Pseudophyllidea
Diphyllobothrium latum
Broad fish tape worm

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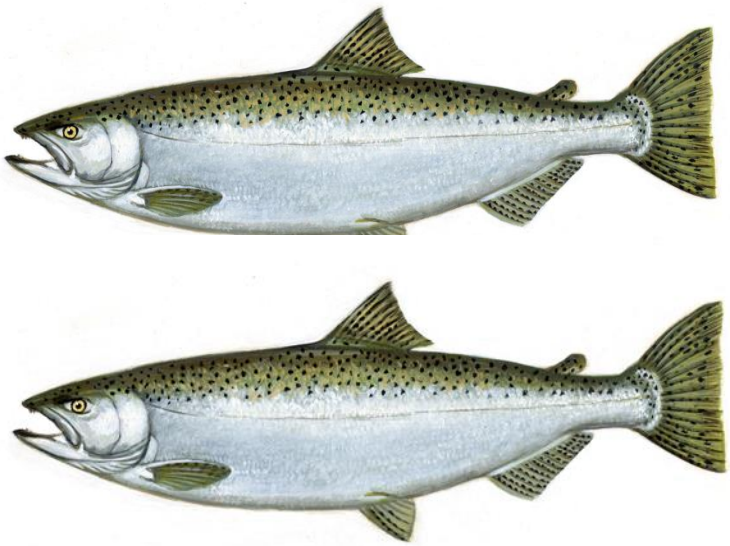
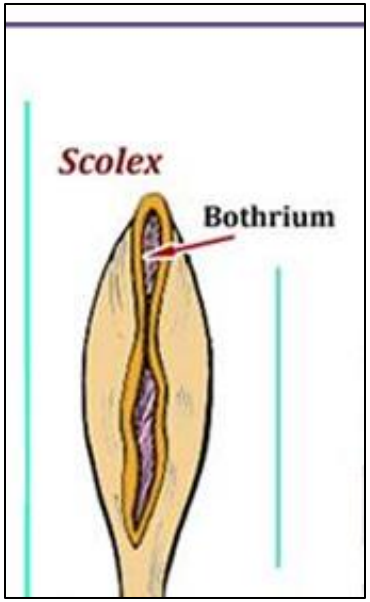
- **Disease**: Diphyllobothriasis.

- **Geographical distribution:**

It is prevalent in Northen Europe mostly in Scandinavia and Russia, where pickled or insufficiently cooked salmon fish is prominent in the diet.



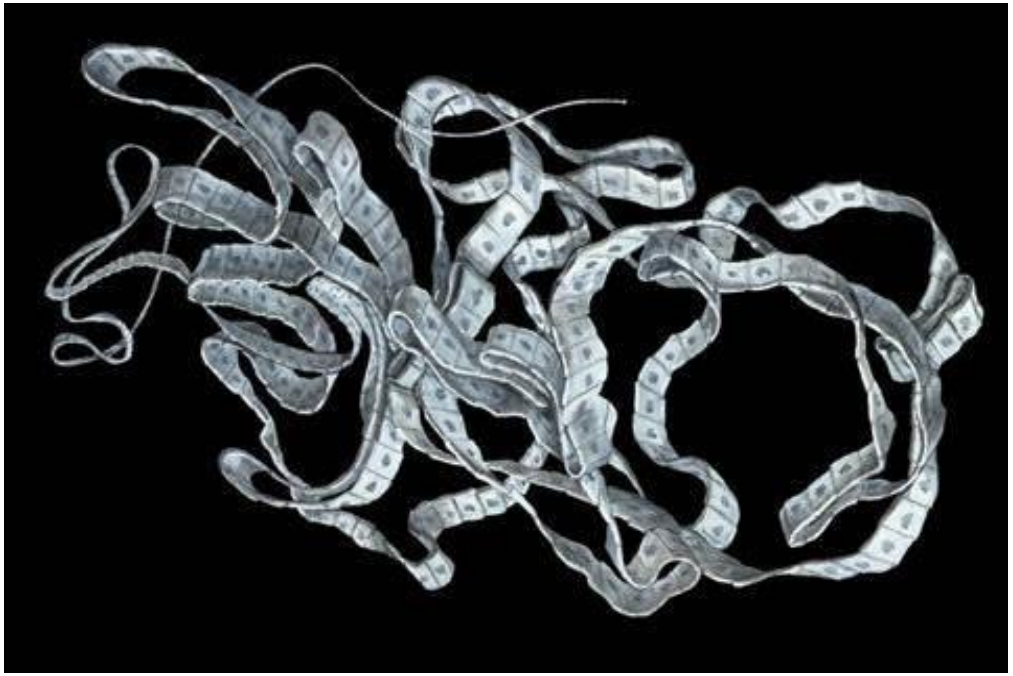


scolex

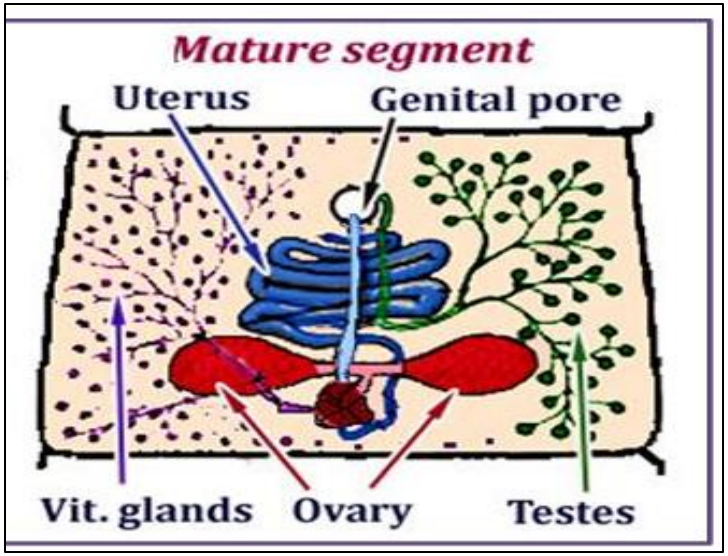
Elongated with dorsal and ventral bothria (grooves)

Adult

3-10 meters

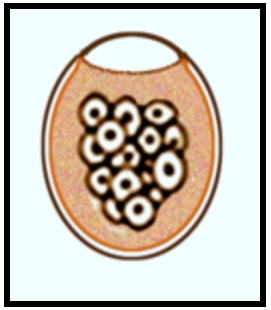


Mature seg.



- Genital pore ventrally
- Uterine pore
- Rosette-shaped uterus

- **Size:** 70 × 50 µm.
- **Shape:** Oval and operculated with thick shell.
- **Colour:** Yellowish brown.
- **Content:** Fertilized and immature.



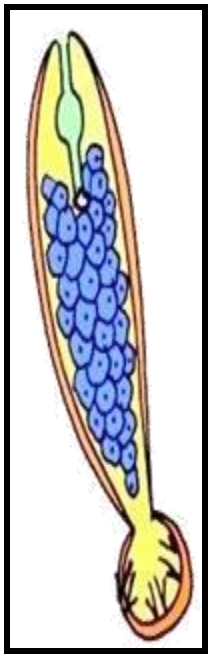
Egg

70x50 µm

Coracidium

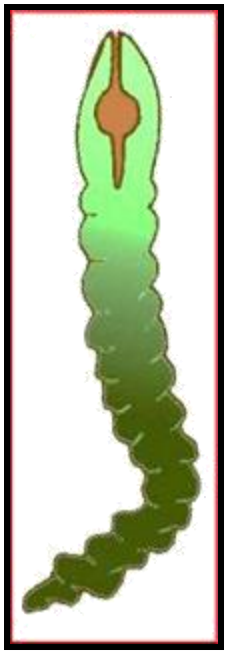
-Spherical, 80–90 µm
-Covered with cilia
- Has 6 hooks

Procercoid



- 500 µm
- Spherical caudal end having 6 hooks

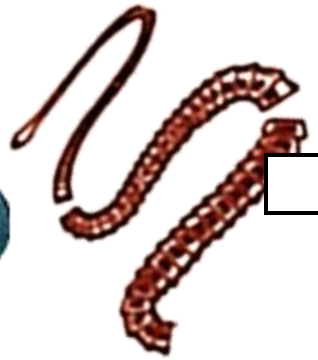
plerocercoid



- 10-20 mm
- Bothria
- Body kinks

Life Cycle of *Diphyllobothrium Latum*

Adult in small intestine



Eggs laid by adult

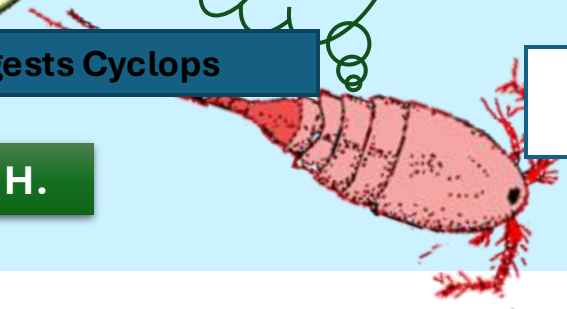
EGGS pass outside with stool to fresh water

FRESH WATER

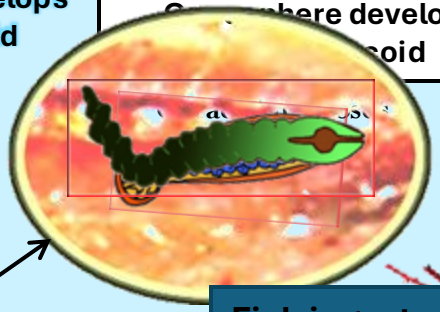
Eggs mature in two weeks

Coracidium
Excit through operculum

Cyclops I.H. Ingests Coracidium



Fish ingests Cyclops



Plerocercoid releases

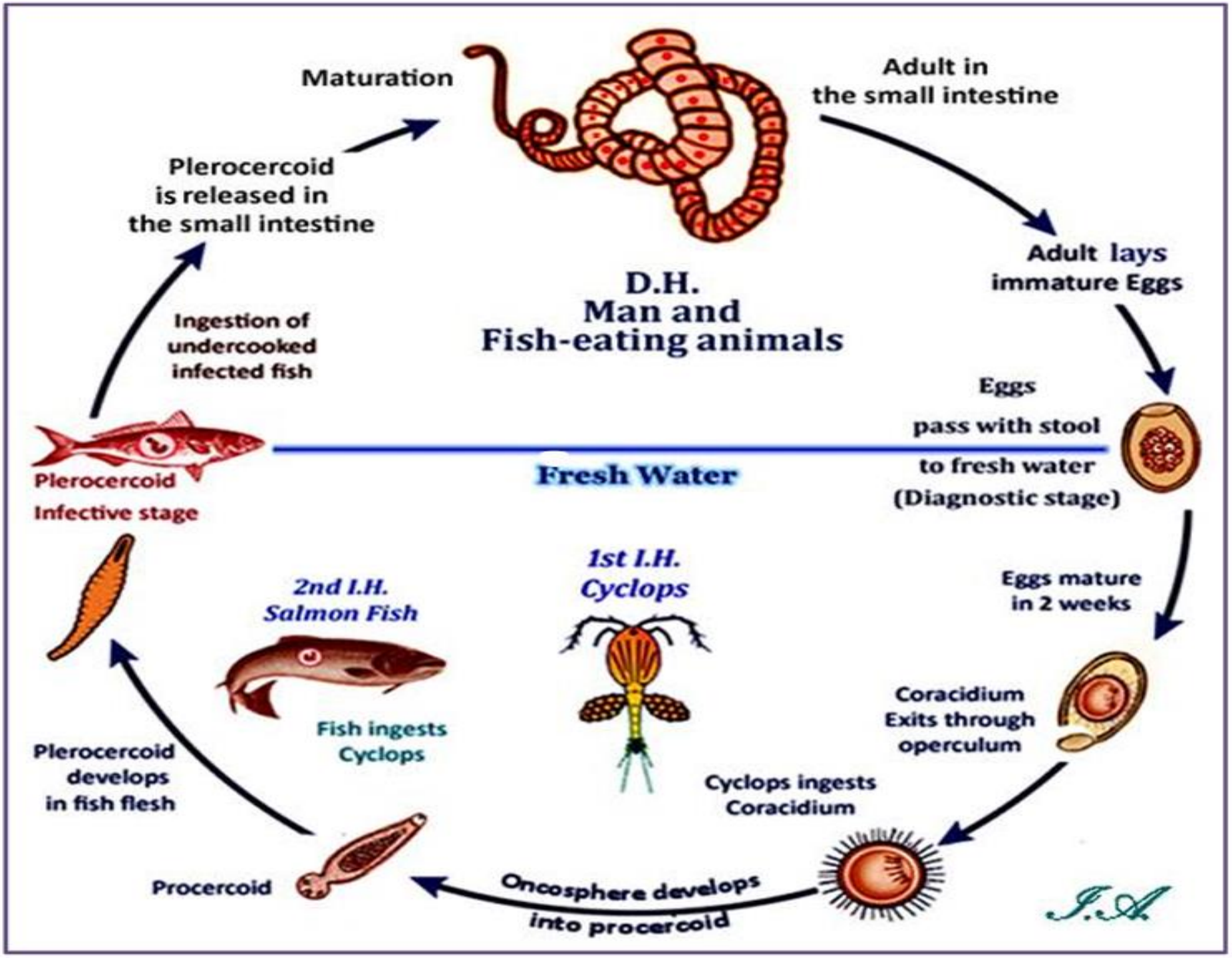
maturation in Small intestine

D. H.

Ingestion

Plerocercoid
Infective stage

I. H.


Maturation
Adult in
the small intestine
Plerocercoid
is released in
the small intestine
D.H.
Man and
Fish-eating animals
Adult lays
immature Eggs
Ingestion of
undercooked
infected fish
Eggs
pass with stool
to fresh water
(Diagnostic stage)
Plerocercoid
Infective stage
Fresh Water
1st I.H.
Cyclops
2nd I.H.
Salmon Fish
Eggs mature
in 2 weeks
Coracidium
Exits through
operculum
Fish ingests
Cyclops
Plerocercoid
develops
in fish flesh
Cyclops ingests
Coracidium
Procercoid
Oncosphere develops
into procercoid

Habitat	Small intestine
Hosts:	**D.H.:** Man
	R.H.: Fish-eating animals such as dogs and cats
	I.H.: 1st I. H.: *Cyclops* & 2nd I.H.: Salmon fish
Diagnostic stage:	Egg
Infective stage:	Plerocercoid
Mode of infection:	Ingestion of improperly cooked salmon fish containing plerocercoid

Clinical picture

- Many patients may be clinically free showing no symptoms.
- Vague abdominal pain, diarrhoea and nausea may be present.

Complications:

- In some patients, serious **megaloblastic anaemia** develops due to vitamin B_{12} deficiency because the worm absorbs a large amount of vitamin B_{12} and also affects the normal absorptive mechanism for vitamin B_{12} in the jejunum.
- Intestinal obstruction.
- Neurological manifestations e.g. headache, insomnia and convulsions are caused by absorbed toxins.

Diagnosis:

- Detection of the characteristic eggs in stool samples.
- Segments may be detached and observed in the stool.

Treatment:

- Praziquantel is the drug of choice.

Differences between Cyclophyllidea & Pseudophyllidea

Differences are:

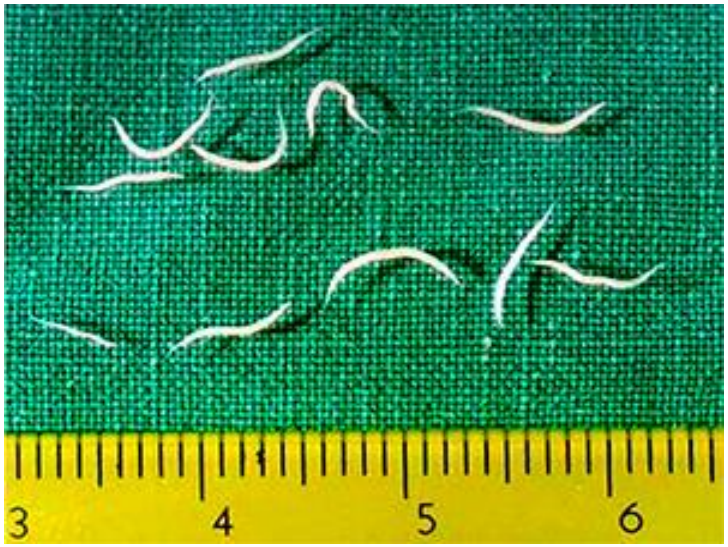
- Scolex.
- Mature segment.
- Gravid segment.
- Eggs.
- Intermediate host.
- Larval stages.

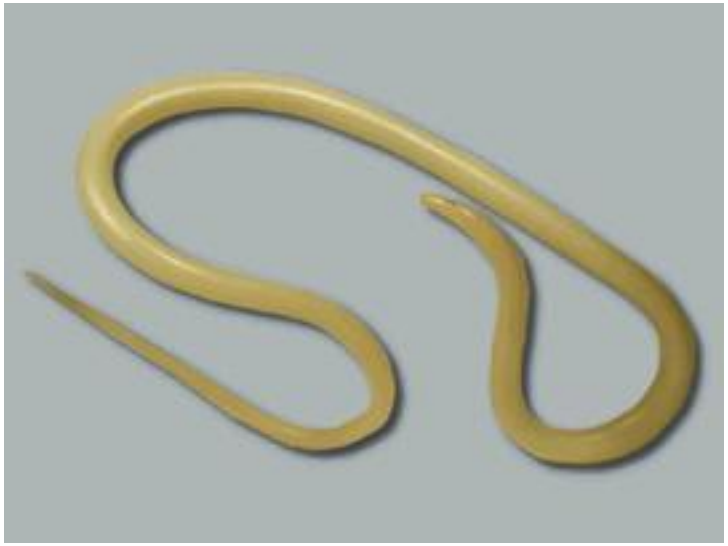
	Cyclophyllidea	Pseudophyllidea
Scolex: - Organs of attachment: - Hooks:	Globular • Suckers • May be present	Elongated • Bothria (grooves) • Absent (unarmed scolex)
Mature segment: -Genital opening: -Uterus: -Vitelline glands:	 • On the lateral side • Blind (no uterine pore) • In mass	 • On the ventral surface • Uterine pore on the ventral surface • Dispersed in the segment
Gravid segment:	Present	Absent
Eggs:	• Non operculated • Mature containing oncosphere	• Operculated • Fertilized & immature
Larval stage	• Cysticercus bovis • Cysticercus cellulosa	• Coracidium • Procercoid • Plerocercoid
Intermediate host	• One	• Two

Introduction to nematodes

General Characters:

- Rounded,elongate unsegmented with variable size.
- Separate sex (males are smaller than females with curved posterior end while the females have straight posterior end).
- Has body cavity, complete alimentary tract and tubular genital system, simple excretory and nervous system.

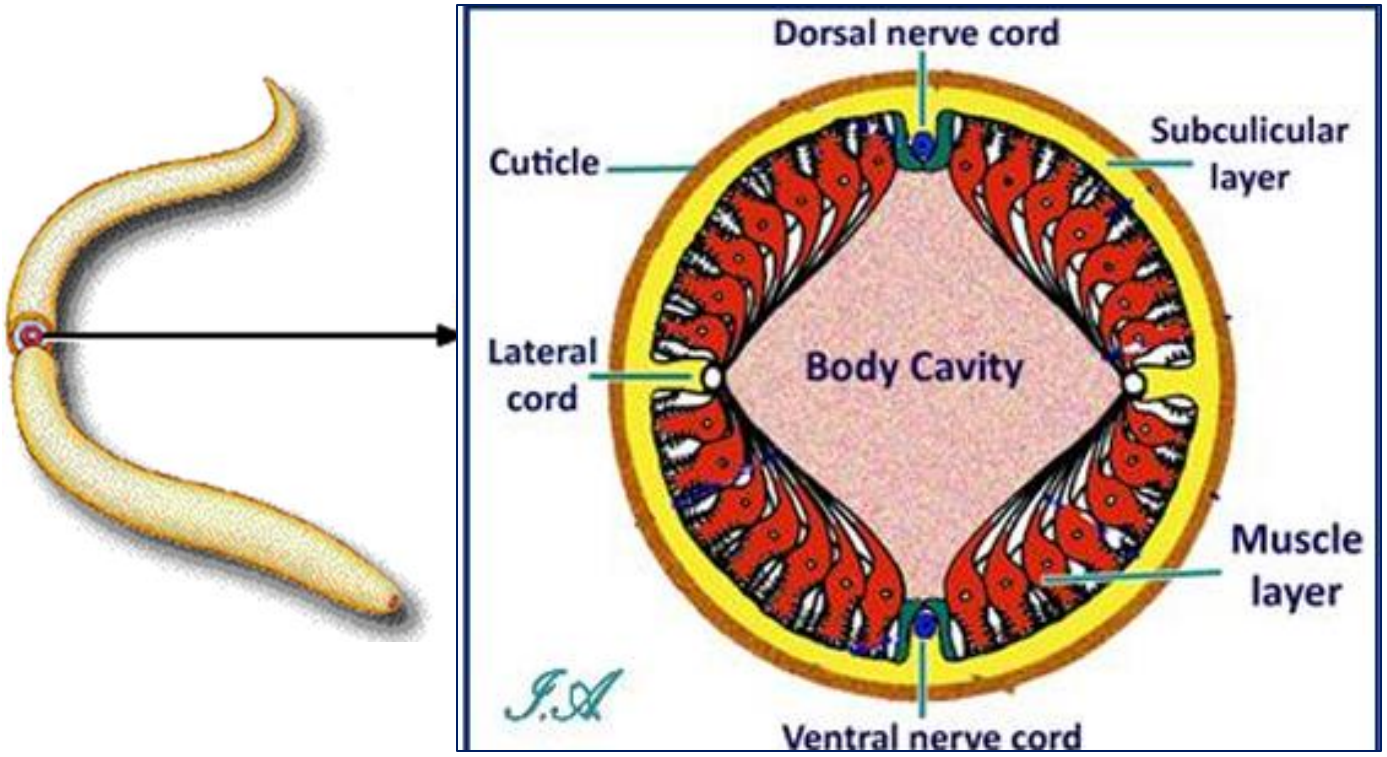




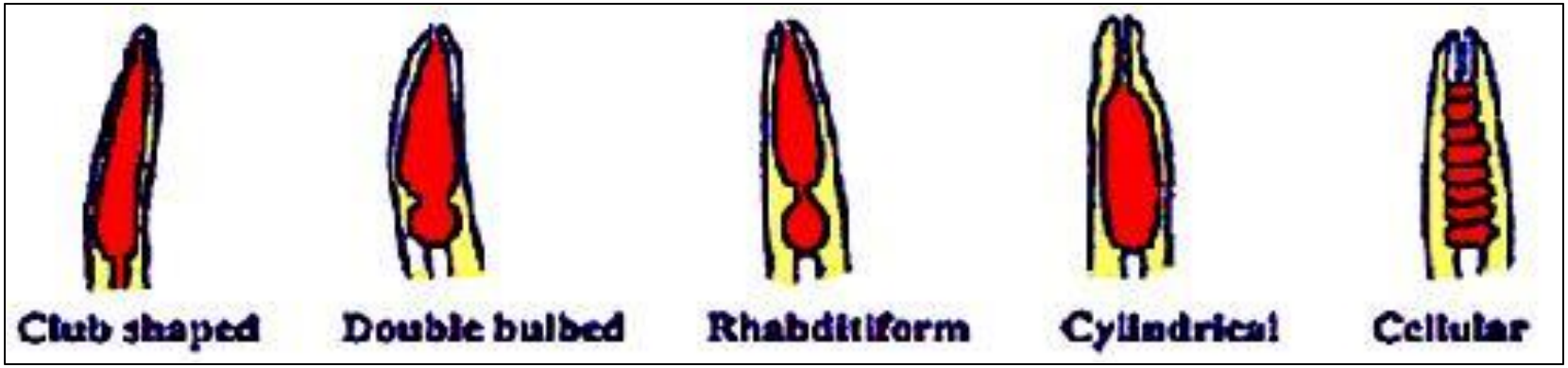
Systems of the body

Digestive:	Male:	Female:
Mouth	Testis	Ovary
↓	↓	↓
Esophagus	Vas difference	Oviduct
↓	↓	↓
Intestine	Seminal vesicle	Uterus
↓	↓	↓
Anus	Ejaculatory duct	Vulva
	(Accessory copulatory organs)	(Sets of genitalia)

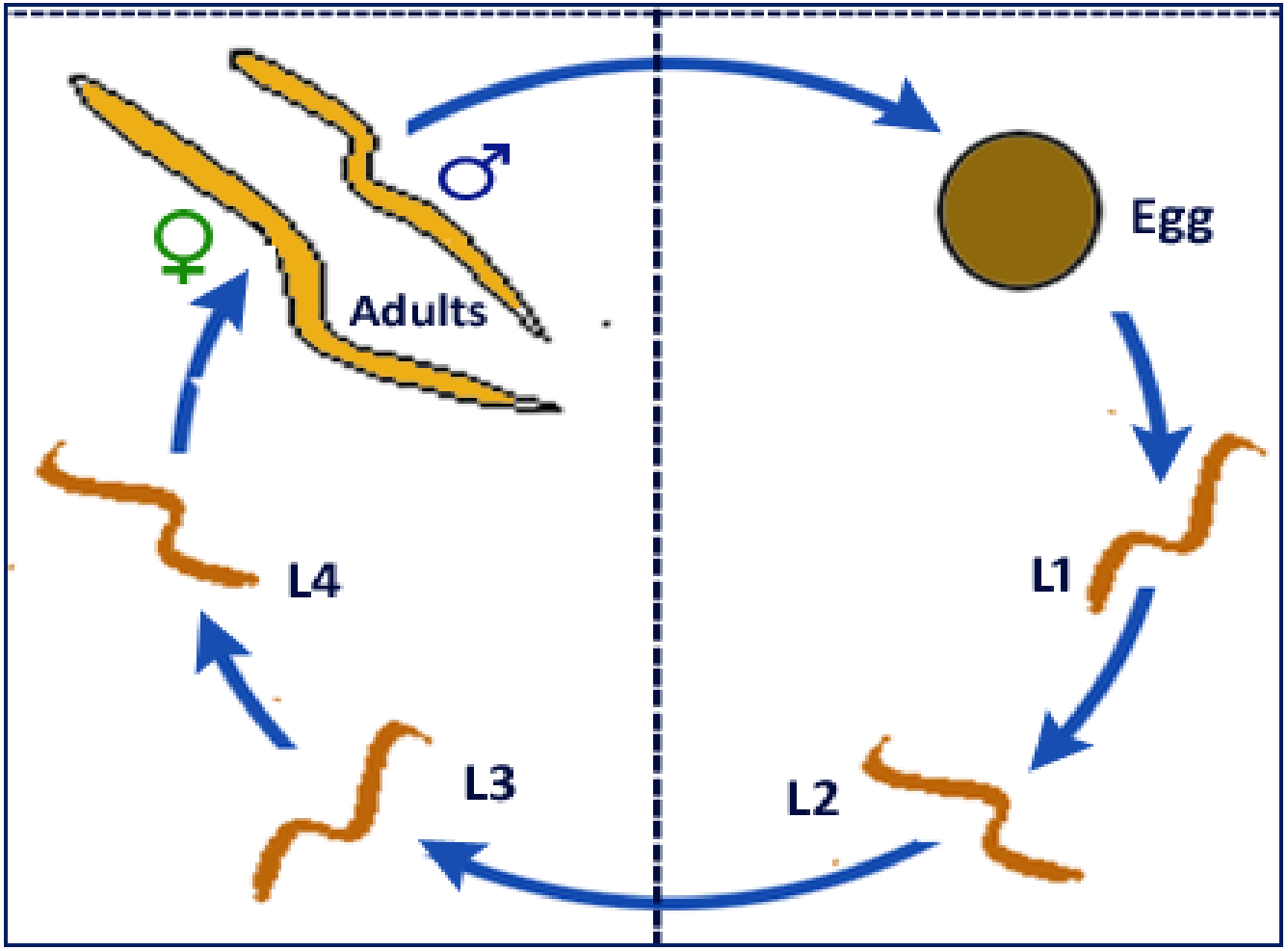
Body wall & cavity



The oesophagus



Life Cycle




Thank you!