

Lab (5)

Phylum: Mollusca

1-Class:Gastropoda

Order: Pulmonata

e.g. *Helix* (Garden snail)

2-Class:Pelecypoda (Bivalvia)

Order: Eulamella branchia

e.g. *Anadonta* (Fresh water clam)

3-Class: Cephalopoda

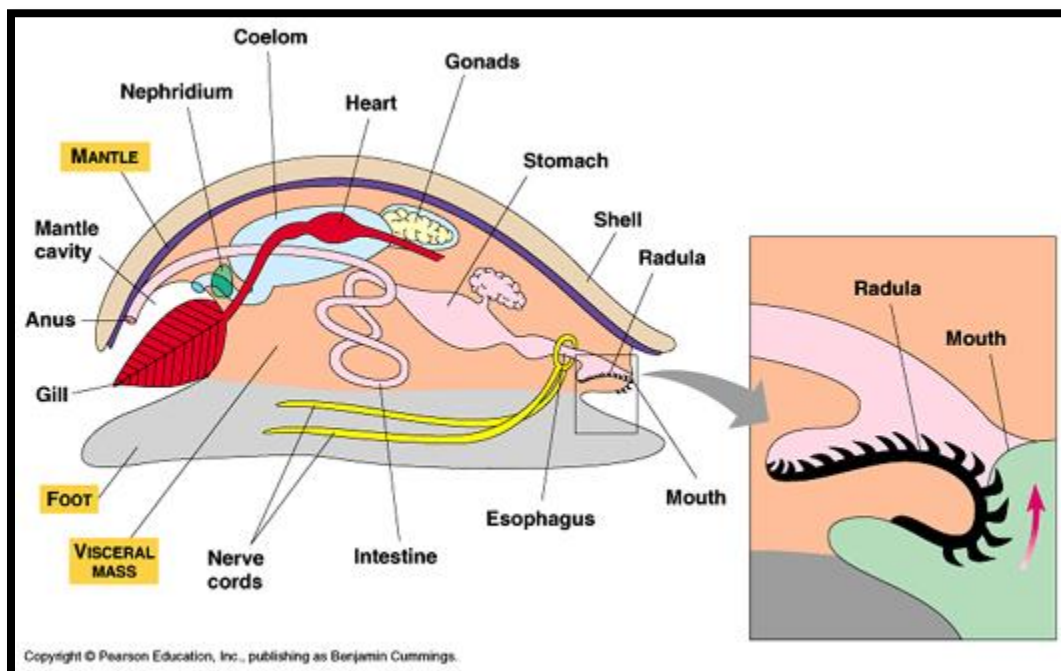
Order: Dibranchiata

e.g. *Octopus*

Characteristic

- **Unsegmented animals, Bilaterally symmetrical ,have a true coelom.**
- **Most are marine, but many are freshwater (gastropods and bivalves) and some are terrestrial (slugs & snails) .**
- **Soft body protected by a hard calicium shell (Cephalopoda lack a shell).**
- **Body is distinguished into an anterior head, ventral foot (a broad, flat muscular organ that is adapted for locomotion and attachment) and a dorsal visceral mass and a mantle.**
- **Visceral mass contain the well developed organs of digestive, excretion and reproduction.**
- **Mantle cavity space between the mantle and the visceral mass, opens to the outside of the body and functions in gas exchange, excretion, elimination of digestive waste and releases reproductive products.**

- **Digestive system is open (have mouth and anus). complex with salivary glands, digestive gland and rasping tongue (Radula) structure bearing transvers rows of minute chitinous teeth.**
- **Nervous system with acircum- oesophageal ring, ganglia and paired nerve cords.**
- **Circulatory system is open, contains a pumping heart have three chambered (two chambered in gastropods), blood vessels and sinuses present (except for Cephalopoda which is closed circulatory system).**
- **Metanephridia (one or two kidneys) open into pericardial cavity and empty metabolic waste into mantle cavity.**
- **Respiration by a well- developed gills (Ctenidia).**
- **Reproduction is sexual and asexual , Sex are separated (dioecious) and fertilization may be internal or external, Larva in marine trochophore .**



1-Class: Gastropoda

Order: Pulmonata

Genus: *Helix* (Garden snail)

- Live in terrestrial environment

-Univalves, usually spirally coiled shell have a mantle, distinct head that includes eyes at the end with two pairs of tentacles , mouth have scraping radula.body have a muscular foot used for creeping .

-Visceral mass typically turned 180° counter clockwise, and the visceral mass is coiled in shell.

-Their body is asymmetrical because of the twisting of the visceral mass in the spiral shape of the shell.



Helix (Garden snail)

2-Class: Pelecypoda(Bivalvia)

Order: Eulamella branchia

Genus: *Anadonta* (Fresh water clam)

-Live in marine or fresh water.

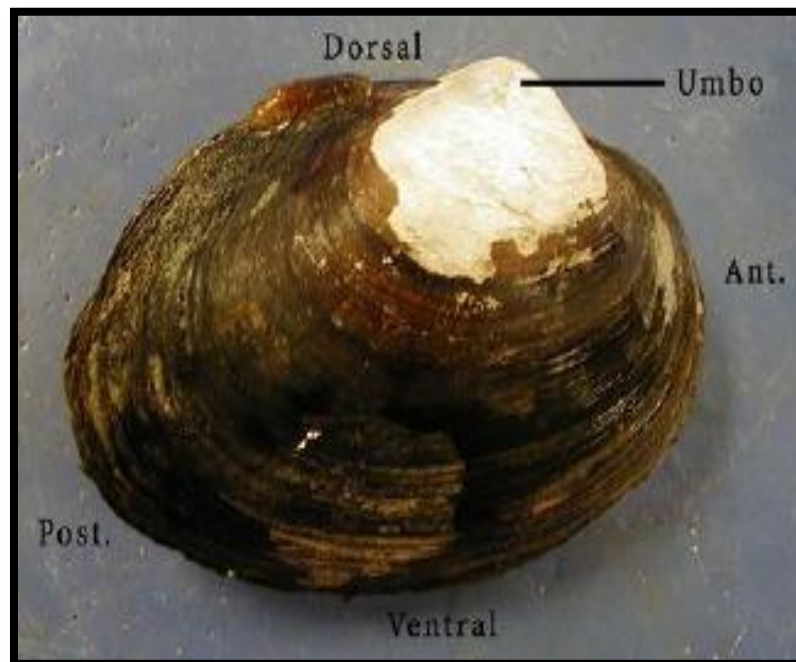
-Characterized by the absence of a head and radula.

-Bivalve refers to having a shell with two halves or valves.

-Mantle of flattened right and left lobes. Posterior margin commonly forming siphons which has a function in respiration.

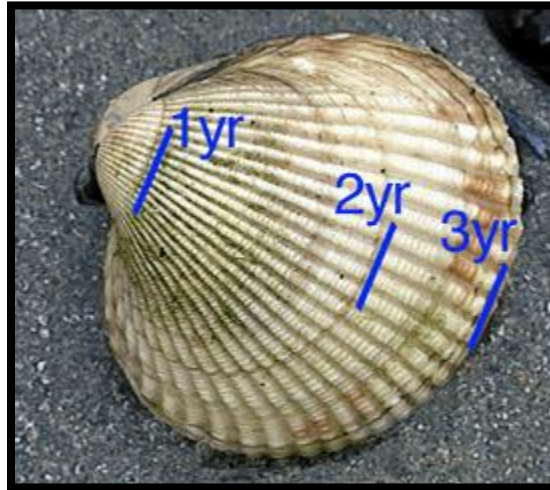
-Dioecious, fertilization external, development usually from trochophore to veliger larvae to spat to adult in marine forms.

-Umbo – swollen area near shell's anteriorit represents the olders part of the shell.



Anadonta (Fresh water clam)

-Growth lines on the shells of molluscs often indicate age, just like the growth rings on trees. In both organisms the rings are formed from alternating periods of summer growth and winter quiescence. Each pair of alternating dark and light lines represents respectively, a summer and winter period of shell growth. The age of each mussel can be determined from the number of winter (light) lines.



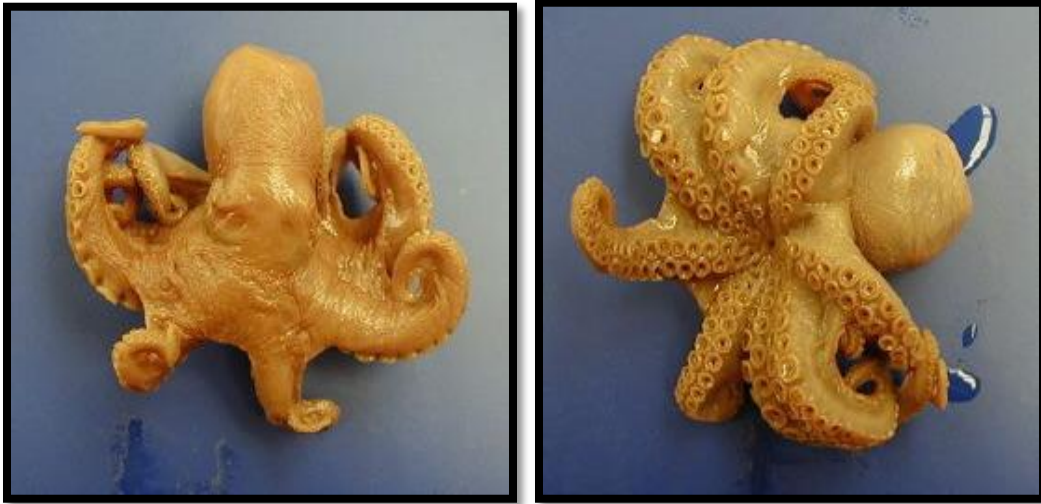
3-Class: Cephalopoda

Order: Dibranchiata

Genus: *Octopus*

- All are marine, active predators. Lack a shell .**
- Large head with two complex eyes, eye contains cornea, lens and retina.**
- Eight arms with suckers and a mouth at the center point of the arms consist of mouth and beak (most of the tearing and cutting is done by a horny beak in the buccal cavity).**
- Digestive system is complete consist of esophagus, crop, stomach, caecum, intestine and anus.**
- Brain large and complex. An octopus has a highly complex nervous system .**

-Dioecious: When octopuses reproduce, males use the third right arm to insert spermatophores (packets of sperm) into the female's mantle cavity then it detaches from the male during copulation. Males die within a few months after mating. In some species, the female octopus can keep the sperm alive inside her for weeks until her eggs are mature, lay hundreds to half a million eggs development direct no larva, female octopus dies after guarding eggs .



Octopus