Medical Academy named after S.I. Georgievsky
of Vernadsky CFU
Department of Biology

# *Fasciola hepatica*

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# Classification

- Kingdom: Animalia
- Phylum : Platyhelminthes
- Class : Rhabditophora
- Order: Plagiorchiida
- Family : Fasciolidae
- GENUS : Fasciola
- Species: F.hepatica

# GEOGRAPHIC DISTRIBUTION

- Fasciola hepatica is mostly found in all the continents.
- It is mostly found in the countries where cattle or sheep are raised.
- It is found in countries like Asia, Africa and the Middle east.

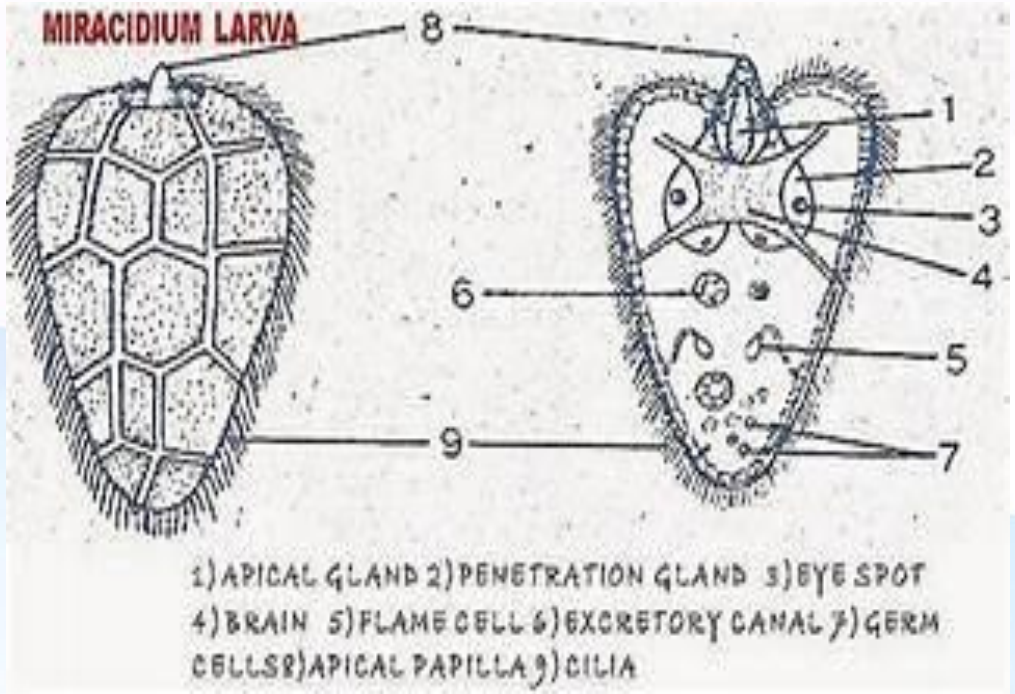
# MORPHOLOGY

It has 7 forms:

1. Adult: The adult form is about 3×1.5cm. it is leaf like with large anterior cone. It has an anterior oral sucker and ventral sucker. Its has 2 testis which is branched, and its branched ovary has vitelline gland and it has a common genital pore in front the ventral sucker. The alimentary canal consists of intestinal caecae which has simple medial branches and compound lateral branches.

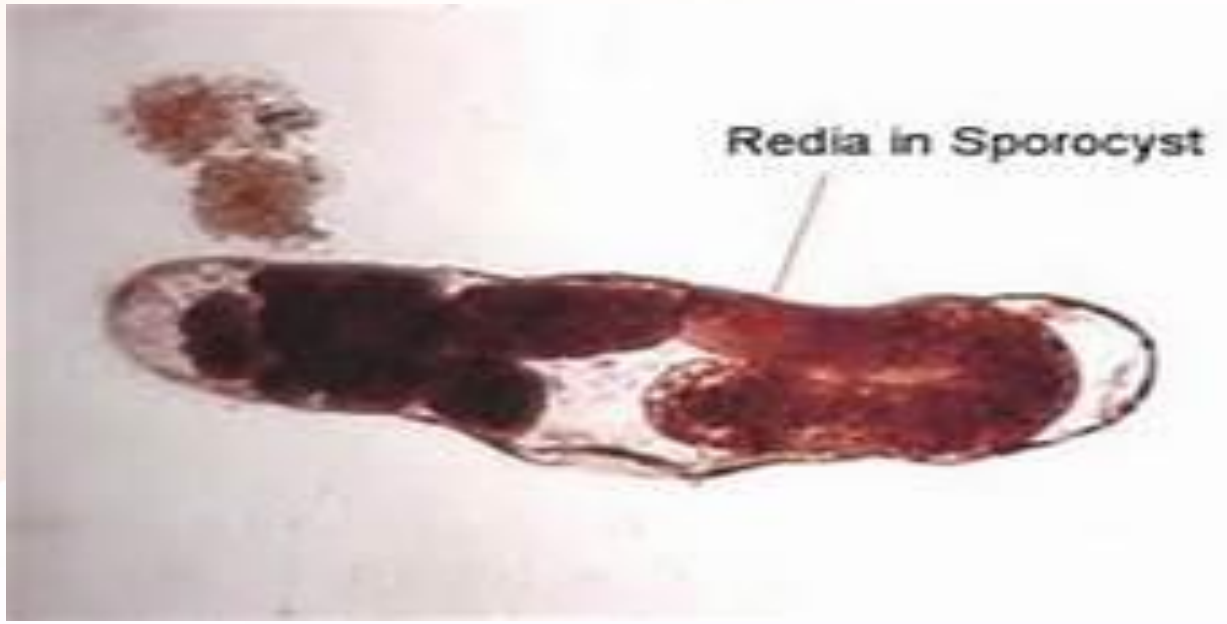
2. EGG. - Operculated oval and yellowish brown and of 140×70

3. MIRACIDIUM : its a pyriform ciliated organism



4.SPOROCYST: sac like organism

5.REDIA : cylindrical organism




6.CERCARIA: it has a body with a simple tail

7.ENCYSTED METACERCARIA:
cercaria loses its tail and secretes a cyst wall.

# Life cycle

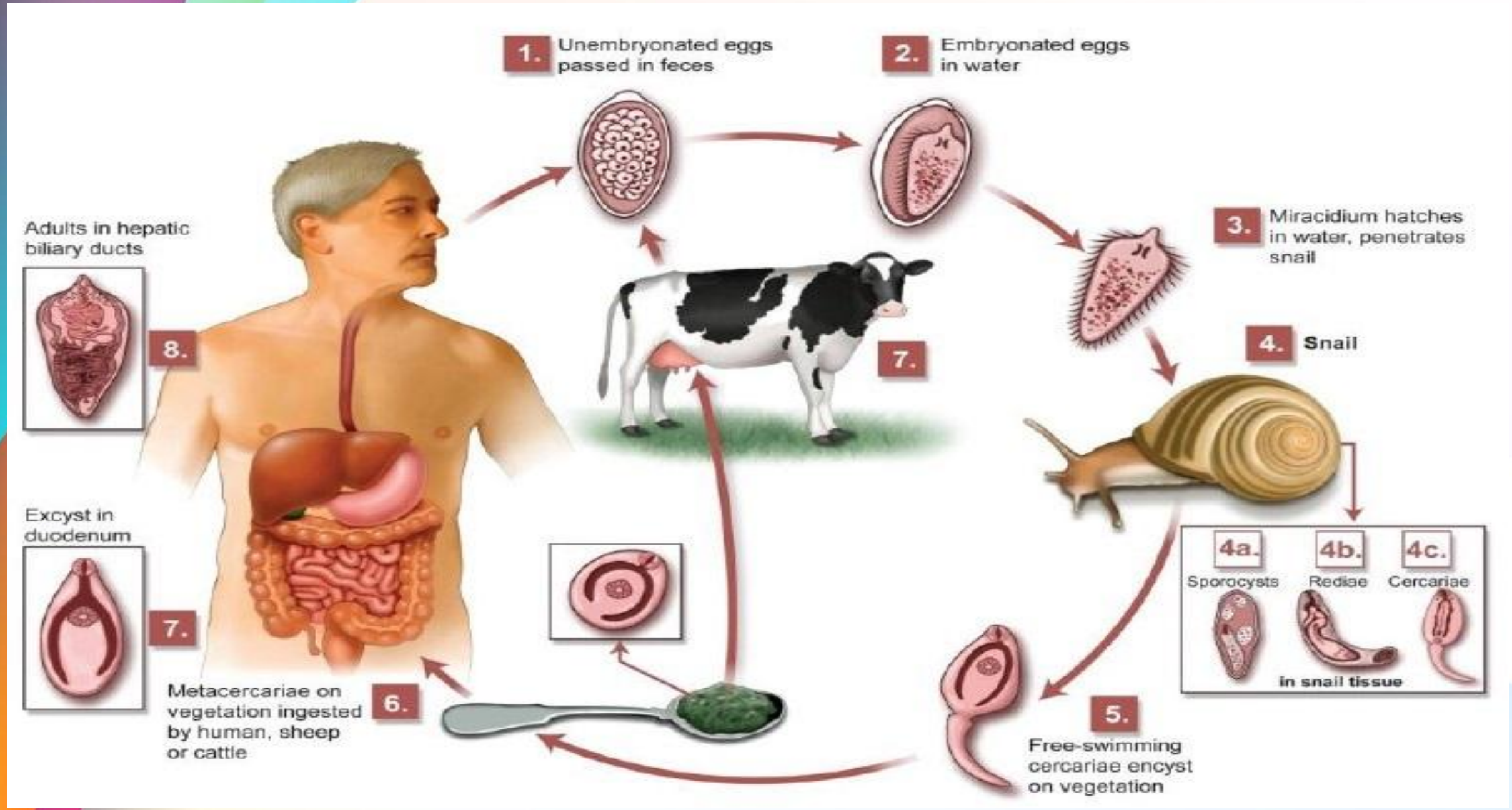
1.The adult fasciola inhabits bile passages of its reservoir host (herbivores animals) and definitive host(man)

2. Then the eggs are passed through the faeces . In the water the miracidium develops and it then hatches within the gap of 2 weeks. The miracidium swims in the water and it dies within 24hours if it doesn't find the snail.

3. It penetrates the tissues of its intermediate host which is the lymnaea truncatula. It then changes into sporocyst dorm and gives rediae and later cercariae within 30 days. These daughter cercaria leave the snail and it encysts on water plants.

4. When the final host ingests raw vegetation or eater containing metacercaria ,it is infected.

5. In the intestine the cyst is dissolved and the metacercaria attacks the liver and the bile duct. This takes place in the gap of 8 weeks


1. Unembryonated eggs passed in feces
2. Embryonated eggs in water
3. Miracidium hatches in water, penetrates snail
4. Snail
4a. Sporocysts
4b. Rediae
4c. Cercariae
in snail tissue
5. Free-swimming cercariae encyst on vegetation
6. Metacercariae on vegetation ingested by human, sheep or cattle
7.
8. Adults in hepatic biliary ducts
7. Excyst in duodenum

# Progress of infection

- Ingestion of Metacercariae
- Ex-cyst in duodenum
- Burrows through intestinal wall
- Enters peritoneal cavity
- Migrates to liver

# Pathogenesis

It causes serious liver damage , bile duct inflammation and pain in the right hypochondrium, Asthemia that is lack of energy and utricuria that is rashes are observed. Prolonged fever , hepatomegaly that is enlarged liver is also seen

# Laboratory Diagnosis

- Serological methods
- Ultrasound
- computed tomography

# Epidemiology

Fasciola hepatica is a parasite that is located in the liver of ruminants with the possibility to infect horses, pigs and humans. The parasite belongs to the Trematoda class, and it is the agent causing the disease called fasciolosis.

# PREVENTION AND CONTROL

- Mass treatment of animals
- Proper washing of water plants or vegetables before consumption should be done.
- Proper cooking of liver.
- Safe supply of water is a major prevention.
- Potable and clean eater to be consumed.
- Elimination of water vegetation and snail control can also be done.