

Phylum Arthropoda

(*Valanga* sp.)



LEARNING OUTCOMES

(c) Discover the unique characteristics of the following phyla:

- vi. Arthropoda (e.g: *Valanga* sp.)
- vii. Mollusca (e.g: *Achatina* sp.)
- viii. Echinodermata (e.g: *Asterias* sp.)
- ix. Chordata (e.g: *Amphioxus* sp.)

(d) Explain evolutionary relationships of animals based on their:

- i. Level of organization
- ii. Germ layers
- iii. Body symmetry
- iv. Body coelom
- v. Segmentation

Unique Characteristics

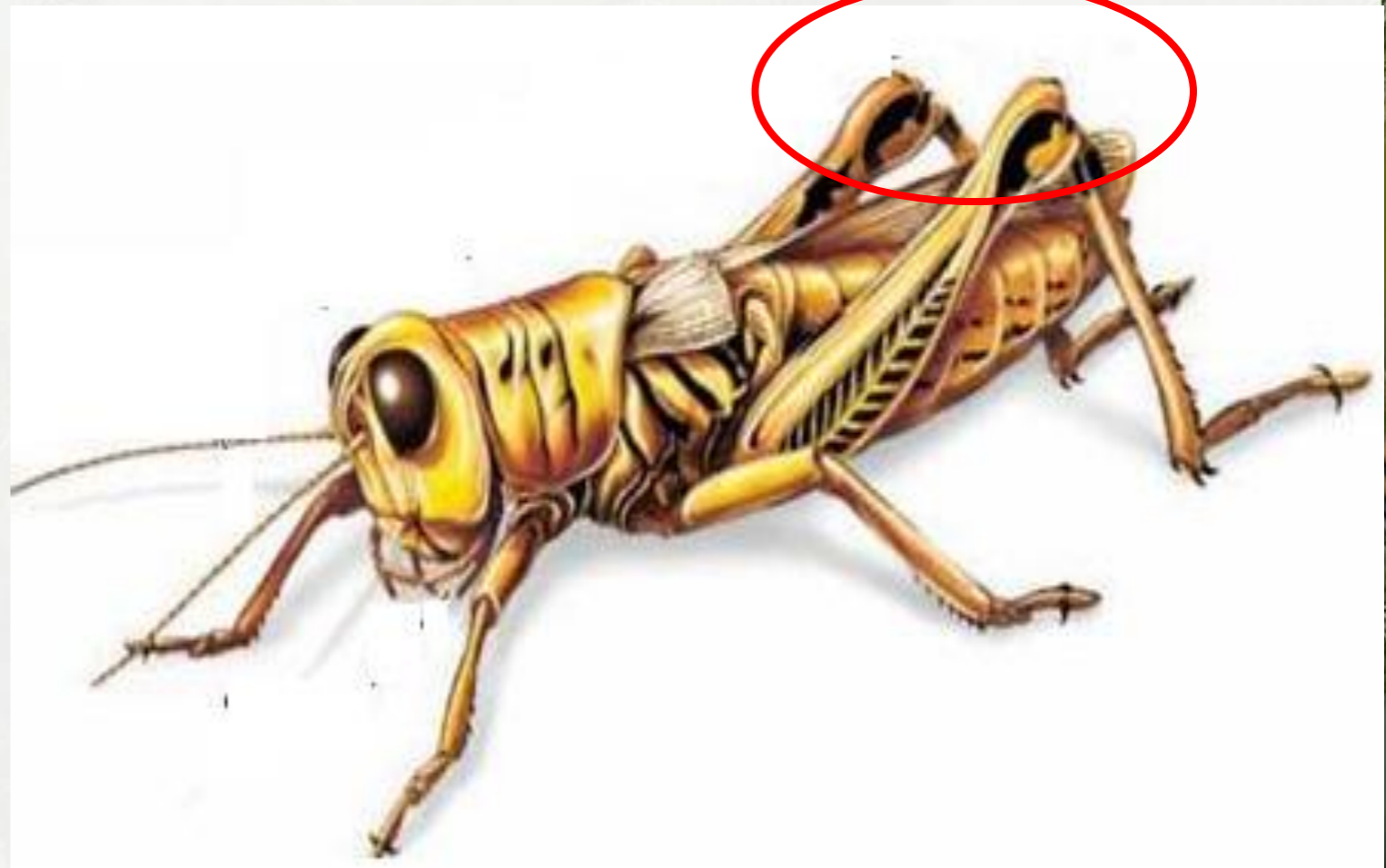
Bilaterally symmetrical

Triploblastic

Coelomate

Paired segmented
appendages

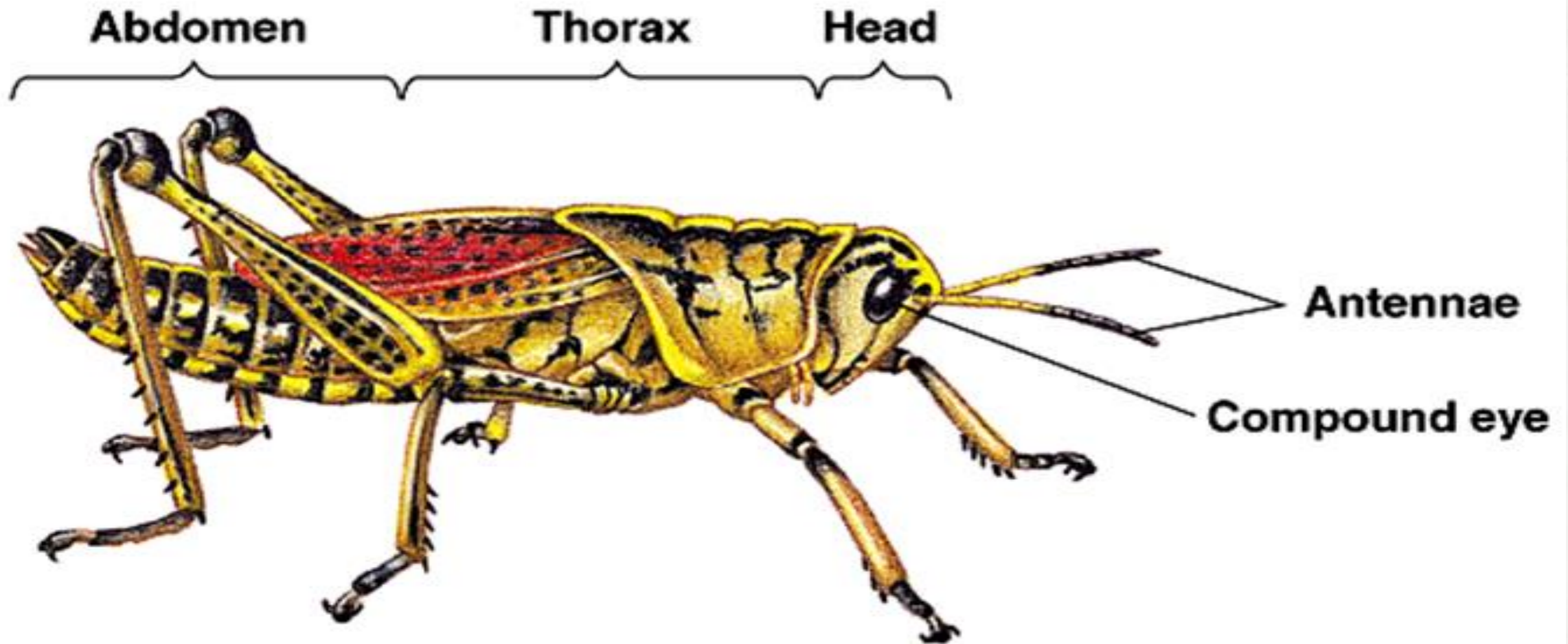
Paired segmented appendages



Unique Characteristics

Segmented bodies

Cephalization - Head, thorax & abdomen



Unique Characteristics

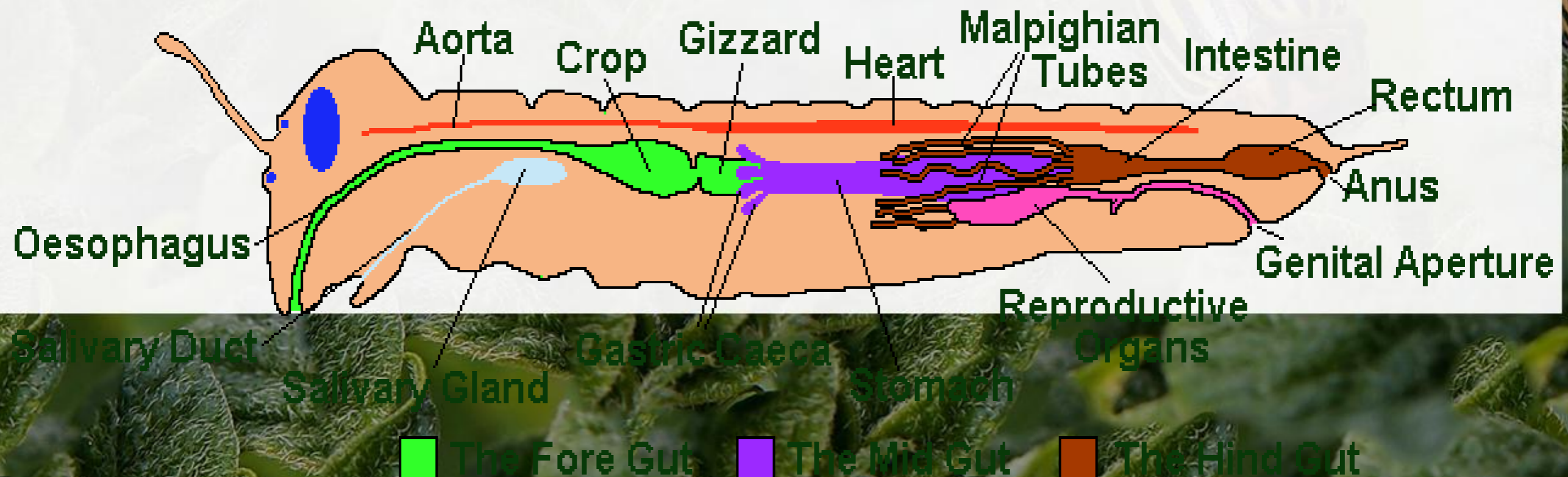
Exoskeleton with chitin

Open blood circulation system

Hemocoel (blood cavity)

Complete digestive system

The Insect Gut (Digestion and Reproduction)



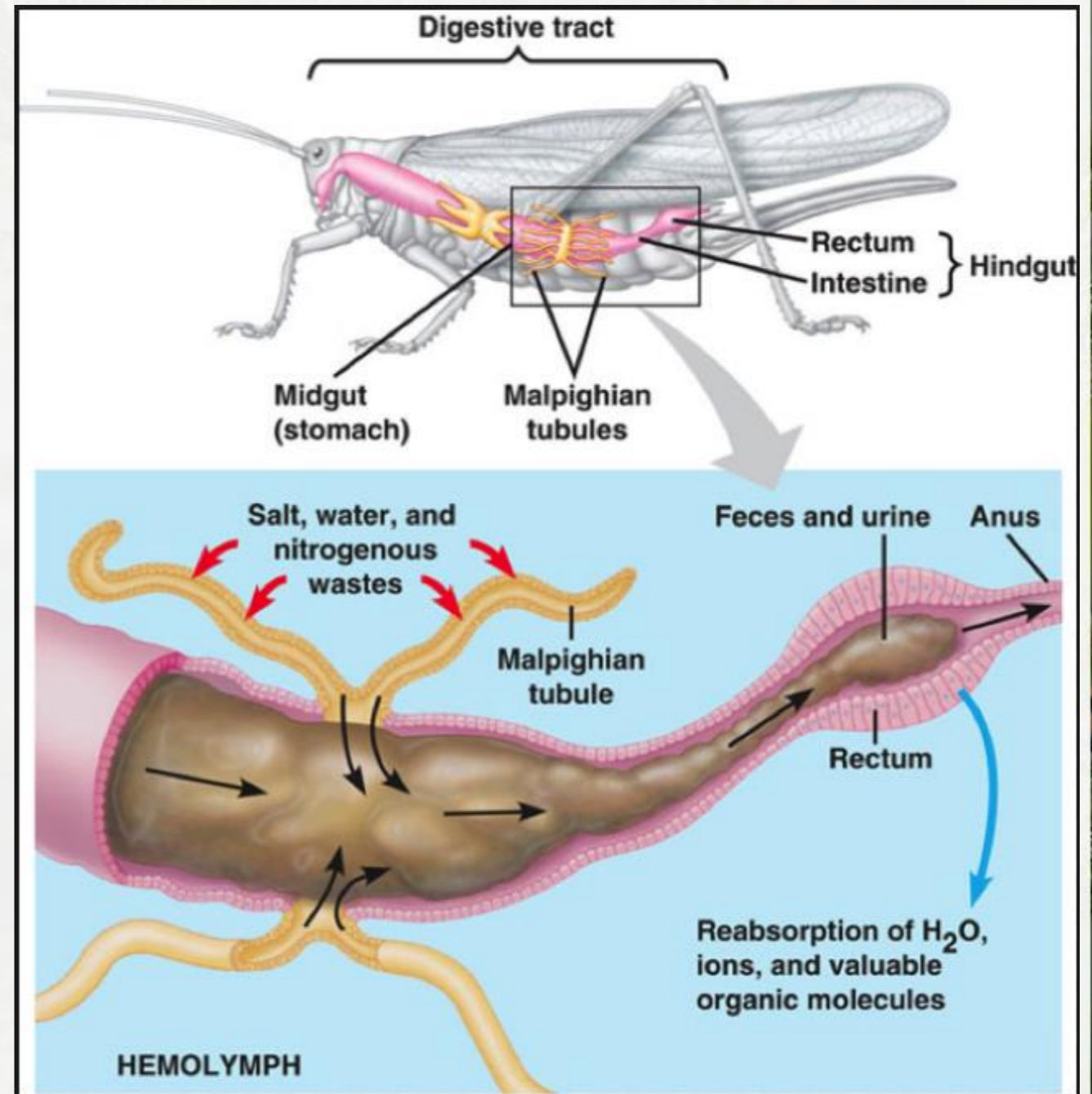
Unique Characteristics

Excretory system

Nervous system

Exoskeleton

Highly developed sensory organs

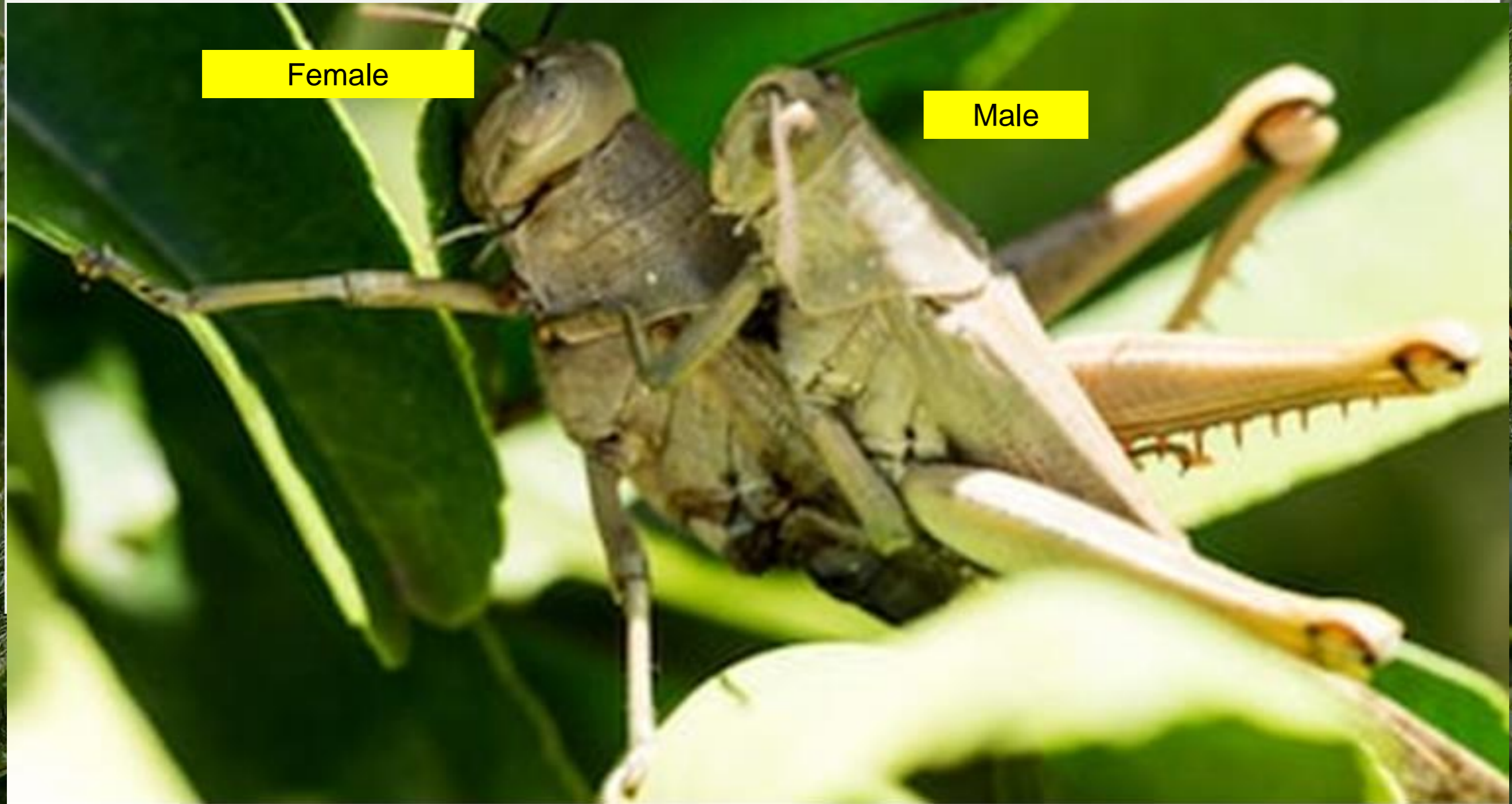


Unique Characteristics

Reproduction - Separate sexes

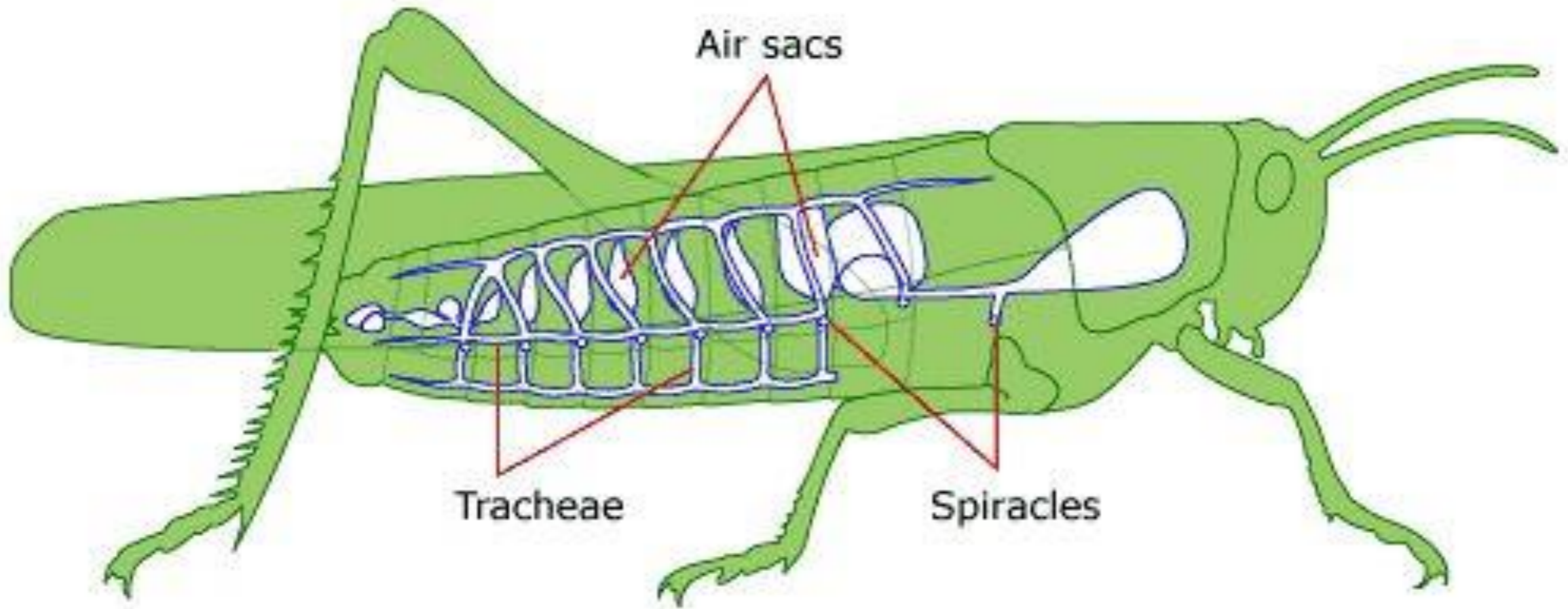
Female

Male



Unique Characteristics

Respiration- Tracheal system



PHYLUM MOLLUSCA

(*Achatina* sp.)



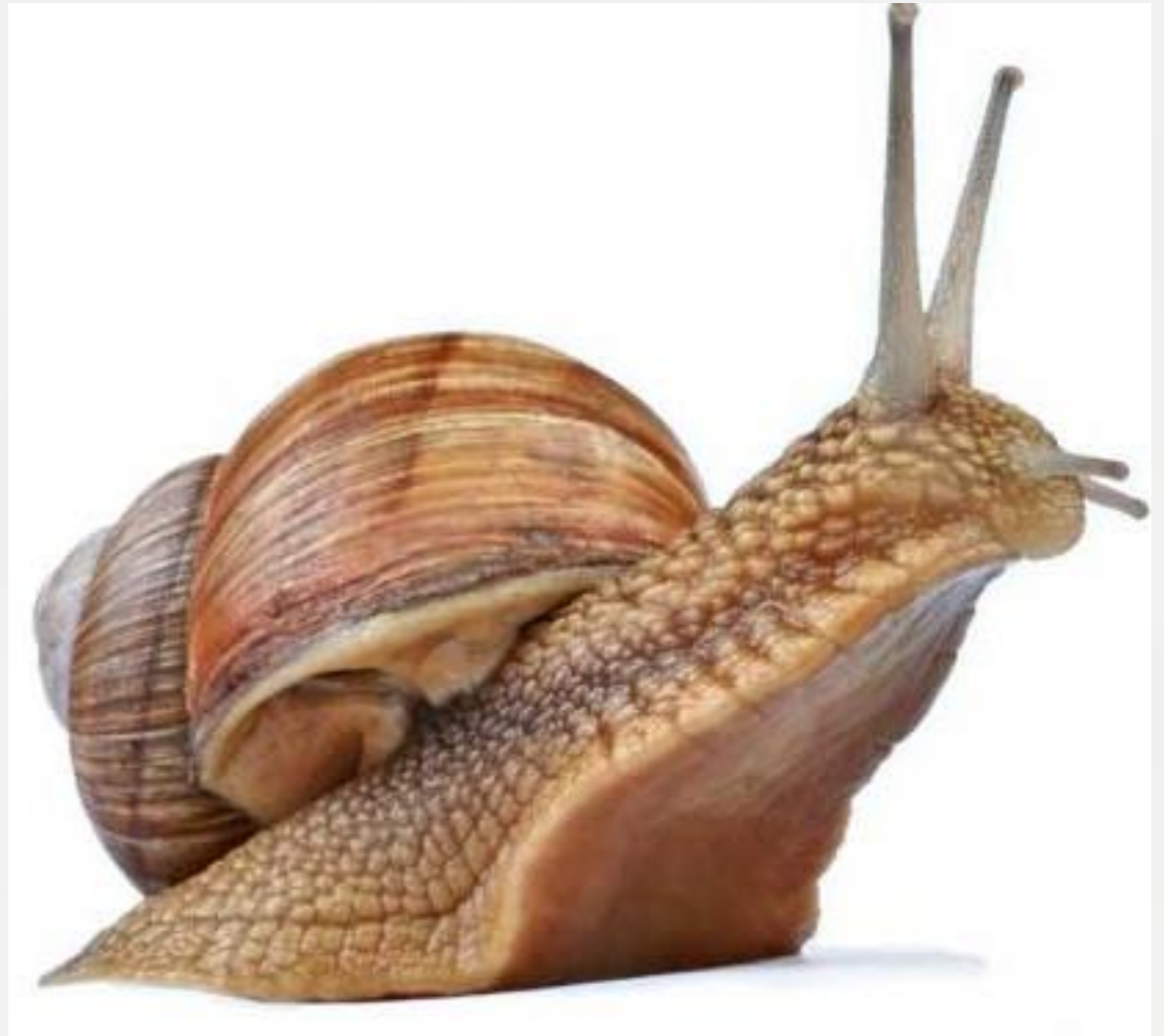
Unique Characteristics

Asymmetry

Triploblastic

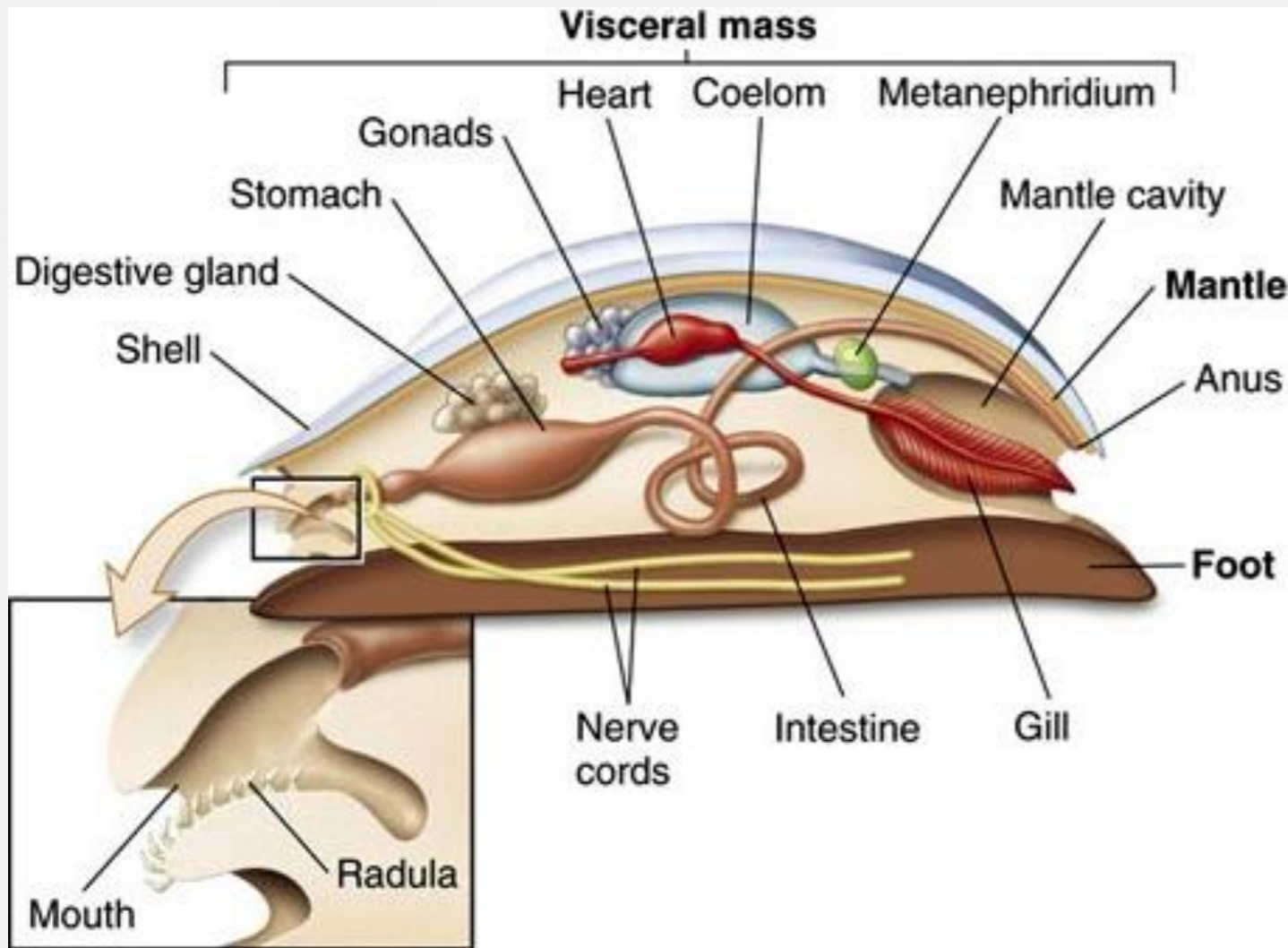
Coelomate

Unsegmented / head



Unique Characteristics

Body plan



Complete digestive system

Mouth has radula

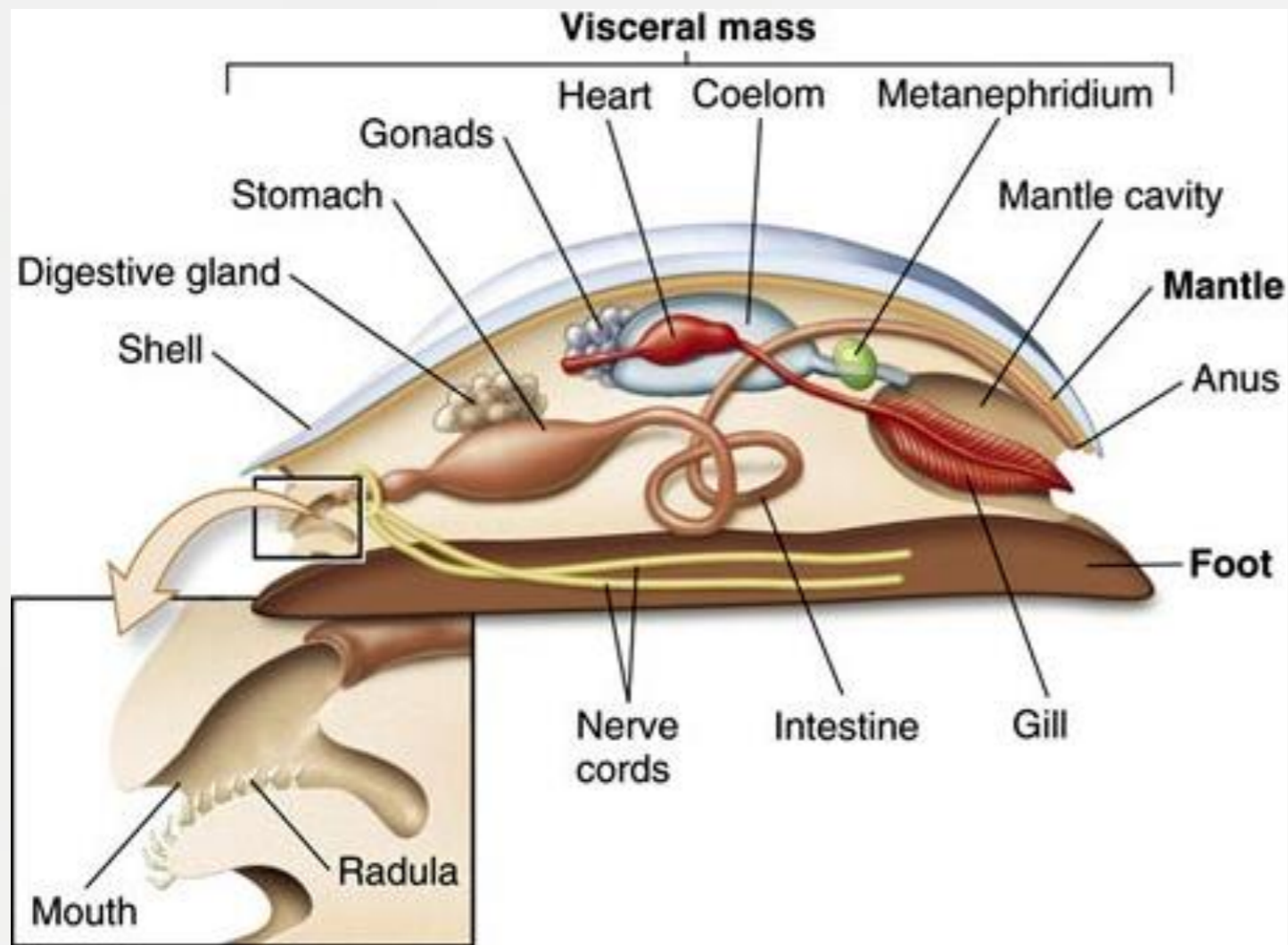
Excretory organs
- Nephridia

Circulatory system
-open / close

Unique Characteristics

Respiratory system - gills or lung in the mantle cavity

Advanced nervous system





PHYLUM ECHINODERMATA

(*Asterias* sp.)

Unique Characteristics

Bilaterally symmetrical
(Larvae)

Radial symmetrical
(Adult)

Unsegmented

Triploblastic



Larvae



Adult



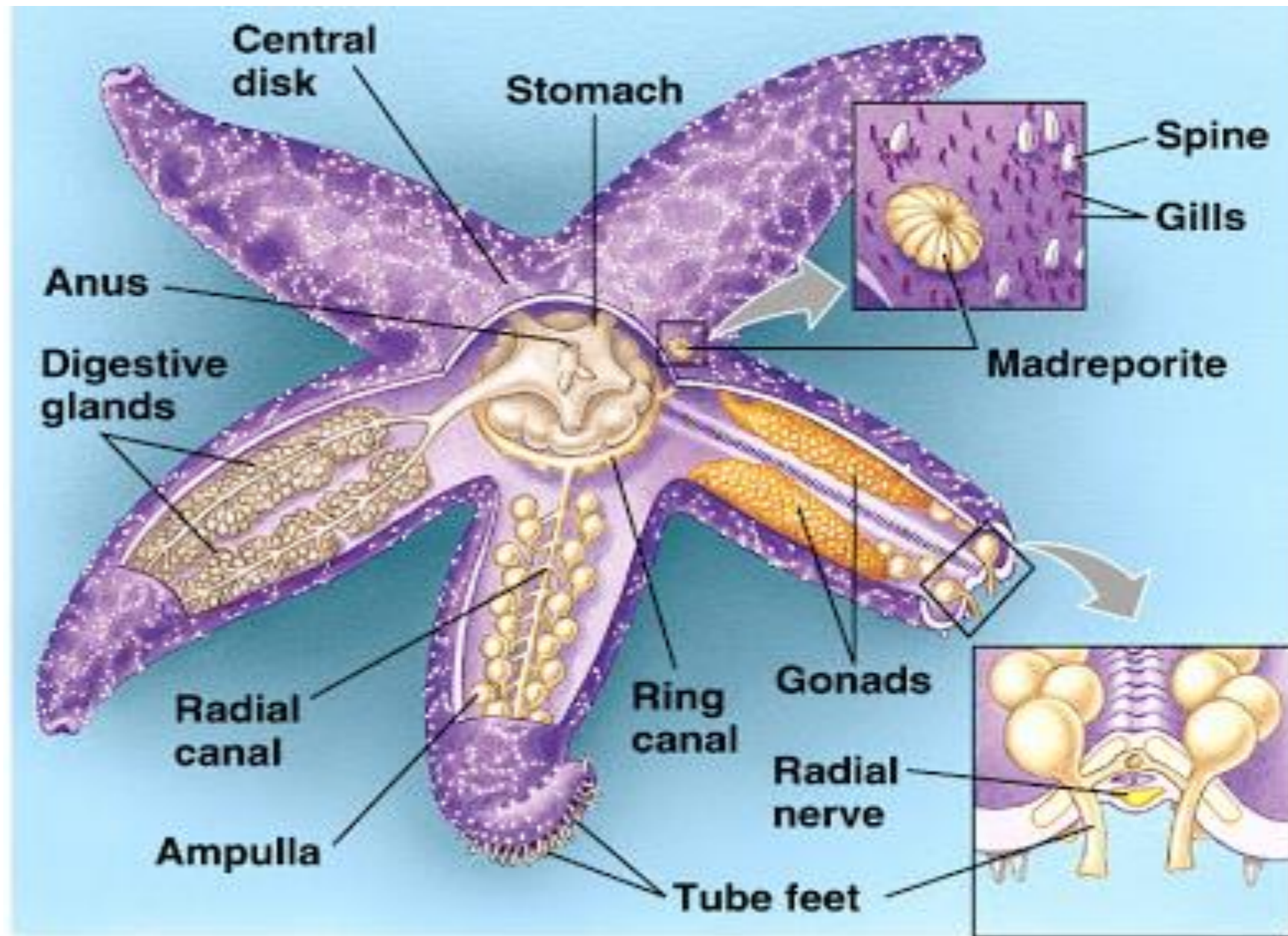
Unique Characteristics

No head

Mouth generally on lower surface of body

Anus on upper (aboral) surface

Tube feet

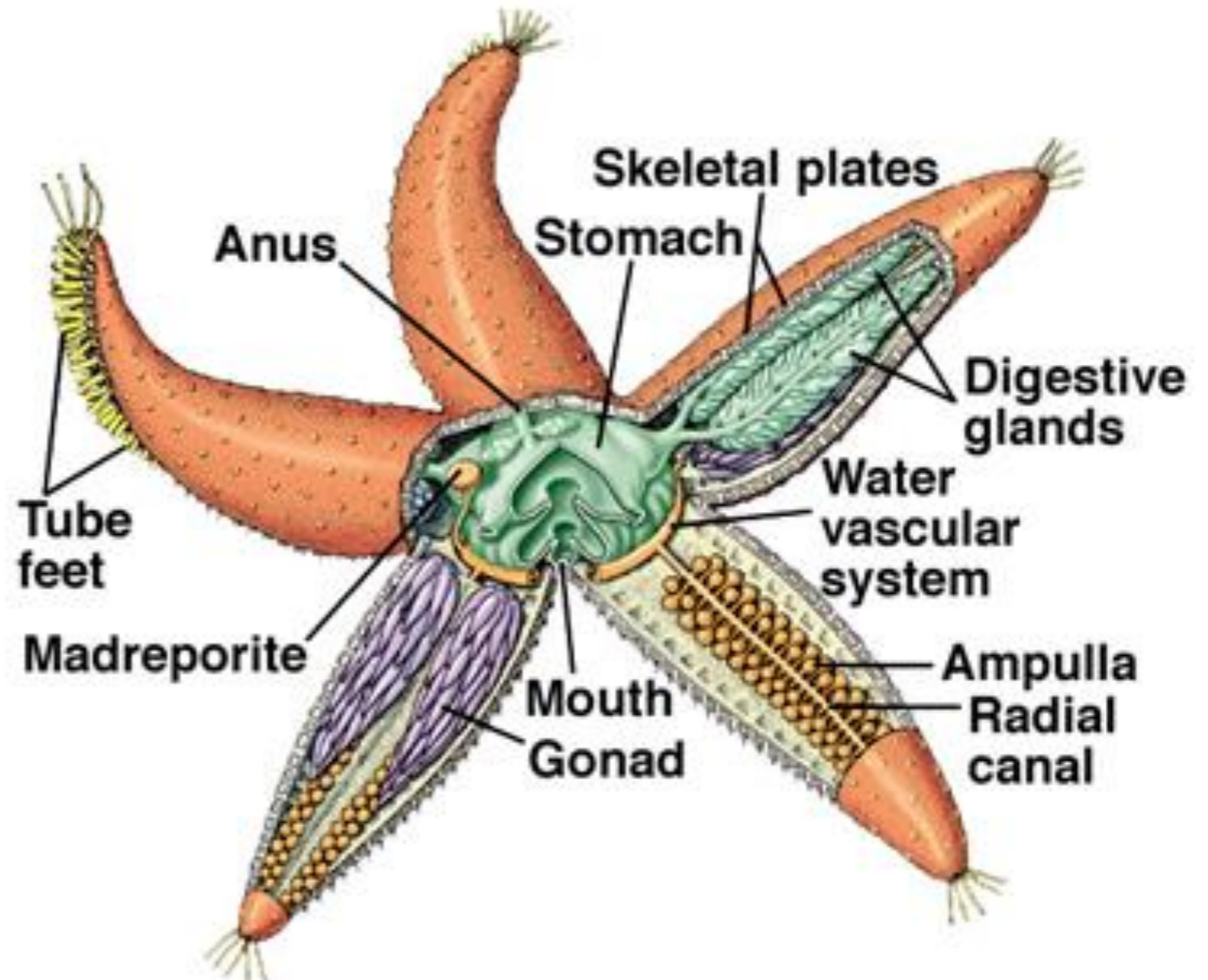


Unique Characteristics

Simple nervous system
without brain

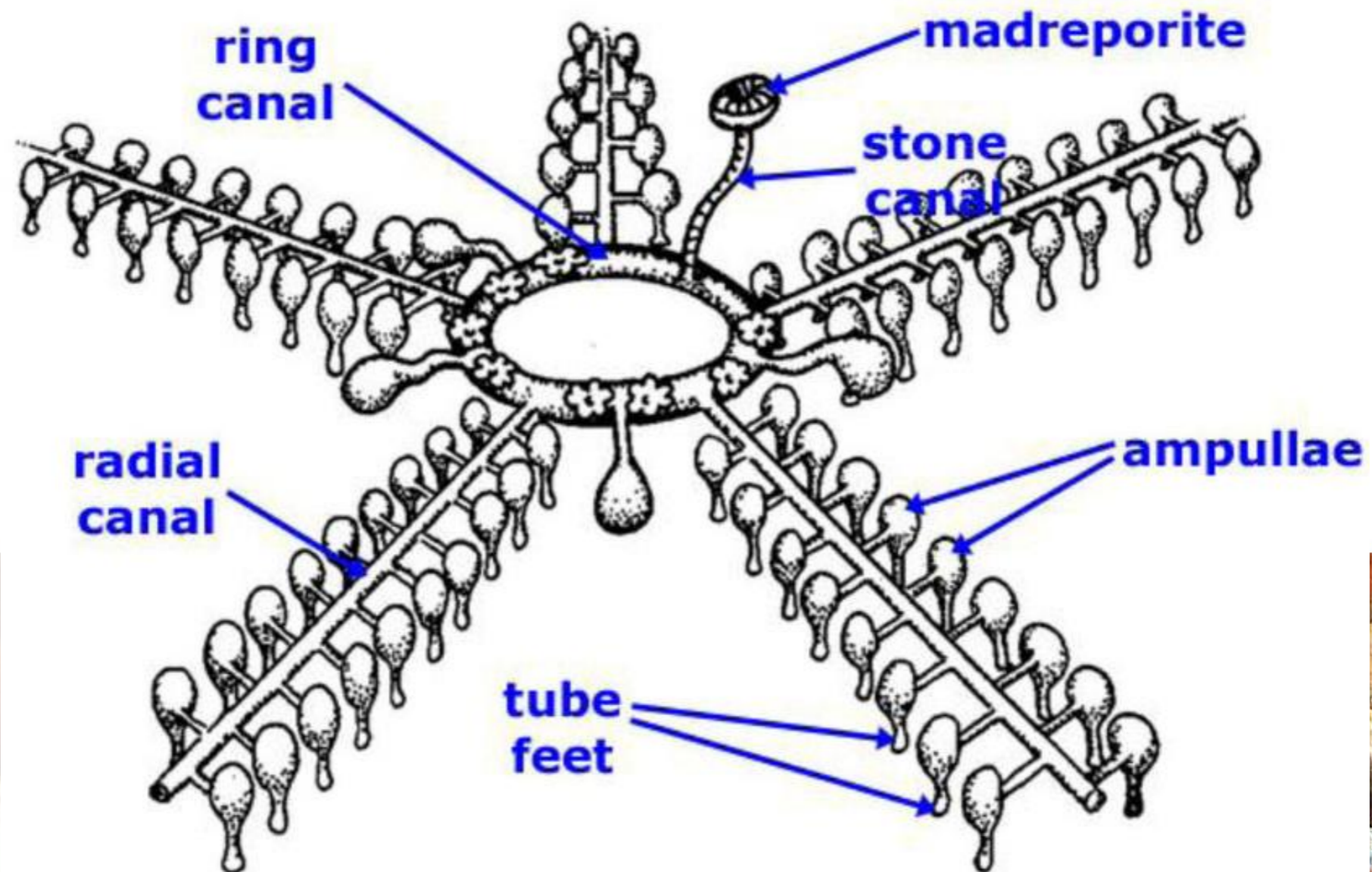
No circulatory

No respiratory or
excretory systems



Unique Characteristics

Water vascular system



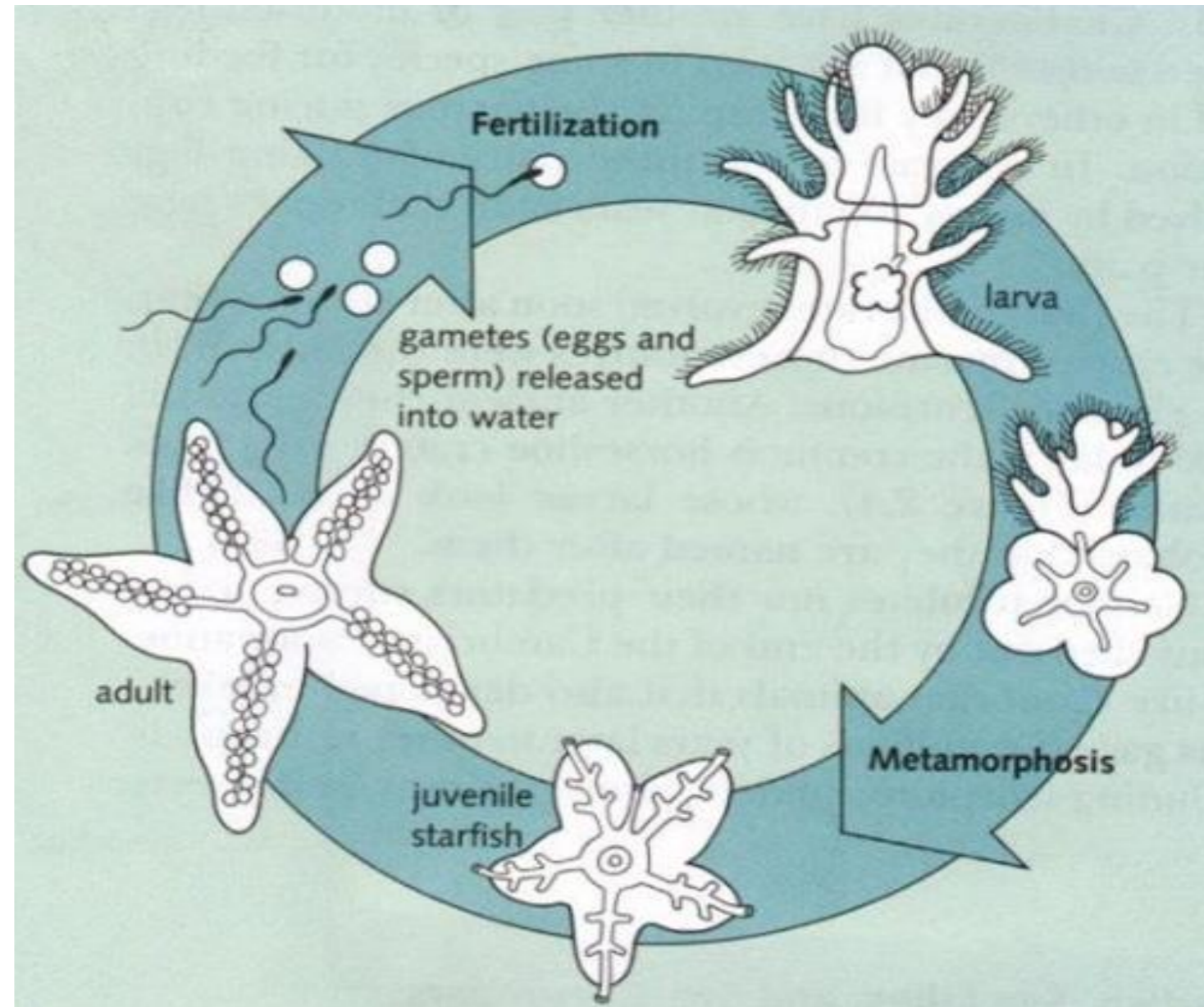
Unique Characteristics

Endoskeleton

Hard calcium carbonate plates and spines

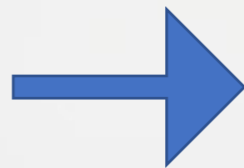
Reproduction

Sexual reproduction
Asexual reeproduction



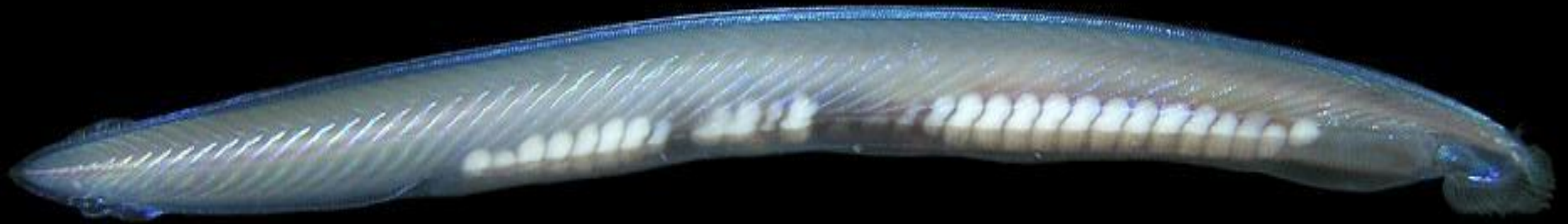
Unique Characteristics

Reproduction



- Hermaphrodites (individuals have both a male set and female set of parts)
- Bisexual (Separated genders)
- Most are internal fertilization, some are external.





PHYLUM CHORDATA

(Amphioxus sp.)

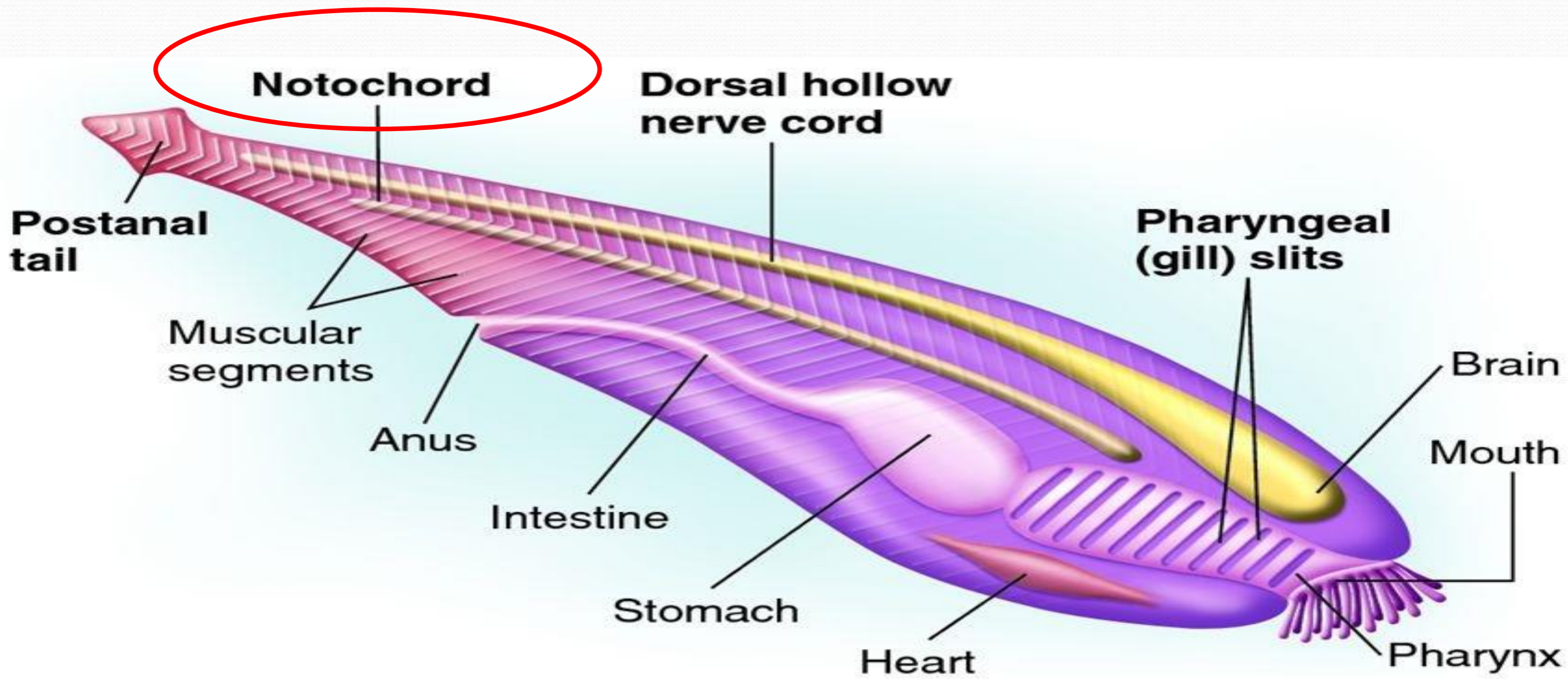
Unique Characteristics

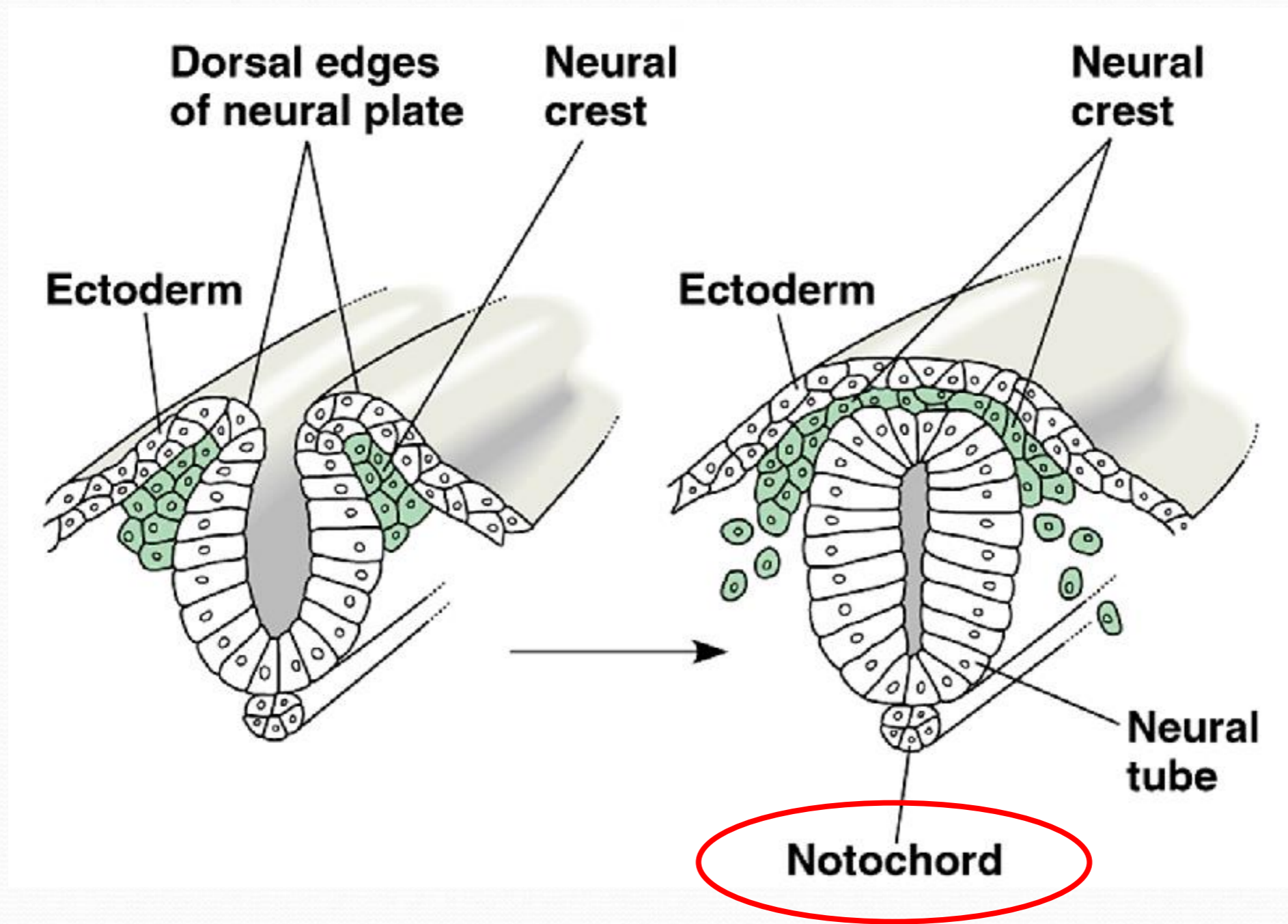
Bilateral symmetrical

Coelomate

Triploblastic

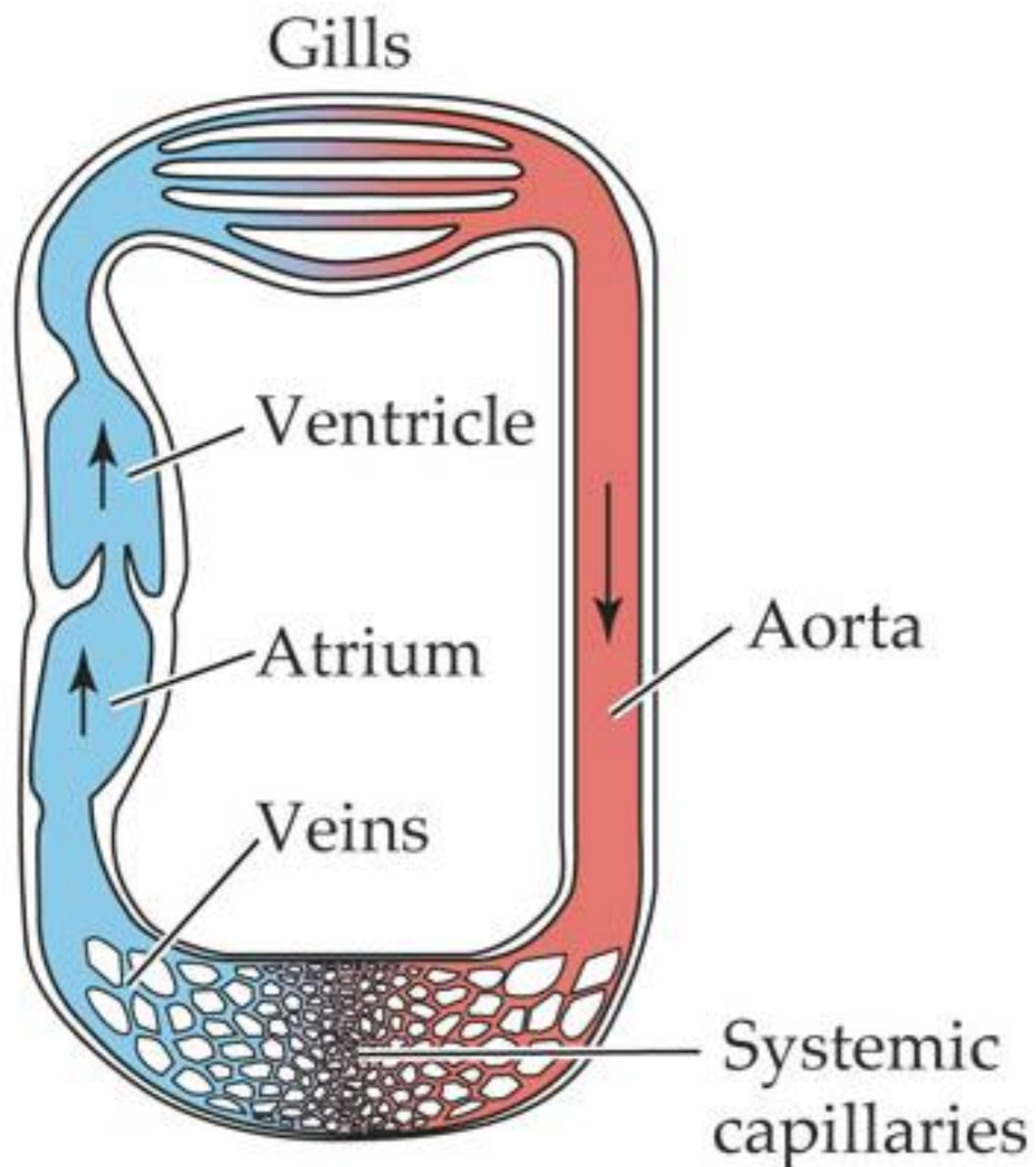
Has notochord





a cartilaginous skeletal rod supporting the body in *Amphioxus* sp.

Unique Characteristics



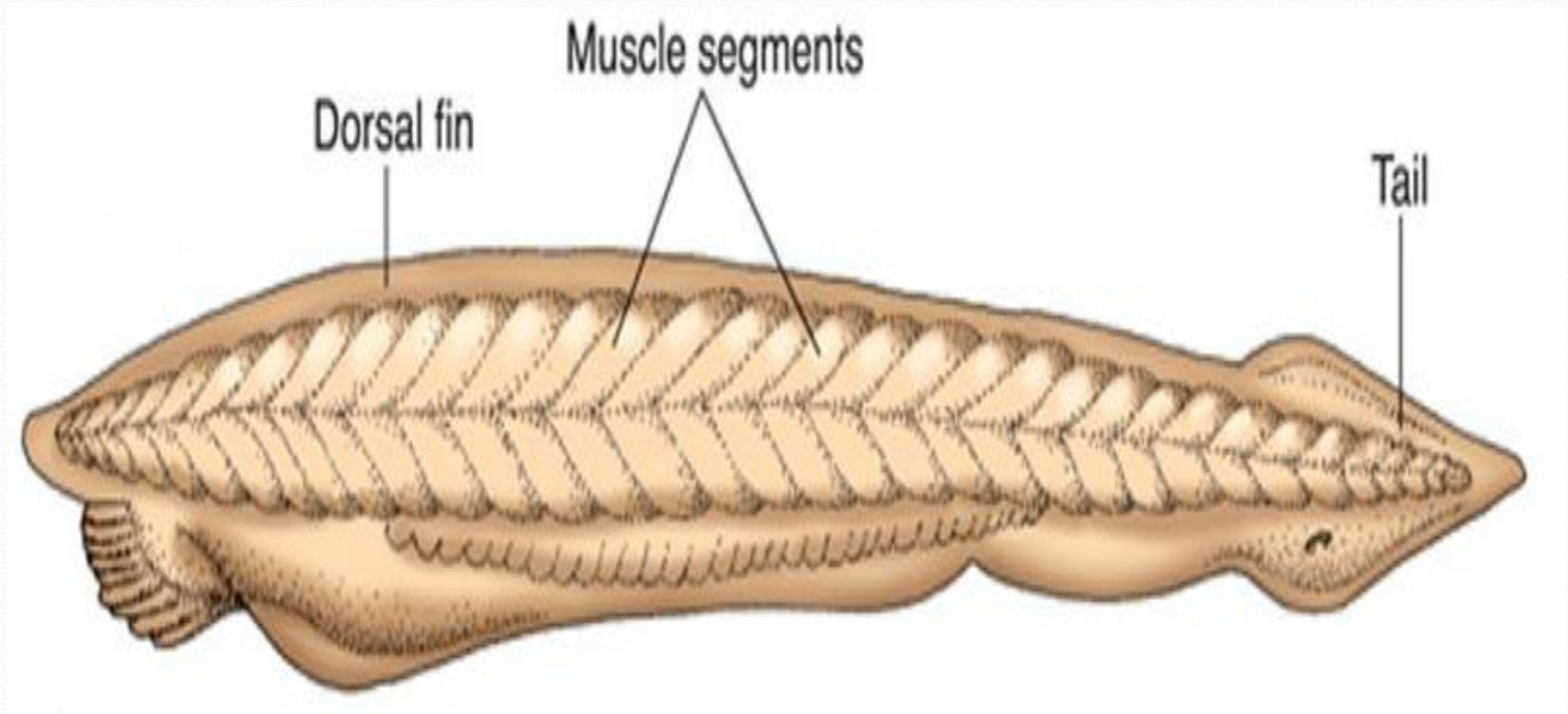
Close circulatory system

- Hepatic portal system
blood from alimentary canal taken to liver
and taken
back to the heart
- Heart is ventral position
found behind and below pharynx.

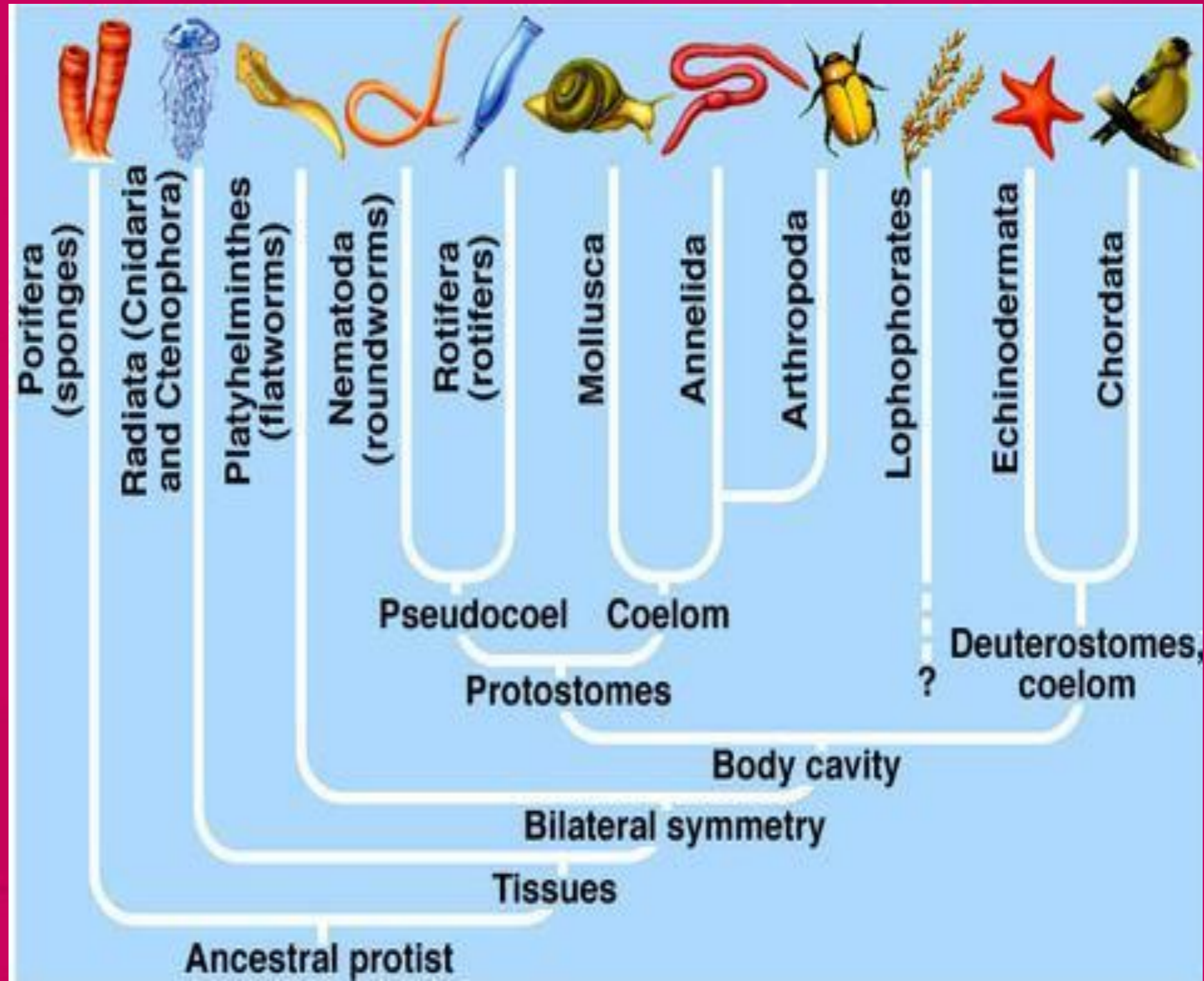
Unique Characteristics

Myotomes

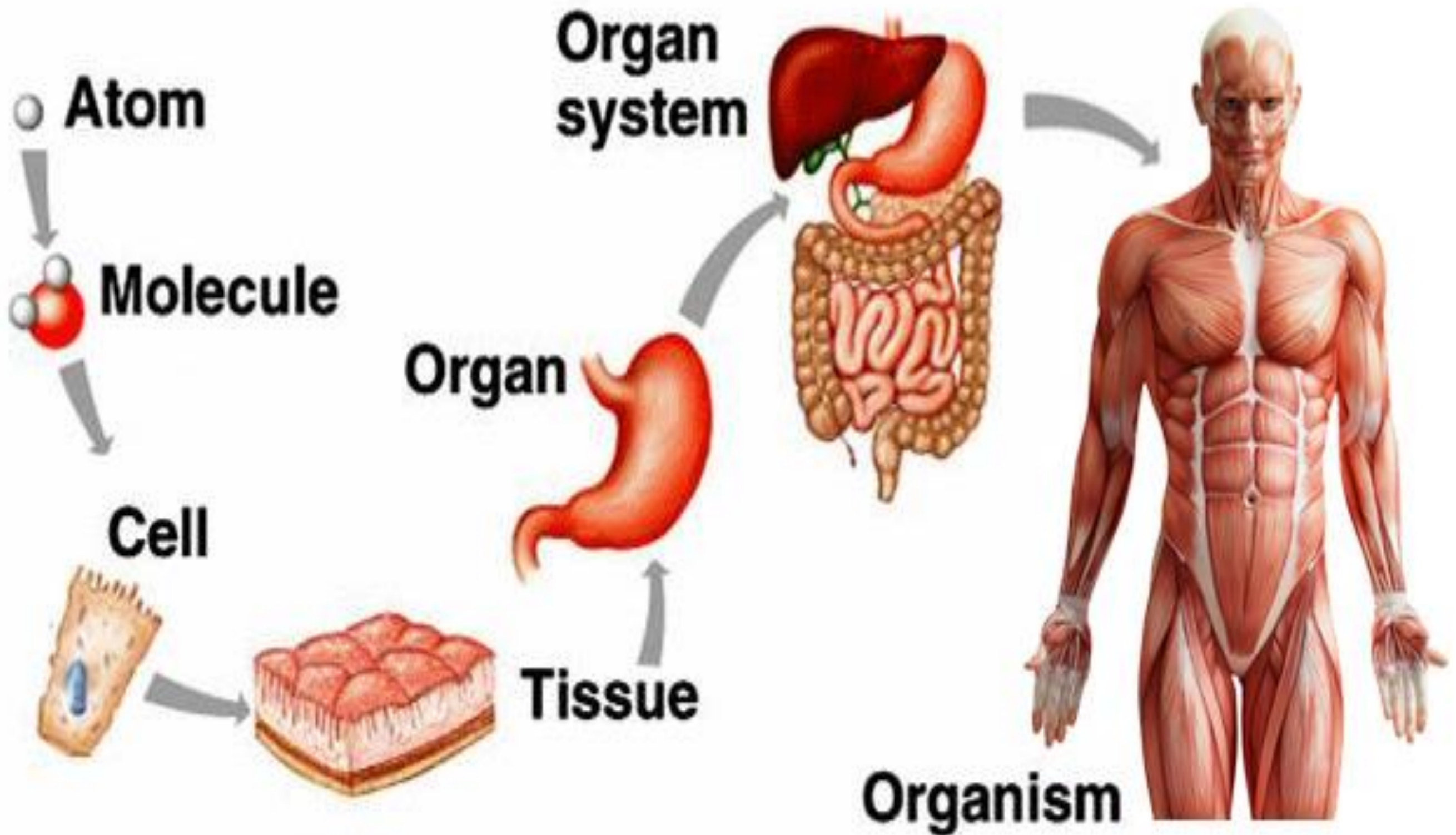
- Muscular tissues arranged in blocks
- Present in embryonic stage
- Maintained in some adults chordates



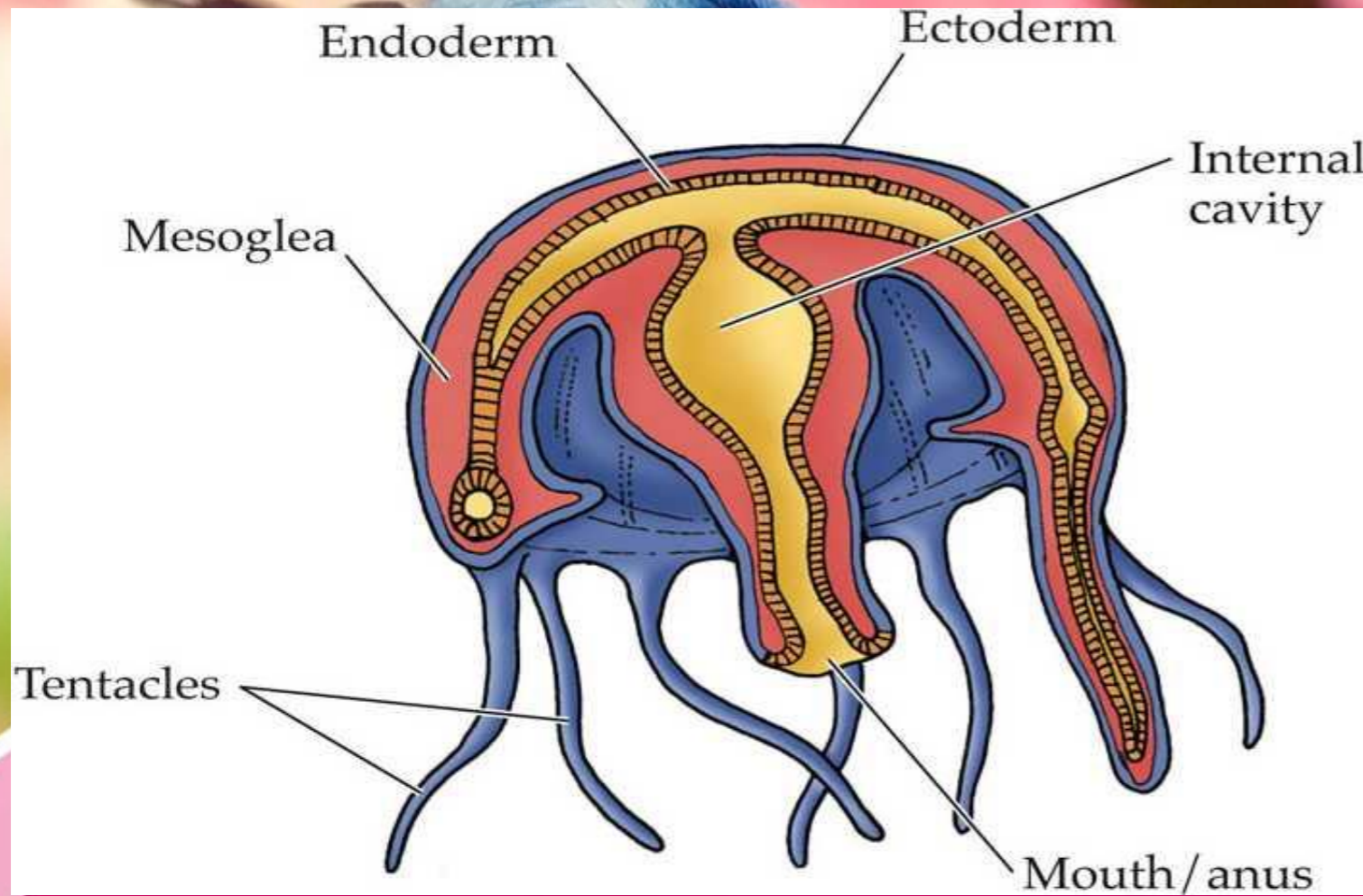
(d) Evolutionary Relationship of Animals based on:



(i) Level of organization

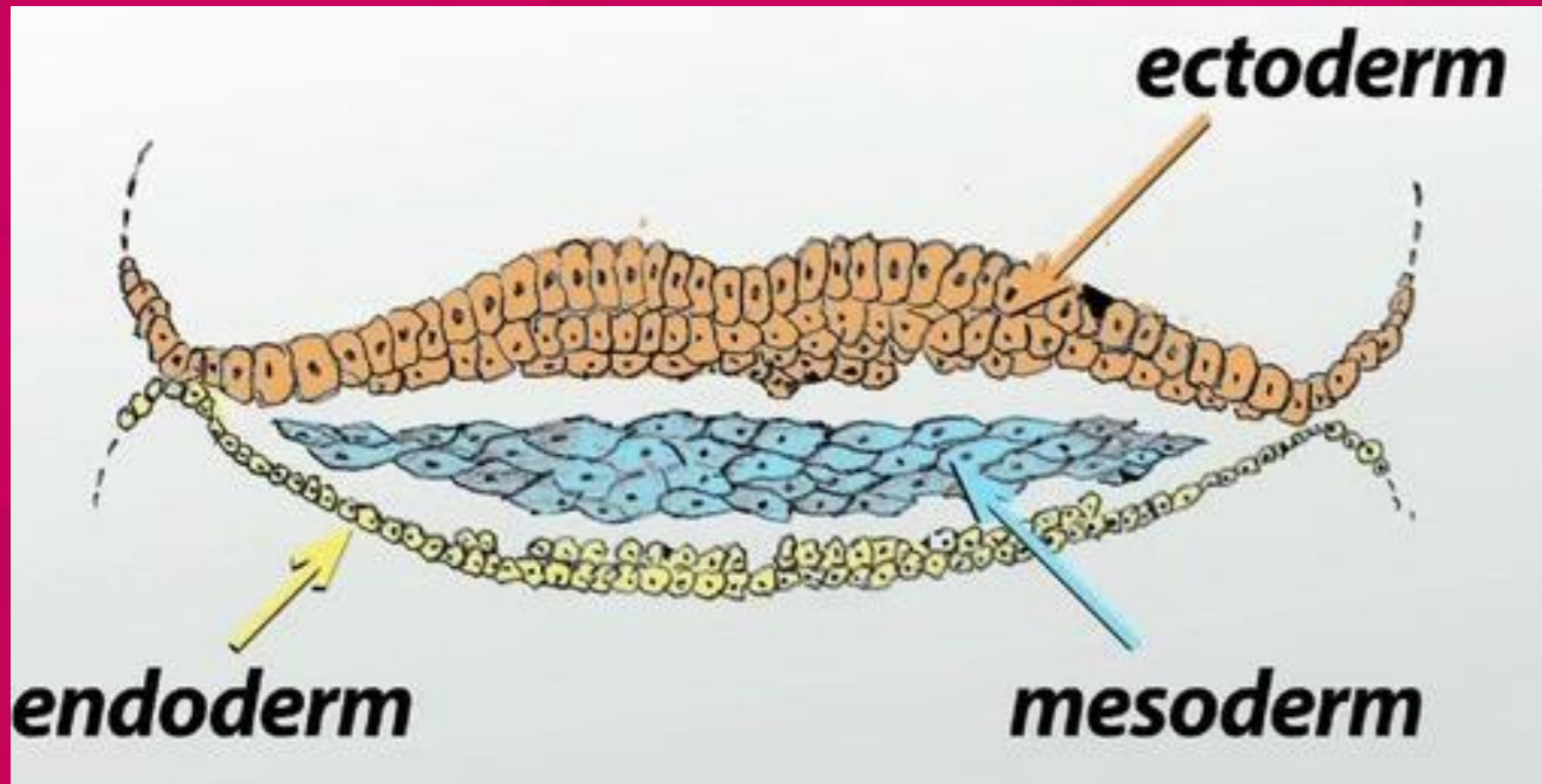


(ii) Germ layers



Diploblastic

❖ Phylum Cnidaria



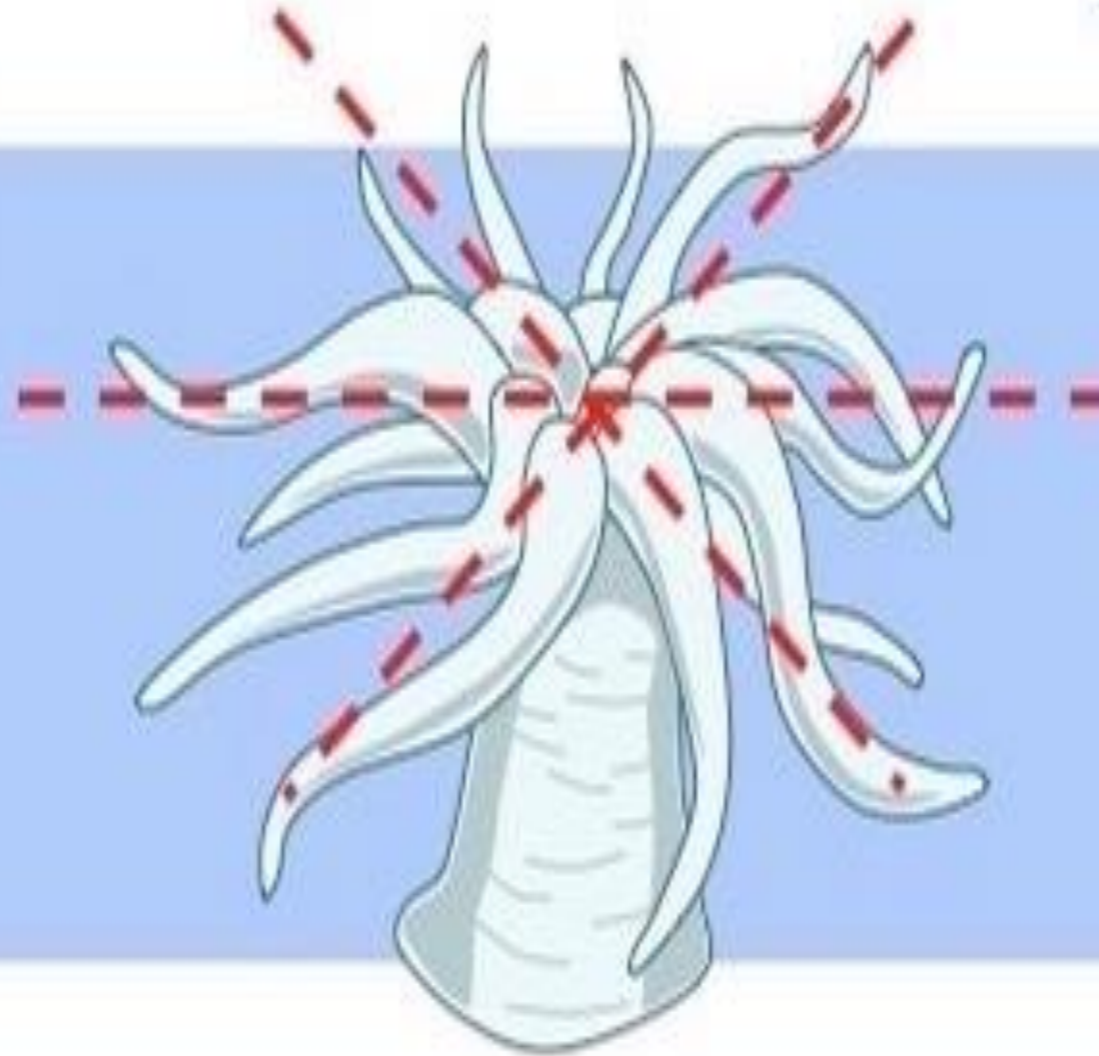
Triploblastic

❖ Phylum
Platyhelminthes to
Phylum Chordata

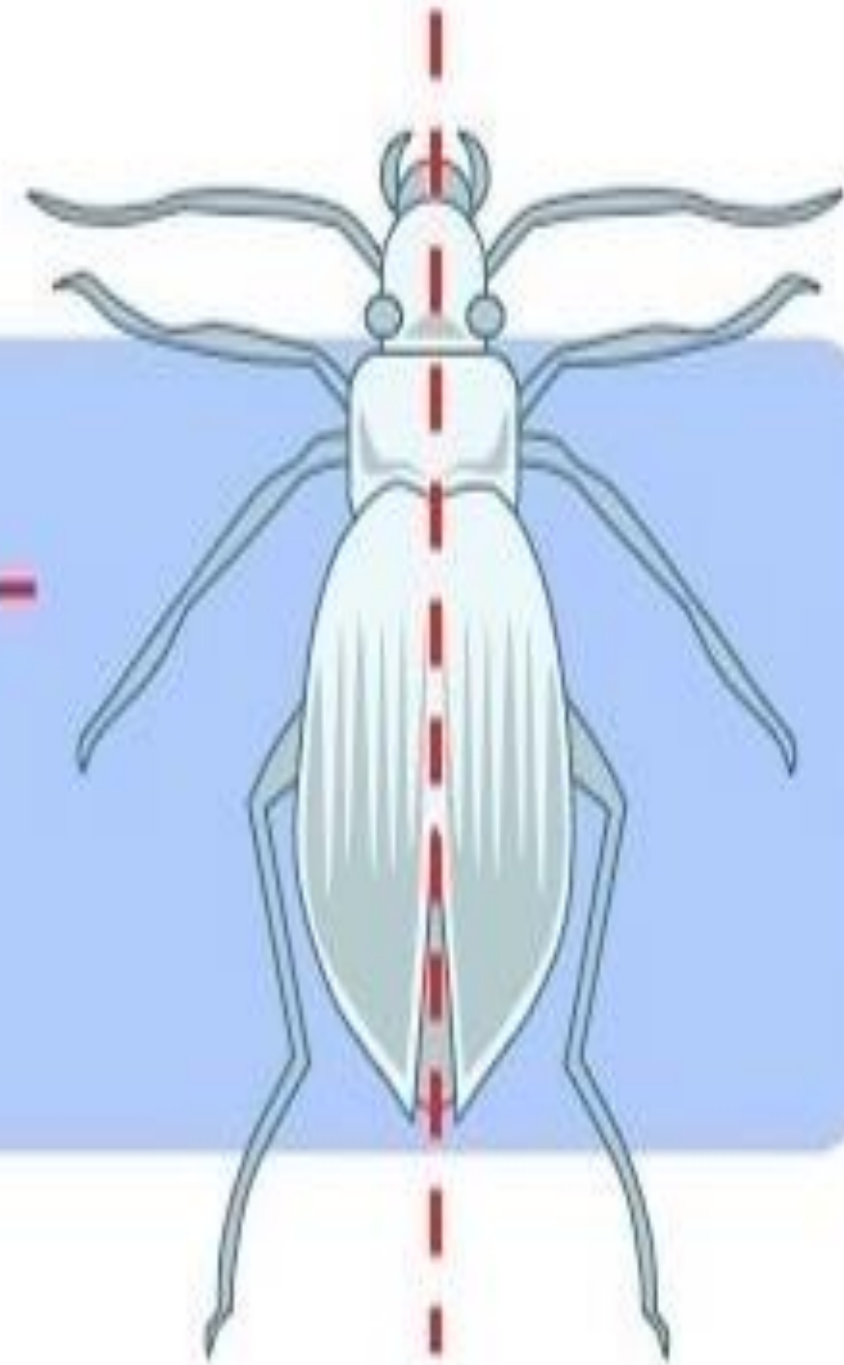
(iii) Body symmetry



No symmetry
(e.g. *Porifera*)

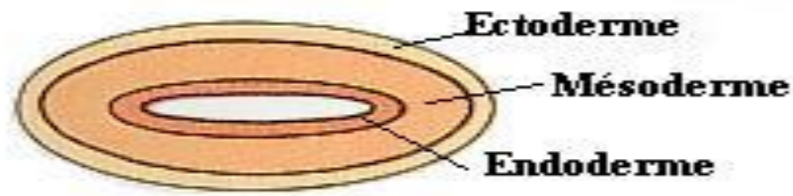


Radial symmetry
(e.g. *Cnidaria*)



Bilateral symmetry
(e.g. *Arthropod*)

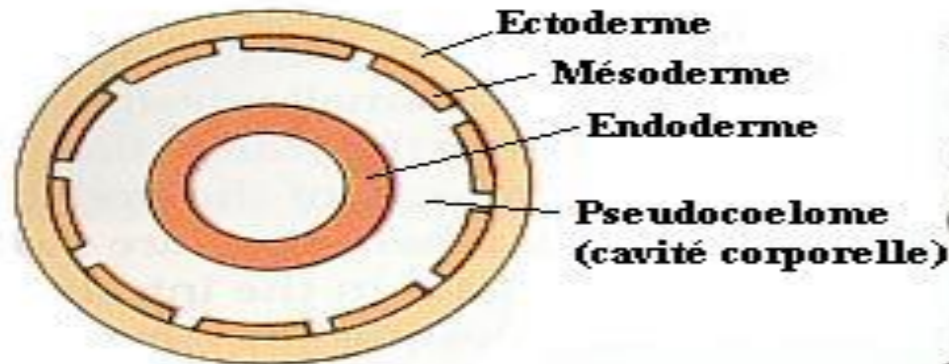
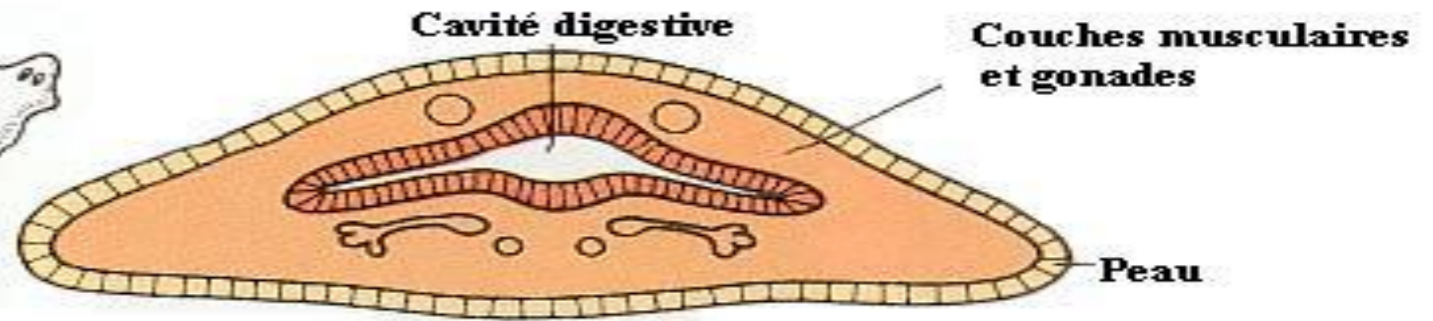
(iv) Body coelom



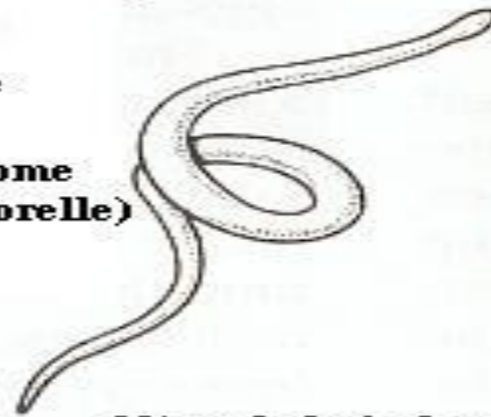
(a) Acoelomate
(pas de cavité corporelle)



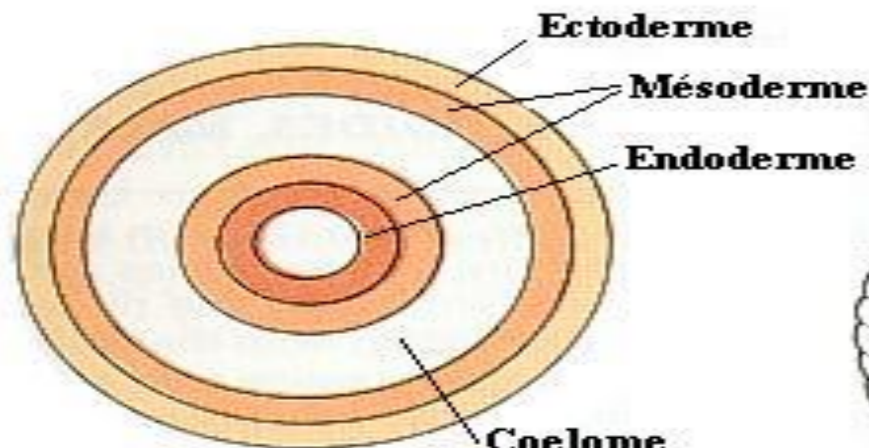
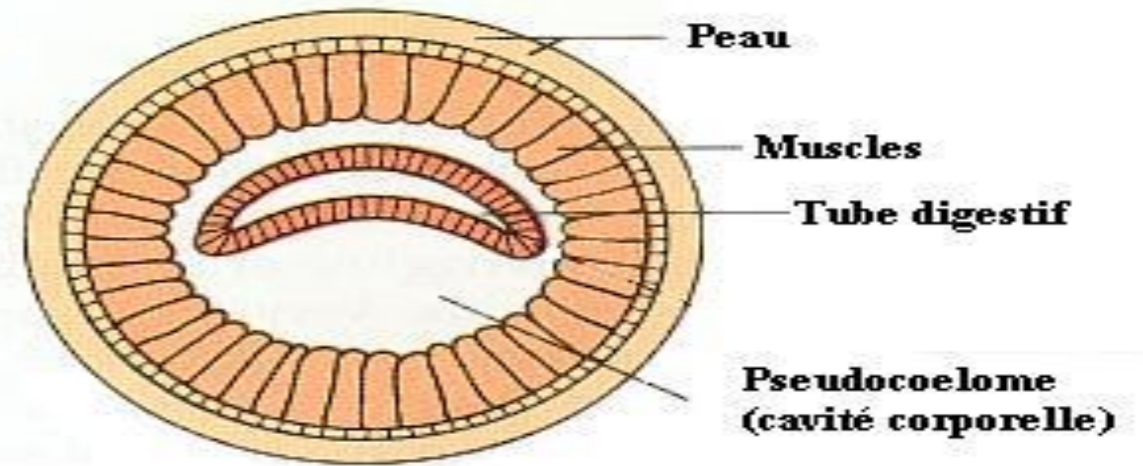
Plathelminthes



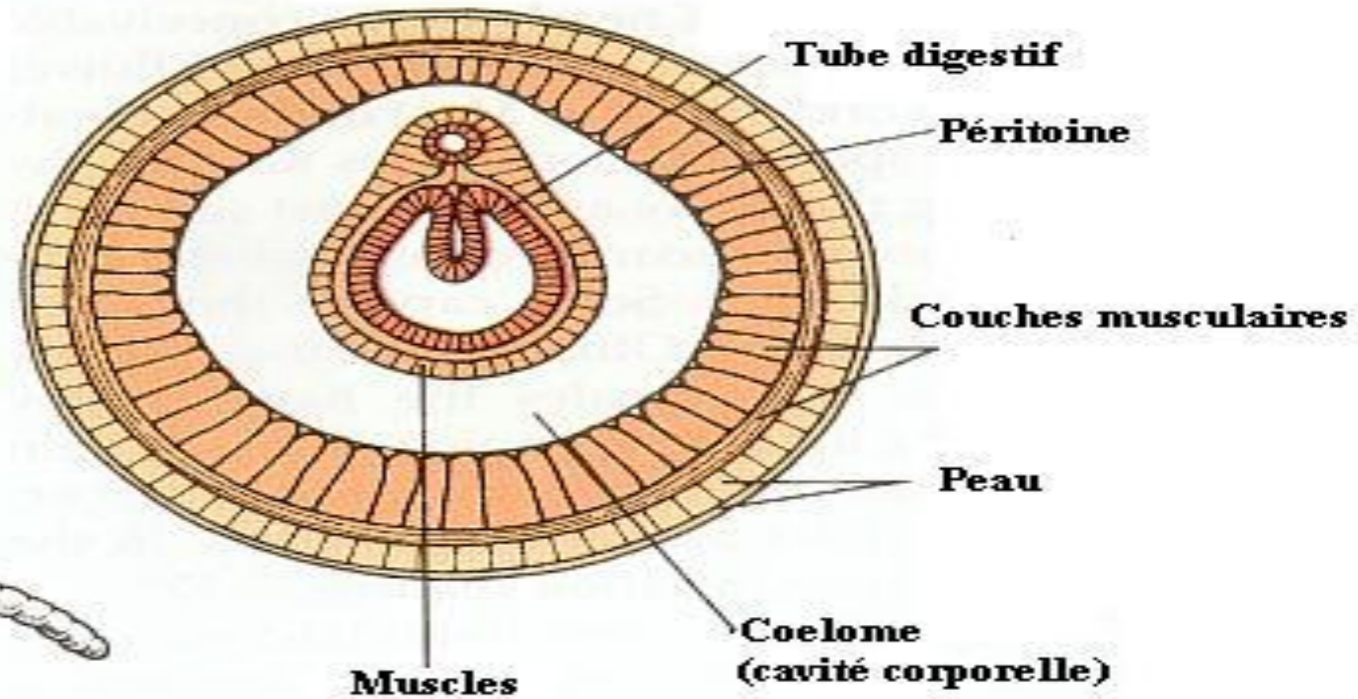
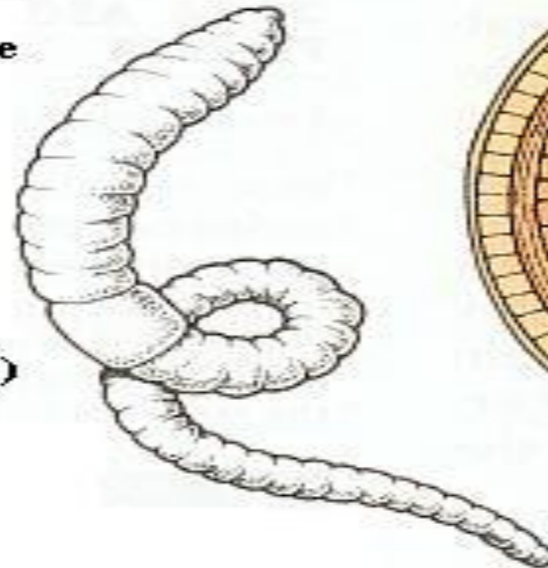
(b) Pseudocoelomate



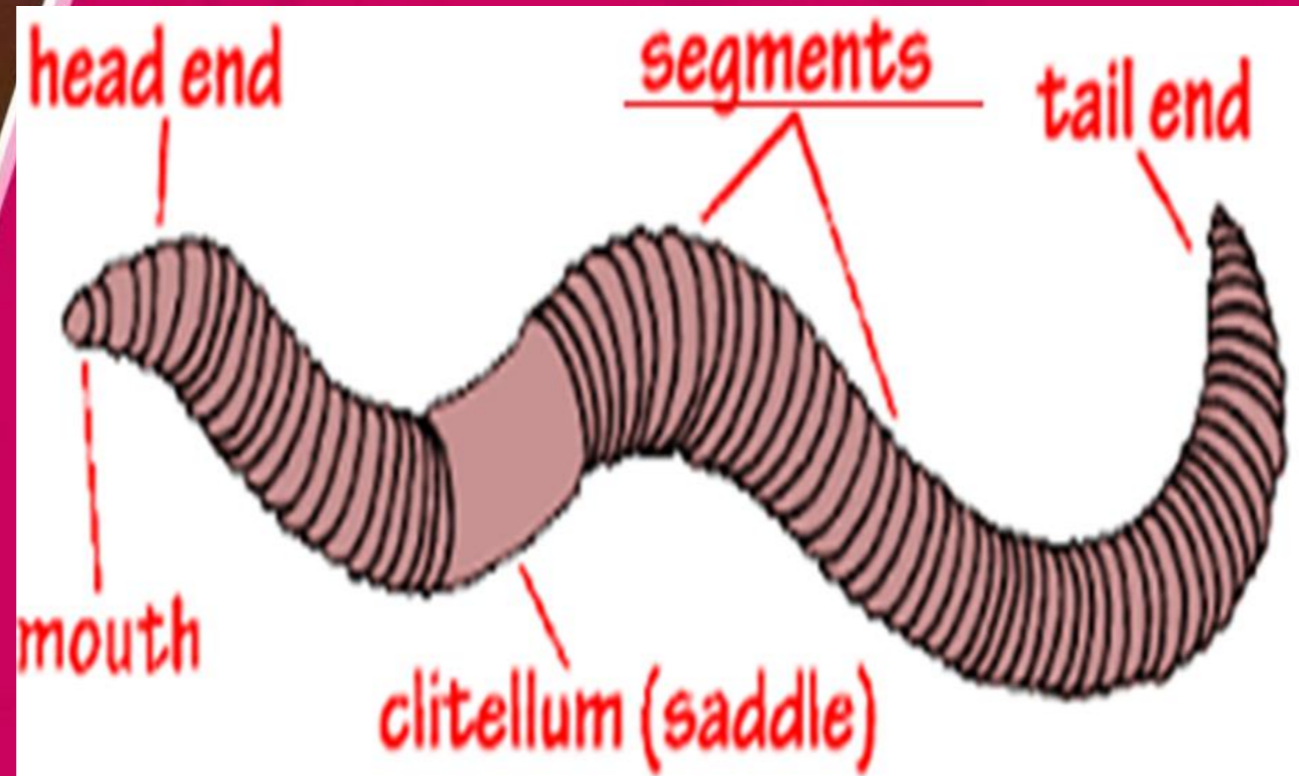
Nématelminthes



(c) Coelomate



(v) Segmentation



Pheretima sp.



Ascaris sp.





THE END OF CHAPTER BIODIVERSITY

**COMING NEXT
CHAPTER IS
ECOLOGY**