

Zoology
B.Sc I Year Paper - I Invertebrate
UNIT - 4 Phylum Platyhelminthes

Topic- Liver Fluke

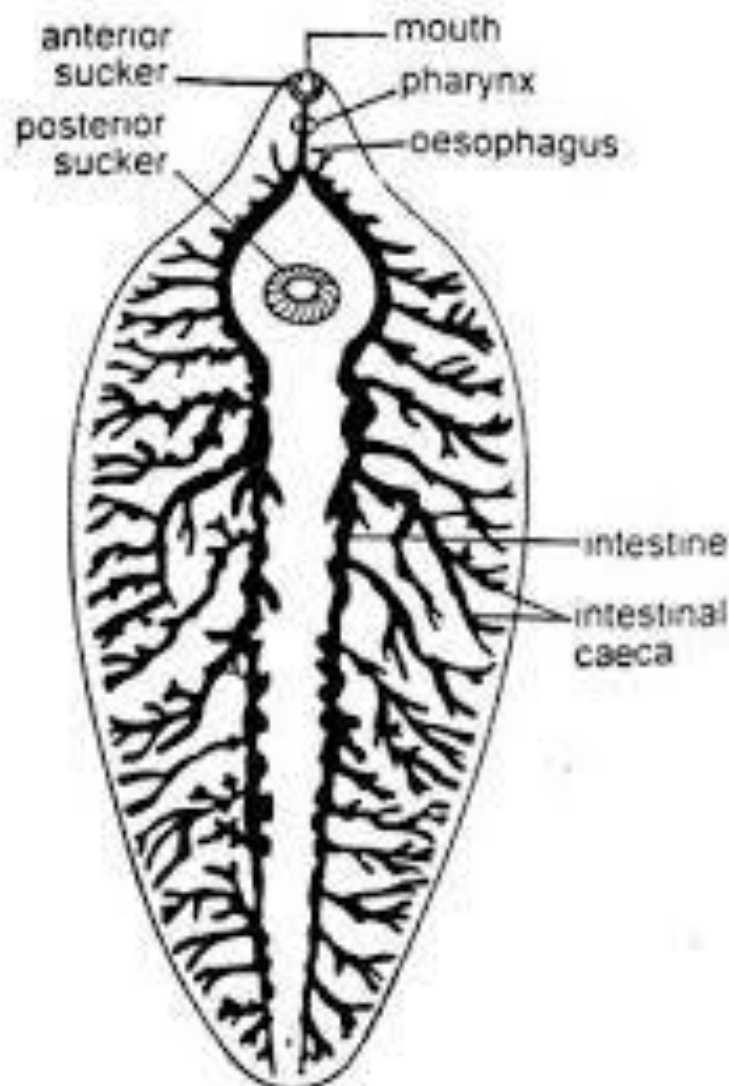
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Morphology: Digestive system:

- Alimentary canal is incomplete as it lacks the anus
- Mouth is situated at the anterior end surrounded by oral sucker
- Mouth leads into an pharynx (bears muscles) which is followed by a narrow oesophagus. Oesophagus leads into intestine. Intestine at once forks into right and left main branches or limbs. Each branch terminates blindly near the rear-end of body and gives out numerous irregular side branches called caeca or diverticula.
- Food and feeding: hungry flukes migrate into smaller bile ducts and capillaries for feeding. They suck up food, lymph, bile and tissue pieces rasped off by oral sucker from the walls of bile passages

Morphology: Digestive system:

- Oral sucker and muscular pharynx serve as an efficient suctorial apparatus
- Digestion is extracellular and takes place in intestine
- No circulatory system, so distribution of digested food is accomplished by the ramifying diverticula of intestine aided by mesenchyme
- Monosaccharide sugars can diffuse directly into the body of fluke through its general surface

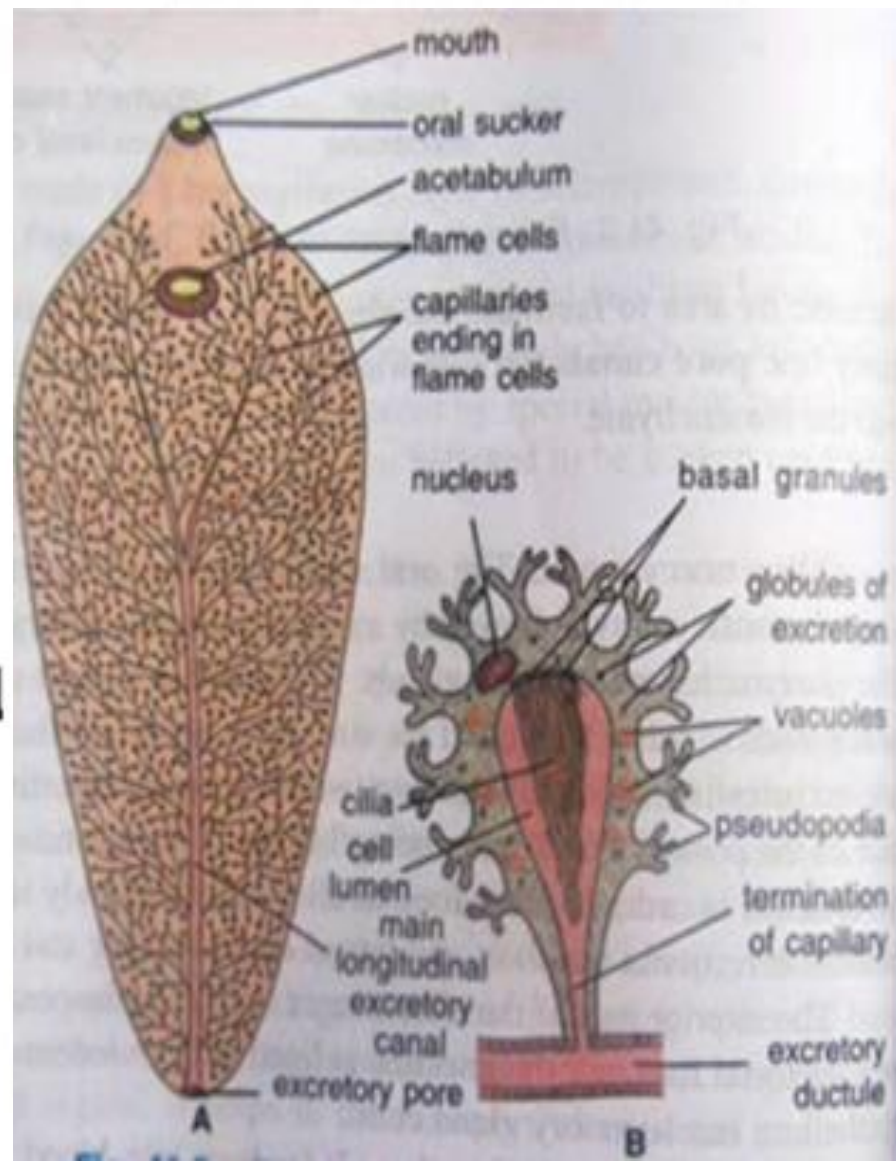


Respiration

- Oxygen content in bile is extremely low
- Usually anaerobic or anoxybiotic respiration
- Glycogen breaks up by anaerobic glycolysis into carbon dioxide and fatty acids
- Lactic acid is the end product of glycolysis.
- If free oxygen is available, aerobic respiration takes place.

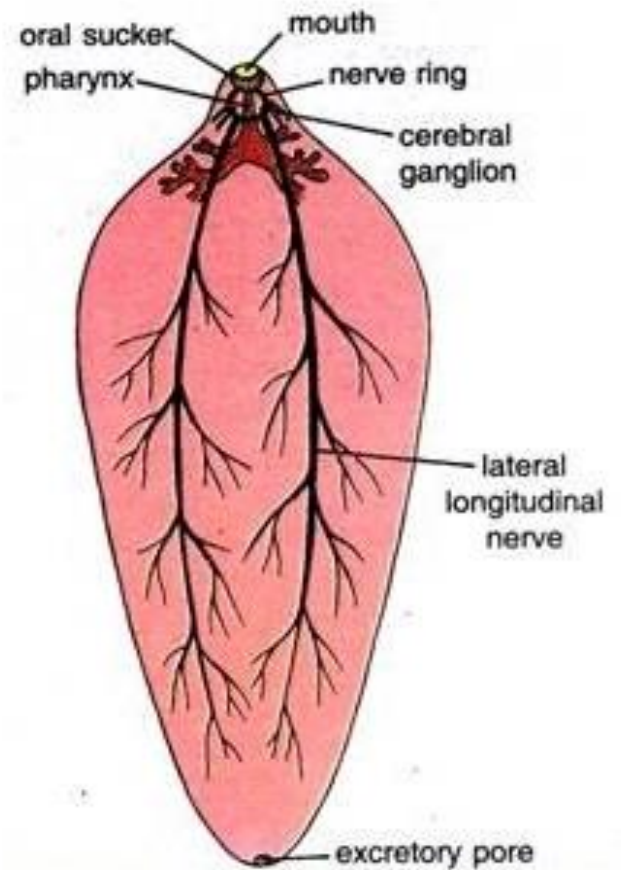
Protonephridial or excretory system

- Comprises a large number of flame cells or flame bulbs or protonephridia
- Flame cells are distributed throughout mesenchyme in a specific pattern; in the living fluke, cilia vibrate like the flickering of a flame, hence the name 'flame cell'
- Single excretory pore situated somewhat ventrally
- Main excretory products of fluke are fatty acids, carbon dioxide and ammonia



Nervous system

- Adult fluke lacks any sense organs
- Nervous system however, is considerably developed
- Brain forms a collar or ring (cerebral ring) around pharynx and bears a pair of lateral cerebral ganglia and a ventral ganglion
- Fine nerves arise from brain and supply the anterior and posterior regions
- Three pairs of longitudinal nerve cords extend posteriorly, giving out numerous fine peripheral branches to various organs



Nervous system.

Reproductive system

- *F. hepatica* is hermaphrodite
- Gogands are well developed and male and female genital ducts open into a common chamber, the genital atrium. It is situated anteriorly in body and opens to the exterior through the common genital aperture or gonopore
- Male reproductive system bears testes, vasa deferentia and seminal vesicle, cirrus sac
- Female reproductive system bears ovary, oviduct and uterus, vitellaria, Mehlis's glands

