

Department of Veterinary Parasitology

Topic: Poultry tape worm

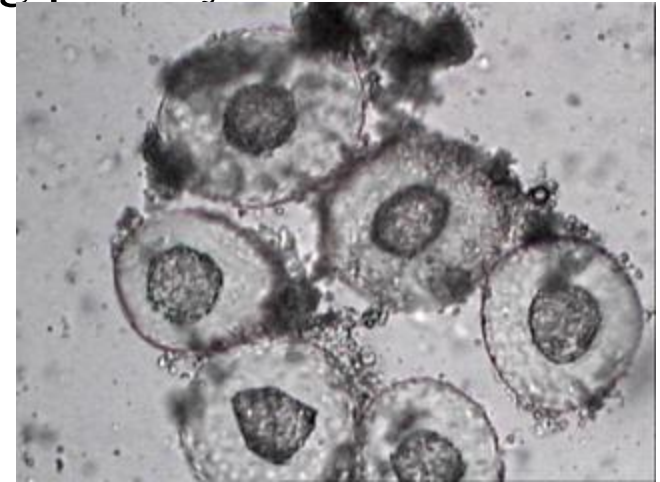
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TAPEWORMS OF POULTRY

There are 10 species of tapeworms affecting poultry.

- ▶ *Davainea proglottina*
- ▶ *Raillietina tetragona*
- ▶ *R. echinobothridia*
- ▶ *R. cesticillus*
- ▶ *Cotugnia digonopora*
- ▶ *Choanotaenia infundibulum*
- ▶ *Hymenolepis carioca*
- ▶ *H. contaniana*
- ▶ *H. lanceolata*
- ▶ *Fimbriaria fasciolaris*



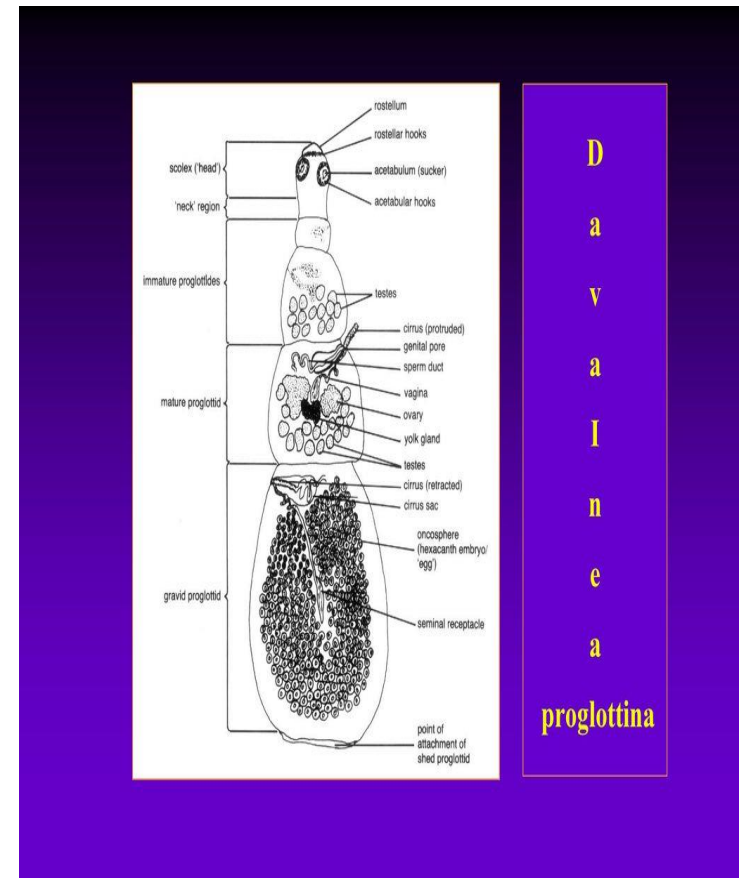
Poultry Tapeworm Eggs

DAVAINA PROGLOTTINA

Common name	Dwarf tapeworm of poultry
Host	Chicken and pigeon
Location	Duodenum
I/H	Slug (snail without shell). <i>Limax</i> and <i>Arion</i> species

Morphology

- ❖ The worms are microscopic in nature, about 0.5 to 3mm in length. They have only 4 to 9 segments.
- ❖ Rostellum is retractable and armed with hammer shaped hooks.
- ❖ Suckers also armed with hooks.
- ❖ Each segment has single set of genital organ.
- ❖ Genital pore opens regularly alternate.
- ❖ In the gravid segment, the uterus is replaced by egg capsule.
- ❖ Each egg capsule contains single egg.

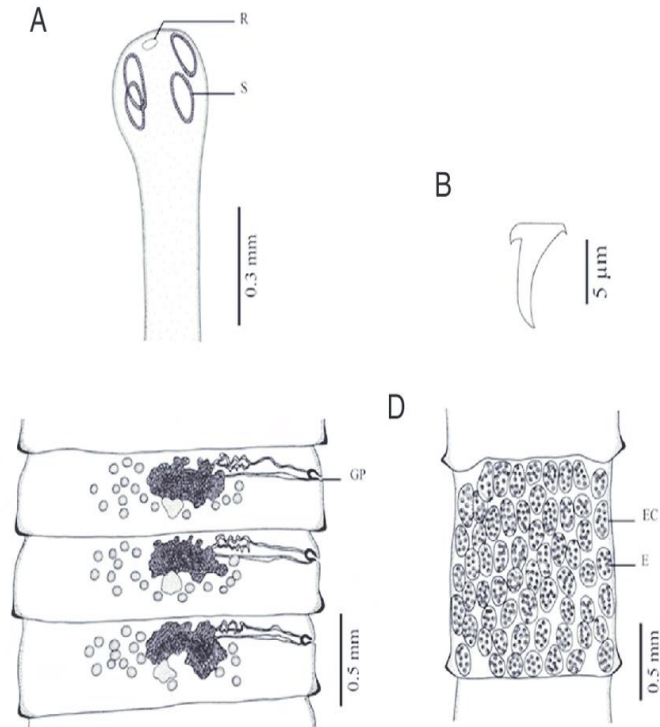


RAILLIETINA TETRAGONA

Common name	Largest poultry tapeworm
Host	Chicken, pigeon and guinea fowl
Location	Posterior half of the small intestine
I/H	Ants. (<i>Pheidole</i> spp. and <i>Tetramorium</i> spp.)

Morphology

- ❖ Adults are up to 25 cm in length. Scolex is smaller than the *R.echinobothridia*. Rostellum is armed with 1 to 2 rows of hooks. Suckers are oval in shape and armed with hooks.
- ❖ Each segment has single set of reproductive organs genital pore opens unilaterally.
- ❖ Each egg capsule contains 6 to 12 eggs.



RAILLIETINA ECHINOBOTHRIDIA

Host	Chicken and turkey
Location	Small intestine
I/H	Ants. (<i>Tetramorium</i> spp.)
Causes	Nodular taeniosis

Morphology

- ❖ Scolex is large in size when compared to *R. tetragona*.
- ❖ Rostellum heavily armed with two rows of hooks. Suckers are circular in shape.
- ❖ Each segment has single set of genital organ. Genital pore irregularly alternate
- ❖ Gravid segments are separated by windows in progottids.
- ❖ Each egg capsule contains 6 to 12 eggs.

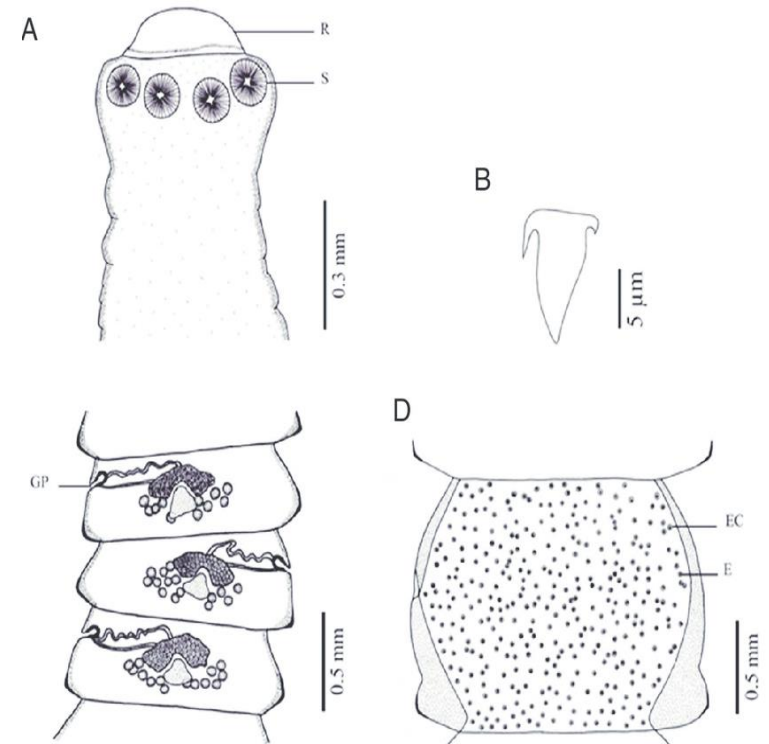


RAILLIETINA CESTICILLUS

Host	Chicken
Location	Small intestine
I/H	Dung beetles

Morphology

- ❖ Usually 4 cm in length. Rarely it attains 15 cm. Scolex is very wide.
- ❖ Large rostellum armed with 400 to 500 small hooks.
- ❖ Suckers are indistinct and are not armed.
- ❖ Each segment contains single set of genital organs. Genital pore unilateral.
- ❖ Each egg capsule has single egg.

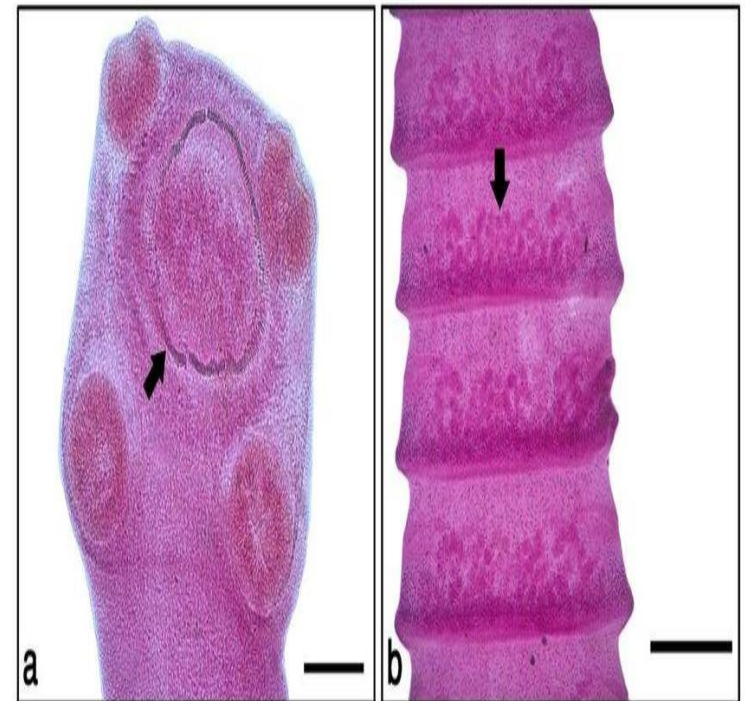
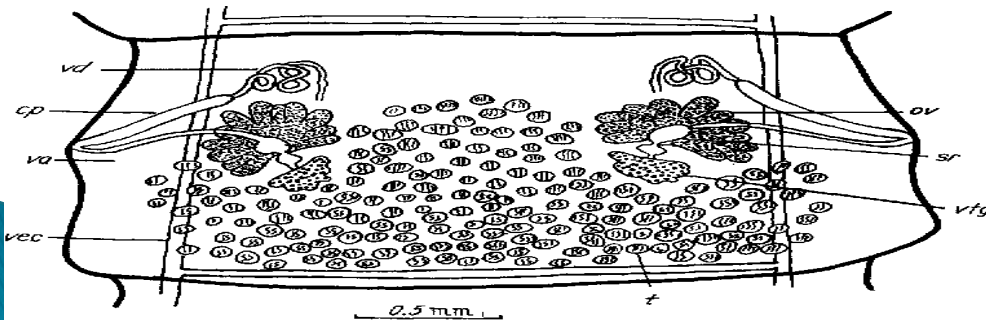


COTUGNIA DIGONOPORA

Common name	Double pored poultry tapeworm
Host	Chicken
Location	Small intestine
I/H	Ants. (<i>Pheidole</i> spp., <i>Monomorium floricola</i>)

Morphology

- ❖ Rostellum is armed with two rows of hooks.
- ❖ It has cup like muscular suckers.
- ❖ Each segment contains two sets of genital organs.
- ❖ Eggs capsule contain single egg.



AMOEBOTÆNIASPHENOIDES

Host	Chicken
Location	Small intestine
I/H	Earthworm

Morphology

- ❖ Small worm. Elongate triangular shape. 4 mm long and 1 mm wide.
- ❖ Rostellum bears 12-14 hooks.
- ❖ There are about 20 proglottids.
- ❖ Testes are 12 or more in number and lie near the posterior border of the segment.
- ❖ Uterus is sac-like and slightly lobed.



HYMENOLEPIS CARIOCA

Host	Chicken
Location	Small intestine
I/H	Dung beetles, flour beetles and <i>Stomoxys calcitrans</i>

Morphology

- ❖ Rostellum armed with spanner shaped hooks.
- ❖ Segments are very small. Each contains single set of reproductive organ. Genital pore is unilateral.
- ❖ Each segments contains three testes. One testes on poral side while the other two on aporal side.
- ❖ Eggs are covered with 3 layers and is rugby ball shaped.



HYMENOLEPIS LANCEOLATA

Host	Ducks
Location	Small intestine
I/H	Aquatic crustaceans

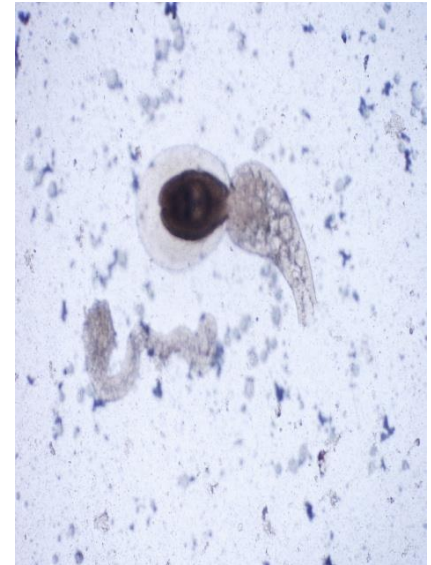
Morphology

Similar to *H.carioca*

- ❖ Rostellum armed with spanner shaped hooks.
- ❖ Segments are very small. Each contains single set of reproductive organ. Genital pore is unilateral.
- ❖ Each segments contains three testes. One testes on poral side while the other two on aporal side.
- ❖ Eggs are covered with 3 layers and is rugby ball shaped.

LIFE CYCLE OF POULTRY TAPEWORMS

- ▶ The gravid segments are passed in the droppings of birds and are crawling on the surface of droppings, during this process, eggs are released. Egg contains hexacanth embryo.
- ▶ The eggs are ingested by intermediate hosts where they hatch and develops into cysticercoid in about 3 weeks time. Infection of poultry by ingestion of infected I/H.



EPIDEMIOLOGY AND PATHOGENESIS

Epidemiology

- ▶ Tapeworm infections are common in free range birds than the intensive system of rearing. Since free range birds have more access to eat I/H than birds reared under confined environment.
- ▶ Sometimes heavy tapeworm infection occurs in intensive system of management due to this system provide conducive environment for breeding of I/H like flies, beetles and ants.

Pathogenesis

- ▶ *D. proglottina* is most pathogenic tapeworm. The worms are penetrate deeply between the villi causes necrosis and haemorrhagic enteritis. Sometimes death may occur due to intestinal obstruction.
- ▶ Chronic infection characterized by reduced growth rate, emaciation and weakness.
- ▶ *R. echinobothridia* is most pathogenic causes nodules formation in the intestine is called as “**Nodular taeniasis**” in poultry. Hyperplastic enteritis may also occur.
- ▶ All other tapeworms are less pathogenic but in heavy infection results in reduced egg production and general weakness.

DIAGNOSIS, TREATMENT AND CONTROL

Diagnosis

- ▶ Macroscopic or gross examination of dropping for the presence of gravid segment.
- ▶ PM examination of representative bird from affected flock.

Treatment

- ▶ Niclosamide - 75 mg/Kg b wt.
- ▶ Fenbendazole - 5 mg/Kg b wt.
- ▶ Aricoline hydrobromide (Arica nut).
- ▶ Praziquantel - 15 mg/Kg b wt.
- ▶ Closantel - 7.5 mg/Kg b wt.

Control

- ▶ Elimination of I/H is very important by
 - Hygienic maintenance of poultry shed.
 - Applying chemical compounds like BHC and HCH.
 - Insect growth regulators like larvadex may be used against *Musca* spp.
 - Laris (Cyromazine) - Chitin inhibitor may be used against I/H develop.
- ▶ Periodical deworming of birds.

*Thank
you*

