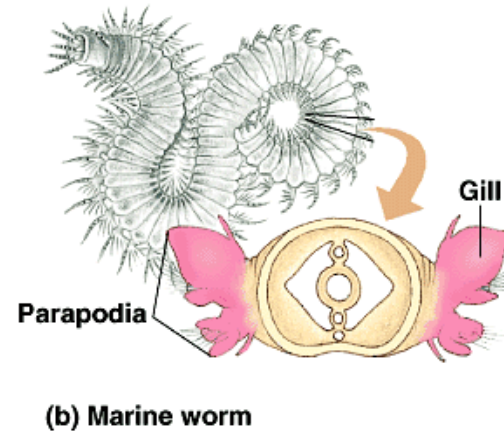
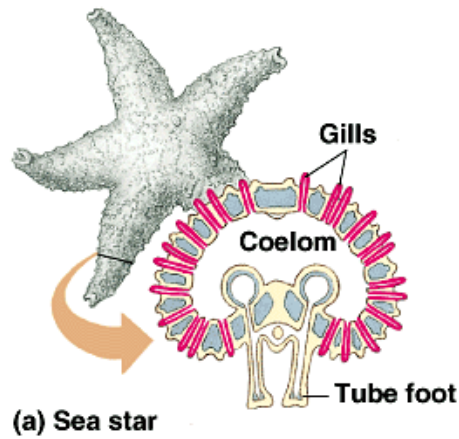


**(a) Open circulatory system**

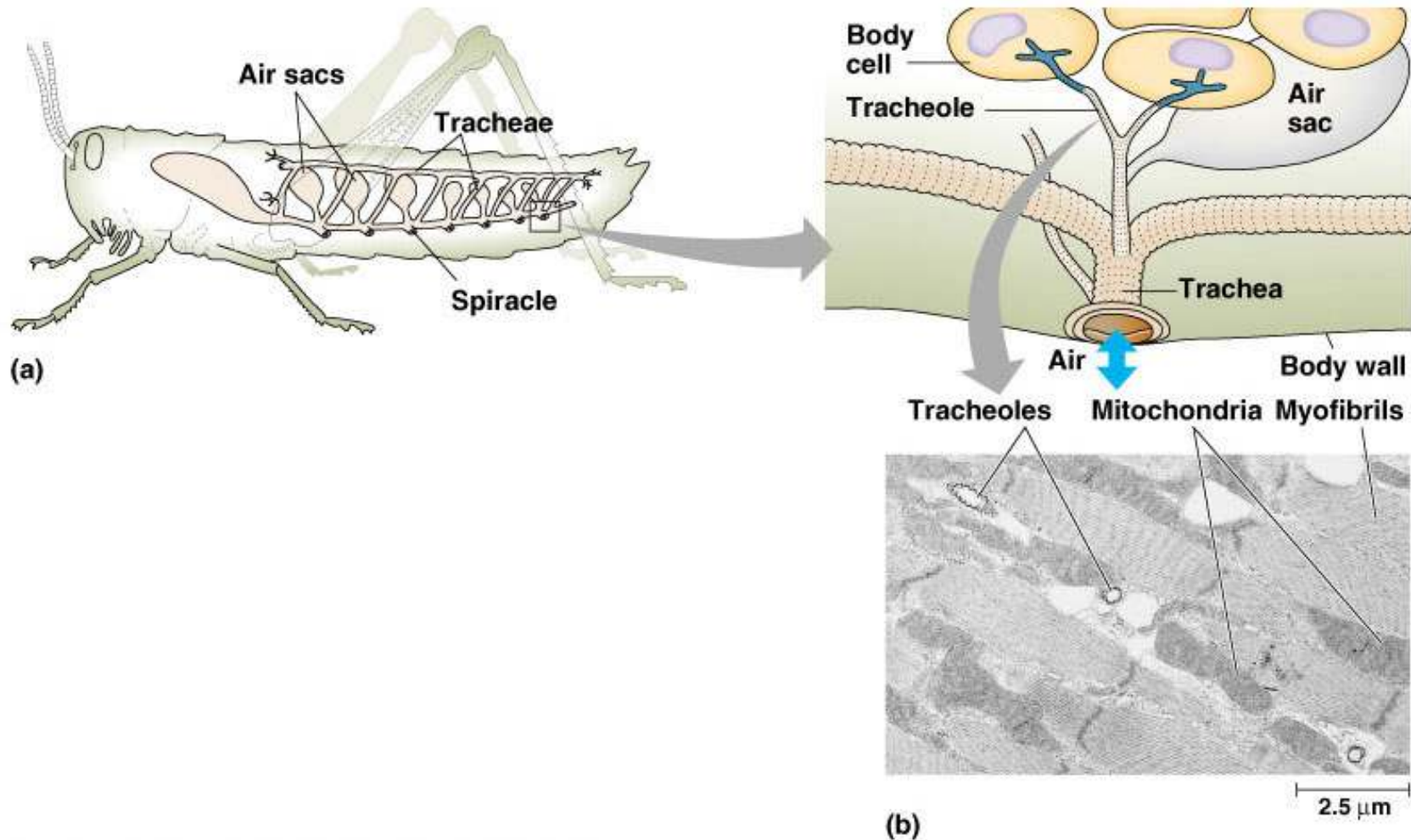
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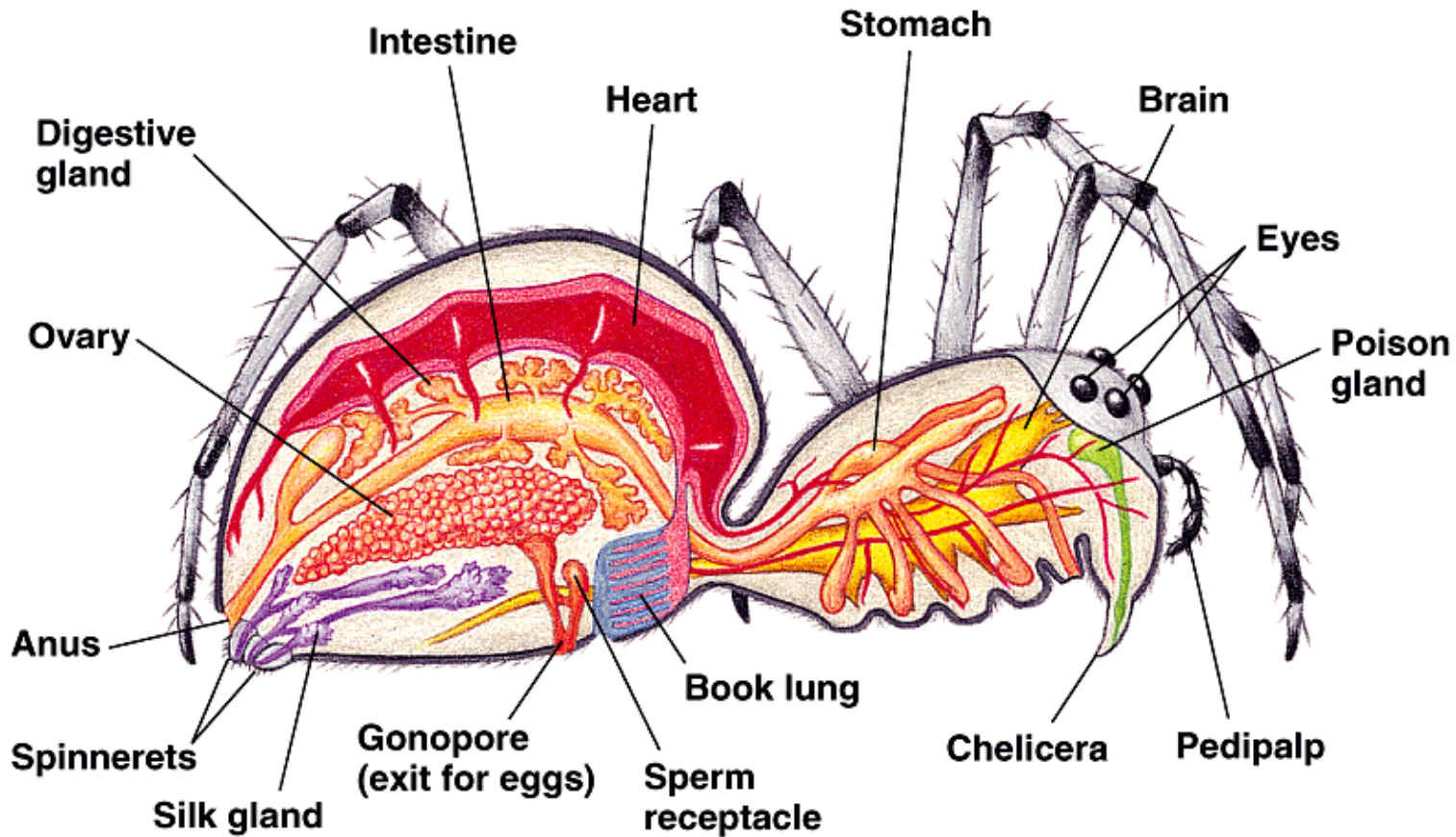
# Respiration – Gills for water



# Respiration - Tracheal Tubes



# Cheliceriform Body Structure



**(b) Anatomy of a spider**

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# Horseshoe Crabs





# Scorpion



# Myriapods - Millipede





# Myriapods - Centipede

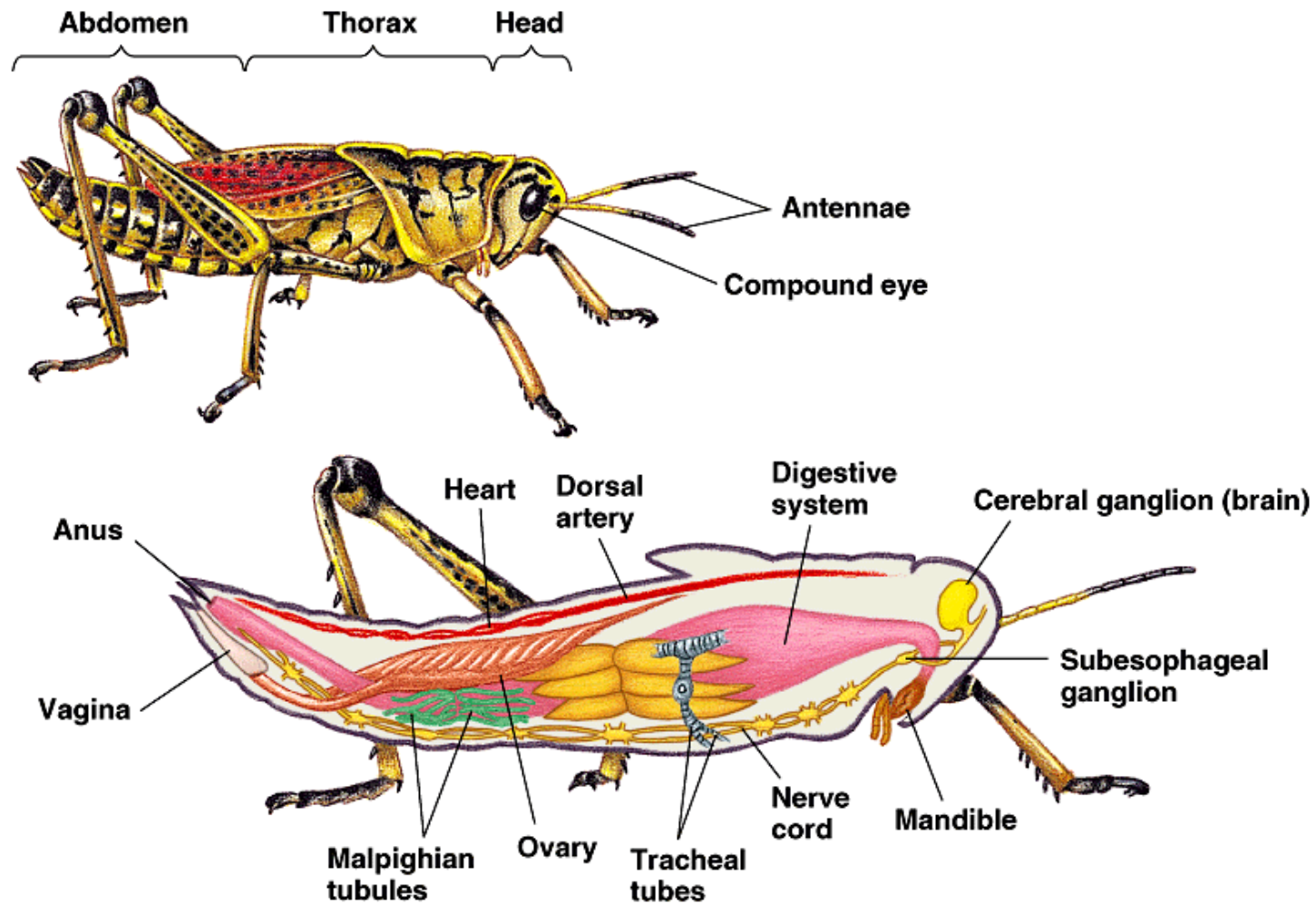


# Hexapoda





# Insect Body Structure



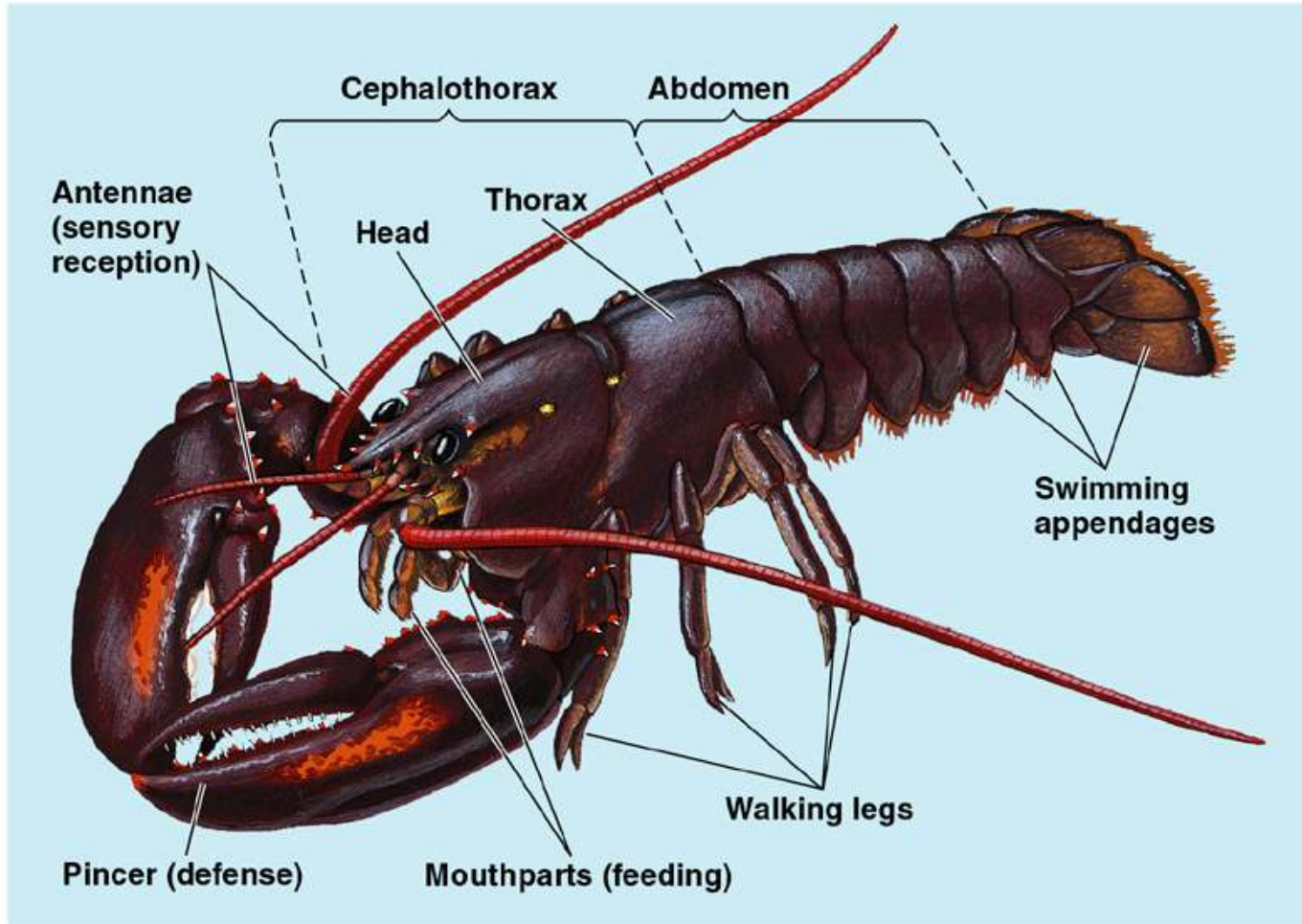
# Complete Metamorphosis



# Pollinators



# Crustaceans





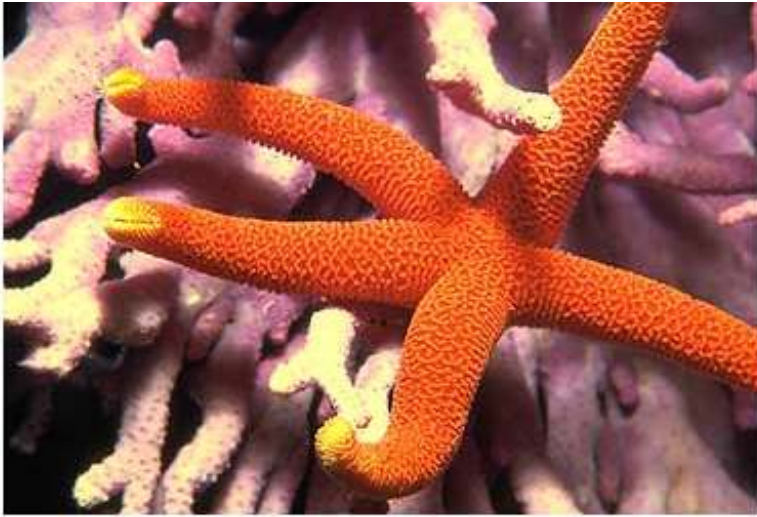
# Pre AP Biology

Animal Kingdom – Invertebrates

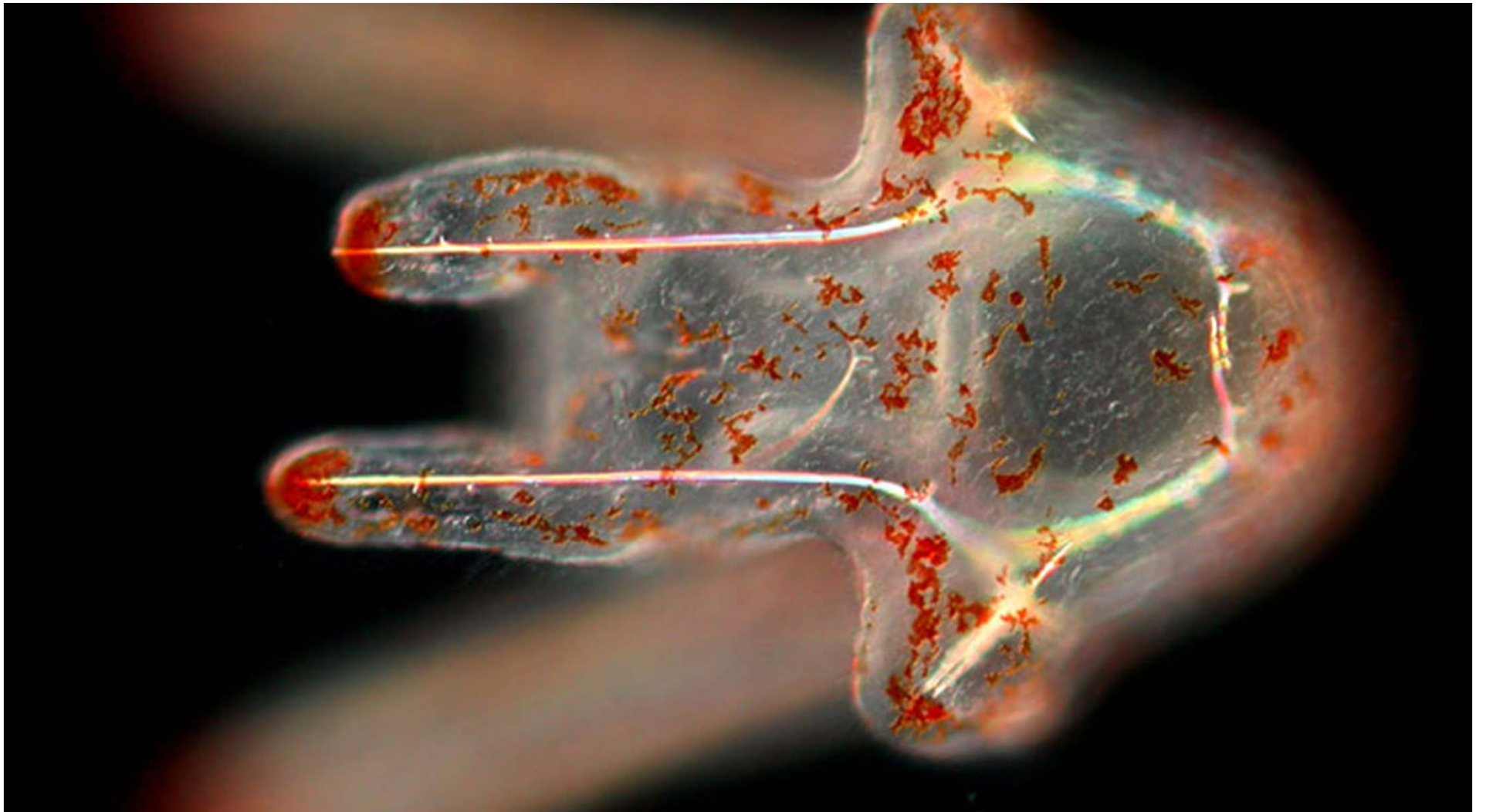
(8.14)

Part 5

# Echinodermata



# Juvenile Echinoderm (Bilateral Symmetry)





# Adult Echinoderm Body Structure

