

Excretory system of prawn

The excretory system consist of four organs

- 1. A pair of antennary or green gland**
- 2. A pair of lateral duct**
- 3. An unpaired renal or nephroperitoneal sac**
- 4. The integument**

I. A pair of antennary or green gland

Coxa of each antenna encloses an antennary gland which is opaque white in colour and as big as a pea seed. It includes three parts-

(i) End sac:

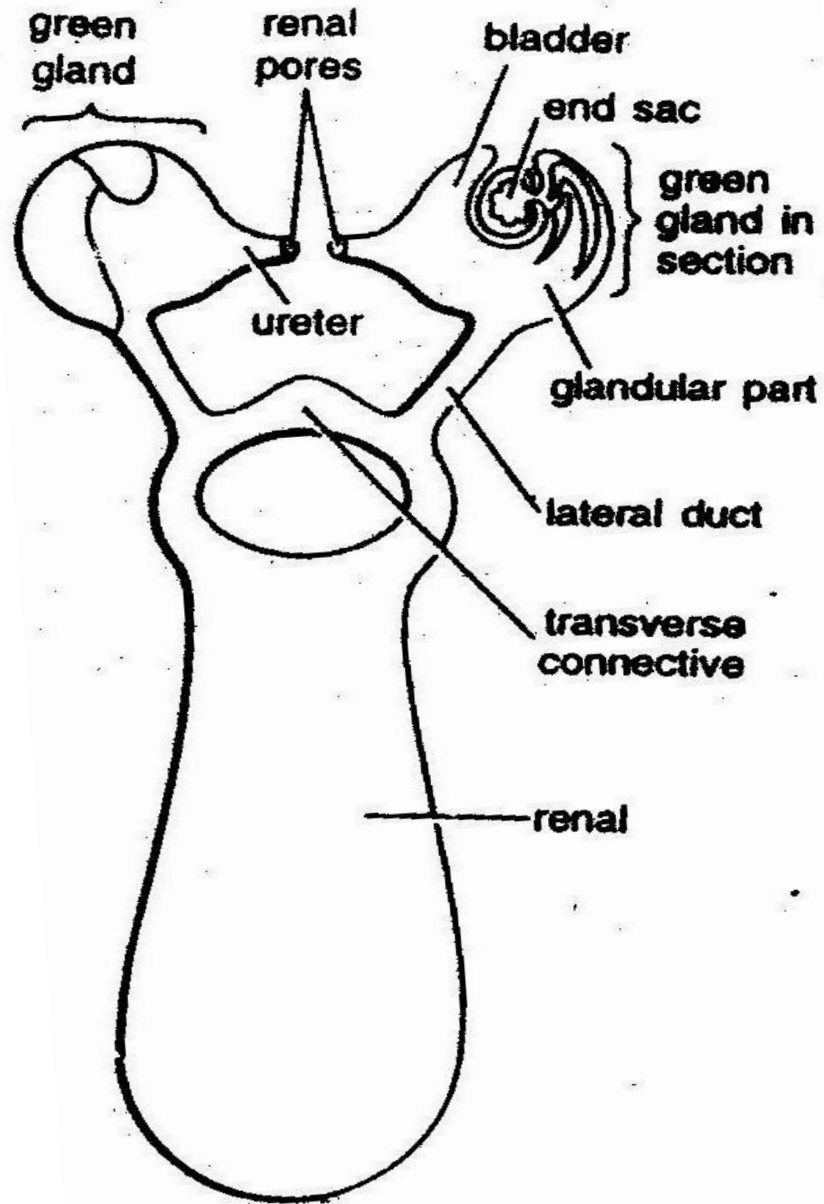
The bean shaped end sac lying between bladder and labyrinth. Internally it contains a large central blood lacuna. Its wall made up of two layers, outer layer consist of connective tissue containing numerous small blood lacunae, while inner thin layer consist of large excretory epithelial cells.

(II) Labyrinth:

Labyrinth or glandular plexus lies on outer side of end sac. It consist of numerous narrow, branching and greatly coiled excretory tubules. These tubules embedded into connective tissue containing blood lacunae and lined by single layer of excretory epithelial cells. They open by single apperture in end sac and by many aperture into bladder

(III) Bladder:

Bladder lies inner side of the end sac. It is thin walled made up of single layer of excretory epithelial cells. Its inner wall is prolonged as ureter which opens on the inner surface of coxa of antenna through renal pore.



Palaemon. Excretory organs in dorsal view.

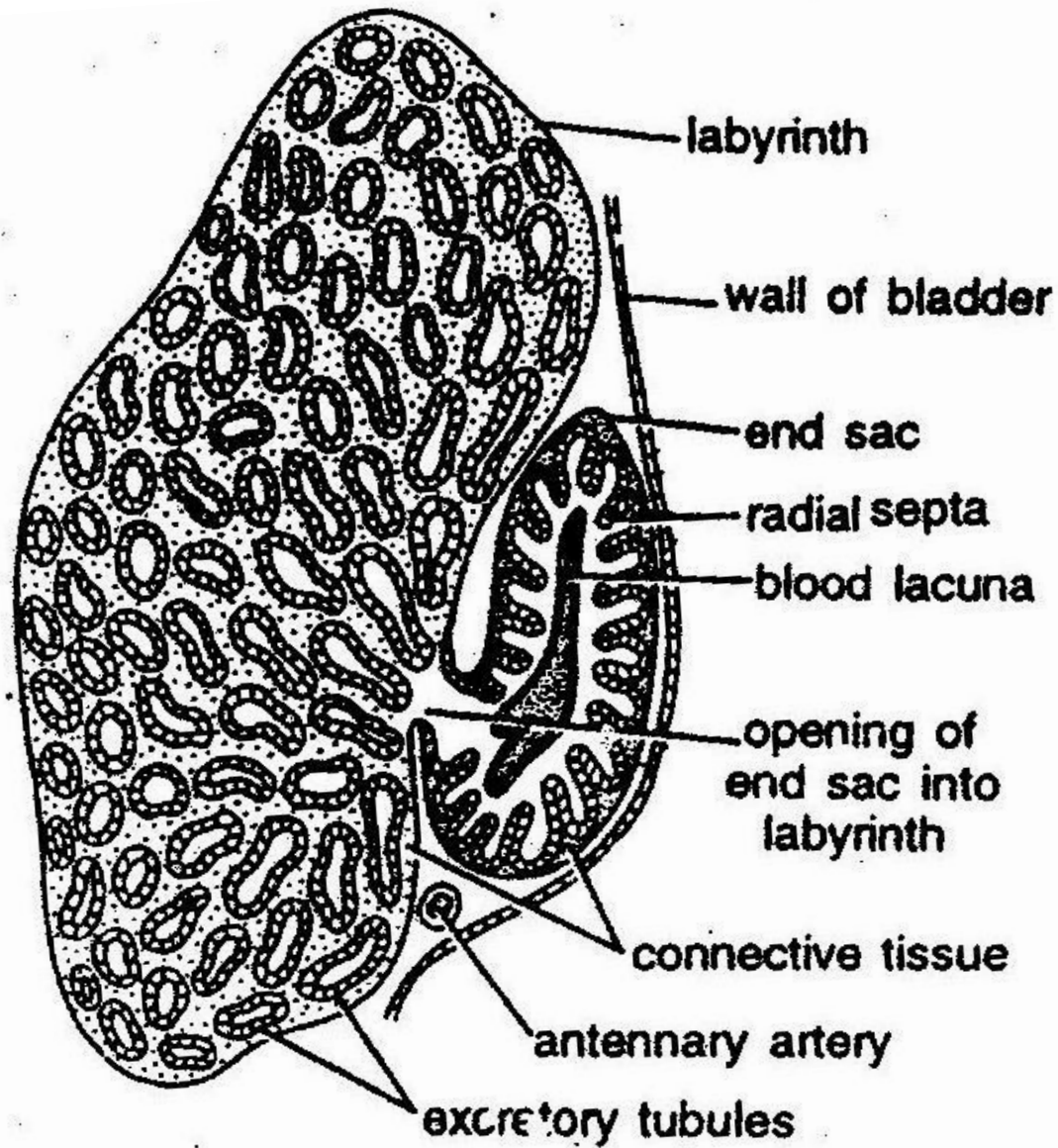


Fig. 27. *Palaemon*. Antennary gland in section.

2. A pair of lateral duct

- ❖ A narrow lateral duct runs posteriorly from the bladder of each antennary gland**
- ❖ Lateral ducts are connected by transverse connective just in front of the brain.**
- ❖ The two ducts run backward along the oesophagus to open into the renal sac**

3. An unpaired renal or nephroperitoneal sac:

It is thin walled sac lying above the stomach and just beneath the carapace and extending posteriorly up to the gonads.

Its wall is made up of a single layer of flattened excretory epithelial cell

4.The Integument:

Non living chitinous covering or integument is discarded off at each moult, by this process they expelled the nitrogenous waste products deposited on the integument.

Mechanism of excretion

- **The antennary gland extract nitrogenous waste and excess water from the blood like higher vertebrates.**
- **Ammonia, some urea and amino acids excrete mainly through end sac but other nitrogenous compound and uric acid excreted by other parts.**
- **Excreted fluid from end sac passes into the labyrinth where useful materials are reabsorbed by blood.**
- **Remaining fluid which is called urine passes into the bladder and finally expelled through the renal pores.**

Excretory System of *Pila*

In *pila globosa*, there is single large renal organ or kidney or organ of Bojanus lying behind the pericardium.

On one side it opens into the pericardial cavity and on the other to the outside through the mantle cavity.

The renal organ is made up of two distinct parts: a right anterior renal chamber and a left posterior renal chamber

Anterior renal chamber

Cavity of anterior renal chamber is very small due to the presence of number of lamellae, arranged on either side along a thick median longitudinal axis or the efferent renal sinus or the efferent renal sinus.

The anterior renal chamber communicates with posterior renal chamber through a small opening at one end and opens by an elongated opening into mantle cavity.

Posterior renal chamber

It has hook like broad chamber with large internal cavity. The afferent and efferent renal vessels profusely branched in the roof of this chamber.

It communicates with anterior renal chamber through an aperture and at the other with pericardium through an elongated slit like reno-cardial aperture.

Mechanism of excretion

The renal organ separates the nitrogenous waste from the blood. The excretory fluid passes from the posterior renal chamber to the anterior renal chamber from where it is discharged into the mantle cavity through the external renal aperture and finally it goes out with the outgoing current of water through right siphon.

The excretory matter contains chiefly ammonia compound, urea and uric acid.