

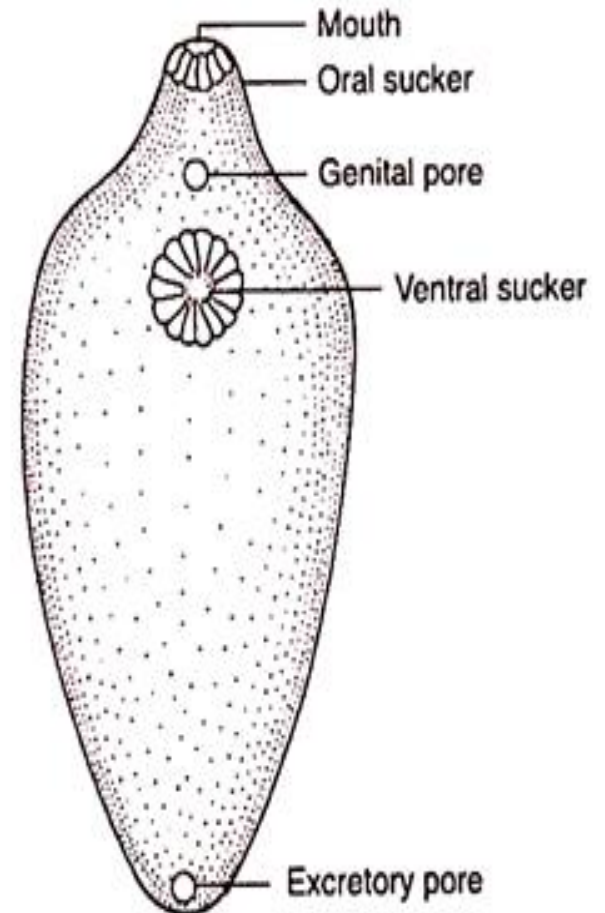
Zoology
B.Sc I Year Paper - I Invertebrate
UNIT - 4 Phylum Platyhelminthes

Topic- Liver Fluke

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Systemic position

□ Phylum	Platyhelminthes
□ Class	Trematoda
□ Order	Digenea
□ Family	Fasciolidae
□ Genus	<i>Fasciola</i>
□ Species	<i>hepatica</i>



Introduction

- Trematodes belonging to class Trematoda are parasitic
- Commonly called flatworms or flukes, on account of their flat, leaf-like form
- Flukes inhabit liver and bile duct of vertebrates like cattle, sheep, goat, rabbit, pig, dog and man
- *F. hepatica* is common liverfluke of sheep and one of the most widely studied trematodes
 - Structure and life history are well-known, but physiology is not much understood
 - Cosmopolitan distribution throughout sheep and cattle raising areas of the world
 - Fascioliasis causes immense damage to the liver-tissues and bile ducts of sheep

Habits and Habitat

- Endoparasite which completes its life history in two hosts
- Adult *F. hepatica* occurs in the liver and bile passages of sheep, the primary host
- It may also occur in some other vertebrates, like goat, horse, dog, ass, ox, deer, antelope, rabbit, elephant, man, monkey, etc.
- A sheep may harbour as many as 200 adult flukes in its liver and cause liver rot
- *F. hepatica* spends a part of its life history in an intermediate host, a freshwater gastropod

Morphology

- **Shape and size:** body is soft, oval in outline, dorso-ventrally fattened and leaf-like
- About 1.8 cm. long and maximum width is about 0.4 to 1.5 cm in the middle region of body. Body tapers anteriorly as well as posteriorly. Anterior end is somewhat broad and rounded, while posterior end is bluntly pointed.
- **Colouration:** usually pinkish, blackish or brownish vitelline glands along the lateral margins; the alimentary canal appears brownish due to ingested bile of the host
- **Oral cone:** anterior end of the body is drawn out into a prominent conical projection, termed the oral cone or head lobe that bears mouth

- **Suckers:** two small suckers, anterior and ventral, no hooks and spines
 - **a. anterior sucker:** mouth is situated at the centre and bottom of a cup-shaped muscular organ called anterior or oral sucker; 1 mm in diameter; acts as an ideal suctorial organ serving for adhesion as well as ingestion
 - **b. ventral sucker:** bowl like adhesive sucker; 3-4 mm. behind the oral sucker, situated mid-ventrally; also known as acetabulum; without an aperture and has a diameter of about 1.6 mm.
- **Apertures:** In addition to mouth, there are two more permanent apertures on body. A small common genital aperture or gonopore and a single excretory pore. Alimentary canal incomplete as there is no anus.

- **Scales:** body is covered with cuticle (tegument)
 - From the cuticle project numerous scales or spinules
 - Protect the body and help in locomotion
- **Body wall** of Fasciolo consists of tegument, basement membrane, musculature and mesenchyme.
 - **Tegument:** thick, non-ciliated body covering
 - Capable of withstanding the action of host's digestive juices. Ideal body covering of the endoparasite
 - Numerous microscopic and broad backwardly directed spinules or scales render protection to body and facilitate locomotion