FASCIOLA HEPATICA

(Liver Fluke)

Q → Describe structure and anatomy of Fasciola hepatica

Fasciola hepatica is commonly known as liver fluke or distomum hepaticum. Adult is a parasite in the livers and bile duct of sheep, cow etc. It causes a disease called liver-rot. It is digenetic endo parasite of snail and vertebrates, therefore their life shows alternation of hosts.

STRUCTURE:

It is dorsoventrally flattened, leaf like of 19mm to 38.1mm in length and about 12.7mm width. Anterior end is triangular while posterior end is tapering. The anterior end terminate into a projection, which is called apical lobe or cephalic lobe cone or head lobe. At the apex of head lobe is situated a small opening called mouth, which is surrounded by anterior muscular sucker, called oral or anterior sucker.

At a short distance behind the head lobe is situated another sucker known as ventral sucker or acetabulum situated on the ventral side. ventral sucker has no connection with the interior of the body.

Suckers serves for the attachment of the liver fluke to the wall of the bile passage. Just infront of the acetabulum there is a common genital pore. At the posterior end is excretory pore. During breeding season, on the dorsal surface is found the opening of Laurer's Canal.

Fig. External feature of Fasciola

Body wall:

It consists of three layers. Outermost layer is the cuticle, a secretion of mesenchyme, middle layer consists of voluntary muscles of three types ⓐ circular muscles fibres ⓑ longitudinal muscle fibres ⓒ diagonal muscle fibres. The third layer is the mesenchyme the space between the internal organ are filled by parenchymatous cells.

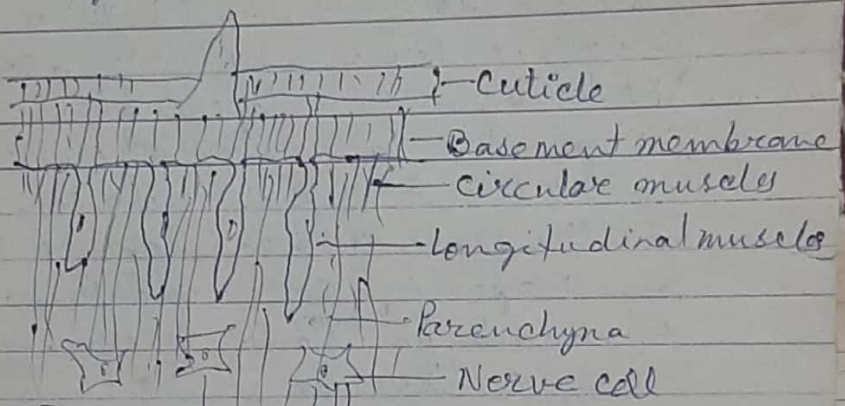

Fig - T.S. of body wall

Digestive System:

It is simple. Mouth is situated in the middle, developing oral suckers. Below the mouth there is a small suctorial pharynx. Pharyngeal glands are also found in pharynx. Pharynx is followed by oesophagus. intestine. There is no anus. Each intestine branched gives many caeca or diverticulae.

Circulatory System is absent.

Excretory System: It is well developed consisting of numerous flame cells. Each flame cell opens into median longitudinal

excretory duct, which opens outside by excretory pore.

Nervous System :

Nervous System is also well developed in the form of ganglia. From ganglia there is arised a lateral nerve cord.

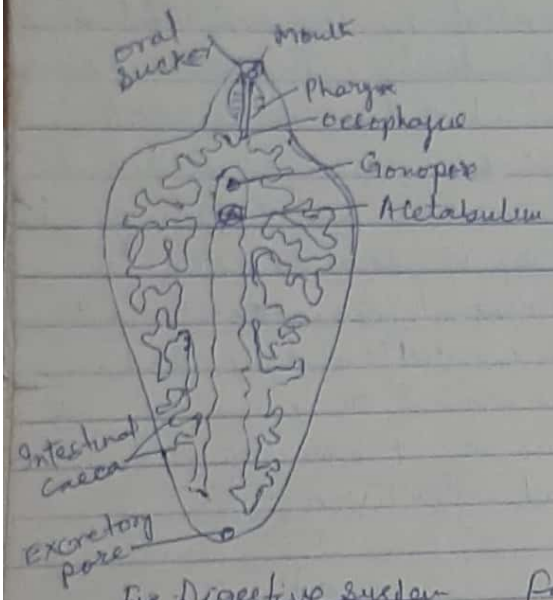

Fig Digestive system of F. hepatica

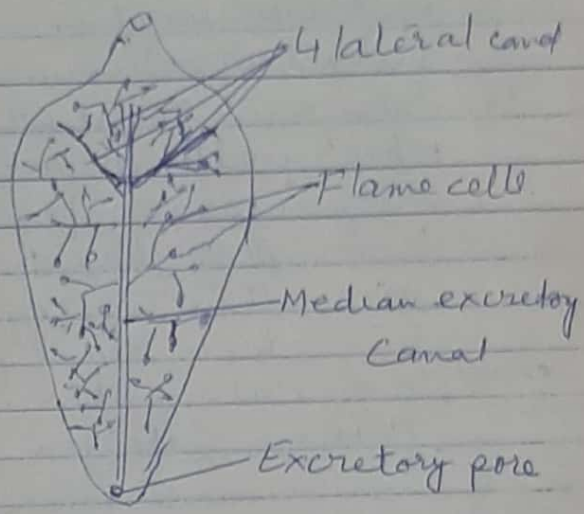

Fig. Excretory system of F. hepatica

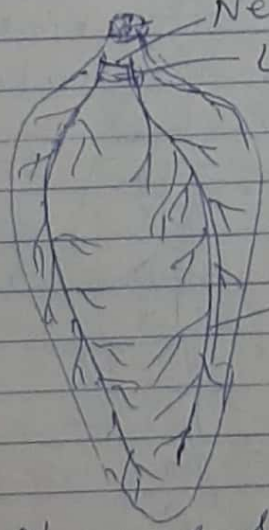

Fig Nervous system of F. hepatica

Reproductive System:

Fasciola is hermaphrodite and so both male and and female reproductive organs are found in same animals. There is only Cross fertilization.

Male Reproductive Organs: It consists of: (i) two testes, (ii) two Vas-deferentia, (iii) Seminal vesicle, (iv) one ejaculatory duct and (v) Cirrus and cirrus sac.

Testes: Testes are situated in the middle and posterior part of the body. These are extremely branched and lie one behind other. From each testis arise out one Vas-deferens which unite to form a common sperm duct. They enlarge in front of ventral sucker to form a pear shaped Seminal vesicles. From this arise thin zig-zag tube called ejaculatory-duct, which runs forward through cirrus or Penis to genital chamber where it open outside through male genital aperture.

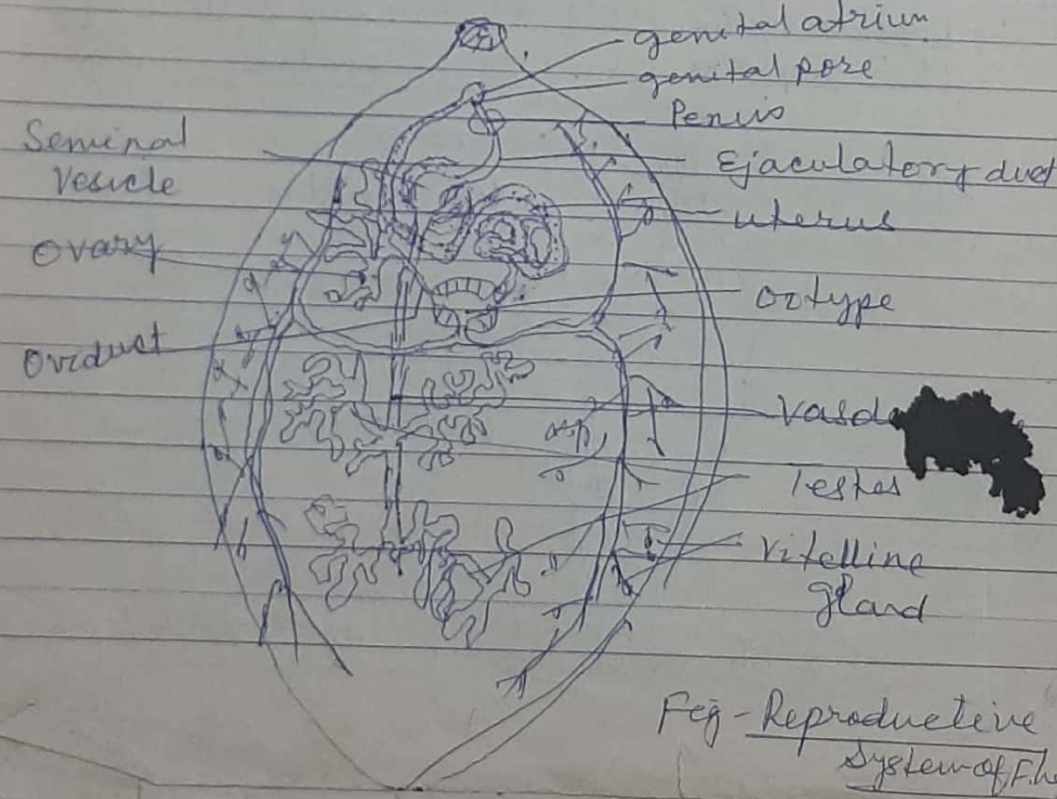

Fig - Reproductive System of Fasciola