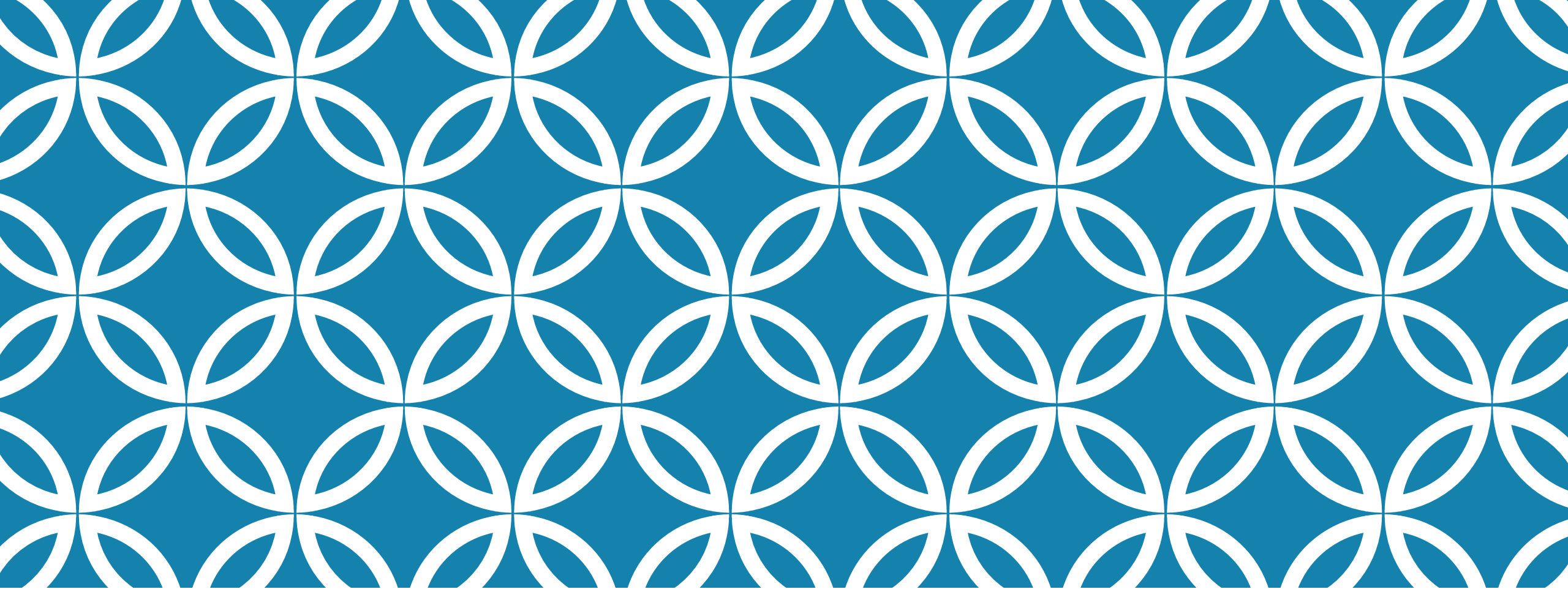




PHYLUM CHORDATA: LOWER CHORDATES

Benilda Ramos-Butron

OBJECTIVE/S:

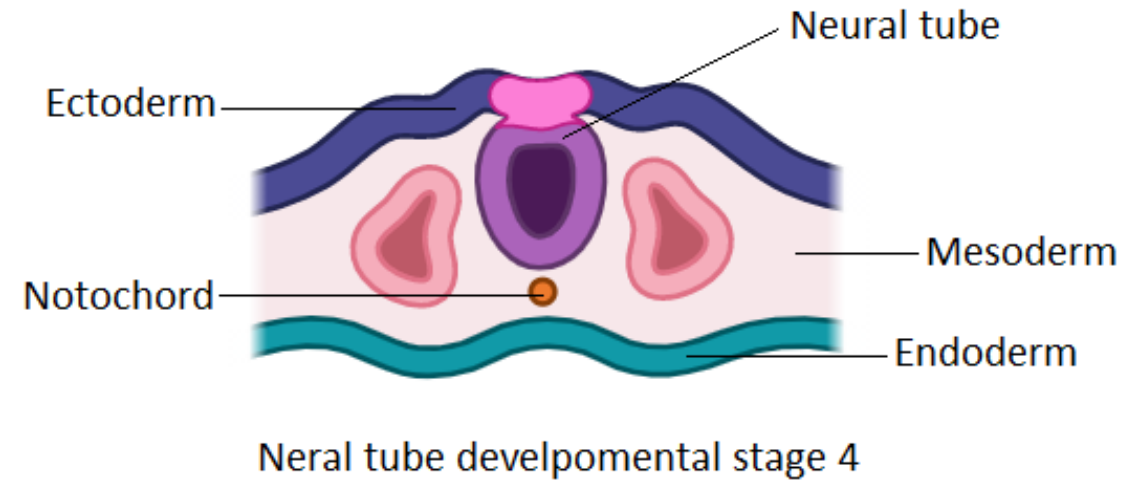
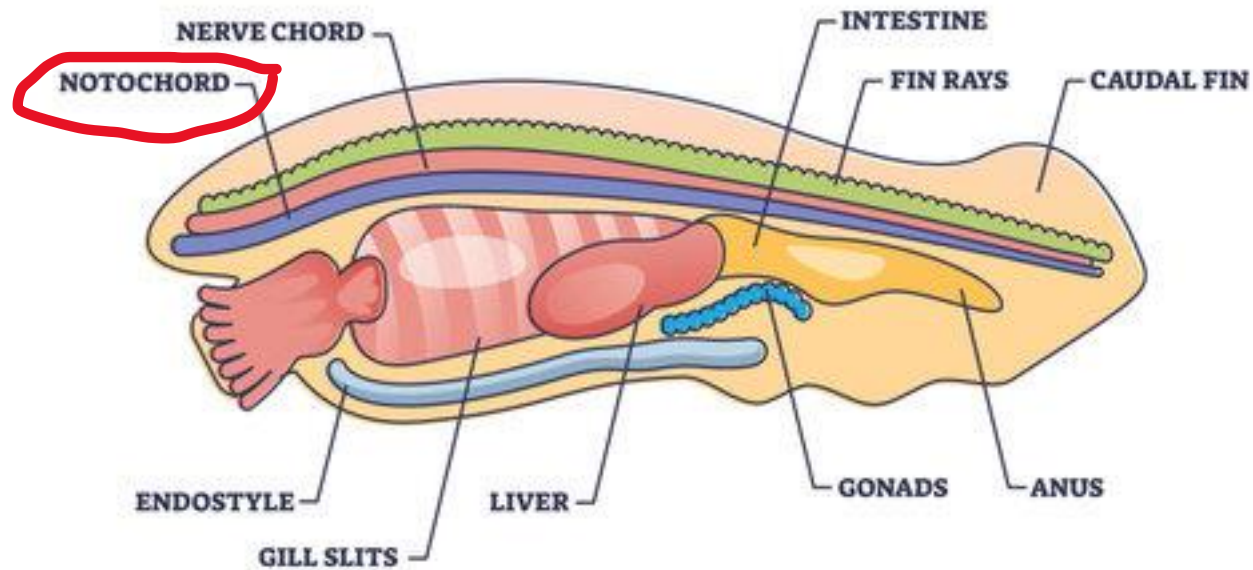
1. Discuss the general characteristics of Phylum Chordata
2. Differentiate Subphylum Urochordata and Cephalochordata

CHARACTERISTICS OF CHORDATES

1. A rodlike dorsal supporting **notochord** present during at least part of the life cycle.
2. A dorsal hollow **nerve cord** present at some time in the life cycle
3. **Gill slits** present in the pharyngeal region during some stage of the life cycle.
4. Often with a tail projecting posterior to the anus.
5. Bilateral symmetry, with 3 germ layers and a segmented body.
6. Coelom enterocoelous in origin and well developed.
7. Mesodermal endoskeleton
8. Closed circulatory system with a ventral heart
9. Sexes separate, oviparous or viviparous

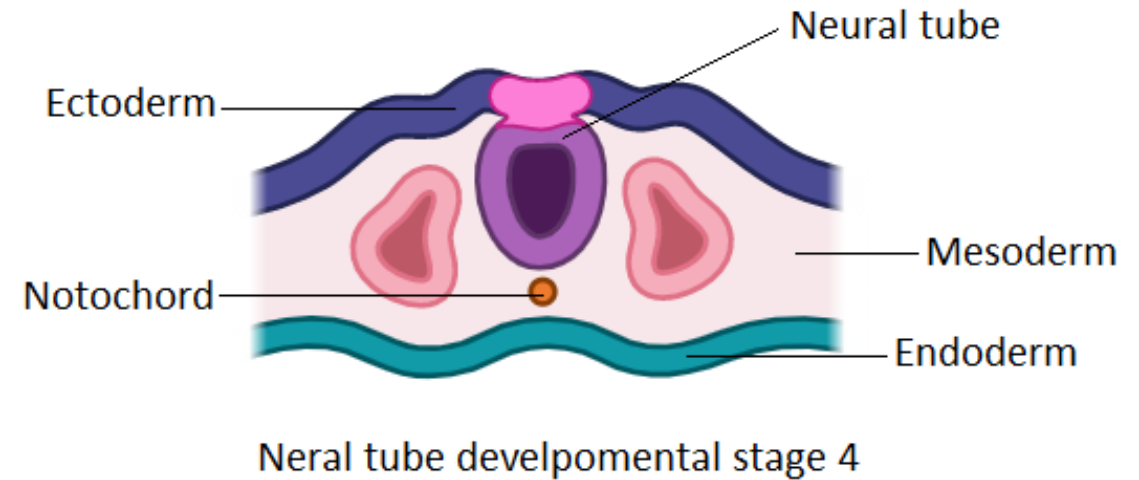
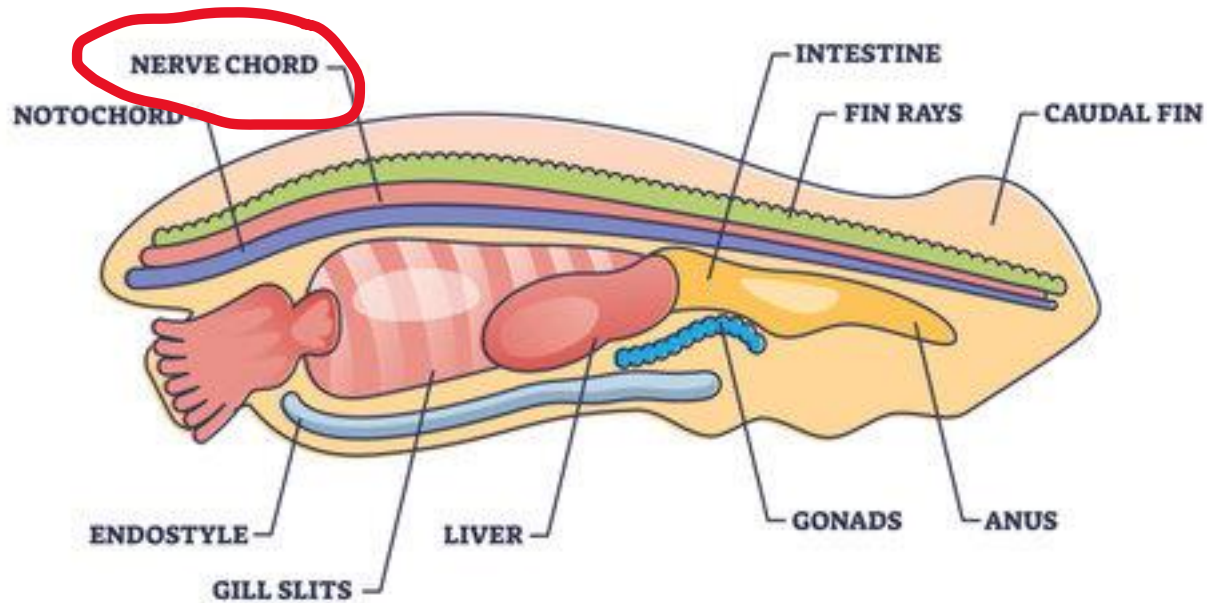
3 DEFINITIVE CHARACTERISTICS ARE:

CHORDATES



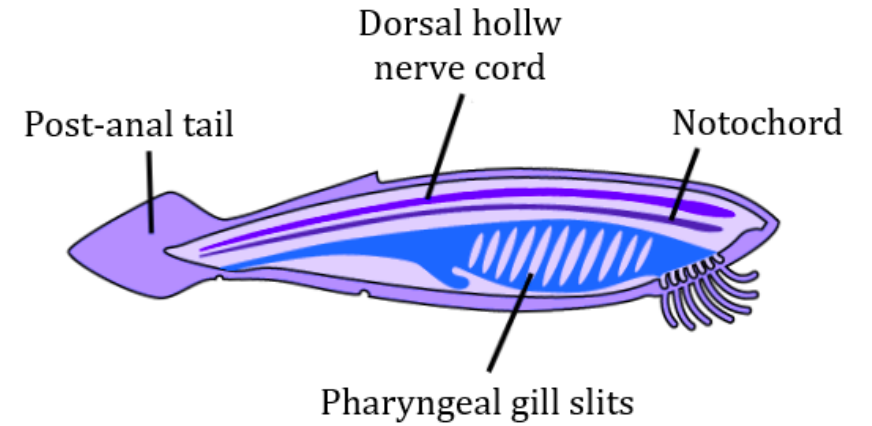
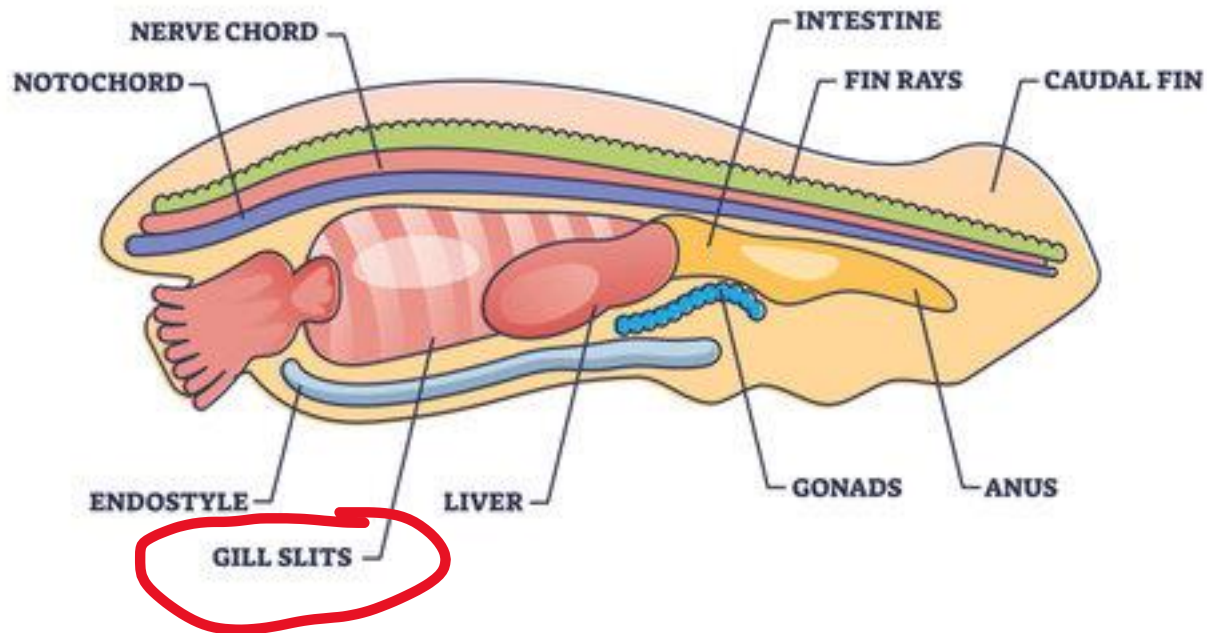
3 DEFINITIVE CHARACTERISTICS ARE:

CHORDATES

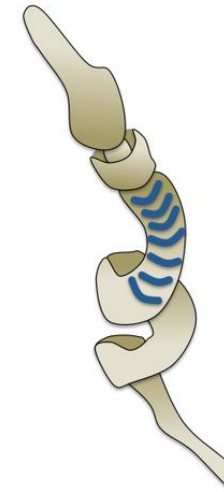


3 DEFINITIVE CHARACTERISTICS ARE:

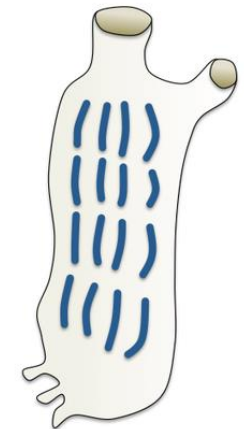
CHORDATES



Hemichordate



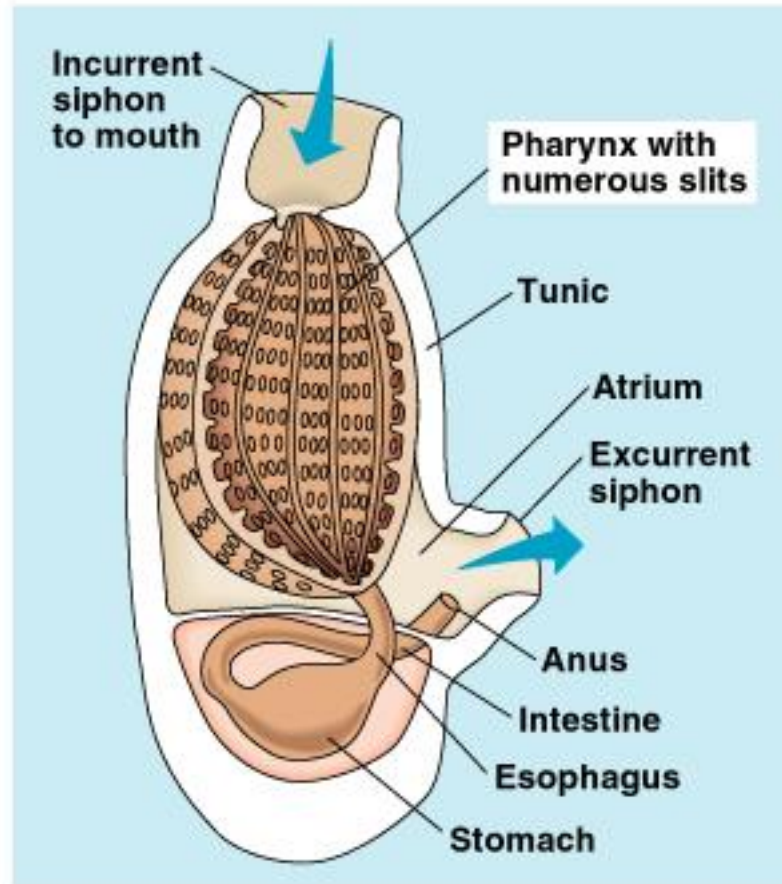
Urochordate



MAJOR DIVISION OF THE PHYLUM CHORDATA

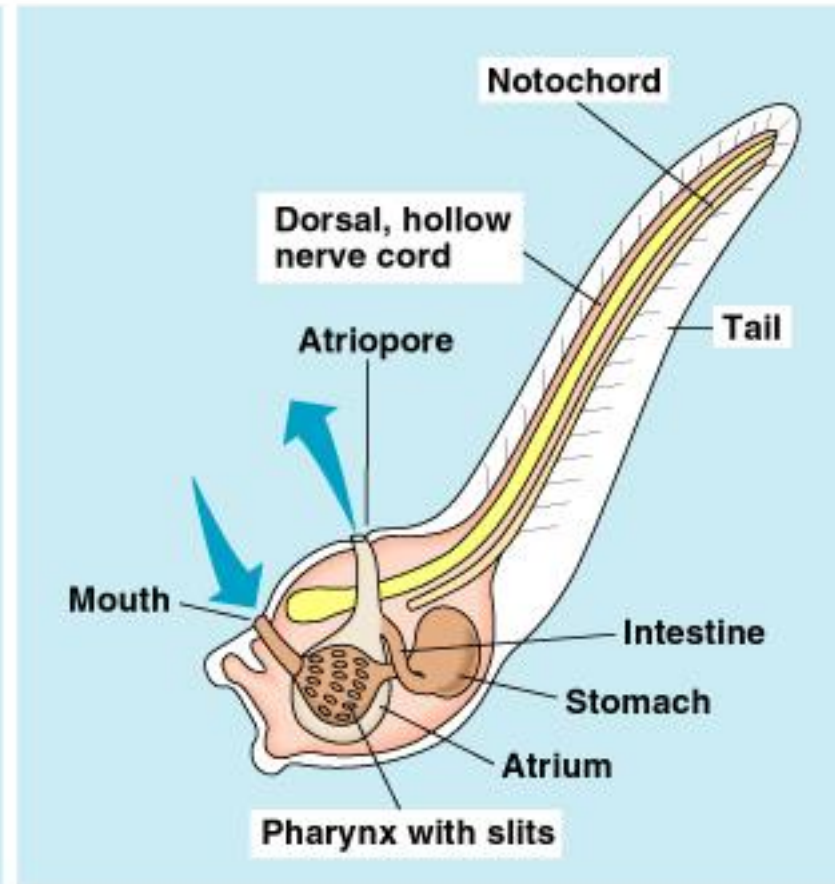
Subphyla and Superclasses	Classes and their principal characteristics
UROCHORDATA: Notochord and nerve cord only in larva; adult contained in secreted tunic	Larvacea: Minute, tadpolelike; tunic temporary; 2 gill slits Ascidacea: Ascidians. Tunic with scattered muscles; many gill slits Thaliacea: Tunic with circular muscle bands

UROCHORDATA



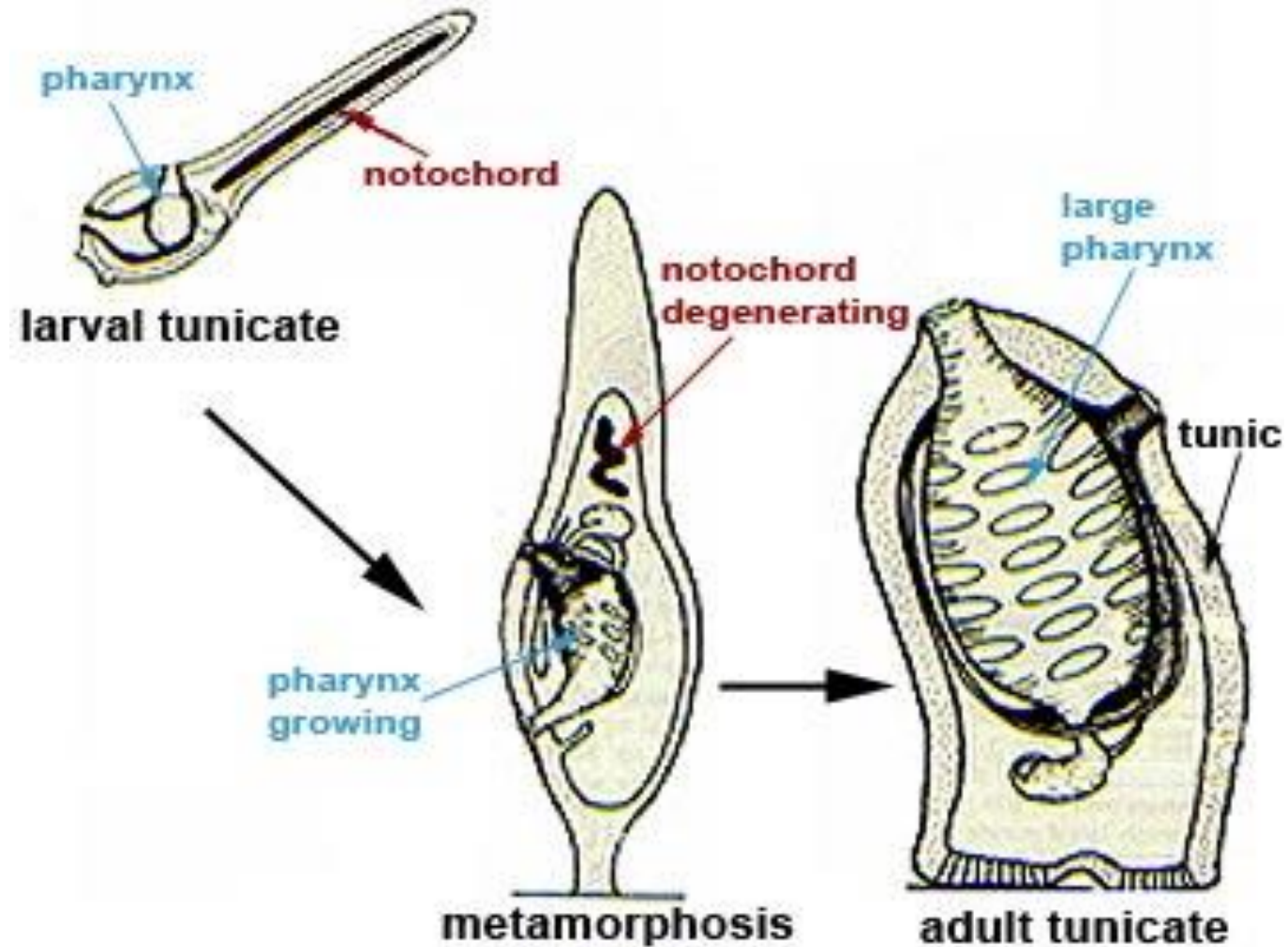
(b)

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(c)

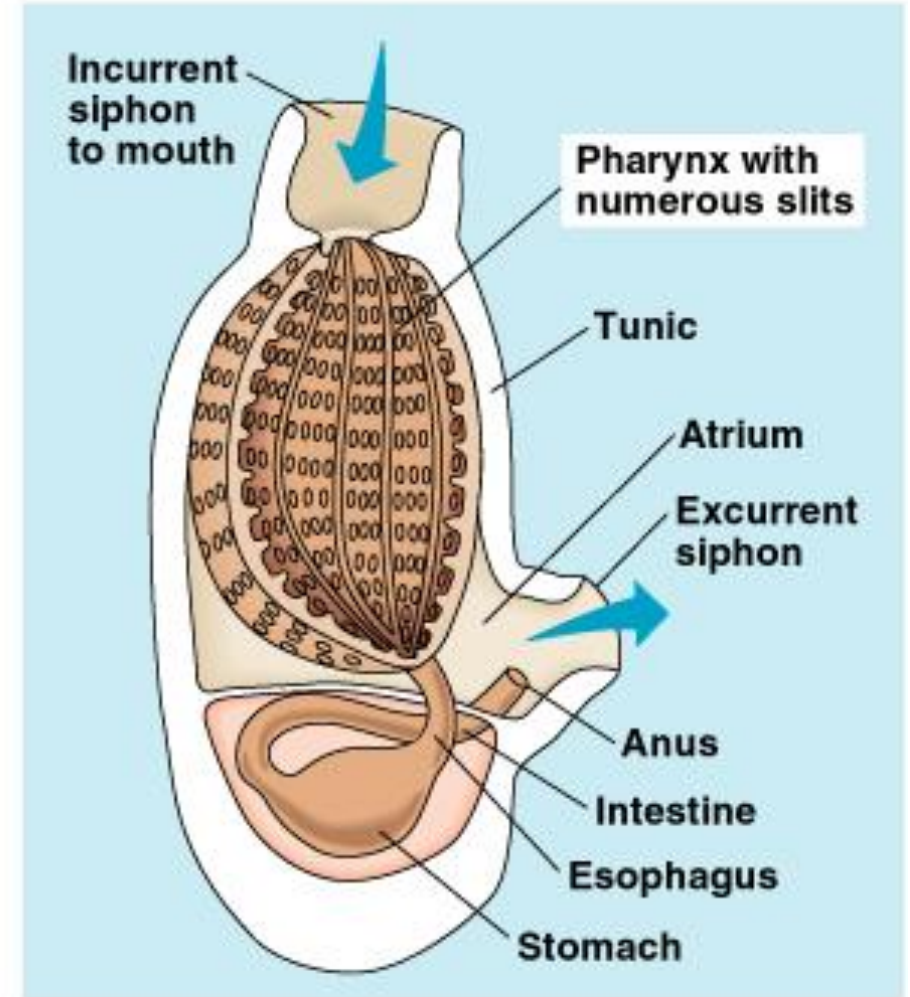
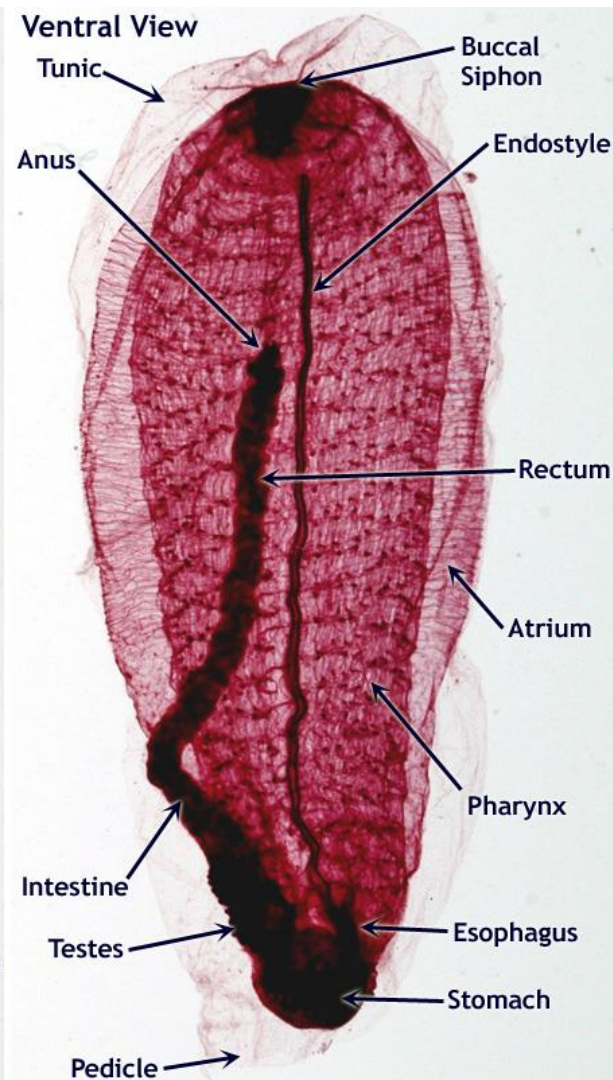
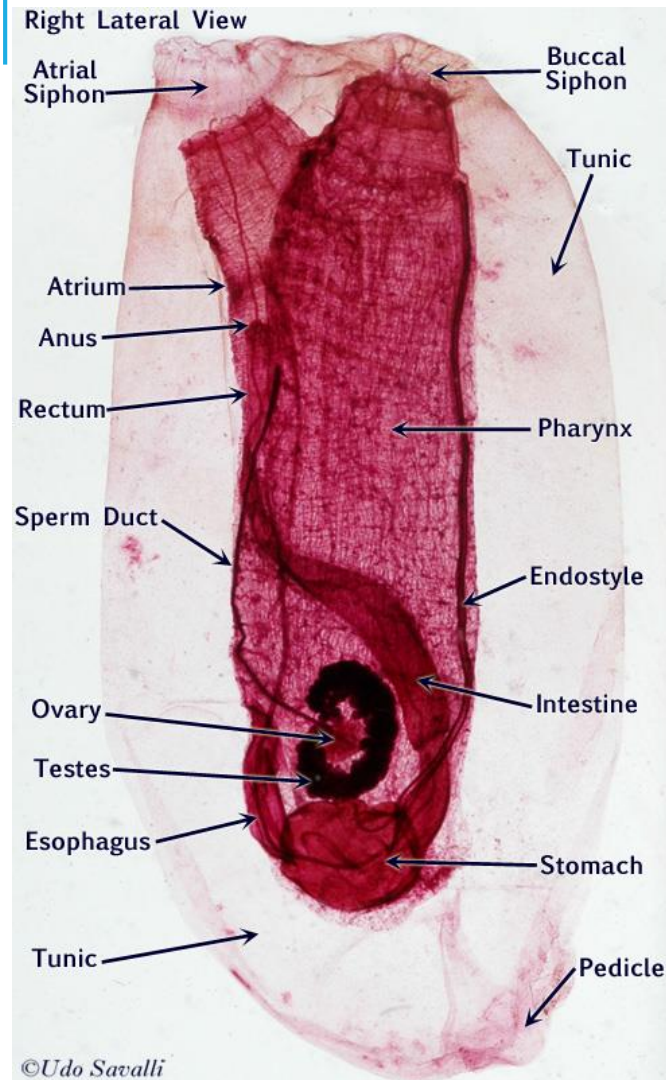
RETROGRADE METAMORPHOSIS



TUNICATES



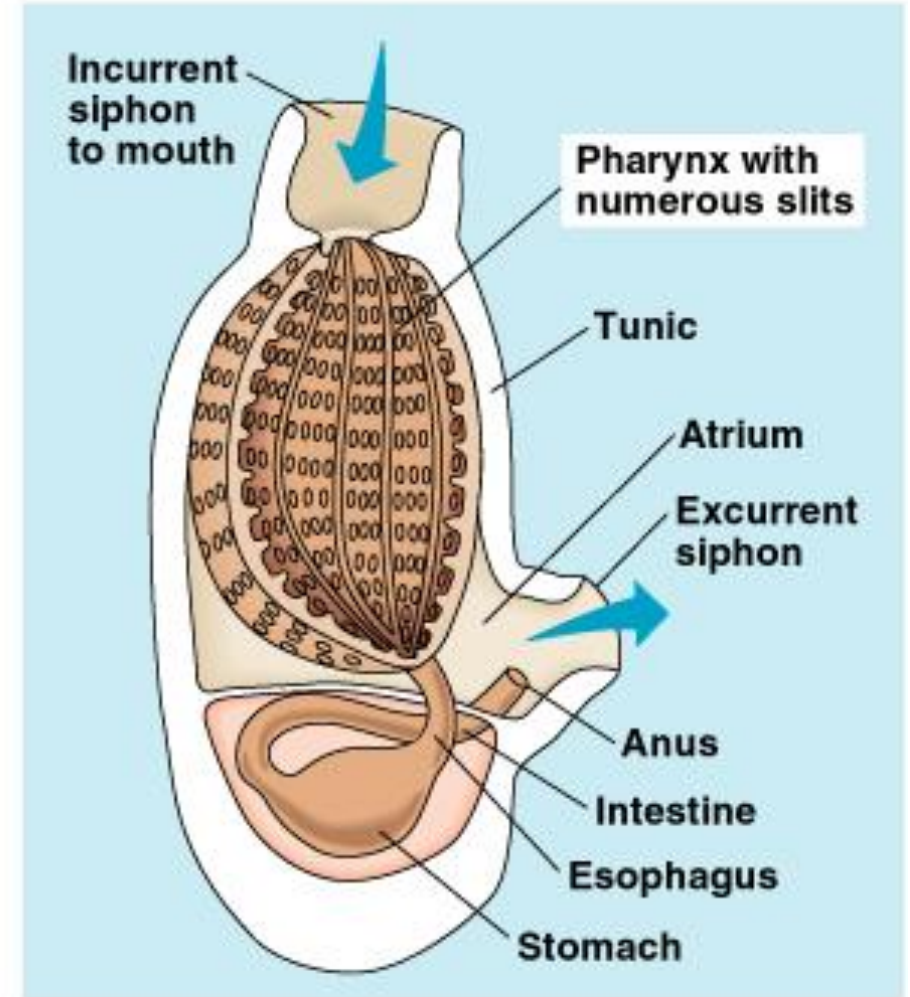
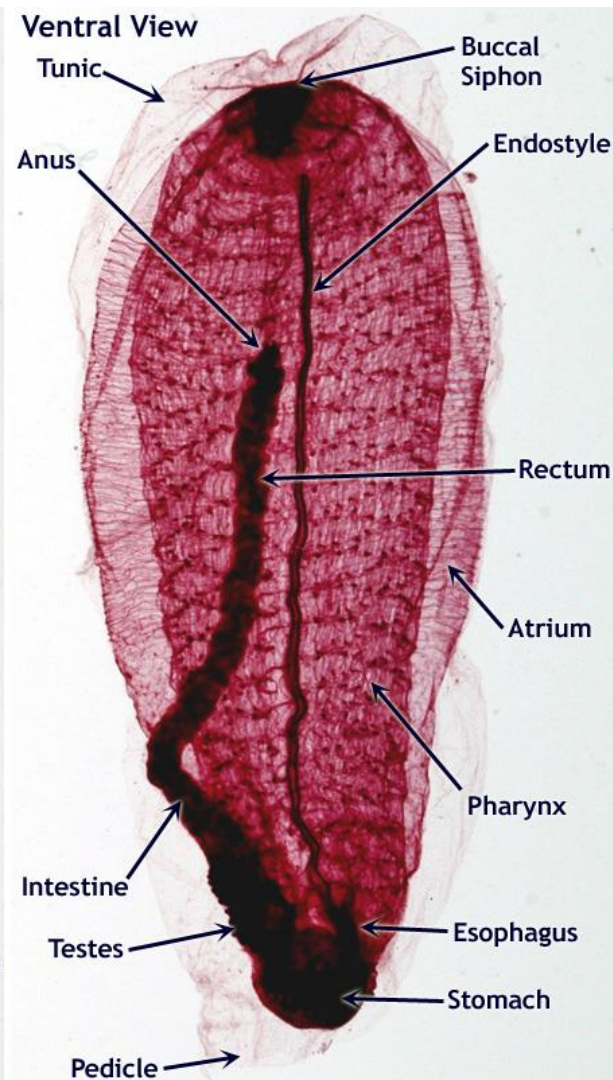
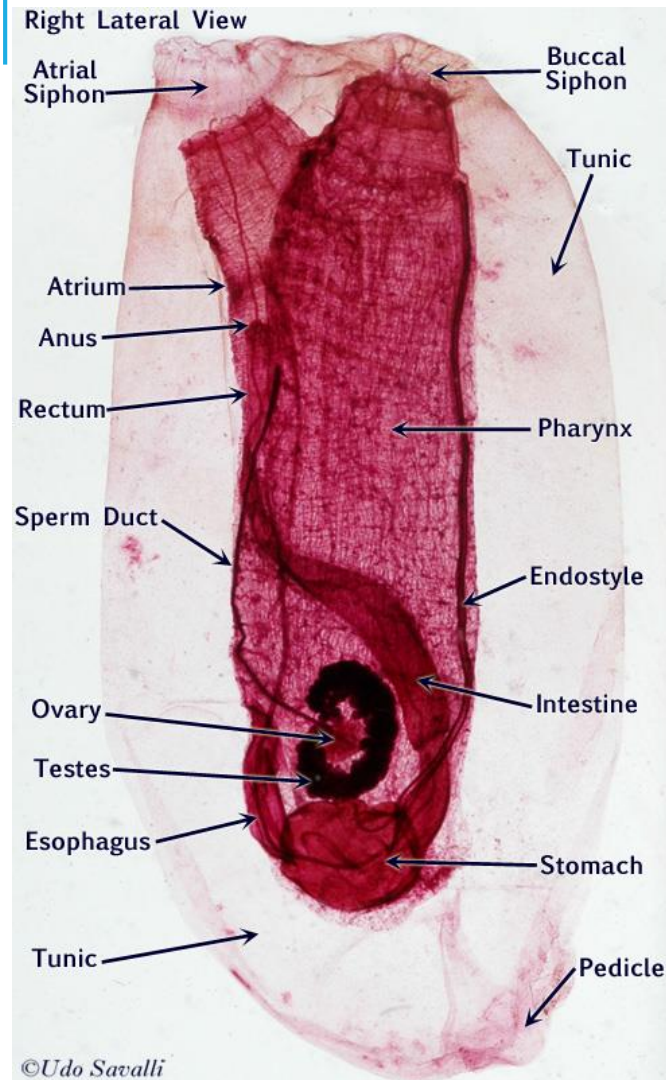
TUNICATES



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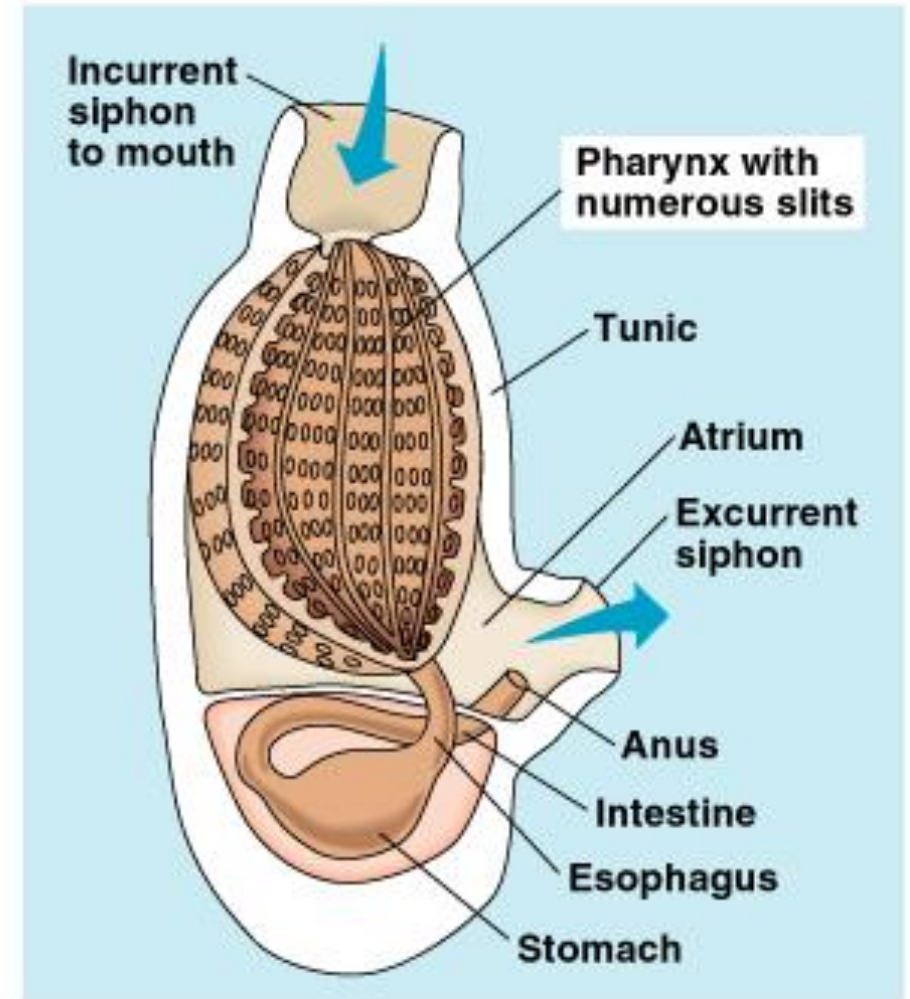
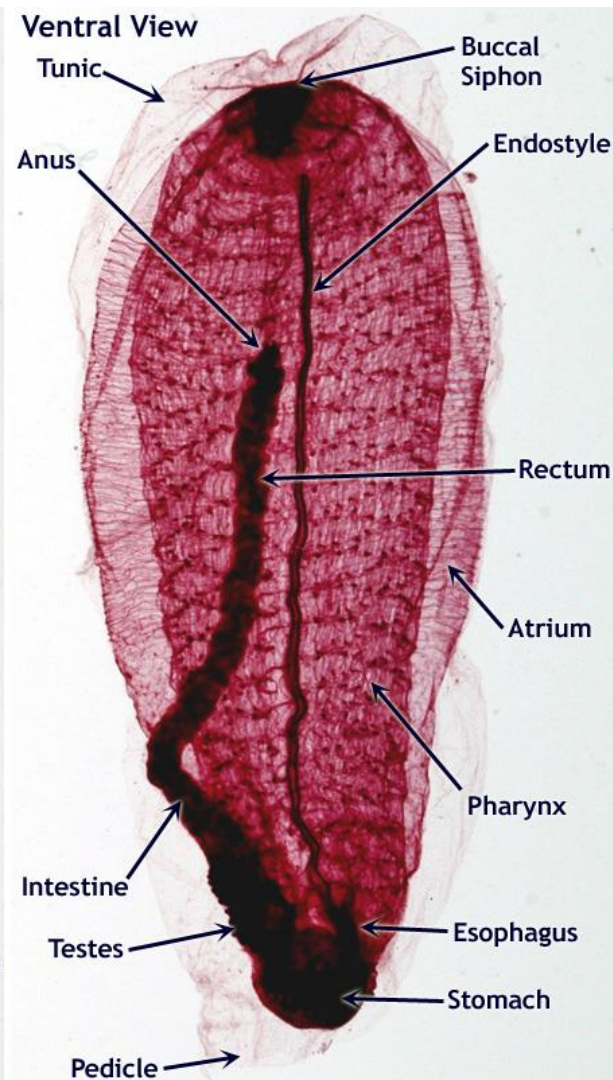
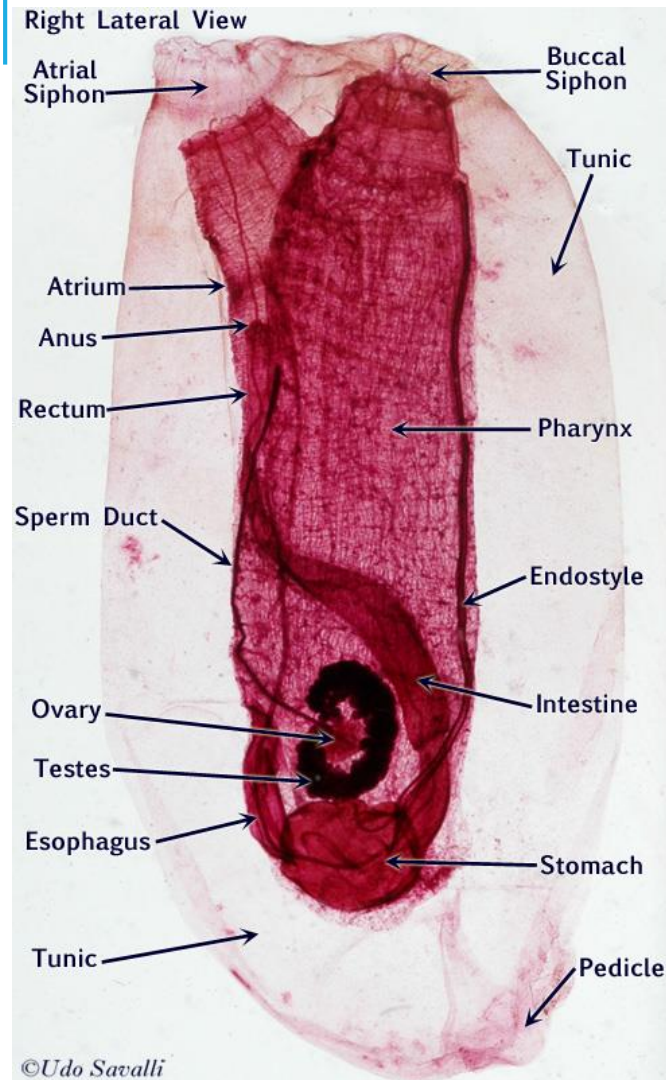
TUNICATES



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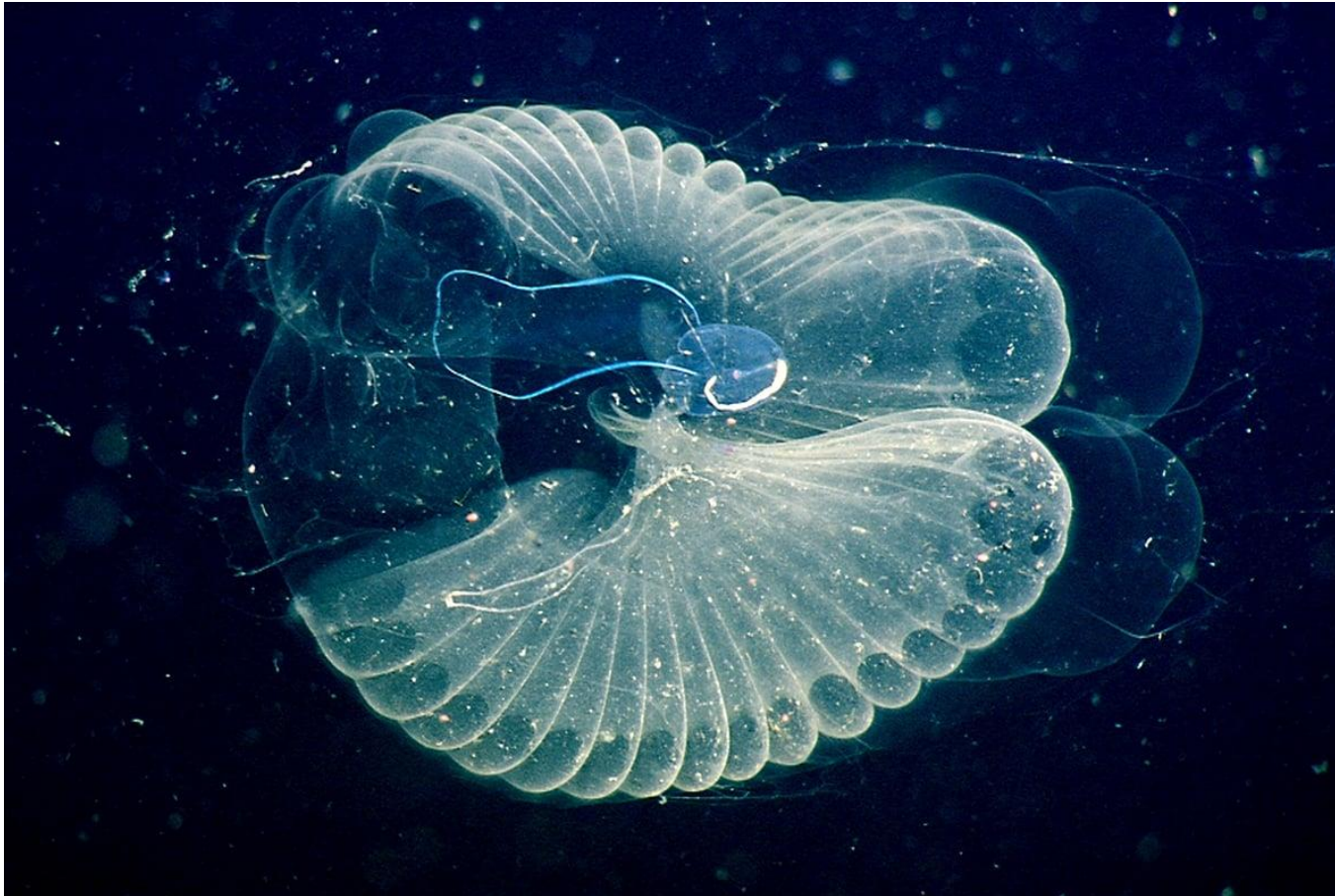
TUNICATES



(b)

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LARVACEANS



Class Larvacea

- Pelagic
- Larvalike appearance (**neotonous**)
- Persistent notochord
- Live in the upper level of the sea
- Lives in a tunic with fine filtering screen across the incurrent siphon
- Regular house shedding
- Sexual reproduction

ASCIDIACEA (SEA SQUIRT)

Class Ascidiacea

- Solitary or compound
- Lives in shallow waters
- Asexual and sexual reproduction
- Most are attached but *Polycarpa* are free living in sand or mud

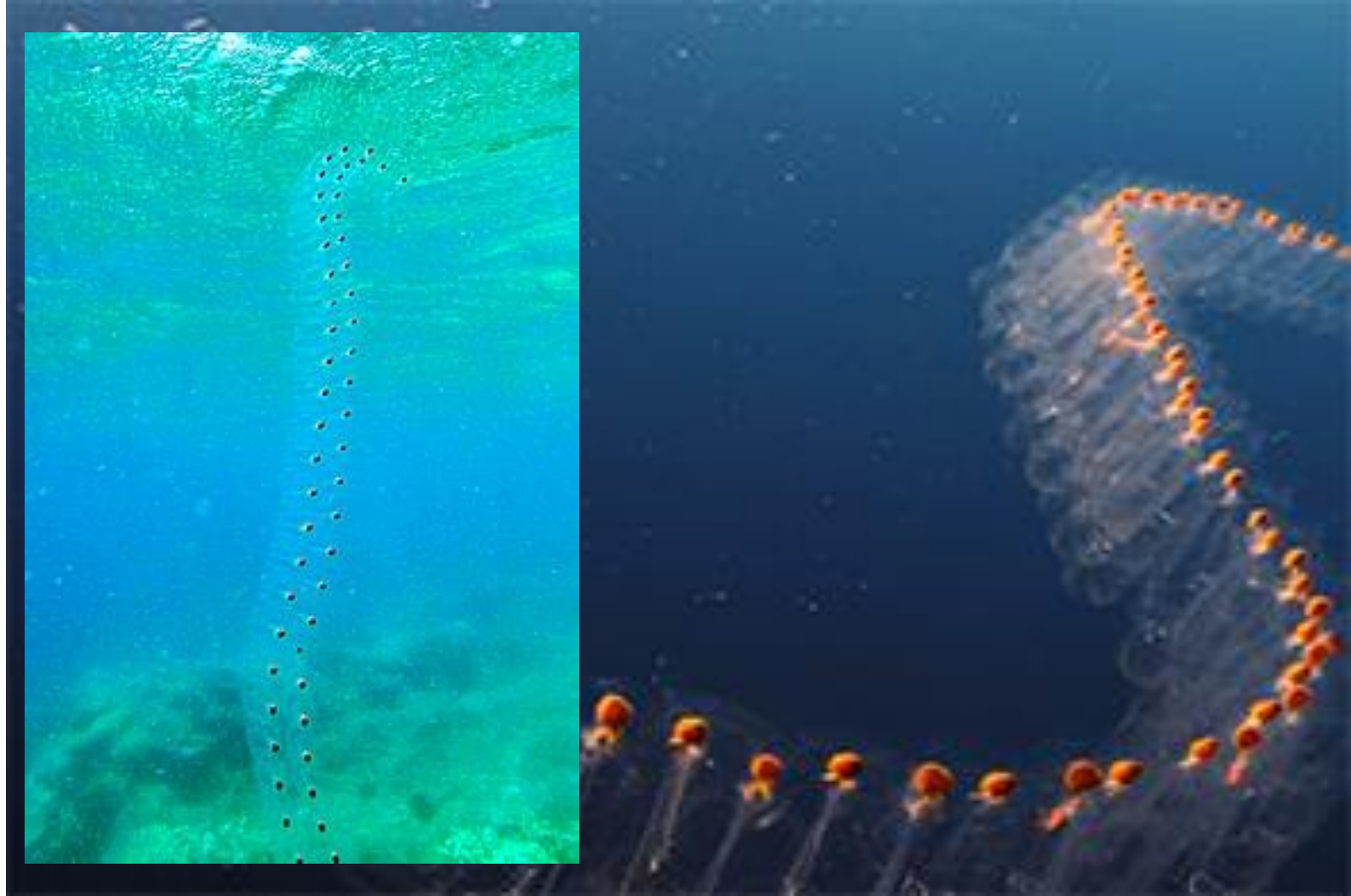


CHRISTIANGLOR2014

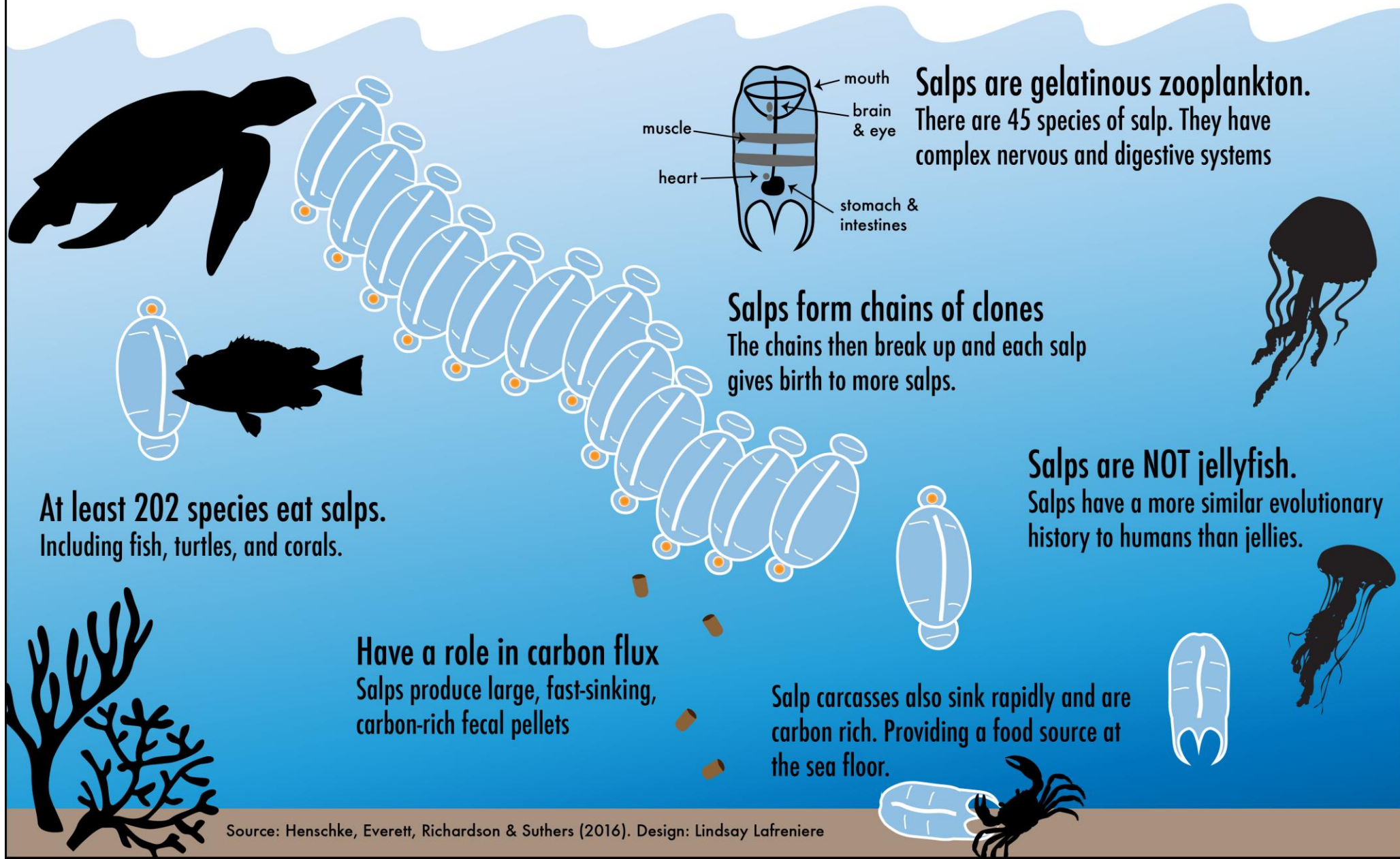
THALIACEA (SALPS)

Class Thaliacea

- Highly modified
- Lives in open tropical or subtropical seas
- Siphons in opposite ends
- Solitary
- Swim by contracting the ringlike muscles
- Life cycle involves asexual budding
- Sexual reproduction: produce larvae or brood eggs without larval stage



5 FACTS ABOUT SALPS



Salps are gelatinous zooplankton.
There are 45 species of salp. They have complex nervous and digestive systems

Salps form chains of clones
The chains then break up and each salp gives birth to more salps.

At least 202 species eat salps.
Including fish, turtles, and corals.

Have a role in carbon flux
Salps produce large, fast-sinking, carbon-rich fecal pellets

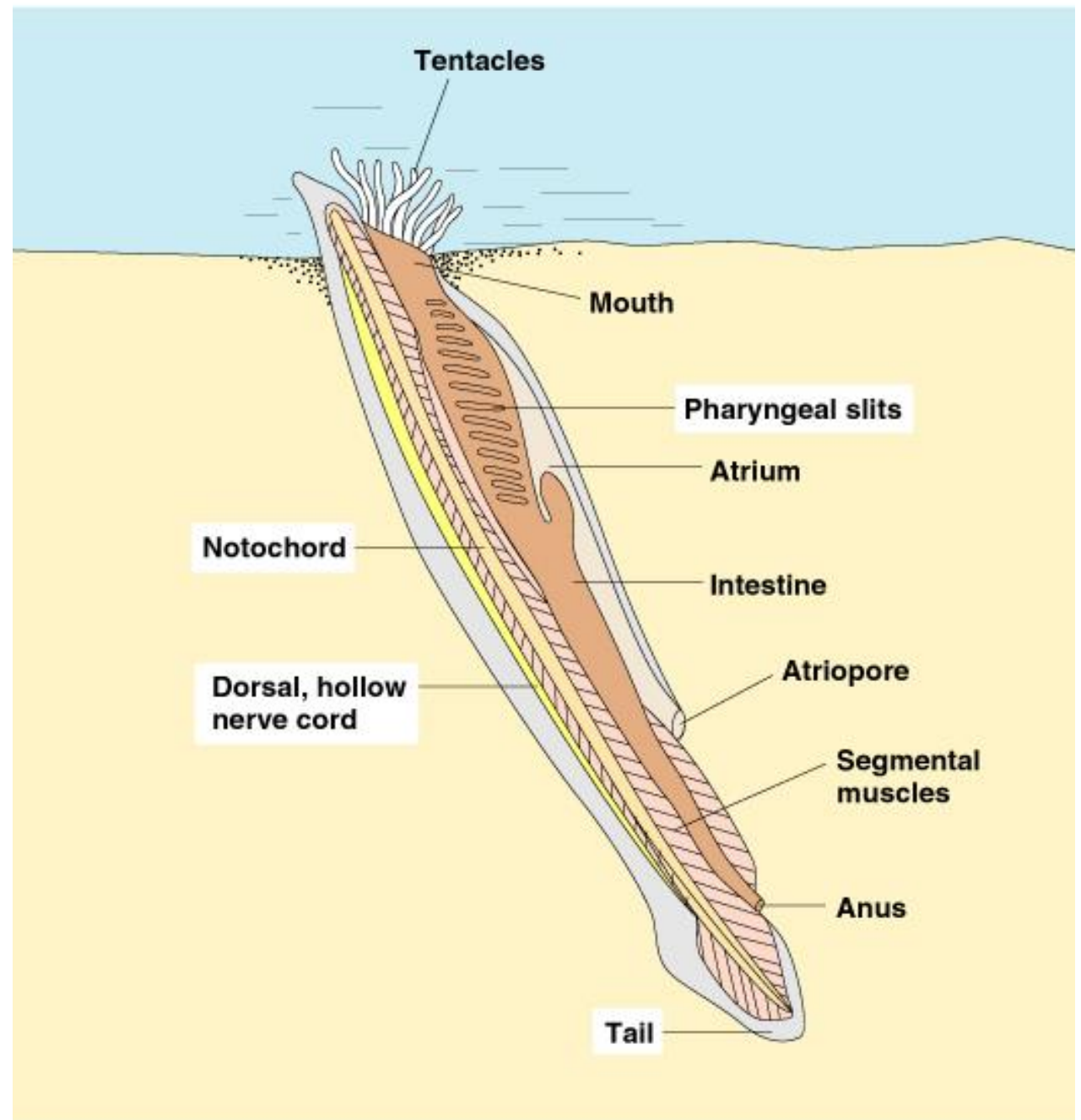
Salp carcasses also sink rapidly and are carbon rich. Providing a food source at the sea floor.

Salps are NOT jellyfish.
Salps have a more similar evolutionary history to humans than jellies.

MAJOR DIVISION OF THE PHYLUM CHORDATA

Subphyla and Superclasses	Classes and their principal characteristics
UROCHORDATA: Notochord and nerve cord only in larva; adult contained in secreted tunic	Larvacea: Minute, tadpolelike; tunic temporary; 2 gill slits Asidiacea: Ascidians. Tunic with scattered muscles; many gill slits Thaliacea: Tunic with circular muscle bands
CEPHALOCHORDATA: Notochord and nerve cord along entire body and persistent, as are the gill slits	Class Leptocardii, Family Branchiostomatidae Lancelets. Slender, fishlike, segmented; epidermis 1-layered, no scales; many gill slits

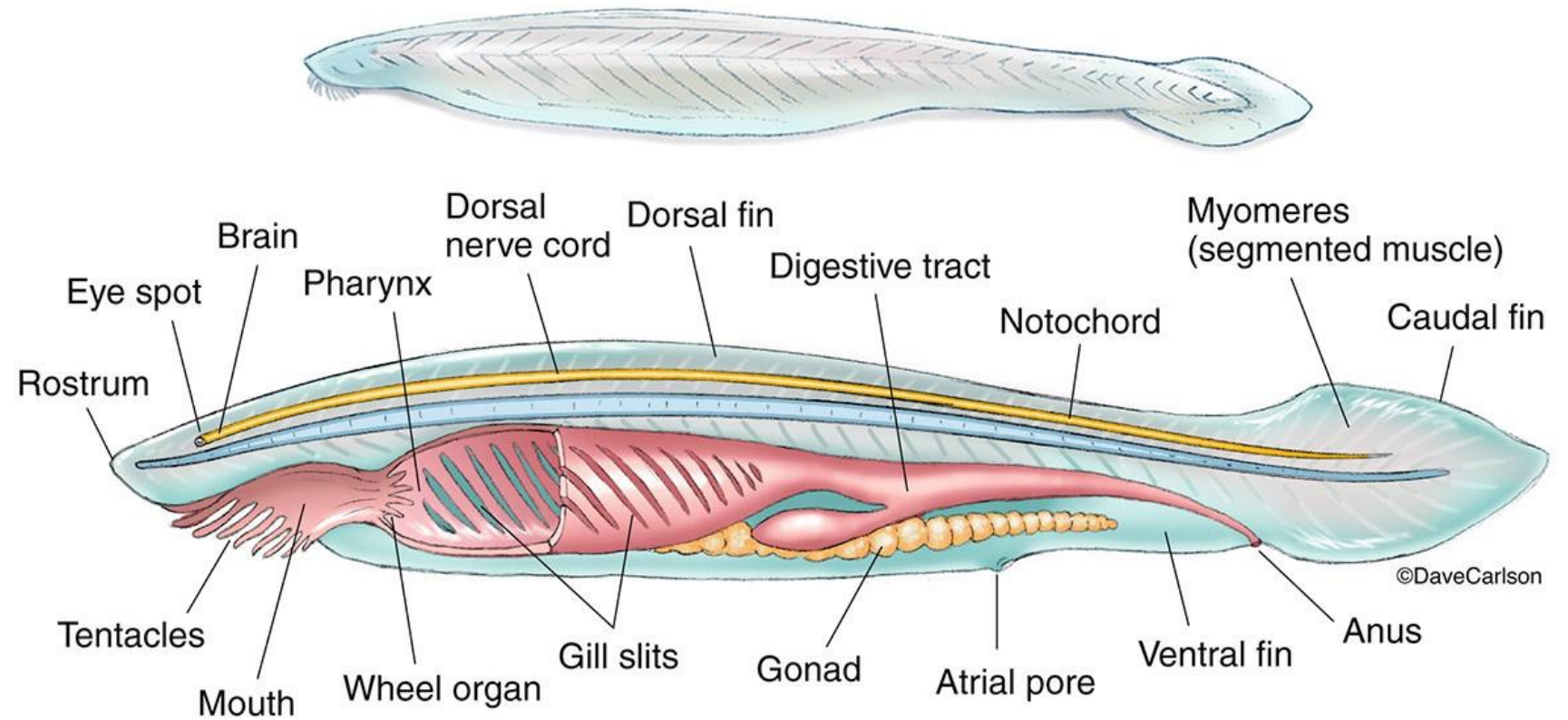
AMPHIOXUS



AMPHIOXUS



AMPHIOXUS



MAJOR DIVISION OF THE PHYLUM CHORDATA

Subphyla and Superclasses	Classes and their principal characteristics
VERTEBRATA: With cranium, visceral arches, vertebrae, and brain Superclass Pisces Superclass Tetrapoda	Ostracodermi Cyclostomata Placodermi Chondrichthyes Osteichthyes Amphibia Reptilia Aves Mammalia

Ostracoderm



Placodermi



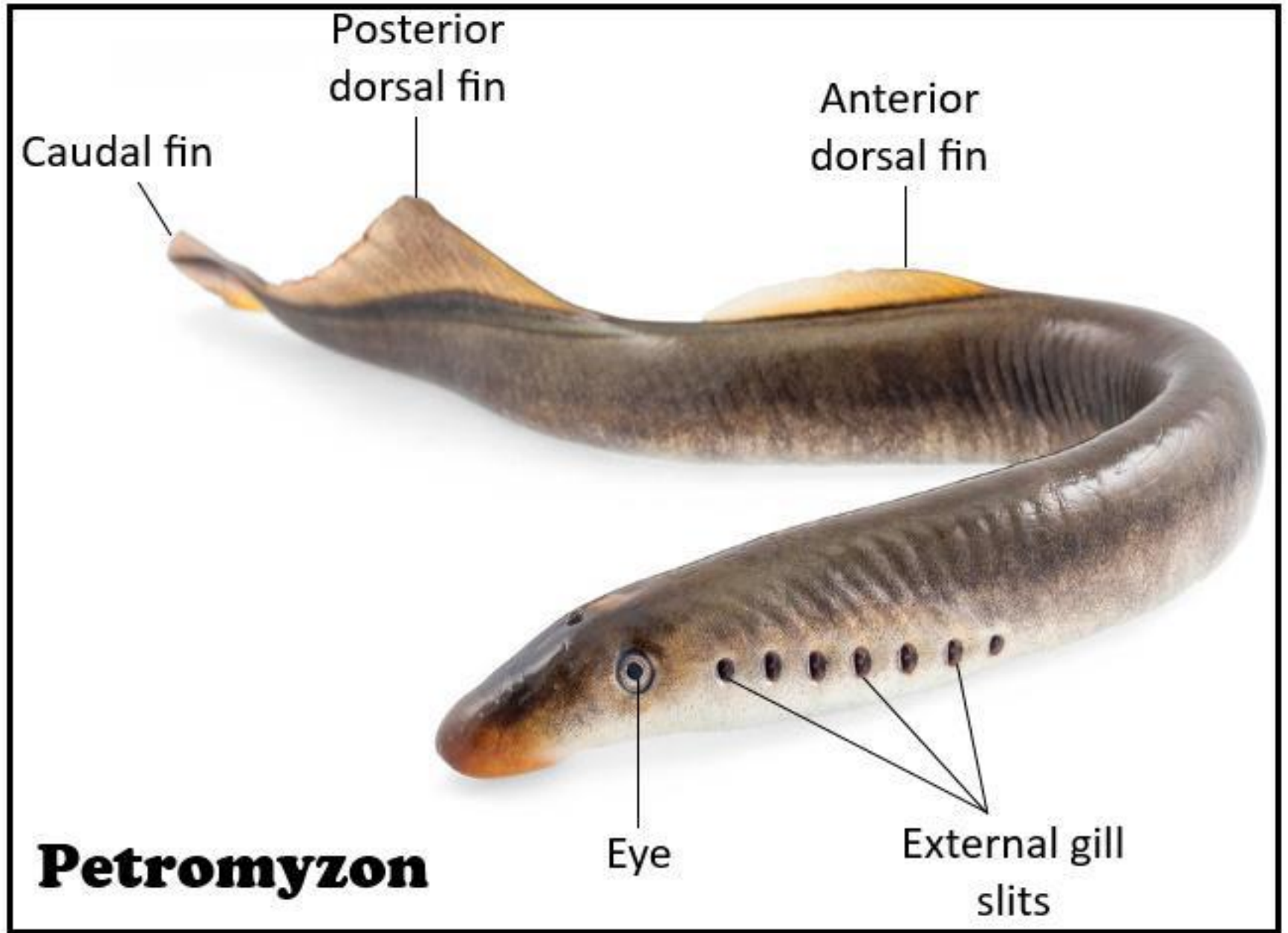
Wuttagoonaspis, an early arthrodire



Materpiscis, a ptyctodontid

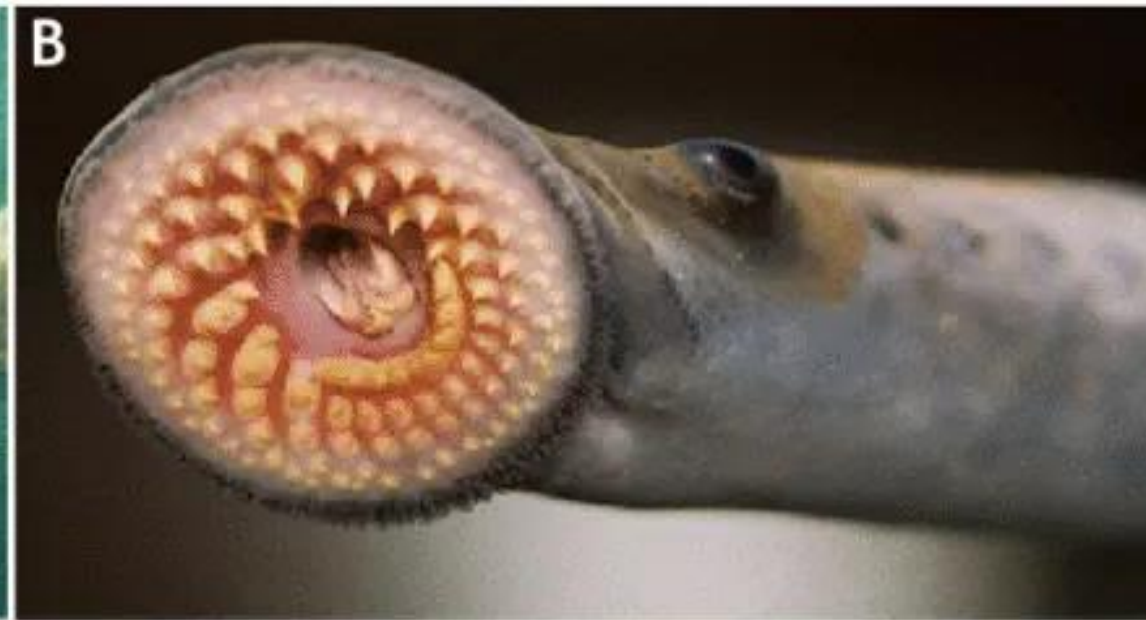


Bothriolepis, an antiarch



Cyclostomata

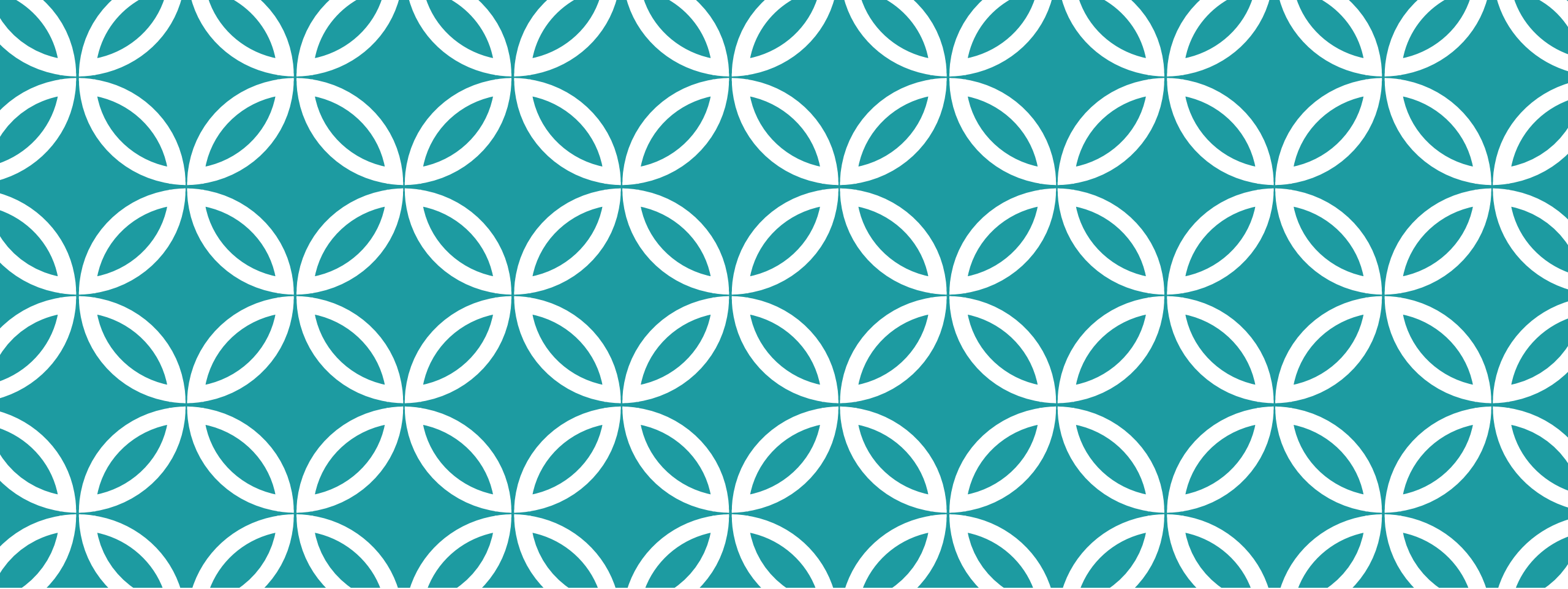
Order 1: Petromyzontiformes:





Hagfishes

Order 2: Myxiniformes:



END |