

ACOELOMATES

PHYLUM

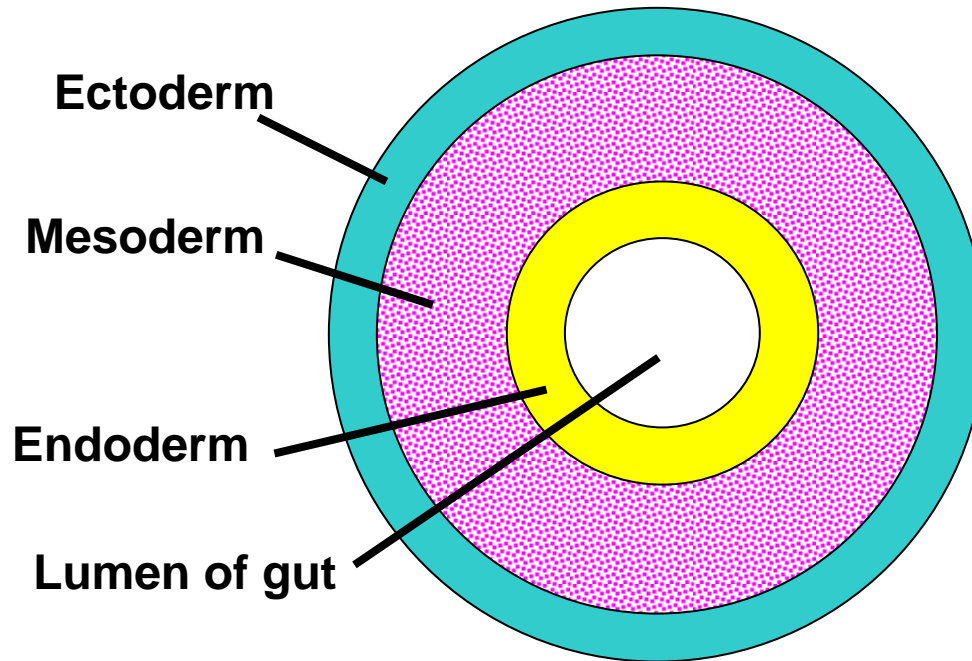
PLATYHELMINTHES

&

PHYLUM

NEMERTINA

The ACOELOMATE Condition



Any triploblastic organism which lacks a body cavity
is said to be an acoelomate...

PLATYHELMINTHES

'Flatworms'

- **ORGAN** grade of body organization
- **TRIPLOBLASTIC**
- **MESENCHYME** = Middle layer derived from mesoderm germ layer = space-filling packing tissue
- **ACOELOMATE** - Mesoderm obliterates the blastocoel in the embryo

PLATYHELMINTHES

3 main classes

- CLASS **Turbellaria** - Free-living flatworms
- CLASS **Trematoda** - Endoparasitic Flukes
- CLASS **Cestoda** - Endoparasitic Tapeworms

These next guys caused a laugh in the video...

(Ooh, yes their going to do it.....
Yes, Yes, YES! Oh wow! That was great!)

It was violent and yet the participants were quite beautiful...

What am I referring to?

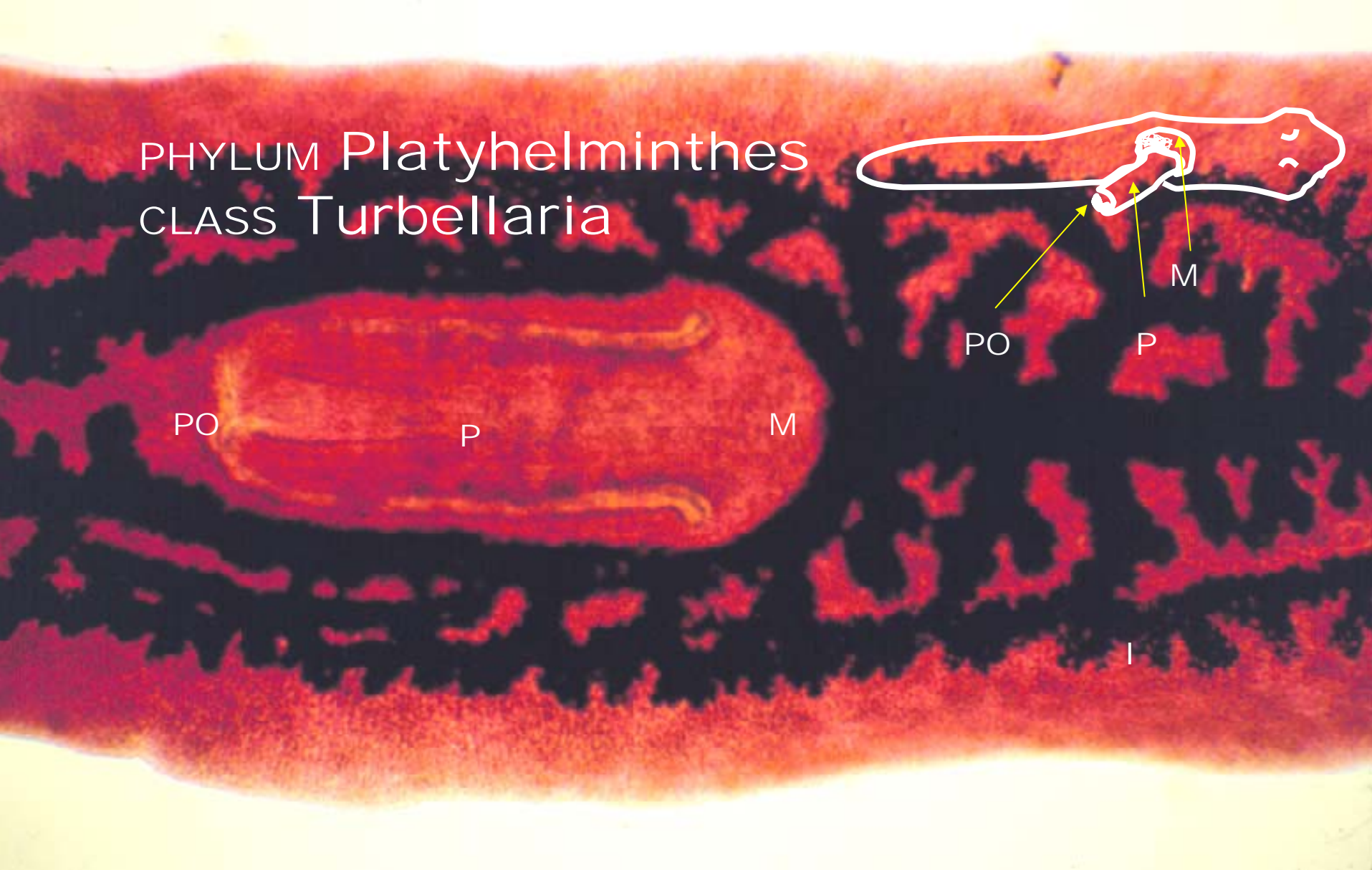


Marine
flatworms...

But what
we saw in
lab was a
freshwater
flatworm. It
was brown
and looked
as if it were
boss-eyed.



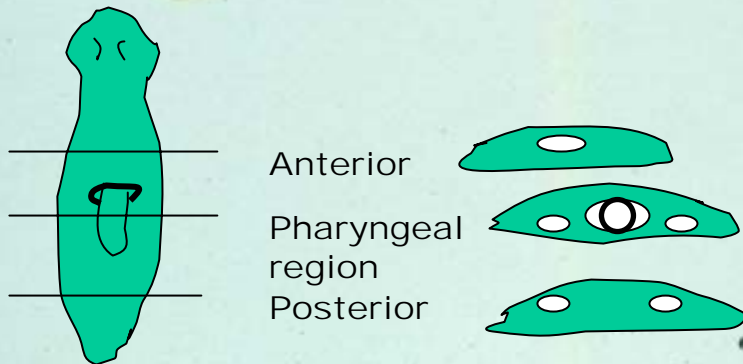
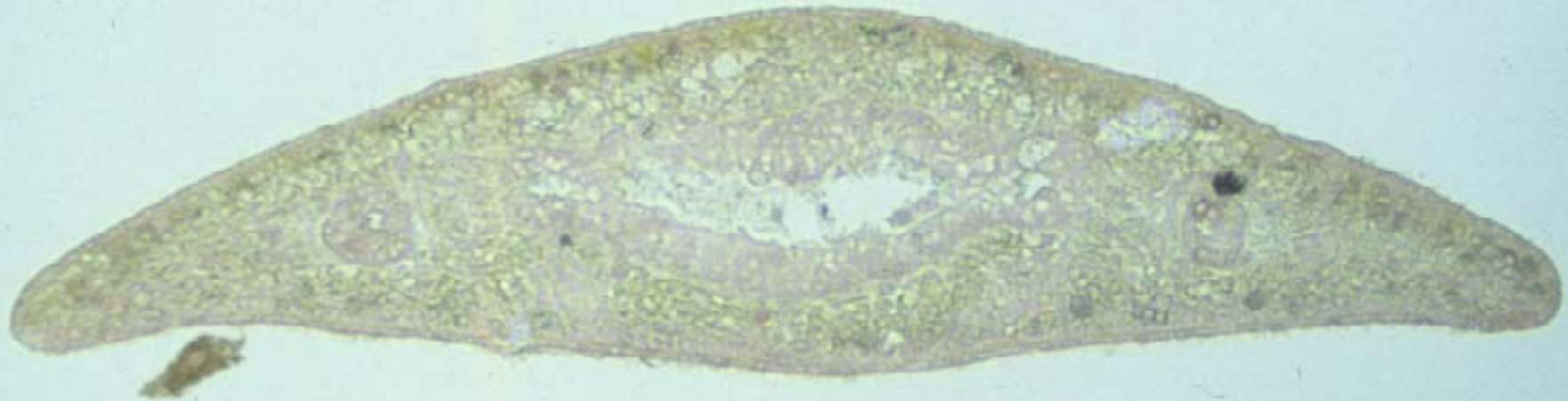
PHYLUM Platyhelminthes
CLASS Turbellaria



Note extensible pharynx (P), pharyngeal opening (PO), mouth (M) & intestine (I) [fig 3.2-A]

PHYLUM Platyhelminthes

CLASS Turbellaria

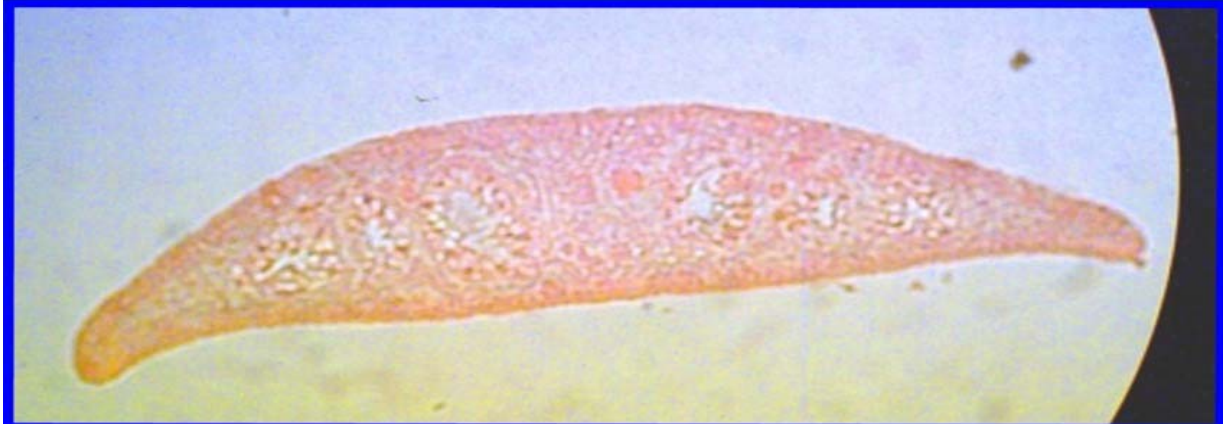


cs through anterior of organism [fig 3.4]
aka Batman's plane. Note No pharynx, only caeca

PHYLUM Platyhelminthes
CLASS Turbellaria

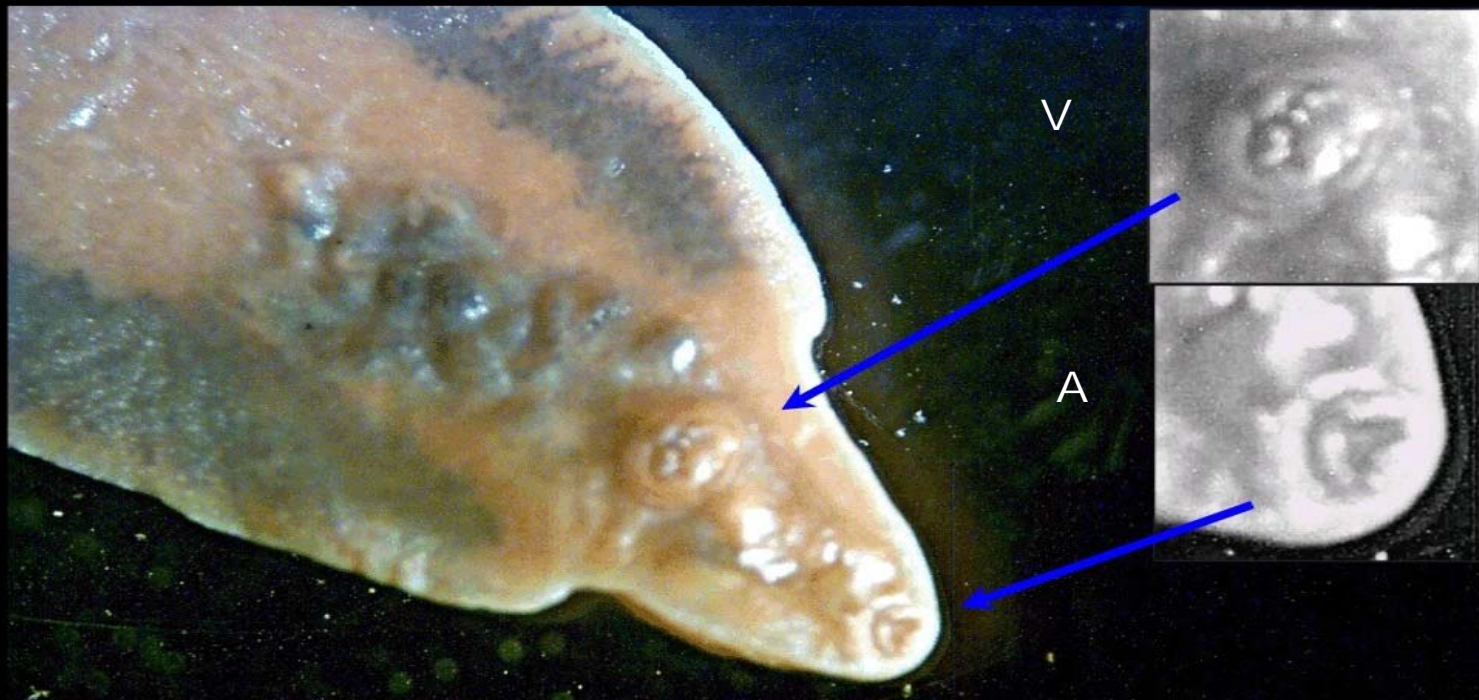


c.s. through pharyngeal region [fig 3.4] Note Pharynx, gastric caeca & Mesenchyme (Cilia!?) First of 2 Acoelomate c.s





PHYLUM
Platyhelminthes
CLASS Trematoda



View of whole fluke organism. Note the two suckers. Anterior (A) one is for feeding, the ventral (V) one is for attachment



PHYLUM

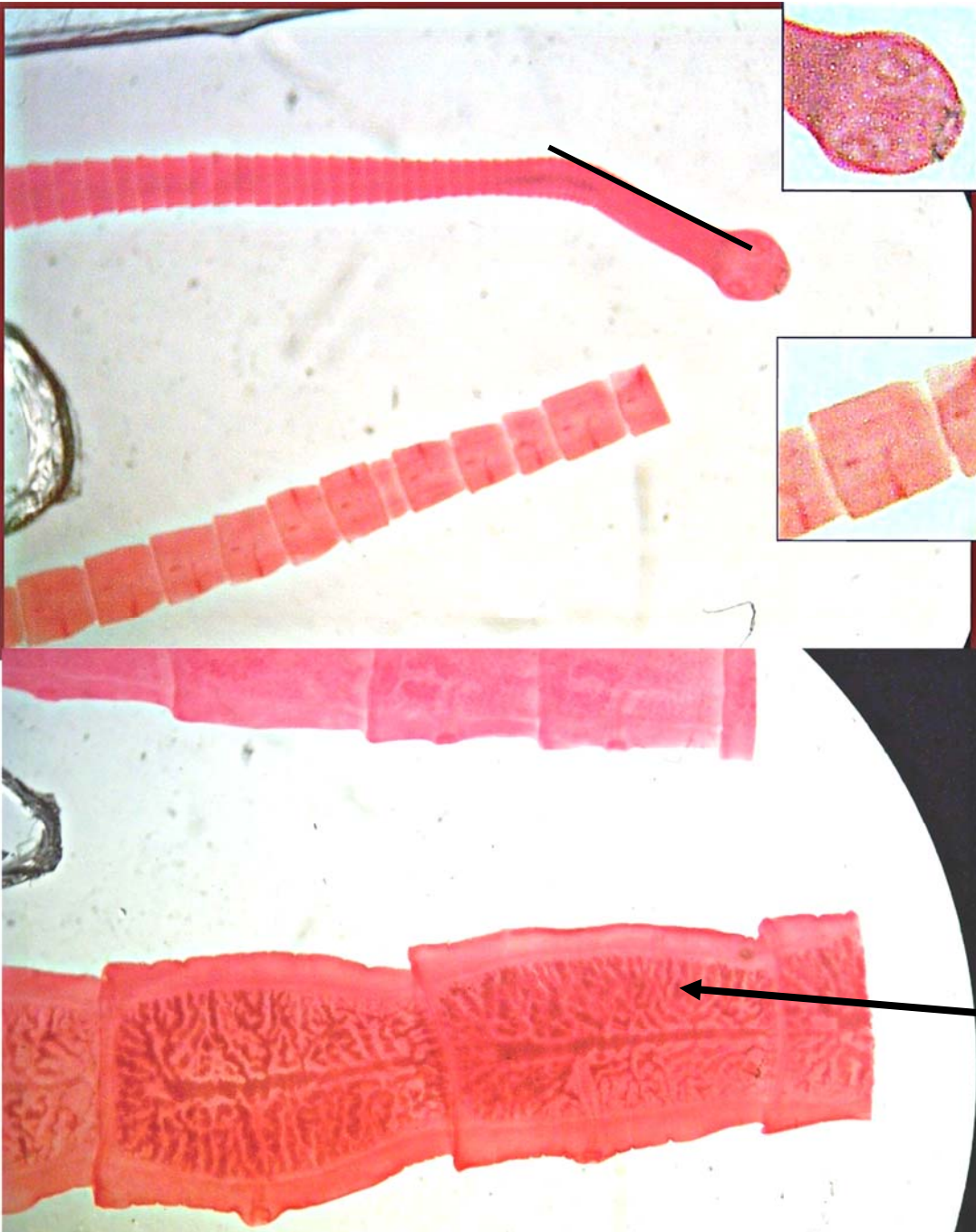
Platyhelminthes

CLASS Trematoda

Anterior end of fluke. Note oral sucker (OS), pharynx (P), caeca (C) & ventral sucker (VS) (for attachment) [fig 3.5]



Note eggs E, ovaries O, shell gland,
caeca C, uterus U and testes T [fig 3.5]



PHYLUM

Platyhelminthes

CLASS Cestoda

Scolex (I) and
maturing proglottids.

The most
reproductively mature
sections are at the
posterior end of the
tapeworm.

What are these
sections called?



PHYLUM
Platyhelminthes
CLASS Cestoda

Scolex region. Note rostellum (R) (rings of hooks) & suckers (S) for attachment [fig 3.7-A]

Sperm in from partner

Sperm exit here
to enter another
partner's proglottid

Speckled
background =
Testes

Uterus
& Shell
Gland

Ovary

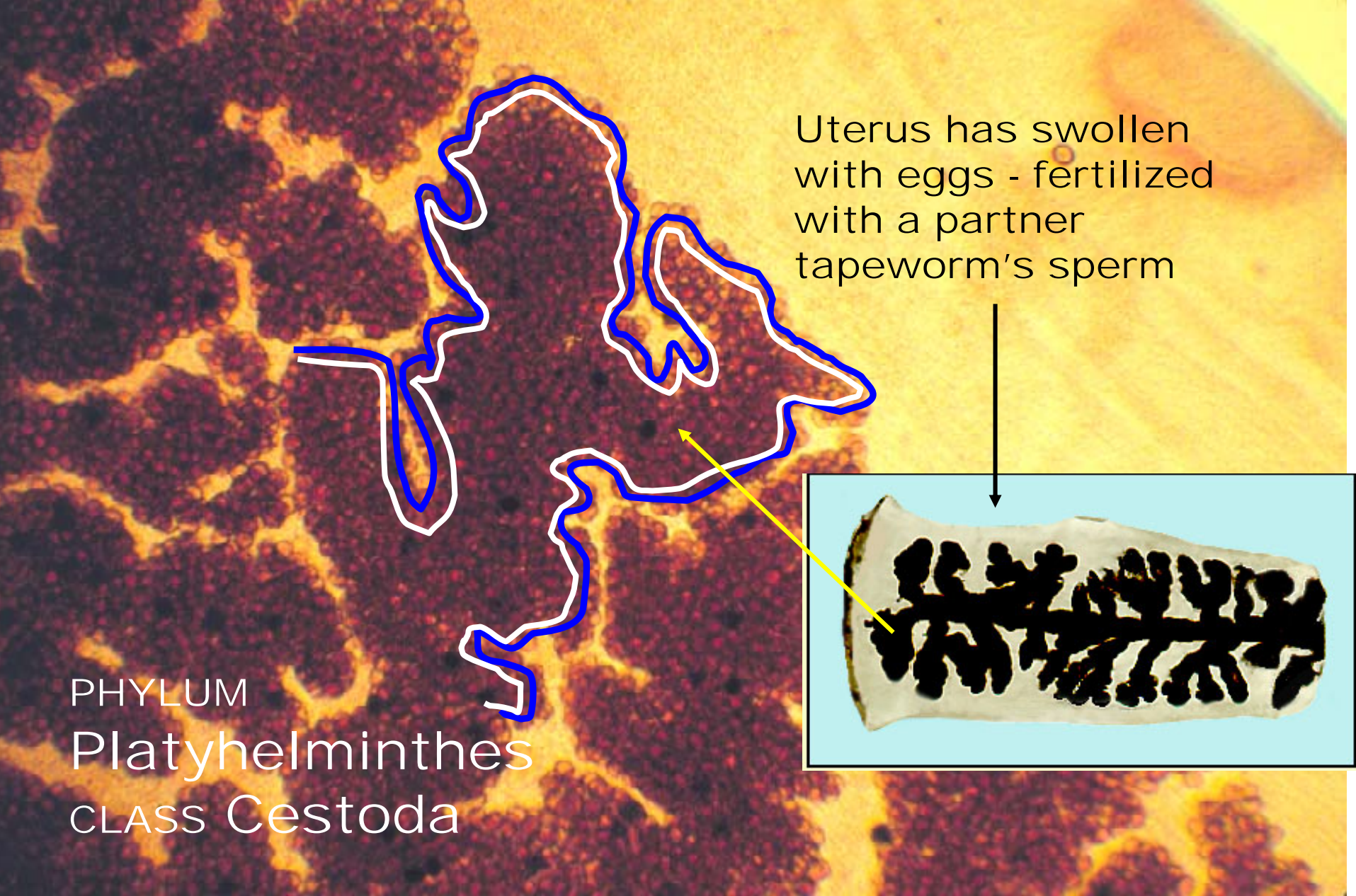
Uterus will swell
with many out-
pockets as the
eggs develop

PHYLUM

Platyhelminthes

CLASS Cestoda

Mature proglottid w/ reproductive structures [fig 3.7-D]



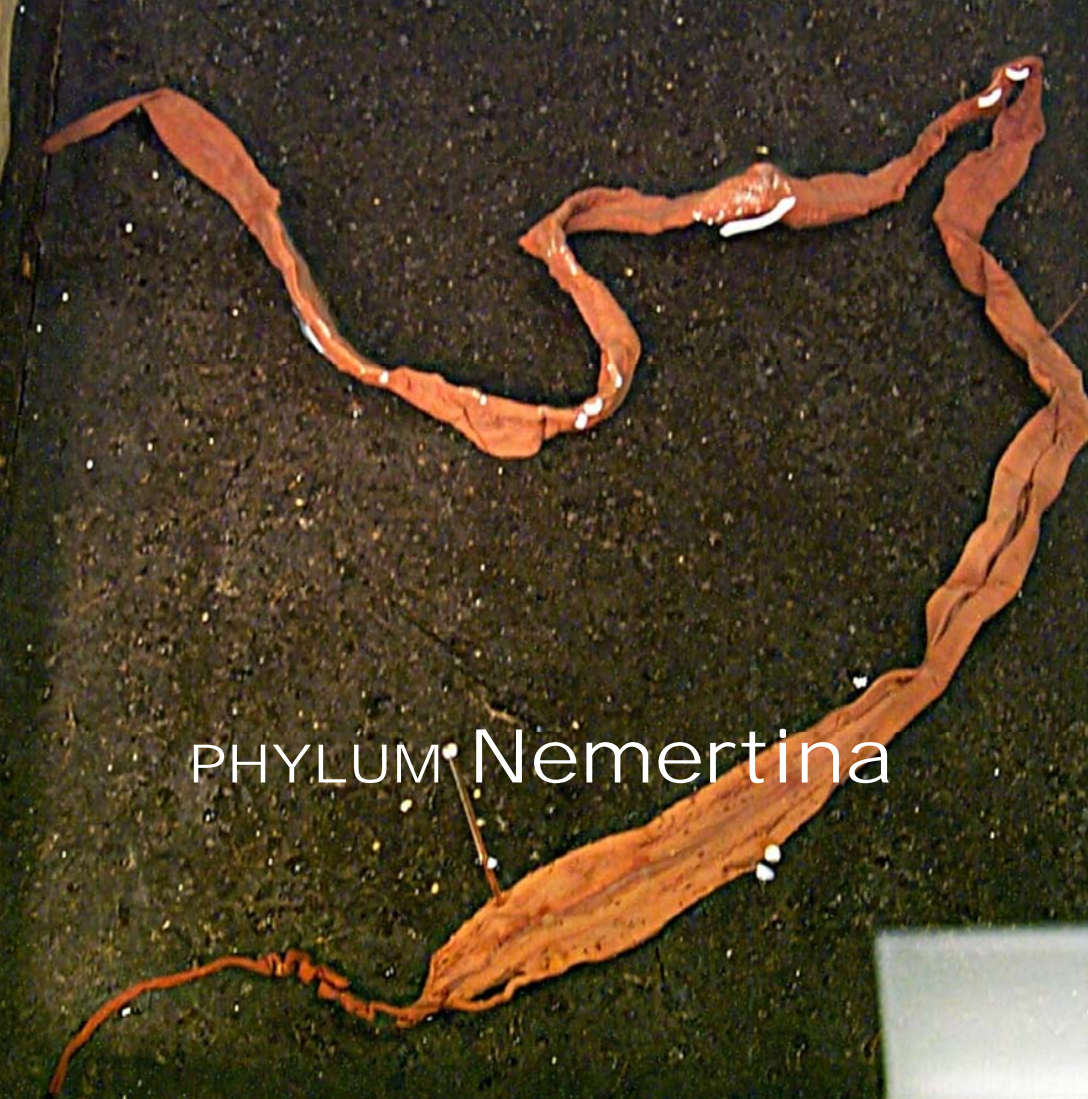
Uterus has swollen
with eggs - fertilized
with a partner
tapeworm's sperm

PHYLUM
Platyhelminthes
CLASS Cestoda

Gravid proglottid chock full o' eggs [close-up of fig 3.7-E]

NEMERTINA

(Acoelomate)



This is our 1st organism
with a COMPLETE
digestive tract -
(i.e. it has an anus)

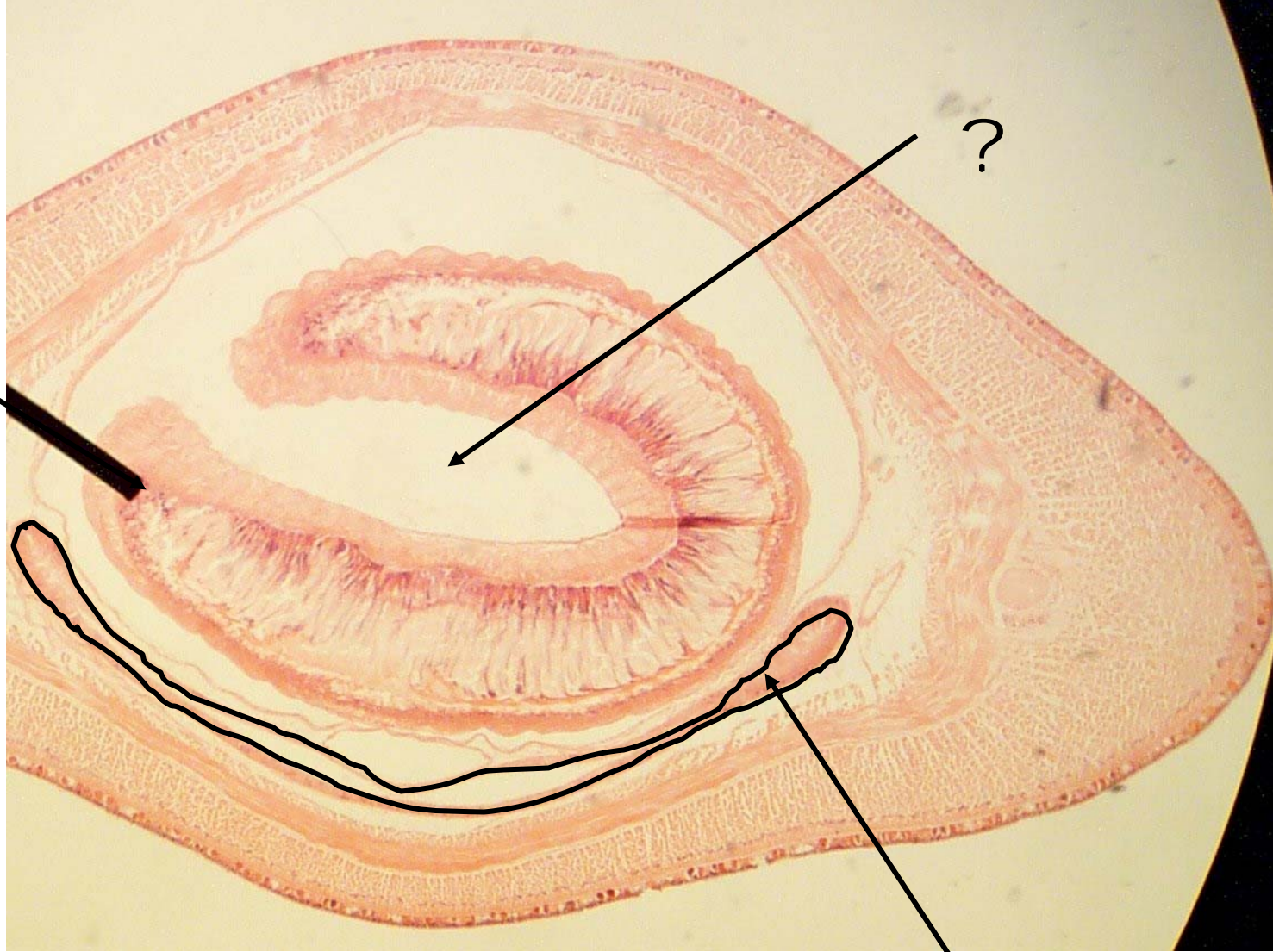
You did not see the specimen but had to fill out labels on a
diagram in your lab manual showing a slide of a c.s.

= 2nd acoelomate c.s.

?

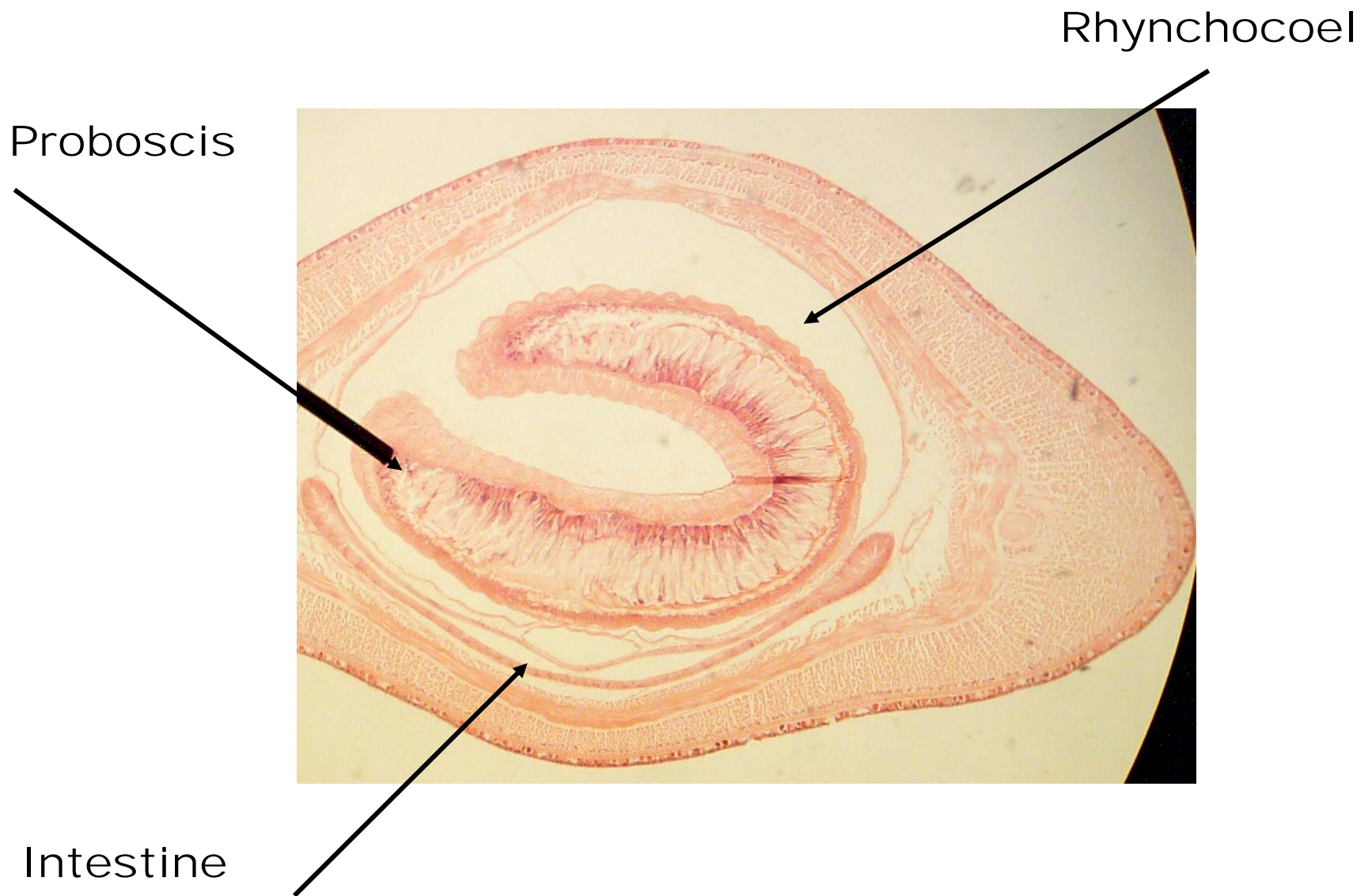
?

PHYLUM
Nemertina



c.s. through anterior end of a flatworm

?



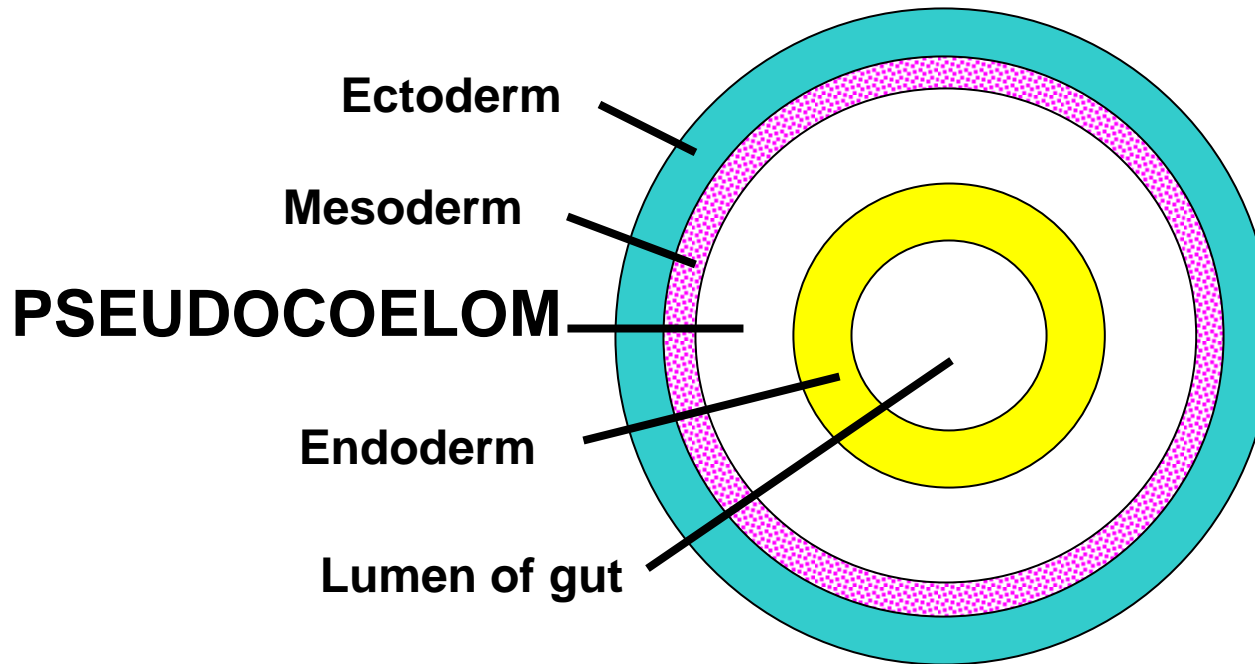
Note proboscis in the rhynchocoel & the flattened intestine (outlined). [fig 4.3-B]

PSEUDOCOELOMATES

PHYLUM NEMATODA

PHYLUM ROTIFERA

The PSEUDOCOELOMATE Condition



Any organism which has a “false” body cavity (pseudocoel) is said to be a pseudocoelomate...

Definition of a pseudocoelom?

- a fluid-filled body cavity, (derived from the blastocoel), which surrounds the gut.

Functions

(i.e. what's it used for?)

- Hydrostatic skeleton
- Circulatory
- Location of organs – reproduction & excretion