

Genus : Paramphistomum

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Paramphistomum : Morphology

- Rumen flukes are smaller in size and grayish to reddish in color.
- Their body is not flattened but pear-shaped, with the head at the narrowest end.
- They have two suckers, an oral and a ventral one, the latter much larger and close to the posterior end.
- As other flukes, they have **no external signs of segmentation**.
- The mouth ends in the **pharynx**, a muscular tube that allows sucking.
- The **digestive system** is **blind**, without anus, only opening is the mouth.
- Rumen flukes are simultaneous **hermaphrodites** .

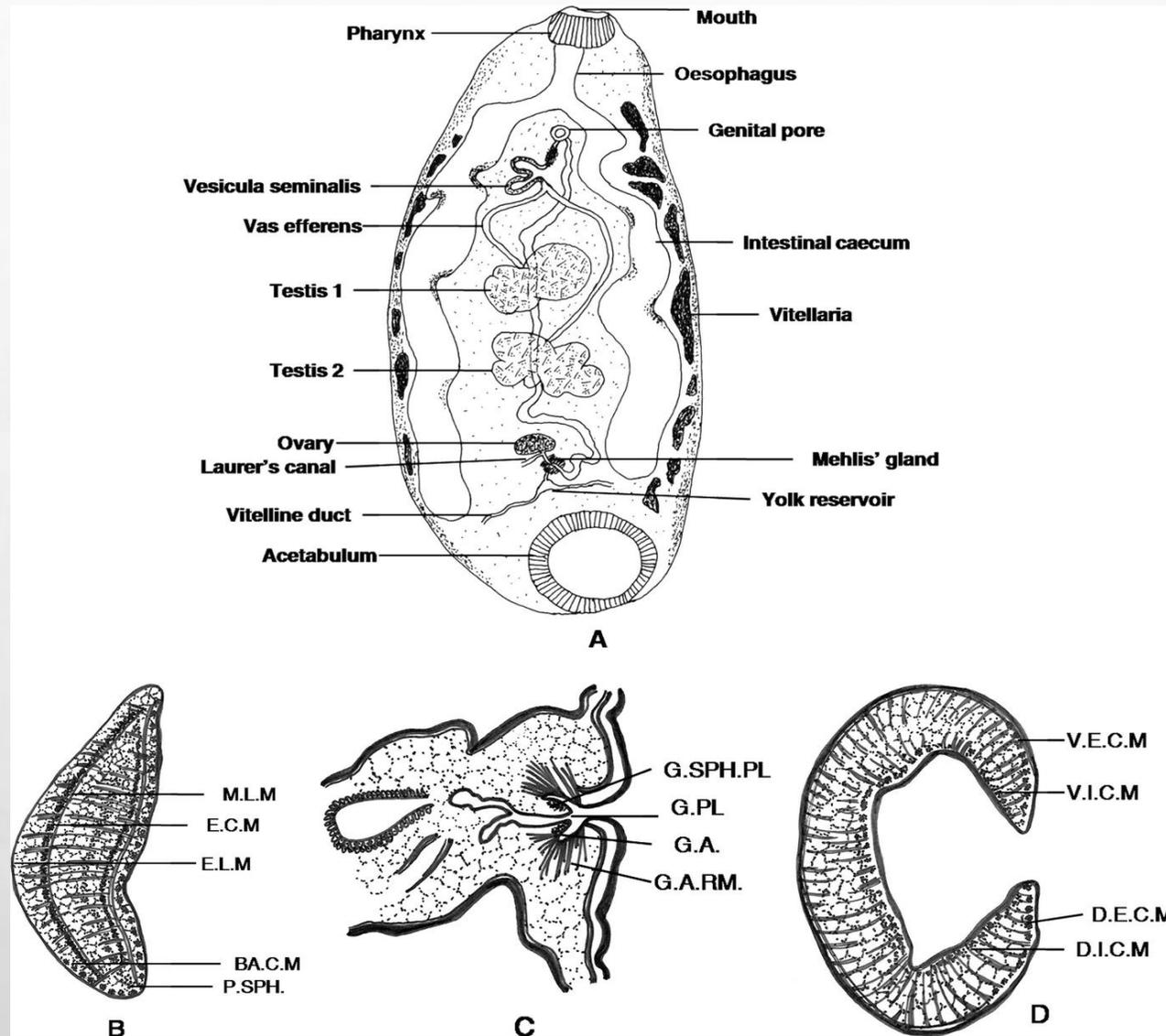


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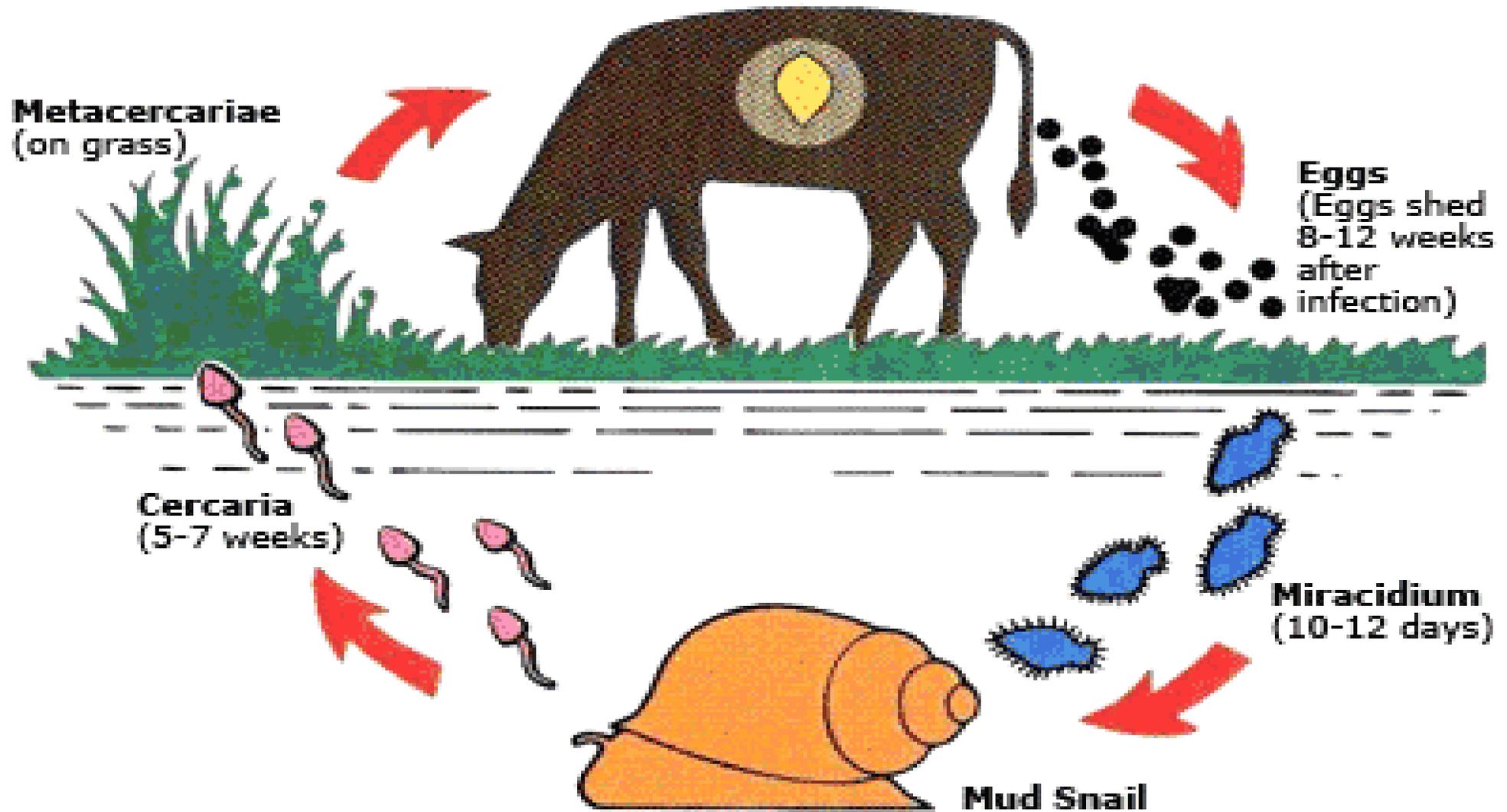
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Paramphistomum : life cycle

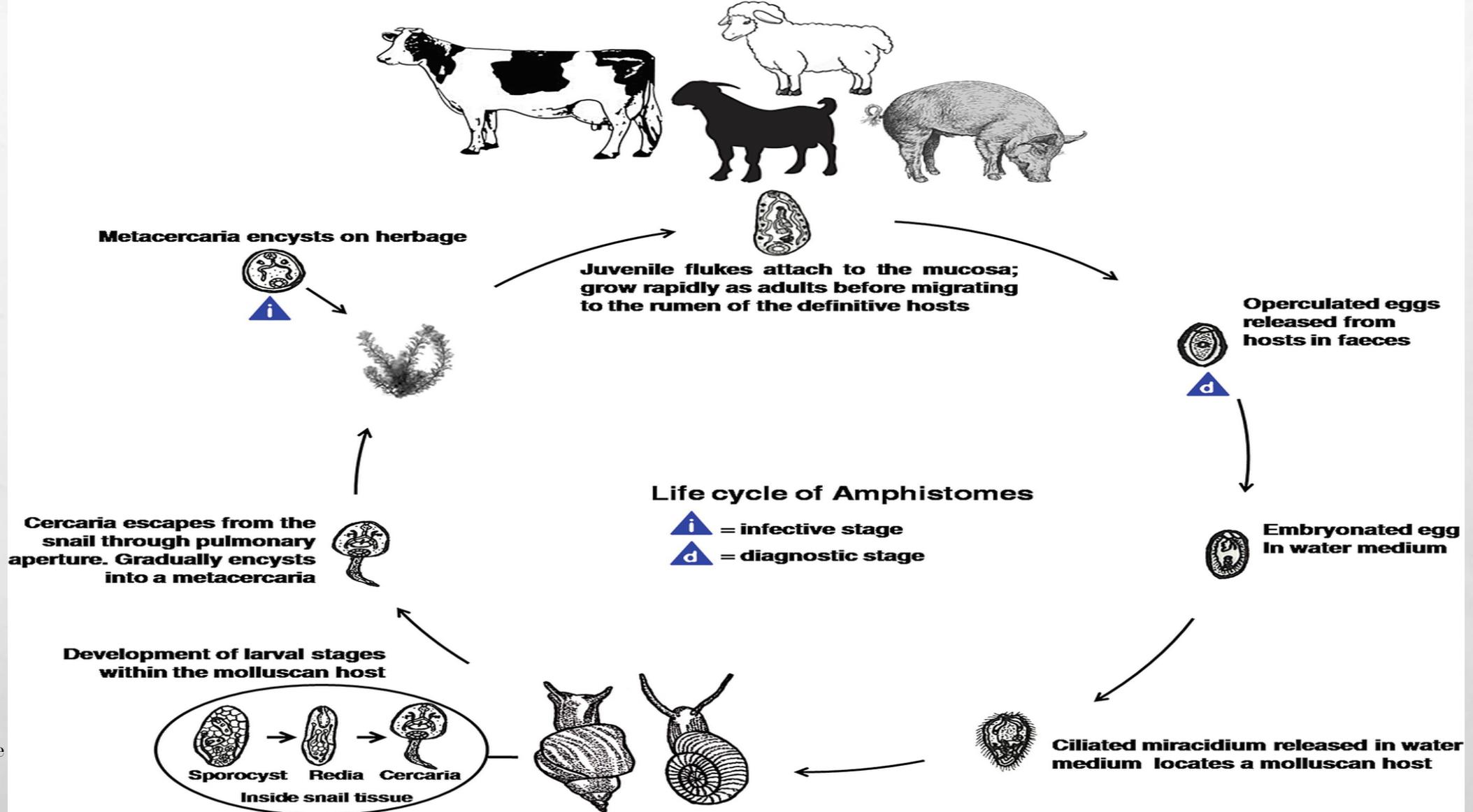
- *Paramphistomum* have an indirect life cycle with freshwater snails as the intermediate hosts.
- Adult flukes in the stomach lay eggs that are shed outside with the feces.
- After 2 weeks **miracidia** hatch out of the eggs. They swim and penetrate into the snail and continue development to **sporocysts** and **rediae**.
- The redia produce daughter rediae which further develop to several **cercariae**.
- These cercariae then leave the snail, attach to the vegetation where they encyst and become **metacercariae**.
- These metacercaria are **infective** for final hosts. Livestock ingests these metacercaria while grazing in contaminated pastures.
- In the small intestine the young flukes leave the cysts, attach to the intestinal mucosa and continue development and finally developed to adult flukes and start producing eggs.



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Parampistomum : life cycle

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Paramphistomum : Pathogenesis

- Symptoms are produced by immature flukes, adult flukes are relatively harmless.
- Paramphistomiasis causes enteritis and anaemia in livestock mammals resulting into severe production and economic losses.
- When the young flukes start to gather in the intestine, there is a watery and foetid diarrhoea which is often associated with high mortality (80-90%) in ruminants.
- Large number of fluke in duodenal mucosa causes acute enteritis.
- Swelling, haemorrhage, discolouration, necrosis, bile duct hyperplasia, and fibrosis appears after extensively damaged of liver tissues



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Parampistomum : life cycle

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Paramphistomum : Diagnosis

- Clinical sign and symptoms indicated by infected sheep and cattle
- The affected animals become severely anorexic or inefficiently digest food, and become unthrifty.
- Foetid diarrhoea is an obvious indication so that fluid faeces are examined for immature flukes.

Paramphistomum : Prevention & control

- Reduction in the snail populations by using molluscicide agents such as copper sulphate is best way to control the fluke population.
- Ensuring an adequate drainage.
- Keeping livestock healthy and well fed also diminishes the harm caused by rumen flukes.