

The Haemocoelomic system contains.

- 1) Four longitudinal haemocoelomic channels.
- 2) Segmental branches.
- 3) Capillaries.
- 4) Haemocoelomic fluid.

1. Longitudinal Haemocoelomic Channels:

Out of four one is dorsal, one is ventral and two are lateral in position.

i) Dorsal canal: It lies above the alimentary canal and extends the entire length. '

- a. It is a distributing channel. In each segment it gives two pairs of dorso laterals from
- a. It is a distributing channel. In each segment it gives two pairs of dorso laterals from its ventral side. They break into capillaries in the dorsal body wall.
- b. It gives dorso-intestinals to the alimentary canal all along its length.
- c. In the sixth segment, it breaks into branches which form capillaries.
- d. In the 22nd segment it bifurcates into branches. They open into ventral canal at the end.
- e. The haemocoelomic fluid flows forwards in the dorsal channel,

ii) Ventral Channel: It lies below the alimentary canal and extends the entire length. It encloses ventral nerve cord. It enlarges at the **anterior** and **posterior** ends to surround the nerve mass. Ventral channel is a distributing channel.

- a. In each segment it gives of a pair of cutaneous branches. Each cutaneous branch divides into two smaller branches. They end in capillaries in the ventrolateral and dorsolateral body wall.
- b. From 12 to 22 segments ventral channel gives a pair of nephridial branches. It ends in capillaries in nephridium and body wall.

iii) Lateral channels: These are two in number which are placed on either side of the alimentary canal they are muscular and valvular. In these channels the haemocoelomic fluid flows from behind forwards. They are both distributing and collecting channels. In the 6th segment they break into capillaries. In each segment both the lateral channels receive laterodorsal and latero-laterals. In each segment they give lateroventral branch.

- a. **Latero-lateral:** It starts from the lateral part of the body wall and nephridium and unites which lateral channel.
- b. **Latero-dorsal:** It arises from nephridial wall and dorso lateral parts of the body wall. It is big. It unites with lateral channel. In each segment two latero-dorsal opposite sides are united by a transverse loop. They are present from 6 to 22 segments.
- c. **Latero ventral:** It starts from the inner side of the lateral channel and supplies blood to nephridium and ventro lateral parts of the body wall. This branch

divides into anterior and posterior branches. They unite with the same branches of the opposite side and from ventral commissures. They are one in each segment from 6 to 23 segments.

Latero-lateral and latero-dorsal canals are collecting canals. But Latero-ventral is distributing canal.

Capillaries:

All the longitudinal channels and their branches divide into capillaries. They are three sets.

i) Botryoidal capillaries: They surround the viscera.

ii) Intermediate capillaries: They penetrate the body muscles.

iii) Superficial capillaries: They enter into the epidermis.

iv) Haemocoelomic fluid: It is a coelomic fluid. It is red in colour because haemoglobin is dissolved in it. This is called blood like fluid.

Circulation:

In the haemocoelomic system the red haemocoelomic fluid flows in a definite course. Dorsal, ventral and the two lateral haemocoelomic channels are united in the 26th segment.

- a. The dorsal and ventral haemocoelomic channels distribute the fluid to body parts.
- b. The two lateral channels are distributory as well as collecting channels.

1) The dorsal channel gives the following.

- a. Dorso-lateral vessel which supplies blood to dorso-lateral body wall.
- b. It gives dorso-intestinal vessel which supplies fluid to gut wall.

2) The fluid from dorso-lateral body wall is pushed into lateral channel through latero-dorsal vessel.

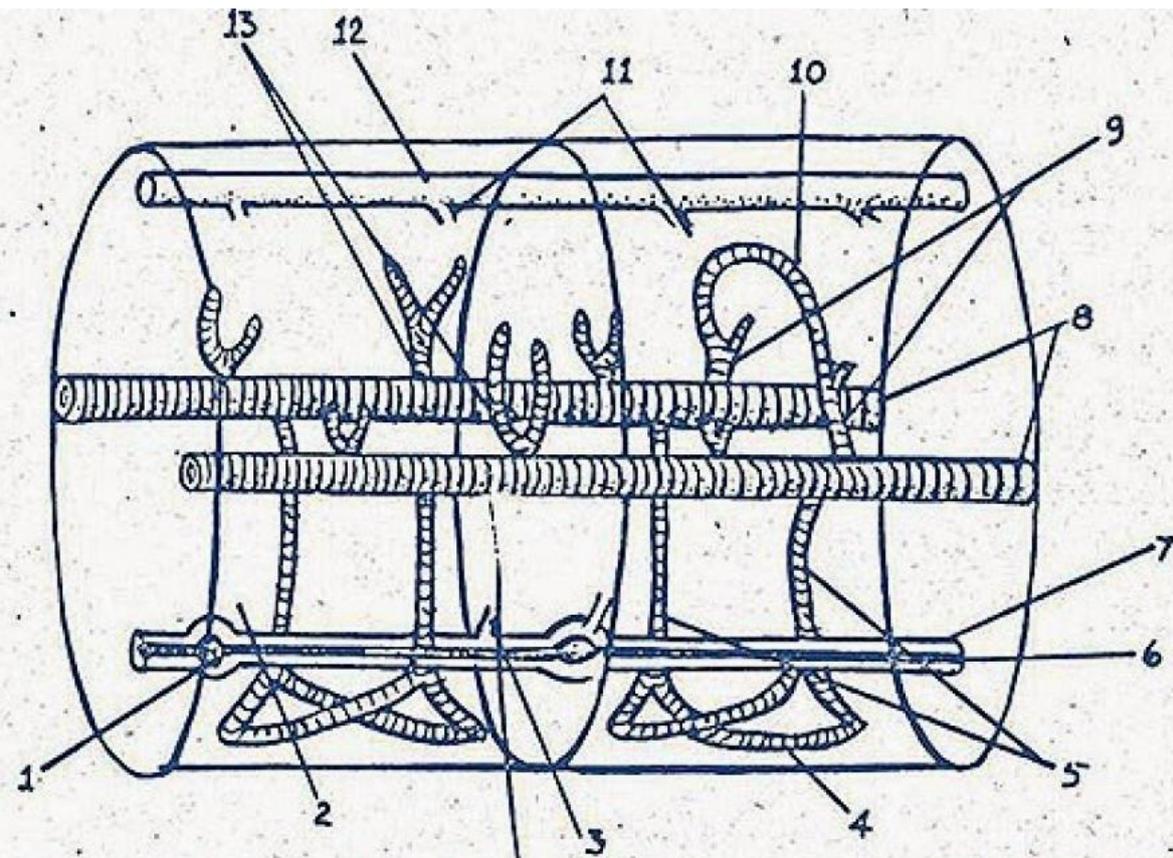
3) The blood from gut wall is carried to lateral channel through latero-dorsal vessel.

4) The lateral channels collect fluid from nephridia and gonads through latero-lateral vessels.

5) Ventral channel supplies blood to nephridia and gonads.

6) Lateral channels distribute blood to gonads, nephridia, body wall and gut wall through ventral commissure.

Thus, the blood is in circulation in the Haemocoelomic system of leech.



LEECH - HAEMOCOELOMIC SYSTEM OF A SINGLE SEGMENT IN LATERAL VIEW.