

The water current entering the pharynx also brings dissolved oxygen in sea water. The **pharyngeal wall** is highly vascular traversed by a rich network of blood vessels and is also very thin enabling gaseous exchange. Some CO_2 of blood diffuses into water and O_2 from water into blood. The respiratory surface is increased by the longitudinal folds and papillae. The respiratory pigment of blood seems to be incapable of absorbing any oxygen. Gaseous exchange also takes place in the **vascular trabeculae**, present in the atrium. Besides, the **test** also acts as an accessory respiratory organ containing **vascular ampullae** and blood vessels which help in gaseous exchange through the surface of test.

Blood vascular system:

- includes
- ① Heart & pericardium.
 - ② Blood vessels
 - ③ blood.

① Heart & pericardium:

- Pericardium = non contractile, elongated, transparent,
- closed at both the ends
- Its thick wall is made of C.T. contains blood sinus.
- * Heart is enclosed within pericardium
- * Attached to its wall
- * Heart is contractile, thin walled
- * Both ends of Heart = open
- No valves

2 Blood vessels : Branches are as follows :

(a) Ventral aorta : → largest vessel

→ arising from the ventral end of heart

→ It supplies ventral test vessel to ventral side of test.

Bifurcates into anterior & posterior hypobranchial branch.

→ Both give several paired transverse vessels

→ The anterior branch joins 2 circular vessels at the base of siphon.

(1) Peripharyngeal vessels

(2) subtentacular "

(b) Dorsal aorta : lying mid-dorsally, above dorsal lamina

→ Not connected to the heart but communicate with ventral vessels.

(c) Branchio-visceral vessels : → into 2 branches

(1) Right esophageal vessels

↓

supplies the right liver lobe & right side of esophagus.

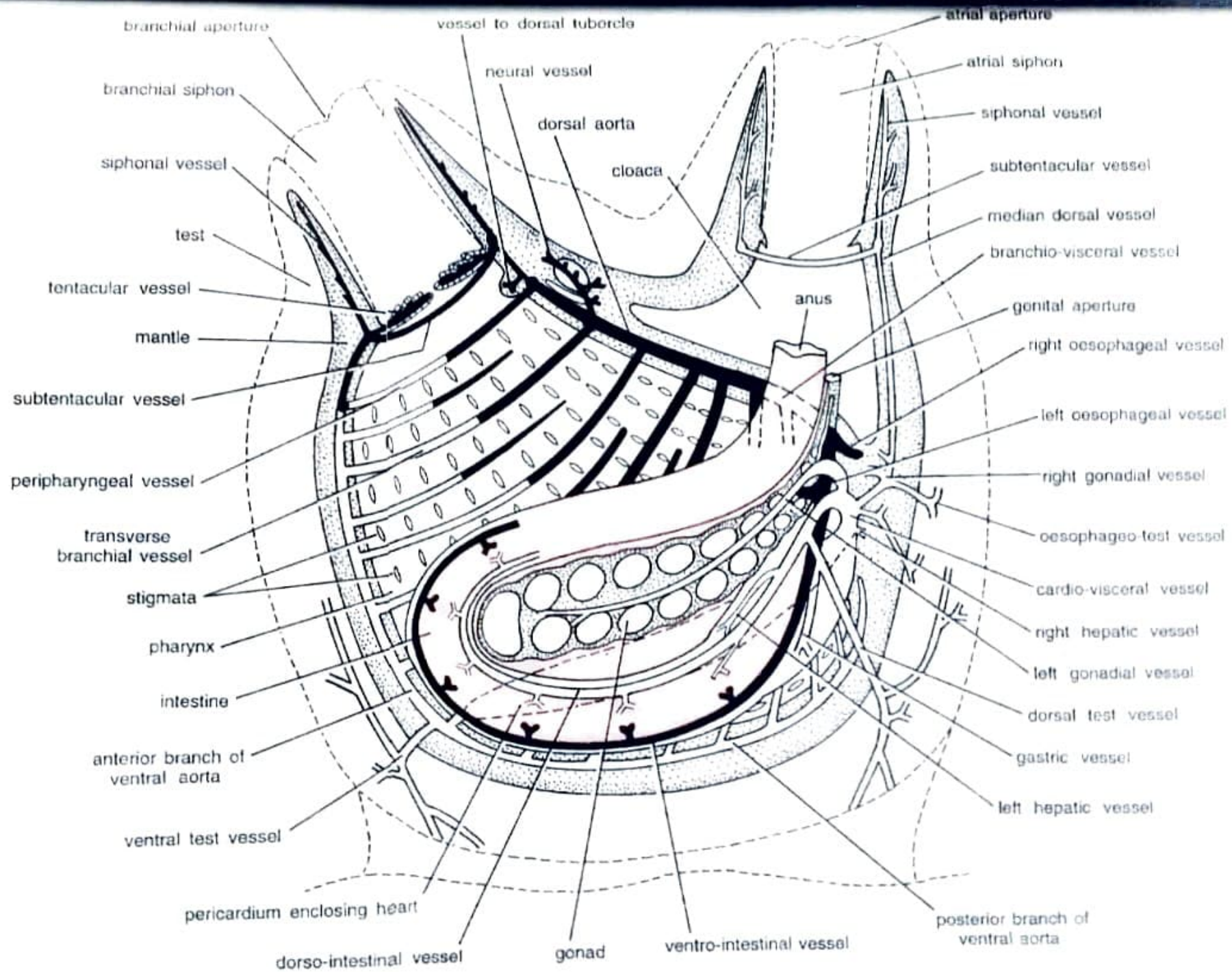


Fig. 21. *Herdmania*. Heart and blood vessels.

2. Venter-intestinal vessel:
↓
supply blood to left side of
oesophagus, stomach, intestine,
rectum, left gonad &
left liver lobe.

(d) Cardio-visceral vessels: It arises
from the dorsal end of the heart
& supplies blood to several organs.

(3) Blood 8 -

(Write about corpuscles)

↓
after that

Course of circulation :->

No valves

to regulate blood flow

→ It is maintain by peristaltic waves,

↳ the small pear shaped body

Its heart is unique for changing the direction of blood flow by reverse peristalsis at regular intervals.

→ When heart beats Ventro - dorsally

its oxygenated blood | Collected through
↓ Ventral aorta

from branchial sac & test

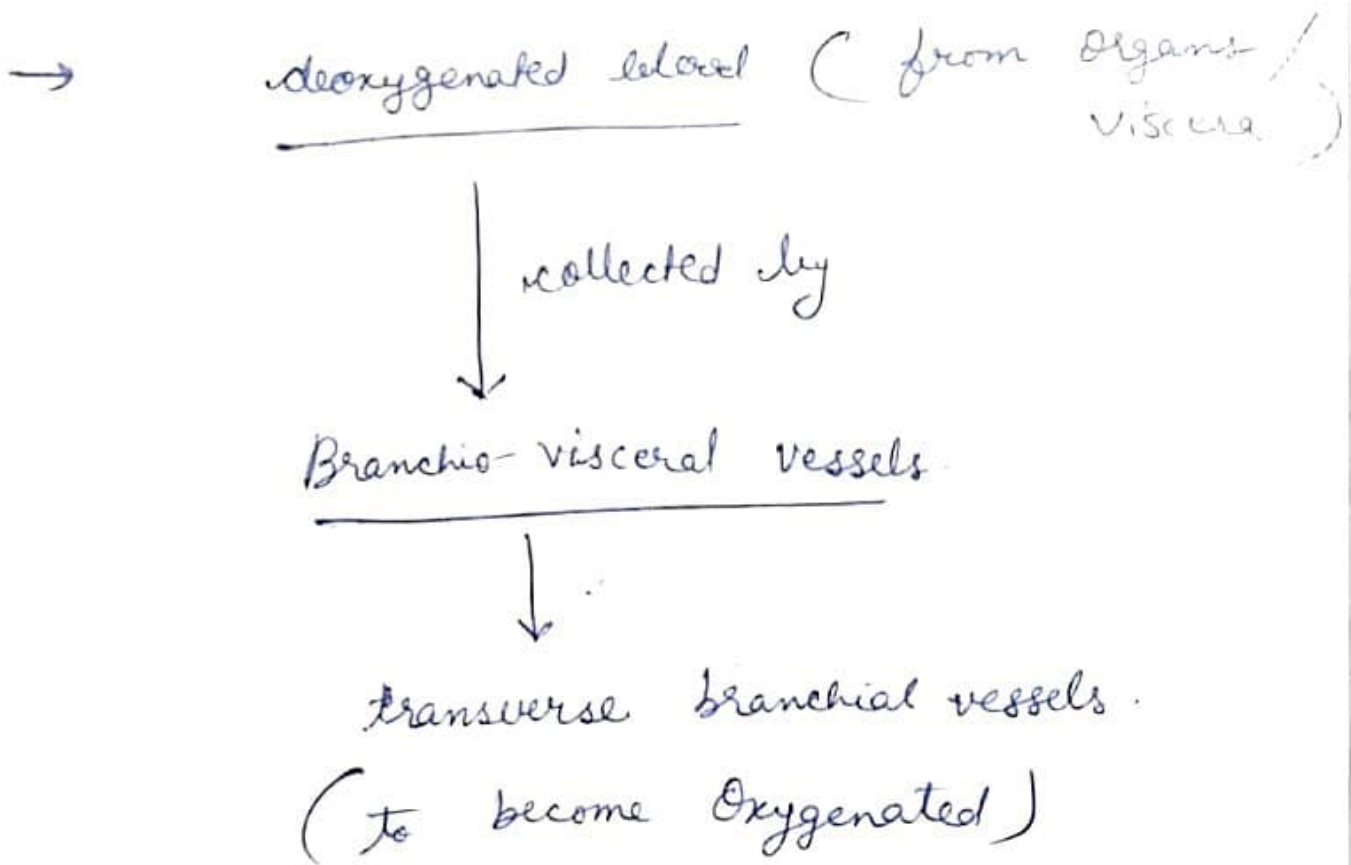
↓ pumped out into

Cardiovisceral vessel

↓ then

distributed to ~~test & viscera~~
various body parts.

(now blood become deoxygenated)



(2) heart beat Dorso-ventrally



Herdmania : A Sea Squirt

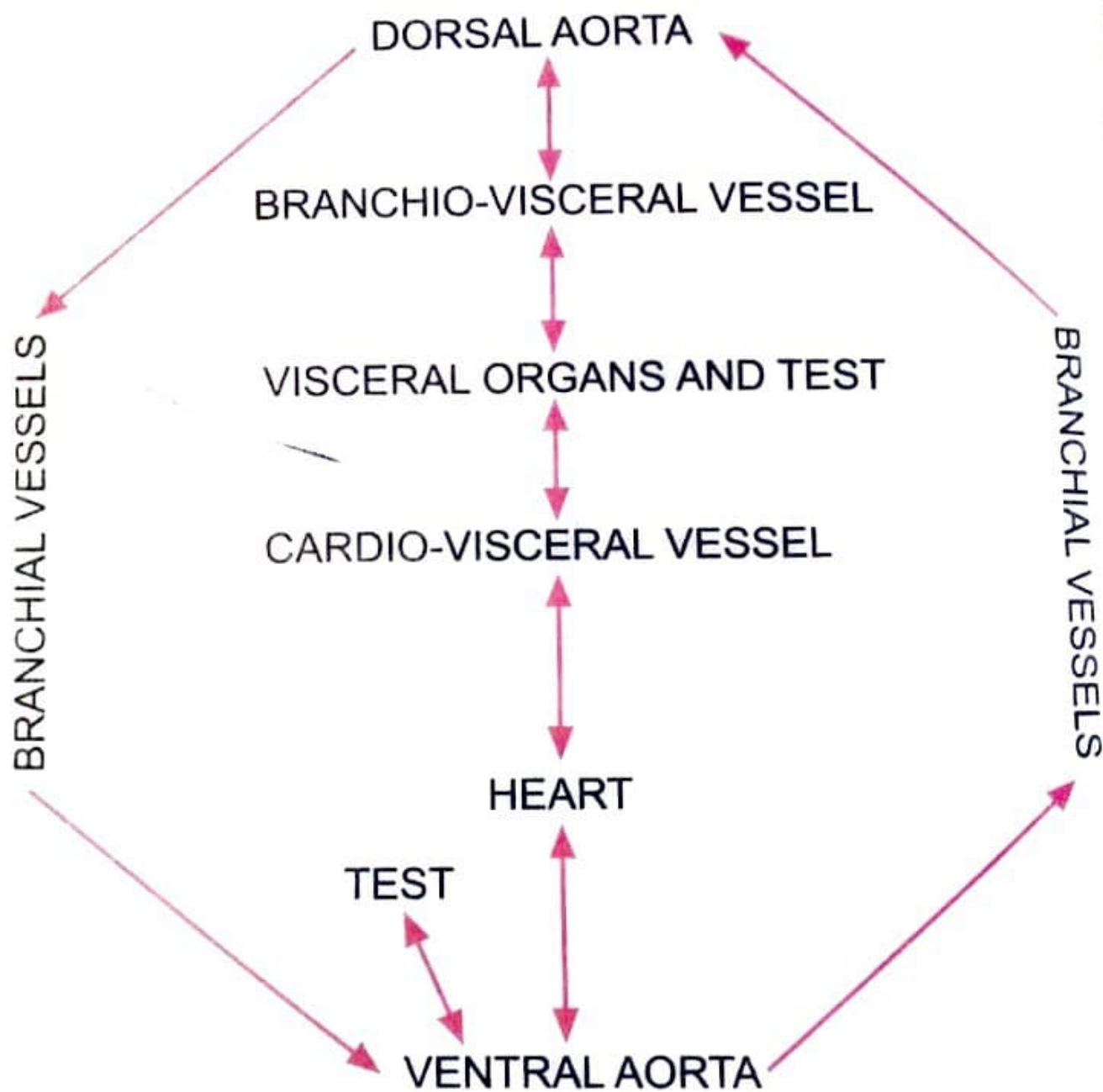


Fig. 23. *Herdmania*. Course of blood circulation.