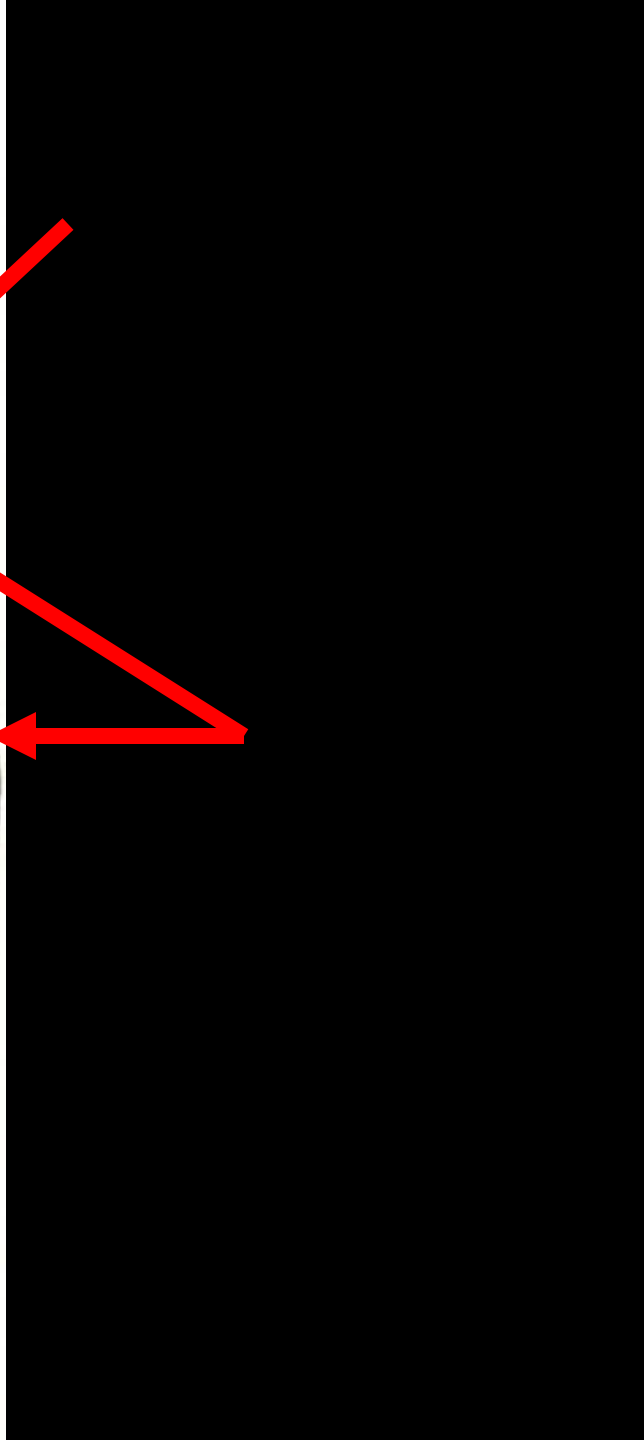
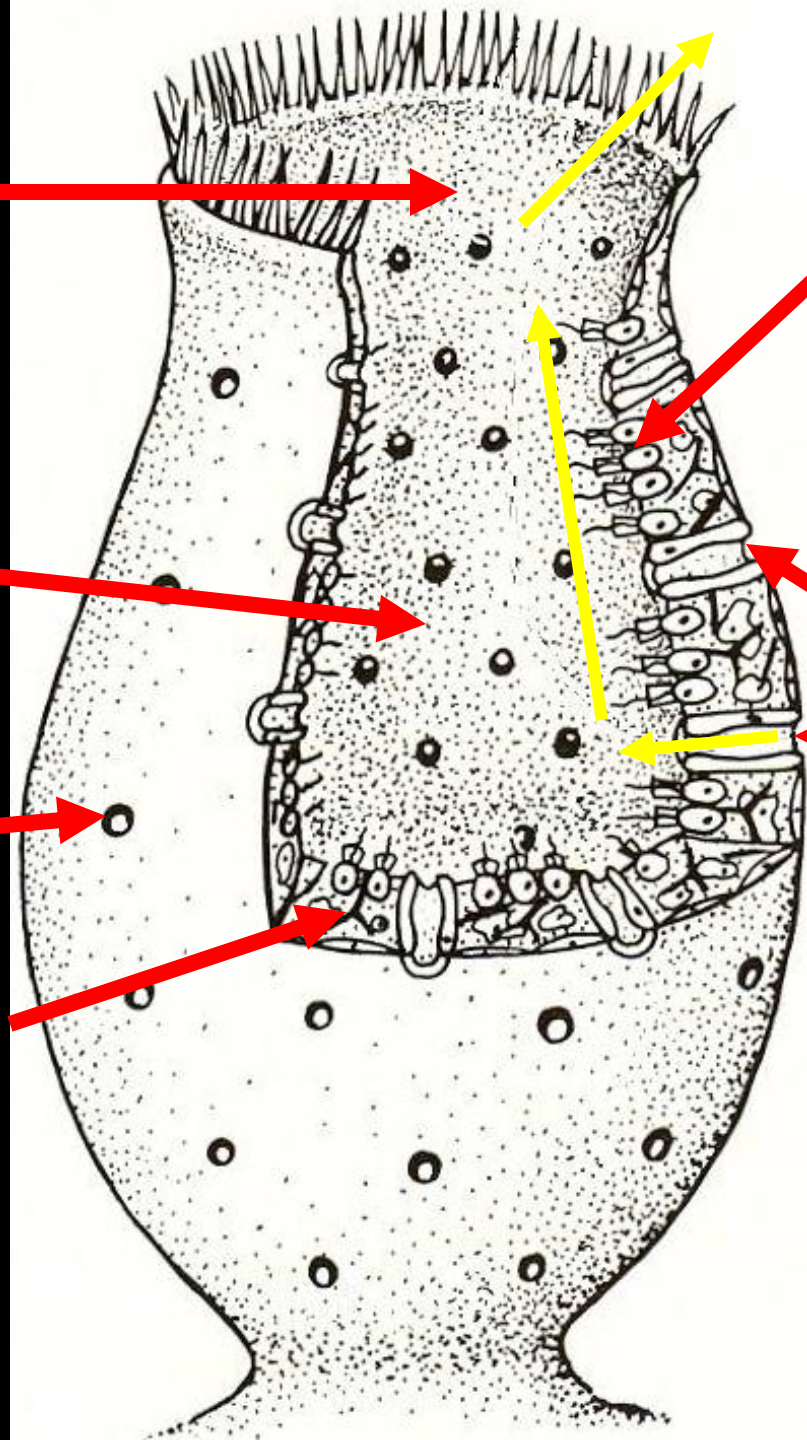


Spongocoel

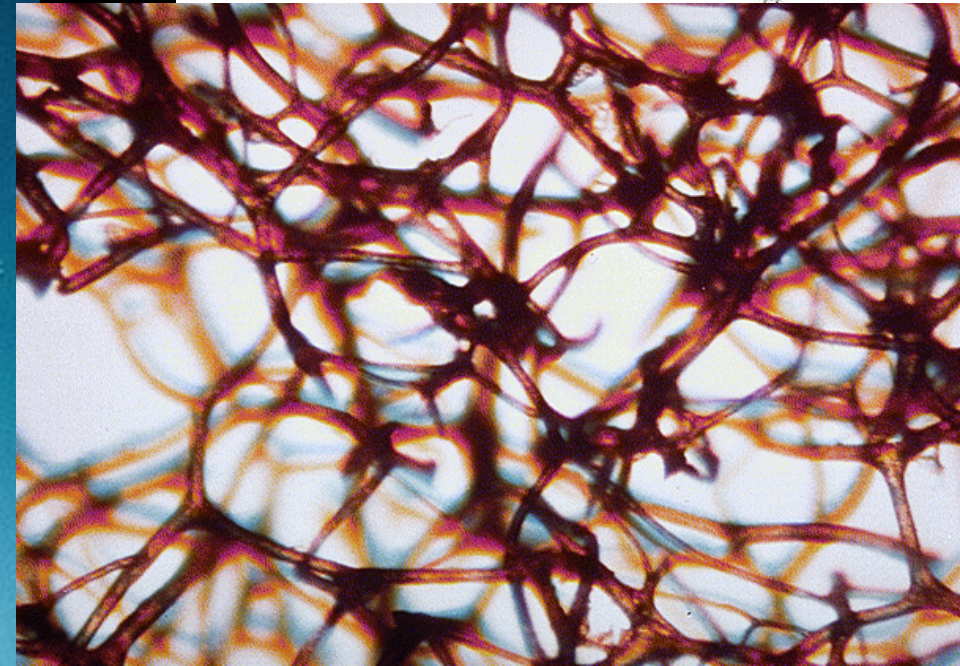
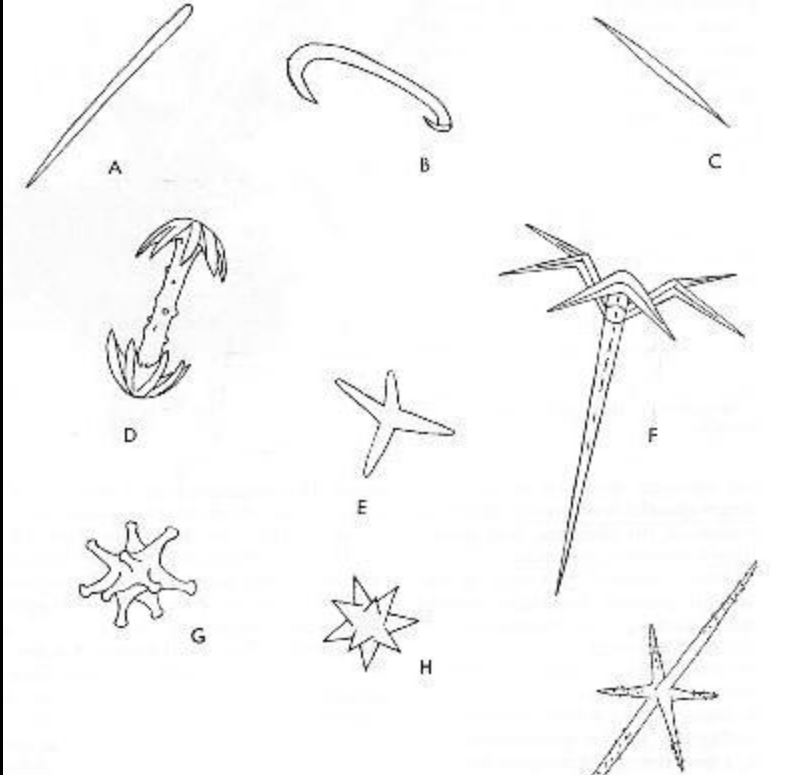
Ostia

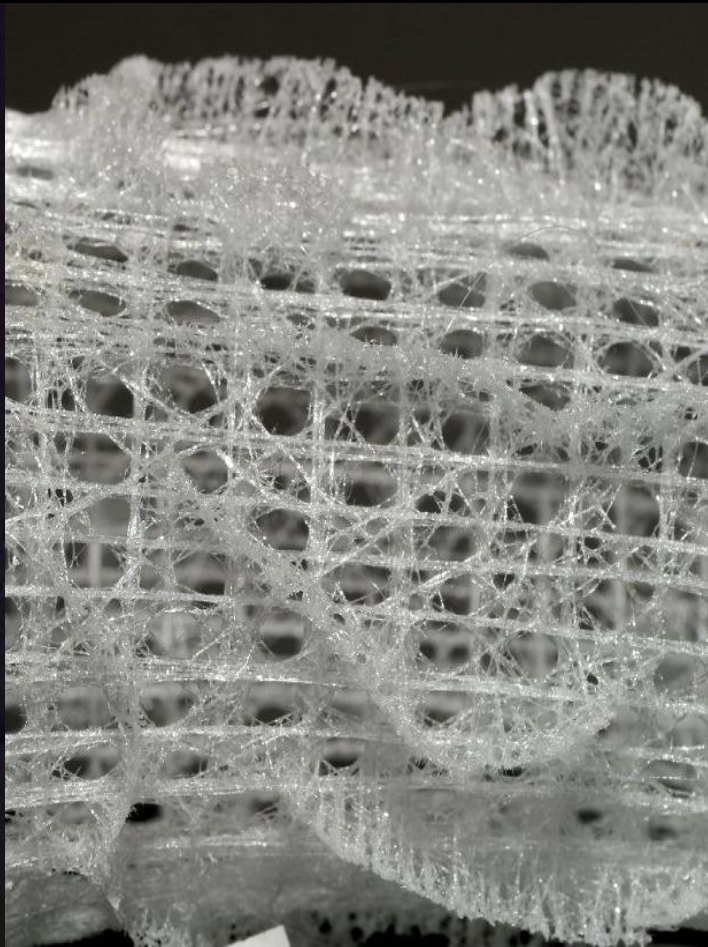
Spicules



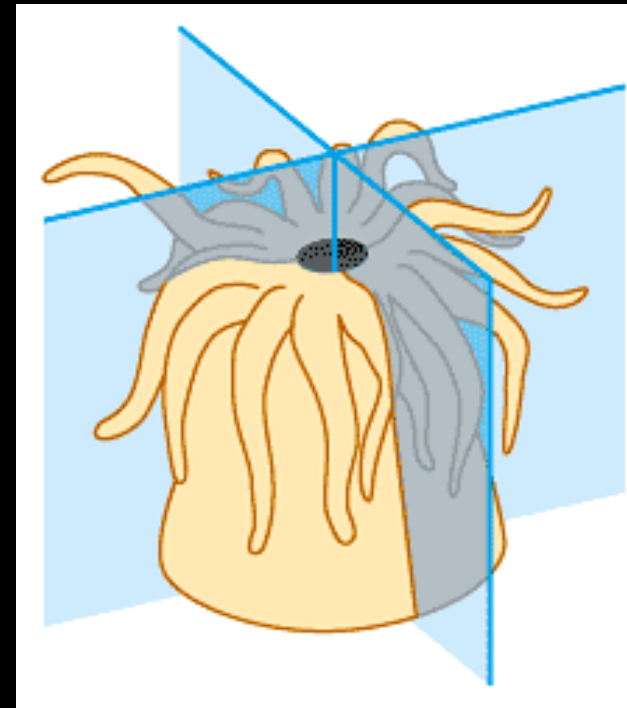
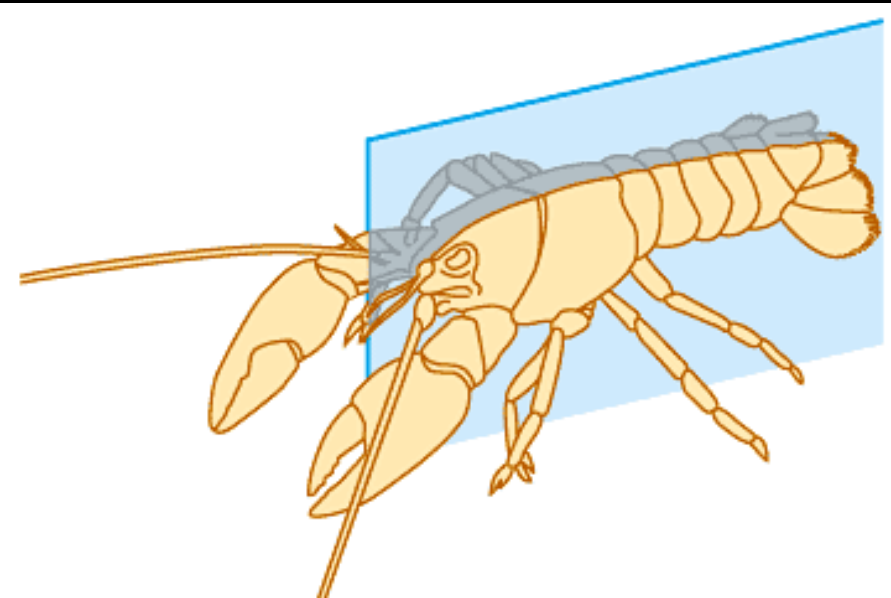


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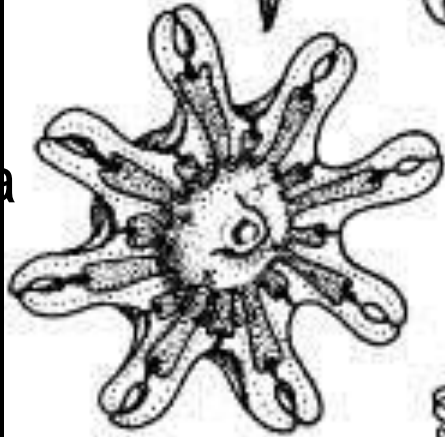
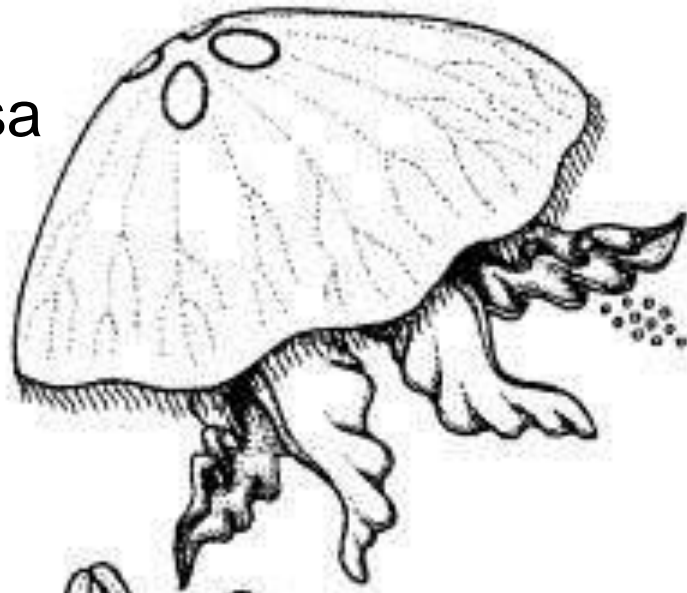


Phylum Cnidaria

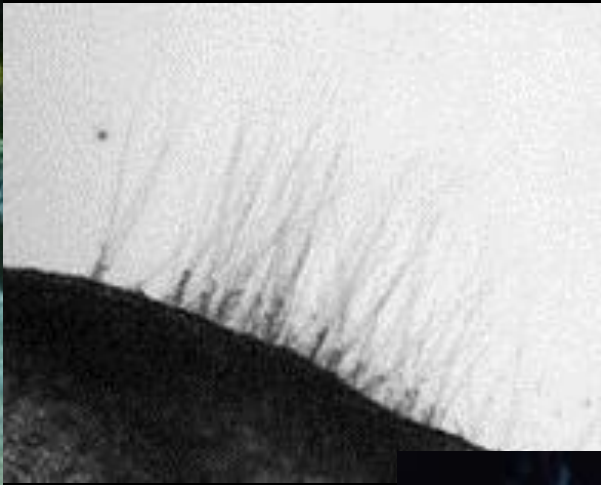




dusa

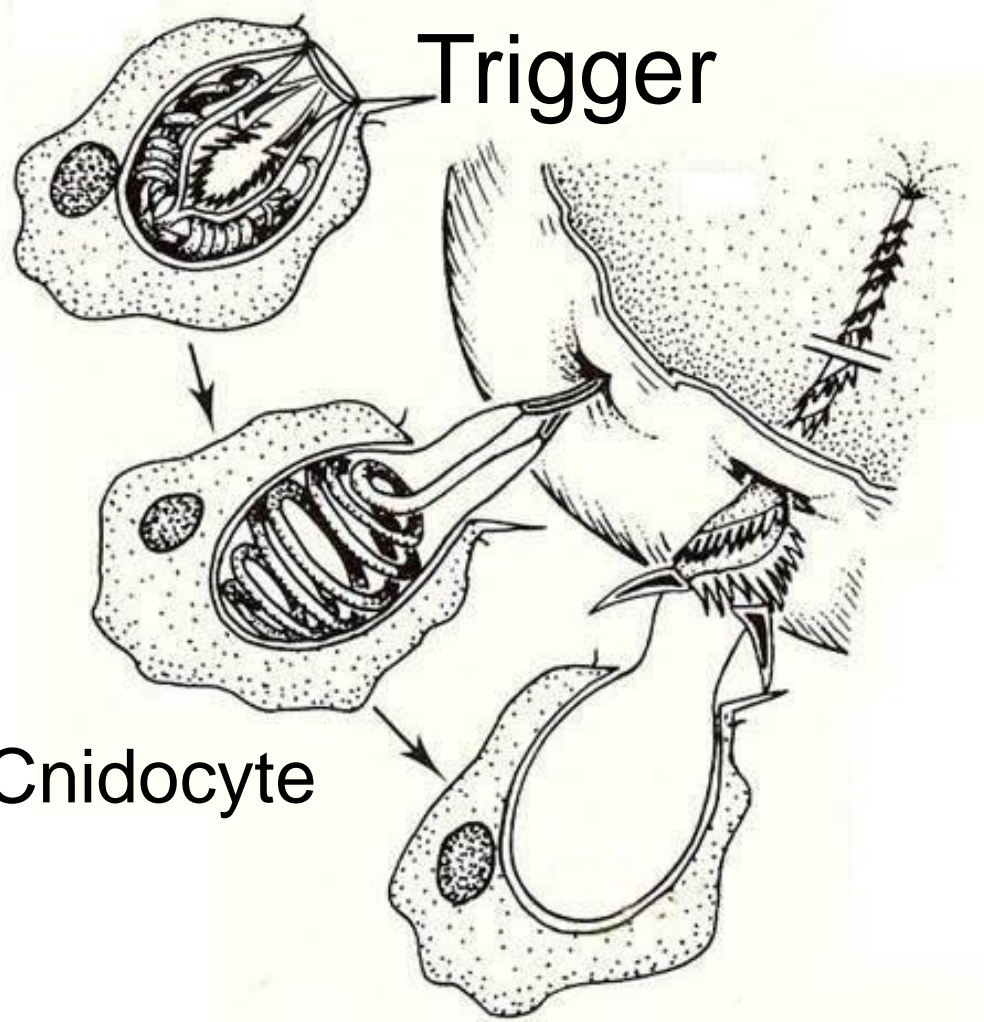
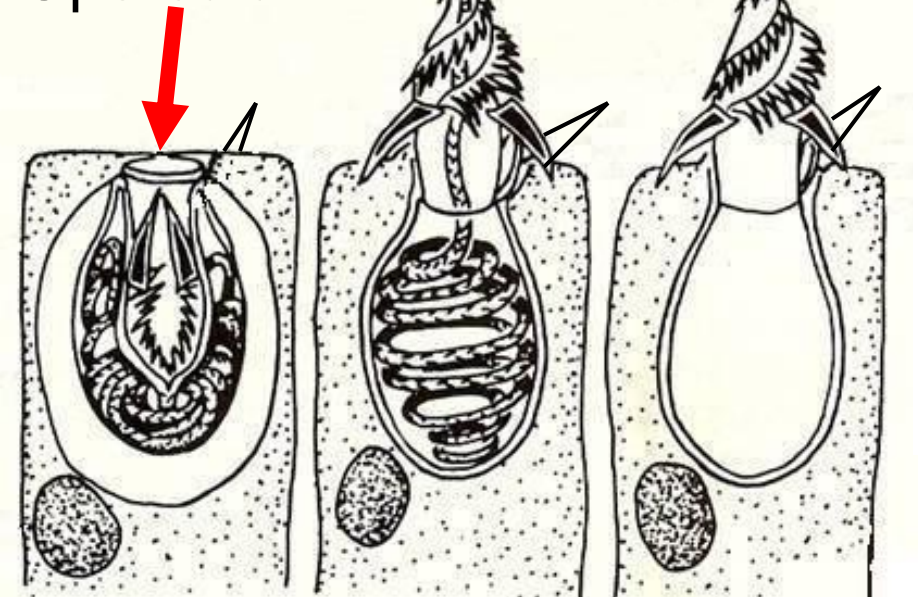


Nematocysts—harpoons



Just a fancy organelle

Operculum



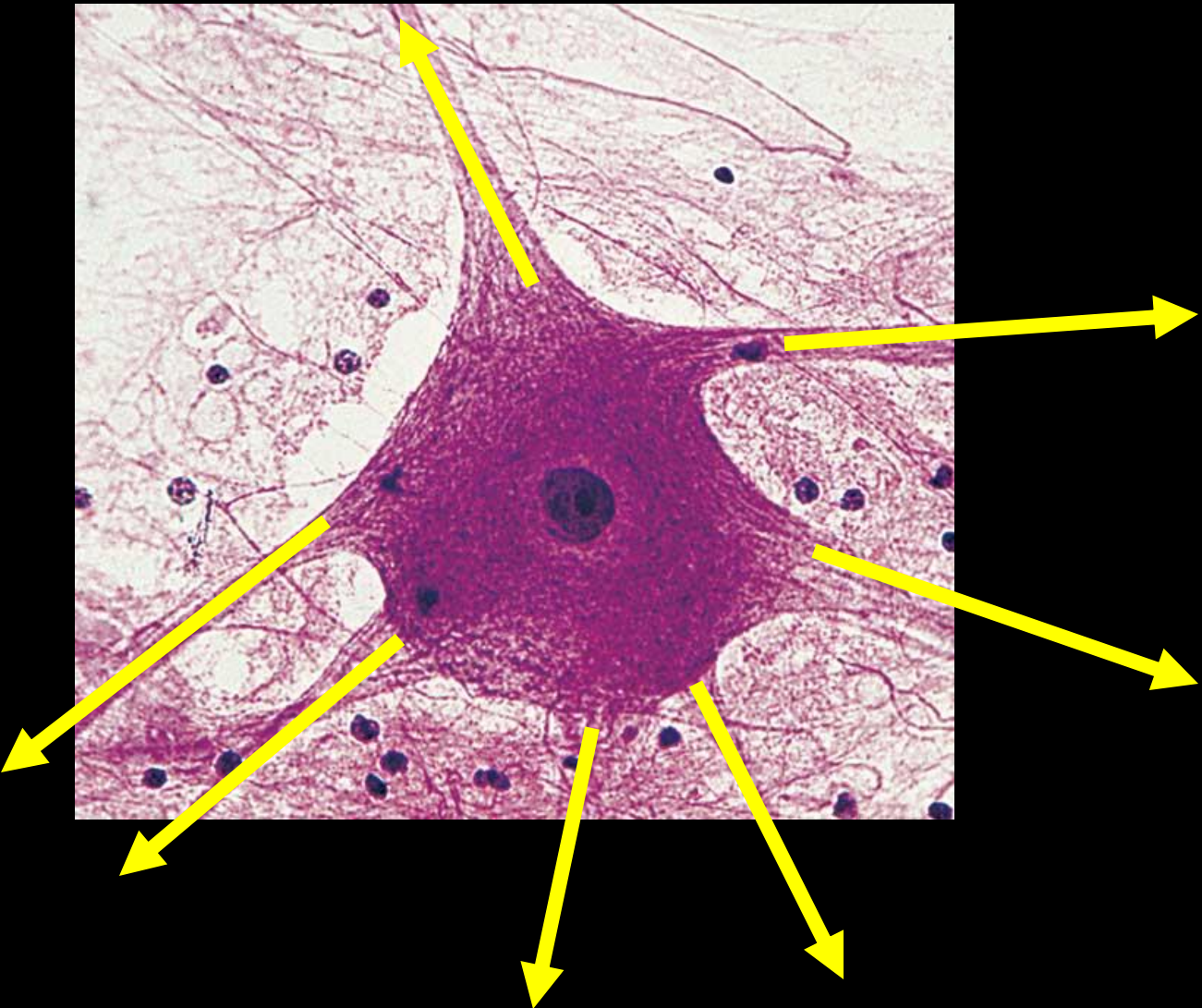
Cnidocyte



Oral cavity

Food goes in

Waste comes out



Four classes:

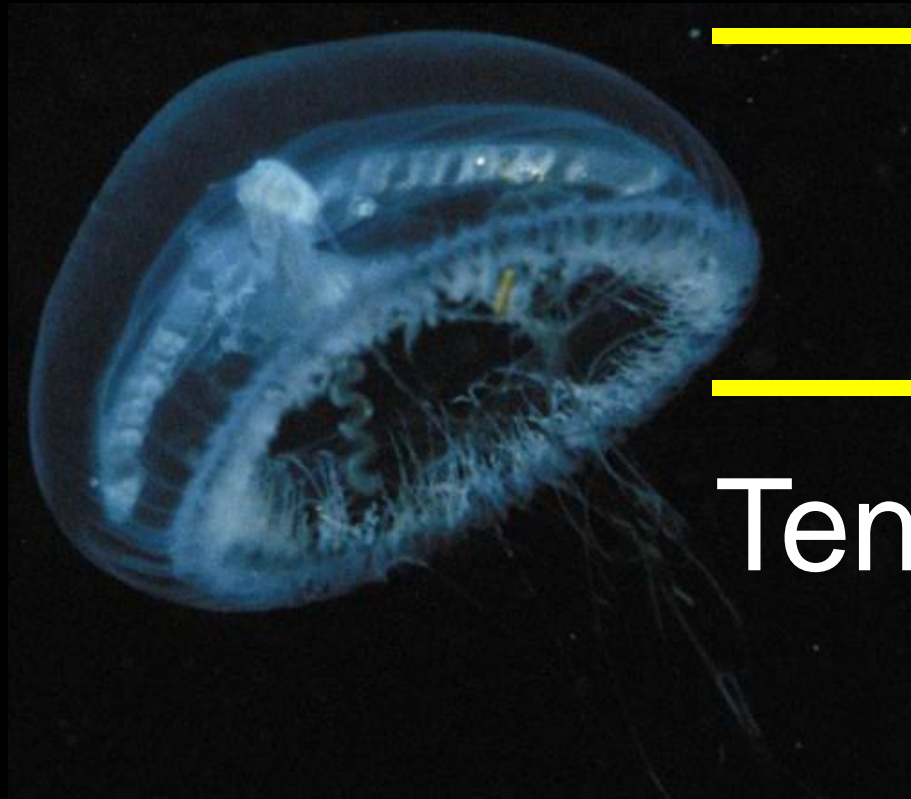
1. Scyphozoa—the jellies

2. Cubozoa—the box jellies

3. Hydrozoa—the hydrozoans

4. Anthozoa—corals and
anemones

Scyphozoans



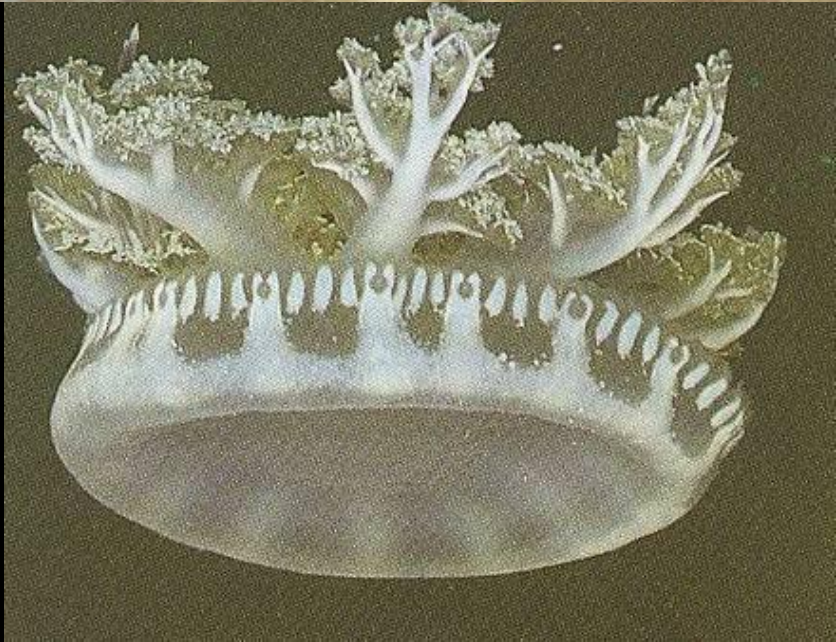
Bell

Tentacles





Cassiopeia—the upside-down jellies





Cyanea—lion's
mane jelly

Tentacles over
100 feet;
bell over 6 feet

Cold
water



Aurelia aurita





*Rhopilema
verrilli*



*Stomolophus
meleagris*



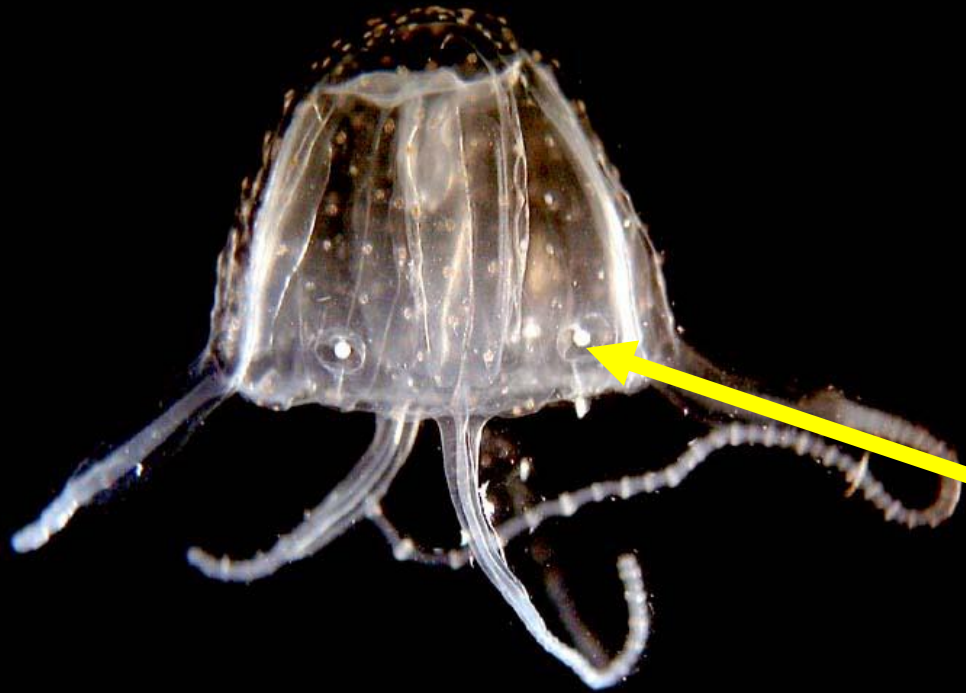
Sea
nettle



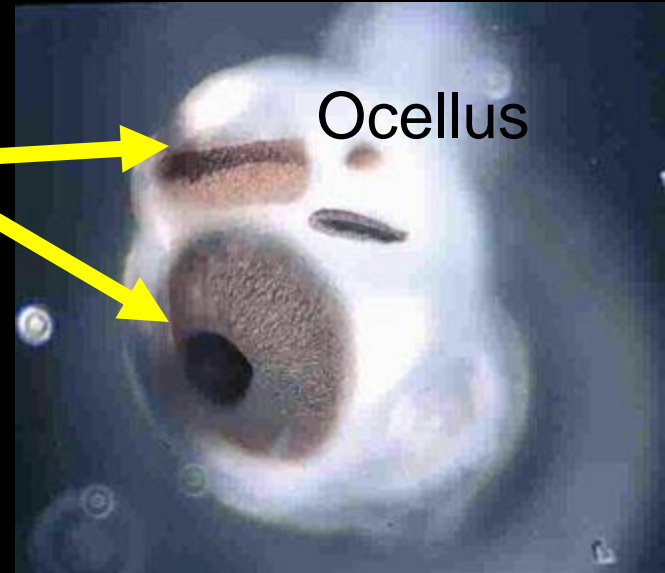
*Chrysaora
quinquecirrha*



Cubozoans—box shaped



Eyes

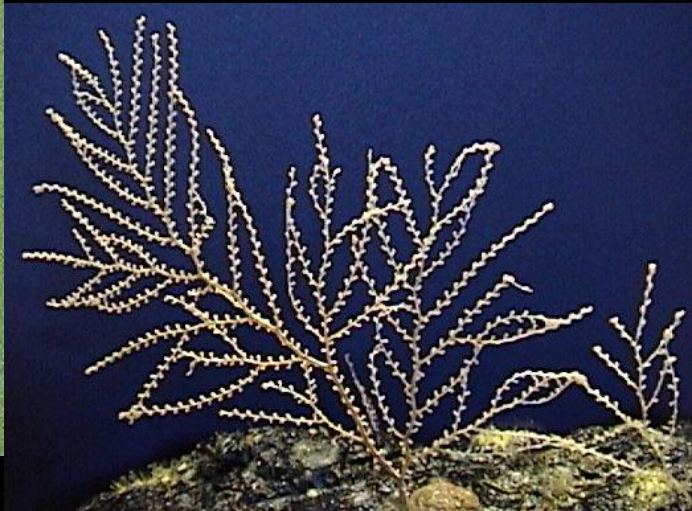
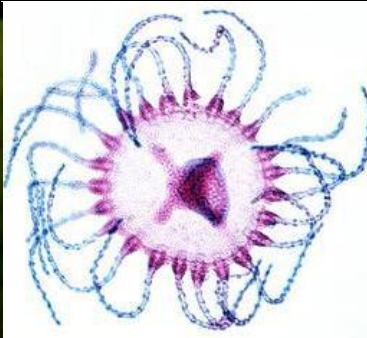


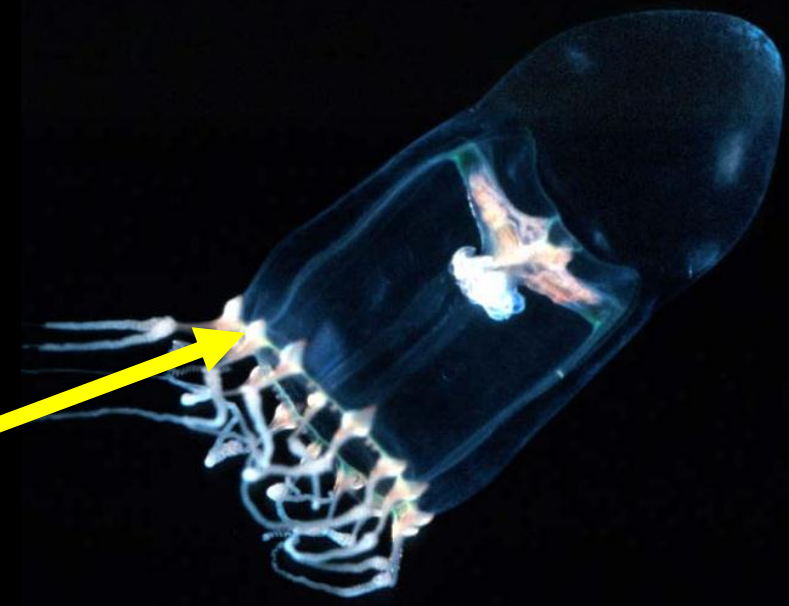
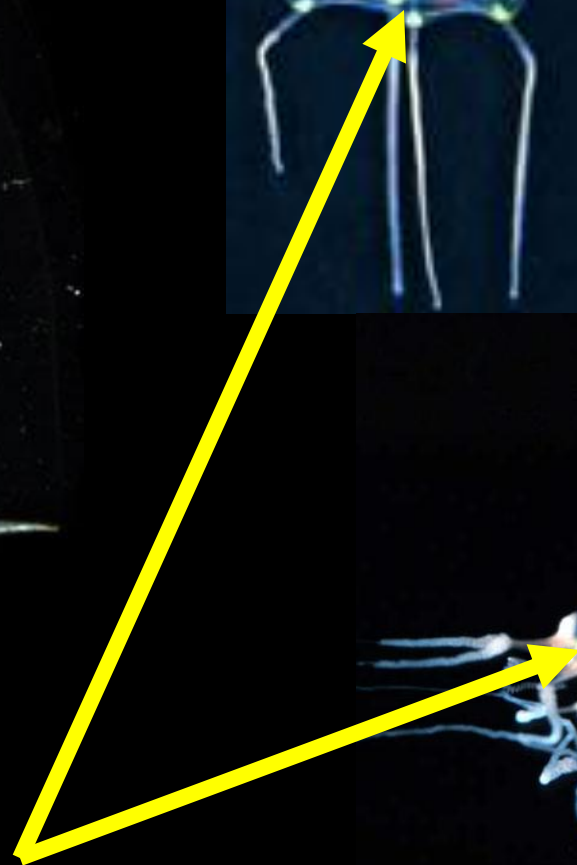
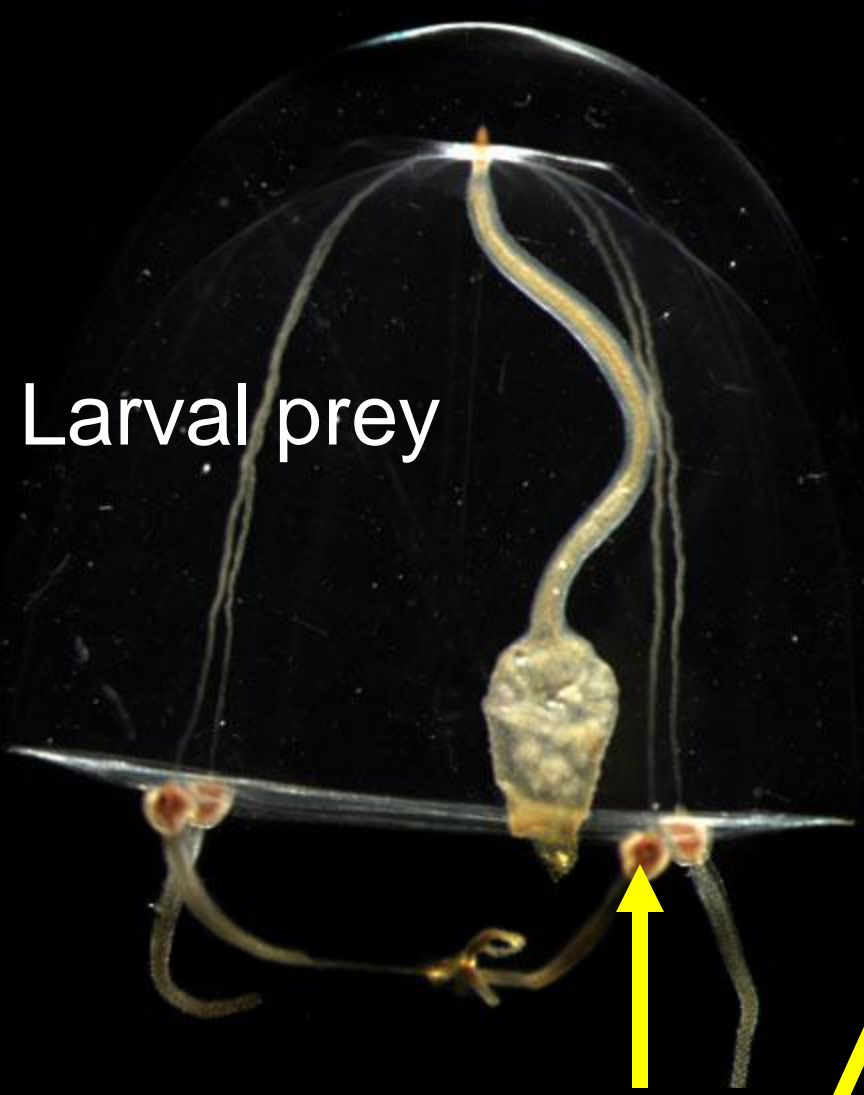
Ocellus

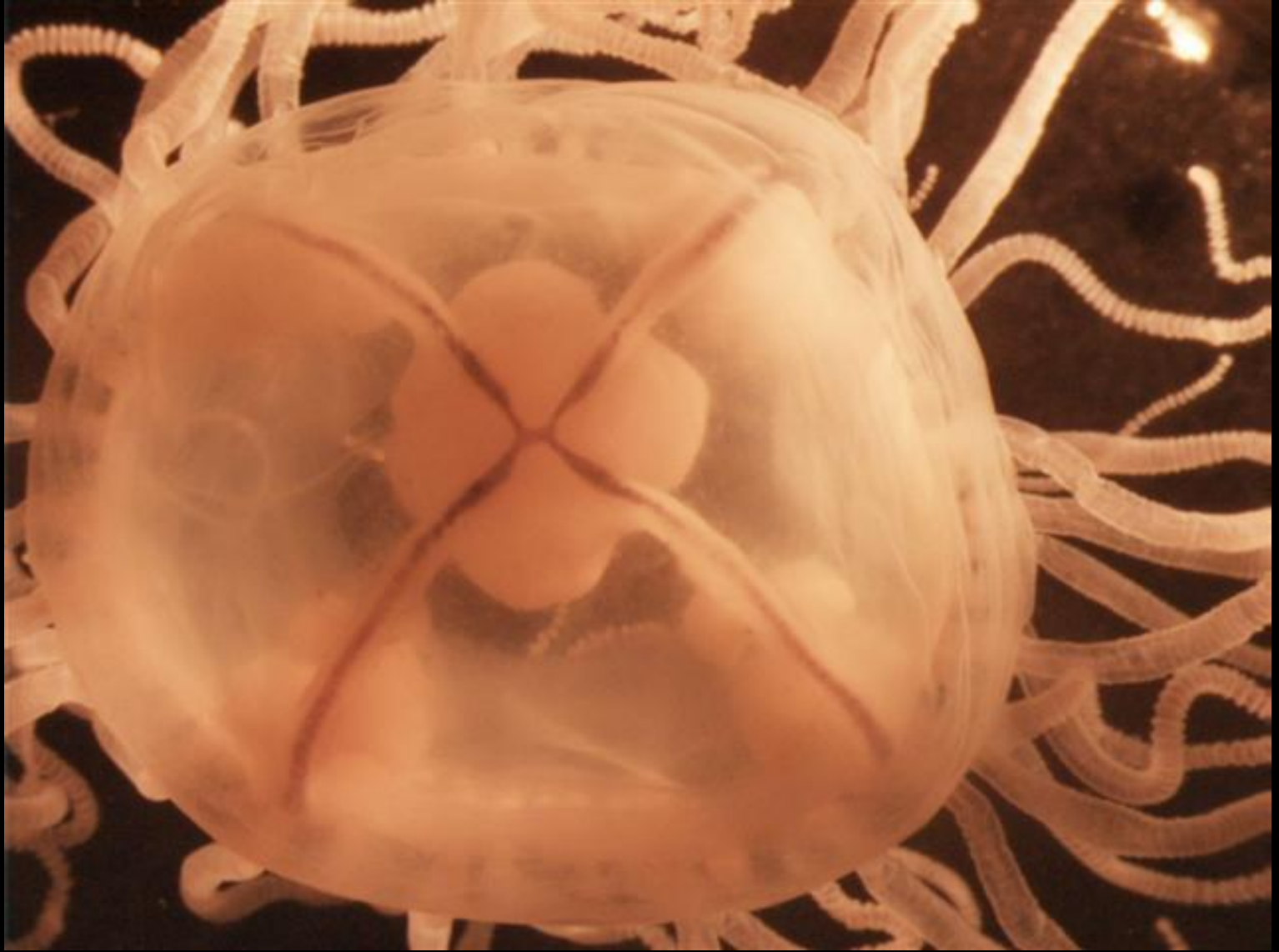
“Sea wasps”; can be deadly



Hydrozoans







Gonionemus vertens.



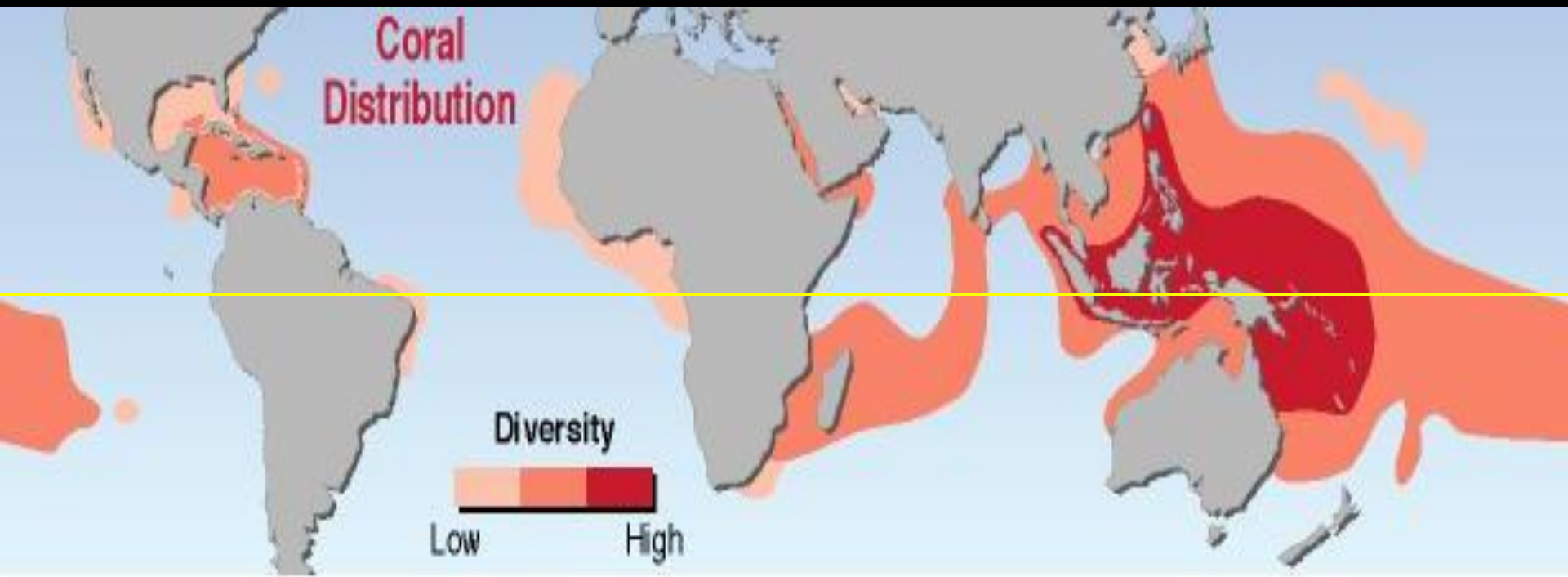
Millepora

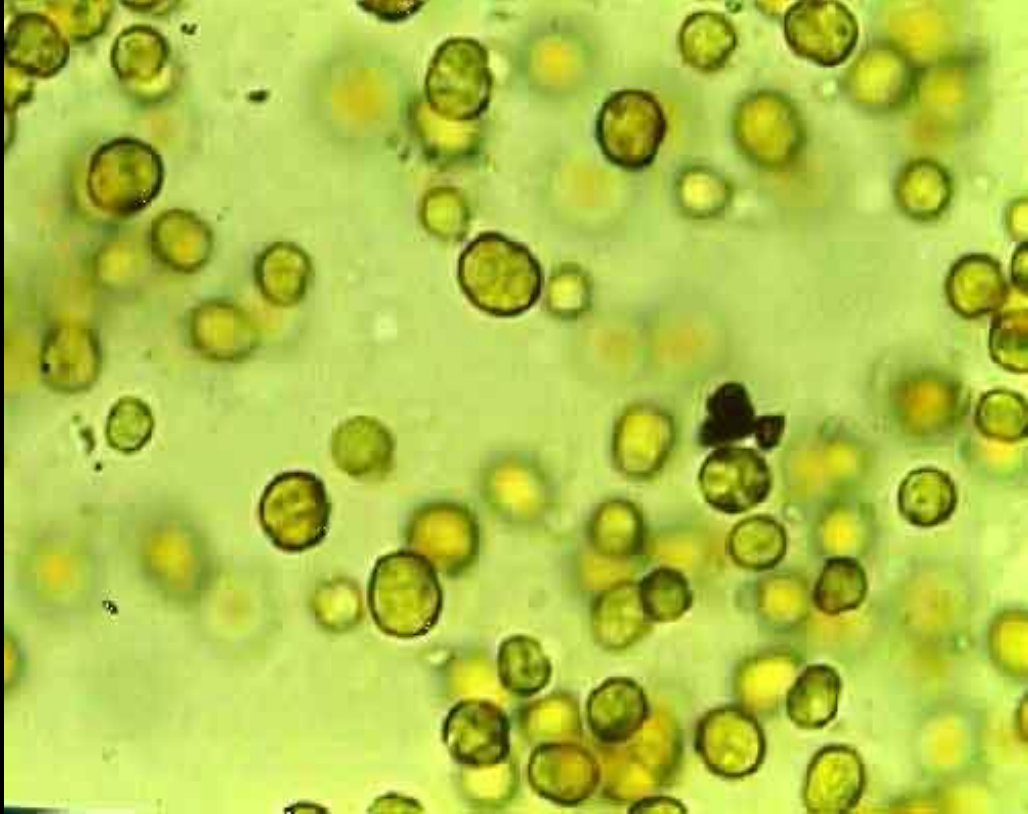
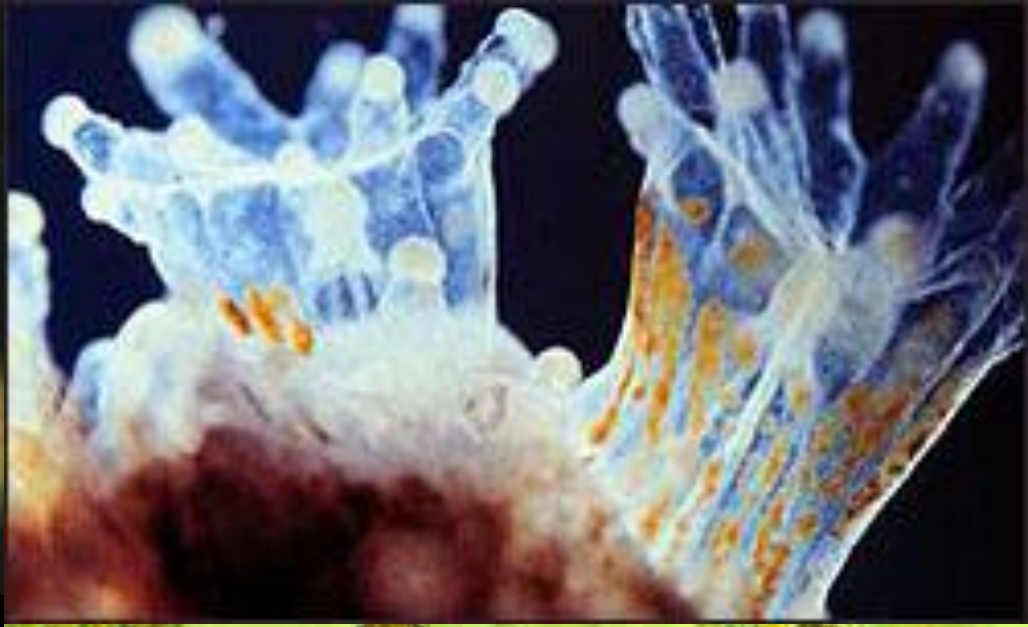


Feeding tentacles

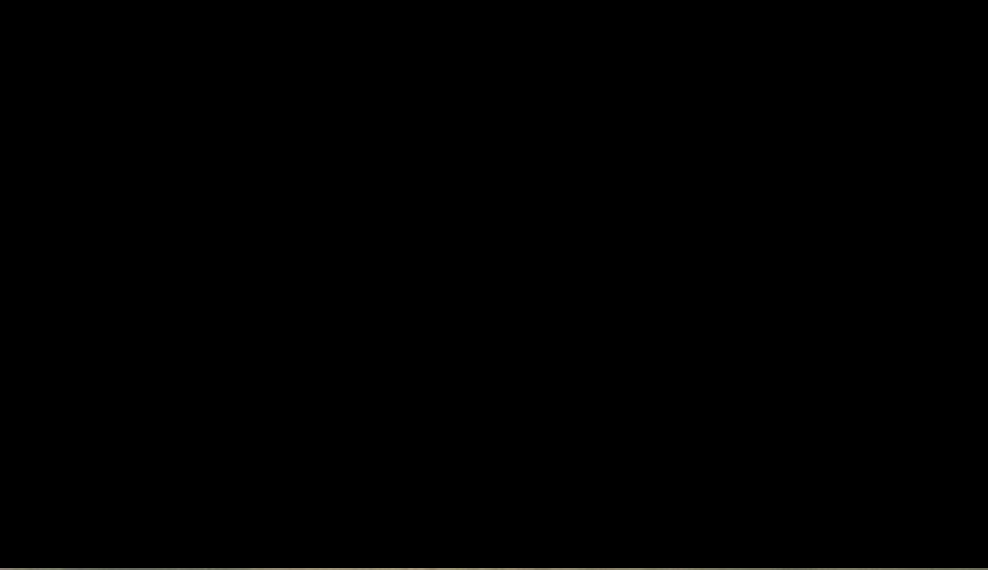












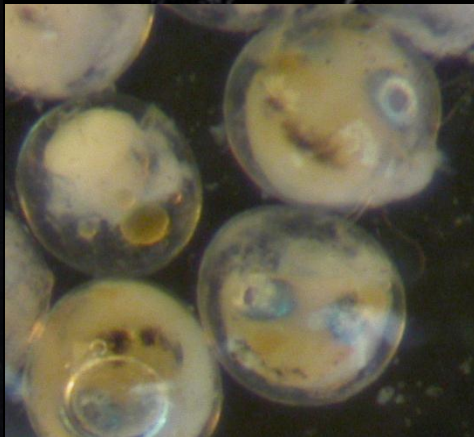
2. Octacorals=8 tentacles

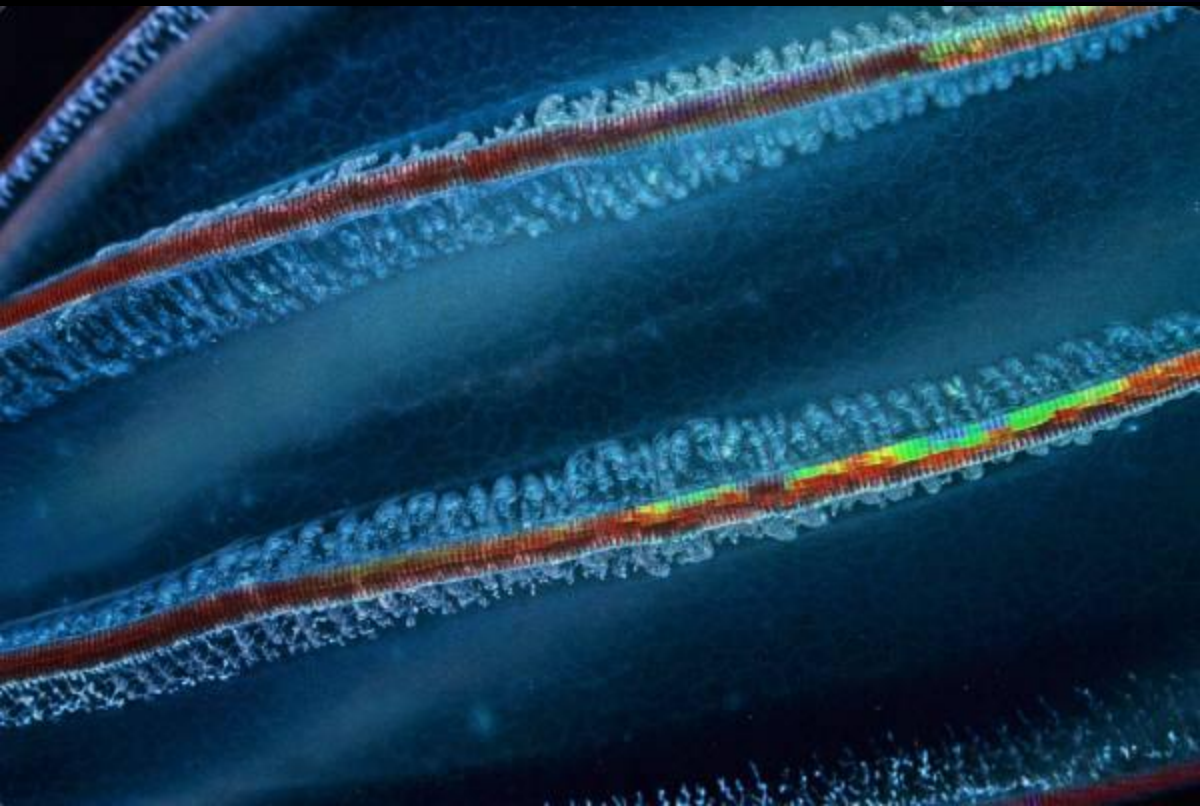




*Renilla
reniformis*

Can devastate an ecosystem by feeding on plankton (introduced)

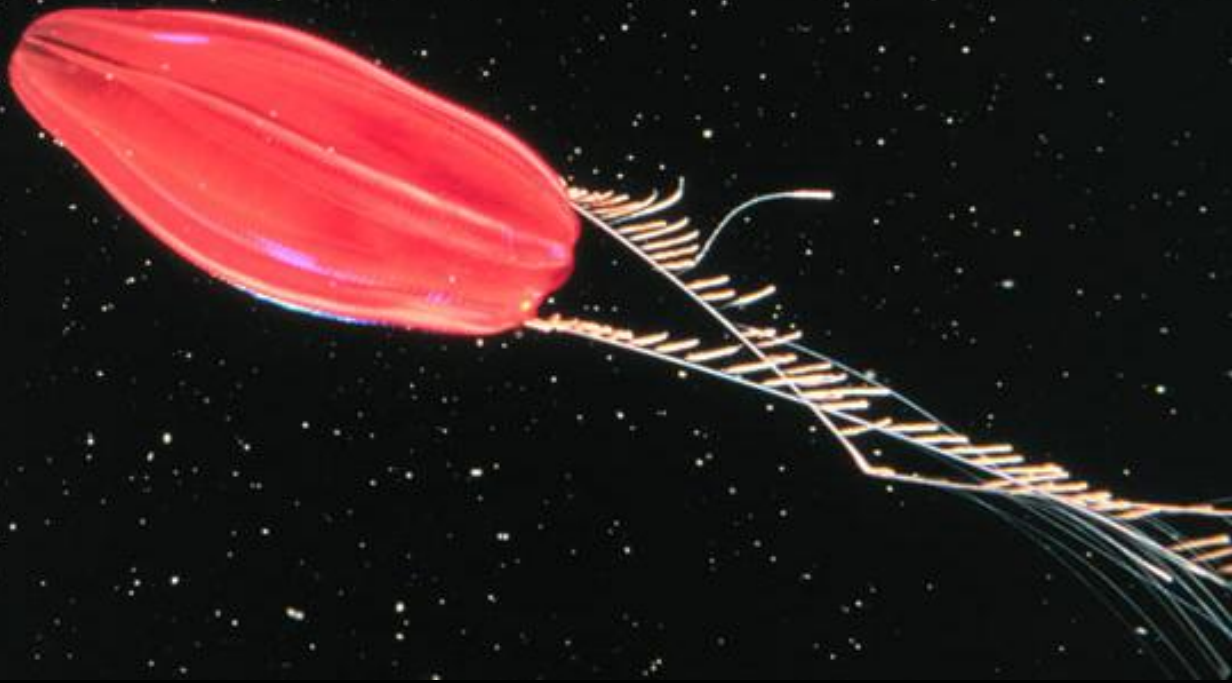




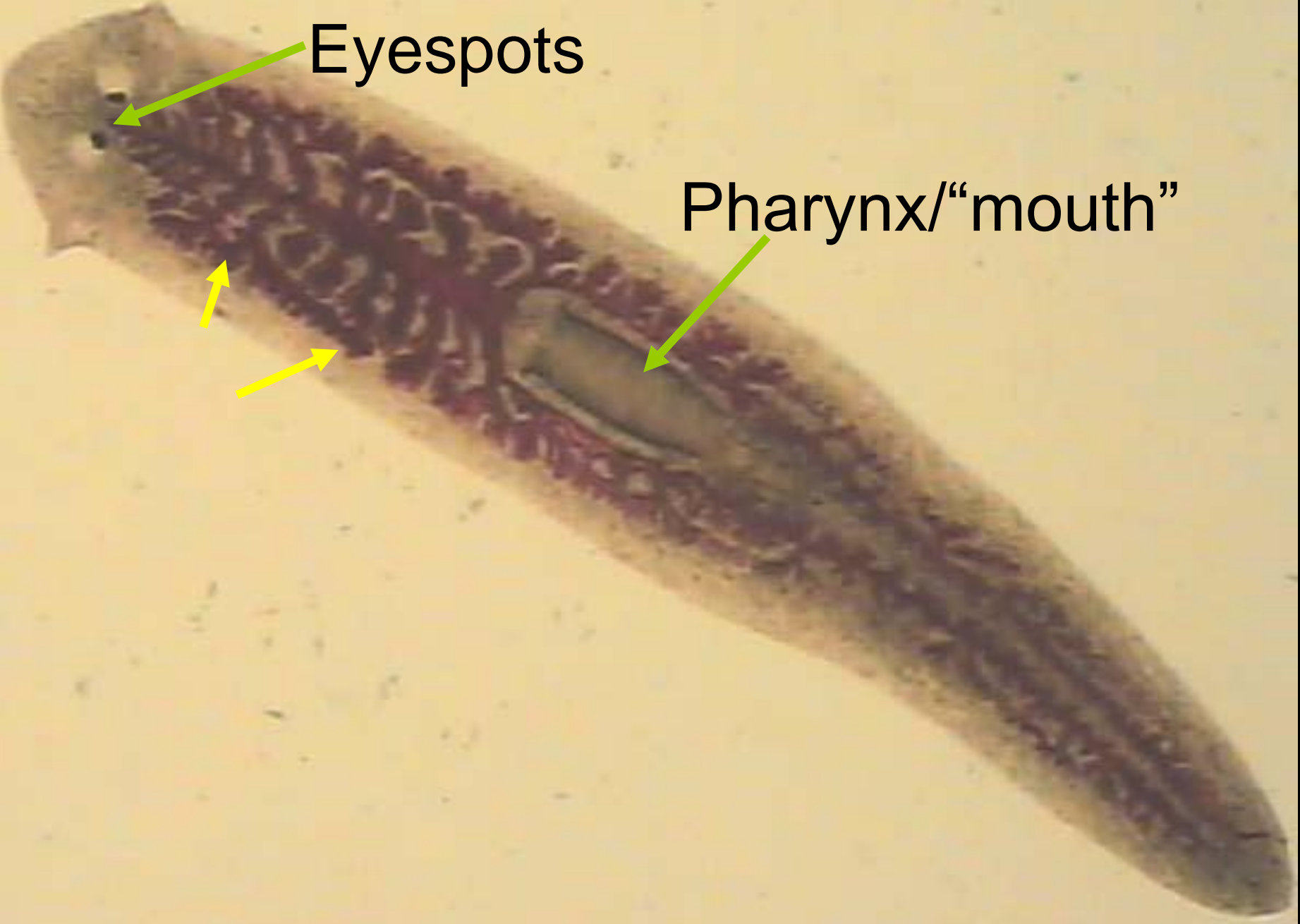
Still 'gastrovascular'



Oral cavity

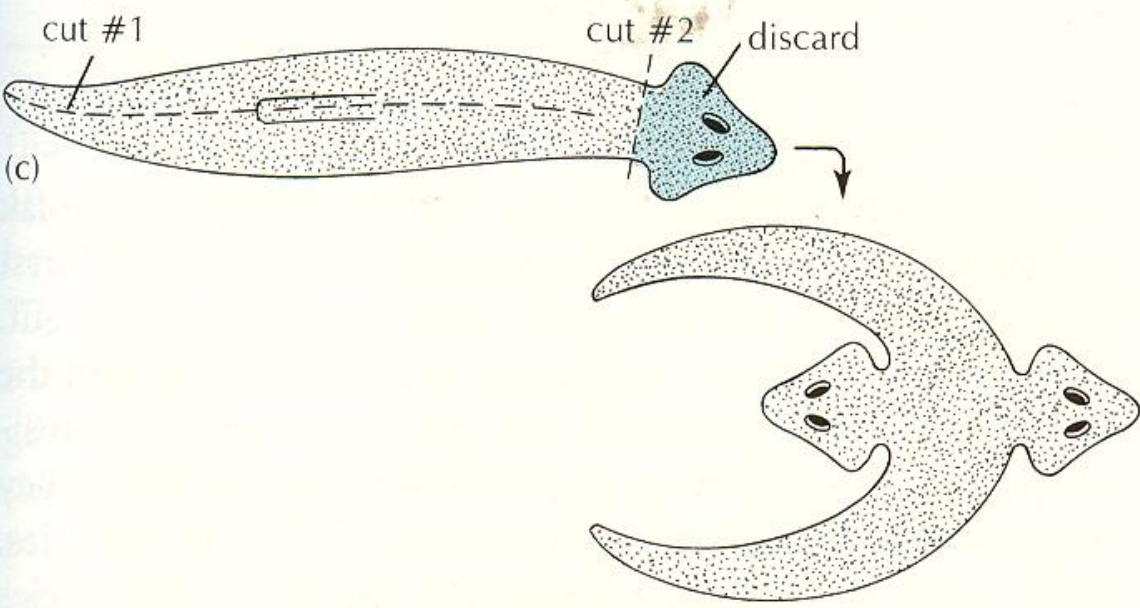
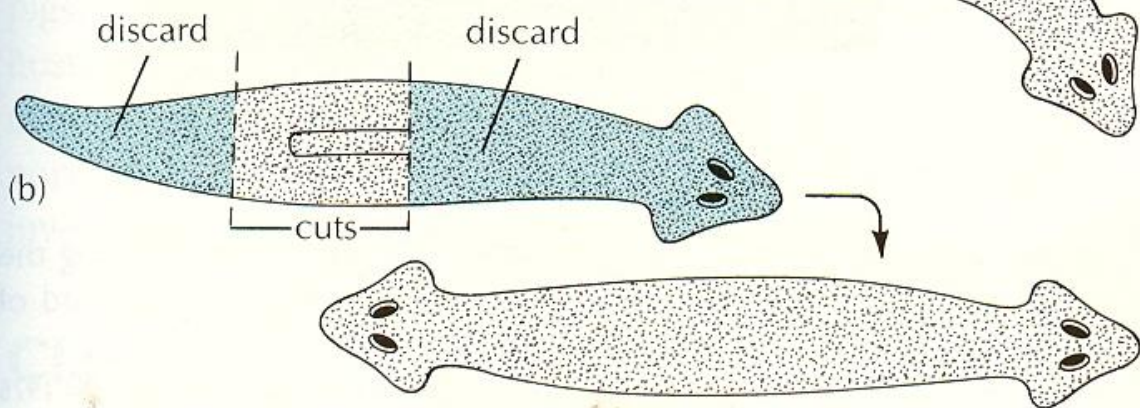
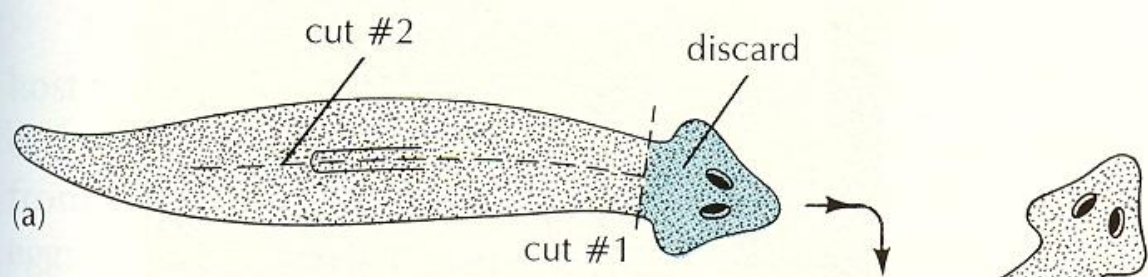






Eyespots

Pharynx/“mouth”

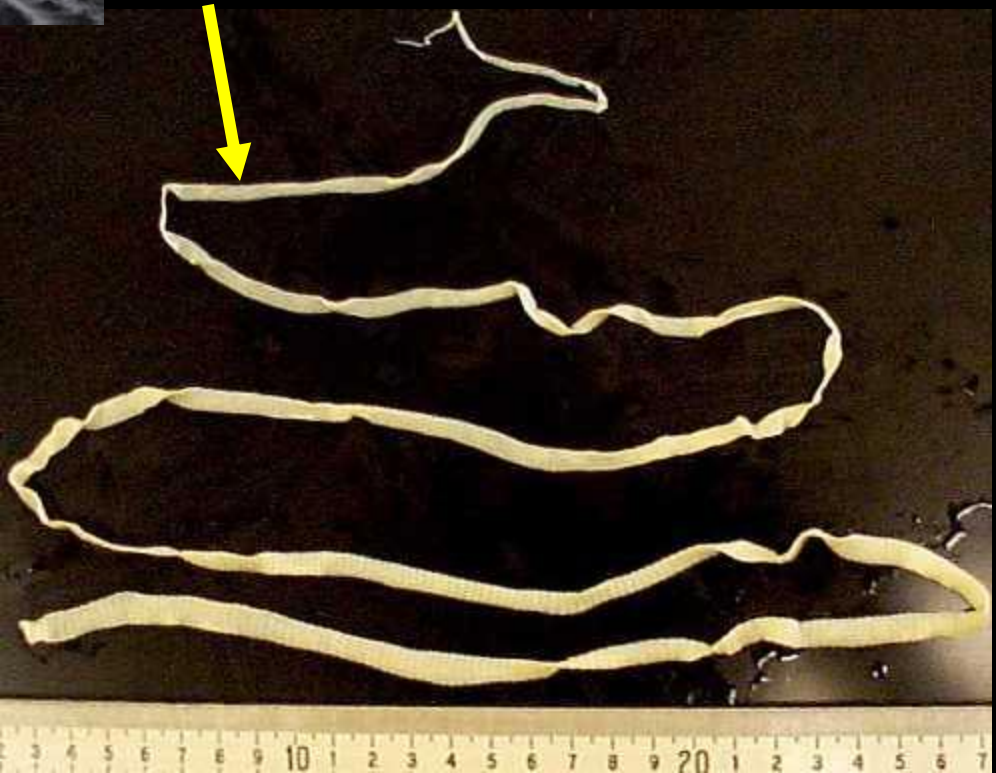
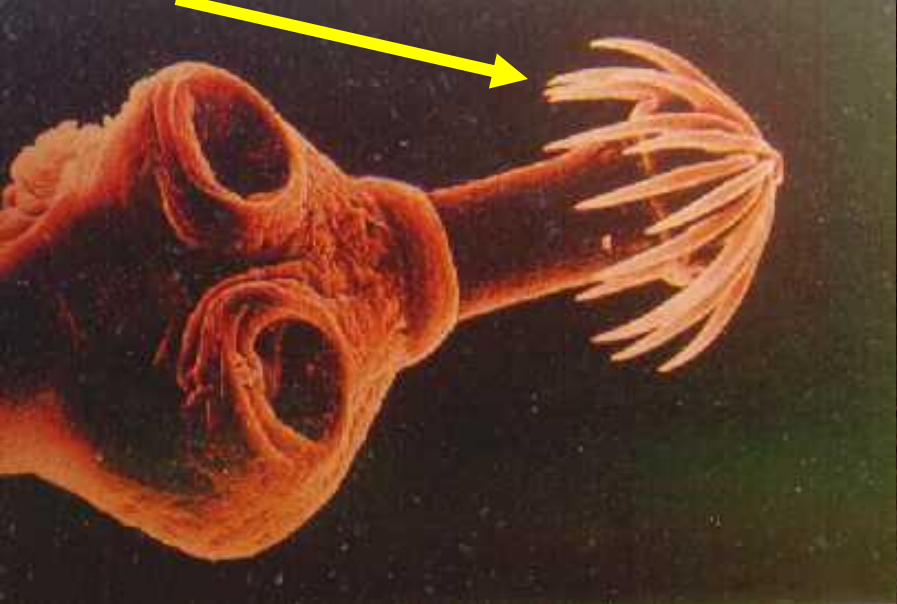


Marine forms



Land form





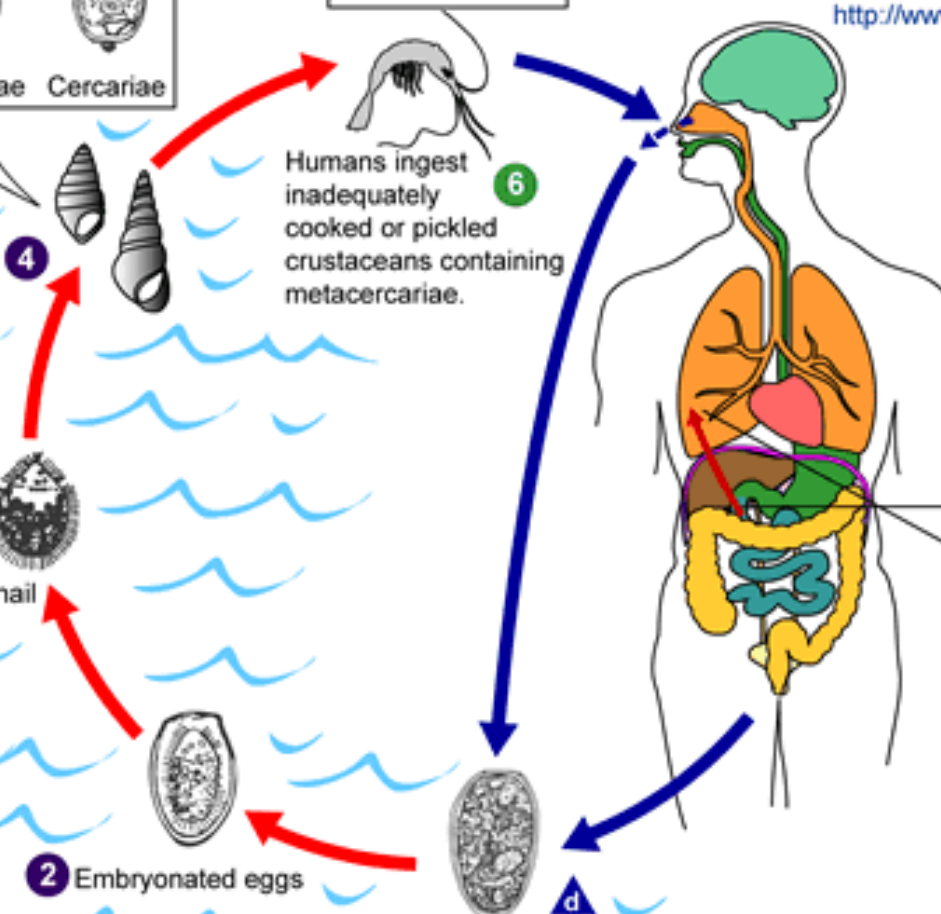
Blood and liver flukes



Rash

Distended belly



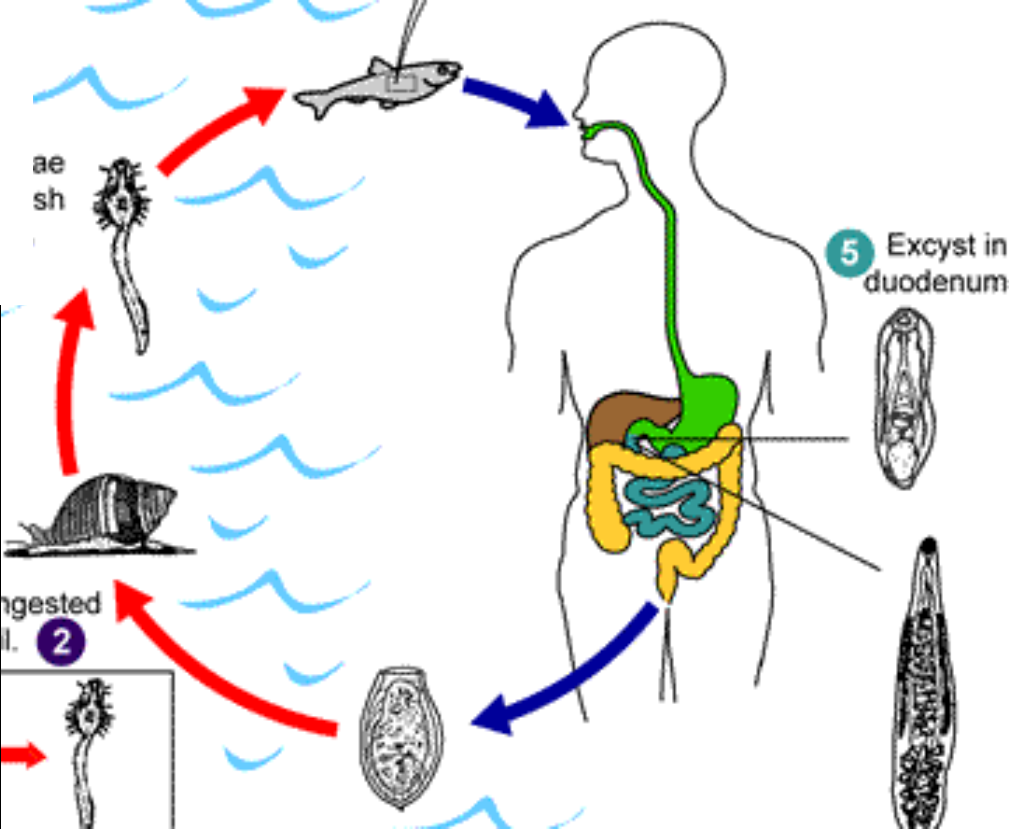


COOK YOUR FOOD

400,000 in USA

200 million WW

Live 5-10 years and may release over 2000 eggs per day



Phylum Nemertea: nemertean worms

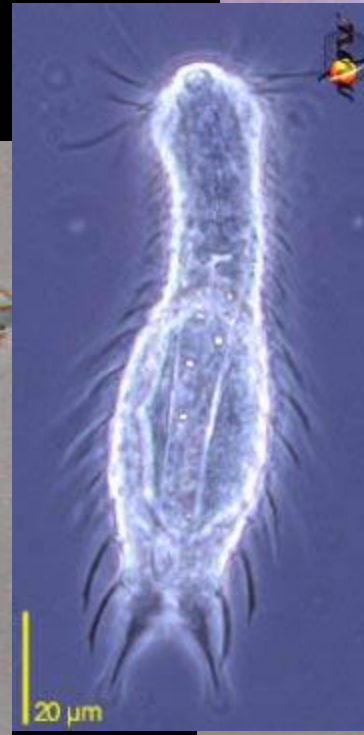




May reach 75ft



Phylum: Gastrotricha

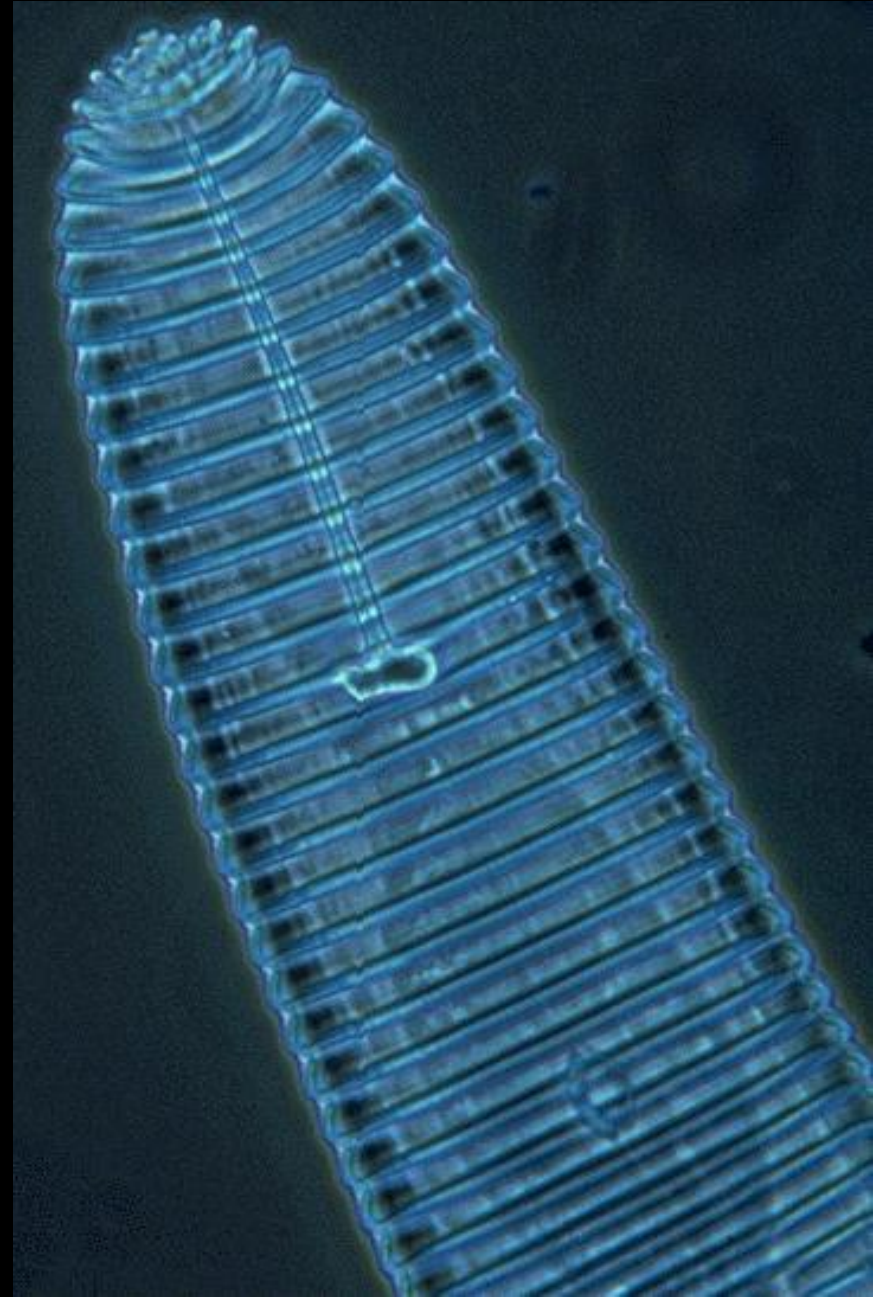
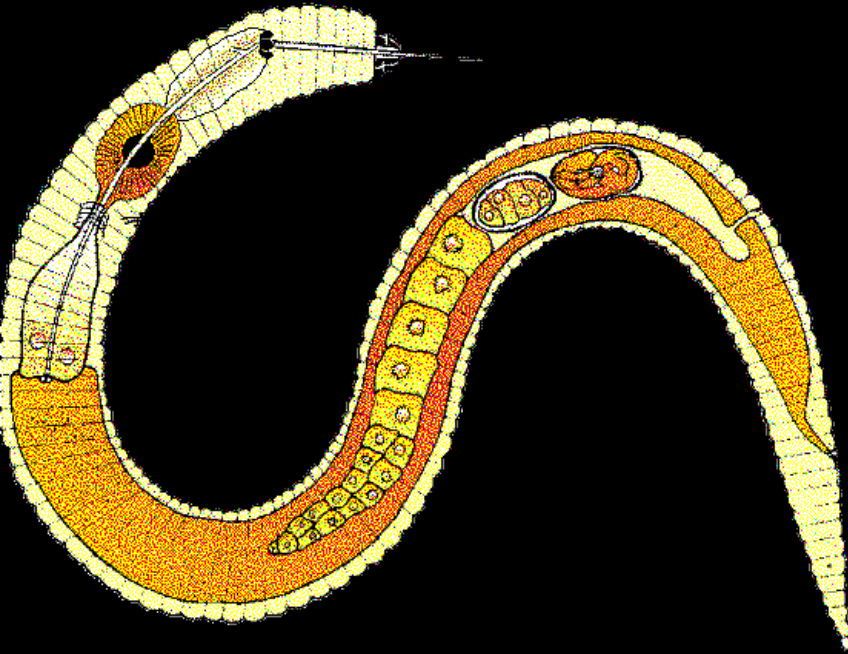


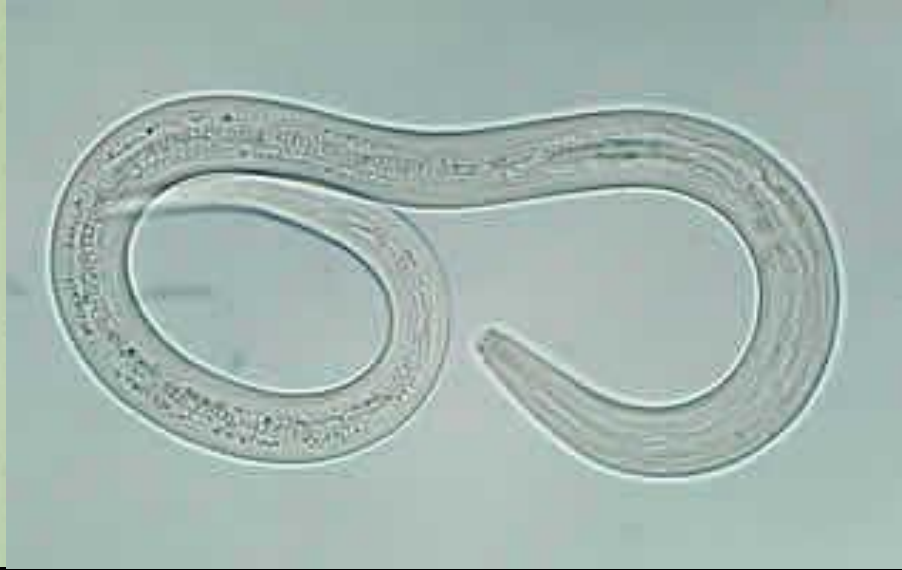
Phylum: Kinorhyncha

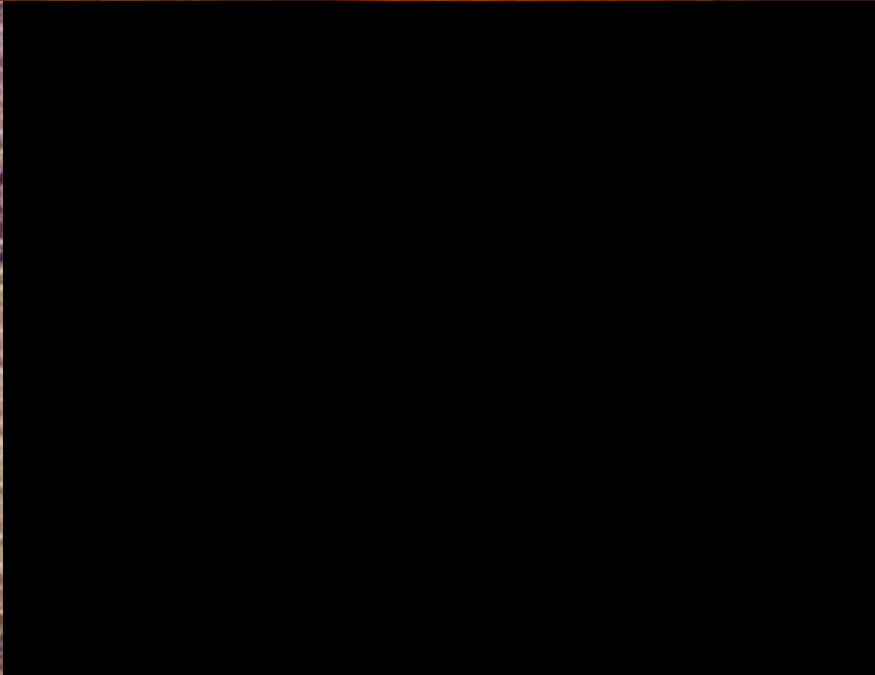


Phylum: Nematoda

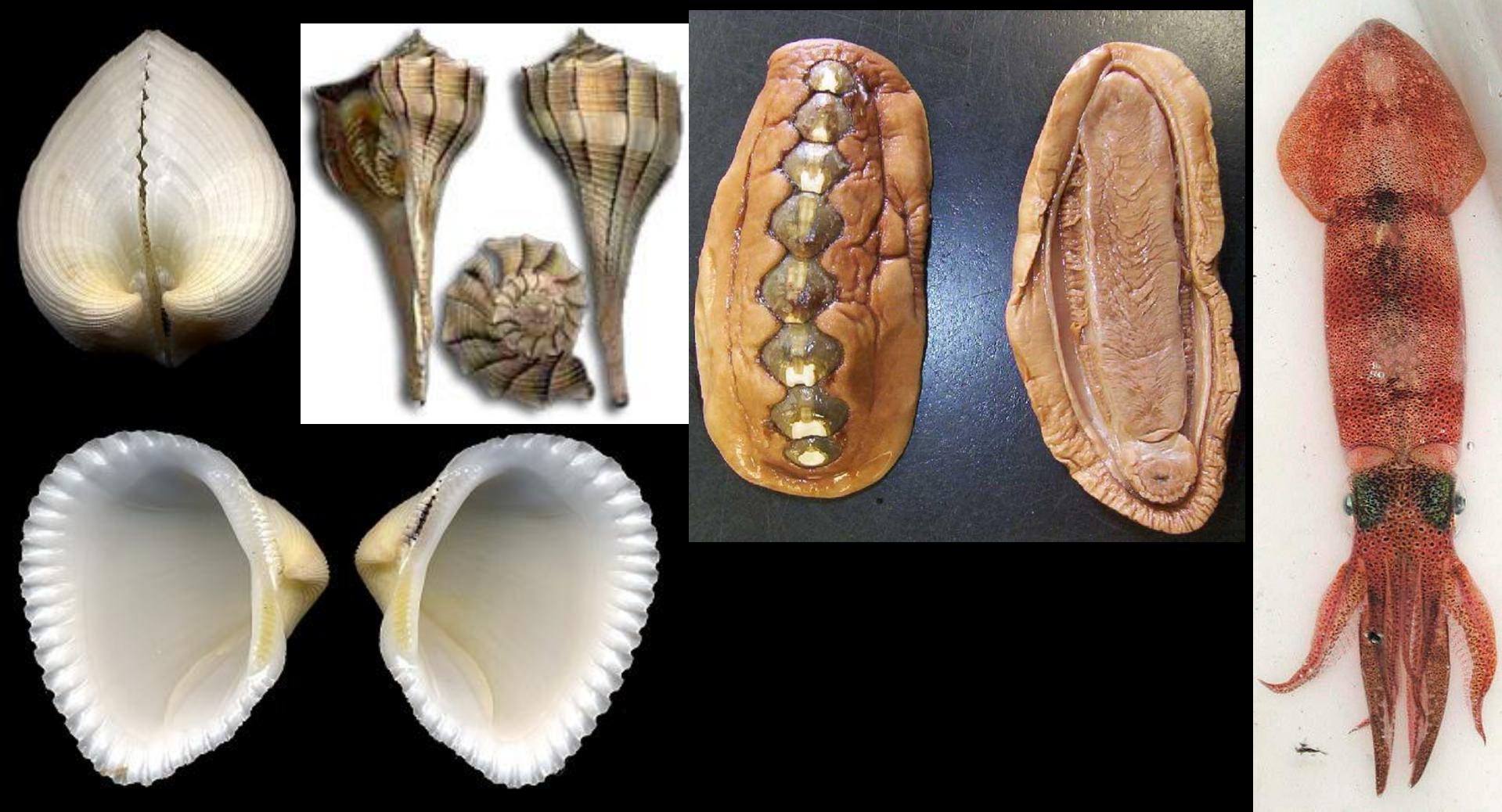








Phylum Mollusca







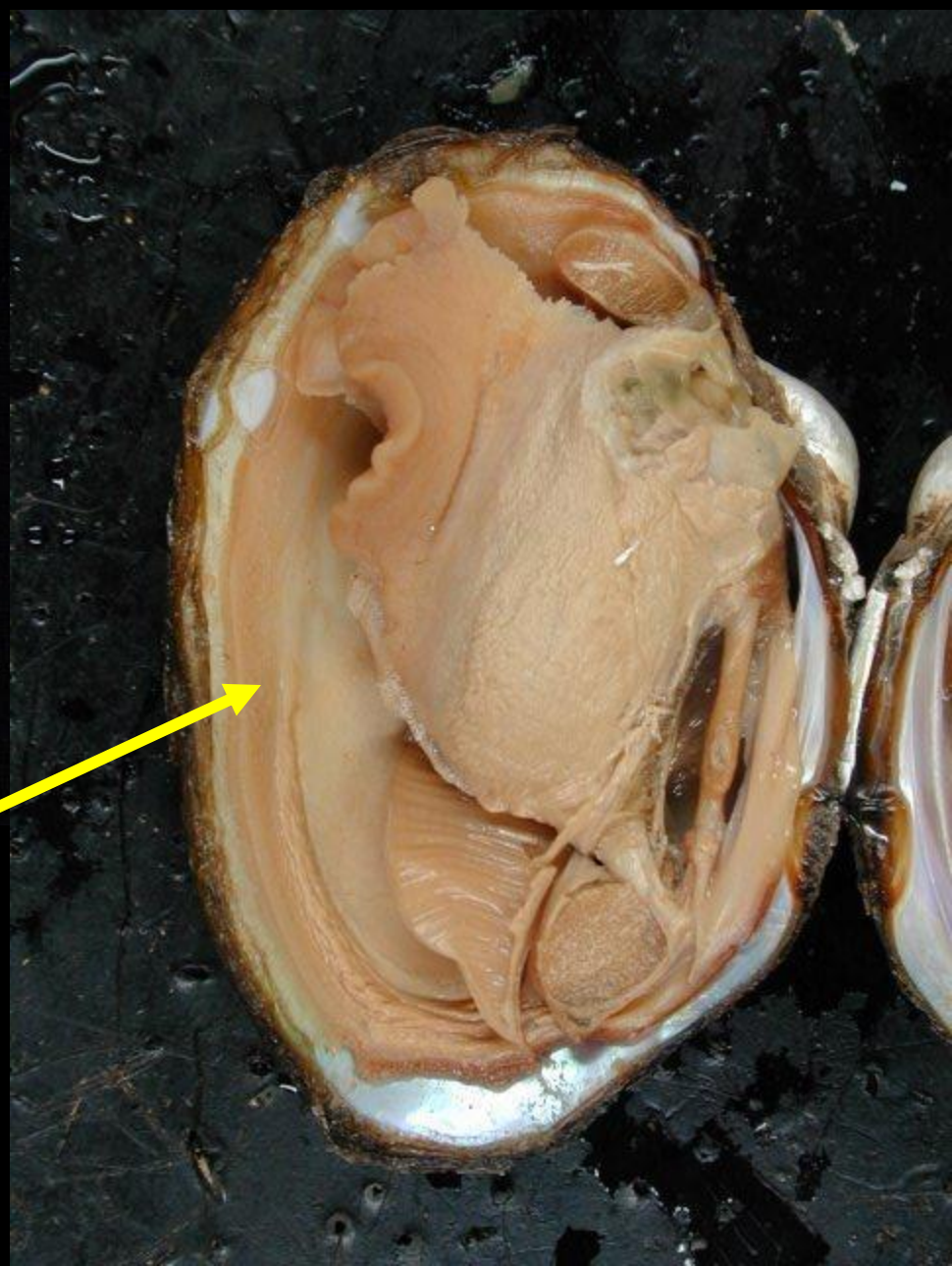
7

8

9

Calcitic "prisms"



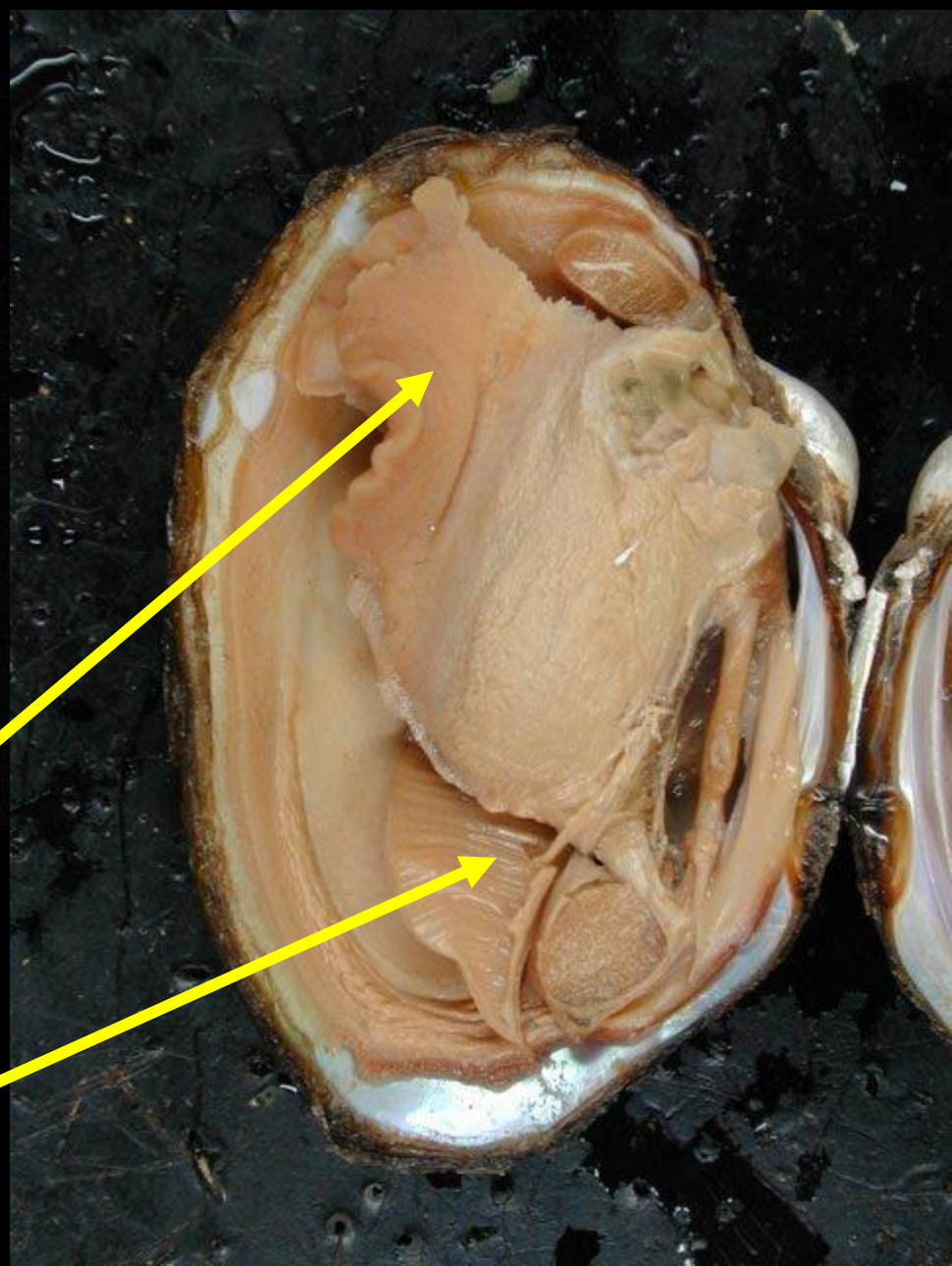


Mantle



Foot

Gills



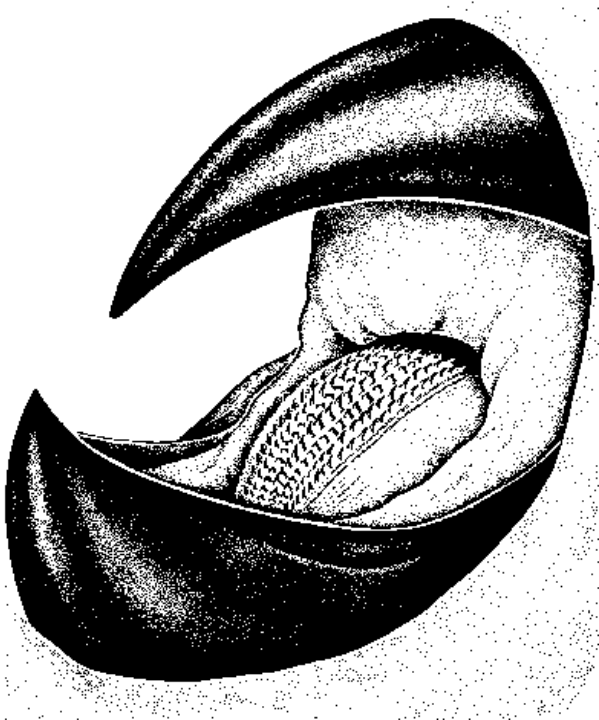
Periostracum

Foot in use



Foot retracted





Classes: **Polyplacophora**,
Gastropoda, Pelecypoda,
Scaphopoda, Cephalopoda



Tonicella (In lab)



Chaetopleura apiculata



Gastropods (stomach-foot) the snails



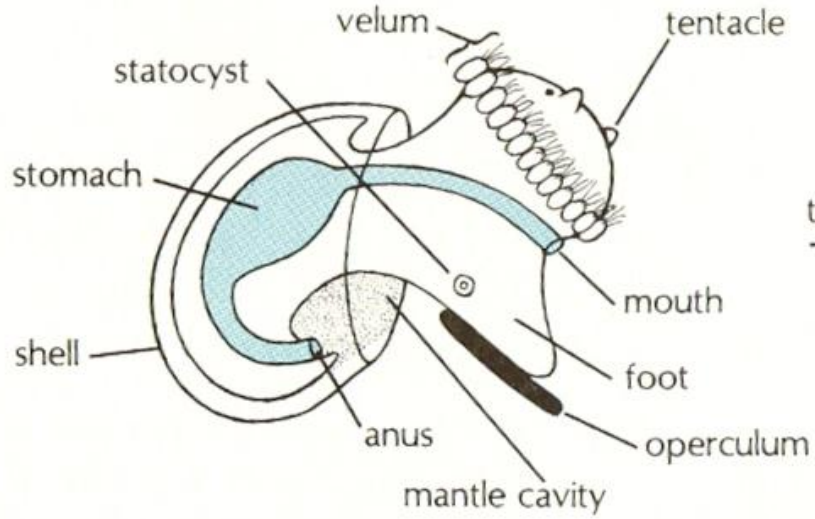


Sinistral

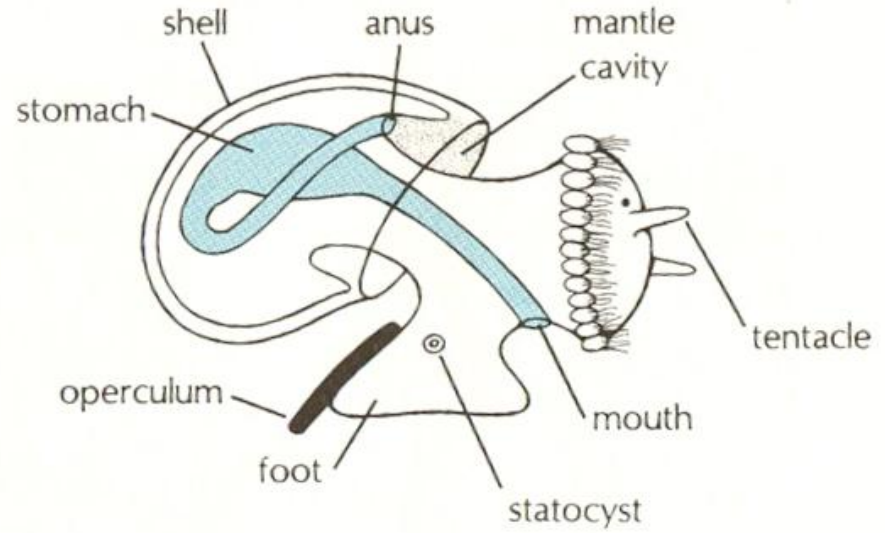


Dextral





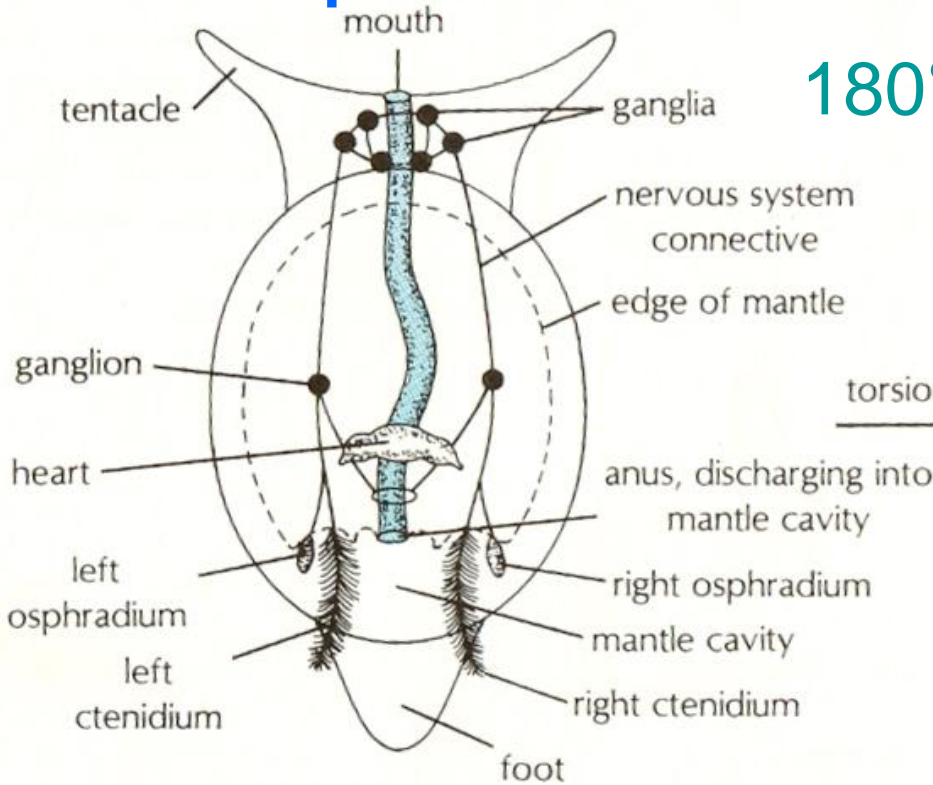
torsion →



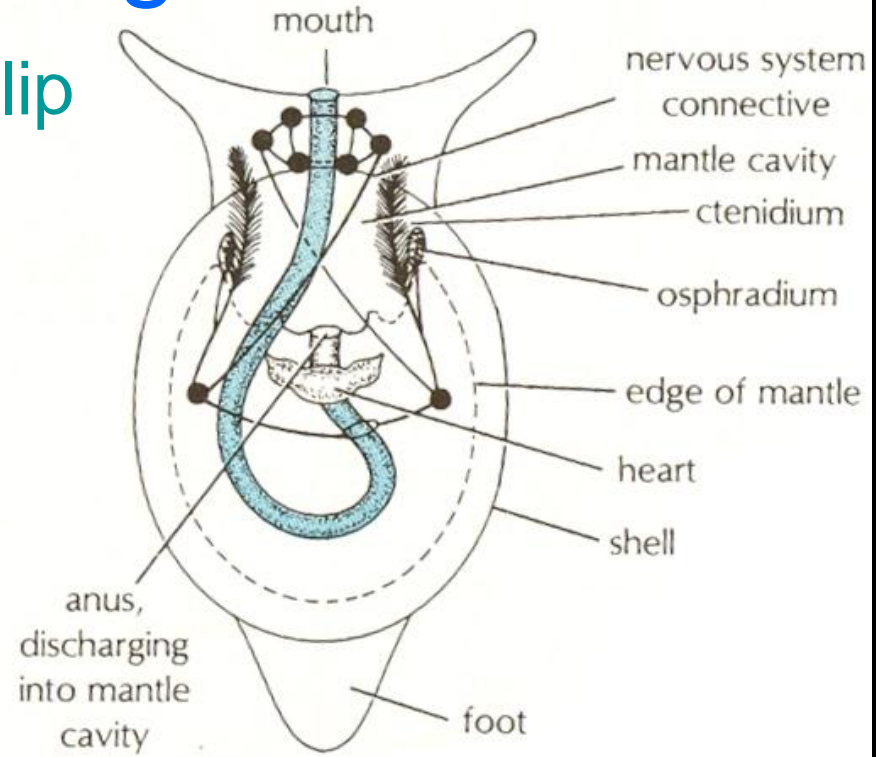
(a)

Gastropods have undergone torsion

180° flip



torsion →



Three groups based on gill placement

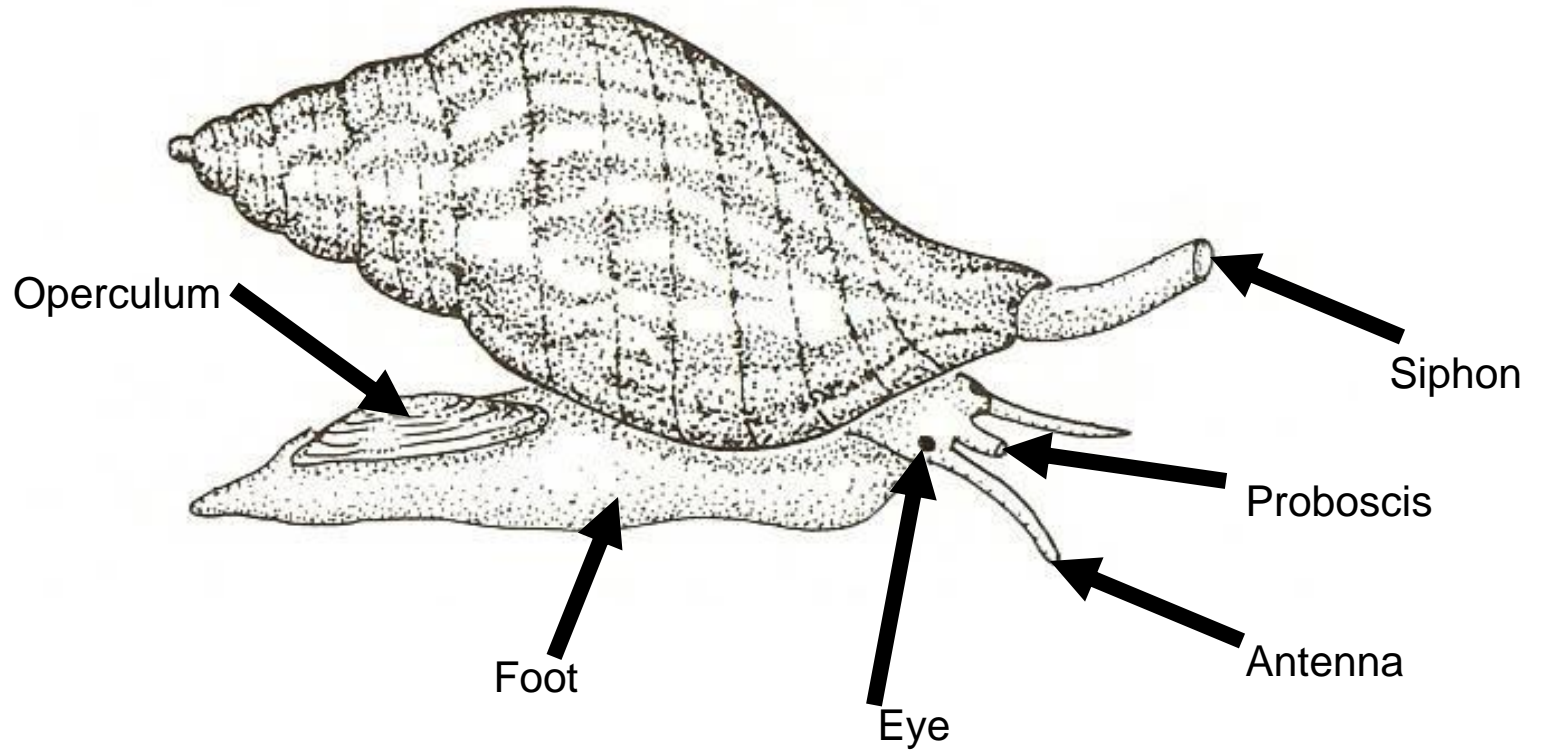
1. Marine snails

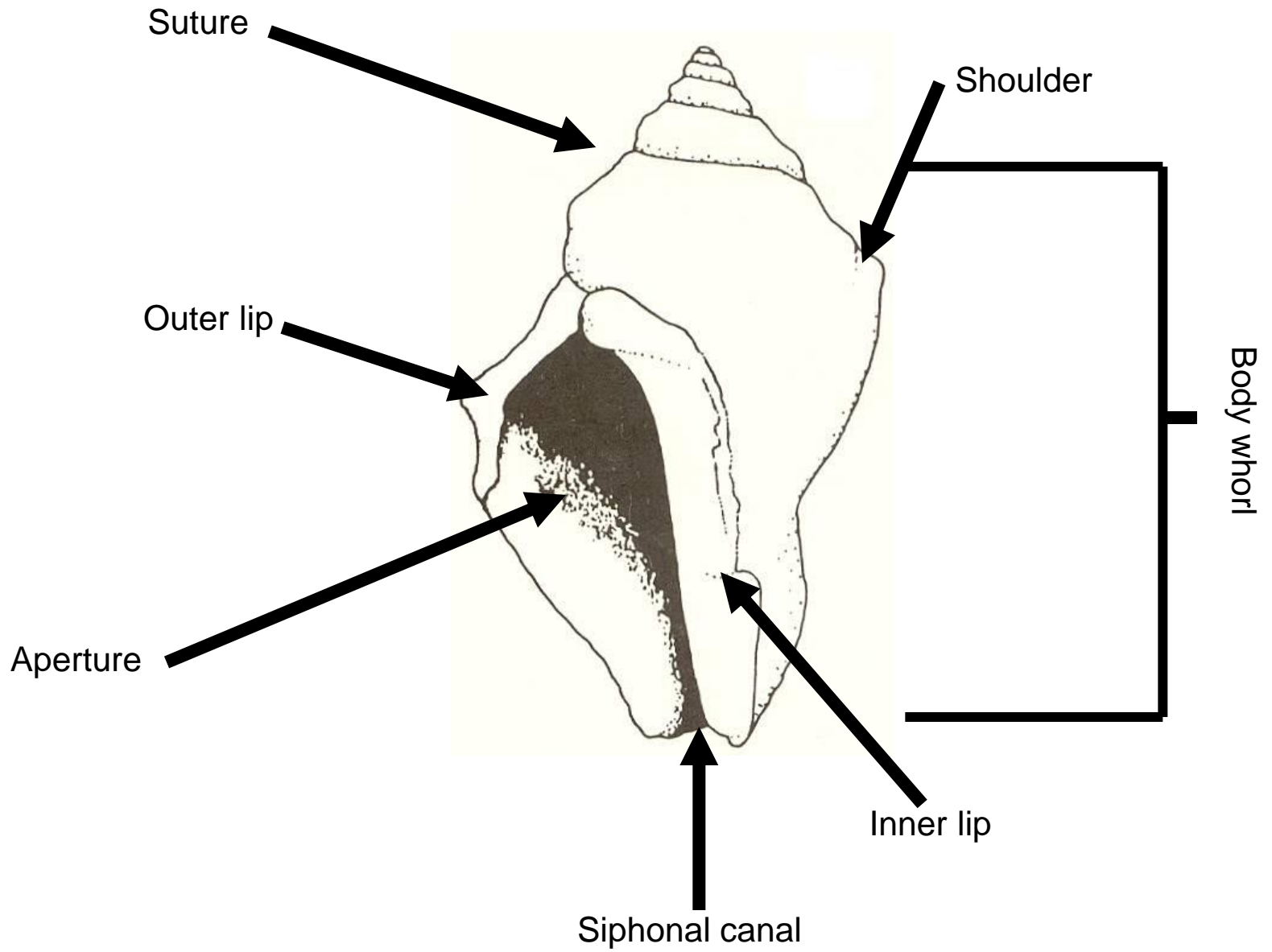


2. Nudibranchs



3. “lunged” land gastropods



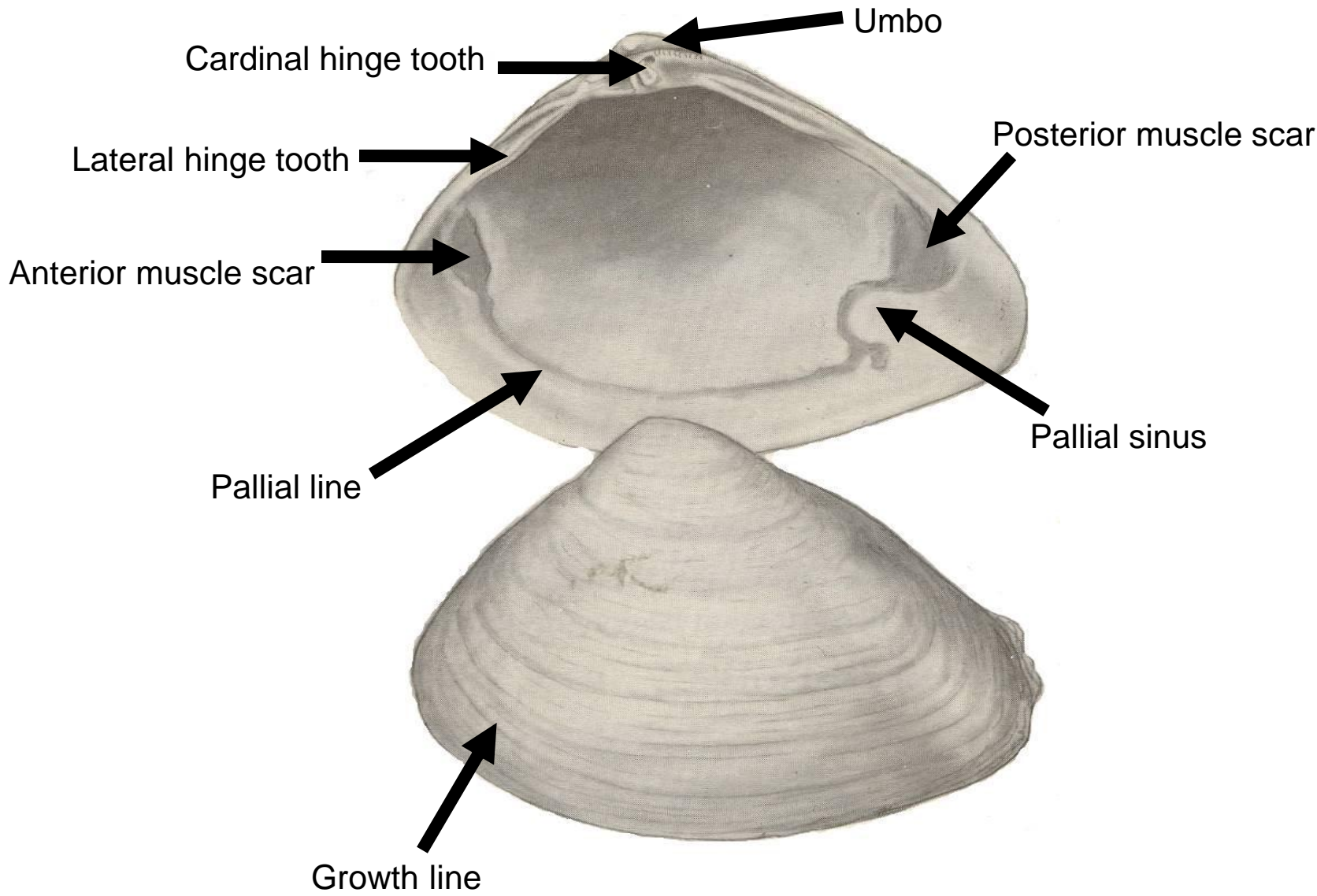


Pelecypods, NOT Bivalvia!!!!!!!

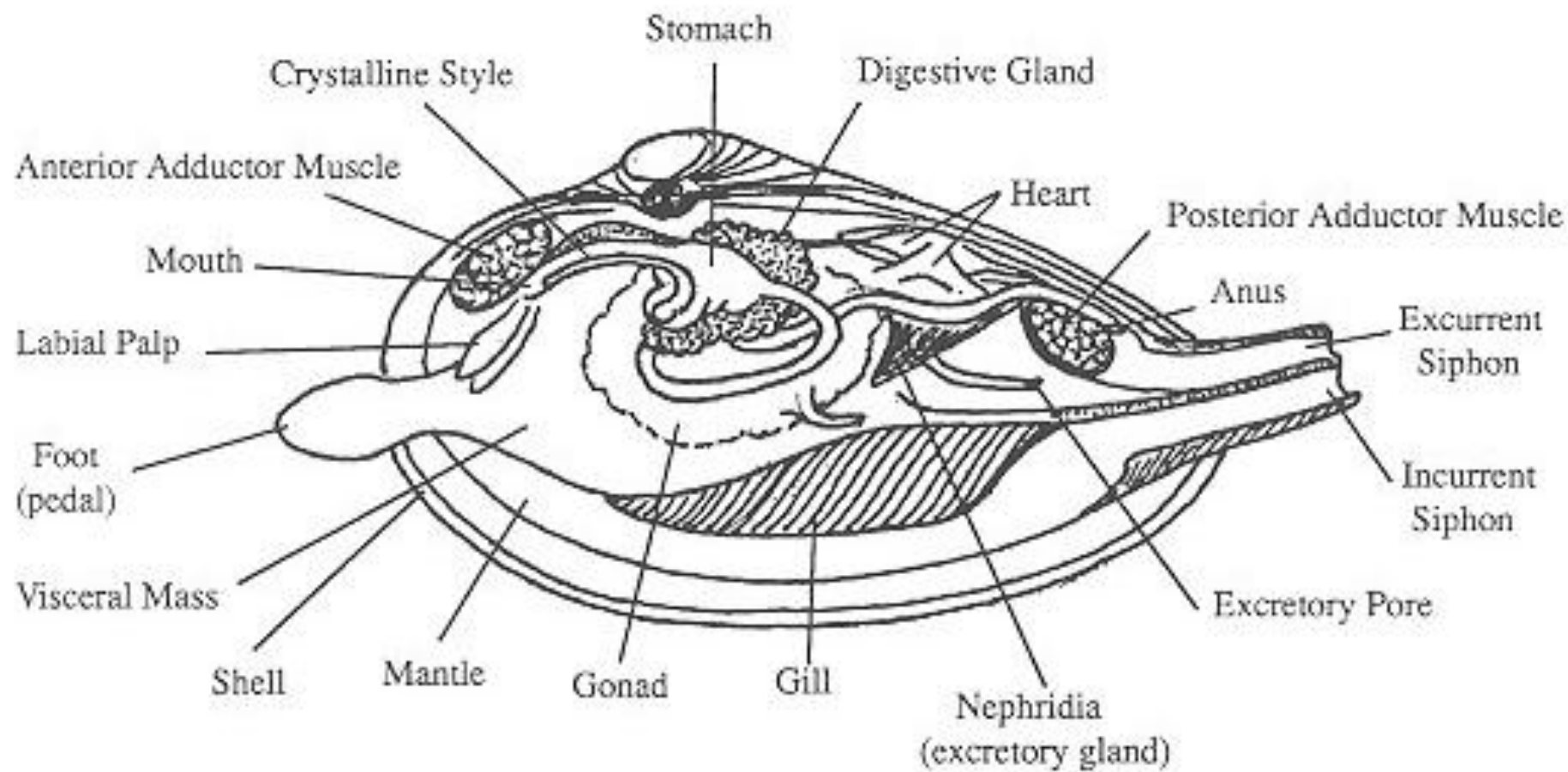


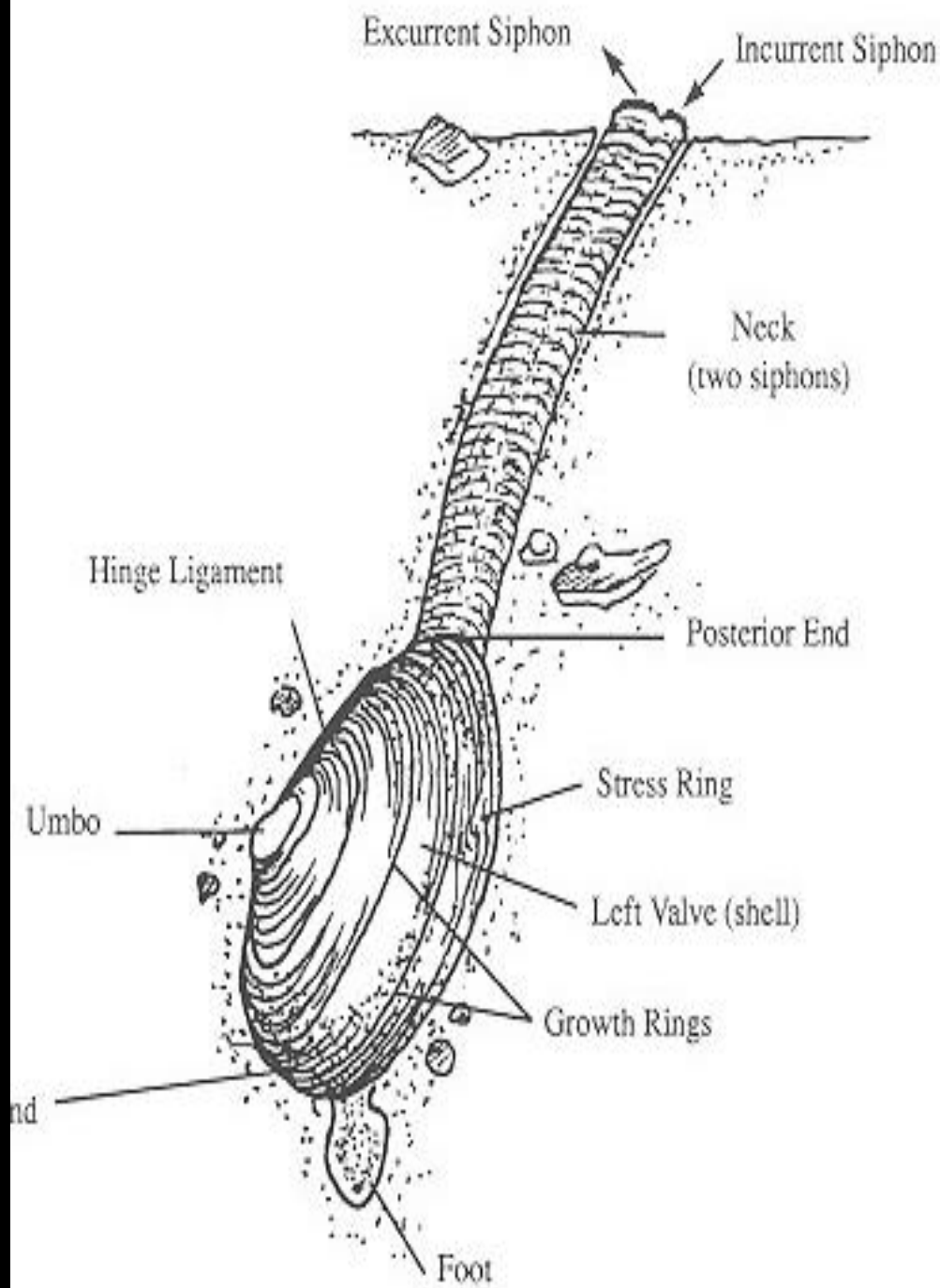
Symmetry

No symmetry



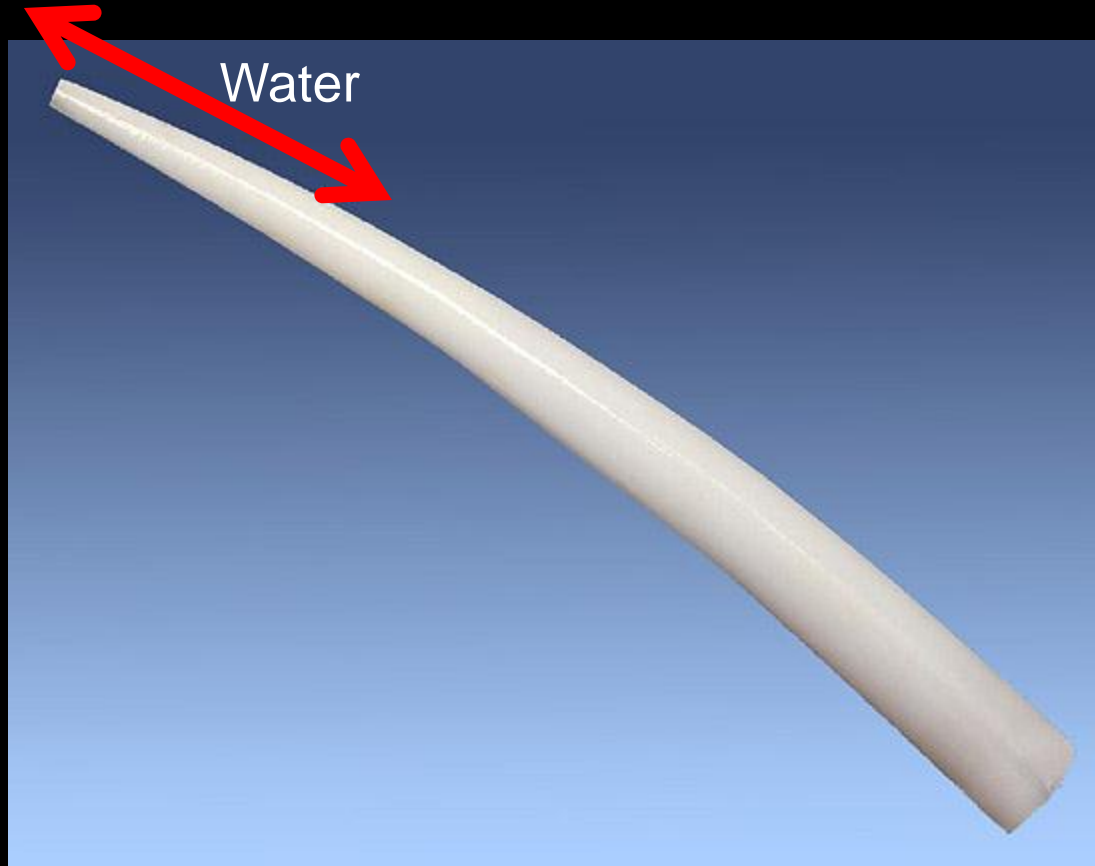
Clam, *Tellina*



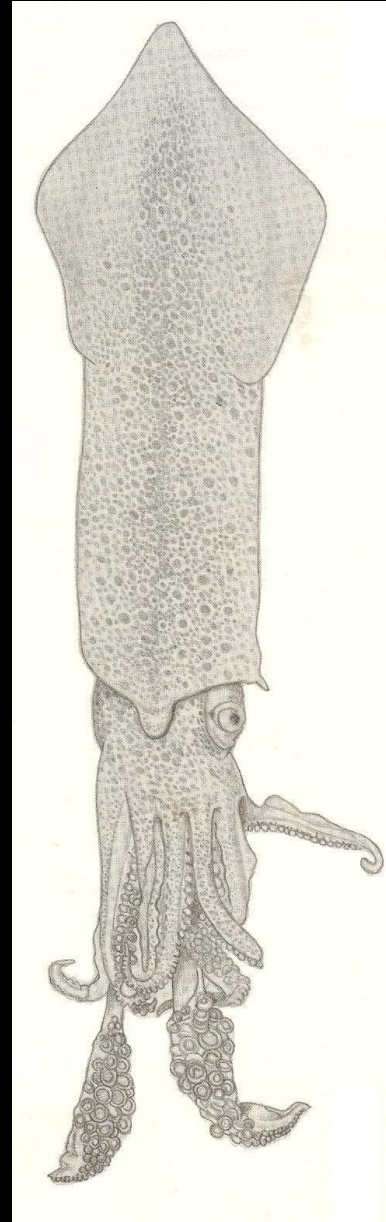
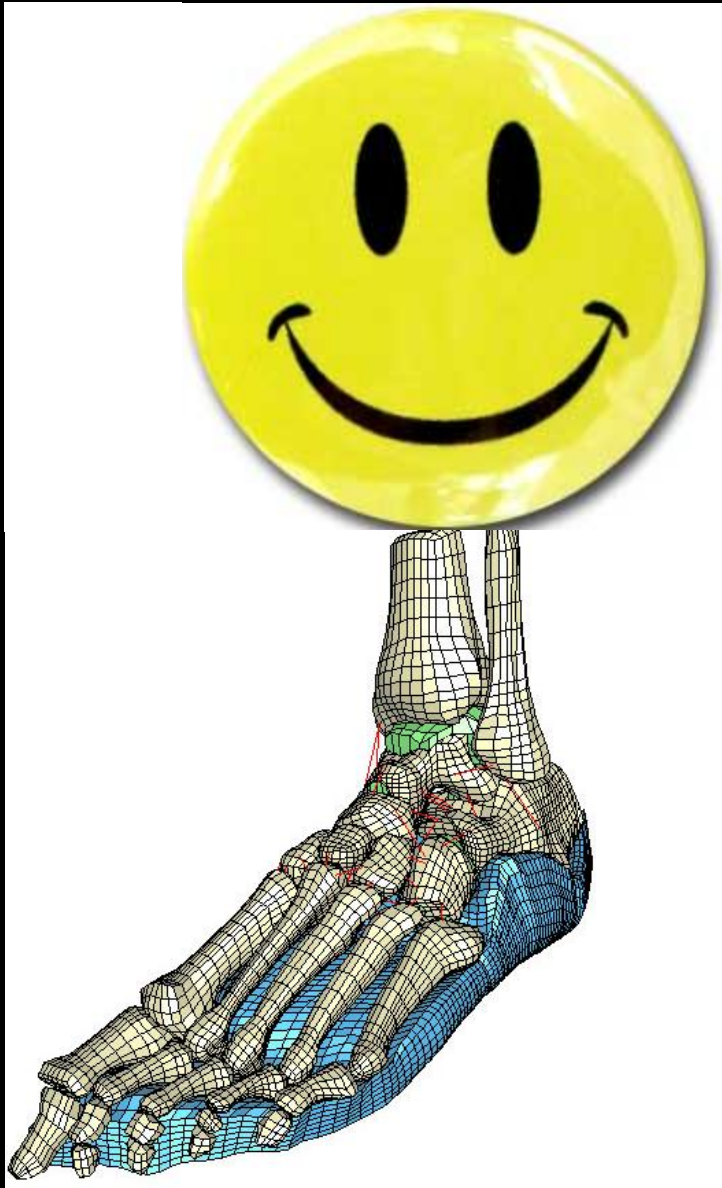


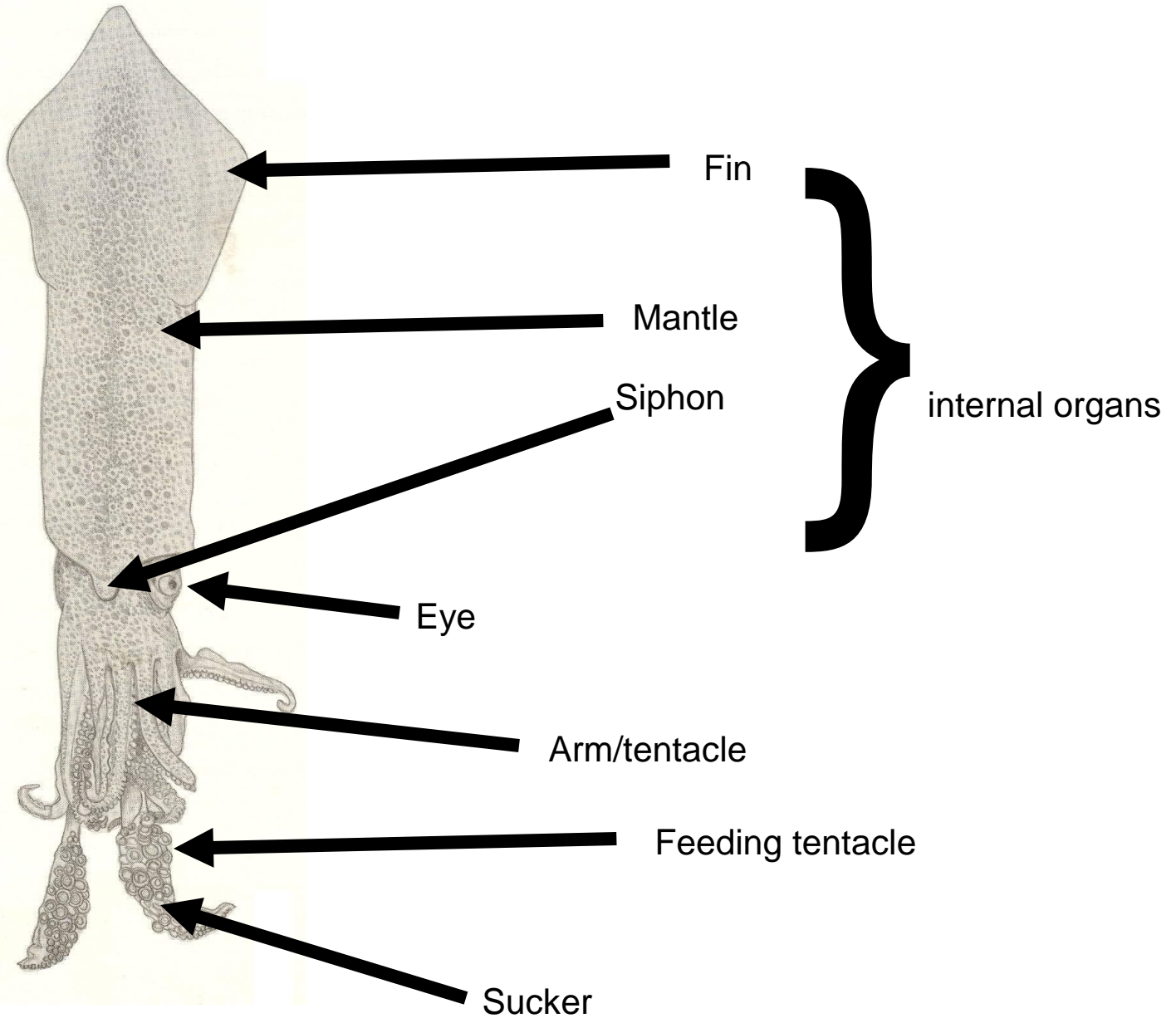


Scaphopods=tusk shells



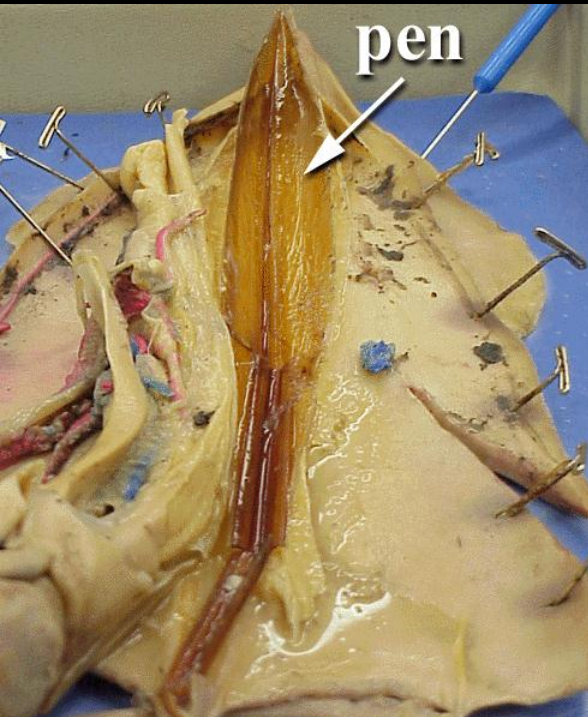
Cephalopods=head + foot





Squid, *Loligo*

Nautilus



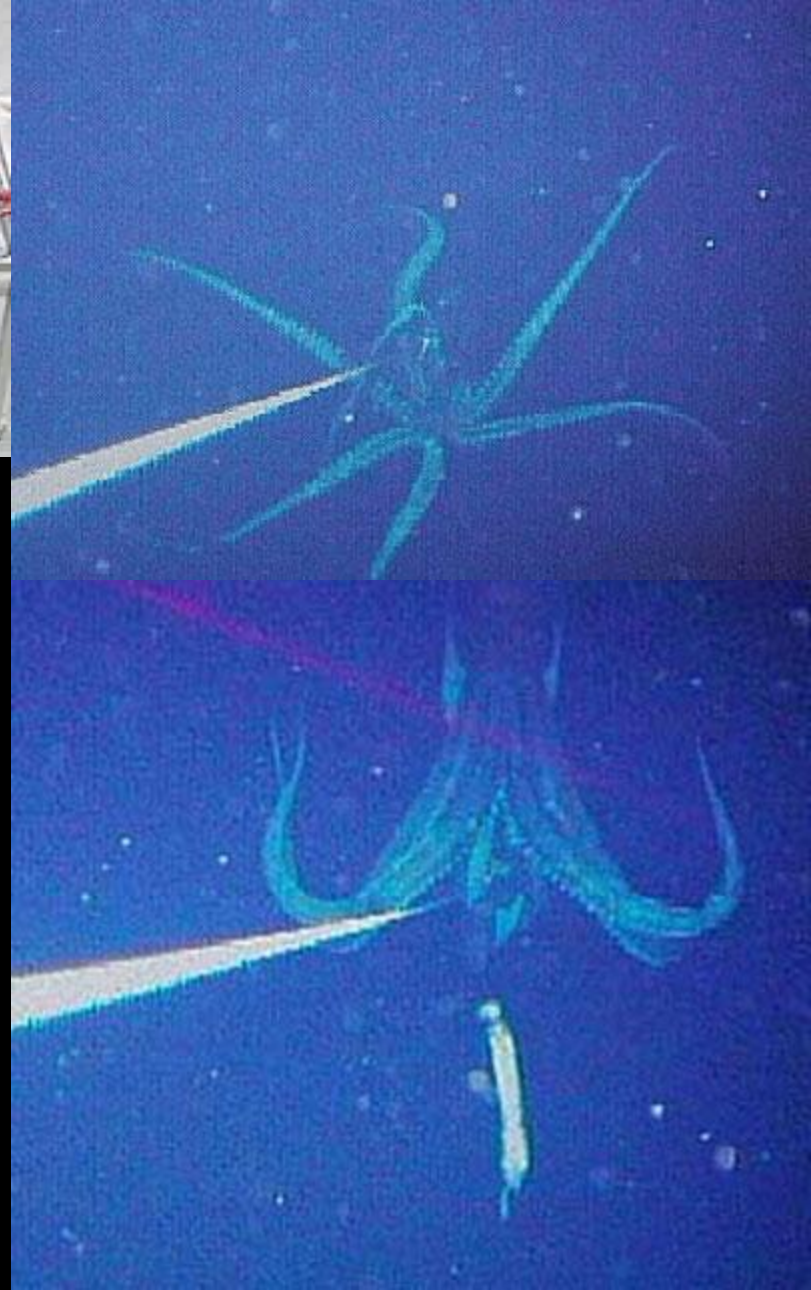


Only in breeding females



Cuttlebone from cuttlefish



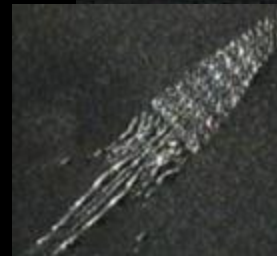


Giant squid





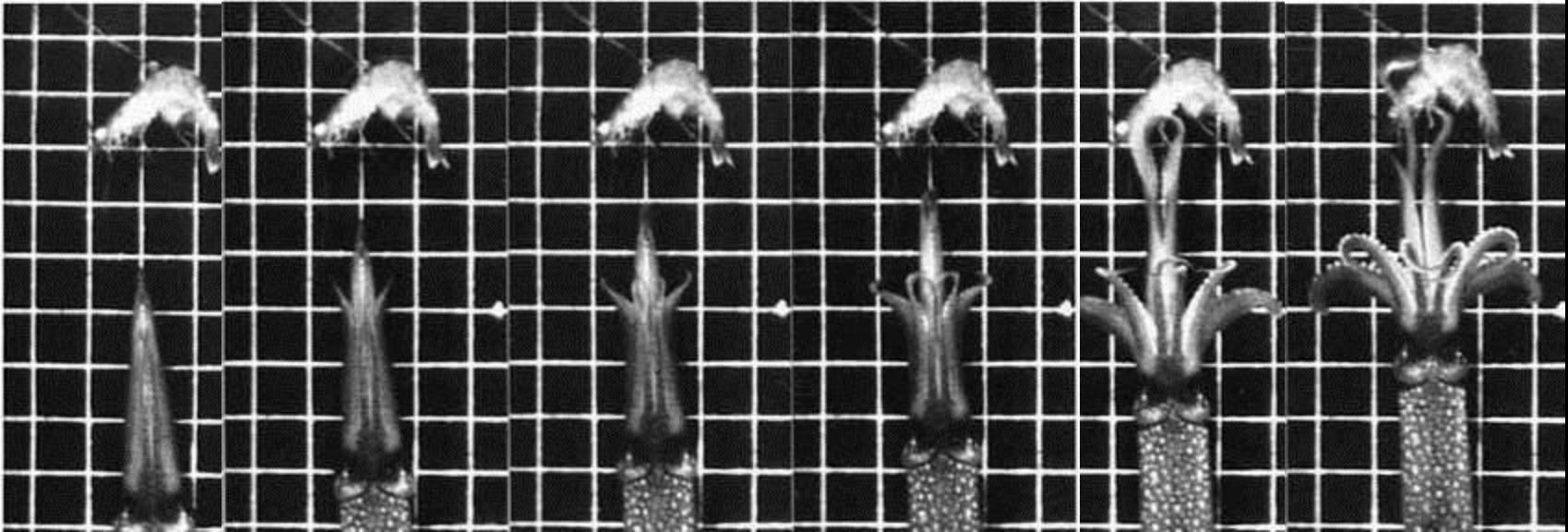




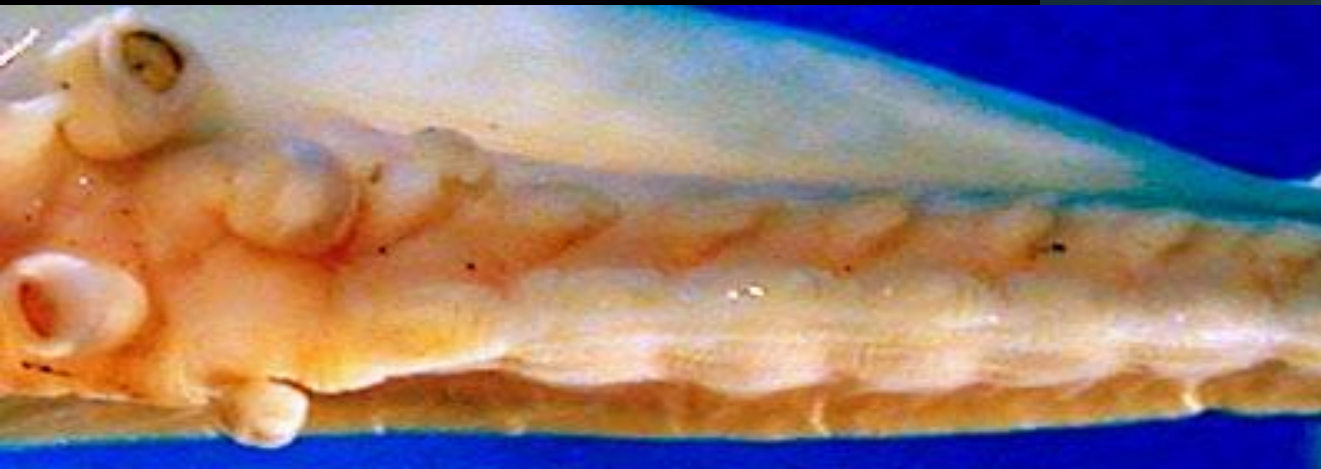




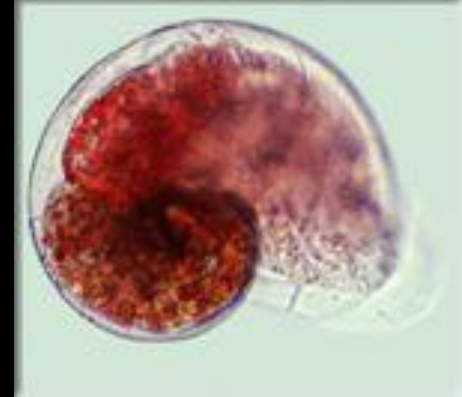
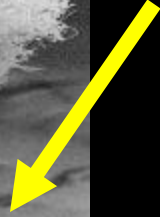
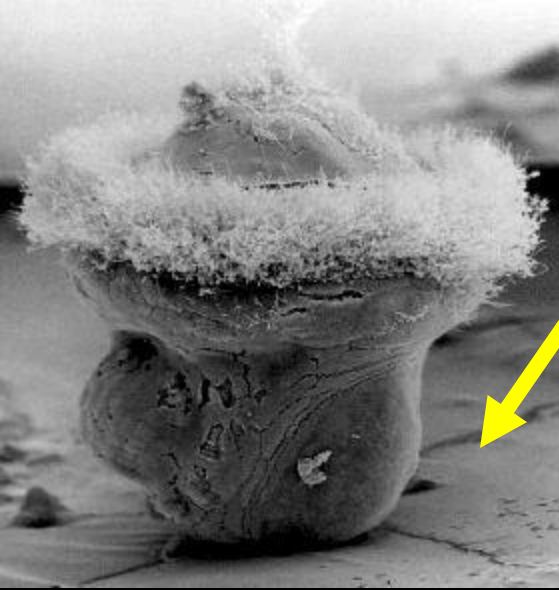




Squid strike in 0.11 second



All Molluscs





Phylum Annelida





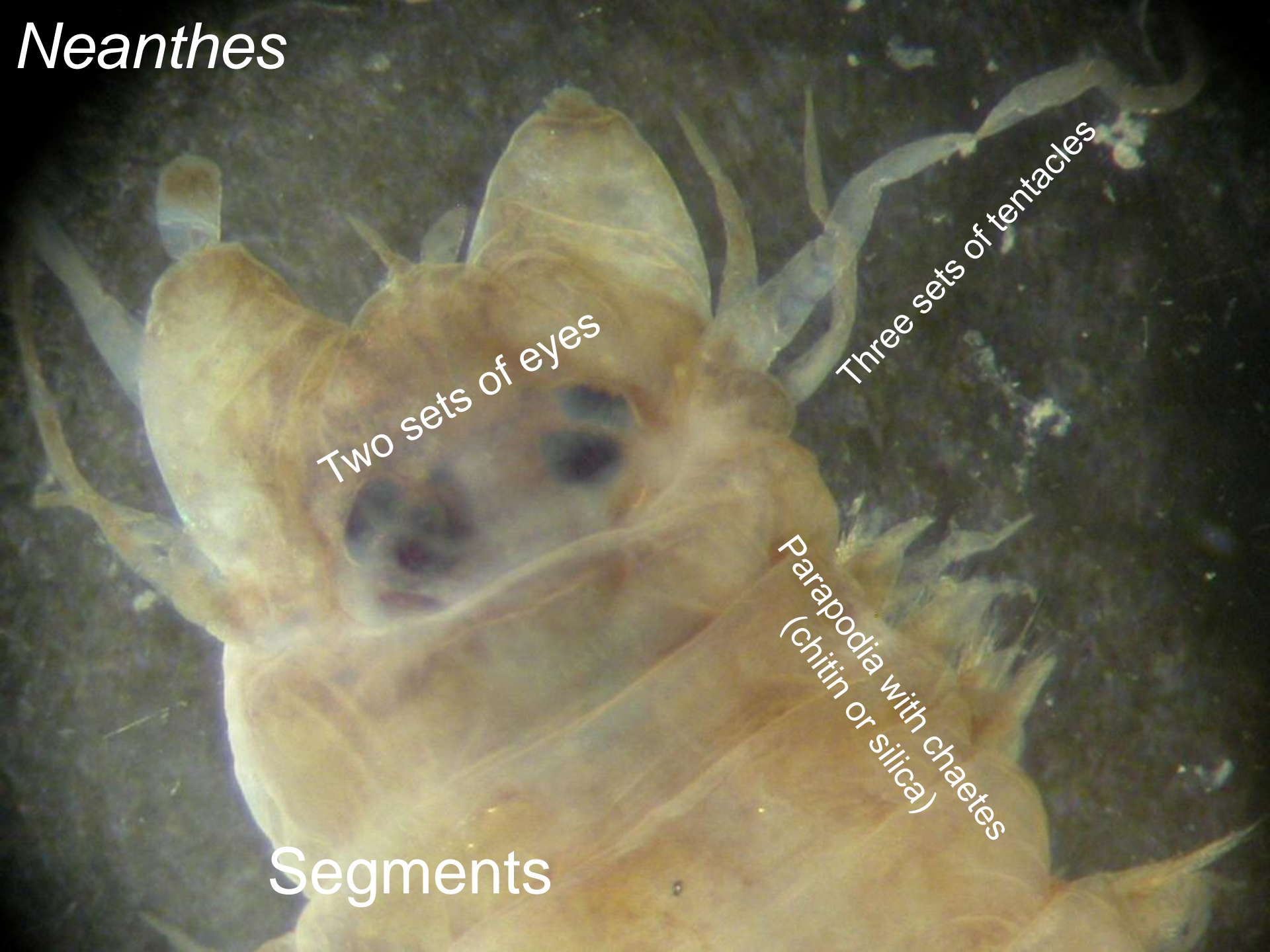
Neanthes

Two sets of eyes

Three sets of tentacles

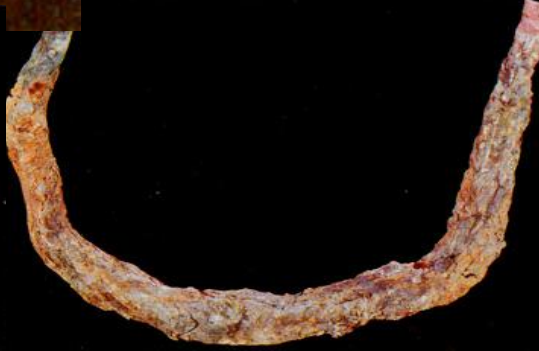
Parapodia with chaetes
(chitin or silica)

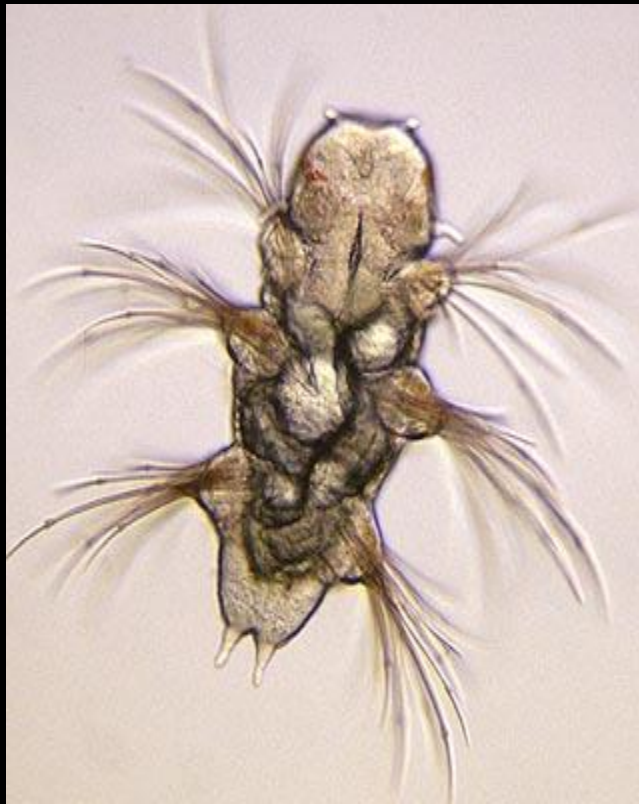
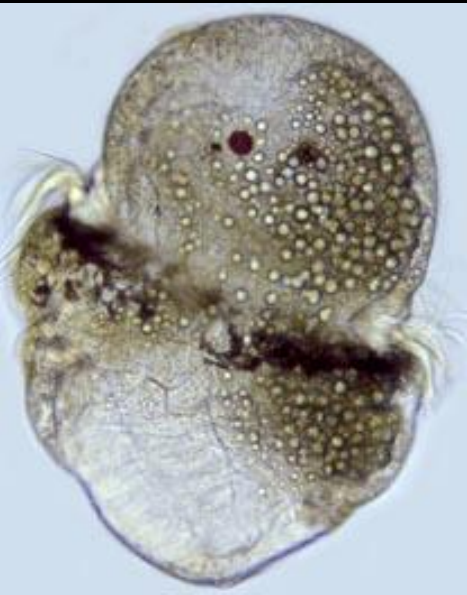
Segments



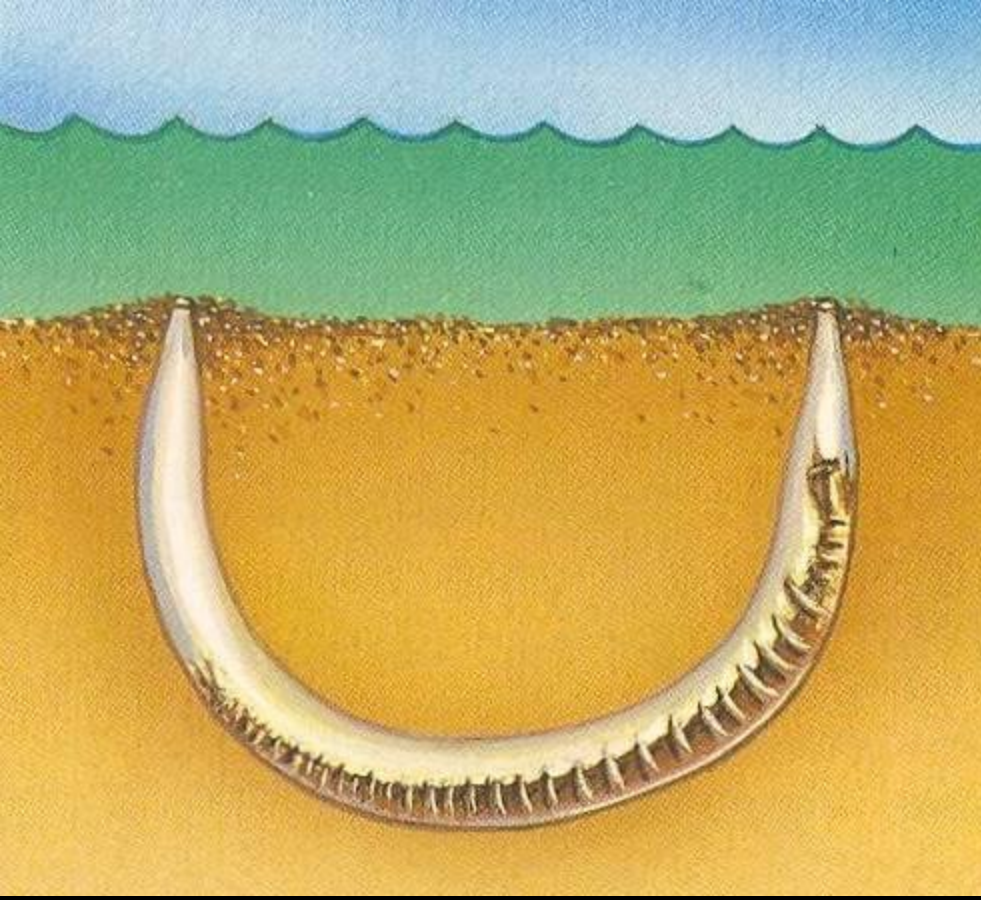


Extensible
proboscis

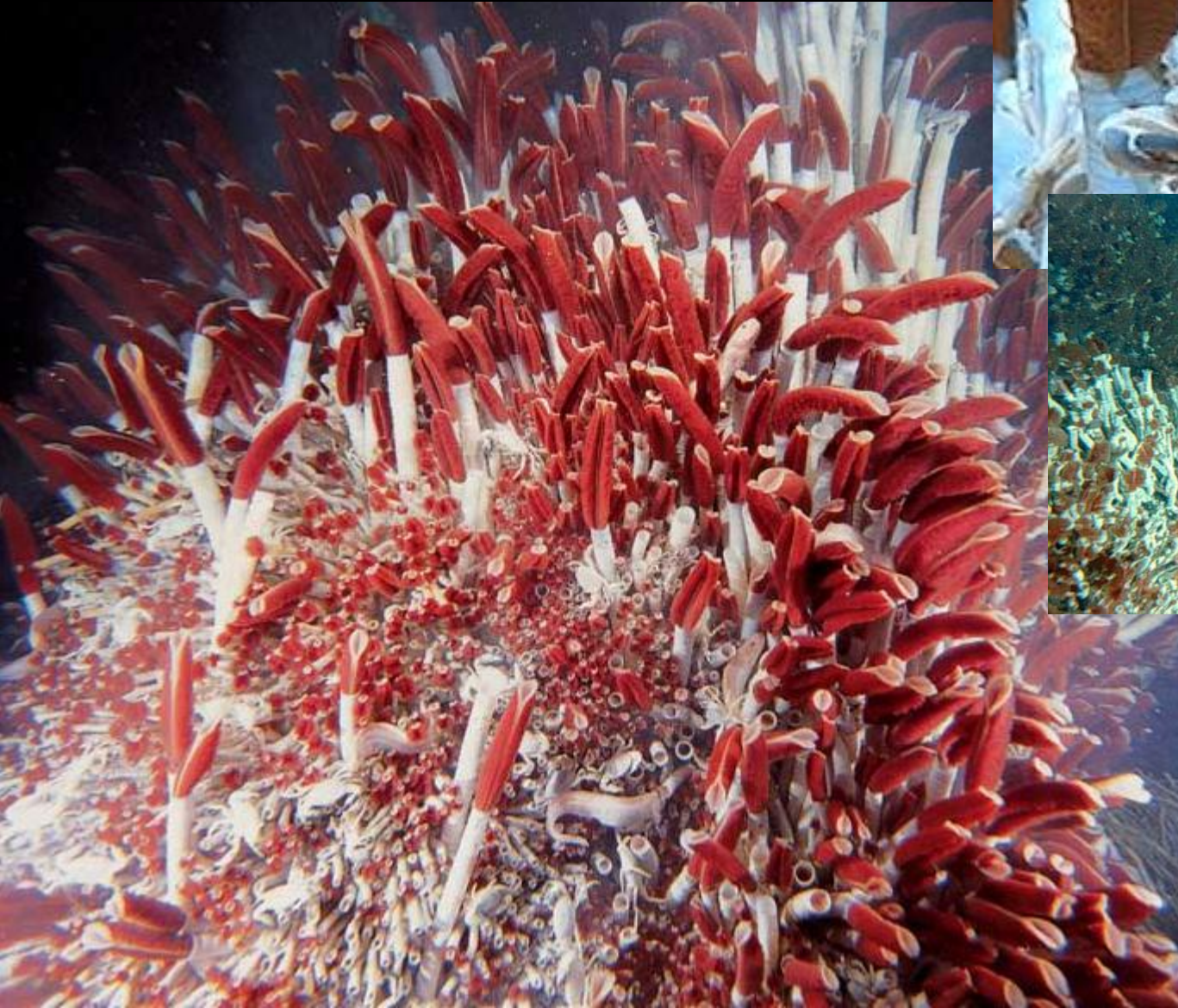








Pogonophorans





Phylum Sipuncula—peanut worms

