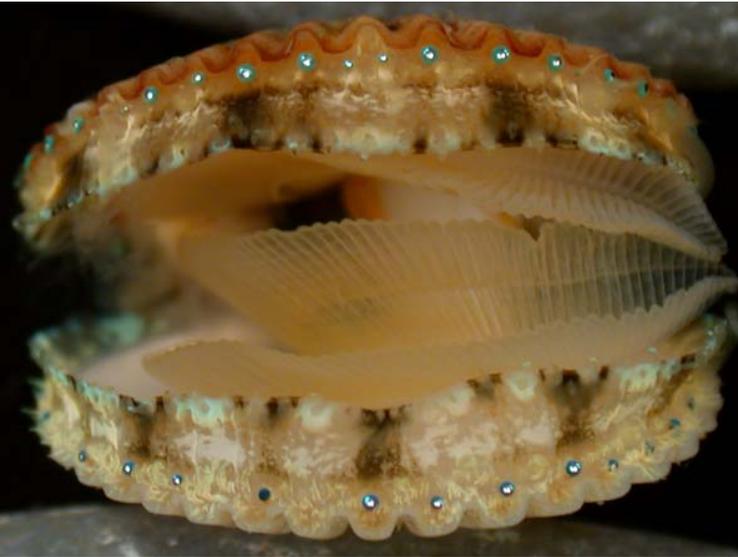
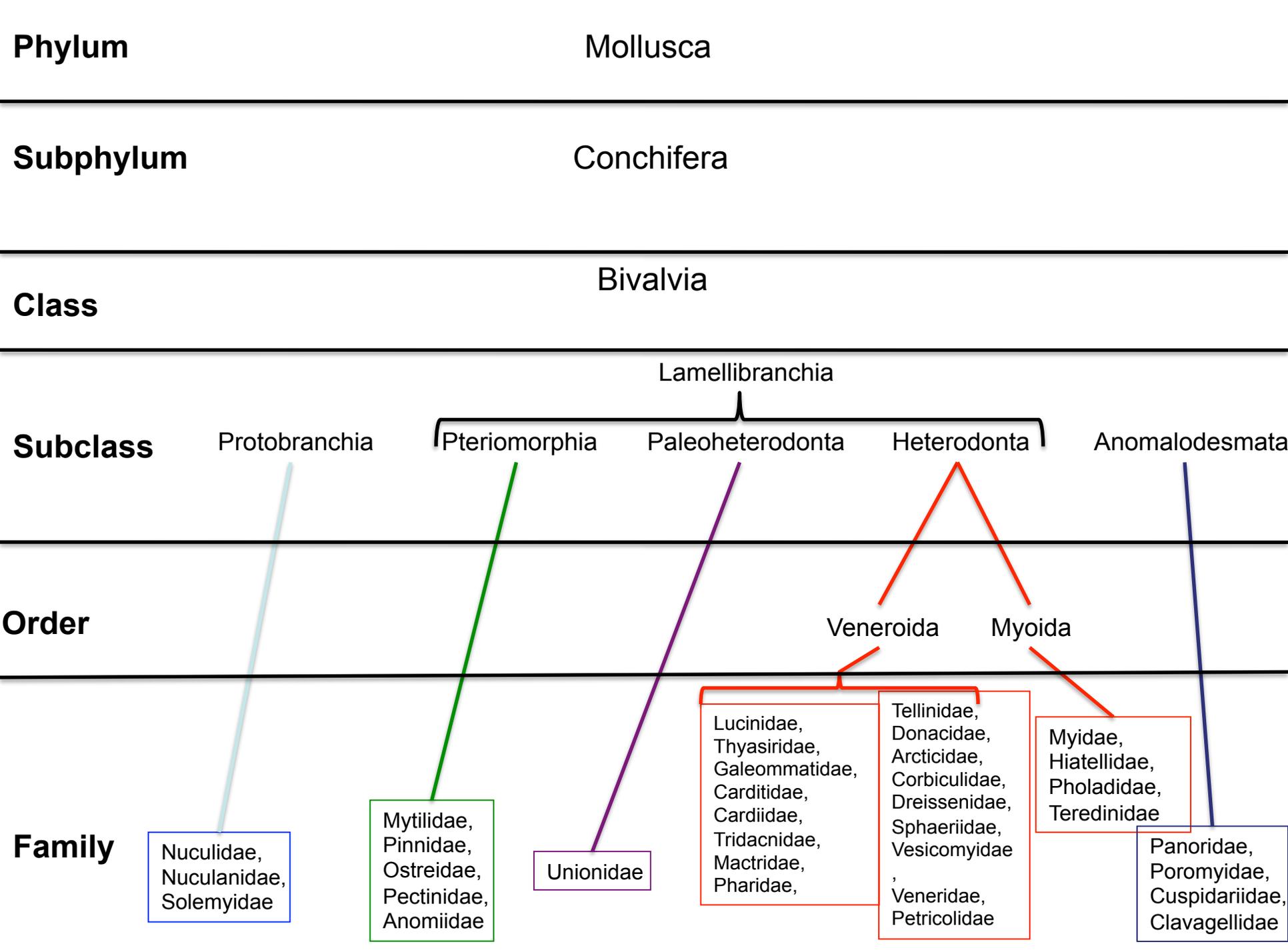


Bivalve Anatomy & Classification

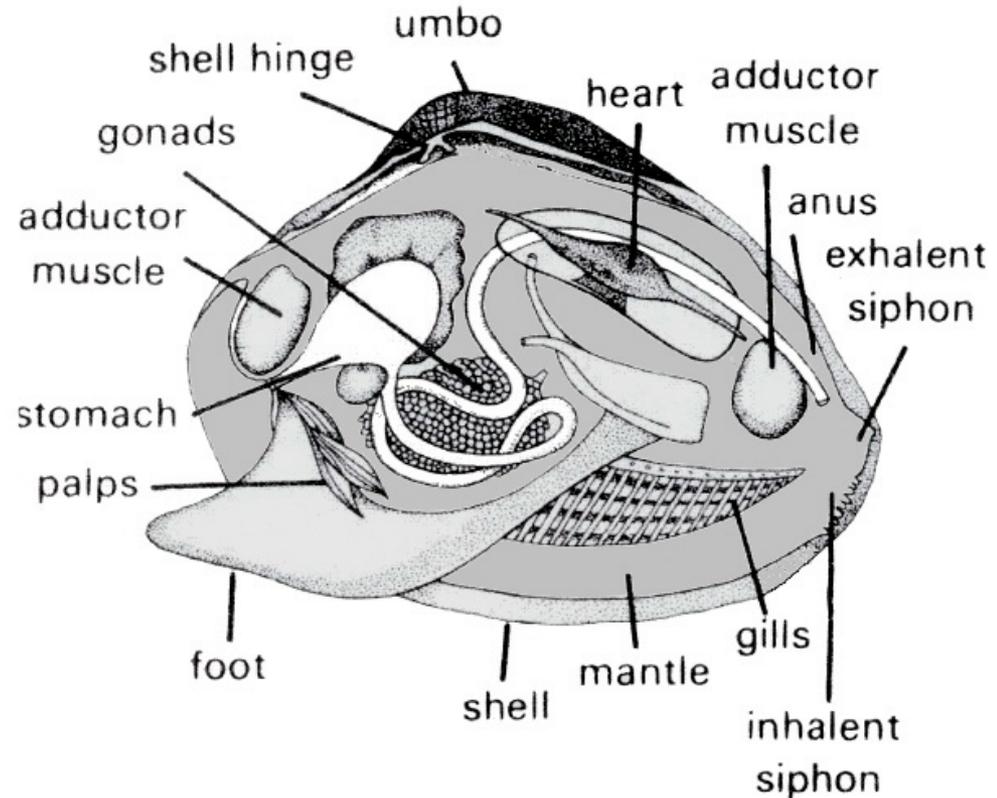
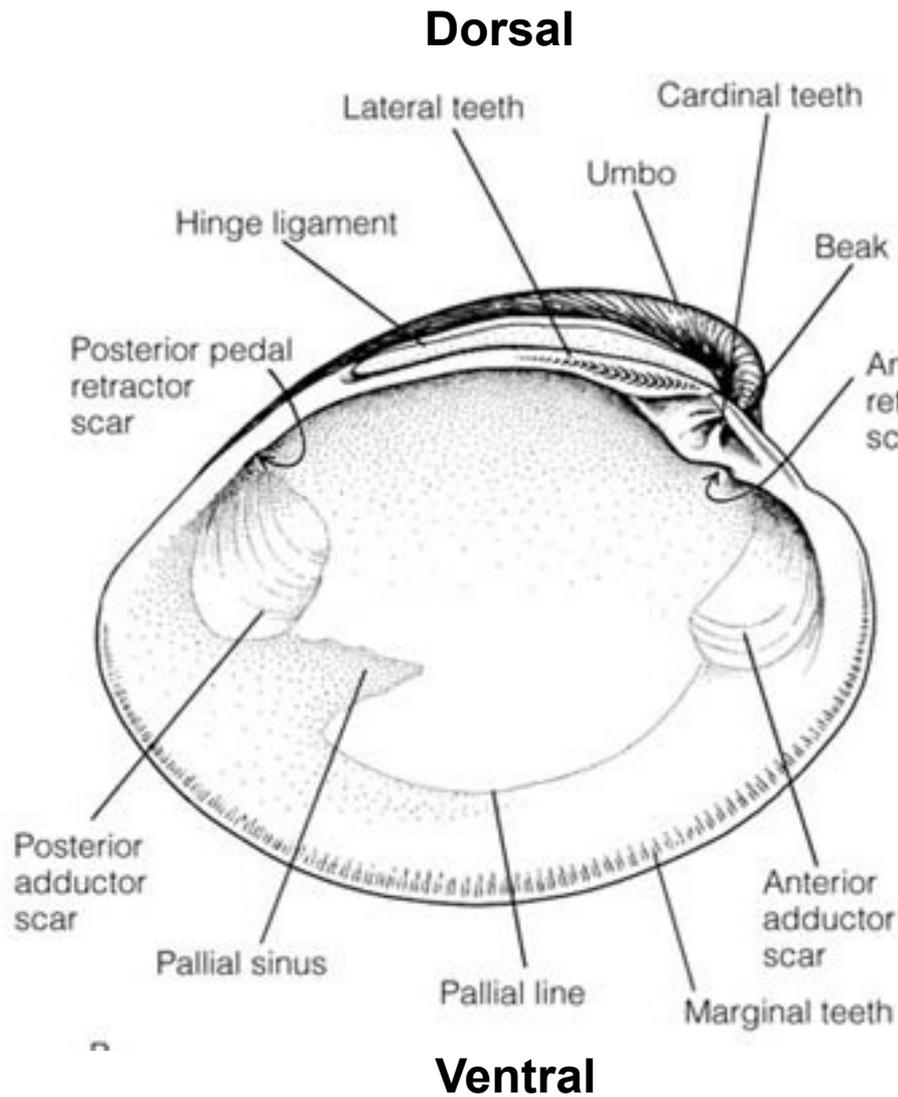


Class Bivalvia

- ~15,000 species; includes clams, scallops, mussels, oysters
- 2-valved (hinged) shells w/ adductor muscles
- Body laterally flattened
- Lack of cephalization
- Spacious mantle cavity
- Sedentary lifestyle
- NO radula



General Bivalve Morphology

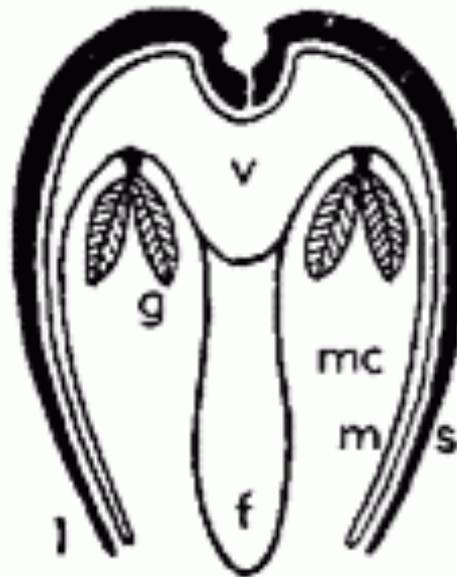


- Compare Filibranch and Eumellibranch Bivalves

- Filibranch = “thread gills” attached by ciliary tufts; mussels, oysters, scallops, jingle shells
- Eumellibranch = filaments connected w/ tissue bridges; clams



- **Protobranch** - small and leaf like. Considered primitive
- **Filibranch** - form lamellar sheets of individual filaments in a "W" shape. They hang downwards into the mantle cavity but have their terminal portions bent upwards
- **Eulamellibranch** - have the same "W" shape but with cross partitions laterally joining the filaments to create water filled cavities. Most advanced and most common
- **Septibranch** - only found in rock borers (Order Pholadomyoidea). Run transversely across the mantle cavity forming a partition that divides the mantle cavity



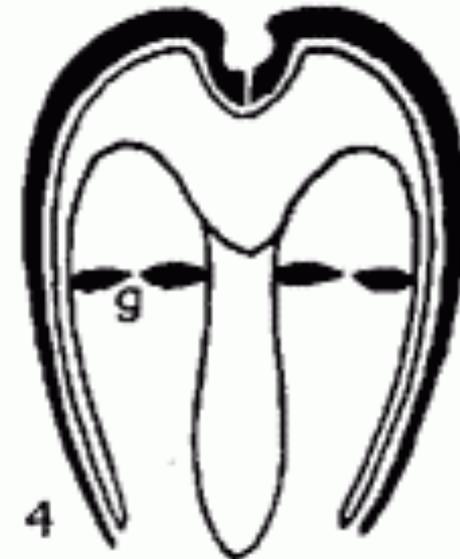
1
Protobranch



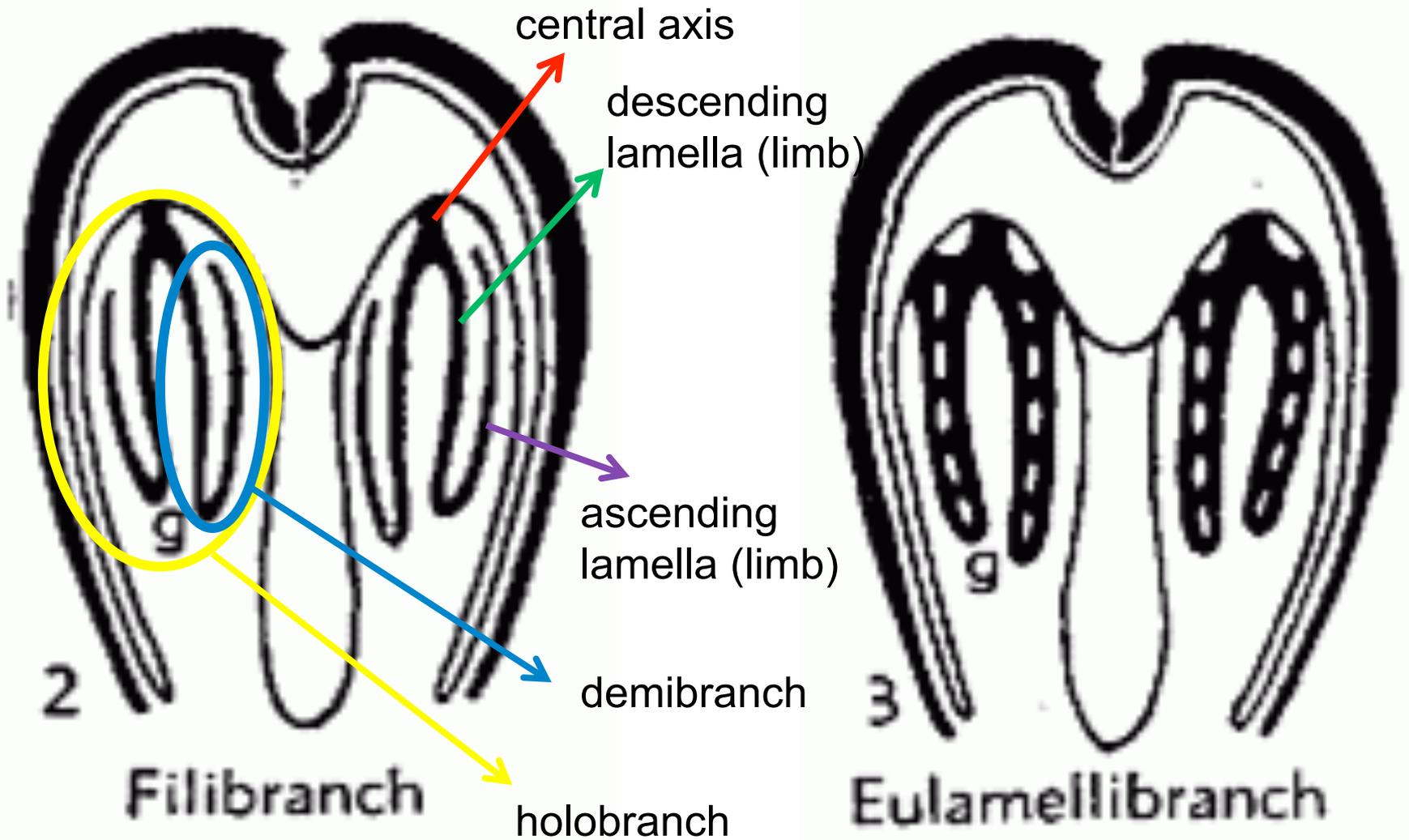
2
Filibranch



3
Eulamellibranch



4
Septibranch



Ascending lamella not attached to body wall

Ascending lamella attached to body wall

Today's Dissection

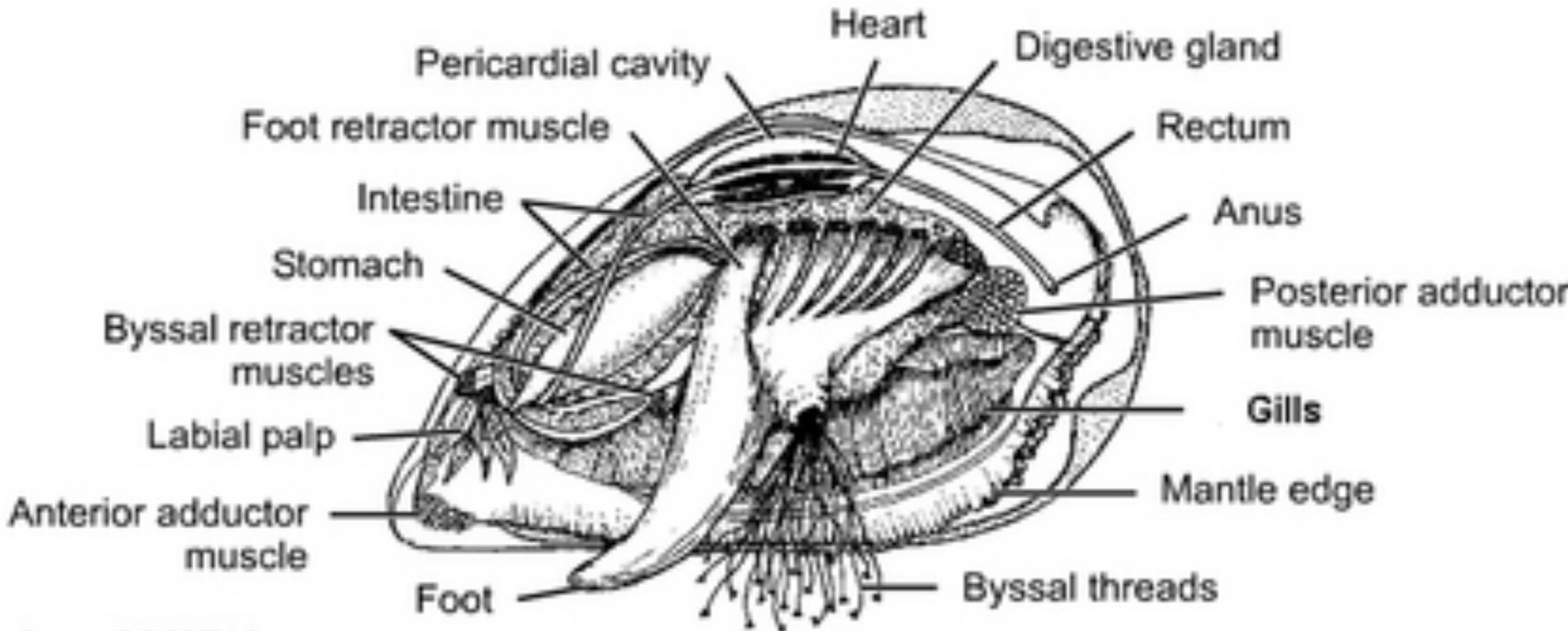
Mytilus edulis

(blue mussel)

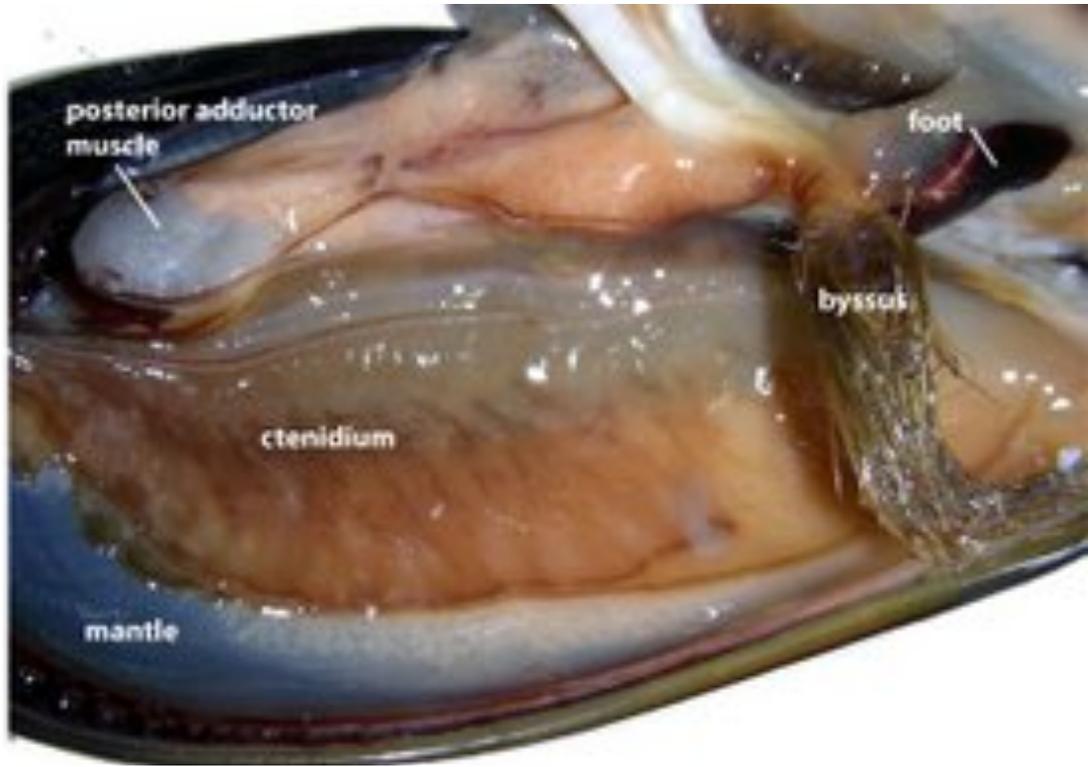


Are mussels filibranchs or eulamellabranchs?

Internal Anatomy



Source: © BIODIDAC

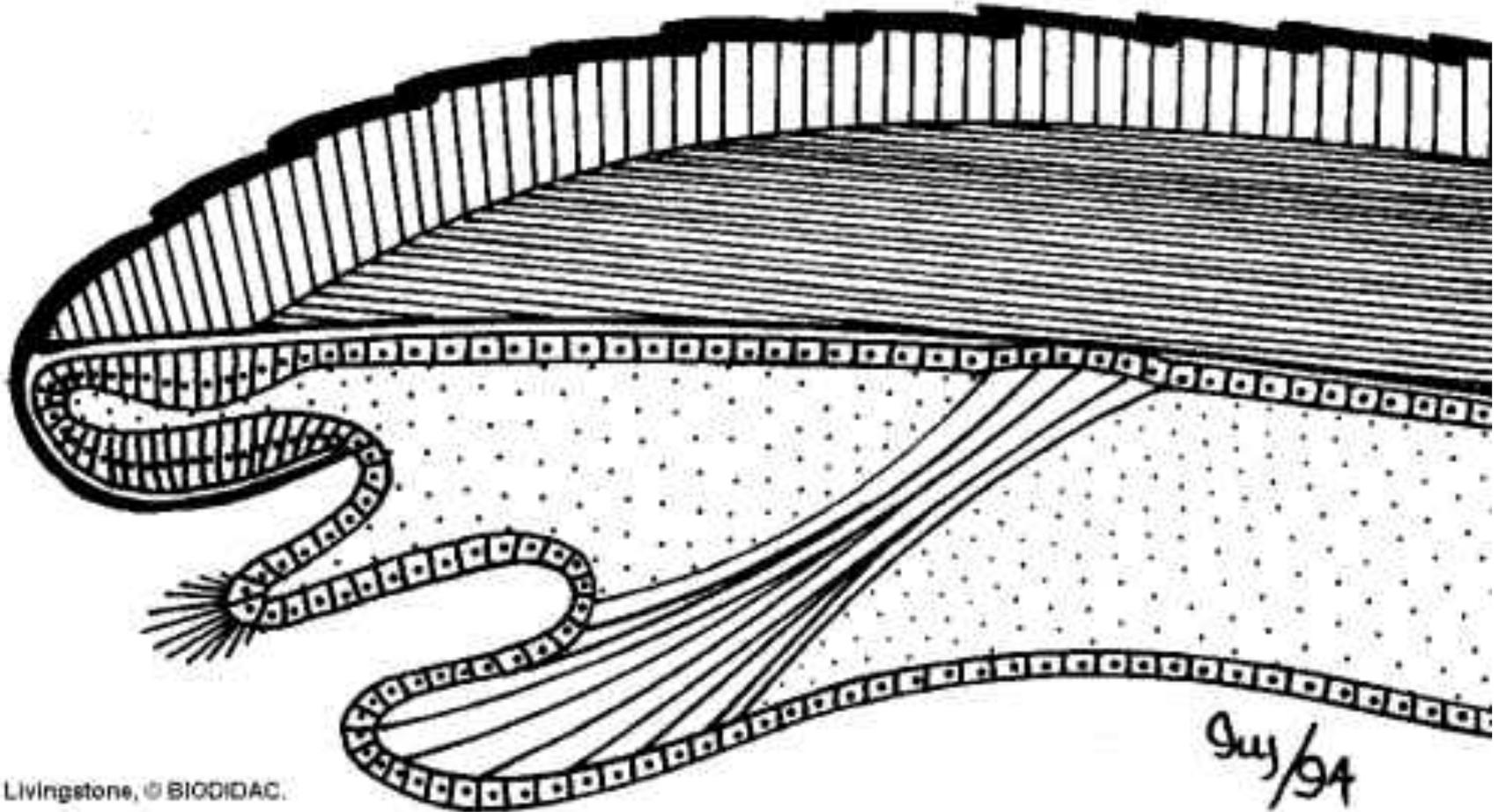


Bivalve Feeding

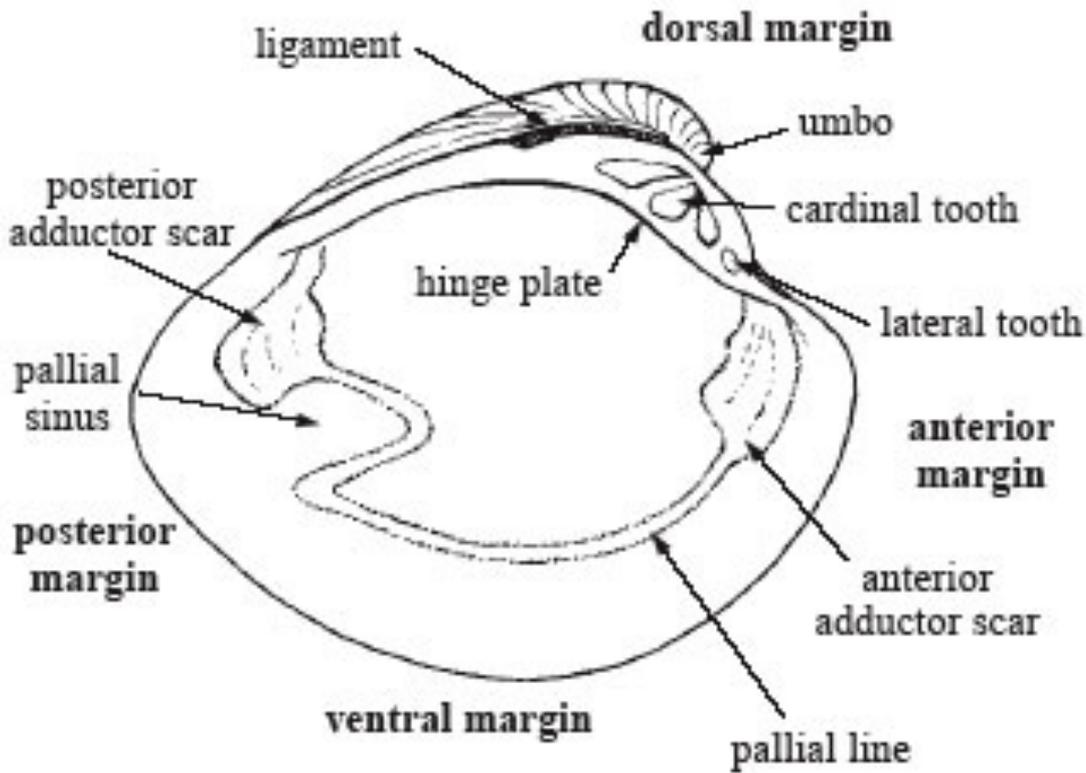
- Water flows in ventrally and out dorsally
- Captured particles move along **food grooves** to the **labial palps**
- Palps sort particles moving food to mouth
- Non-food particles rejected and expelled as **pseudofeces**
- <http://www.biology.ualberta.ca/facilities/multimedia/?Page=252>

Shell Layers

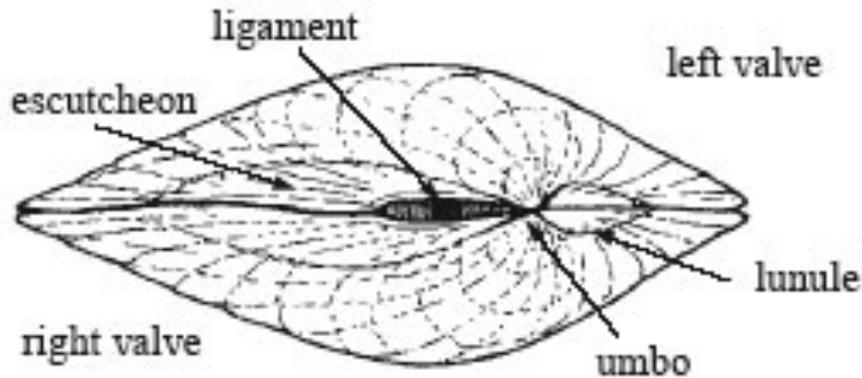
Compare manila clam and mussel shell



Do all bivalves possess 3 layers?



interior of left valve



dorsal view of entire shell

- Examine shells of different families of bivalves; what distinguishes each group?
- Think about shell composition, morphology & hinge features; very important in bivalve taxonomy (ie: # cardinal & lateral teeth)