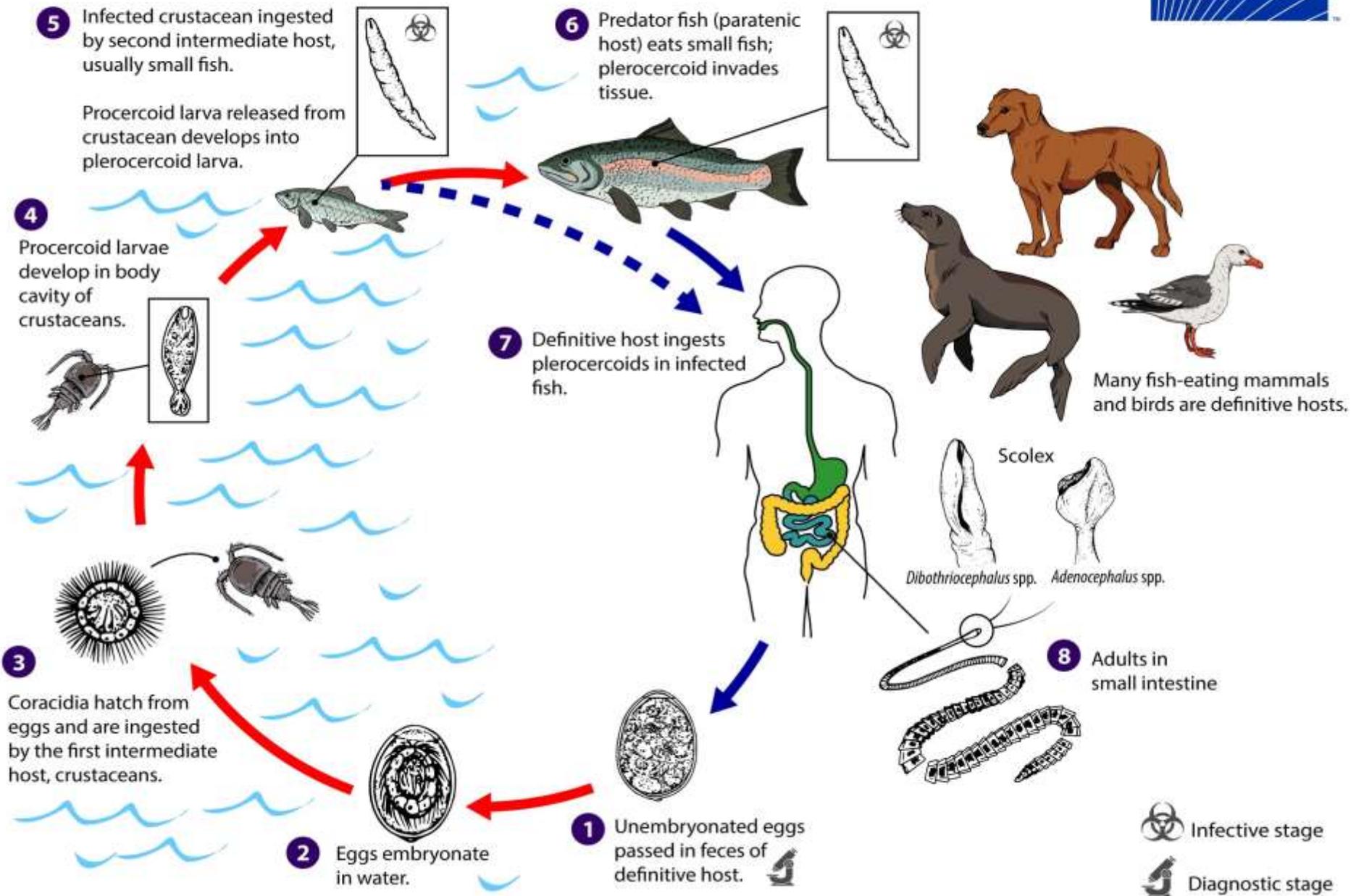


Cestoda Lab (Tapeworms)

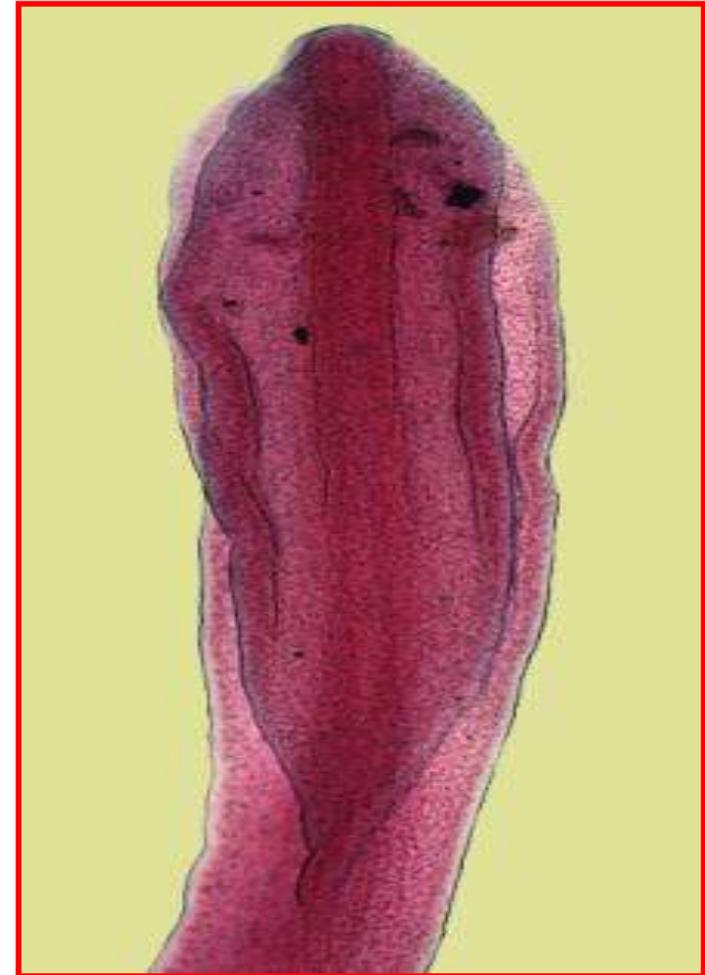
**General Microbiology
2nd year student
2021-2022
Dr. Mohammad Odibate**



1) *Diphyllobothrium latum* (broad tapeworm , fish tapeworm)

Adult :-

- **Size** : 3 - 10 meters.
- **Scolex** : Elongated, almond like with two grooves (bothria), one dorsal & one ventral.
- **Strobila** : More than 3000 segments:
 - a- Immature segments
 - b- Mature segments
 - c- Gravid segments: Not present.



Scolex

Diphyllobothrium latum egg

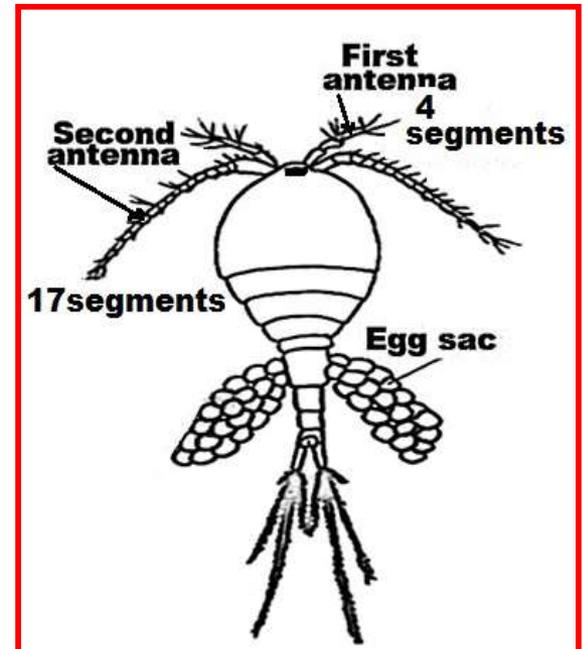
- **Size** : 70×45 μm
- **Shape** : Oval.
- **Shell**: Thick and operculated.
- **Color** : Yellowish brown.
- **Content** : Immature (ovum and yolk cells).



Coracidium : Onchosphere ➤
larva with ciliated epithelium
containing hexacanth
embryo.



Cyclop: 1st I.H of
Diphyllobothrium latum
containing proceroid
larva.



1 Oncospheres develop into cysticerci in muscle

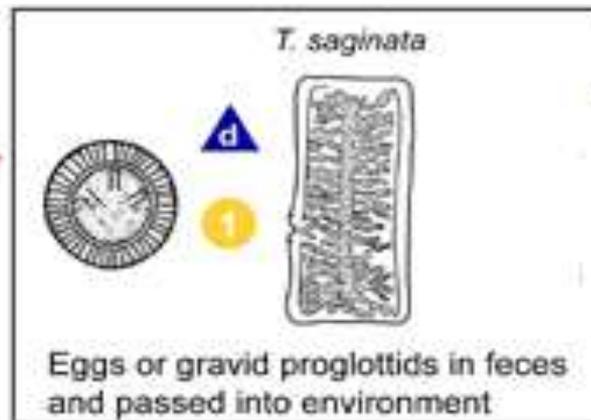
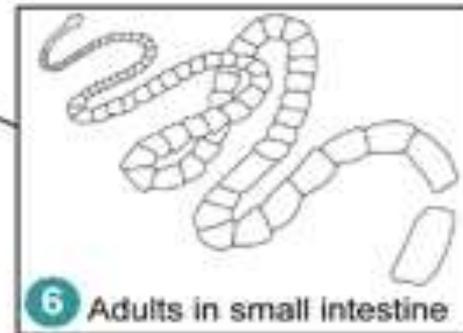
4 Humans infected by ingesting raw or undercooked infected meat

Oncospheres hatch, penetrate intestinal wall, and circulate to musculature

3

Taenia saginata

2 Cattle become infected by ingesting vegetation contaminated by eggs or gravid proglottids



Taenia saginata

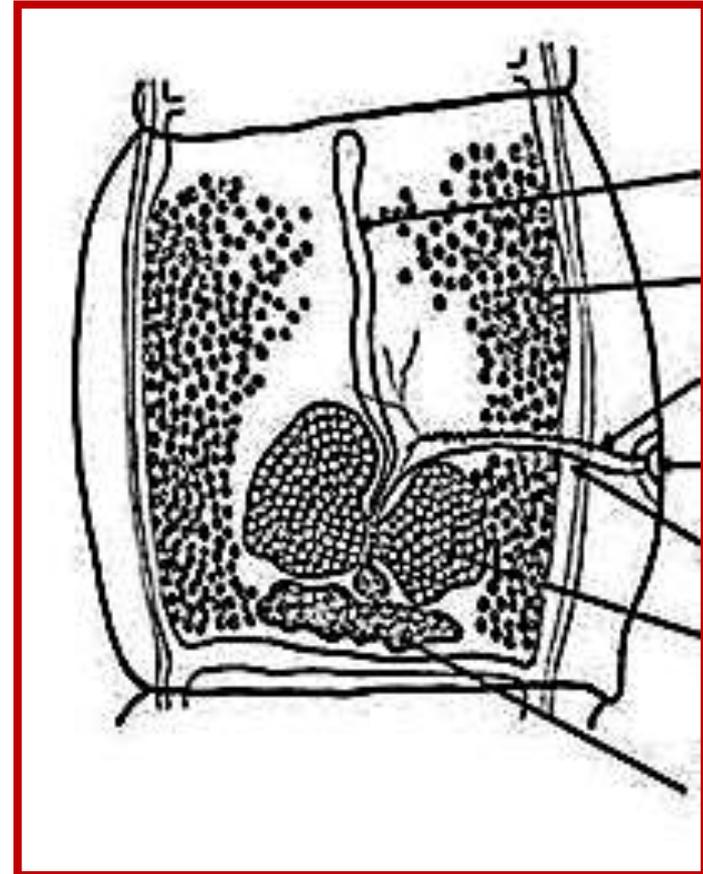
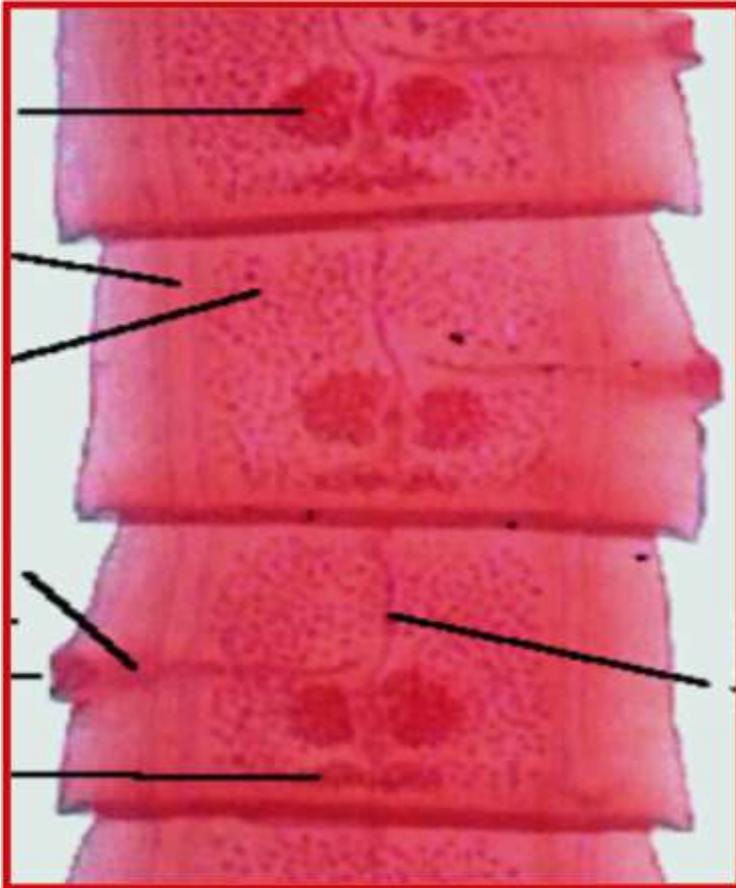


1) Adult :-

- **Size** : 4-10 meters.
- **Scolex** : Globular, with 4 cup shaped suckers at the angles of the head. **No rostellum or hooks.**
- **Strobila**: 1000 - 2000 segments.
 - **Immature segments.**
 - **Mature segments.**
 - **Gravid segments.**



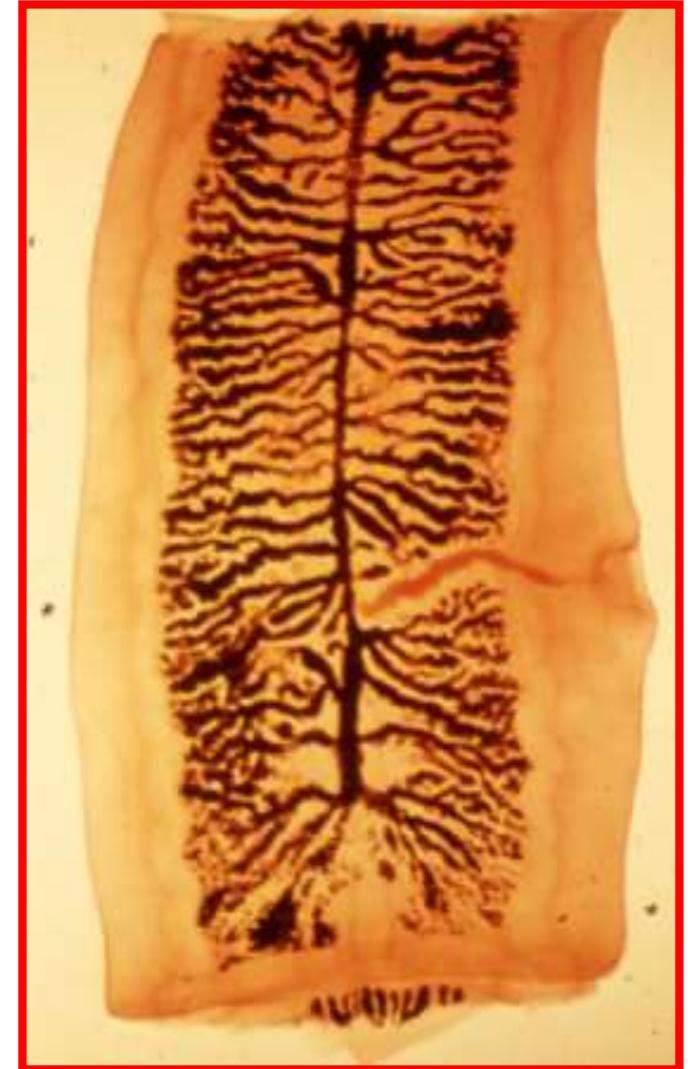
Mature segment of *T. saginata*



Squarish in shape
Contains male & female genital systems

Gravid segment of *T. saginata*

- Longer than broad
- Uterus with 15 - 30 (18) lateral branches on each side
- Full of eggs.
- Detached **singly** out of the anus.



Egg of *T. saginata* (D.S)

Size : 30- 40 μm in diameter.

Shape : Spherical.

Shell : Thick, radially striated.

Color : Yellowish brown.

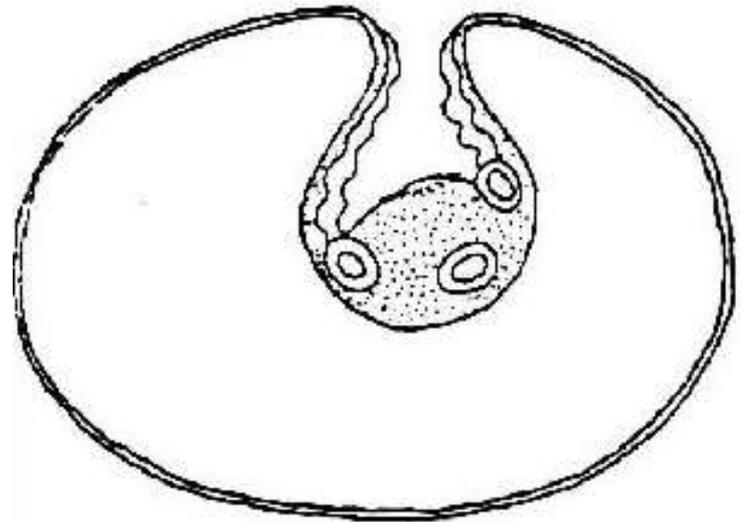
Content : Mature hexacanth embryo.

Egg of *T. solium* similar to *T. saginata* but it is the infected stage to human causing cysticercosis

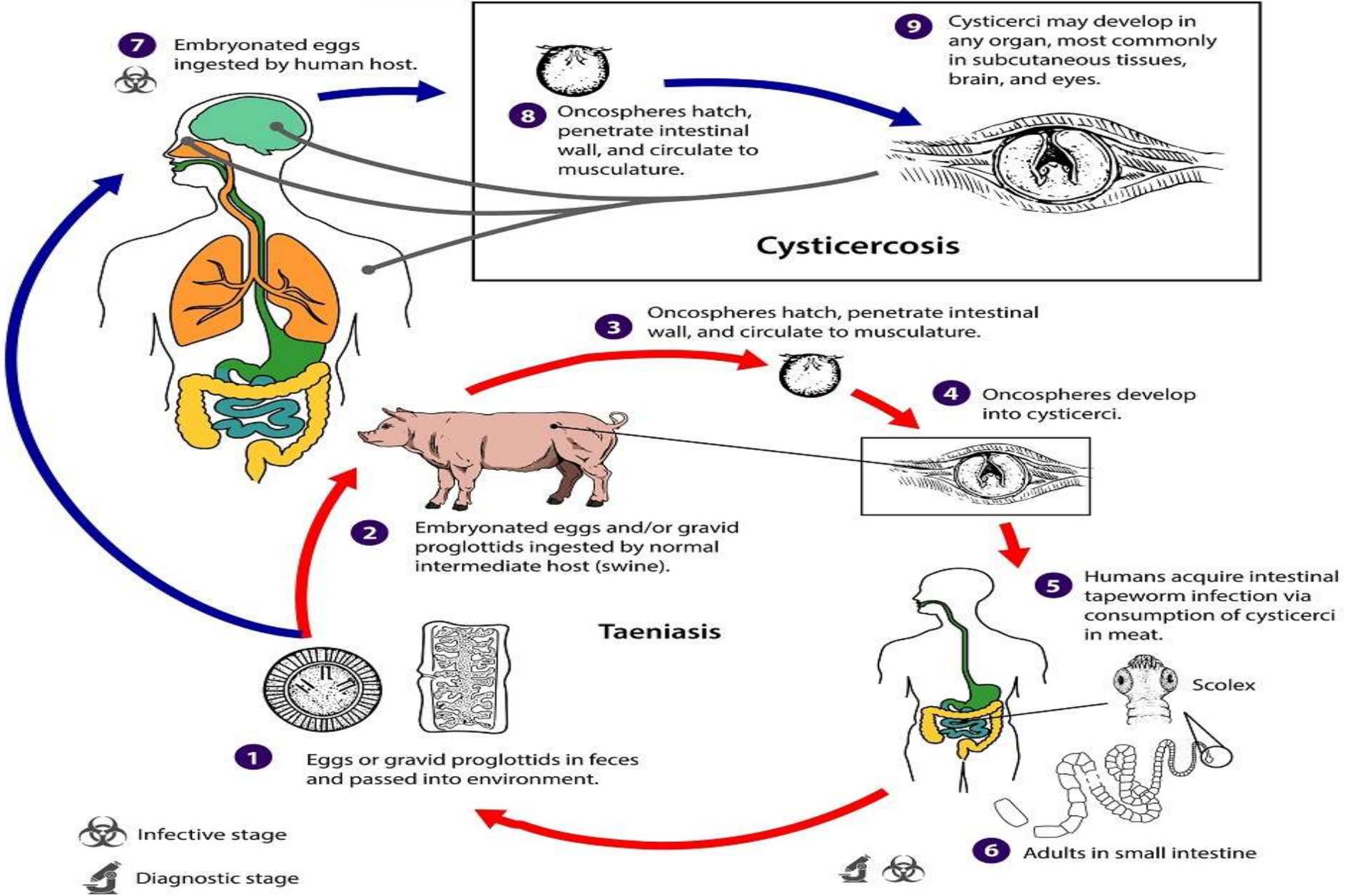


Cysticercus bovis of *T. saginata* (I.S)

- **Cystic larva of *T. saginata* found in beef.**
- **Lined with germinal epithelium & contain fluid.**
- **Has invaginated scolex with 4 suckers (without hooks).**



Taenia solium



Taenia solium

1)Adult :-

➤ **Size: 4-6 meters.**

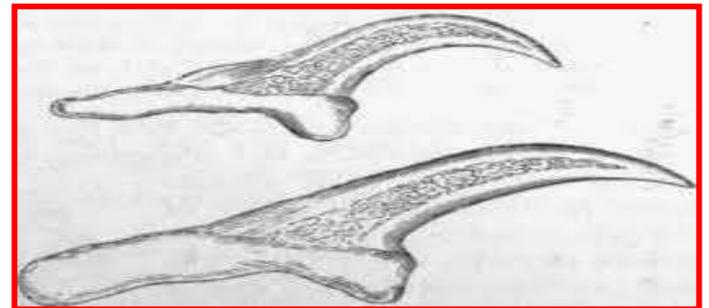
➤ **Scolex :-**

- **Globular.**

- **4 cup shaped suckers.**

- **Rostellum with 2 rows of**

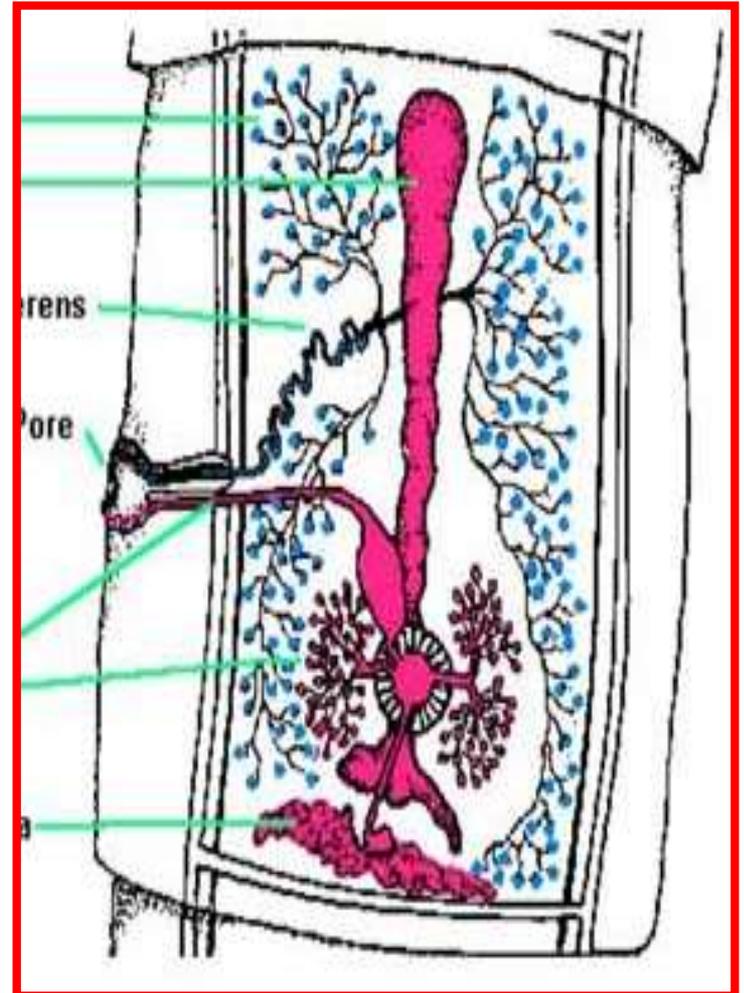
hooks



Mature segment of *T. solium*

Strobila : About 1000 segments:-

- Immature segments.
- Mature segments :
- Similar to *T. saginata* except :-
 - *Smaller.
 - *Testes : Fewer.
 - *Ovary : Trilobed.



Gravid segment of *T. solium*

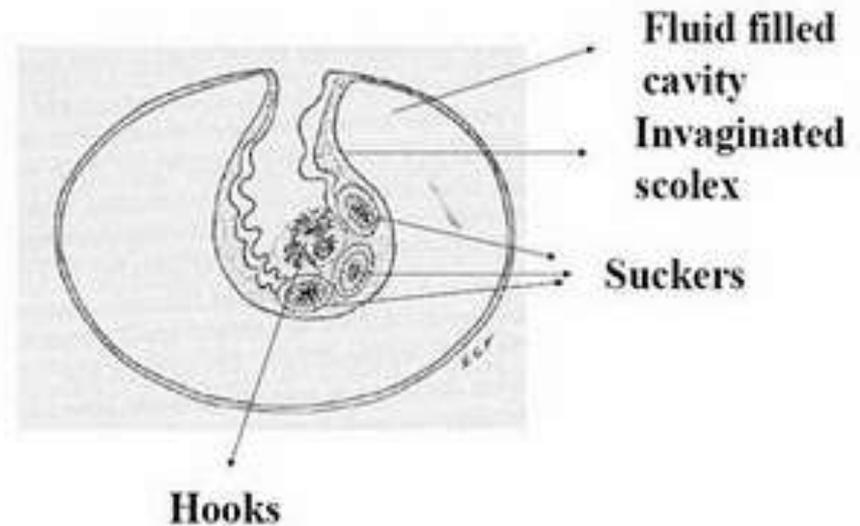
- **Gravid segments :**
- **Similar to *T. saginata* except:-**
 - 1 - Smaller.**
 - 2 - Uterus: About 9 lateral branches on each side.**
 - 3 - Segments detach in groups.**



Cysticercus cellulosa of *T. solium* (I.S)

**Similar to cysticercus bovis,
but detected in pork and
the invaginated scolex
carries 4 suckers,
rostellum and hooks.**

Diagrammatic representation of a cysticercus



Diagnosis of Cysticercosis

A. Direct methods:

- Biopsy from nodules for detection of larvae.
- CT and MRI for brain infection.
- X ray for calcified cyst.
- Ophthalmoscope for eye infection.
- Surgical removal for detection of the larvae.
- Stool examination for detection of eggs or gravid segments (only in patients having the adult worm).

B. Indirect methods:

- Serological tests.
- Eosinophilia.

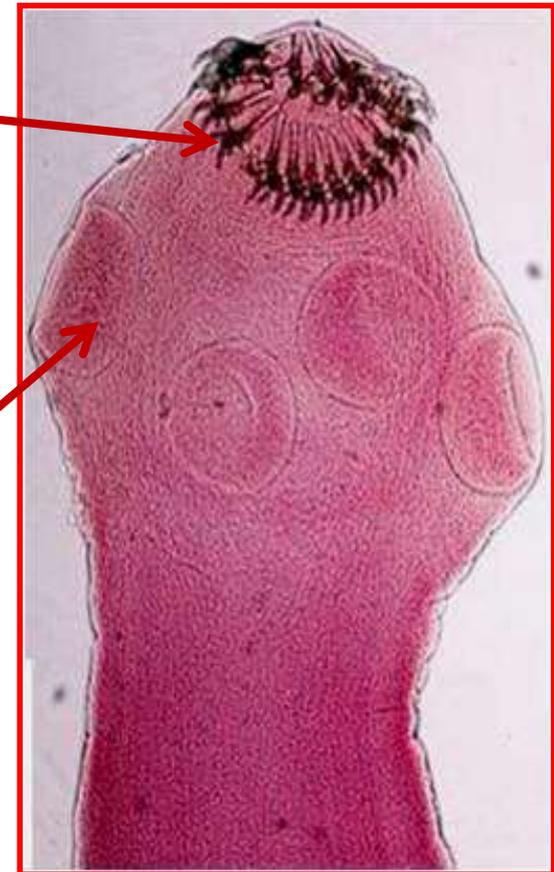
***Taenia saginata*
scolex**

***Taenia solium*
scolex**



**Rostellum
with 2 rows
of hooks**

Suckers



**Globular, with 4 cup shaped suckers at the
angles of the head**