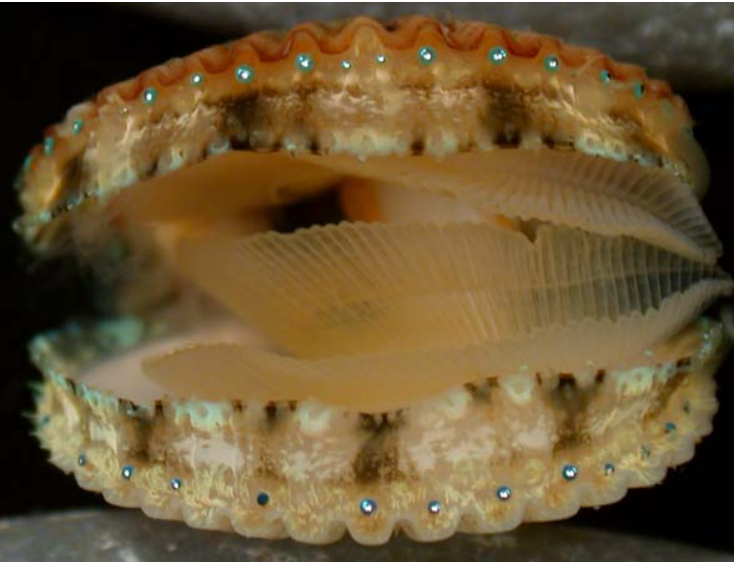
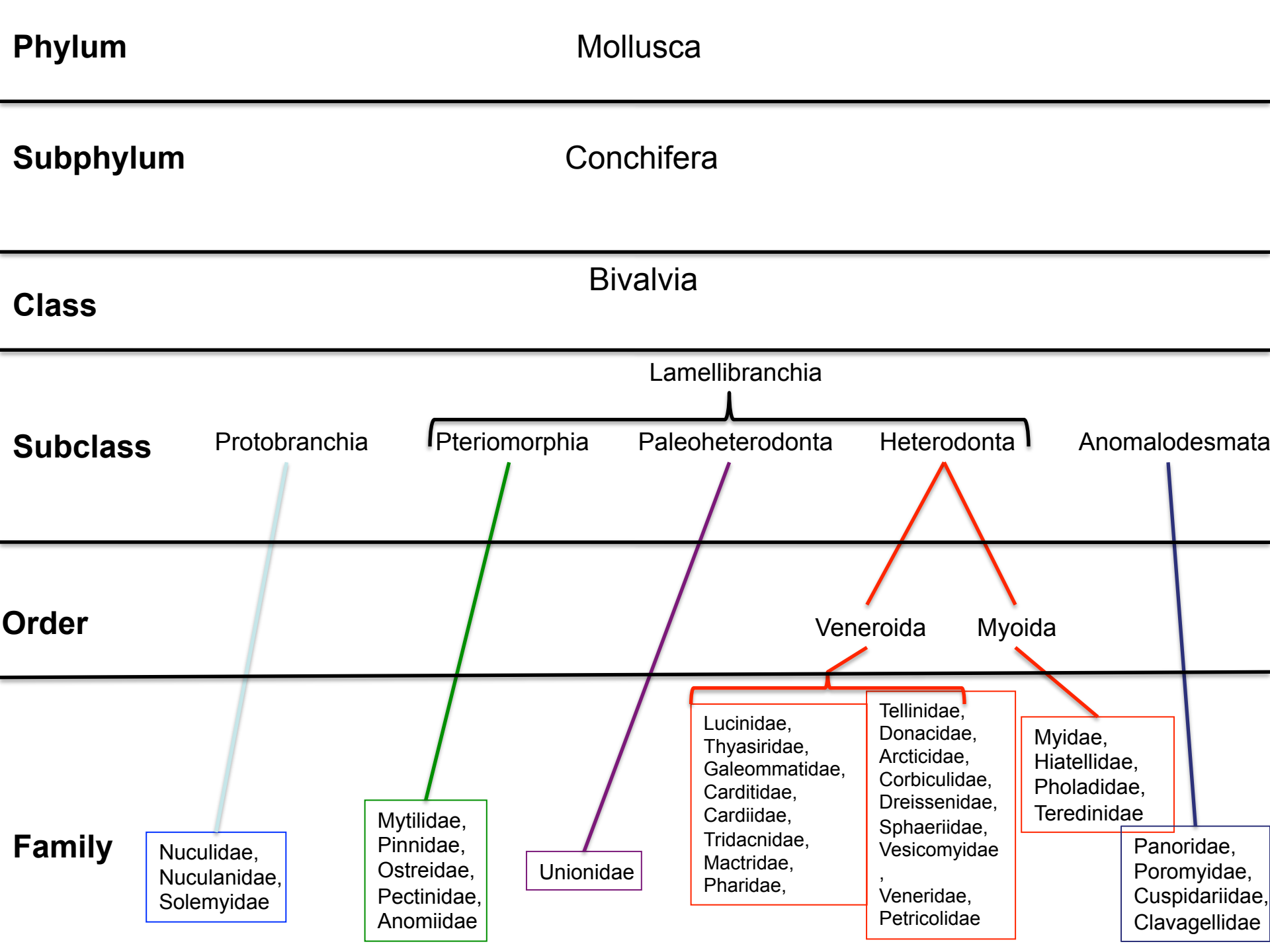


Bivalve Anatomy & Classification

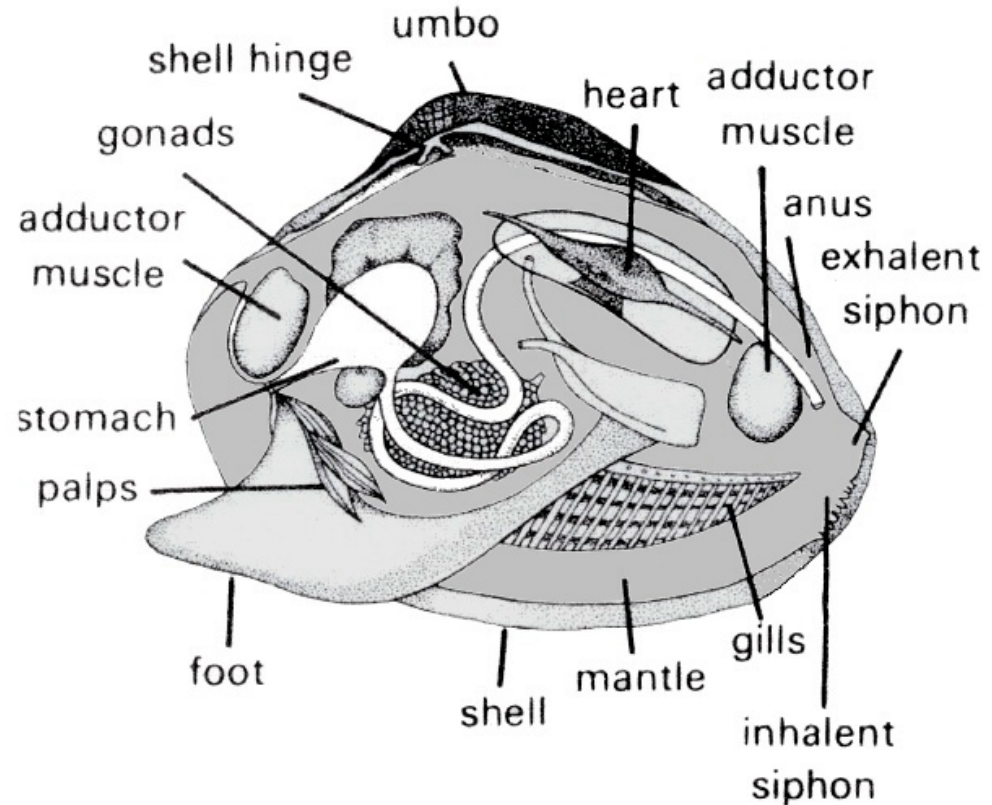
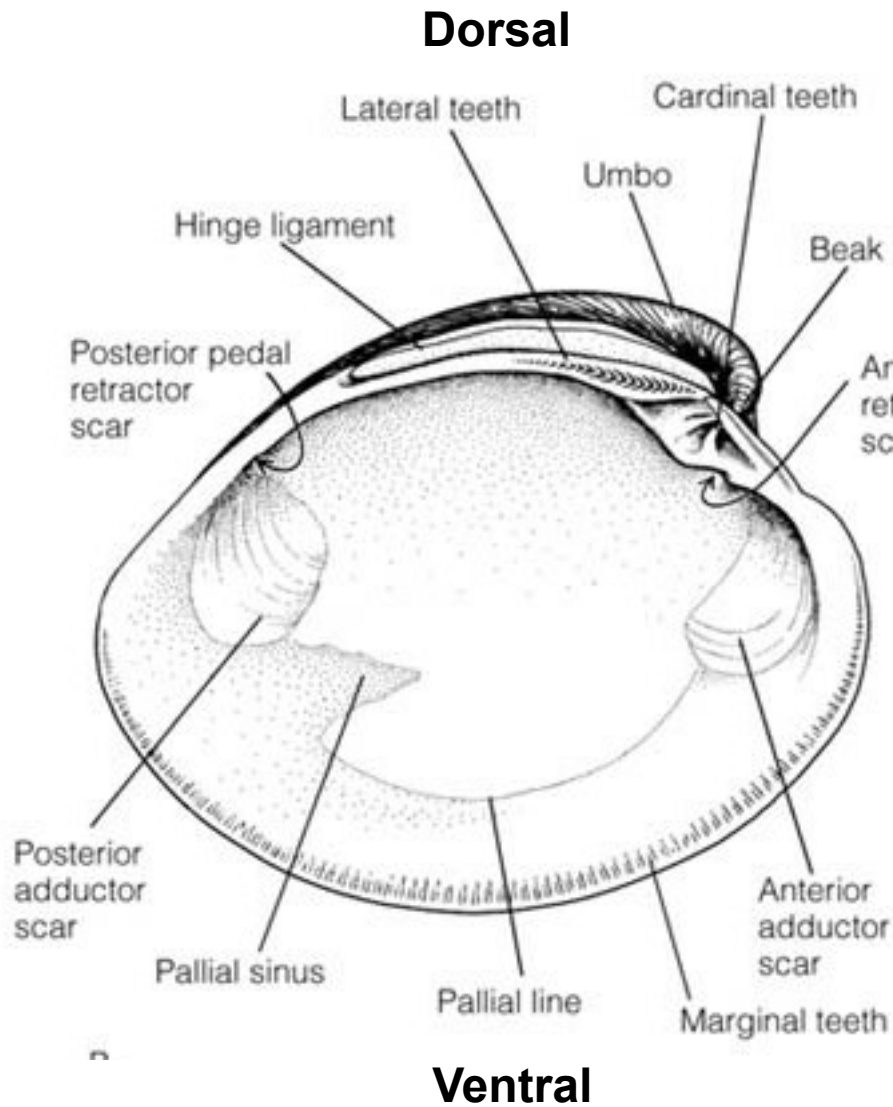


Class Bivalvia

- ~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

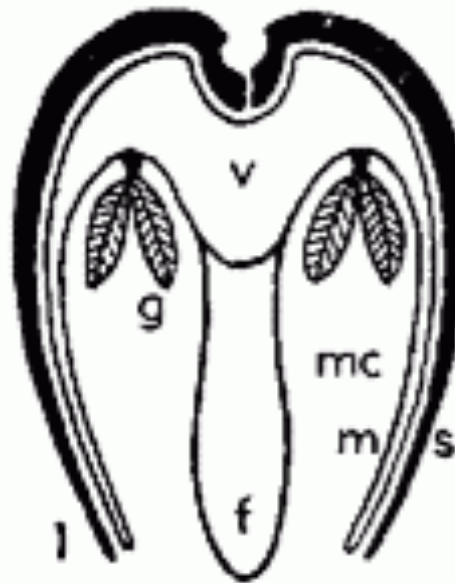


- Compare Filibranch and Eumellibranch Bivalves

- Filibranch = “thread gills” attached by ciliary tufts; mussels, oysters, scallops, jingle shells
- Eulamellibranch = 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



Protobranch



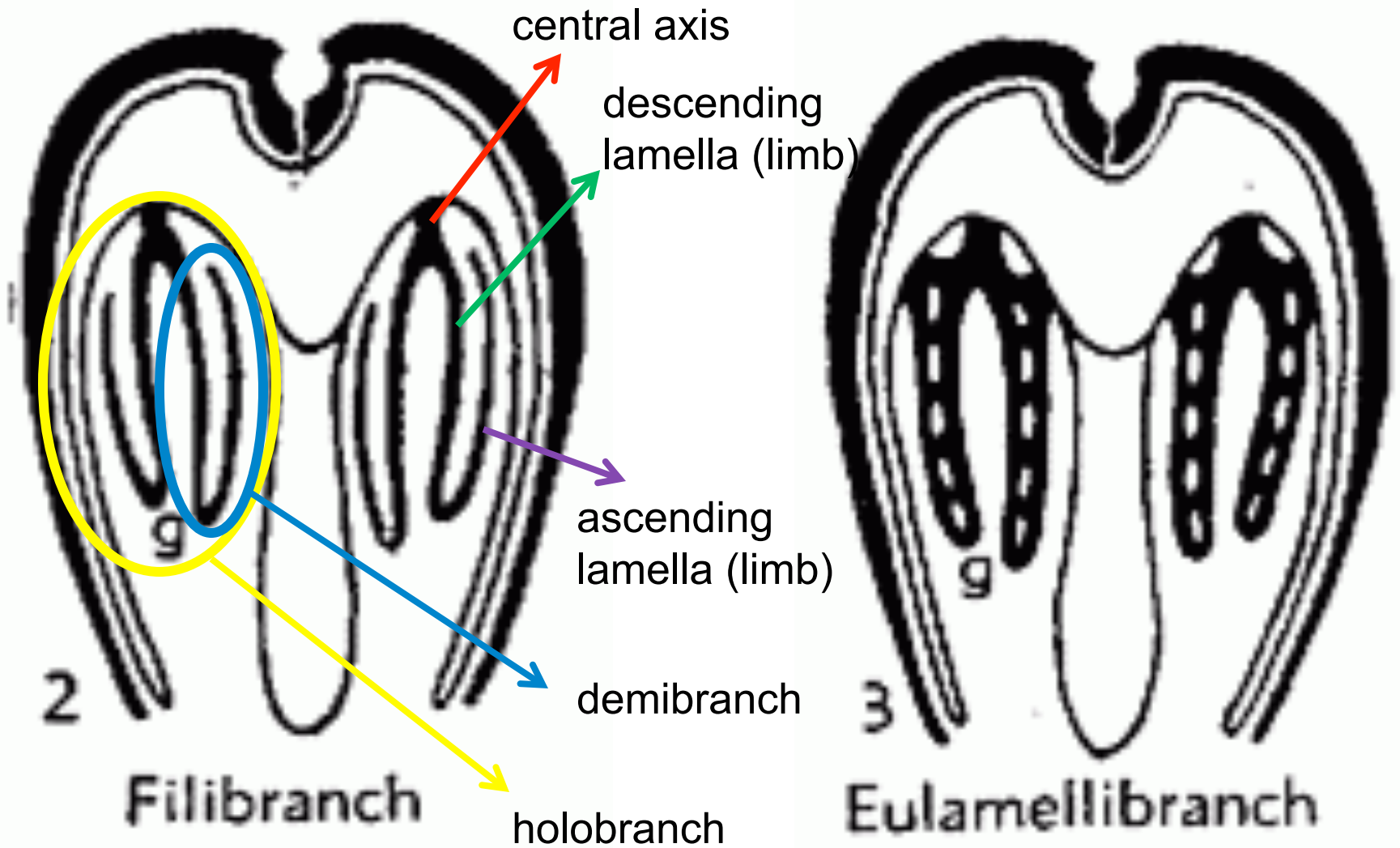
Filibranch



Eulamellibranch



Septibranch



Ascending lamella not attached to body wall

Ascending lamella attached to body wall

Today's Dissection

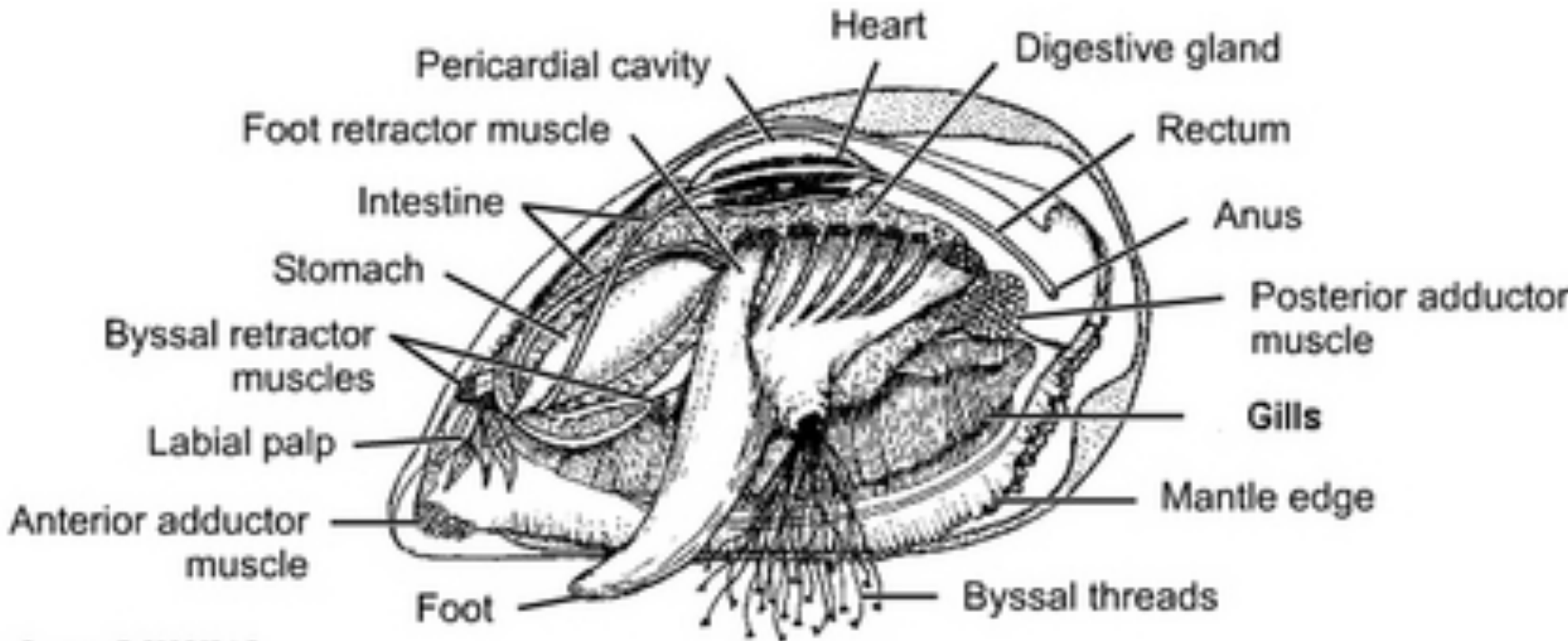
Mytilus edulis

(blue mussel)

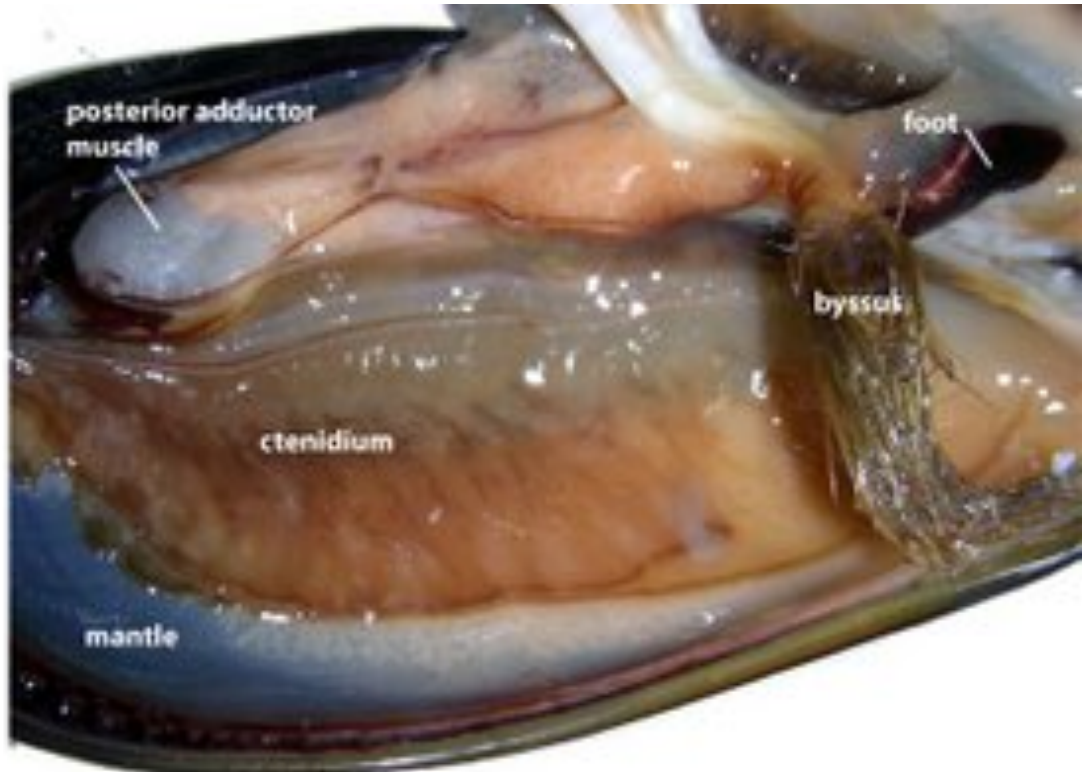


Are mussels filibranchs or eulamellabranchns?

Internal Anatomy



Source: © BIODIDAC

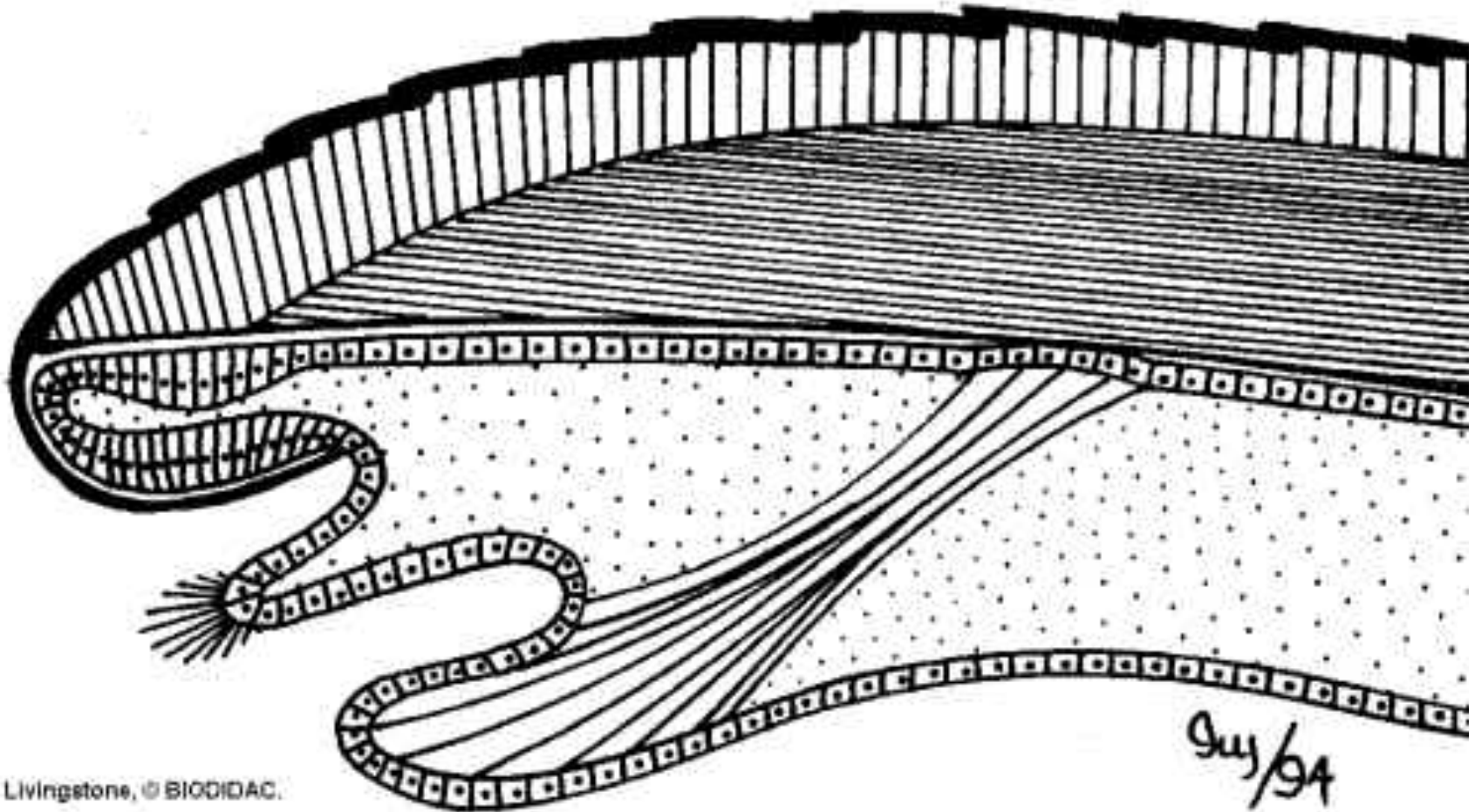


Bivalve Feeding

- 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>

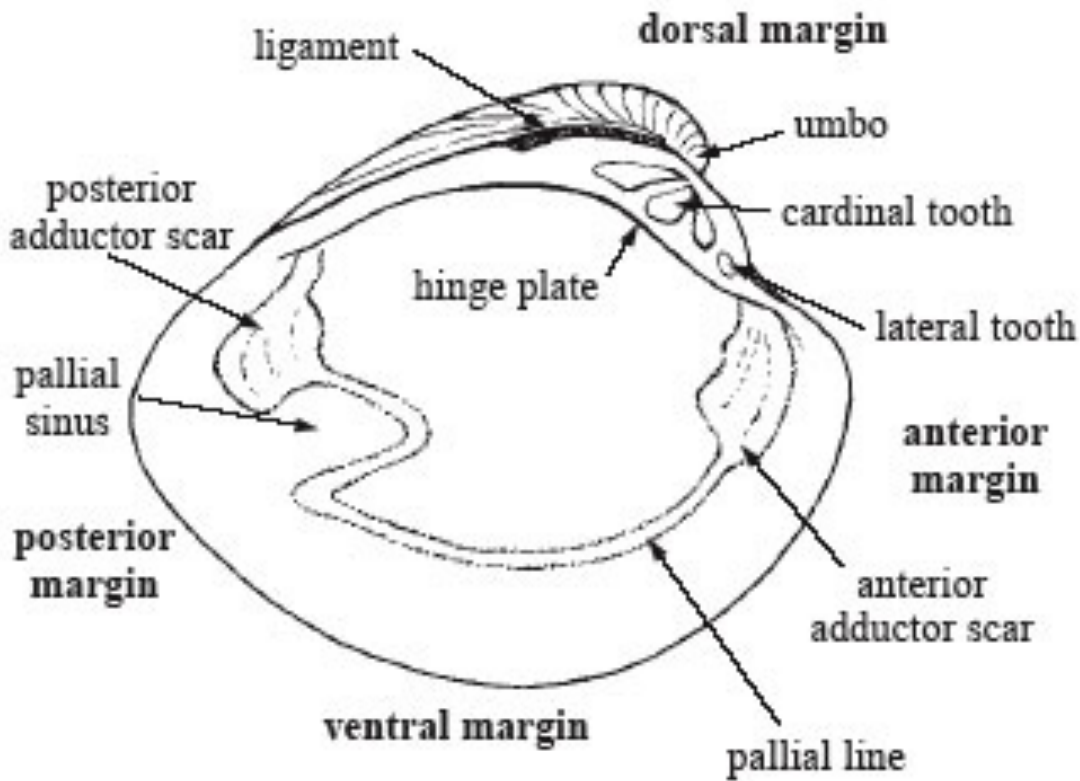
Shell Layers

Compare manila clam and mussel shell

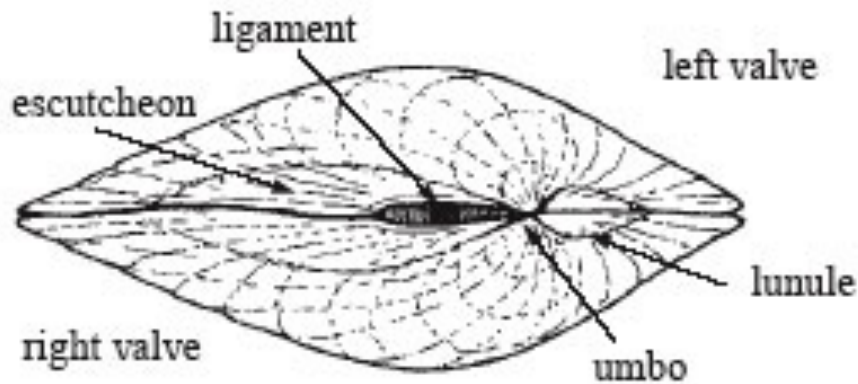


Livingstone, © BIODIDAC.

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)