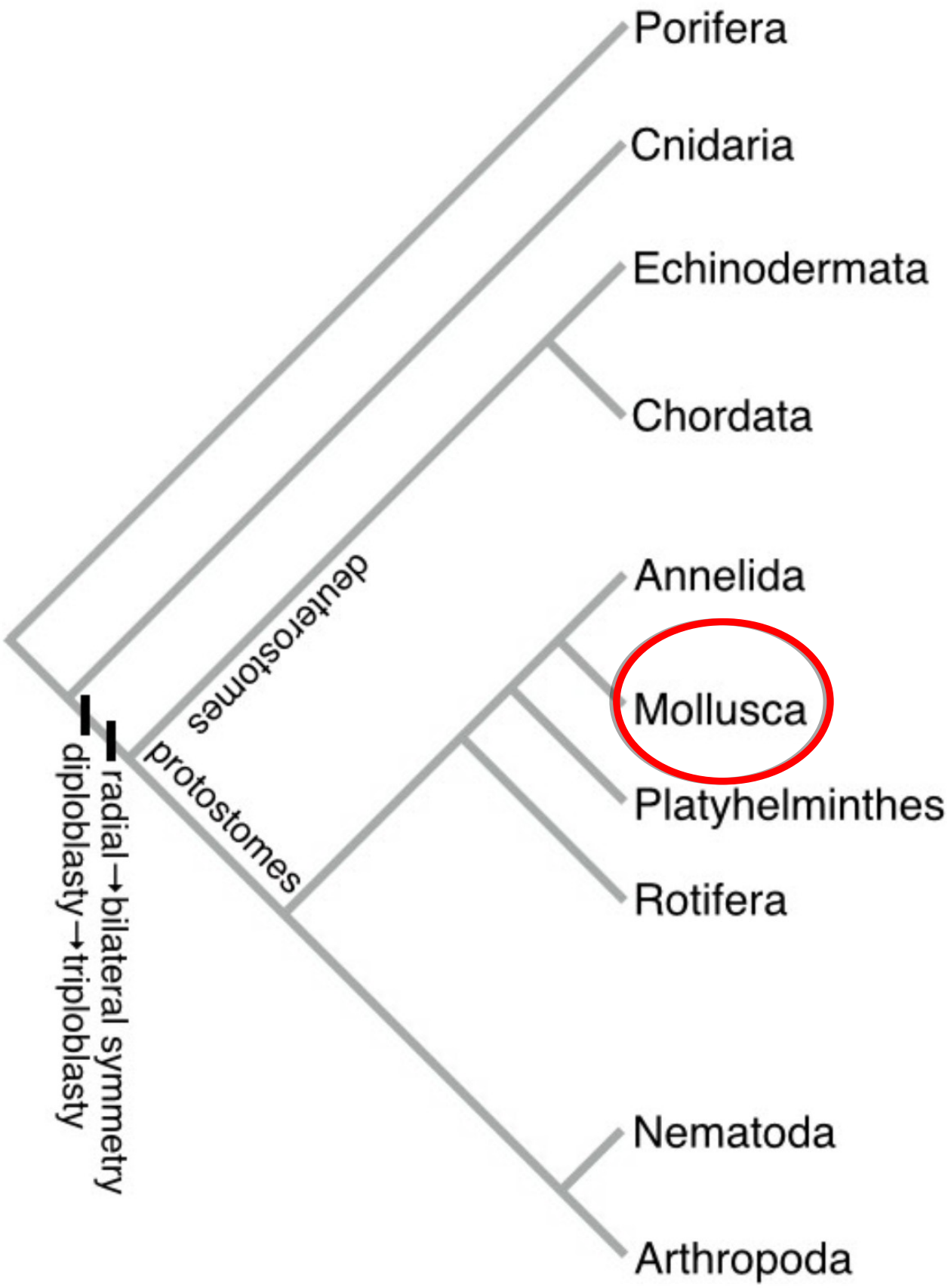
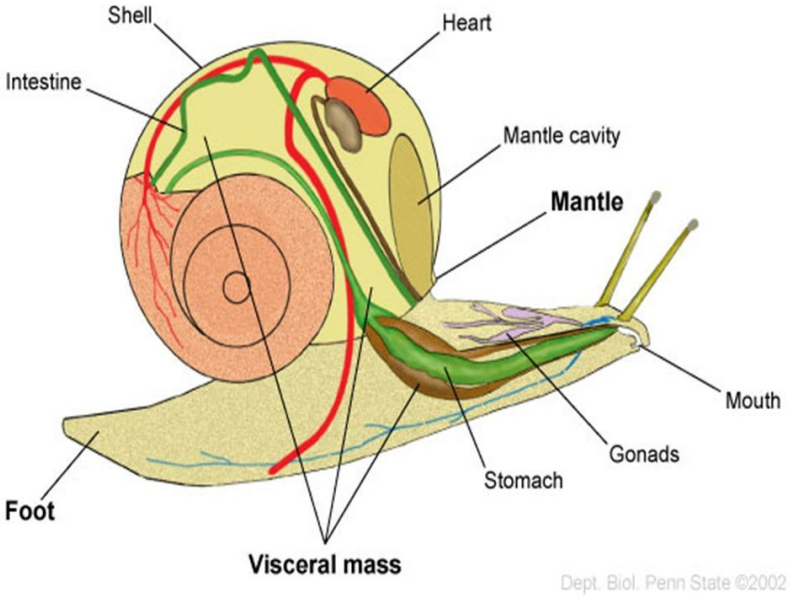
Mollusks


Porifera
Cnidaria
Echinodermata
Chordata
Annelida
Mollusca
Platyhelminthes
Rotifera
Nematoda
Arthropoda
deuterostomes
protostomes
radial→bilateral symmetry
diploblasty→triploblasty

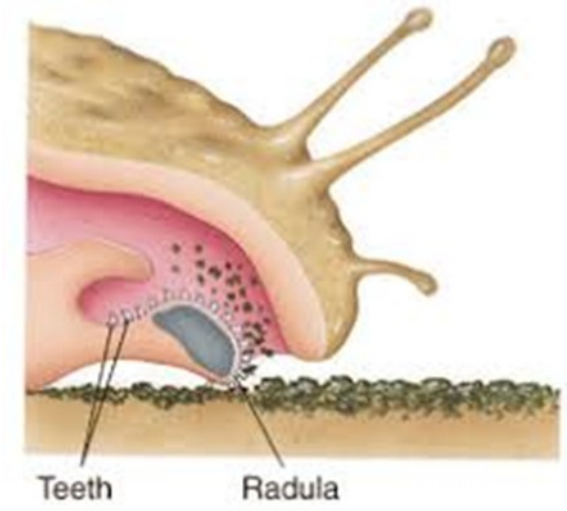
Phylum: Mollusca

- Characteristics
  - Cephalization w/ radula
  - Muscular foot used for locomotion
  - Dorsal visceral mass enclosing vital organs
  - **Mantle,** a fold of tissue that surrounds the **visceral mass**
  - Calcareous shell, which may be reduced or lost altogether
  - have trochophore larvae



Phylum: Mollusca
More Characteristics

- Second most diverse phylum (arthropods are first)
- **radula**: rasp-like tongue used for scraping (bivalves only ones that do not have this)
- 4 distinctive parts:
  - well developed head bearing major sensory organs
  - muscular foot
  - visceral mass
  - mantle - secretes shell (if present)
- vital organs include digestive, circulatory, excretory, & reproductive



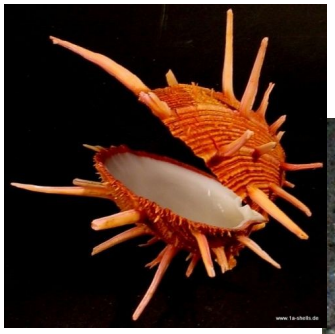
Phylum: Mollusca

Four major classes:

- **Class Gastropoda:** snails, slugs, limpets, & cowries

There are 7 classes total, but we will focus on 4.

- **Class Bivalvia:** clams, mussels, oysters, & scallops



- **Class Cephalopoda:** octopi, squid, nautili, & cuttlefish

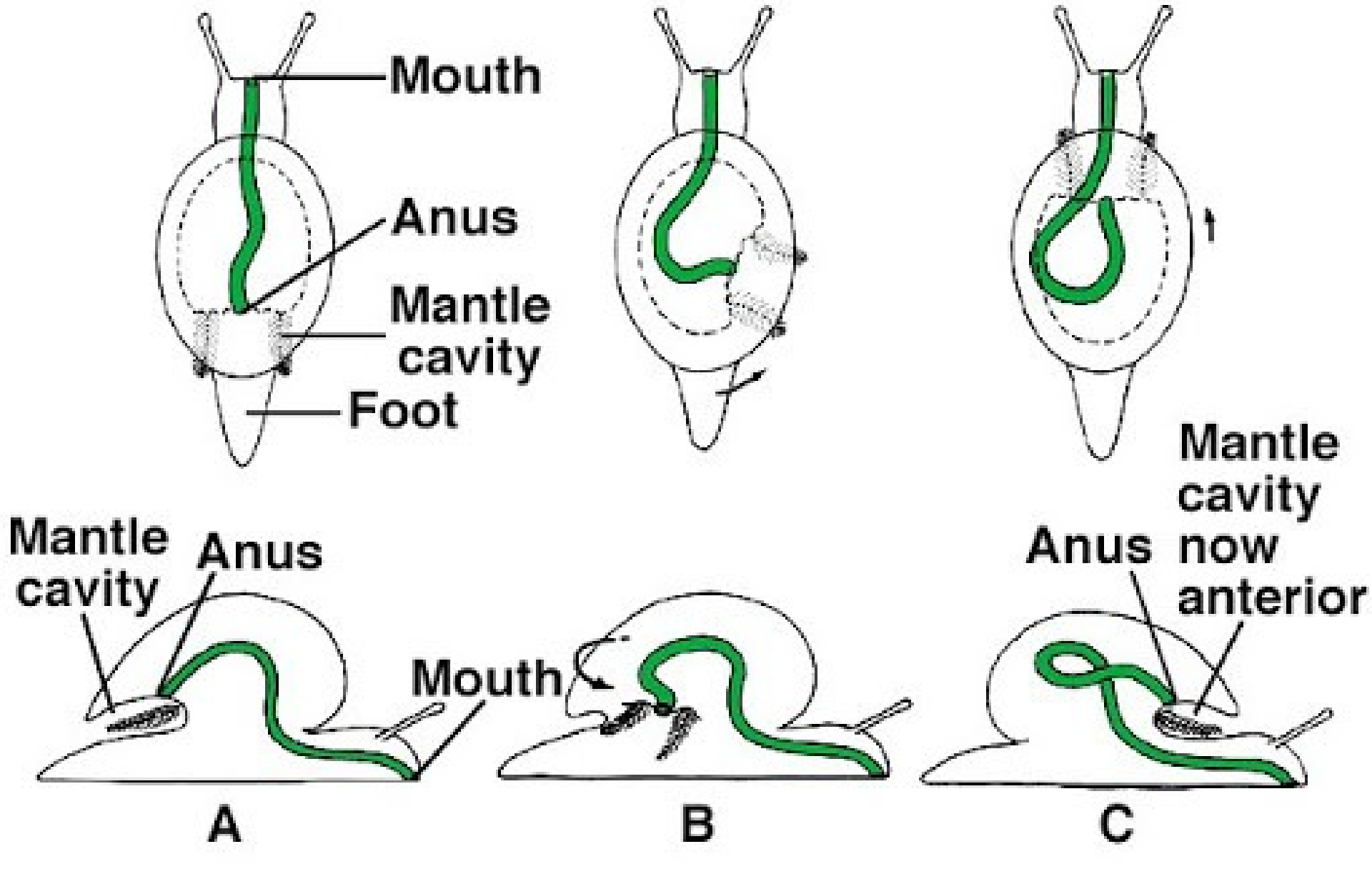
- **Class Polyplacophora:** chitons

Class Gastropoda

(snails, slugs, nudibranchs, limpets, cowries)

- *only successful group of mollusks to invade land*
- half of its body rotates 180 degrees to where the anus meets near the mouth, known as **torsion**
- cephalization obvious
- muscular foot is large & flat → used for crawling
- cowrie shells used to make puka shell necklaces

Torsion in gastropods



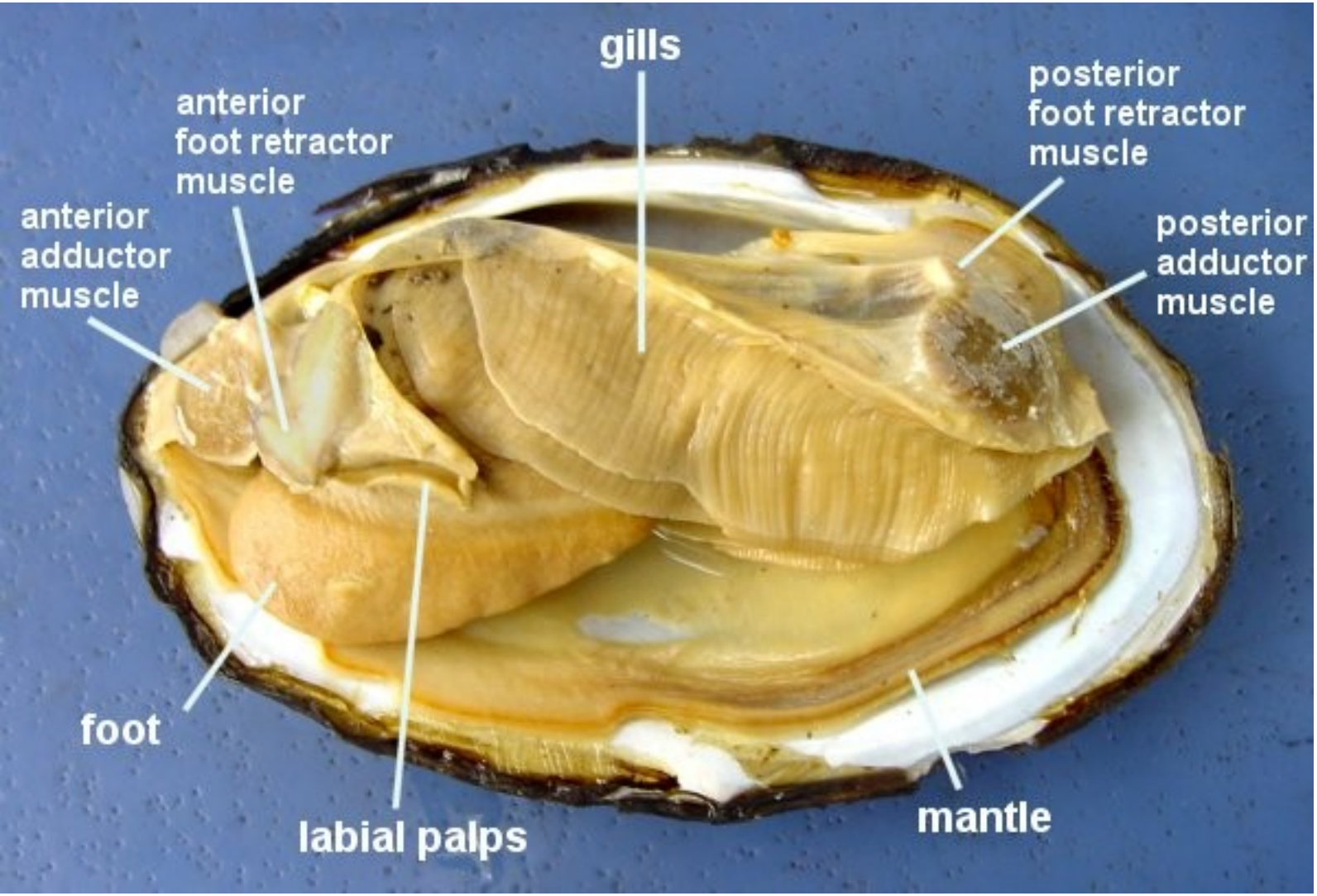
Class Bivalvia

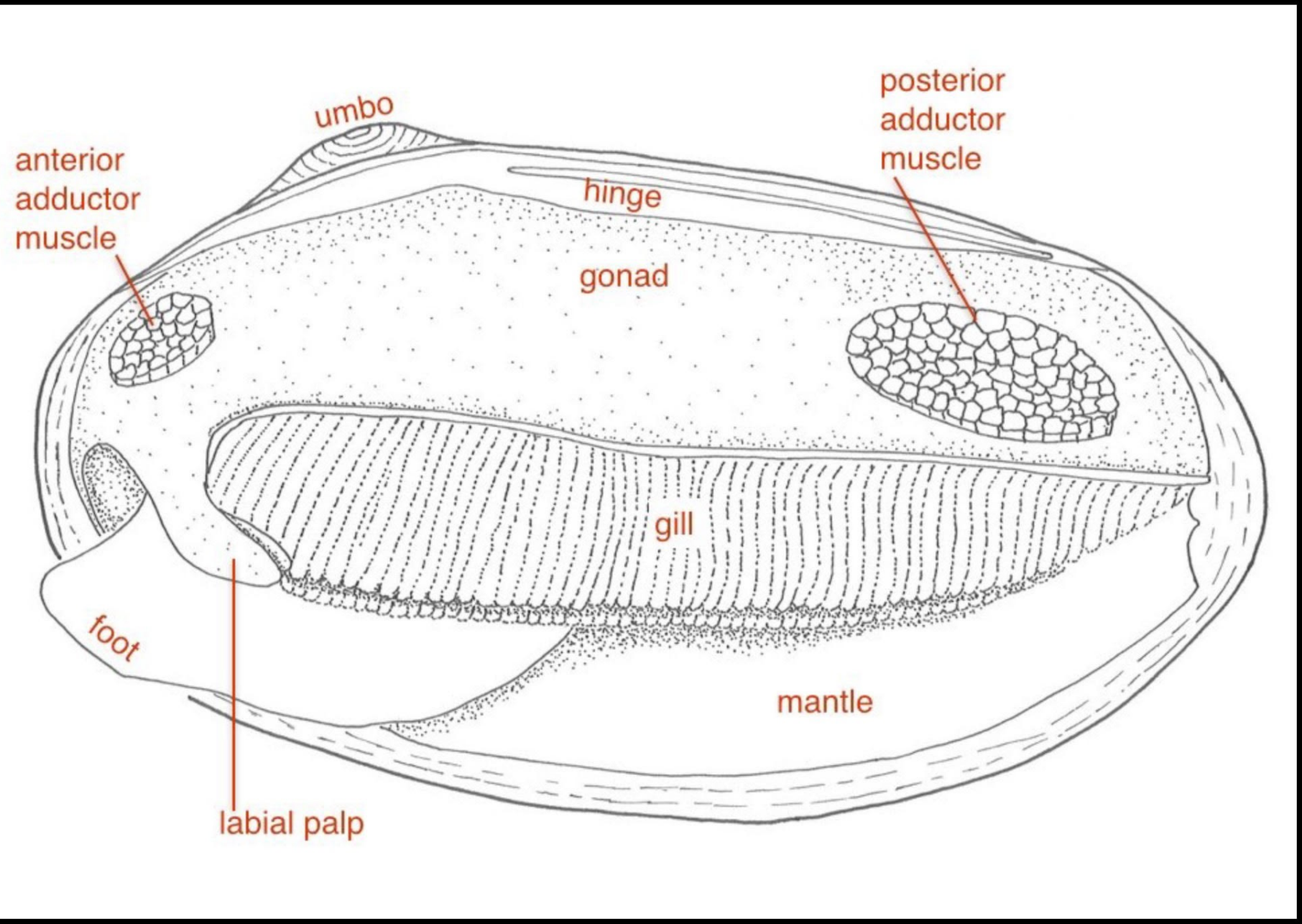
(clams, mussels, & oysters)

- mostly marine (some freshwater bivalves are)
- body covered by hinged shell of two valves
- head greatly reduced (no radula)
- foot wedged-shaped

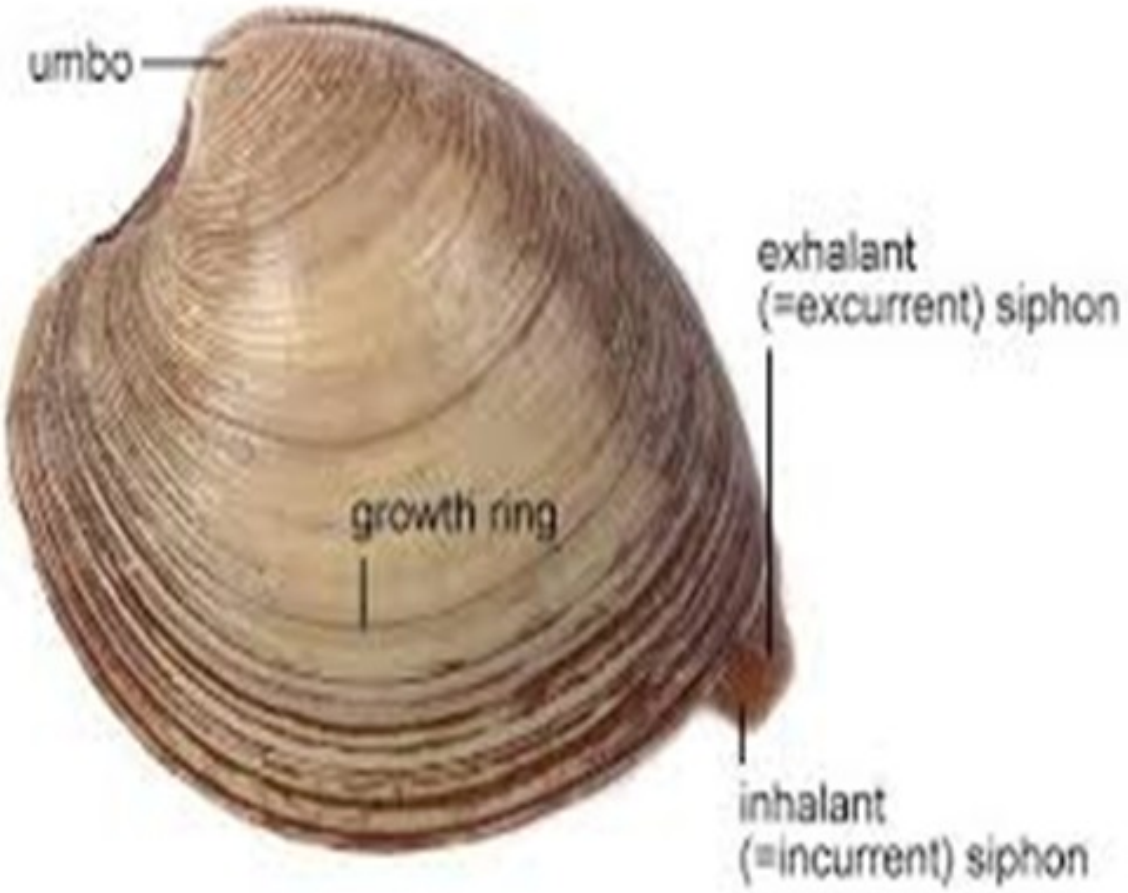
Class Bivalvia

clam dissection -make sure to know the functions of each labeled part




umbo
posterior
adductor
muscle
anterior
adductor
muscle
hinge
gonad
gill
foot
mantle
labial palp

Clam - External Features



Class Cephalopoda

(octopi, squids, nautili, & cuttlefish)

- Head well-developed w/ single lens (camera) eyes
- Foot modified into tentacles and arms
- Shell can be reduced (squids), internal (cuttlefish), present (nautili), or absent (octopi)
- Completely marine



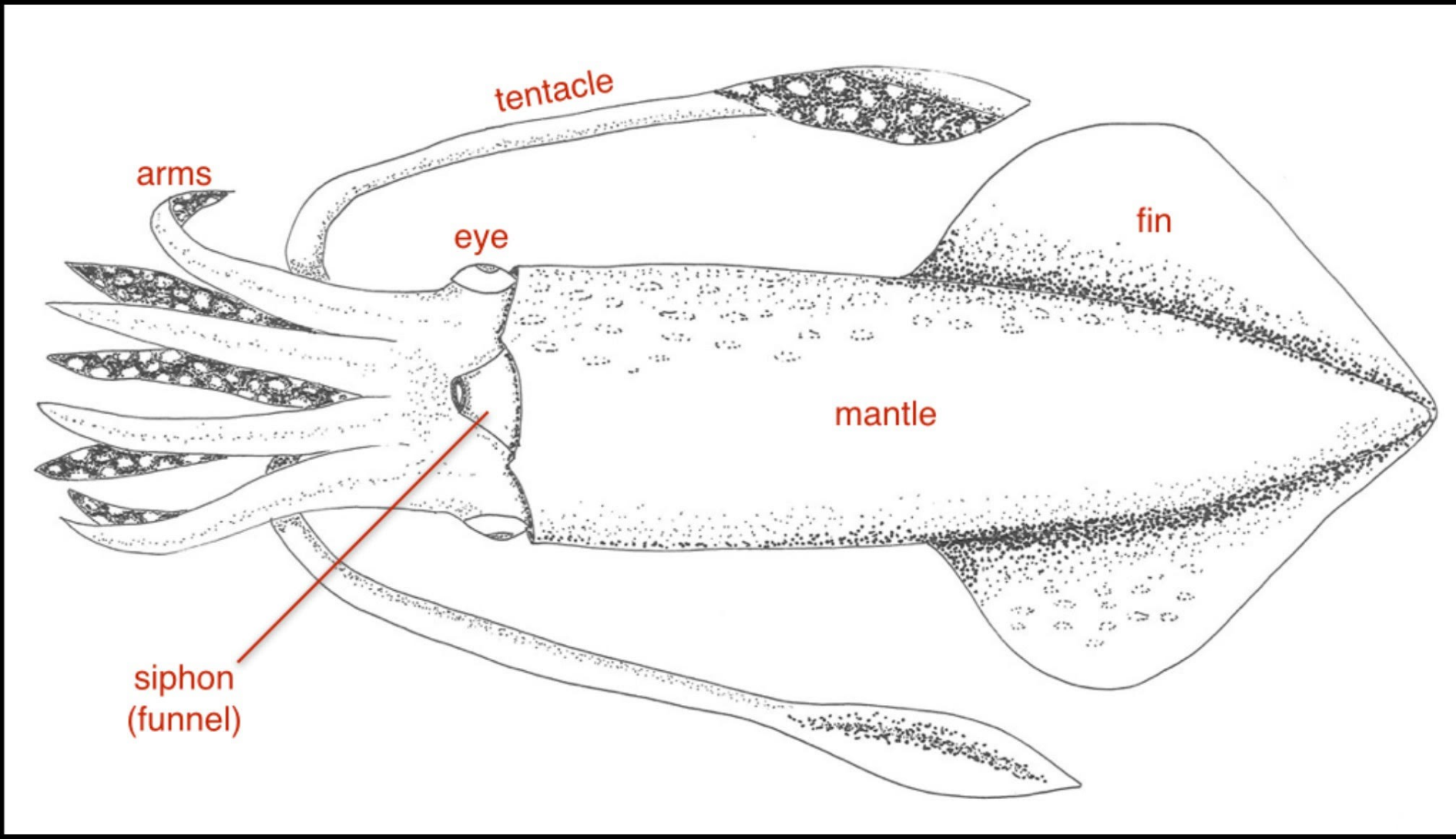
Class Polyplacophora

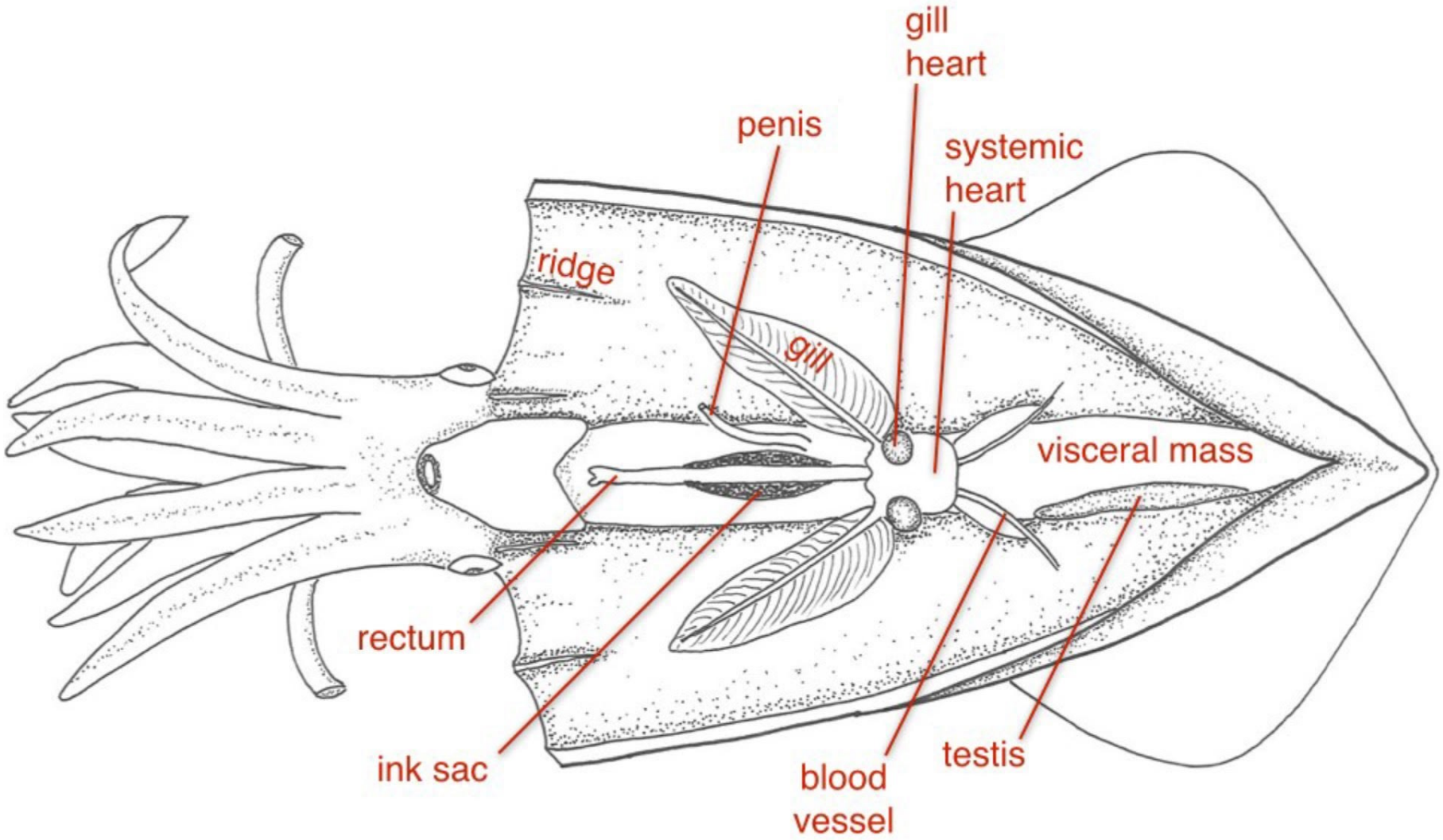
(Chitons)

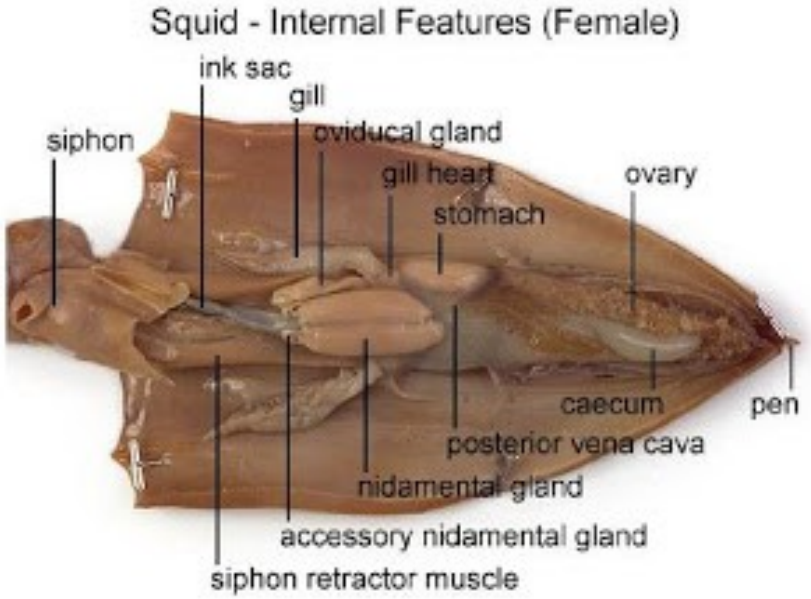
- Suction like muscular foot, adheres to rock and feeds on algae
- completely marine
- 8-plated shell covers it’s flat body

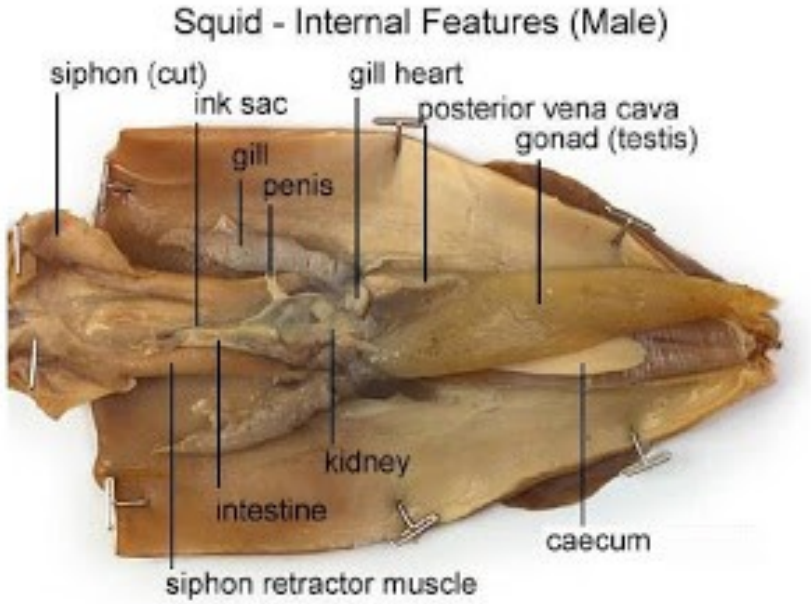
Squid Dissection

(watch video on Canvas – take note of anatomy)


tentacle
arms
eye
fin
mantle
siphon
(funnel)

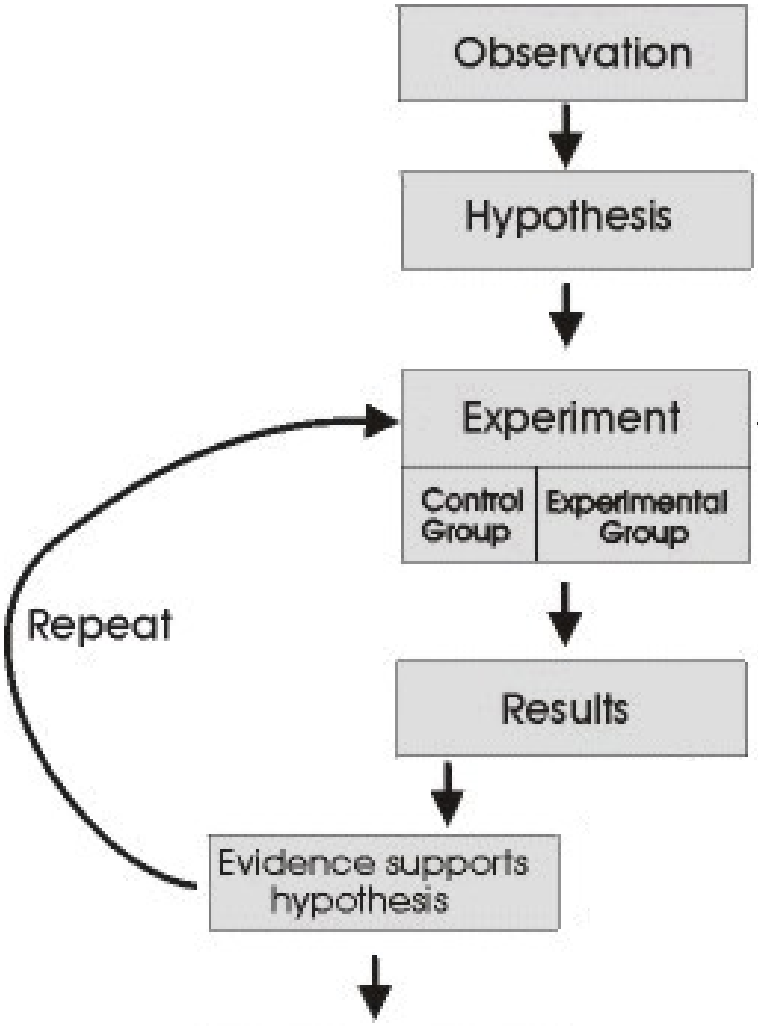

gill
heart
penis
systemic
heart
ridge
gill
visceral mass
rectum
ink sac
blood
vessel
testis





More images and information on pages 282-287.

Experimental Design



This Week

- Dissections
  - Squid (review quiz in lab manual pg 288)
  - Clams (review quiz in lab manual pg 298)
- Discussion
- Quiz!