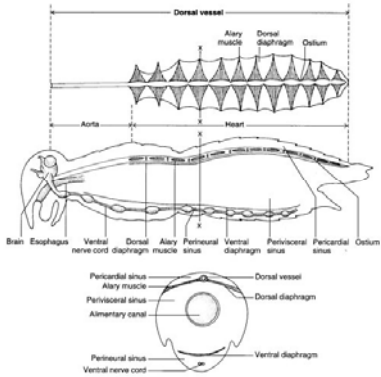
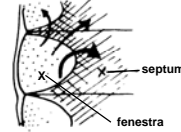
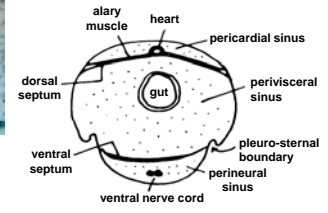
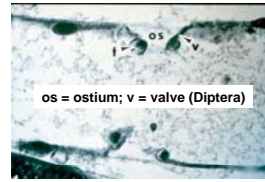


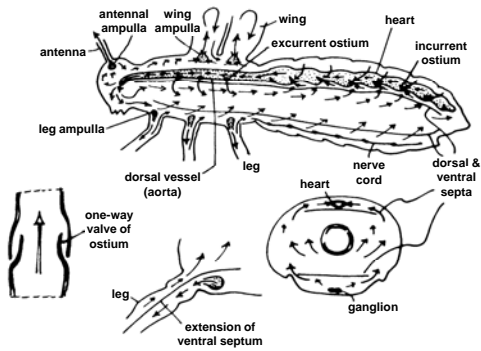
**The insect circulatory system**



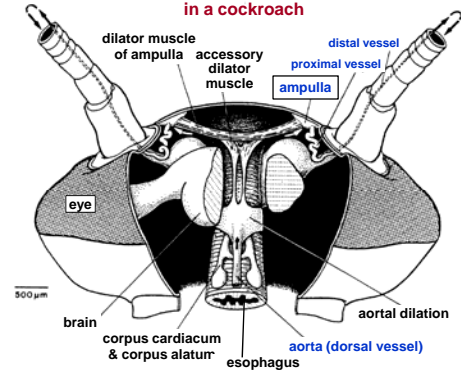
**The insect circulatory system: details**



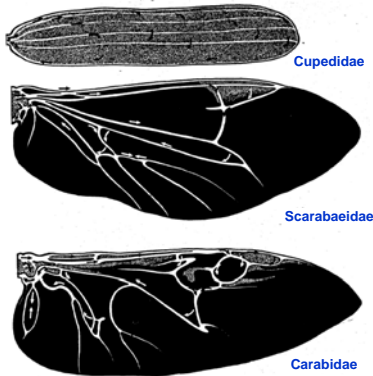
**Pattern of circulation**



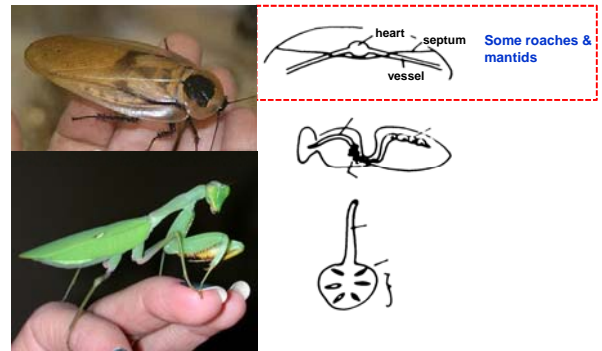
**Accessory pulsatile organs (APO) in a cockroach**

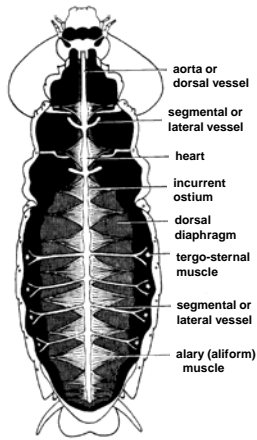


**Circulation in the wing venation of two beetles**



**Lateral segmental vessels**

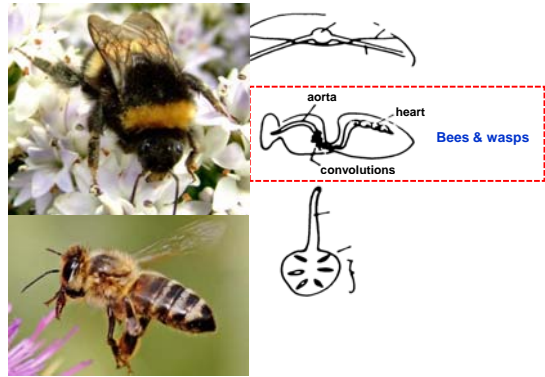




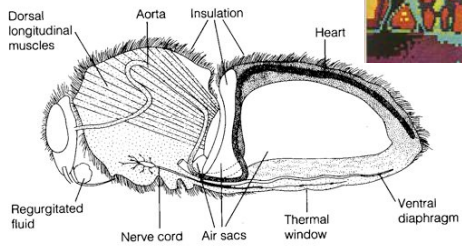
**Segmental vessels in *Blaberus***  
(2 pairs thoracic, 4 pairs abdominal)



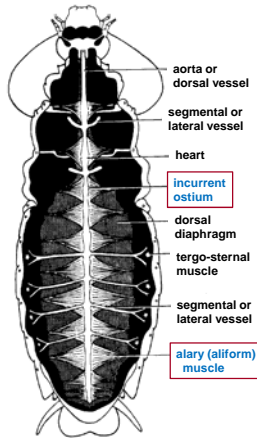
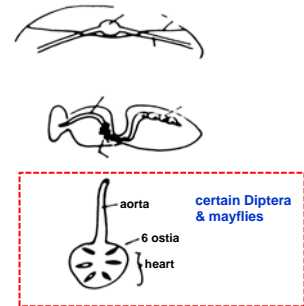
**Thermoregulation and the *rete mirabile***



**Bumblebee circulation & thermoregulation**



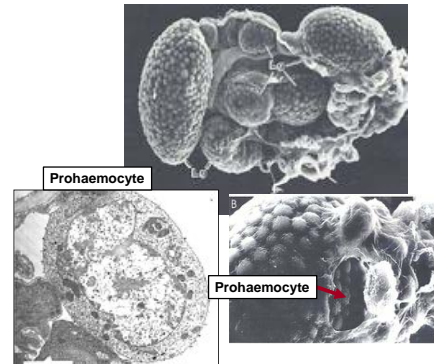
**Centralization (shortening) of the heart**



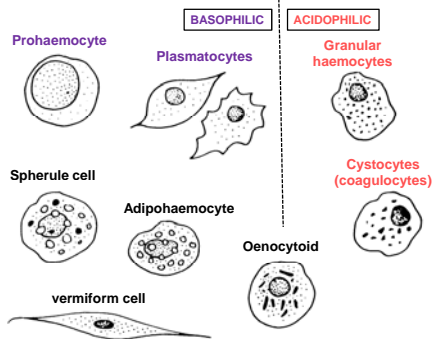
**Number & placement of ostia; nature of alary muscles**

Ex. = ancestral condition

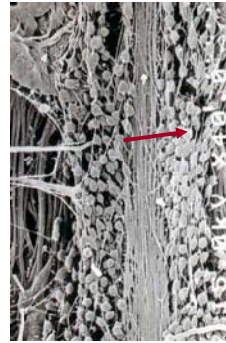
**Haemopoietic organ ("lymph glands")**



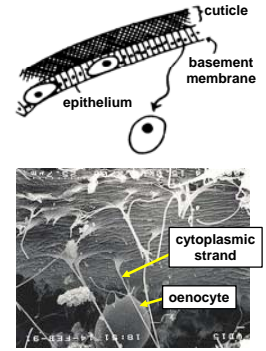
**Cells in the haemolymph (haemocytes)**



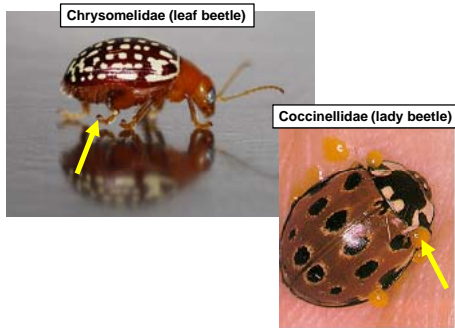
**Pericardial cells**



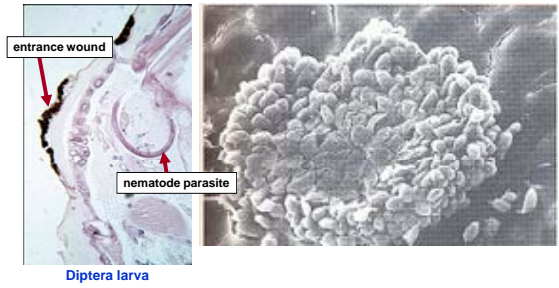
**Oenocytes**



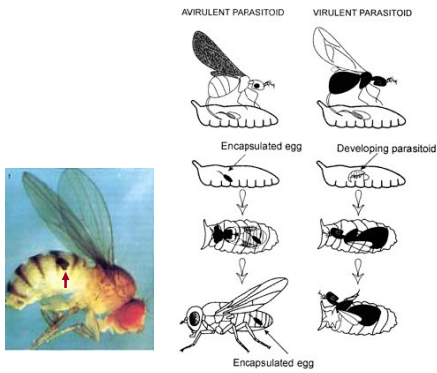
**Blood function: reflex bleeding**



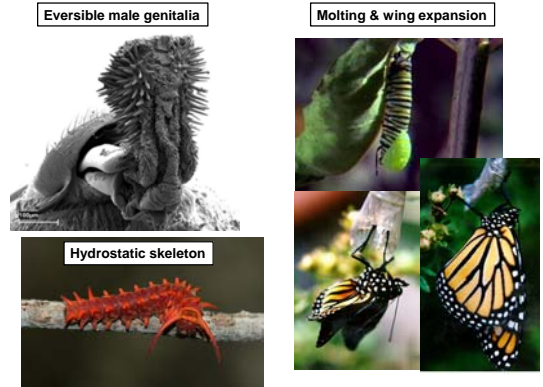
**Wound-healing and clotting**



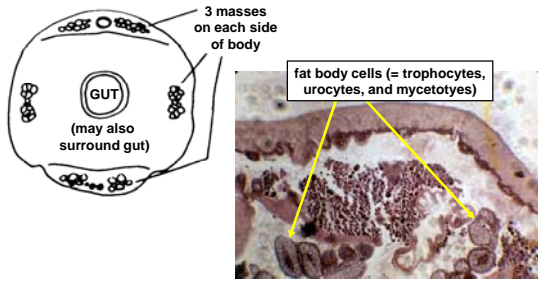
**Immune function of blood: encapsulation**



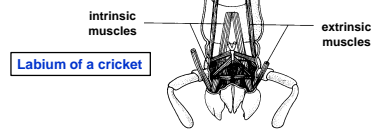
**Hydrostatic functions of blood**



**Fat body**



**Muscles: opposing types**



**Metathoracic leg of a grasshopper**

