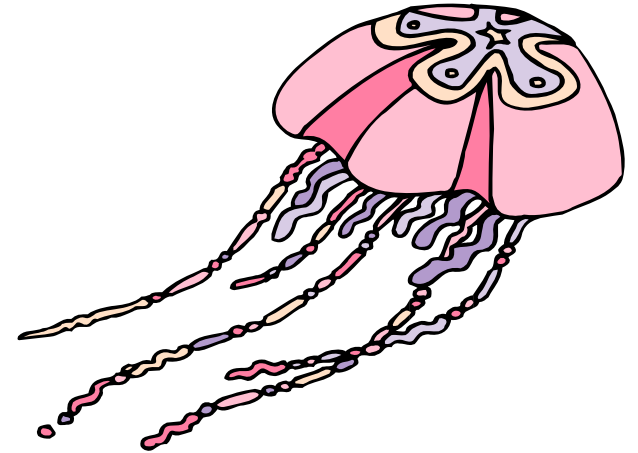


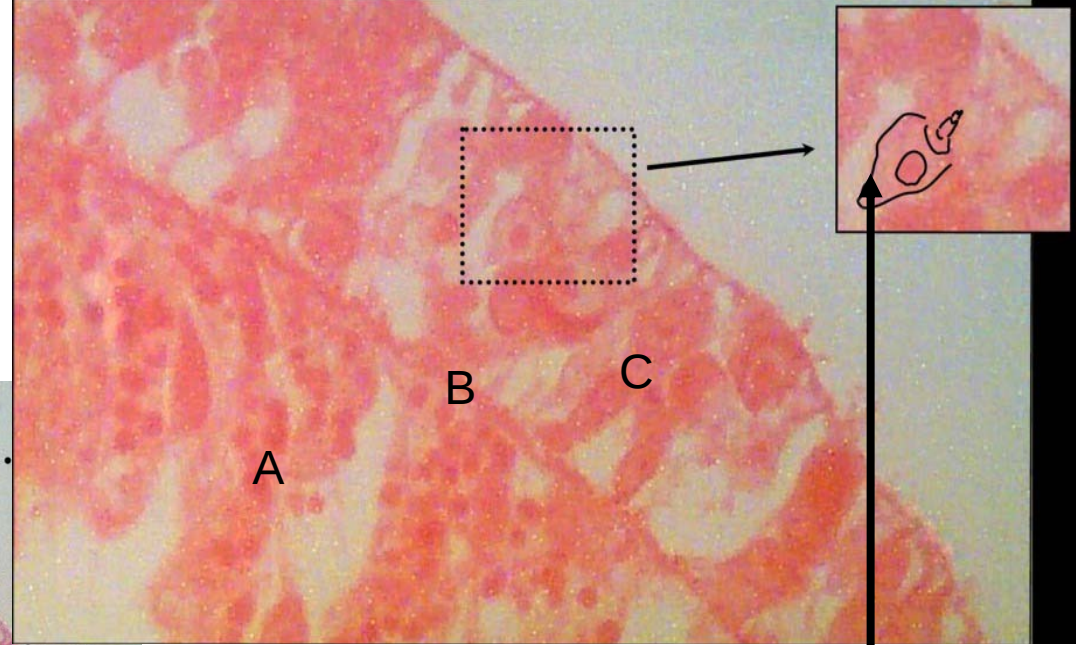
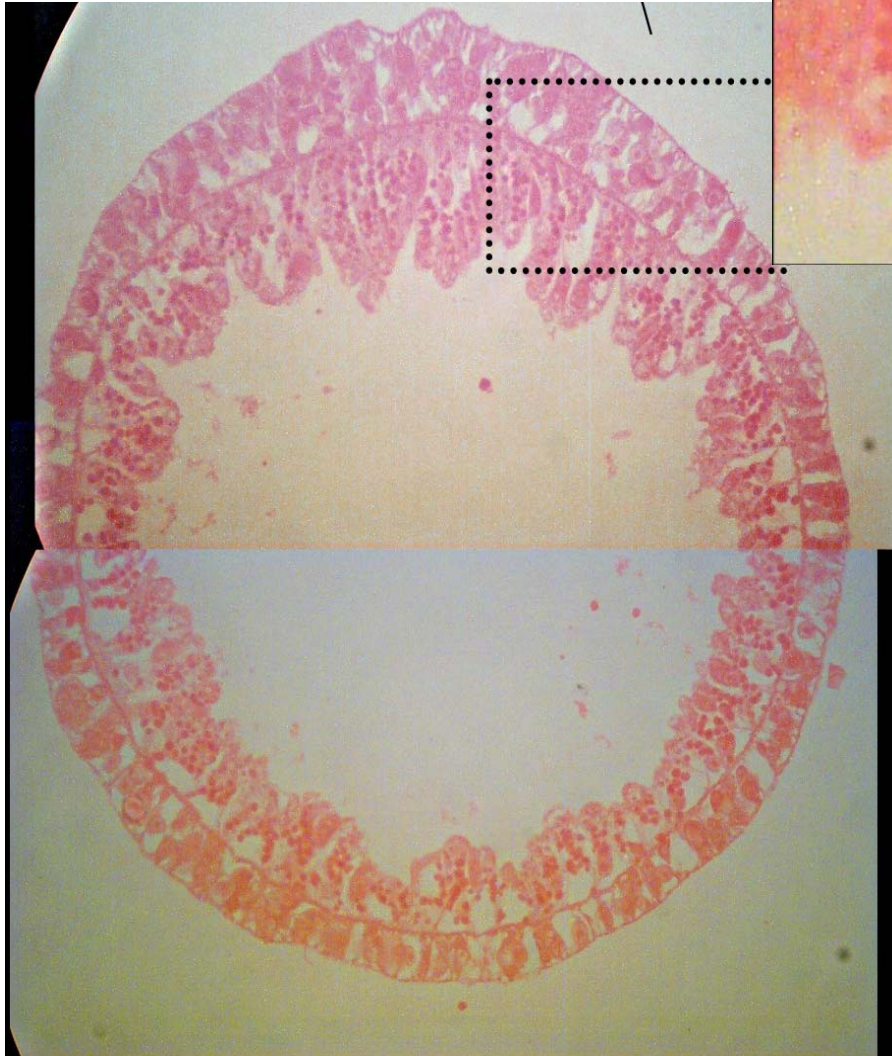
PHYLUM

CNIDARIA



- **TISSUE** level of body organization
- Middle layer = **MESOGLEA** = Acellular matrix (Just jelly!)
- Diagnostic cell type = **CNIDOCYTE**
It contains the Nematocyst organelle

Cnidocyte vs. Nematocyst



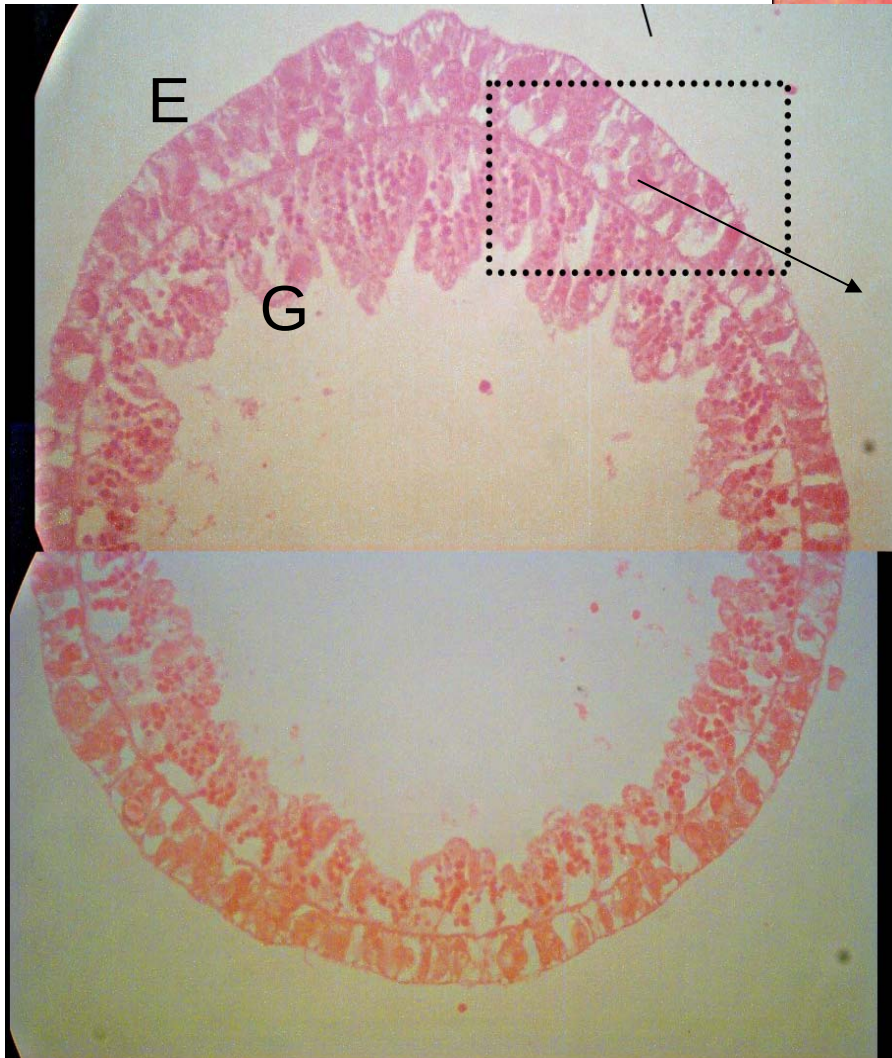
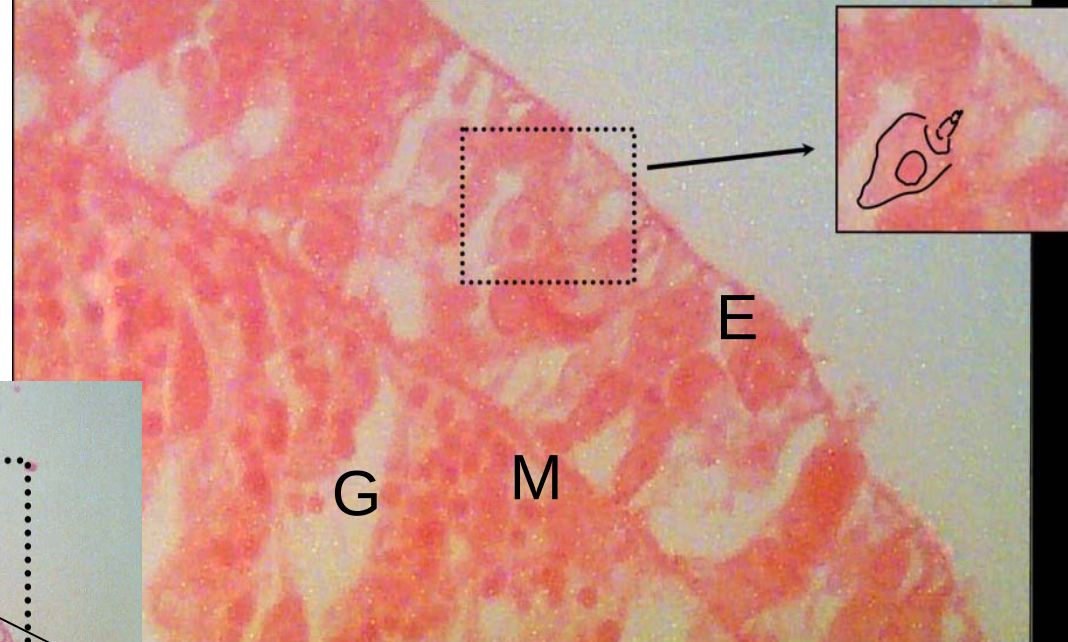
A = ?

B = ?

C = ?

?

Insert: A Cnidocyte (C)
– *cell* containing a
Nematocyst - *organelle*
not yet triggered.



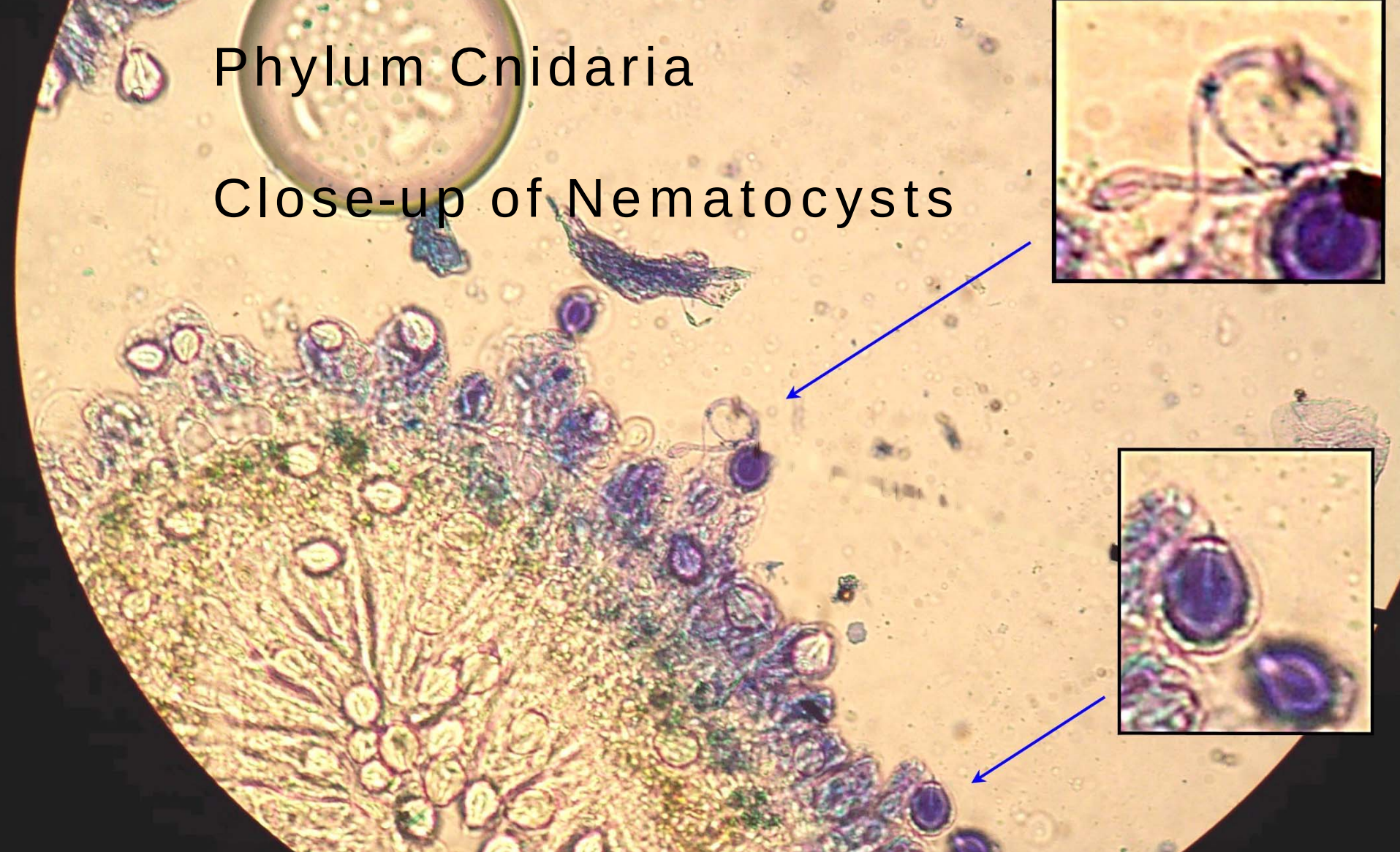
Cnidarians are
DIPLOBLASTIC

(2 tissue layers)

C = Epidermis (E) &
A = Gastrodermis (G)
with B = Mesoglea in
between the two

Phylum Cnidaria

Close-up of Nematocysts



Specialized cells called cnidocytes contain nematocysts. These are used for anchorage, defense and capture of prey.

Cnidarian Life Cycles

- Hydrozoa Polyp dominant
Medusa does exist
(Hydra is cute but odd!)
Remember the fire coral!
- Scyphozoa Medusa dominant
Polyp does exist
- Anthozoa Polyp only

Do you know the
difference
between a bud
and a gonad?

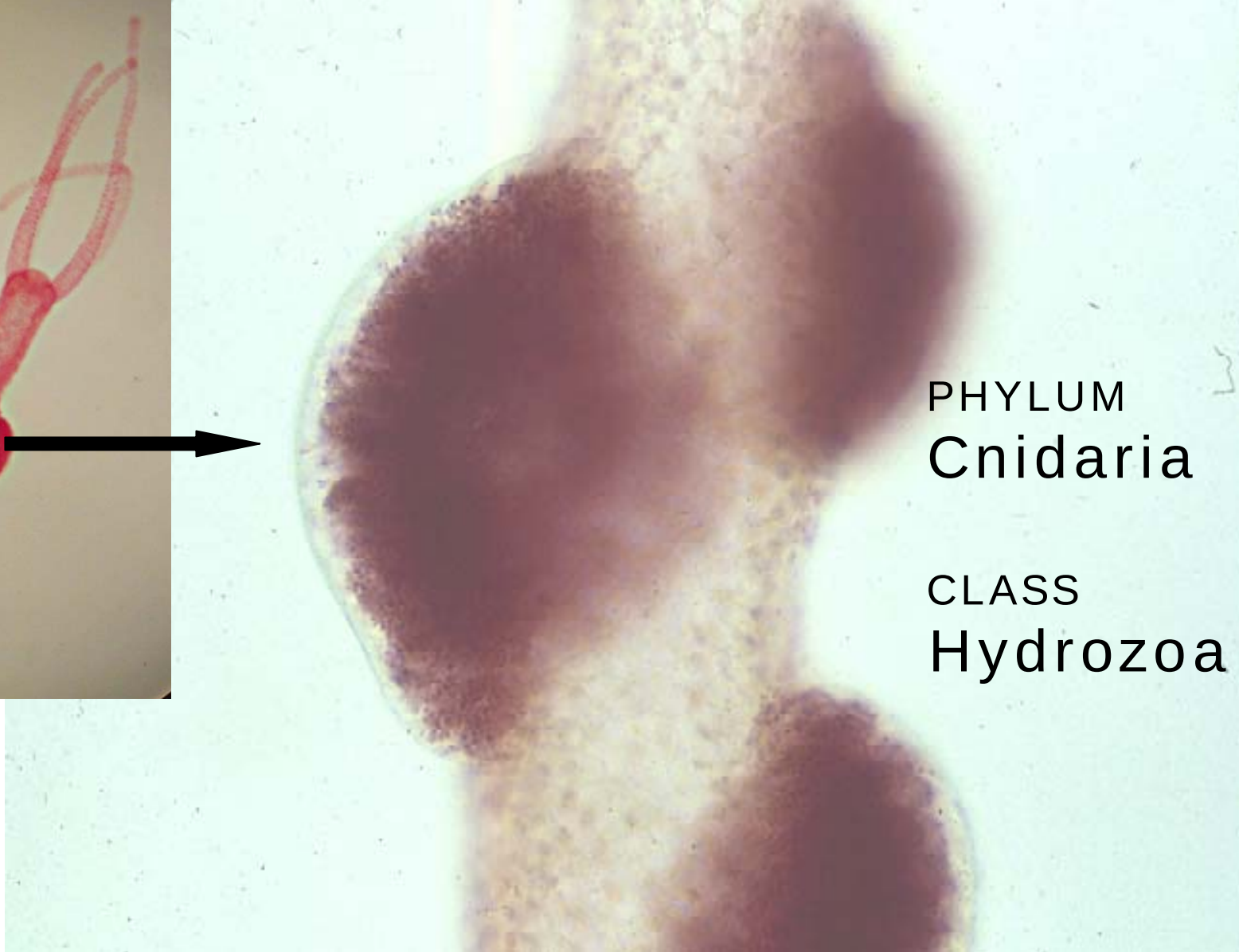
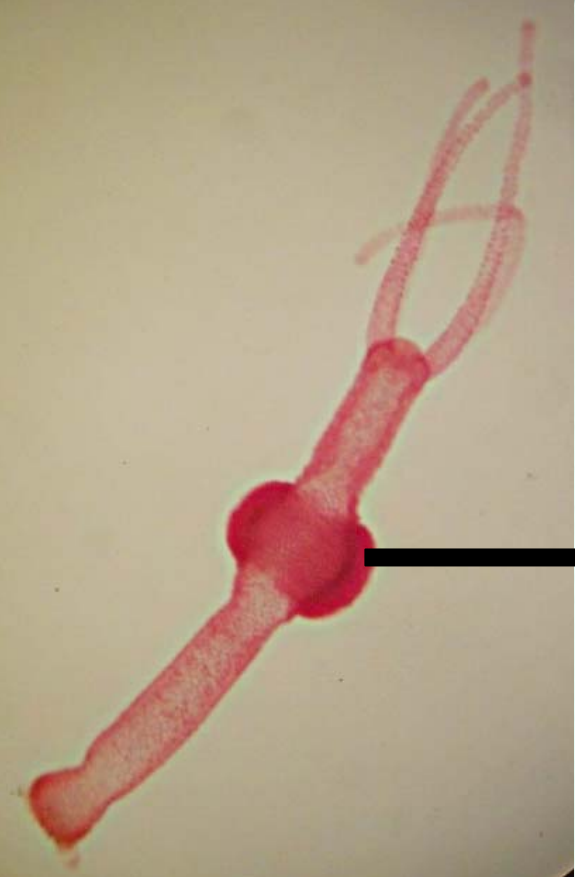


PHYLUM Cnidaria

CLASS Hydrozoa



Cnidocyte-bearing tentacles, mouth, GVC
& bud (branch = asexual reproduction) [fig 2.2]



PHYLUM
Cnidaria

CLASS
Hydrozoa

Polyp with gonads for sexual reproduction &
close-up view of the gonads [fig 2.2] (bumps)



Which structure is used for what?



PHYLUM
Cnidaria

CLASS
Hydrozoa

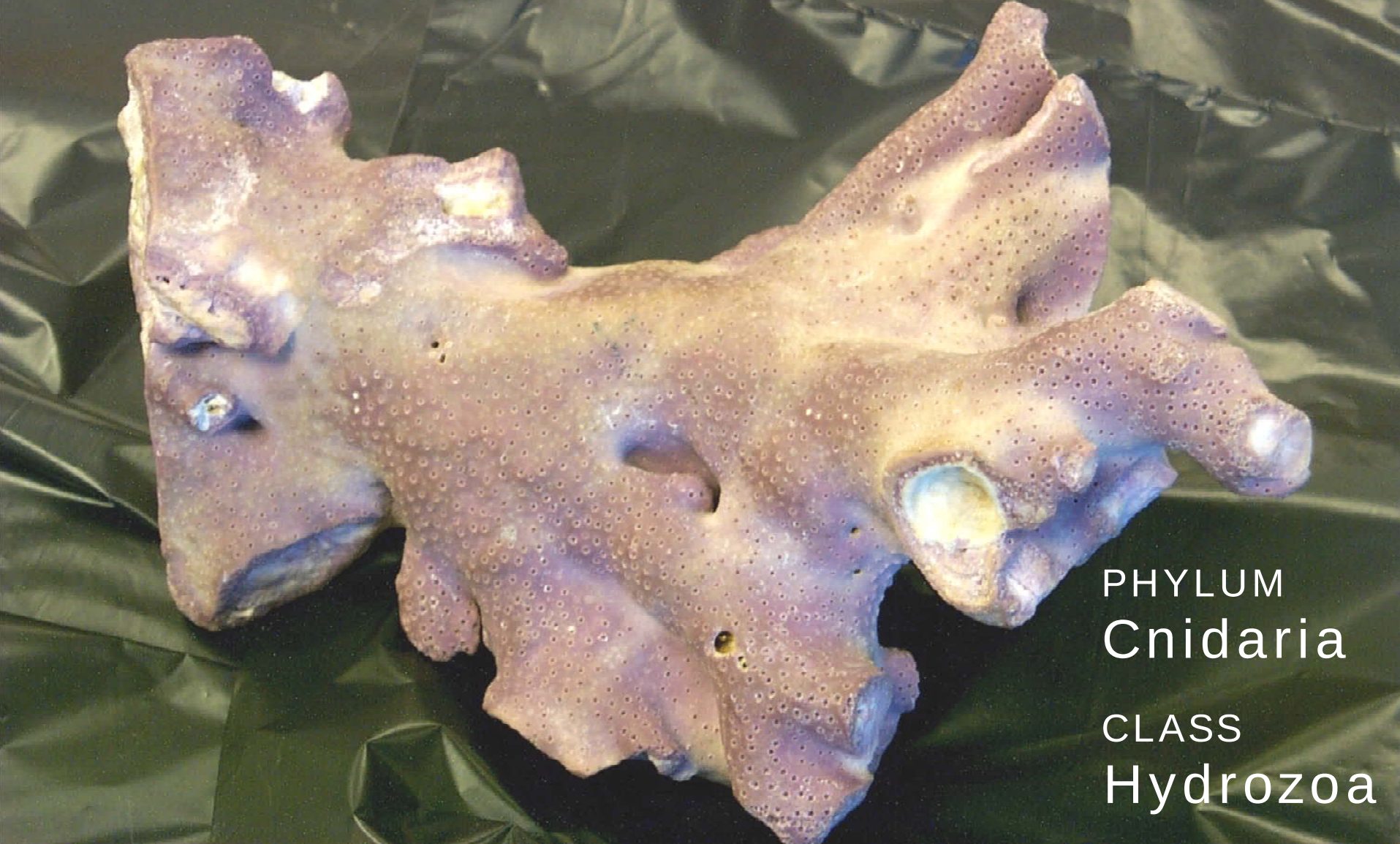
Obelia colony slide with close-up of the some of the polyps or zooids. Note polymorphism - gastrozooids (with feeding tentacles) & gonozooids for reproduction [fig 2.3-6]

A photograph of a Portuguese Man-of-War (Physalia physalis) in a glass jar. The organism consists of a large, translucent, bell-shaped float (siphon) that is inflated with gas. Below the float is a cluster of orange, jelly-like structures, which are the polyps (zooids) of the colony. The jar is placed on a dark surface.

PHYLUM Cnidaria

CLASS Hydrozoa

Portuguese Man-O-War is an excellent example of polymorphism. It is a colony of many individuals – again = zooids – modified for different tasks (feeding, floating, reproduction, etc.)



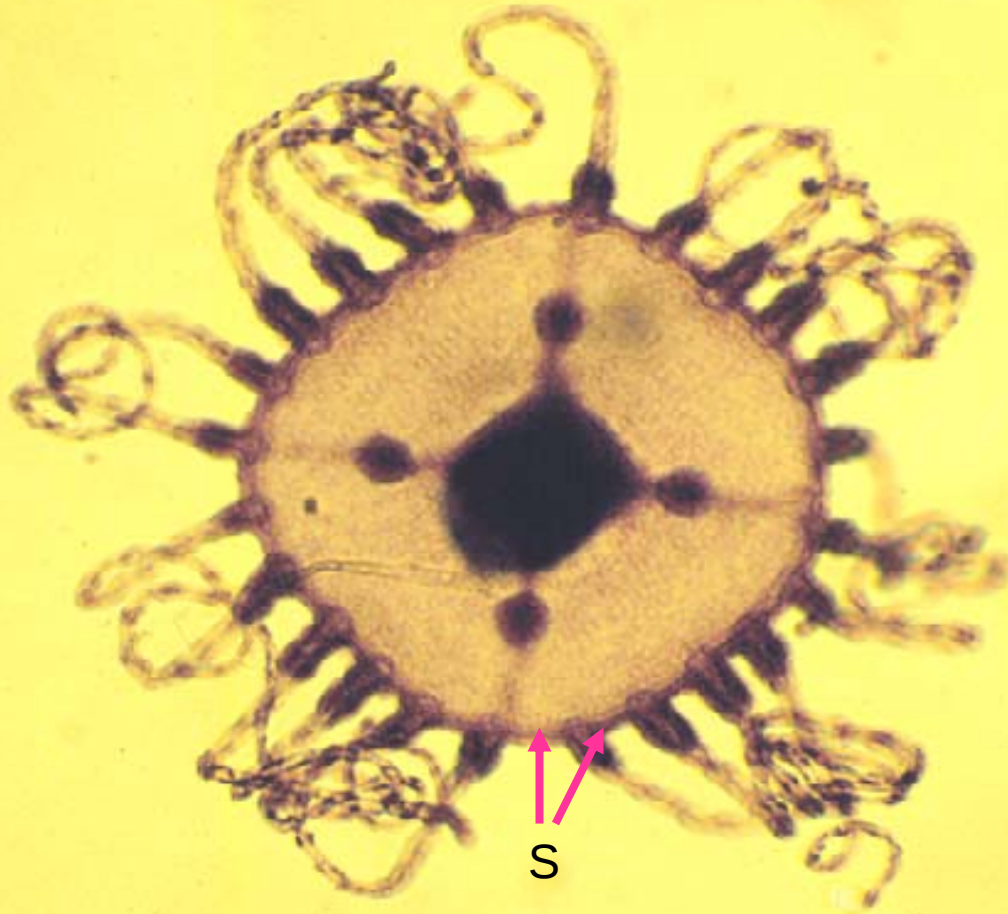
PHYLUM
Cnidaria

CLASS
Hydrozoa

Calcium-carbonate skeletons of a fire coral. This is a hydrozoan (not an anthozoan corals) because it has both a POLYP stage (dominant = above) & a MEDUSA stage in its life cycle.

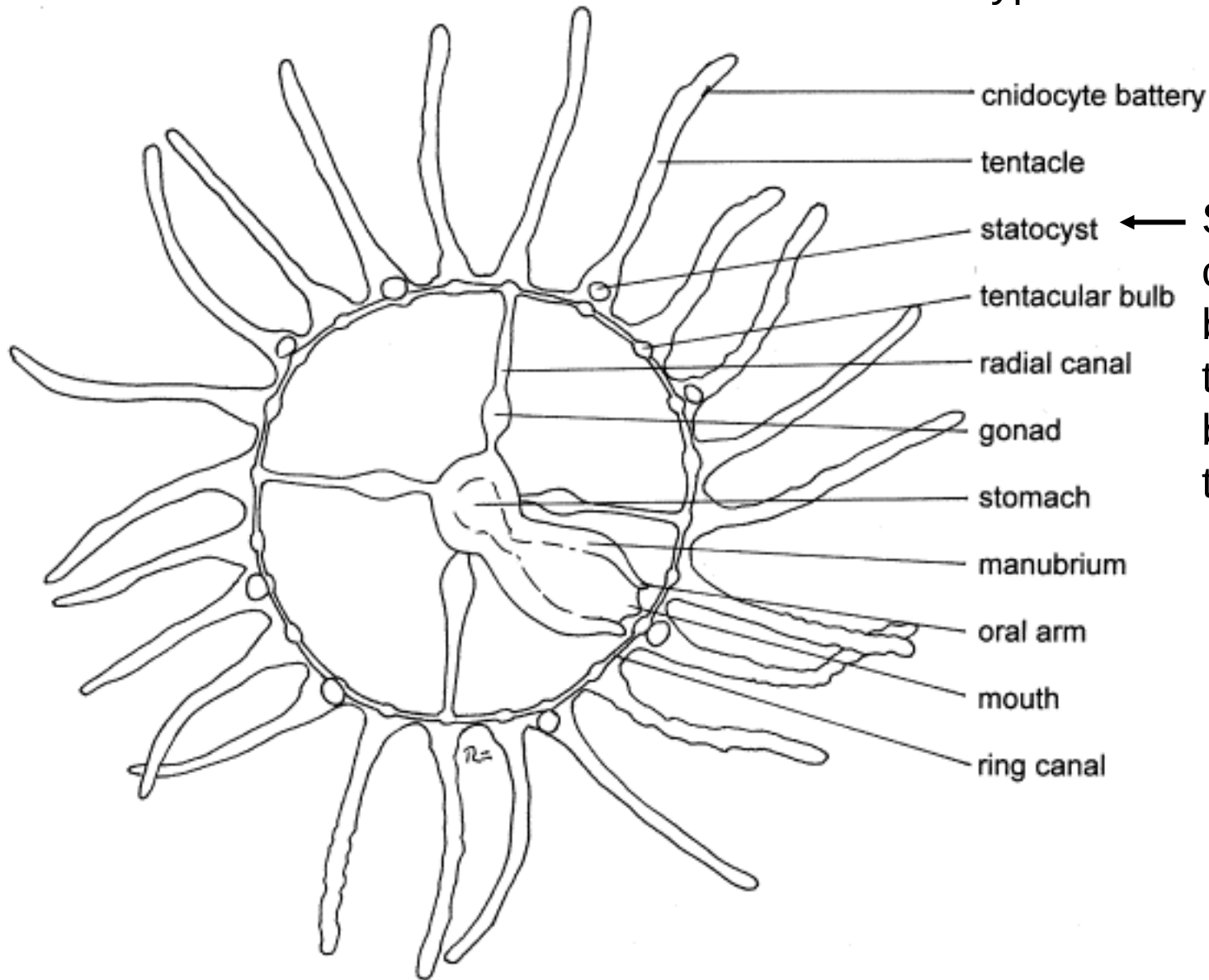
PHYLUM
Cnidaria

CLASS
Hydrozoa



Ventral view of a Hydrozoan Medusa [fig 2.3-7]
Note Long knobby tentacles with batteries of
nematocysts along them. (S) Statocysts are for balance

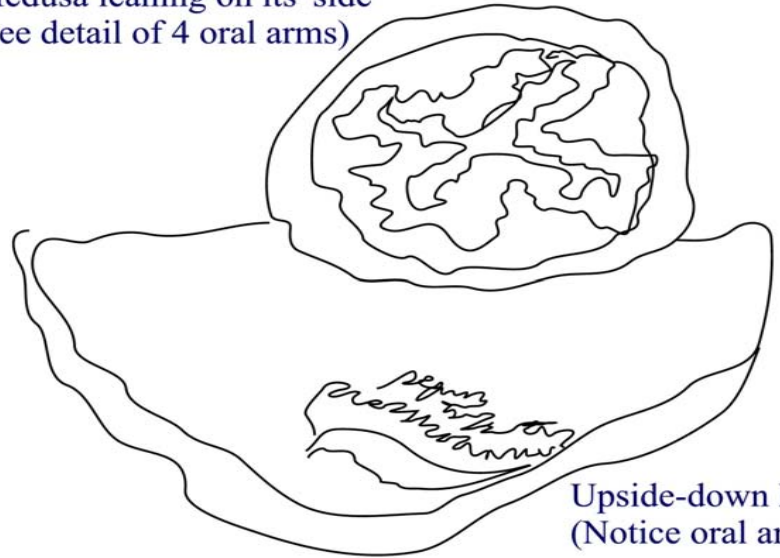
A Scyphozoan = A jelly!



← Statocysts can be at the base of the tentacles or in between them.



Medusa leaning on its' side
(see detail of 4 oral arms)



Upside-down Medusa
(Notice oral arm)

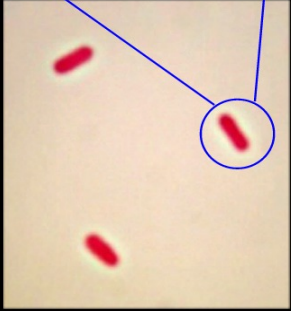
3 examples of jellyfish. Note the large amount of mesoglea present in this class. MEDUSA is dominant in Scyphozoans, but polyp stage is also present at some point during their life cycle.



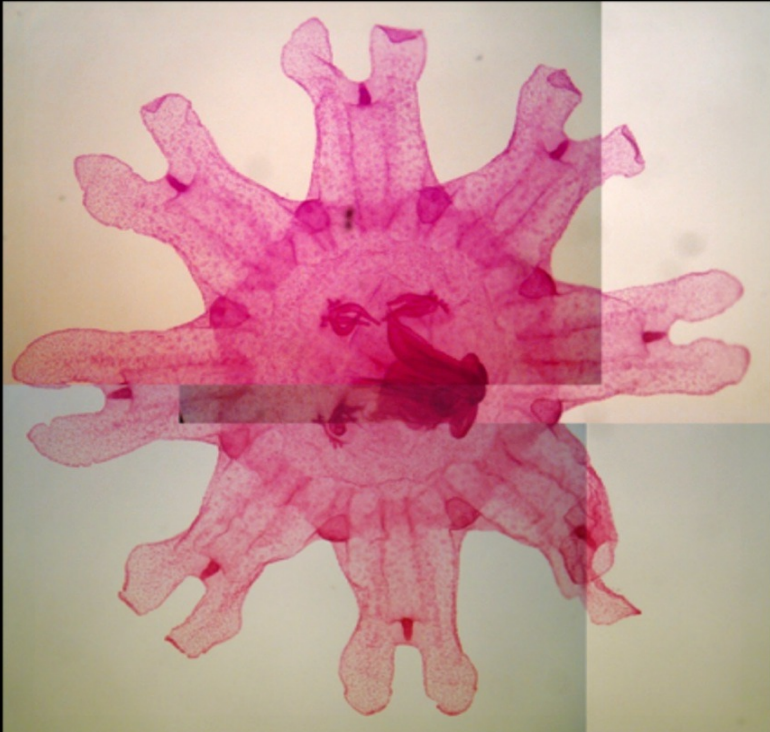
P

S

St



E



Life cycle (fig 2.6)

P A S St E A

P Planula

A Actinula (No slide)

S Scyphistoma

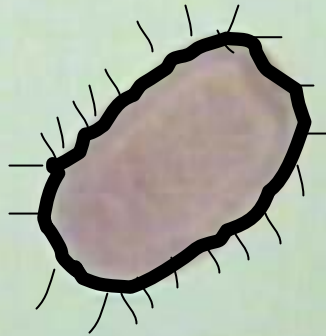
St Strobila

E Ephyra

A Adult

PHYLUM
Cnidaria

CLASS
Scyphozoa



Close-up of planula stage [fig 2.6-B] Bilateral SEXUAL motile larval stage moves away from parent to settle in a new area.



PHYLUM
Cnidaria

CLASS
Scyphozoa

Close-up of scyphistoma stage [fig 2.6-D]

PHYLUM Cnidaria
CLASS Scyphozoa

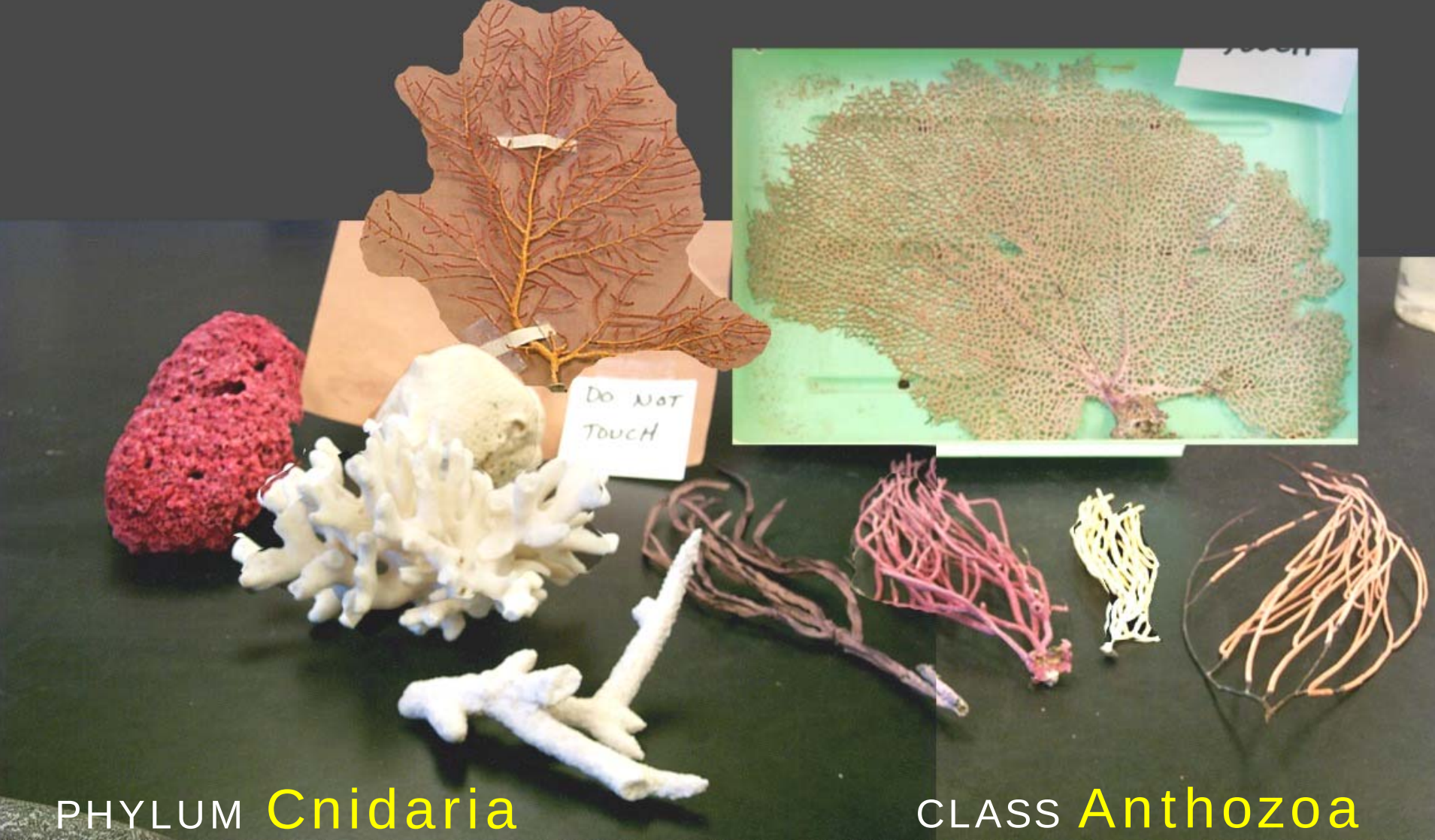


Close-up of strobila stage.
Buds form from asexual reproduction [fig 2.6-E]

PHYLUM Cnidaria
CLASS Scyphozoa



Close-up of ephyra larva [fig 2.6-F]



PHYLUM **Cnidaria**

CLASS **Anthozoa**

Calcium-carbonate skeletons of various corals, sea fans & sea whips. All = Anthozoa: ONLY the POLYP stage is present.



PHYLUM Cnidaria

CLASS Anthozoa

Note that ONLY the POLYP stage is present. In their life cycle

Remember you saw them fight in slow motion in the 'Shapes of Life' video????



PHYLUM
Cnidaria

CLASS
Anthozoa

Other Anthozoa grow as colonies of polyps. Examples of this include sea pansies (shown here,) sea fans, sea whips, sea pens and of course corals.



Remember, ONLY the POLYP stage is present in the Anthozoa class of cnidarians.