

B.Sc First year Zoology (Subsidiary)

Paper-1

Lecture-2 The digestive system of palaemon (prawn)

(b) Pyloric stomach:

Pyloric stomach has thick muscular walls and its lumen is divided into two chambers, by two folds of lateral walls of stomach.

Dorsal chamber is small while the ventral chamber is large and both the chambers are connected by a narrow vertical canal.

The floor of ventral chamber is covered by a filter plate made up of two V-shaped rectangular surfaces. Each rectangular surface bears a series of alternating ridges and grooves.

The ridges bear rows of bristles, which together with bristles of side walls forms pyloric filtering apparatus.

This pyloric filtering apparatus allows only liquid food to pass through it. Dorsal chamber remains as a small blind caecum and leads behind into the mid-gut.

The junction of the two is guarded by one median dorsal and two lateral groups of elongated setae. These strain the food, when it goes to mid-gut but prevents its regurgitation.

Hepatopancreas:

It surrounds the cardiac stomach from outside and opens into pyloric filtering apparatus by hepatopancreatic ducts.

Hepatopancreas combines in itself the function of pancreas, small intestine and liver of higher animals.

It secretes digestive enzymes and absorbs the digested food material and as liver, stores it in the form of glycogen, fat and calcium. Some intracellular digestion also seems to take place in hepatopancreas.

2. Mid-gut:

Mid-gut represented by intestine, is long narrow and straight tube running back upto the 6th abdominal segment.

Its lumen is wide at the anterior end but reduced posteriorly due to the presence of longitudinal folds.

3. Hind gut:

Mid gut leads into swollen muscular part, the rectum, bears many internal longitudinal folds. It opens outside through anus which is a sphinctered midventral longitudinal slit-like opening situated on a raised papilla at the base of telson.

