

Lab 13

Phylum : Platyhelminthes

Class : *Cestoda*

Characteristic features of tapeworms :

1. The body is elongated, ribbon – like and measures from 1 mm to 10 or 12 meters in length .
2. Worms are primitive in that they absorb nutrients and excrete waste products through the tegument .
3. Body consists of :
 - Scolex : 4 suckers (for movement and attachment), scolex in some species have a rostellum, from which one or two rows of hooks may or may not be presents .
 - Neck : unsegmented (for strobilization) .
 - Strobilia : mature and immature segments .
4. All tapeworms are hermaphrodited (♀ and ♂ reproductive organs at the same segment) .

Taenia saginata

Common name : beef tapeworm .

Infective stage : larval stage, *Cysticercus bovis* .

Taenia solium

Common name : pork tapeworm .

Infective stage : larval stage, *Cysticercus cellulosae* .

*Other aspects of the two species :

Intermediate host : Cattle and swine .

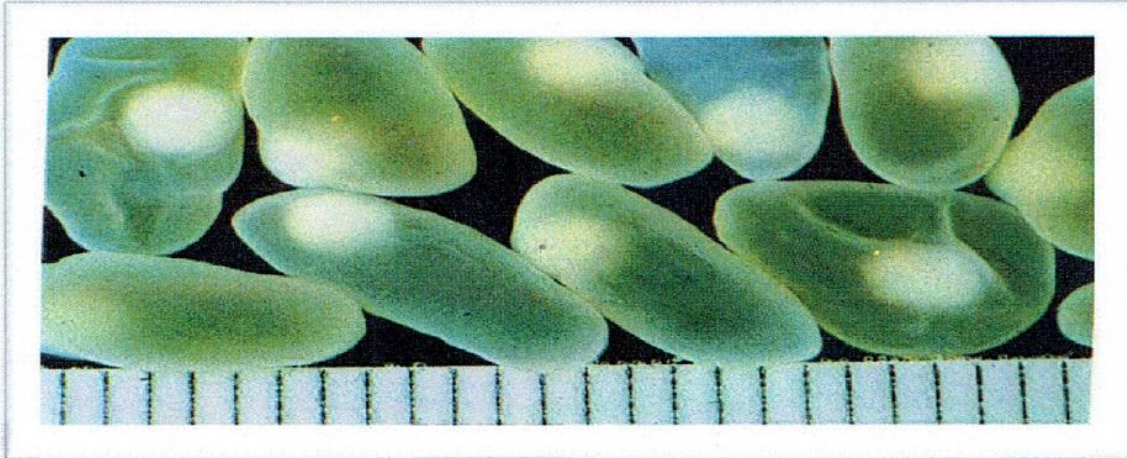
Final host : humans .

Mode of infection: Ingestion of insufficiency cooked muscles of cattle and swine infected by larval stages .

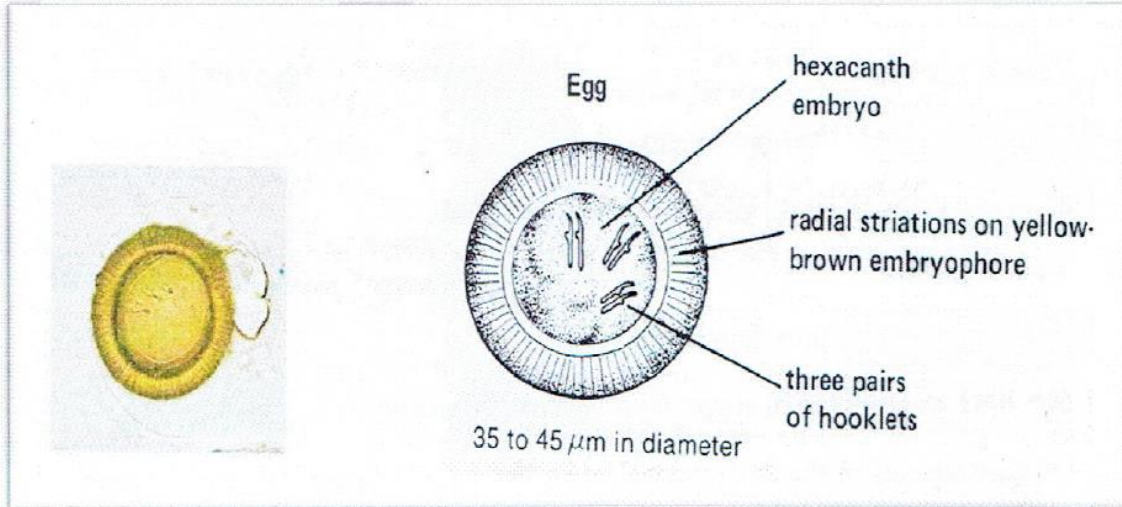
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Diagnosis :

Eggs or segments in faeces (eggs of the two species are indistinguishable) .



Taenia solium (cysticercus cellulosae)



Egg of *Taenia* spp.

Cysticercosis Disease

Human acquired the eggs of *T. solium* by :

1. Autoinfection .
2. Accidental ingestion of eggs with food and water .

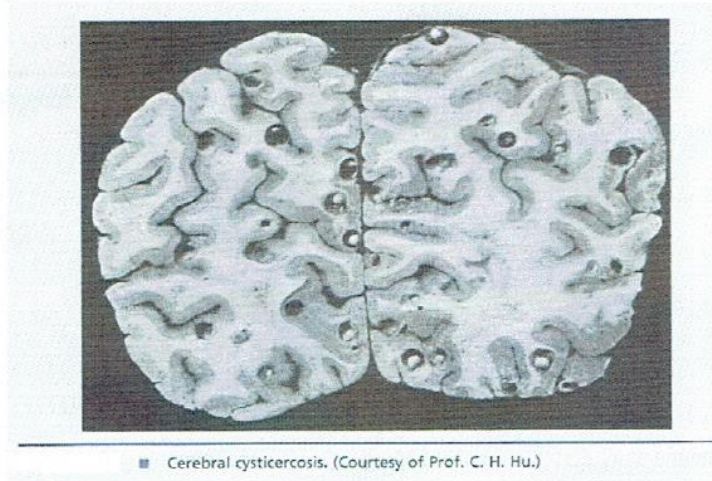
The eggs lose their outer covering, allowing the developing oncosphere to invade :

1. Blood stream .
2. Tissues .
 - Voluntary muscles .
 - Brain .
 - Eye .

Diagnosis :

The diagnosis occurs by :

1. Biopsy of nodules .
2. X – ray examination .
3. Various serological tests also :
 - ELISA .
 - IHA .

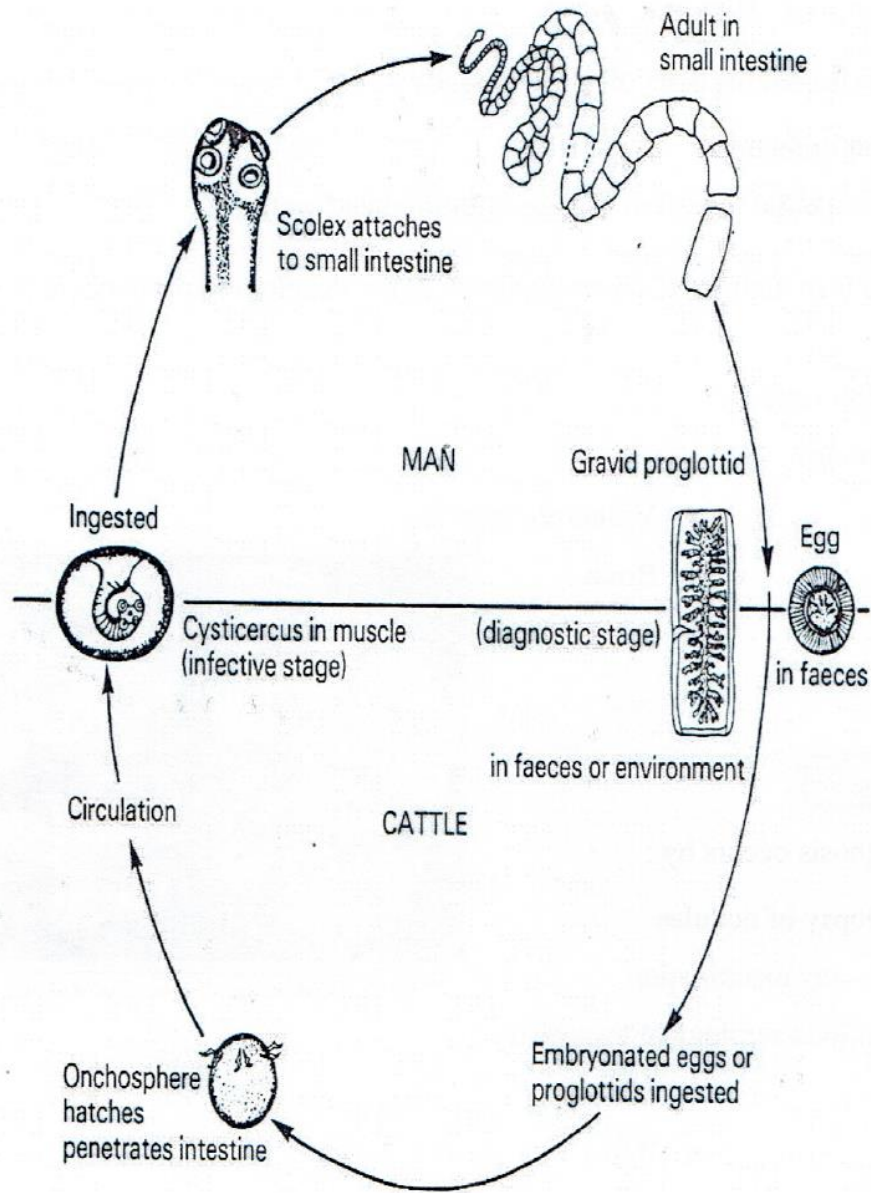


Clinical aspects :

The common symptoms are :

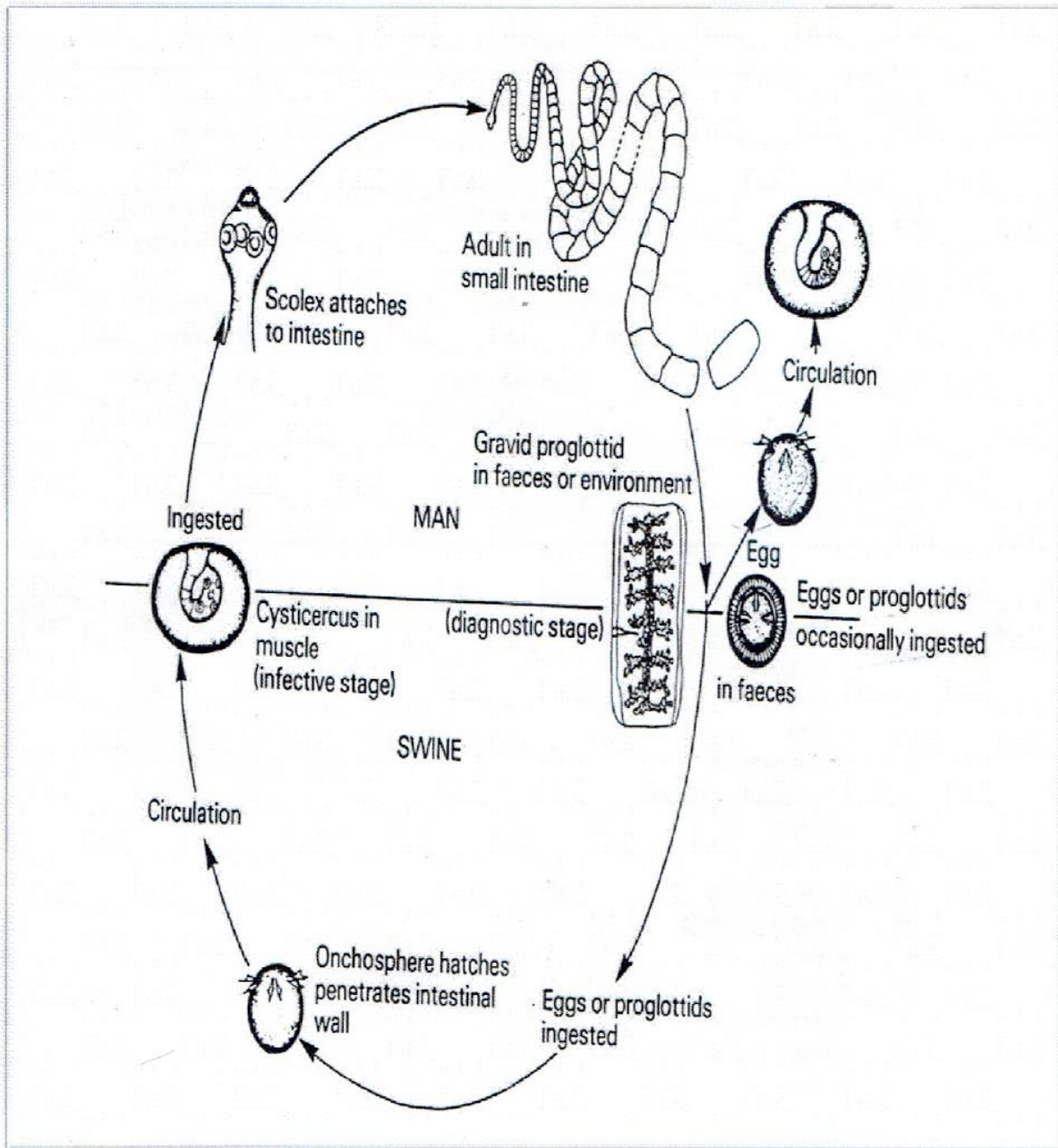
1. Palpable cutaneous nodules .
2. Epileptiform fits .
3. Cyst begins to die and are calcified in 3 – 6 years .

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Life cycle of *Taenia saginata*

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Life cycle of *Taenia solium*

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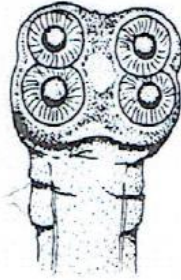
Comparative morphology of *T. saginata* and *T. solium*

	<i>T. saginata</i>	<i>T. solium</i>
<i>Scolex</i>	4 suckers no hooks	4 suckers rostellum with hooks
<i>Egg</i>	Radially striated embryophore	Radially striated embryophore
<i>Mature Segment</i> Ovary	2 large lobes	1 small and 2 large lobes
Testes	Small follicular testes 300 to 400	Small follicular testes 150 to 200
<i>Gravid Segment</i> Uterine branches	15 to 30	7 to 12

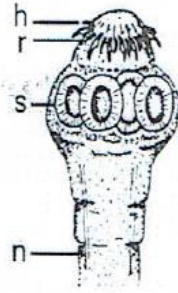
- h = hooks
- r = rostellum
- s = suckers
- n = neck
- e = embryophore
- he = hexacanth embryo
- t = testes
- u = uterus
- vd = vas deferens
- go = genital opening
- v = vagina
- ot = ootype
- vi = vitelline gland
- osl = small lobe of ovary
- o = ovary

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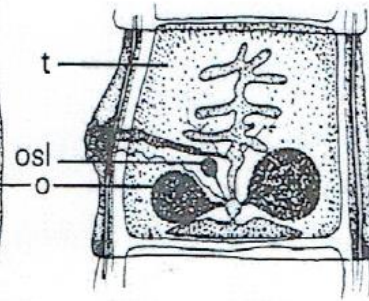
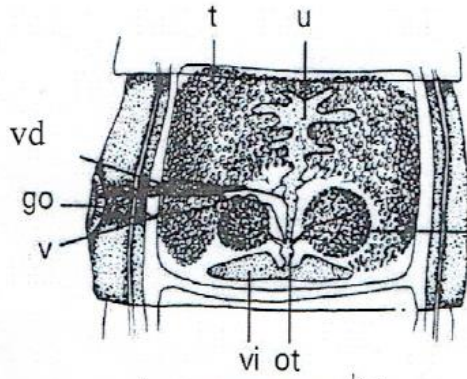
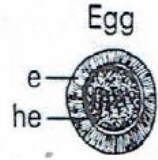
Taenia saginata



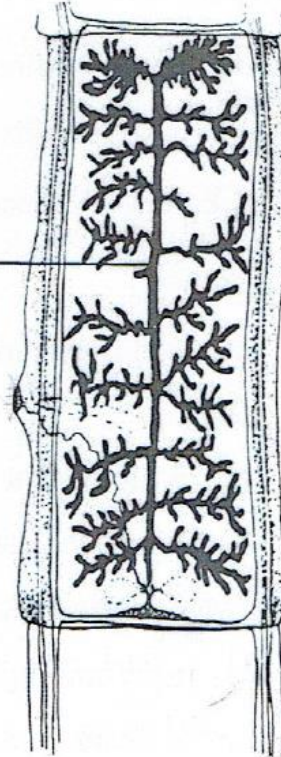
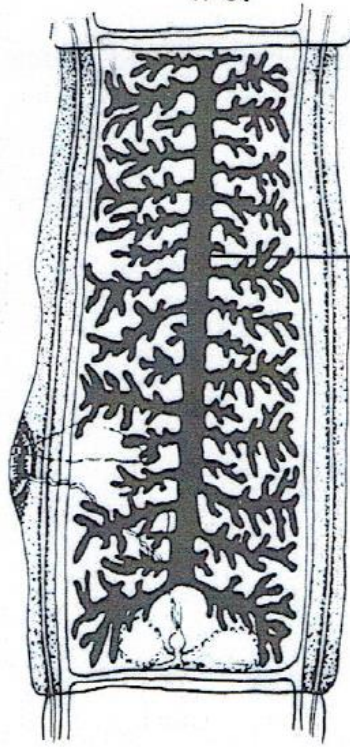
Taenia solium



Scolex



Mature proglottid



Gravid proglottid

4K