

Chapter 7: Planktonic Crustacea

Xiamen University
Department of Oceanography

References

郑重, 李少菁, 许振祖, 1984. 海洋浮游生物学. 北京:
海洋出版社

堵南山, 1987. 甲壳动物学(上册). 北京: 科学出版社

堵南山, 1993. 甲壳动物学(下册). 北京: 科学出版社

Part I: General Account

1 General Morphology

Metamerism

Exoskeleton

Appendages



1.1.1 Metamerism (分节)

Head (头)

Thorax (胸)

Abdomen (腹)

Cephalomeron (头节)

Thoraxmeron (胸节)

Pleomeron (腹节)

Cephalothorax (头胸部)

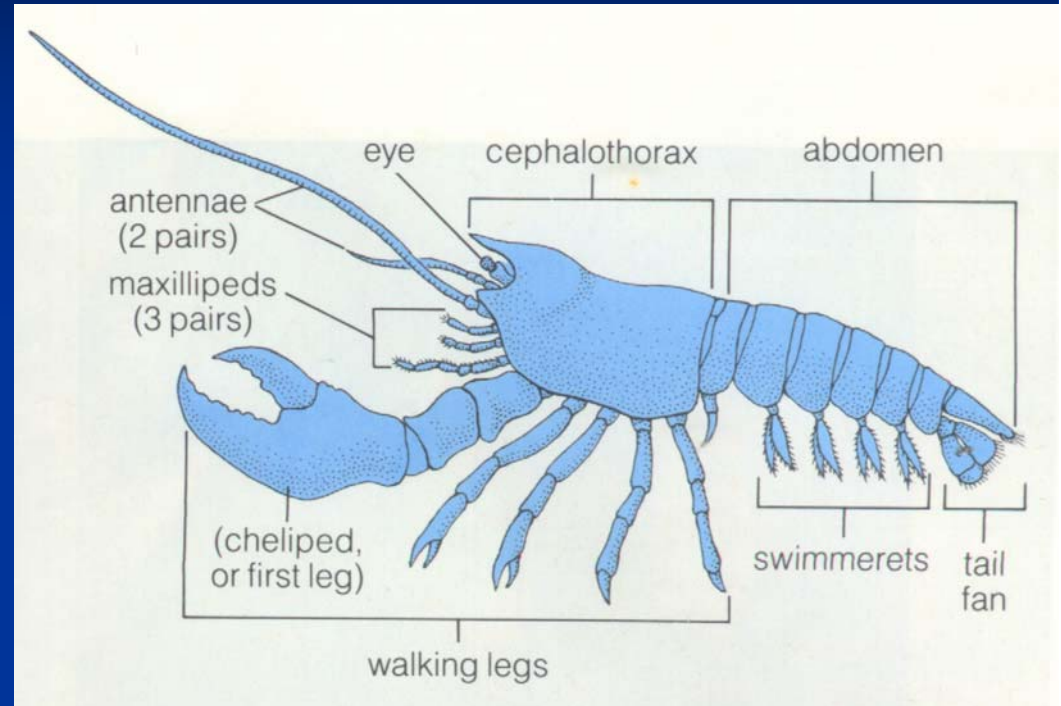
Thorax (peraeon, pereion, 胸部)

Abdomen (pleon, 腹部)

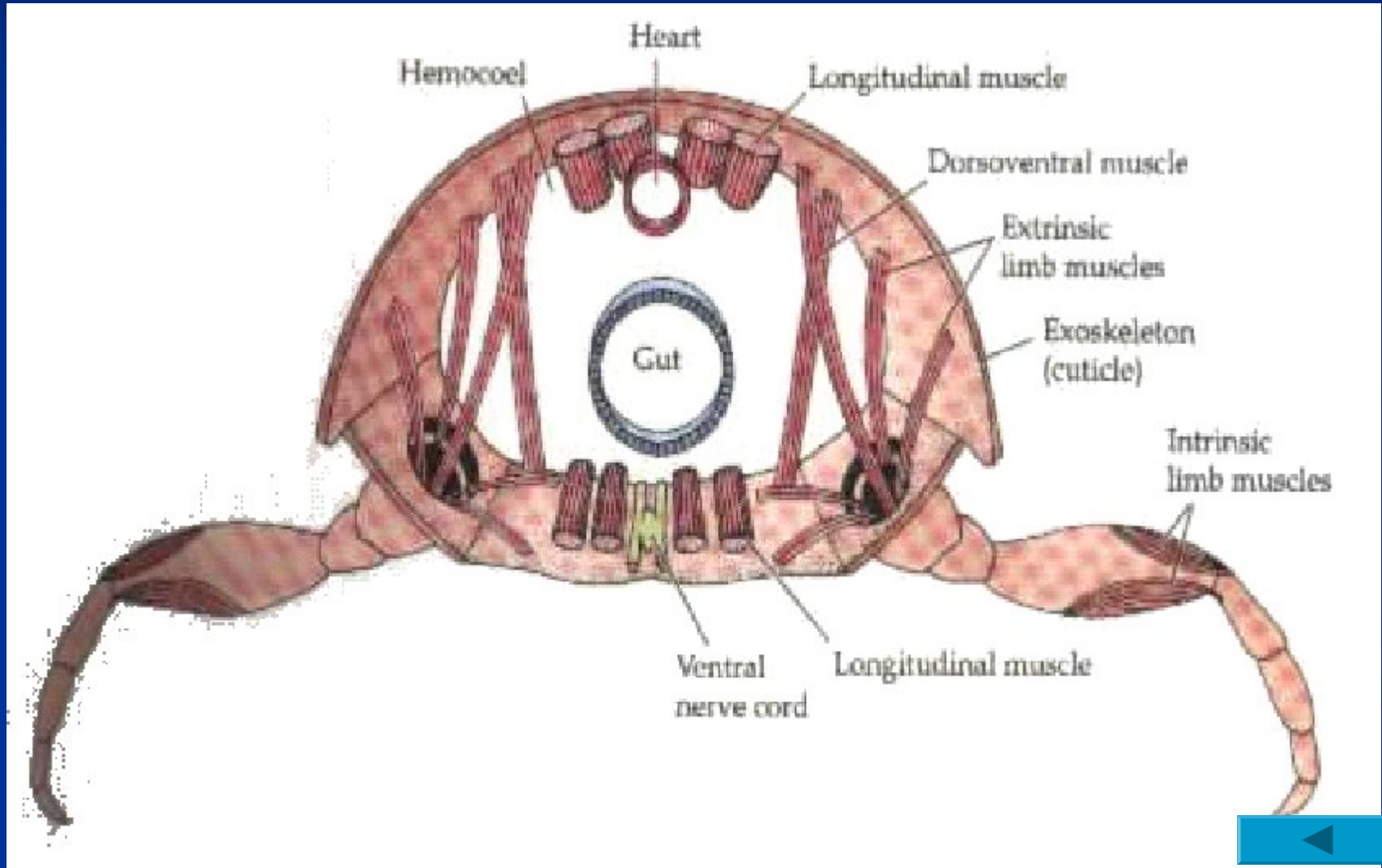
Pleotelson (腹尾节)

Telson (anal segment, 尾节, 肛节)

Furca (尾叉)



- tergite (背甲)
- sternite (腹甲)
- pleurum (侧甲)



1.1.2 Exoskeleton (外骨骼)

Integument (外皮)

Cuticle (表皮)

epicuticle (上表皮)

endocuticle (内表皮)

pigment layer (色素层)

calicified layer (钙化层)

uncalcified layer (非钙化层)

Epidermis (真皮)

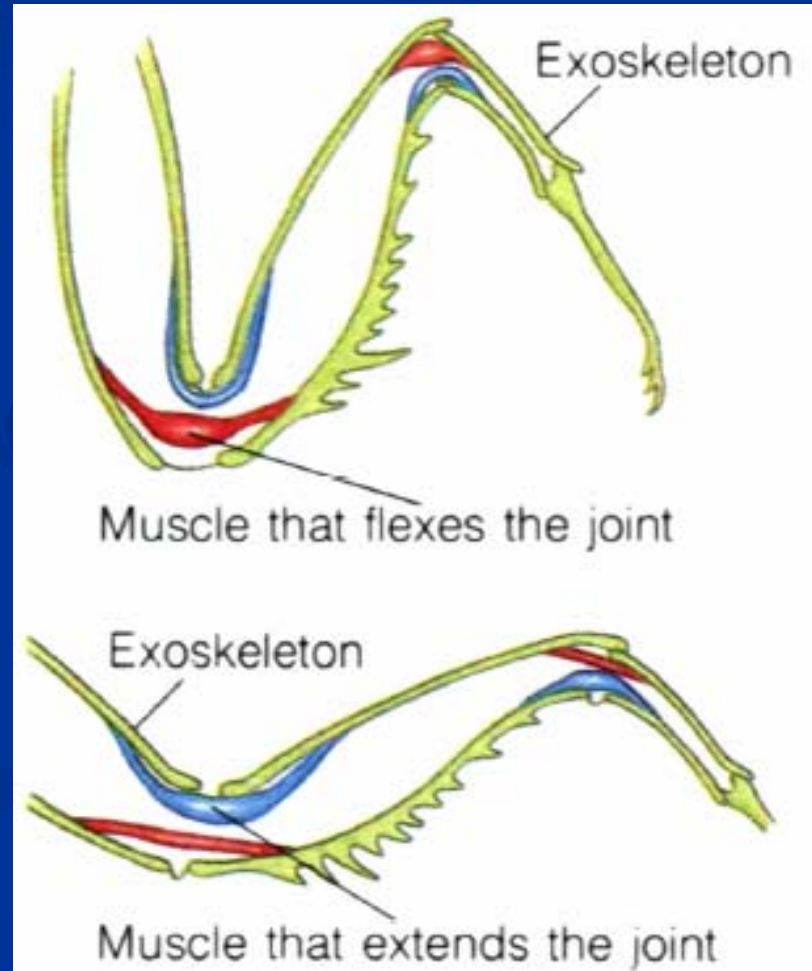
Basement membrane (基膜)





Vertebrate joint

Arthropod joint



1.1.3 Appendages

uniramous (单肢型)

biramous (双肢型)

1-3 protopodite (B, 原肢)

1 subcoxa (亚基节)

6 endite (内叶)

2 coxa (B₁, 基节)

7 exite (epipodite, 外叶, 上肢)

3 basis (B₂, 底节)

4 endopodite (R_i, 内肢)

8 ischium (座节)

9 merus (长节)

10 carpus (腕节)

11 propodus (掌节)

12 dactylus (趾节)

5 exopodite (R_e, 外肢)

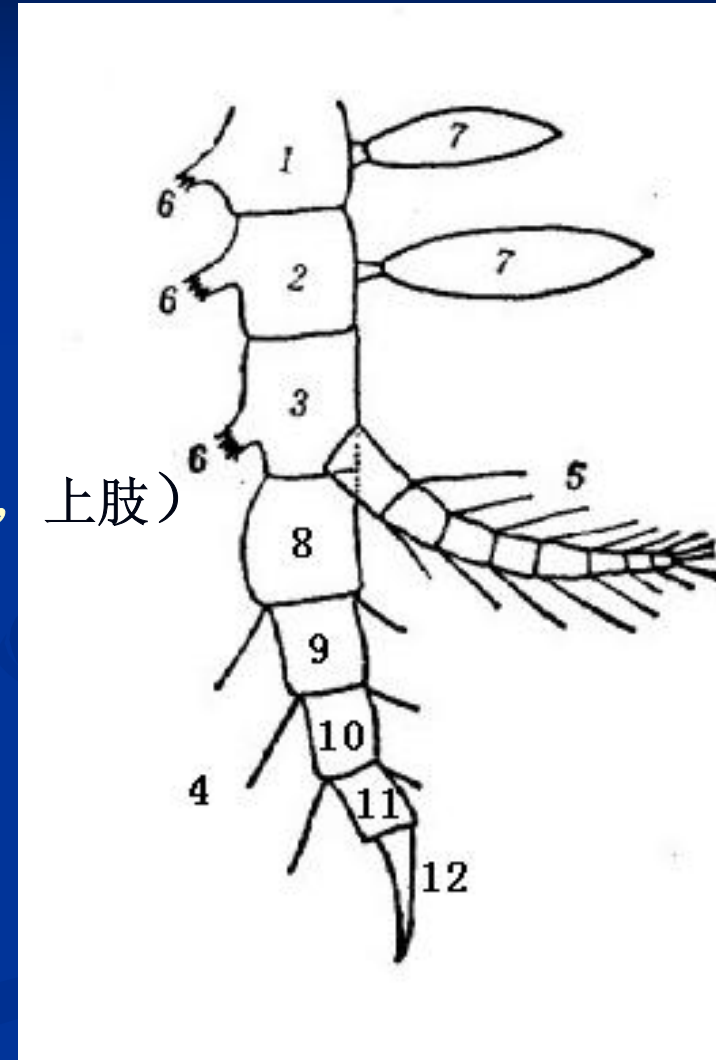
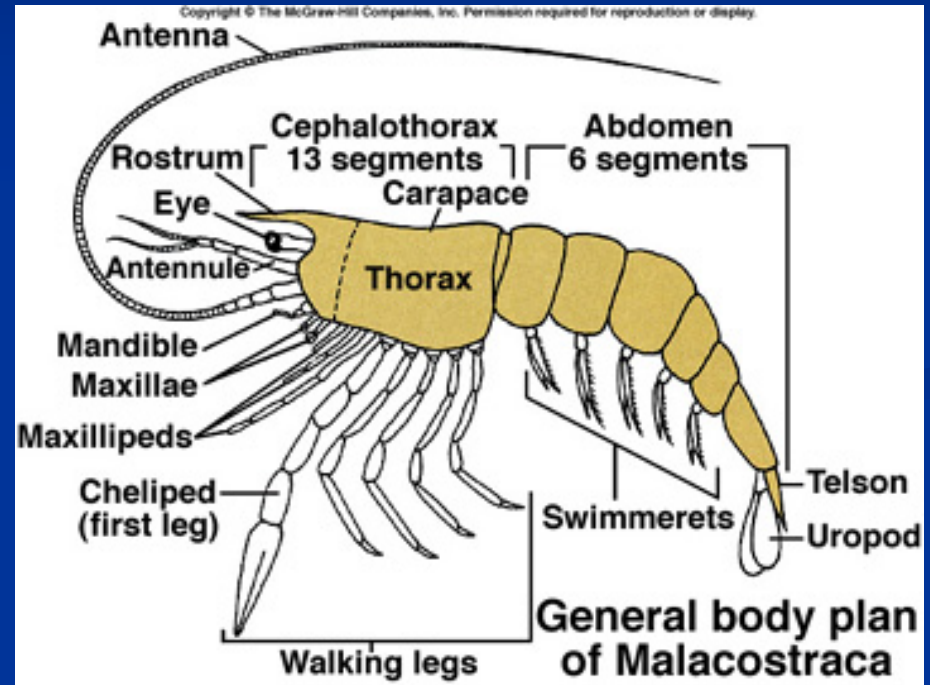
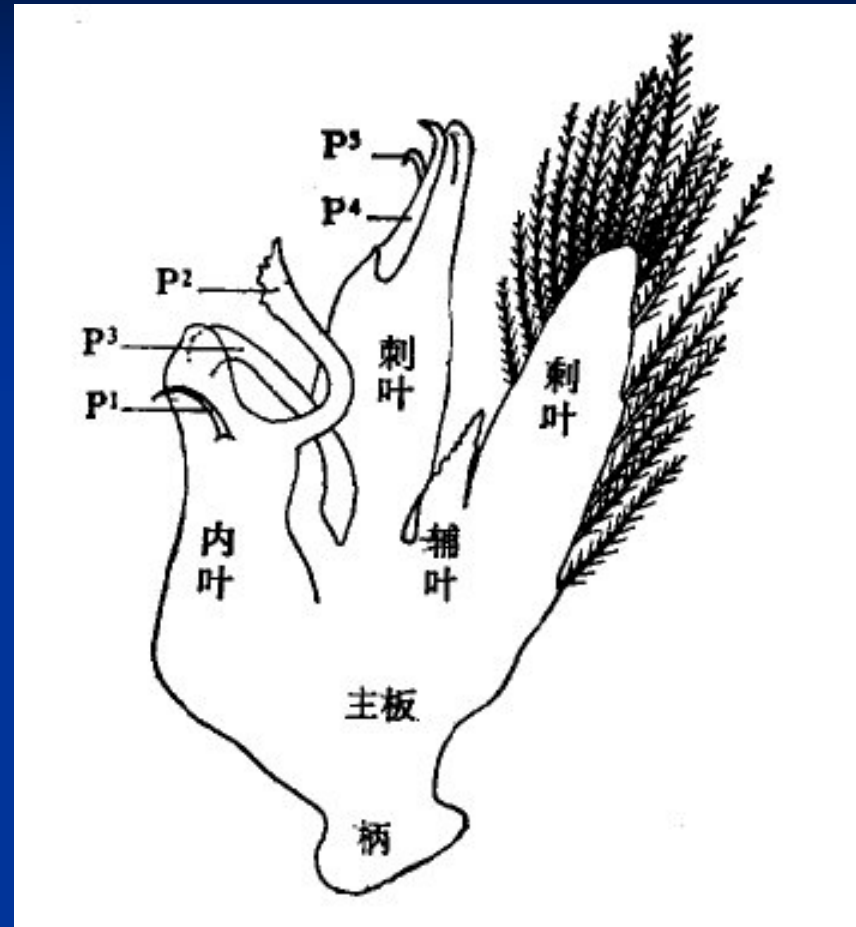


Diagram of appendage

- **Antennae** (A, 触角)
 - antennule (A₁, 小触角)
 - antenna (A₂, 大触角)
- **Mandibulae** (M, 大顎)
- **Maxillae** (小顎)
 - maxillula (M₁, 第一小顎)
 - maxilla (M₂, 第二小顎)
- **Maxillipeds** (Mp₁₋₃, 顎足)
- **Pereiopods** (P₁₋₅, 胸足)
- **Pleopods** (Pl₁₋₅, 腹足)
- **Uropod** (Up, 尾足)





The petasma of a male euphausiid



1.2 Internal Features

1.2.1 Digestive System

1.2.2 Extretory System

1.2.3 Respiratory System

1.2.4 Circulatory System

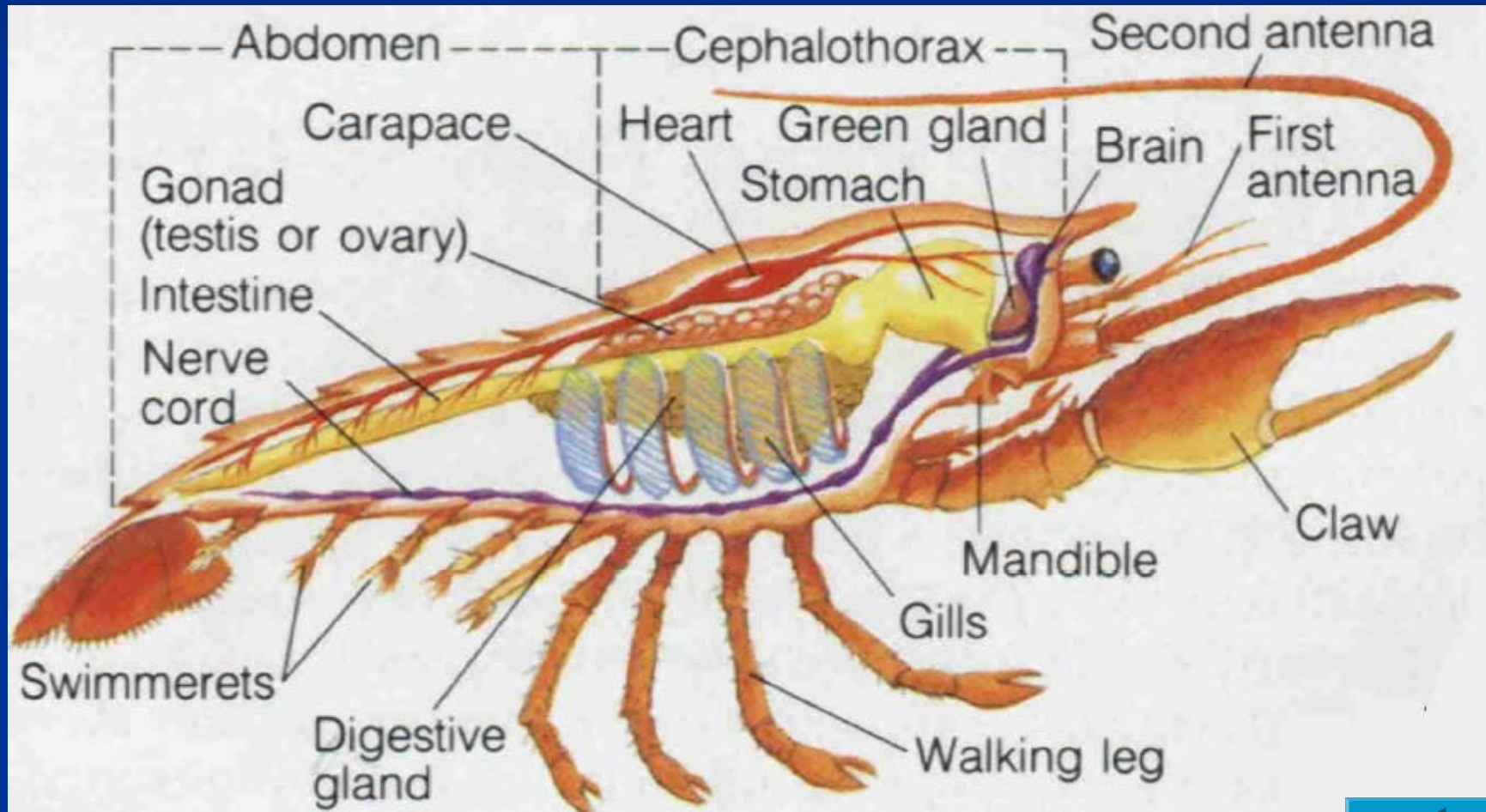
1.2.5 Nervous System and Sense Organs

1.2.6 Reproductive System



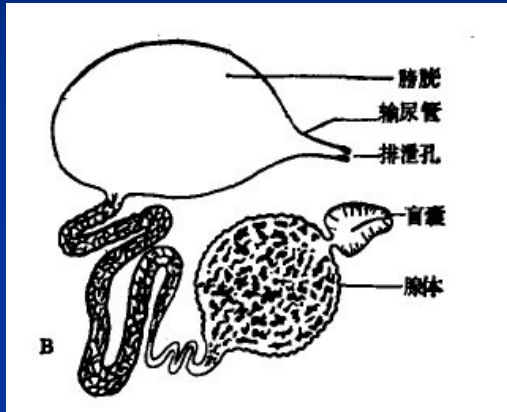
1.2.1 Digestive System

Foregut Midgut Hindgut hepatopancreas

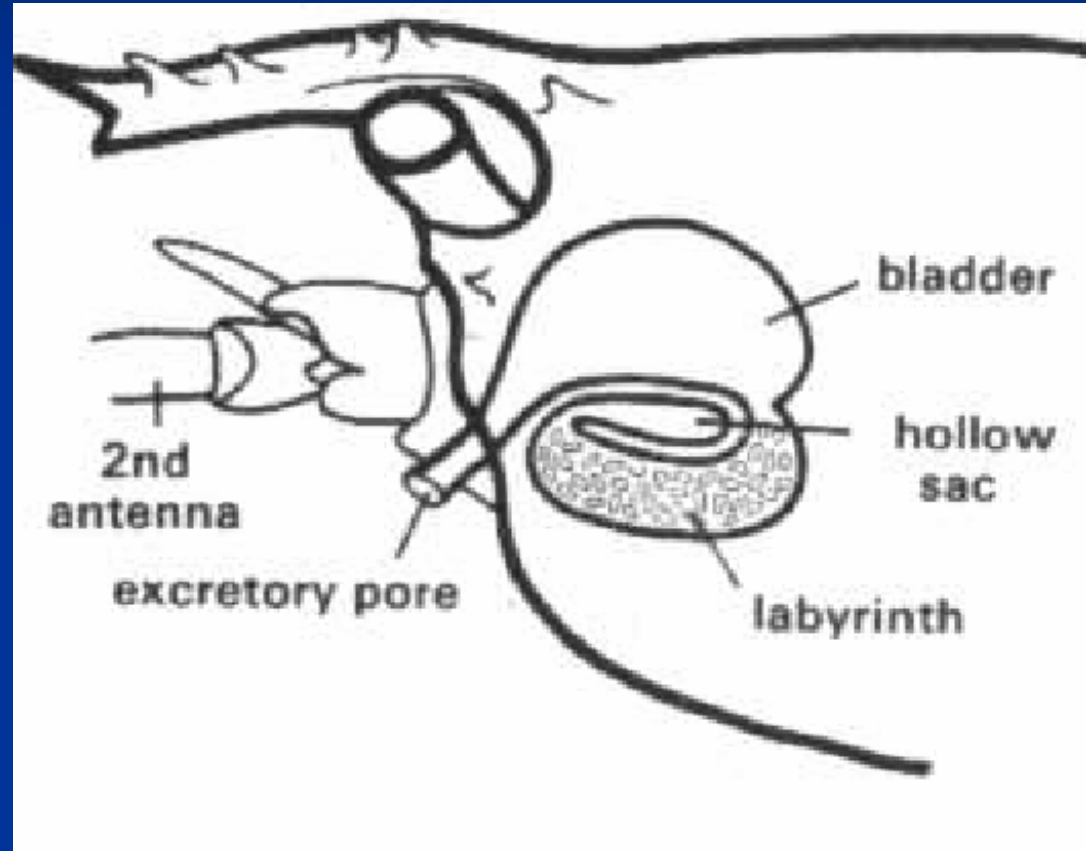


1.2.2 Excretory System

Antennal gland

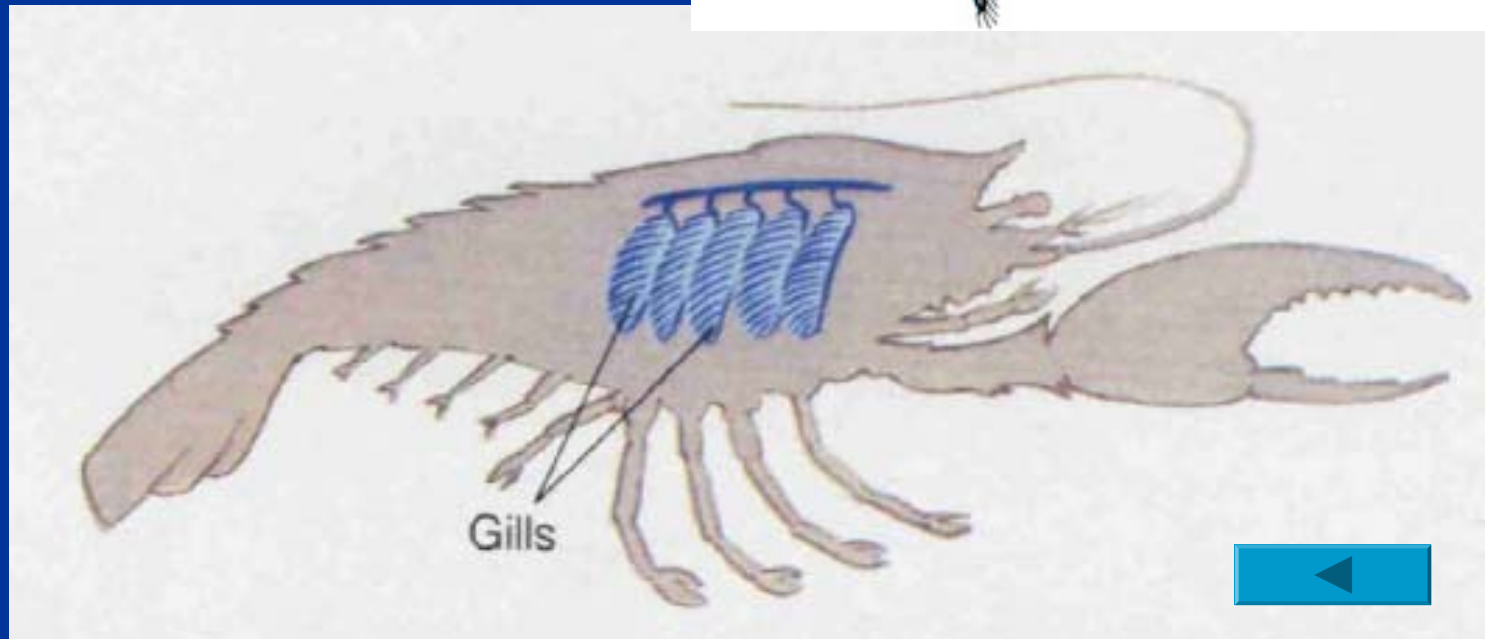
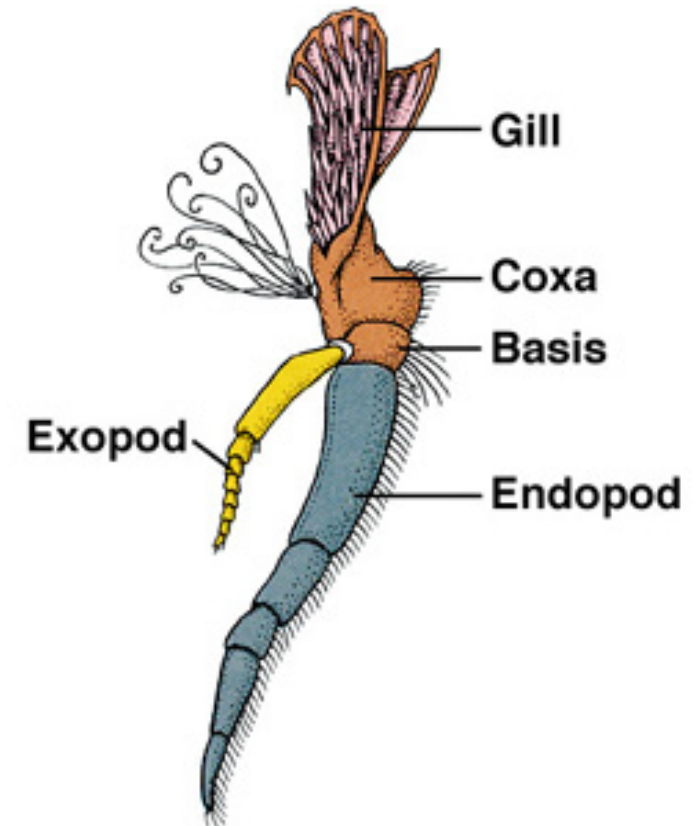


Maxillary gland

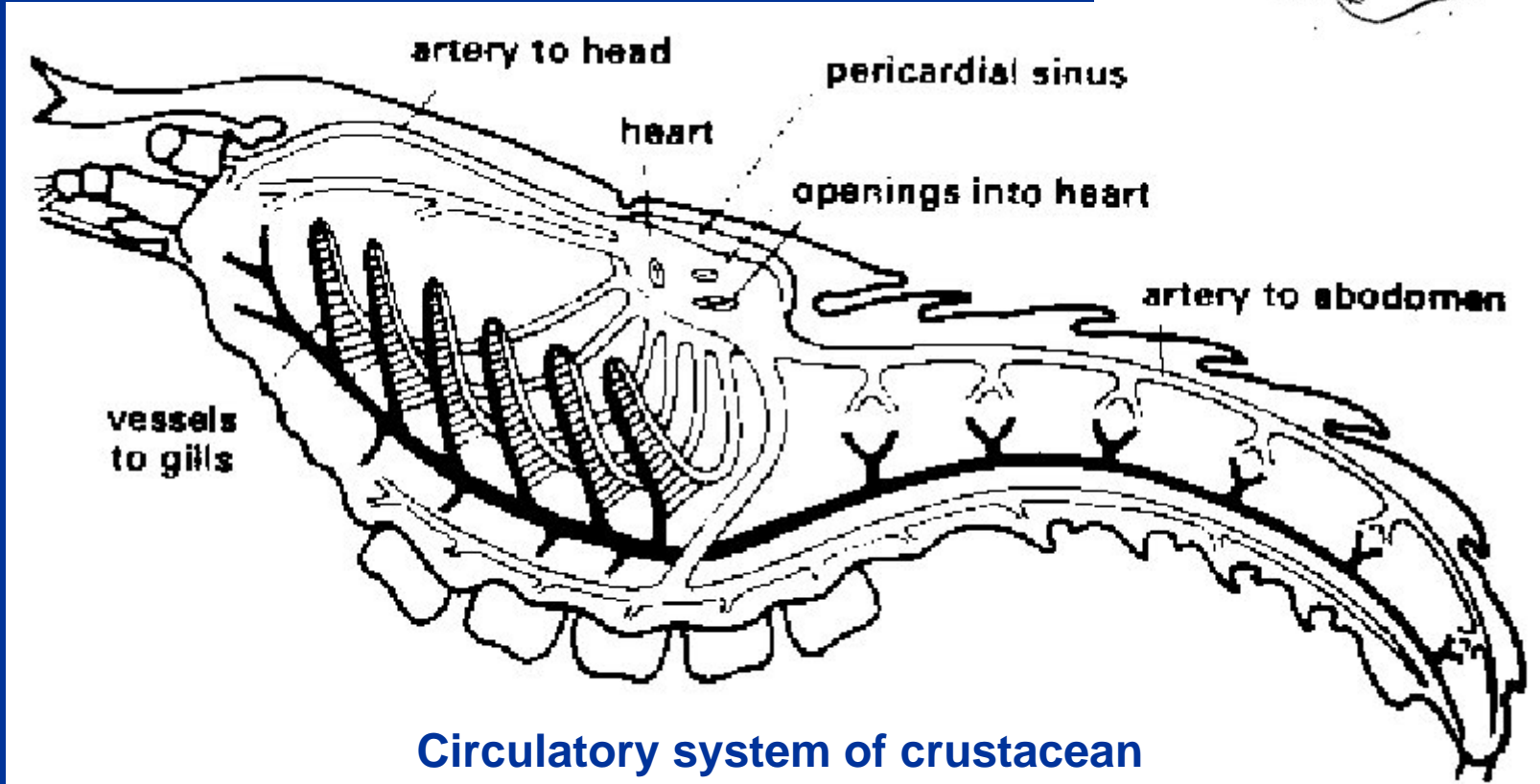
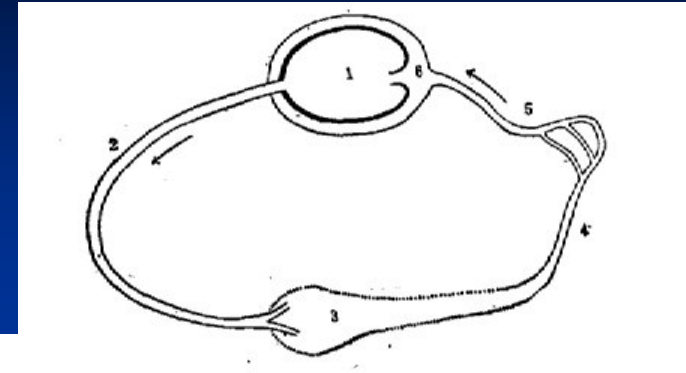


1.2.3 Respiratory System

- gill
 - podobranch (足鳃)
 - arthrobranch (节鳃)
 - pleurobranch (侧鳃)



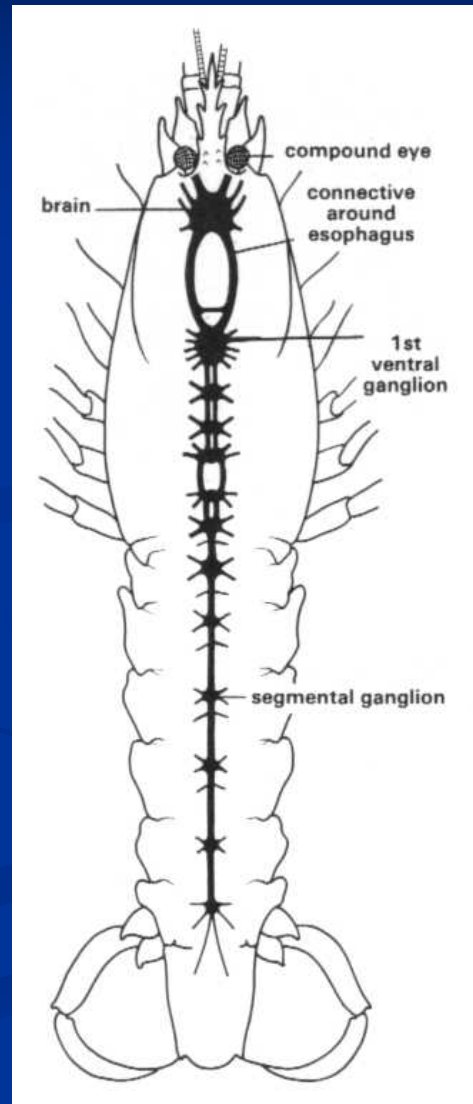
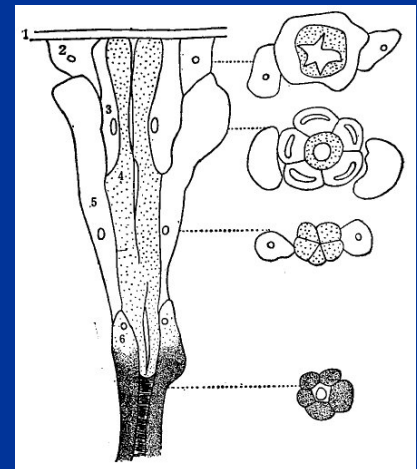
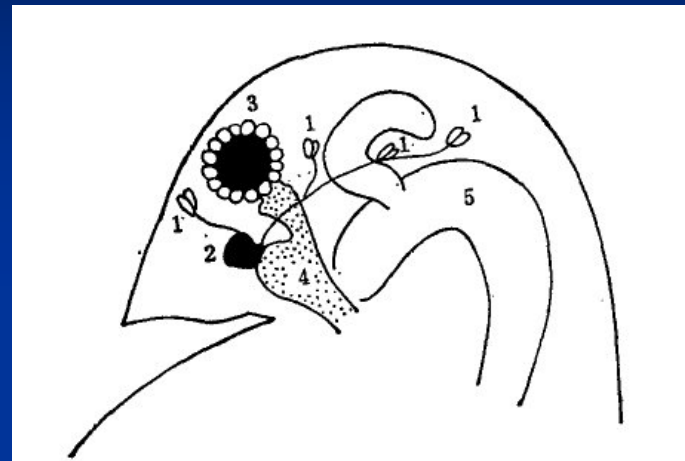
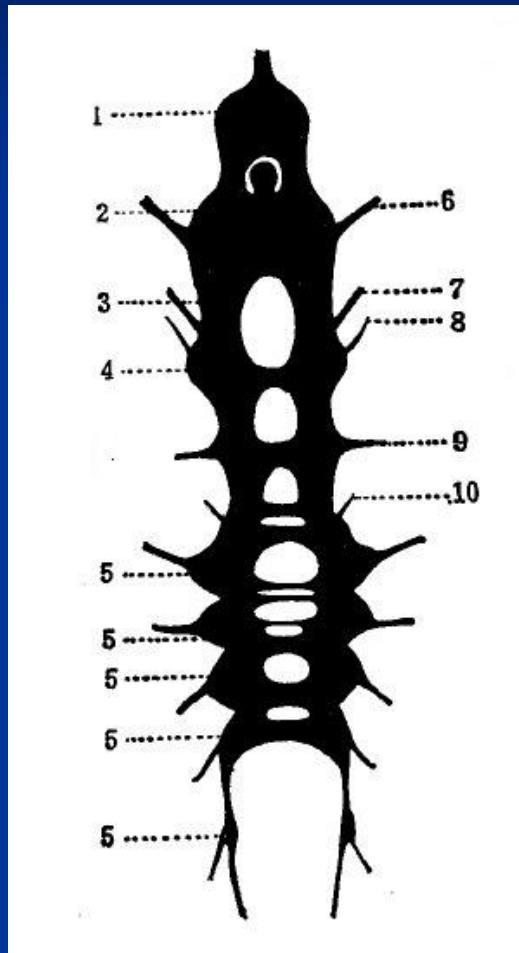
1.2.4 Circulatory System



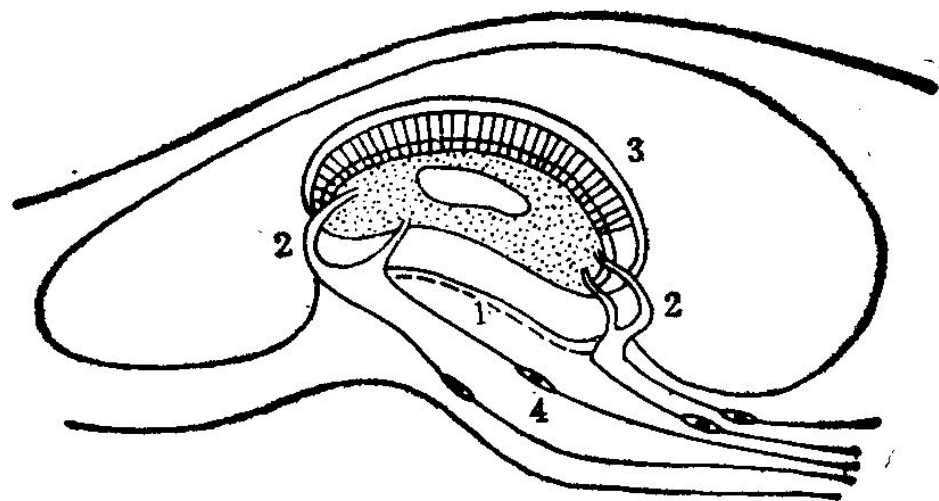
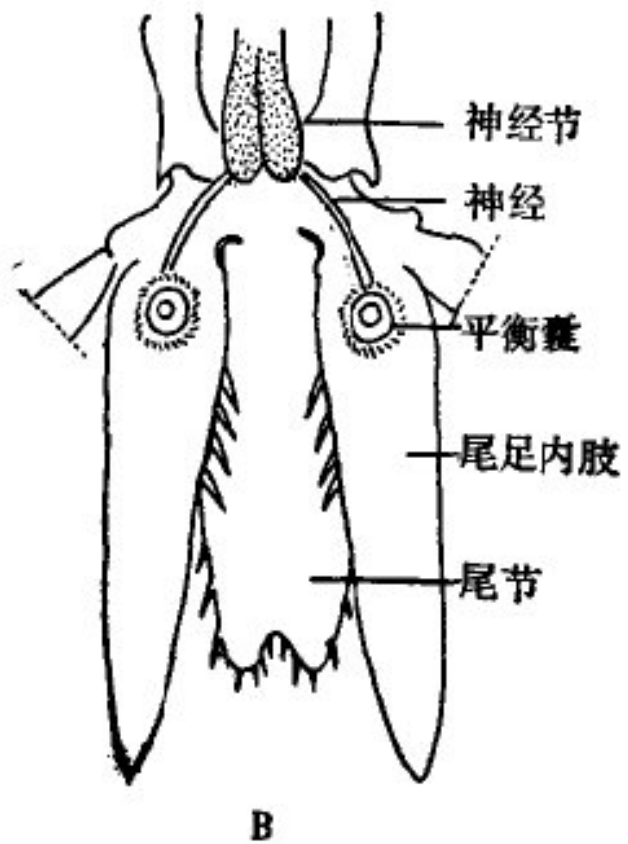
Circulatory system of crustacean



1.2.5 Nervous System & Sense Organs



Nervous system of cladocera

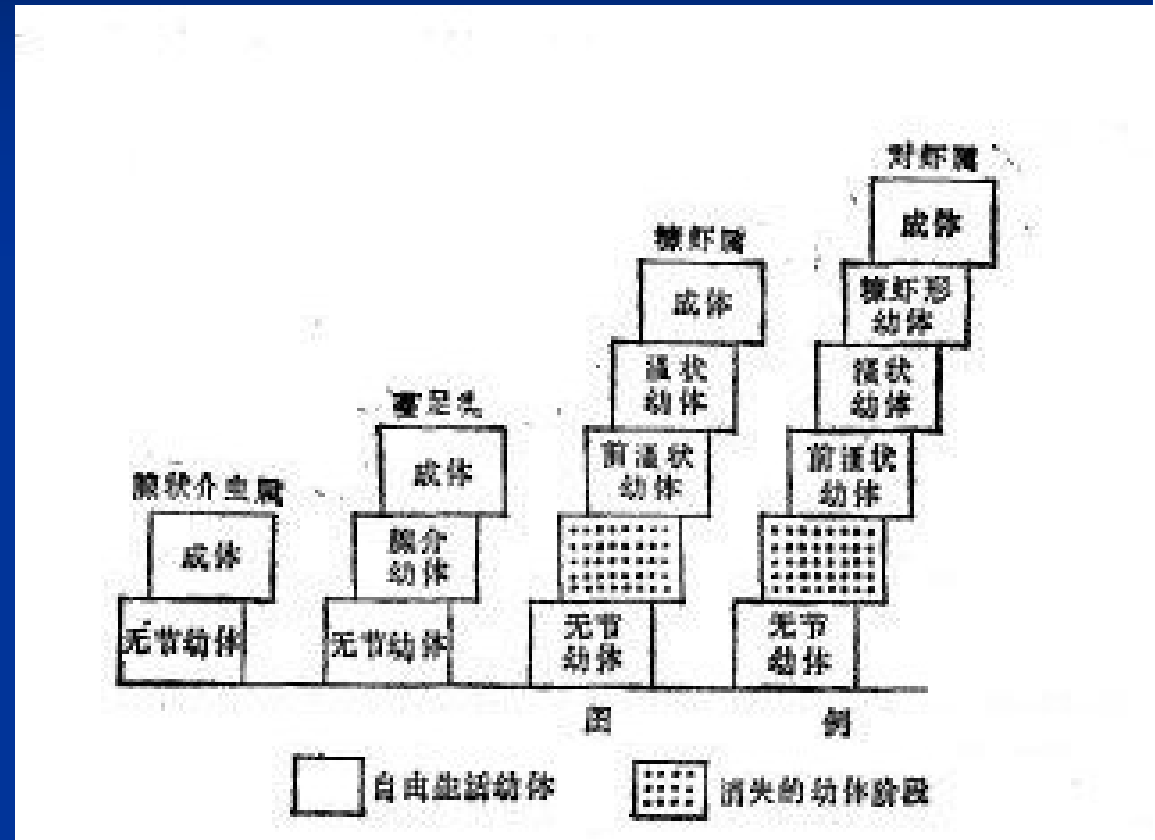


Statocysts of Mysidacea



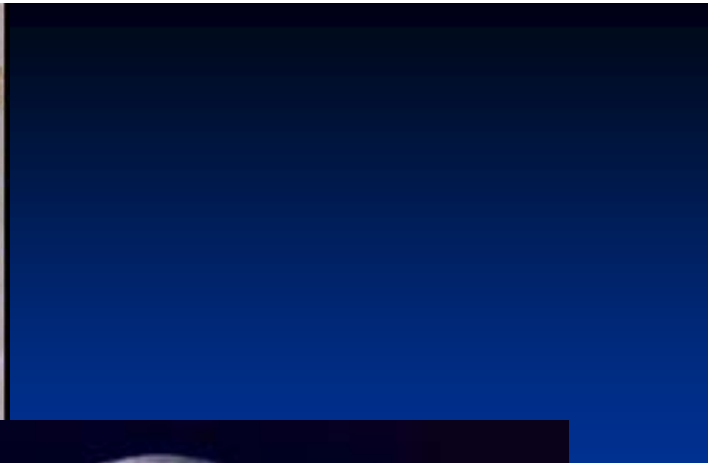
1.3 Reproduction and Development

- Reproduction
 - Parthenogenesis
 - Sexual reproduction
- Development
 - Anamorphosis
 - Epimorphosis
 - Metamorphosis

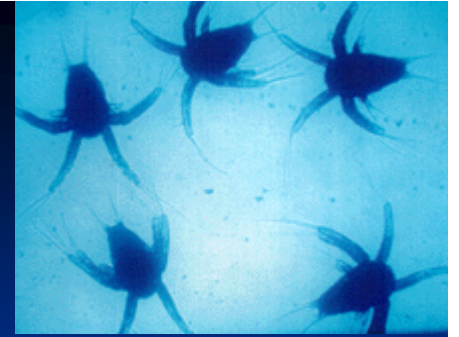


2 Major Group of Planktonic Crustacea

Branchiopoda	Malacostraca
Anostraca: <i>Artemia</i>	Peracarida
Cladocera: <i>Penilia</i>	Mysidacea: <i>Gastrosaccus</i>
Ostracoda	Cumacea*: <i>Diastylis</i>
Myodovopa: <i>Conchoecia</i>	Amphipoda*: <i>Hyperia</i>
Copepoda	Isopoda*: <i>Cirolana</i>
Calanoida: <i>Calanus</i>	Eucarida
Cyclopoida: <i>Oithona</i>	Euphausiacea: <i>Pseudeuphausia</i>
Harpacticoida: <i>Microsetella</i>	Dedapoda*: <i>Lucifer</i>







The End

Thank you for your attention!