

Genus - *Dicrocoelium*

Instructor:

Dr R. K. Sharma

Assistant Professor

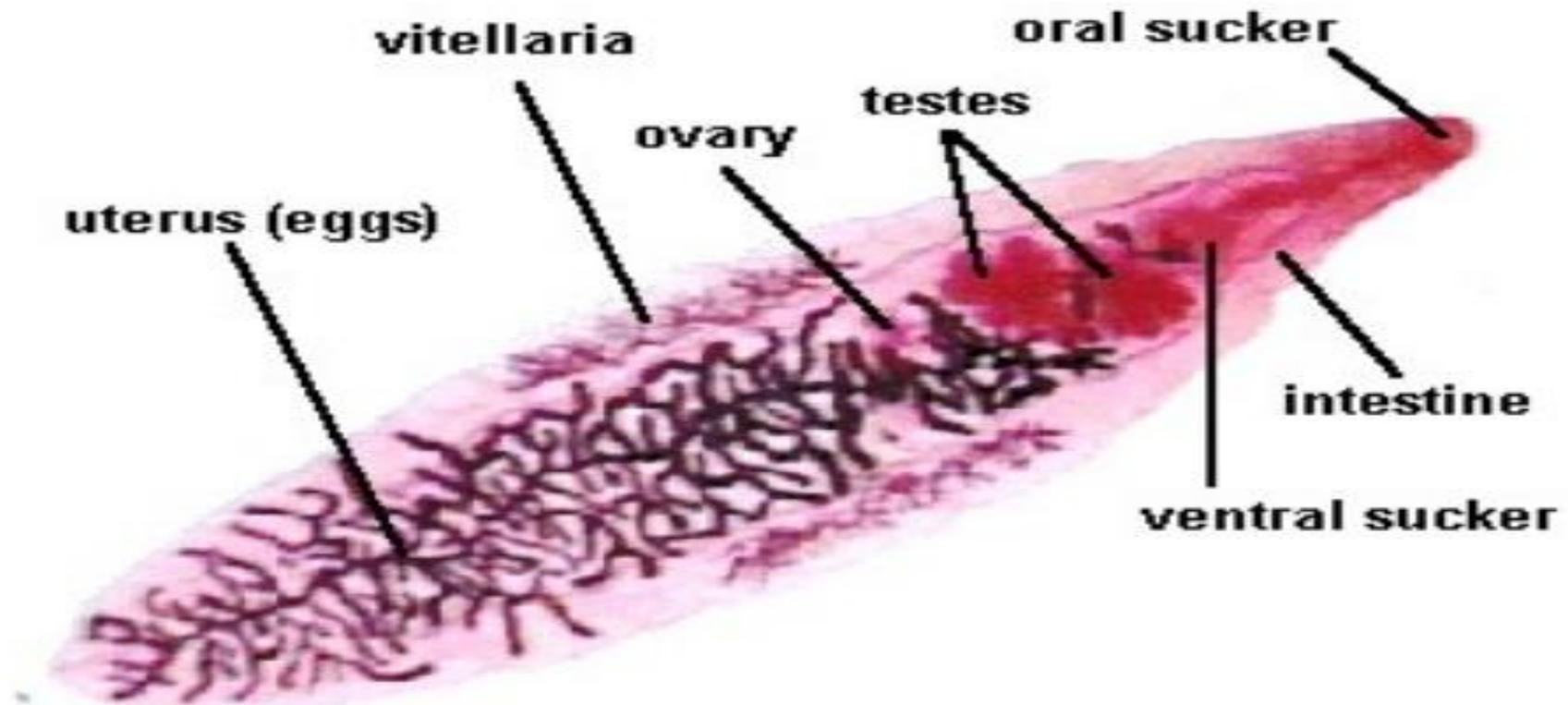
Veterinary Parasitology

Bihar Veterinary College, Patna

Dicrocoelium : Morphology

- The lancet liver fluke is flat, transparent, and spindle-shaped.
- The oral and ventral suckers resemble each other.
- The ventral sucker is located in the first third of the worm.
- The intestine do not extend to the tail of the fluke.
- In the fluke's anterior part, the testes can clearly be seen.
- The testes are located between the caecal branches, caudal to the ventral sucker.
- The ovary is caudal to them, close to the midline.
- The genital pore is located in front of the ventral sucker.
- The vitellaria glands can be distinctly seen at the lateral edges, posterior to the testes.

DICROCOELIUM LANCEATUM

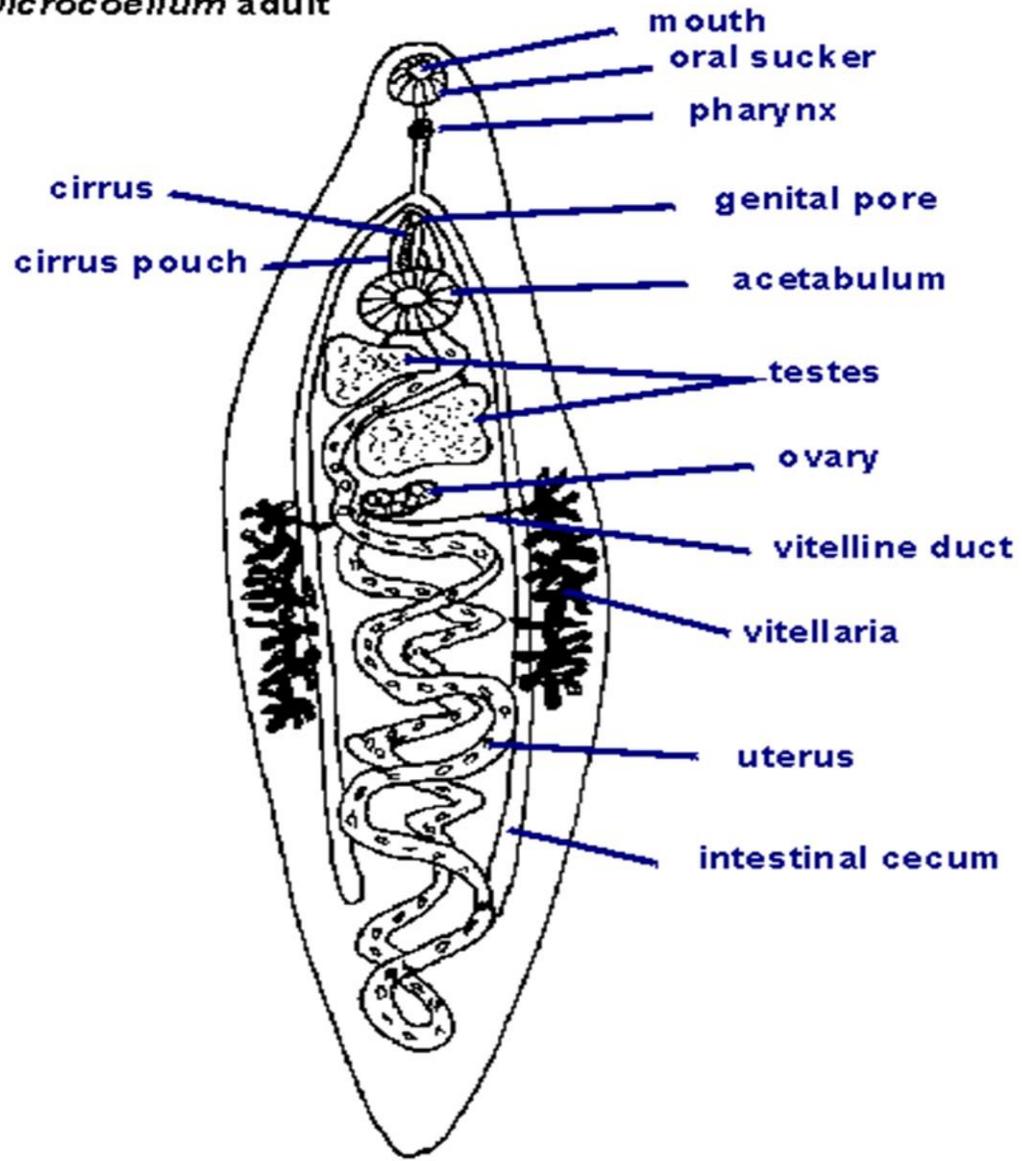


SOURCE-GOOGLE

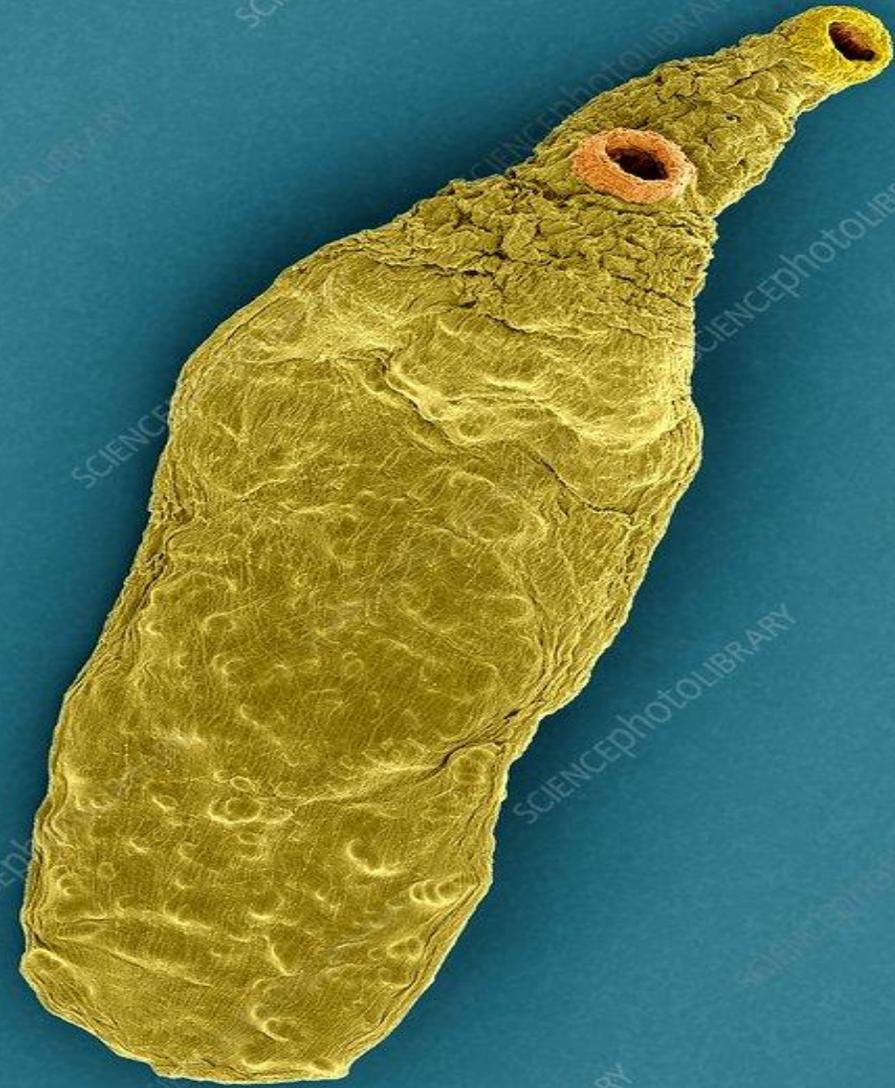
21

Dicrocoelium : Parts of body

Dicrocoelium adult

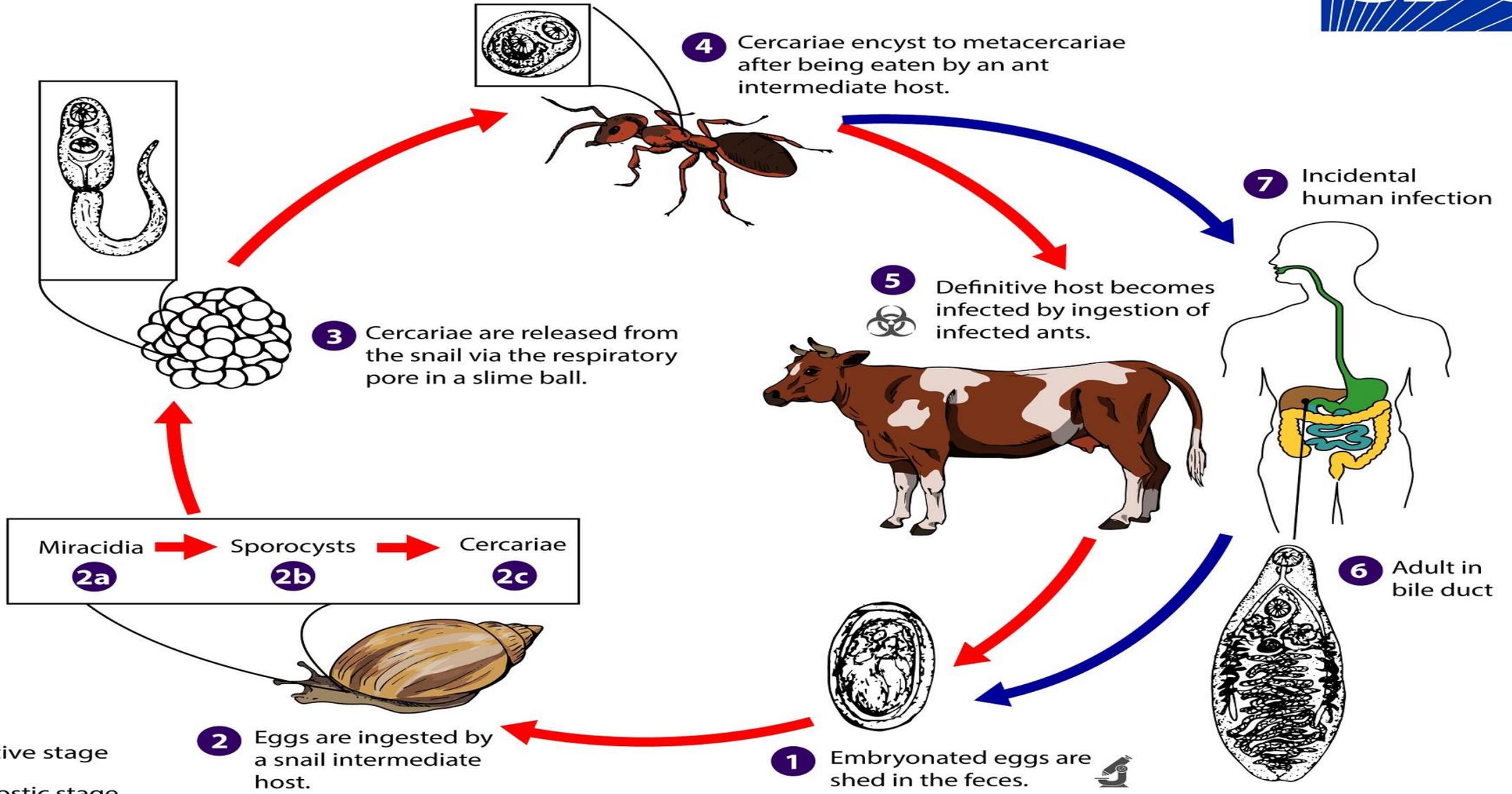


AWS



Dicrocoelium : Life cycle

- The eggs are excreted in the feces.
- First intermediate host, the snail ([*Cochlicopa lubrica*](#)), consumes the feces, and becomes infected by the larval parasites. The larvae (or miracidium) drill through the wall of the gut, settle in its digestive tract then transformed to sporocyst.
- The 2nd generation sporocyst produce cercaria, which is in the form of cyst.
- The second intermediate host, an ant ([*Formica fusca*](#)), then swallows a cyst loaded with hundreds of juvenile lancet flukes. The parasites enter the gut where the cercaria mature into metacercariae.
- The ant goes back to the top of a grass blade until a grazing animal comes along and eats the blade, ingesting the ant along with it, thus putting lancet flukes back inside their host. They live out their adult lives inside the animal, reproducing so that the cycle begins again.



Infective stage
 Diagnostic stage

Dicrocoelium : Life cycle

Dicrocoelium : Mode of transmission

- Due to the highly specific nature of this parasites life cycle, infections mainly occurs in animals.
- Ruminants such as cows and sheep are usually the definitive host, but other herbivorous mammals can also serve as definitive hosts through ingestion of infected ants.

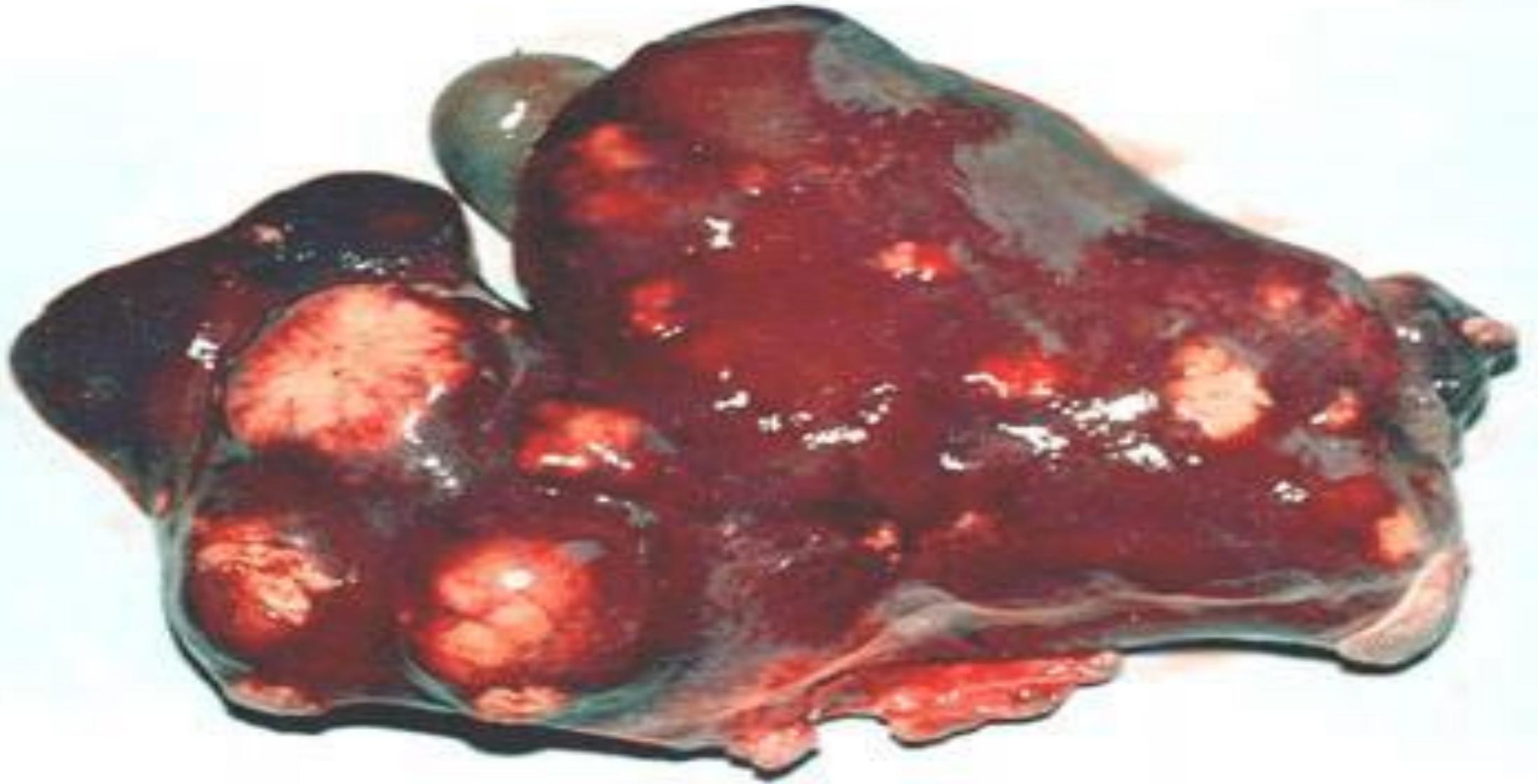


Dicrocoelium : Mode of transmission

Dicrocoelium : Pathogenesis

- *Dicrocoelium* spp. usually infests the gall bladder and bile ducts of herbivores, such as, sheep, goat, cattle.
- Diarrhea caused by *Dicrocoelium* spp. lasting longer than four weeks.
- Although *D. dendriticum* is less pathogenic than *Fasciola hepatica*, it leads to extensive damage in the liver by penetrating even to the most slender bile ducts.
- Symptoms such as irritation in bile ducts, infectious hepatitis, a swollen abdomen, enlarged and painful liver, diarrhea, constipation, eosinophilia, and anaemia are the symptoms also seen in fascioliosis.





Source- Google

Dicrocoelium : lesions

Dr. R.K.Sharma

Dicrocoelium : Diagnosis

- Diagnosis based on the identification of *Dicrocoelium dendriticum* eggs in the faeces .
- Examination of bile or duodenal fluid for detection of eggs is a more accurate diagnostic technique .
- An ELISA using a *Dicrocoelium dendriticum* antigen was able to identify cases of dicrocoeliasis in sheep in 28 days earlier than any traditional methods.

Dicrocoelium : Control

- In the year 2007 the W. H. O. included *Dicrocoelium dendriticum* on its list of organisms to target with its Foodborne diseases.
- Current public health prevention strategies have involved the condemnation of contaminated livers so as to eliminate any possibility for food-borne infection.
- Control of snails can minimize the fluke population.