



## **Zoology (4)**

### **(Entomology & Invertebrates II)**

**206 scbio**

**(Practical Part)**

**Second semester**

**Prepared by**

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**Dr. Ali Mansour Fadlallah**

**Faculty of Science**

**Zoology department**

**2022-2023**

# **Book data**

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**Faculty: Education**

**Group: Second**

**Division: Biology & Geology**

**Publication date: Second semester**

**2022-2023**

Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Arthropoda

Subphylum: Branchiata

Class: Crustacea

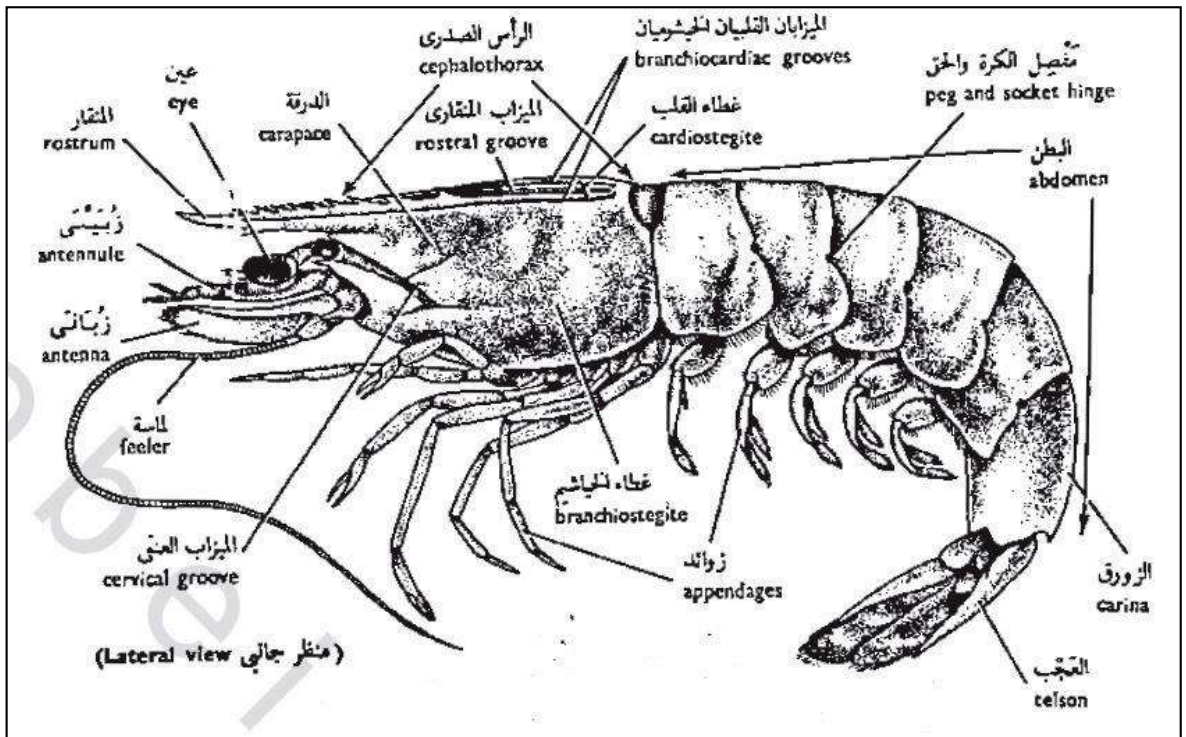
Subclass: Malacostraca

Order: Eucarida

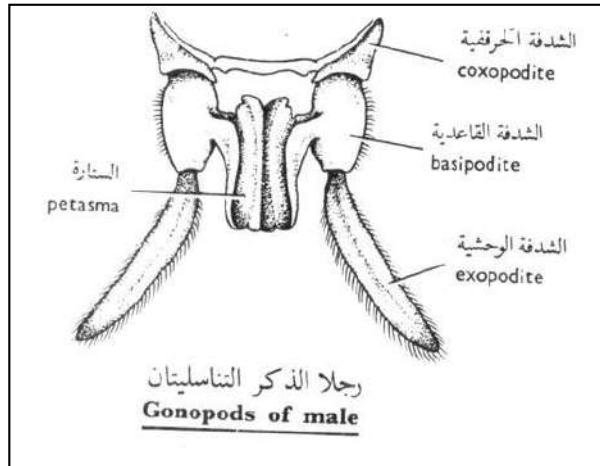
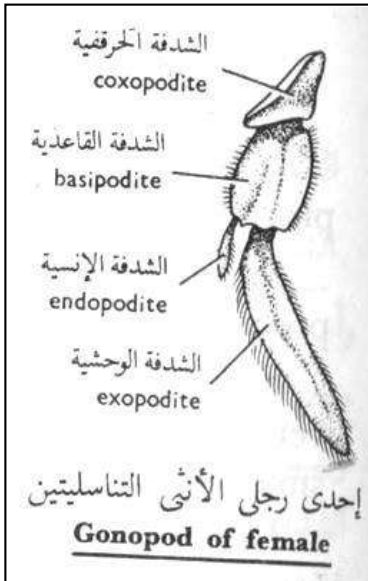
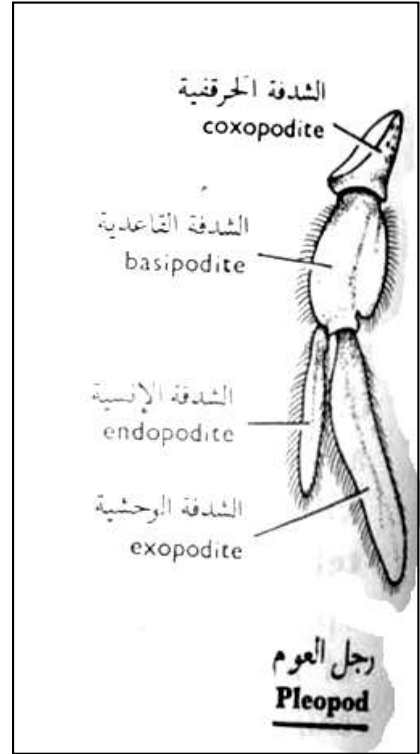
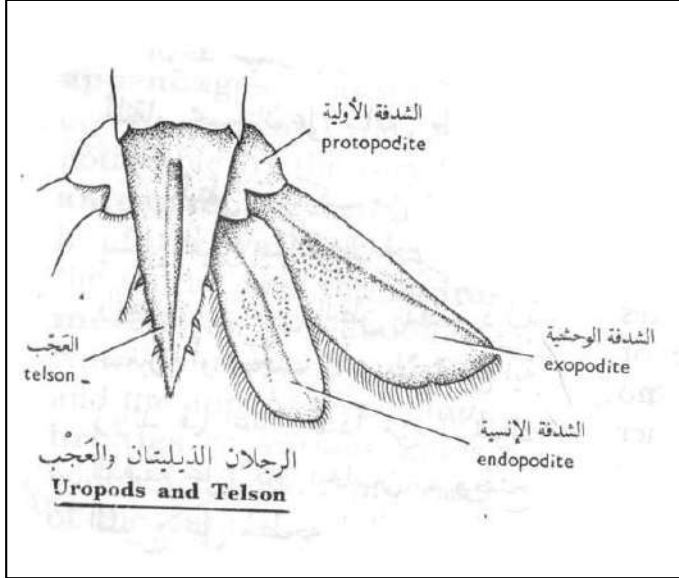
Suborder: Decapoda

Family: Macrura

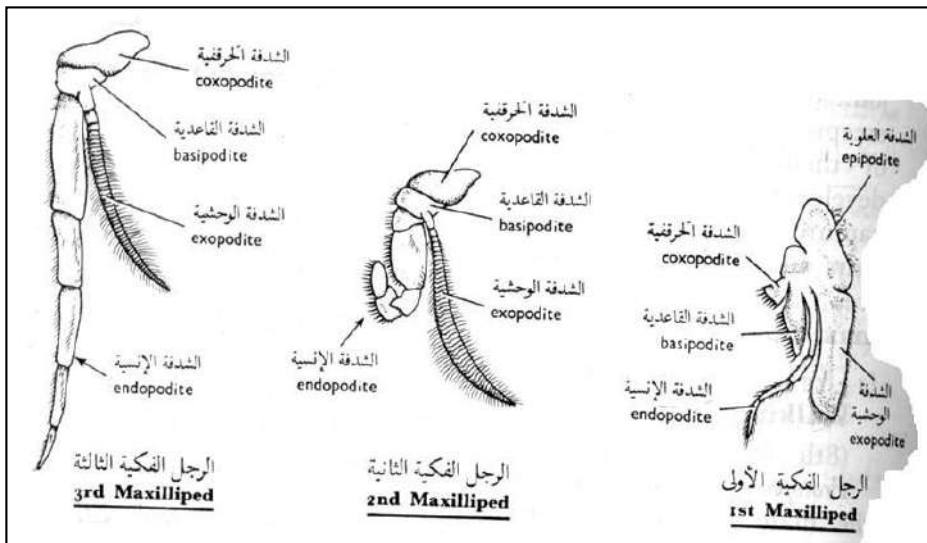
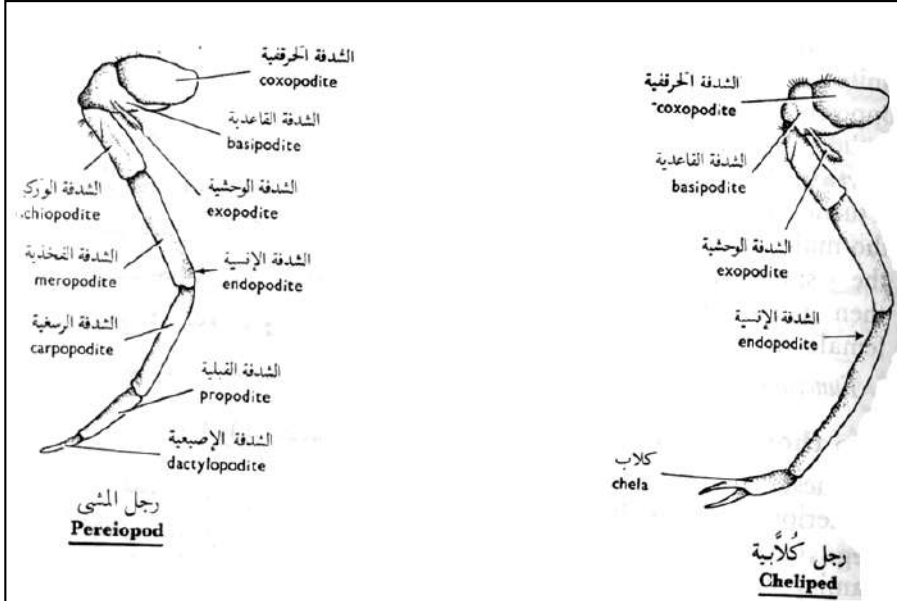
e.g.: *Penaeus japonicus*.



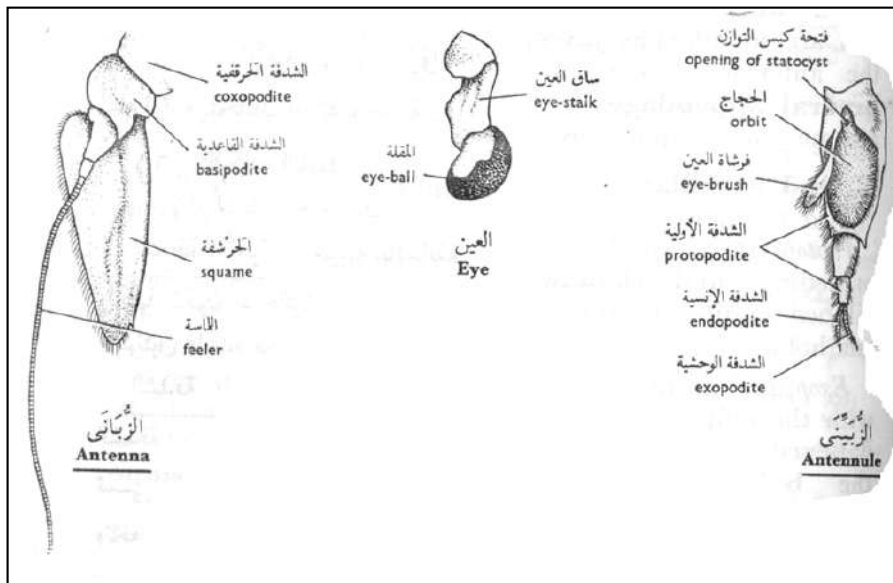
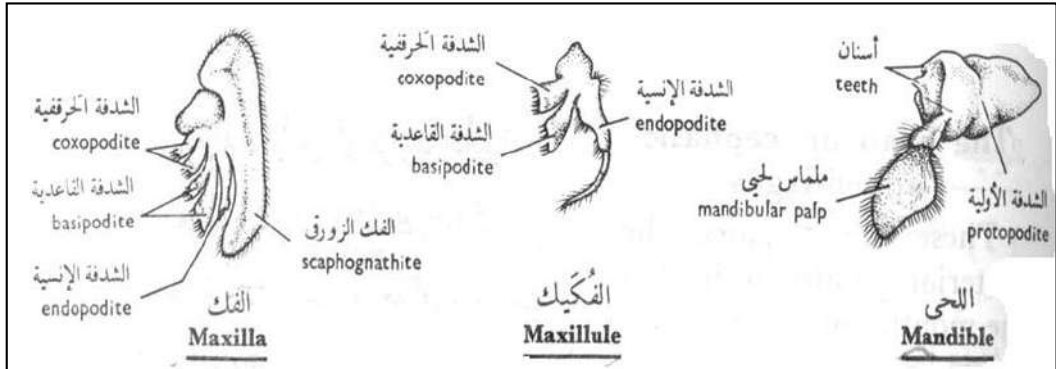
## Abdominal appendages



## Thoracic appendages



## Cephalic appendages



Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Arthropoda

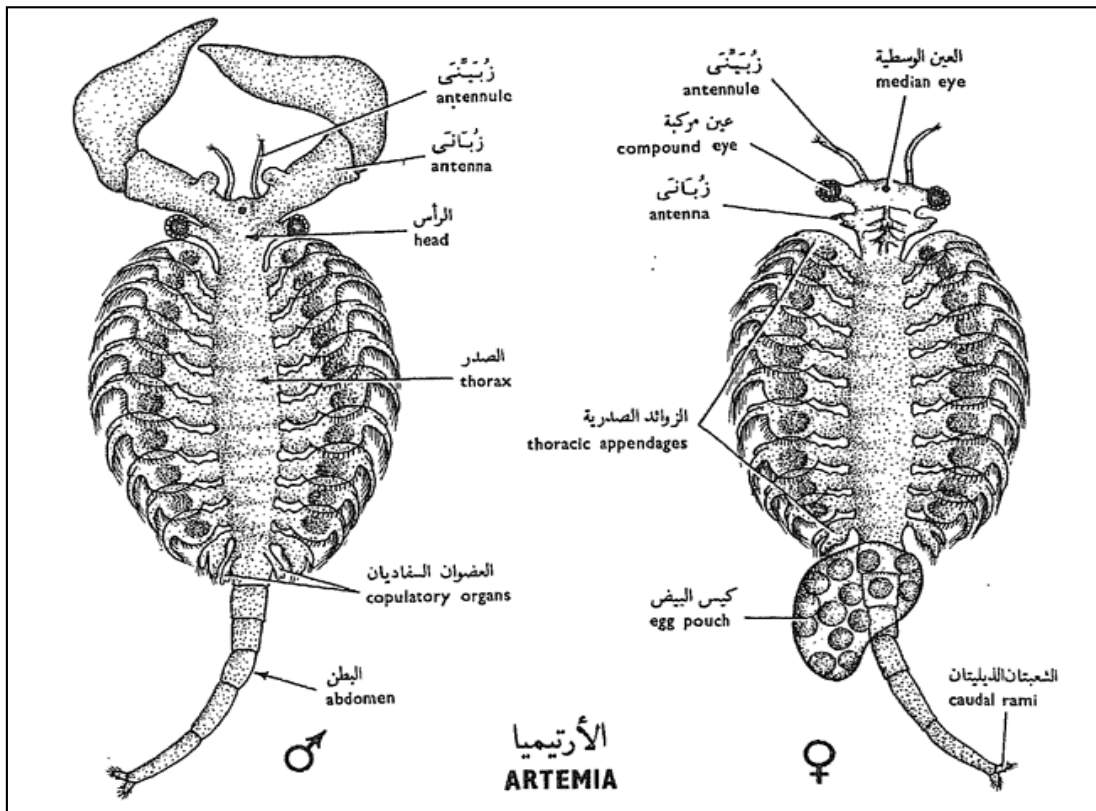
Subphylum: Branchiata

Class: Crustacea

Subclass: Branchiopoda

Order: Anostraca

e.g.: *Artemia* sp.



Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Arthropoda

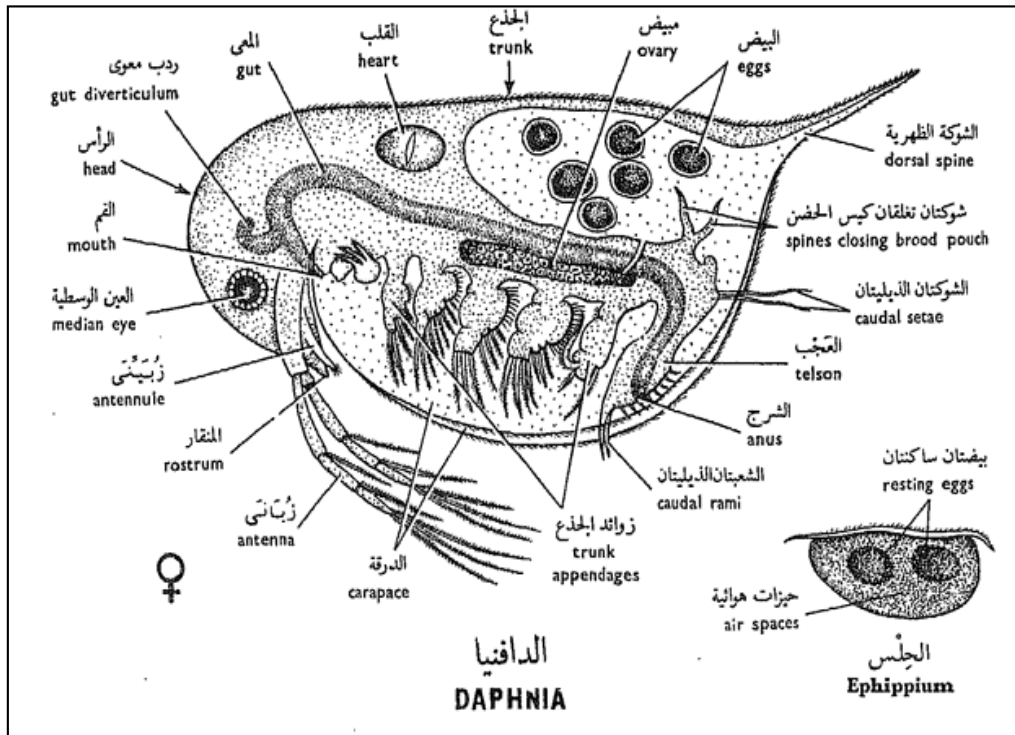
Subphylum: Branchiata

Class: Crustacea

Subclass: Branchiopoda

Order: Cladocera

e.g.: *Daphnia* sp.





Kingdom: Animalia

Subkingdom: Metazoa

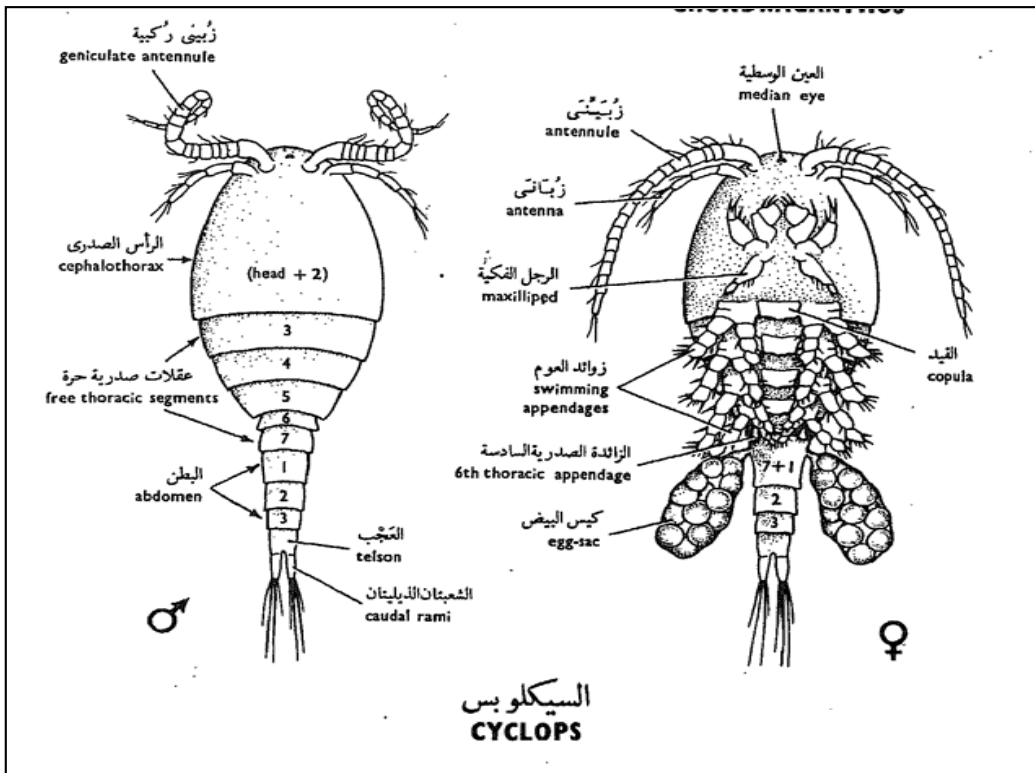
Phylum: Arthropoda

Subphylum: Branchiata

Class: Crustacea

Subclass: Copepoda

e.g.: *Cyclops* sp.



Kingdom: Animalia

Subkingdom: Metazoa

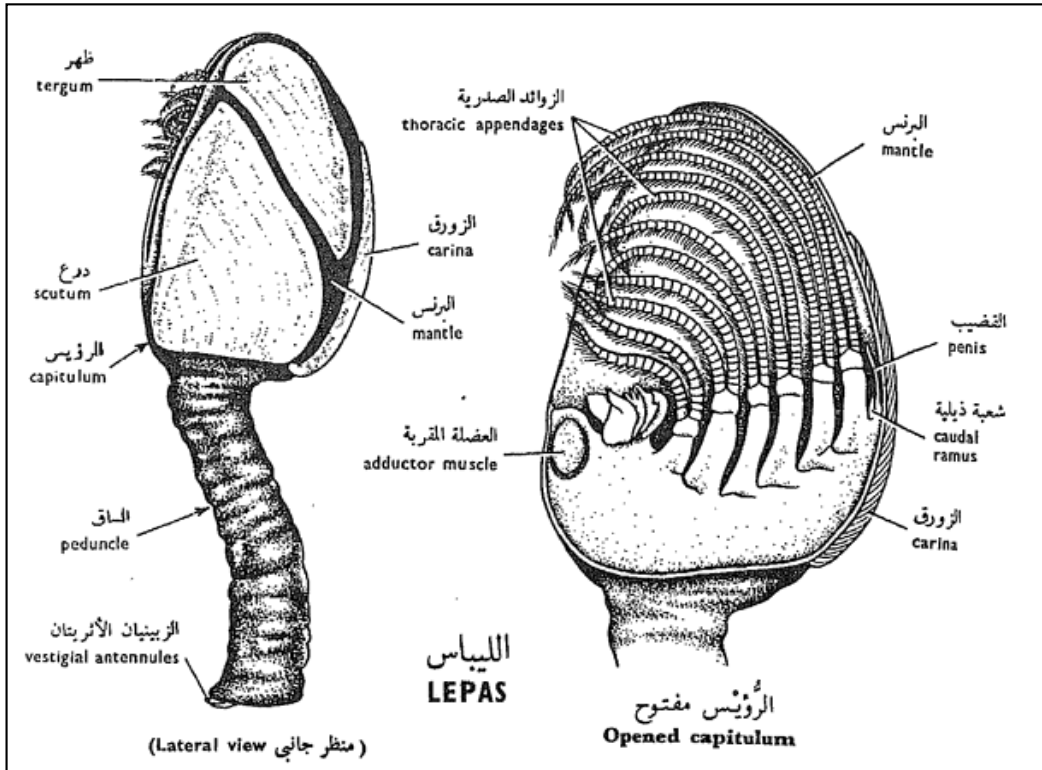
Phylum: Arthropoda

Subphylum: Branchiata

Class: Crustacea

Subclass: Cirripedia

e.g.: *Lepas* sp.



**Kingdom: Animalia**

**Subkingdom: Metazoa**

**Phylum: Arthropoda**

**Subphylum: Branchiata**

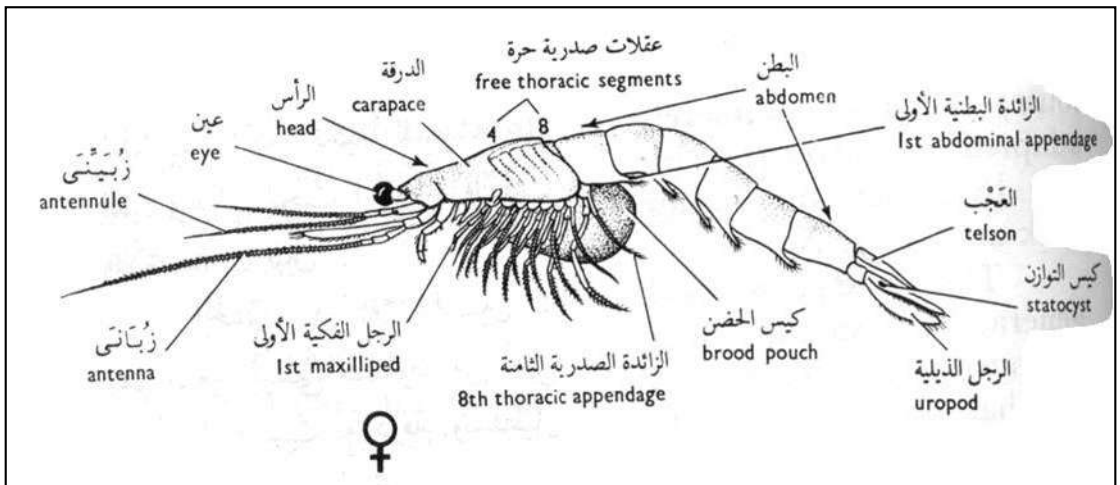
**Class: Crustacea**

**Subclass: Malacostraca**

**Order: Peracarida**

**Suborder: Mysidacea**

**e.g.: *Mysis* sp.**



**Kingdom: Animalia**

**Subkingdom: Metazoa**

**Phylum: Arthropoda**

**Subphylum: Branchiata**

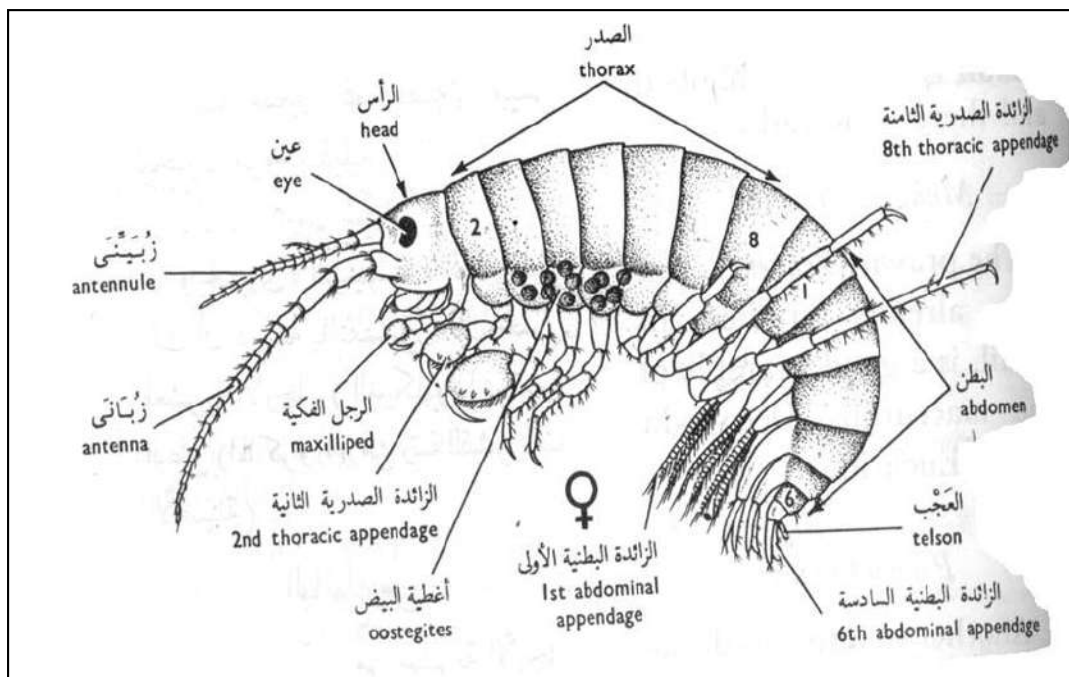
**Class: Crustacea**

**Subclass: Malacostraca**

**Order: Peracarida**

**Suborder: Amphipoda**

**e.g.: Gammarus sp.**



**Kingdom: Animalia**

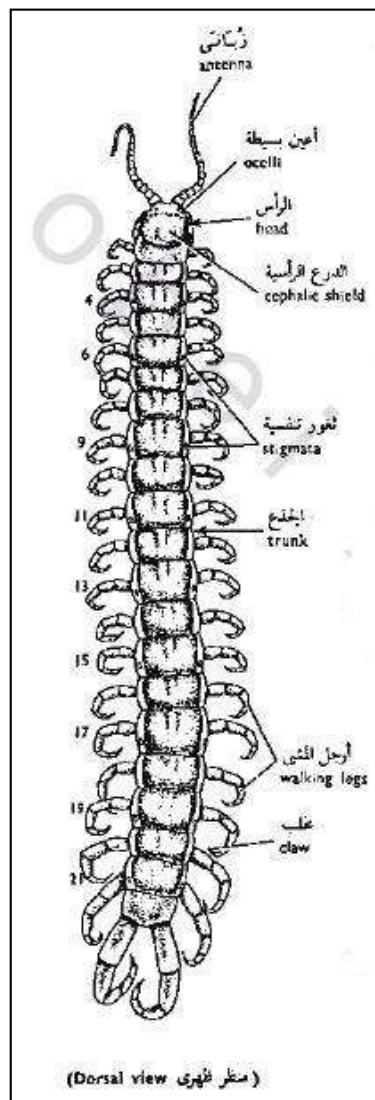
**Subkingdom: Metazoa**

**Phylum: Arthropoda**

**Class: Myriapoda**

**Subclass: Chilopoda**

**e.g.: *Scolopendra morsitans*.**



Kingdom: Animalia

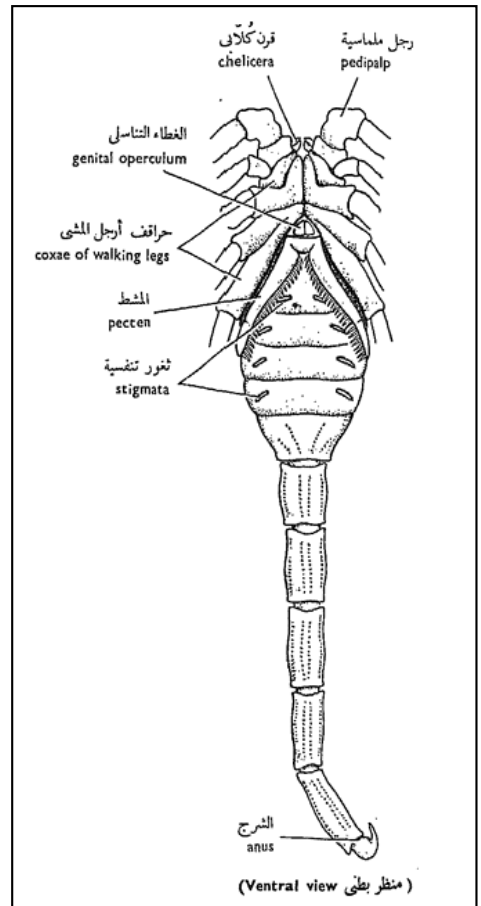
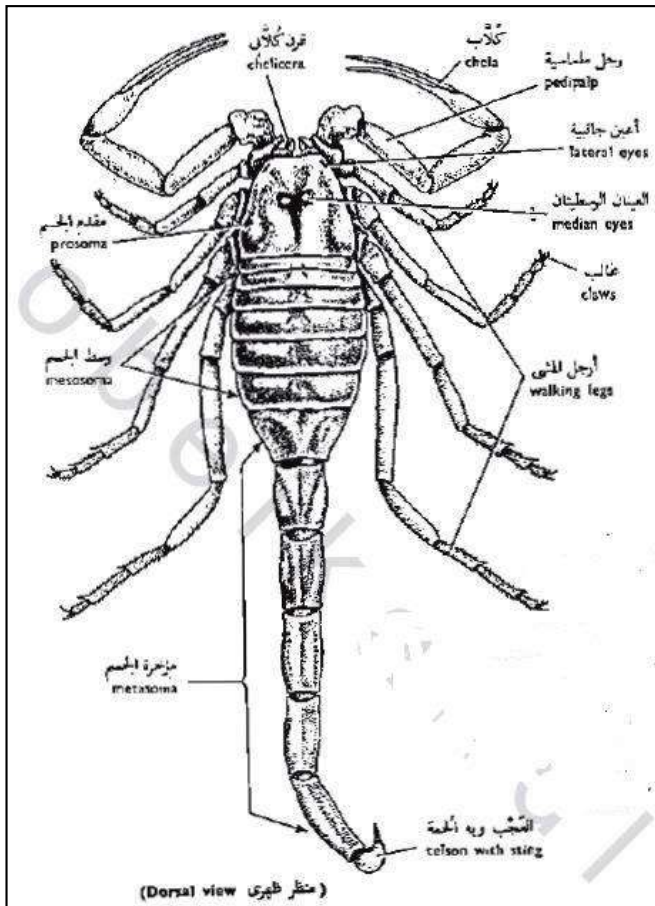
Subkingdom: Metazoa

Phylum: Arthropoda

Class: Arachnida

Order: Scorpionidea

e.g.: *Buthus quinquestriatus*.



Kingdom: Animalia

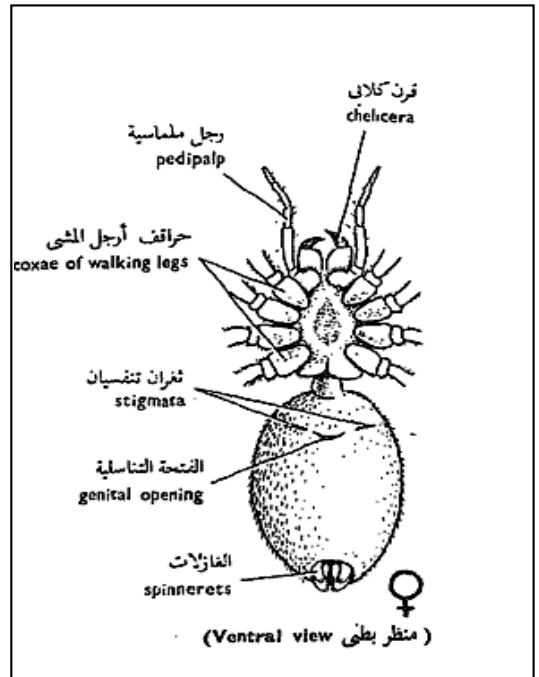
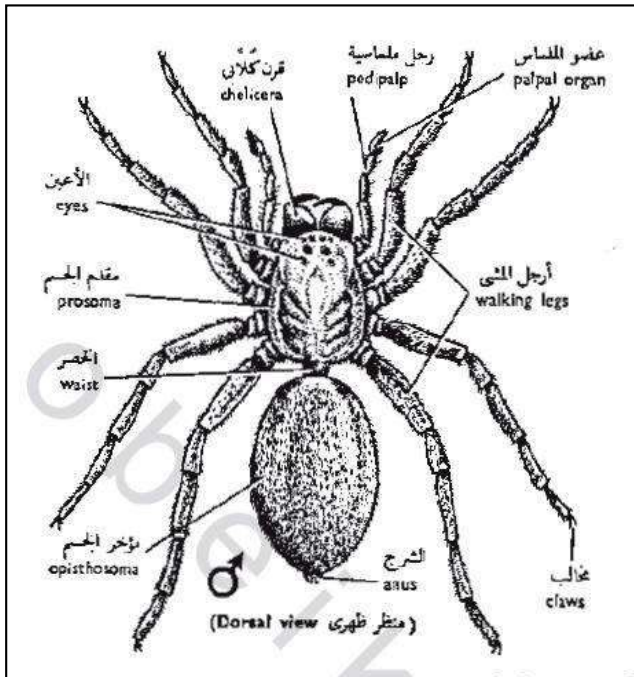
Subkingdom: Metazoa

Phylum: Arthropoda

Class: Arachnida

Order: Aranida

e.g.: *Lycosa ferox*.



Kingdom: Animalia

Subkingdom: Metazoa

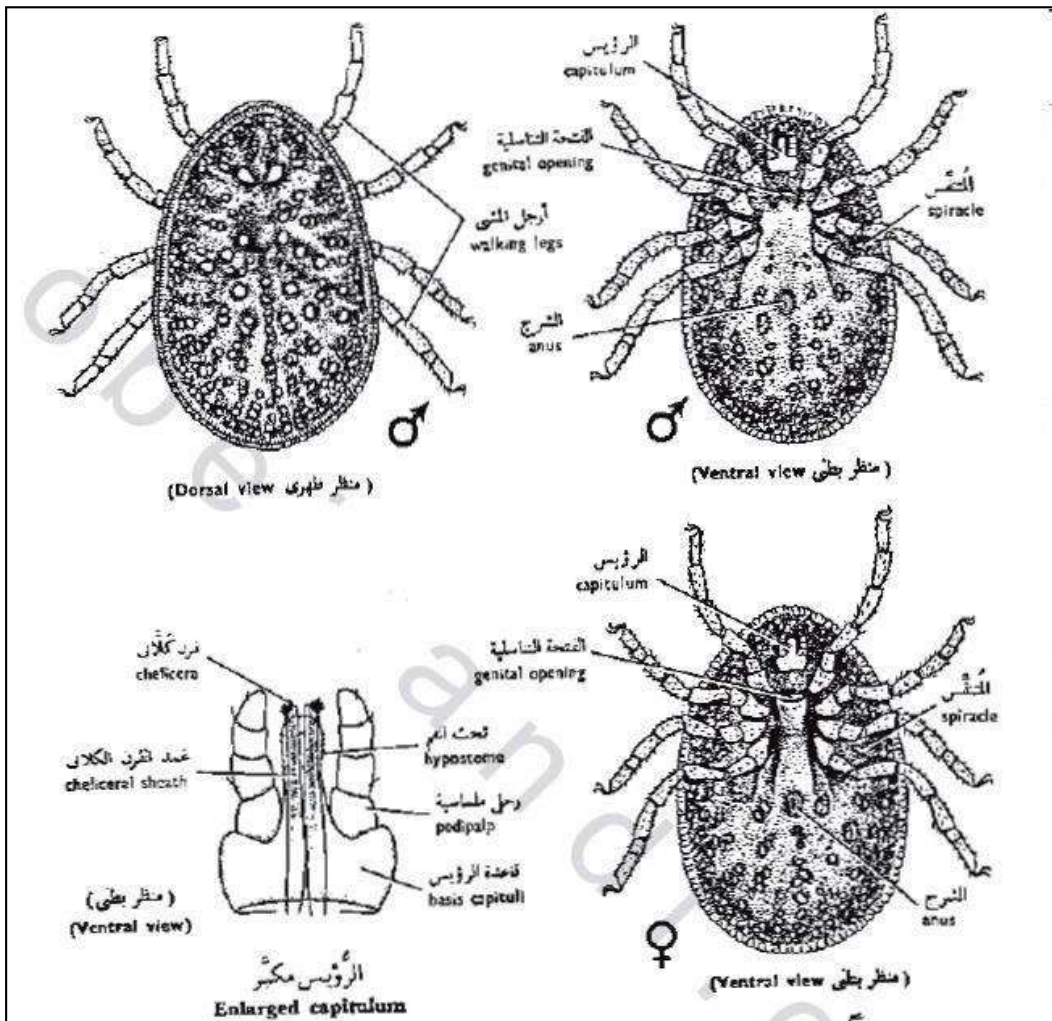
Phylum: Arthropoda

Class: Arachnida

Order: Acarina

Family: Argasidae

e.g.: *Argas persicus*.





Kingdom: Animalia

Subkingdom: Metazoa

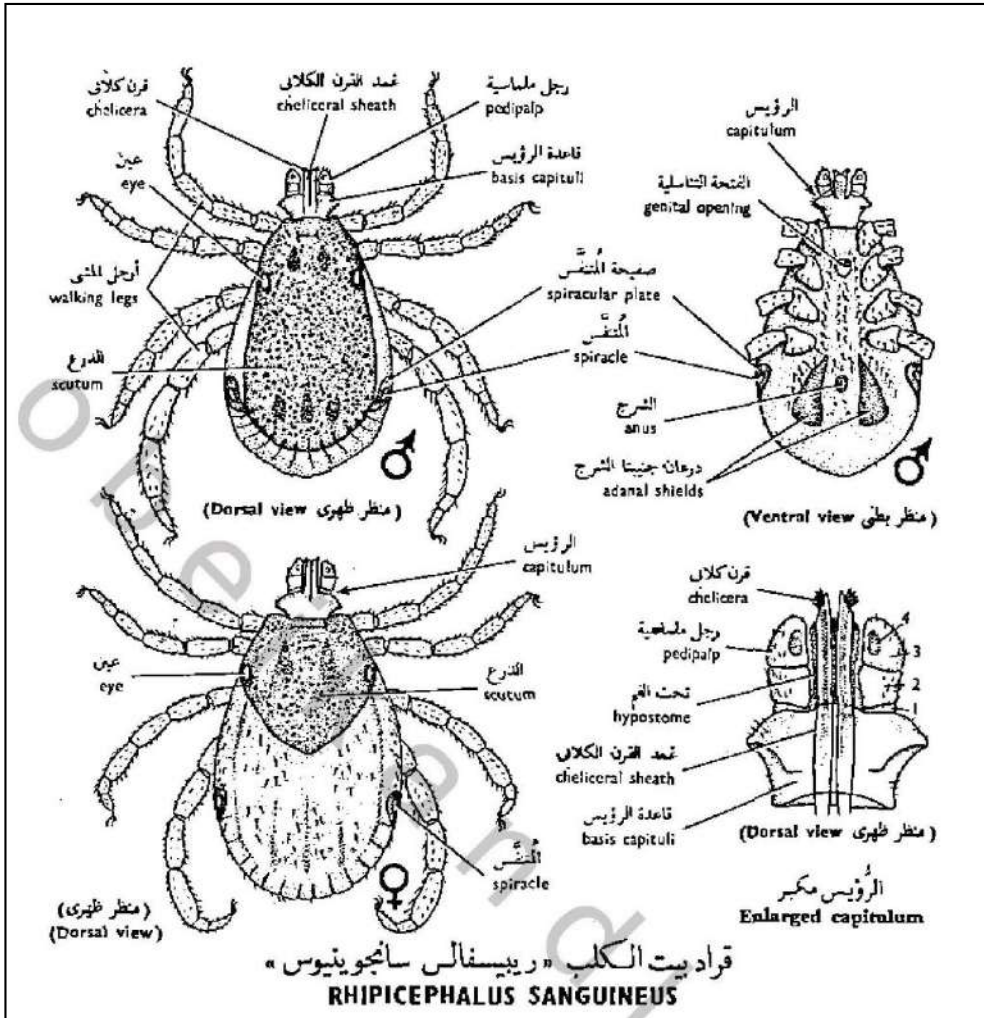
Phylum: Arthropoda

Class: Arachnida

Order: Acarina

Family: Ixodidae

e.g.: *Rhipicephalus sanguineus*.



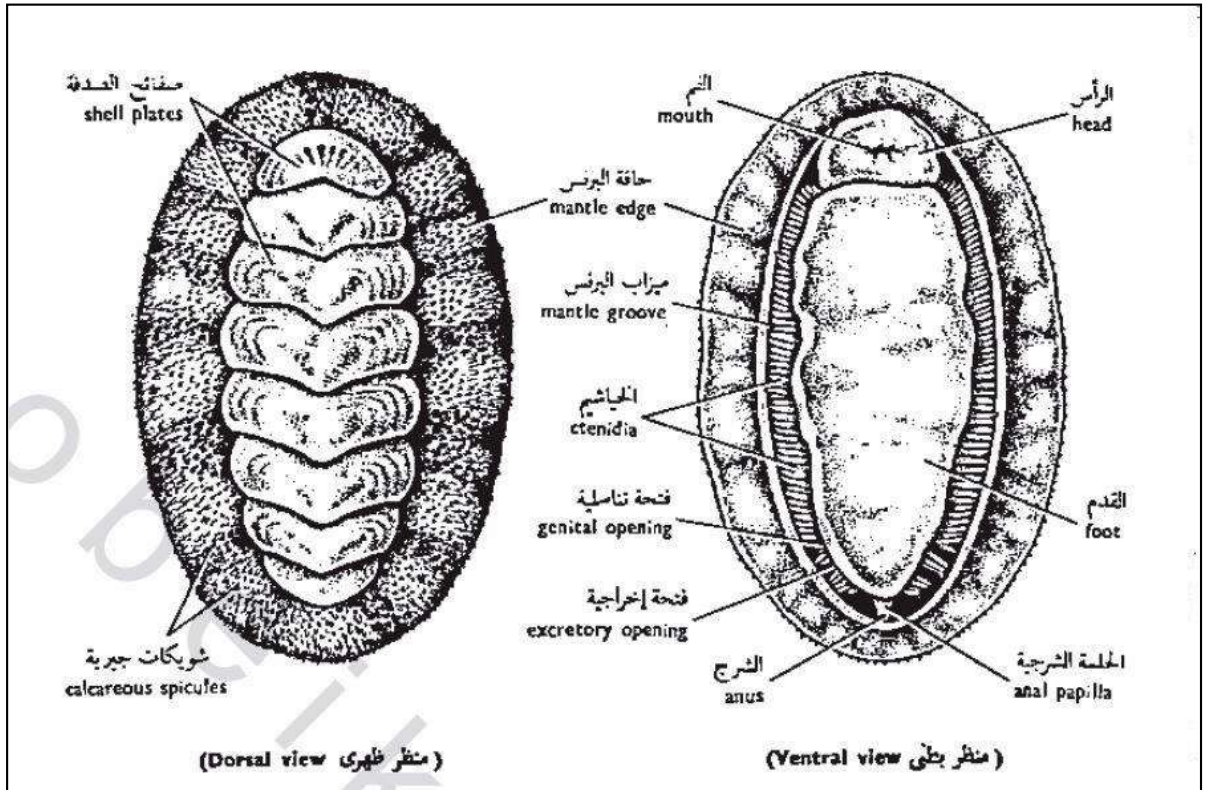
Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Mollusca

Class: Plachophora

e.g.: *Acanthochiton spinigera*.



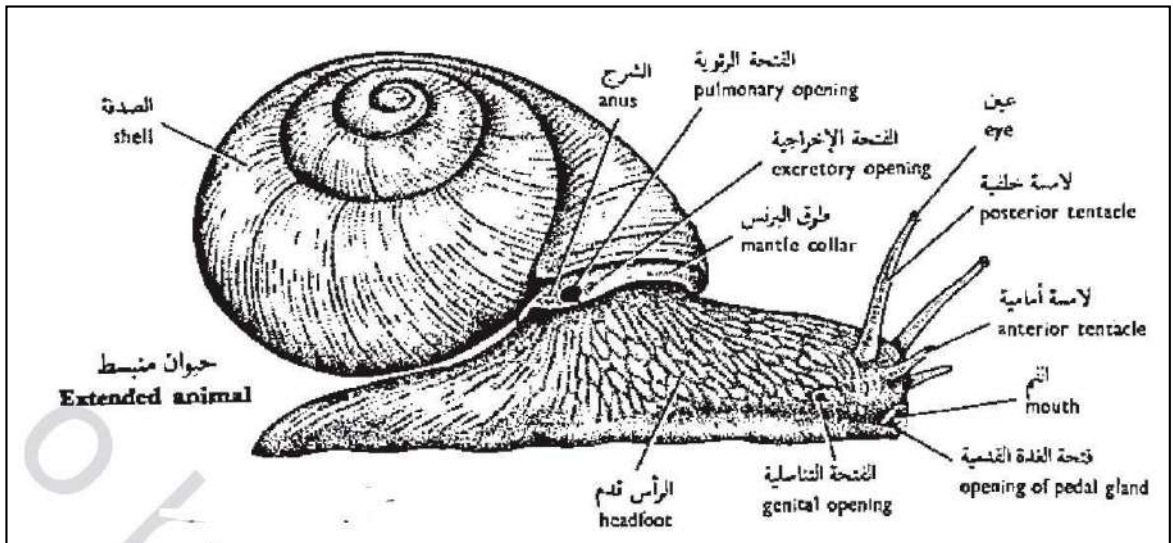
Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Mollusca

Class: Gastropoda

e.g.: *Eremina desertorum*.



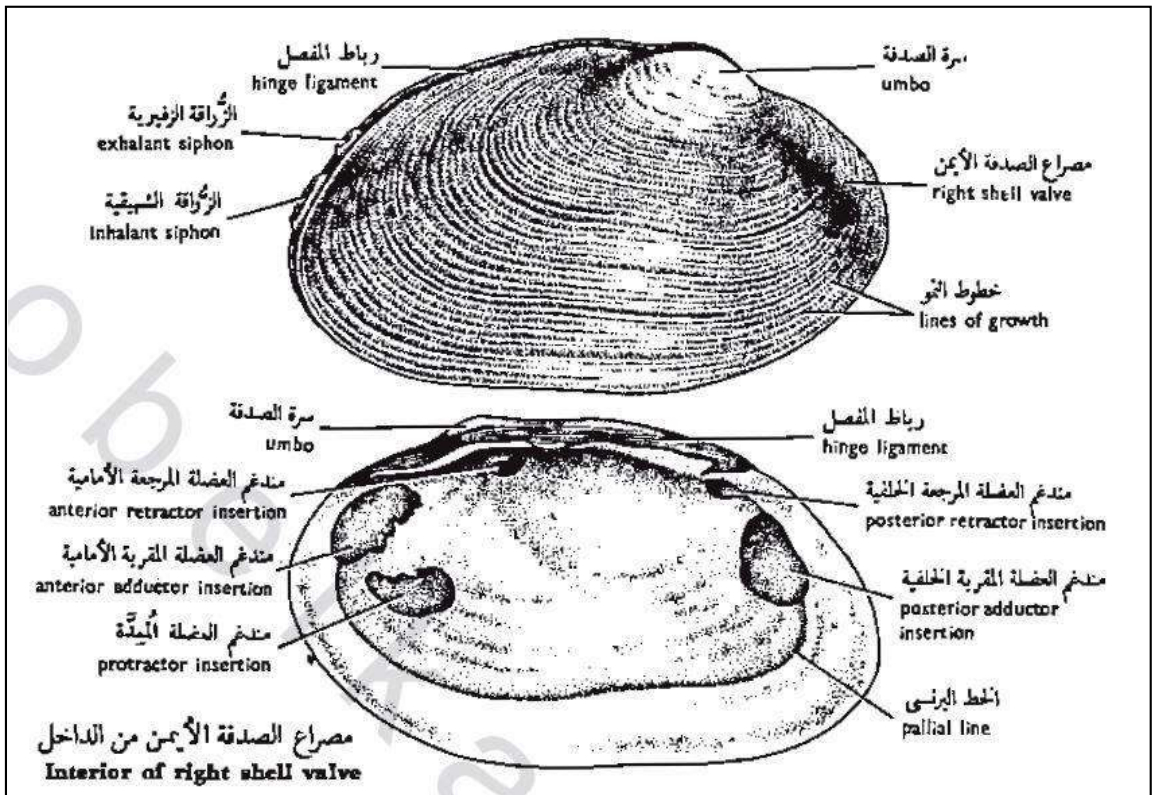
Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Mollusca

Class: Pelecypoda

e.g.: *Anodonta rubens*.



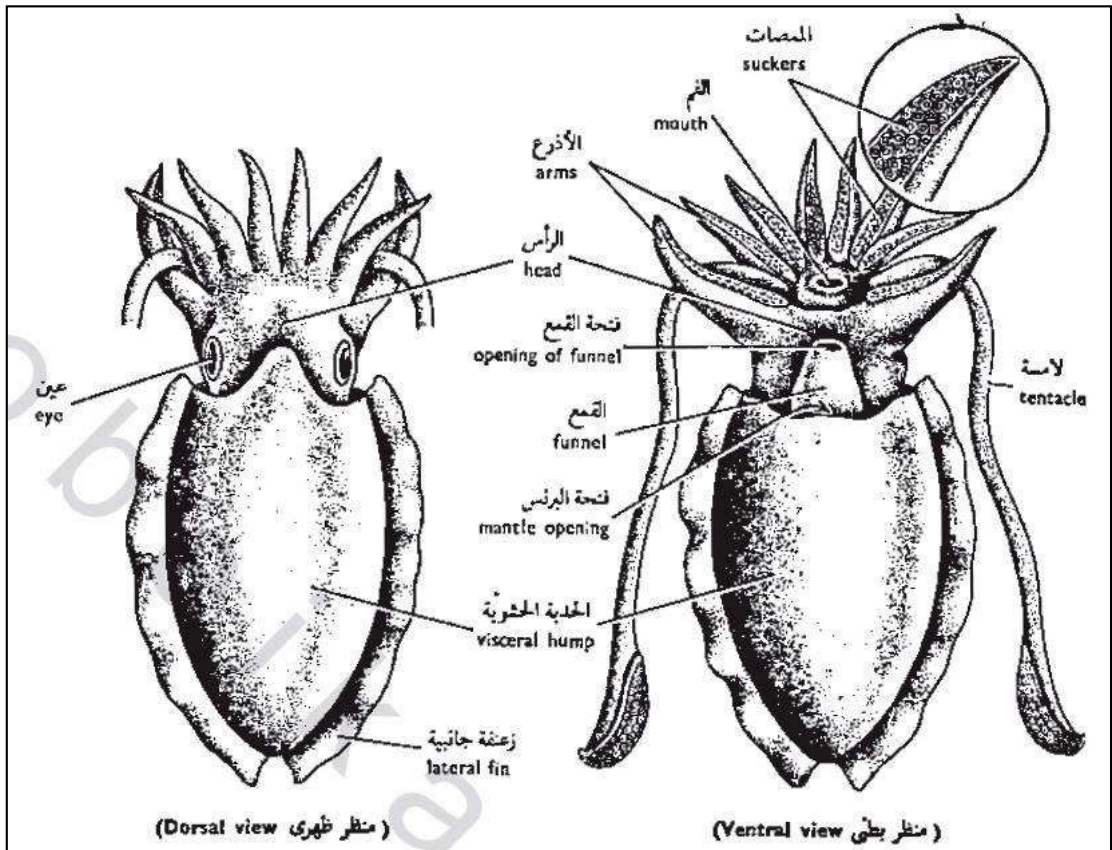
Kingdom: Animalia

Subkingdom: Metazoa

Phylum: Mollusca

Class: Cephalopoda

e.g.: *Sepia savignyi*.



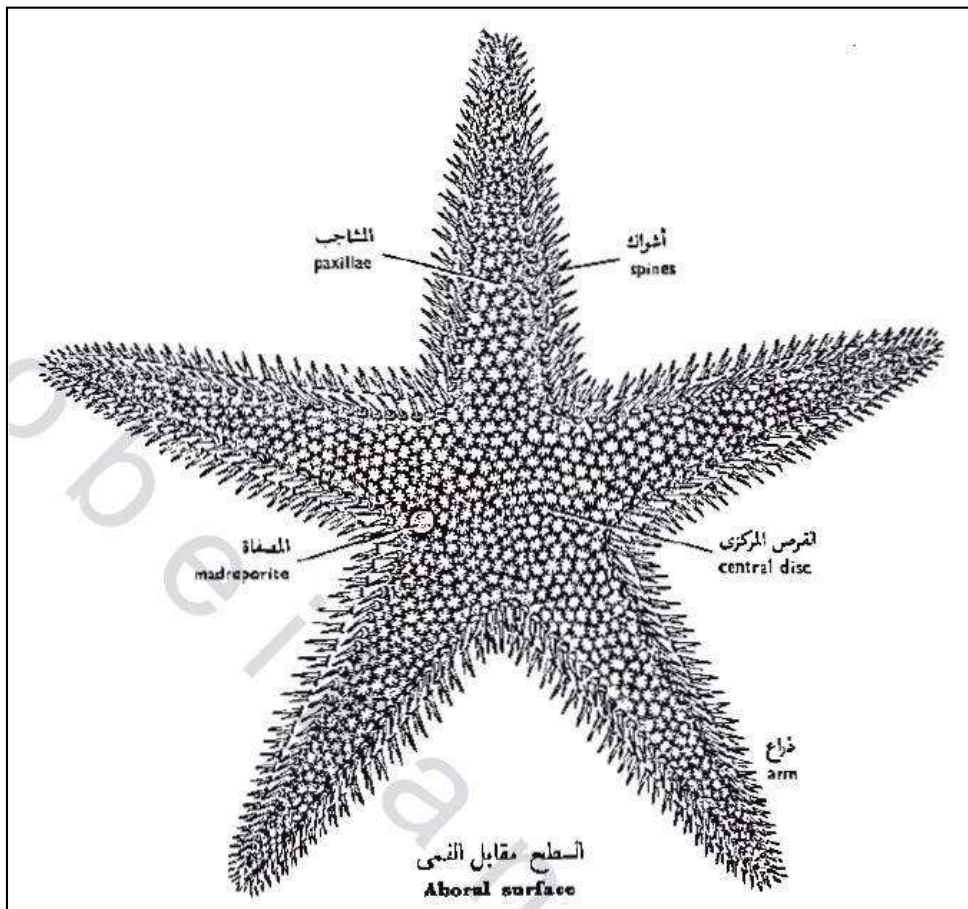
**Kingdom: Animalia**

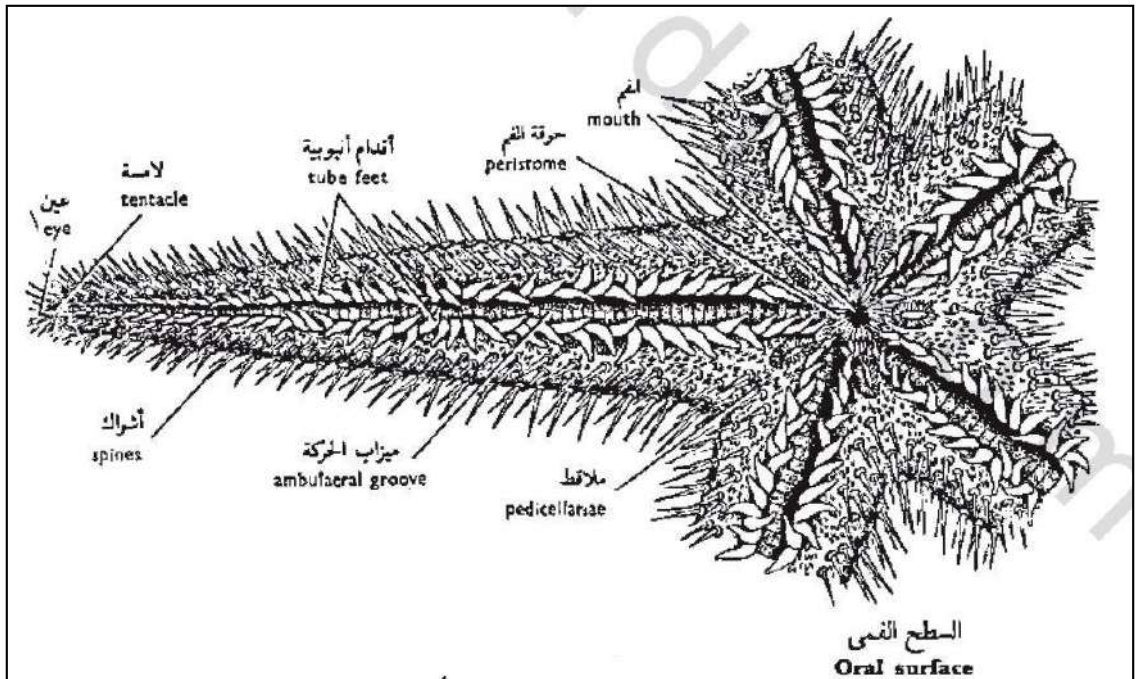
**Subkingdom: Metazoa**

**Phylum: Echinodermata**

**Class: Asteroidea**

**e.g.: *Astropecten relitaris*.**





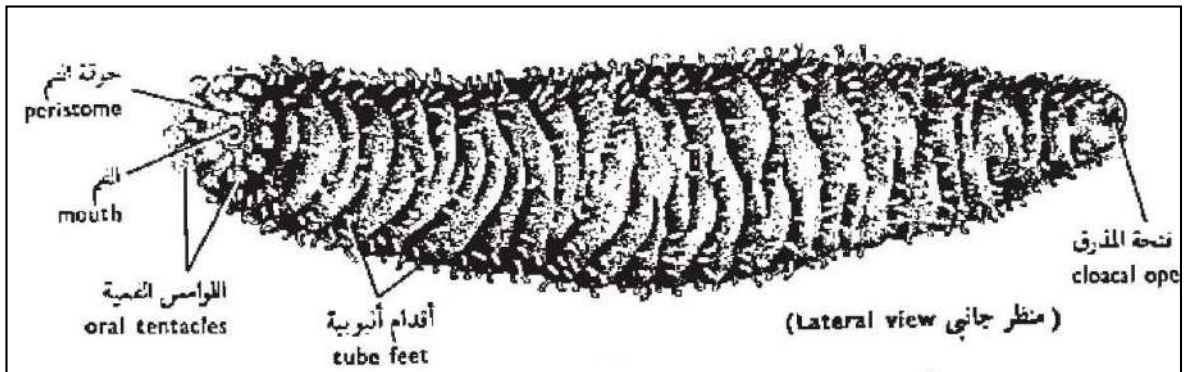
**Kingdom: Animali**

**Subkingdom: Metazoa**

**Phylum: Echinodermata**

**Class: Holothuroidea**

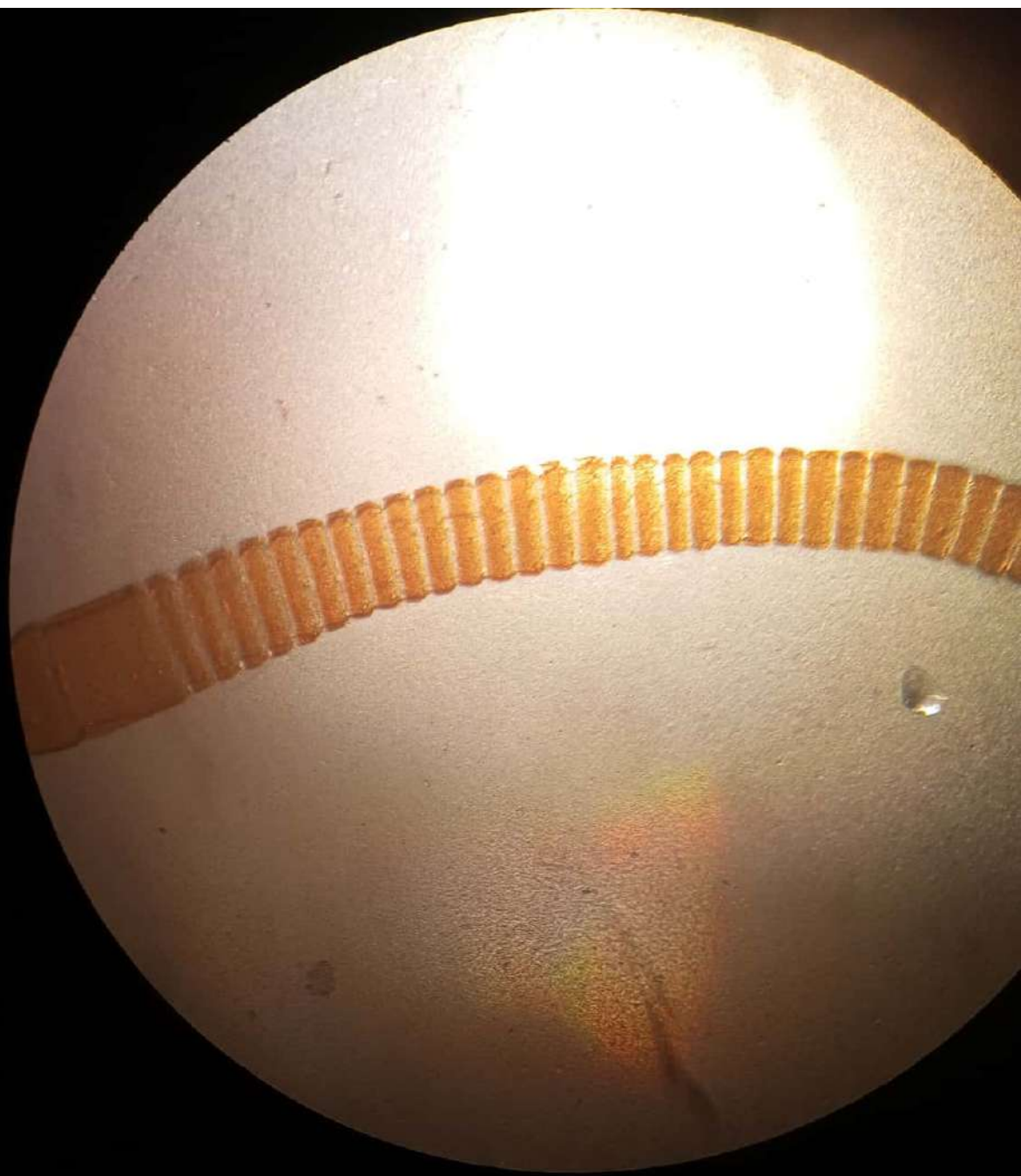
**e.g.: *Holothuria curiosa*.**



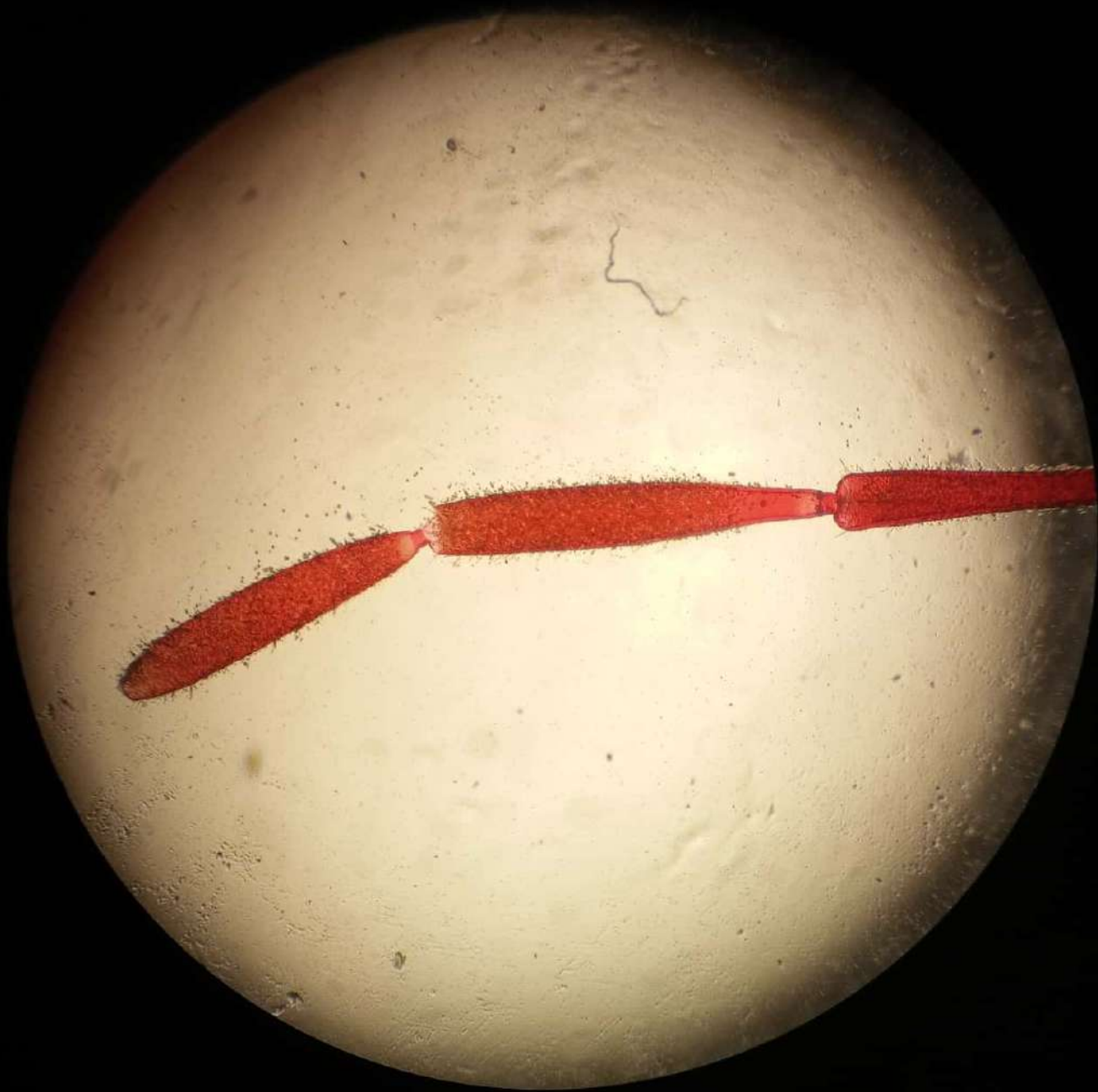


## References

بيولوجية الحيوان العملية باللغتين العربية والإنجليزية (الجزء الثالث) :  
للدكتور أحمد حماد الحسيني والدكتور إميل شنودة دميان ، القاهرة (مصر):  
دار المعارف 1969.



Staceous antenna



Filiform antenna



# Moniliform antenna



# Clavate antenna



# Serrate antenna



# Aristate antenna



Stylate antenna

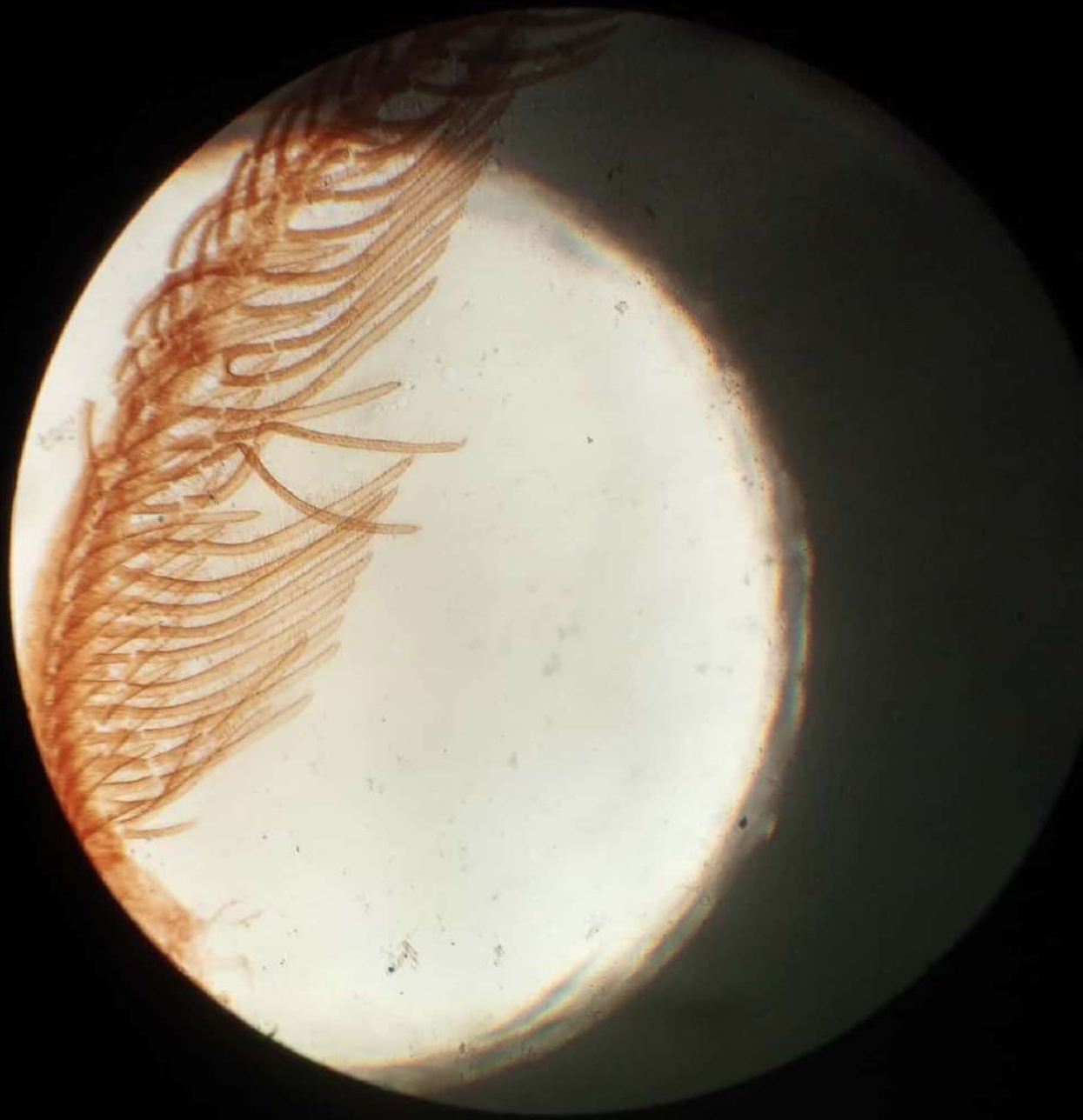




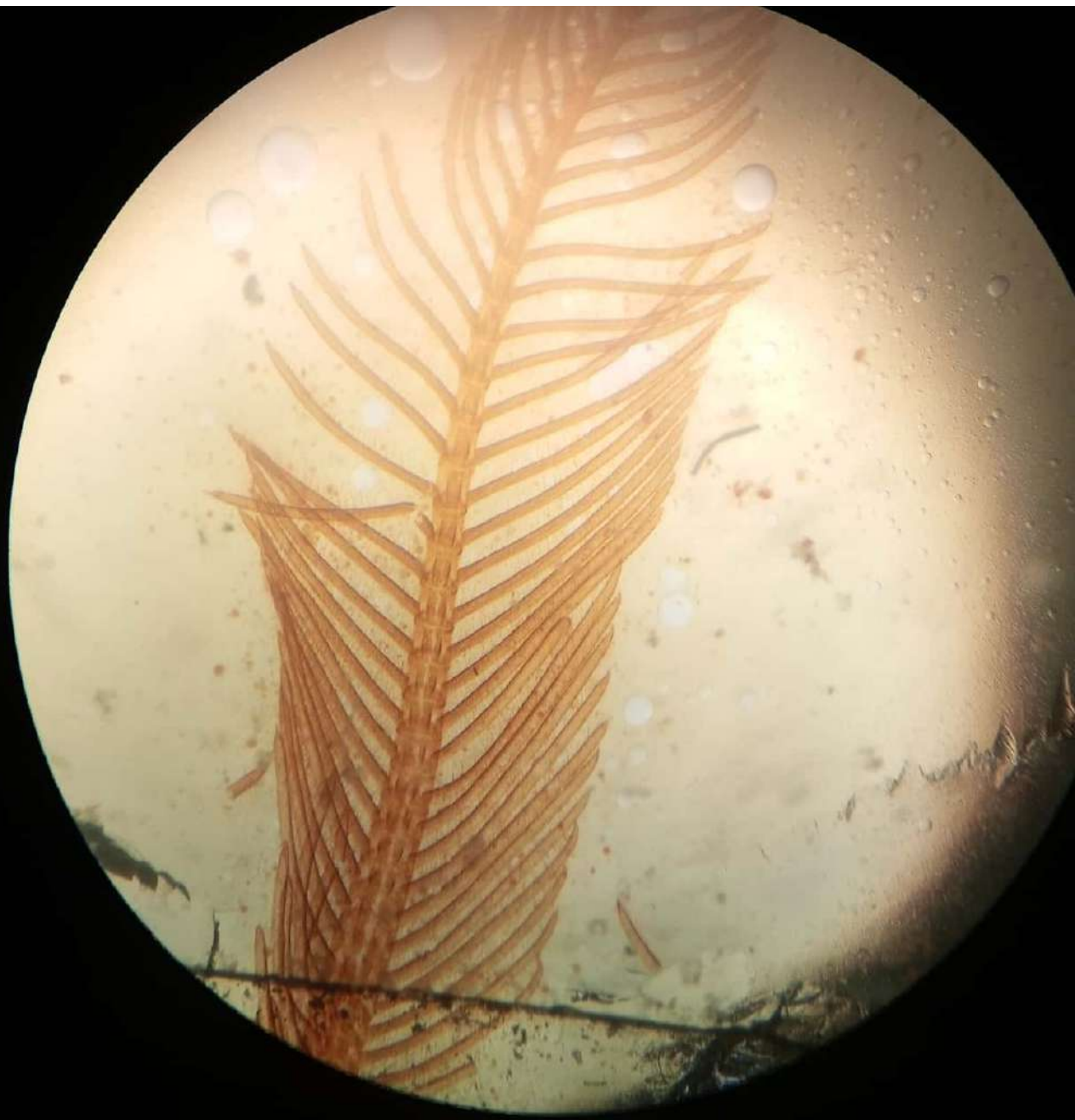
# Geniculate antenna



# Pilose antenna



Pectenate antenna



# Bipectinate antenna



# Capitate antenna



Lamellata antenna



Stylate antenna



Biting or chewing mouth part

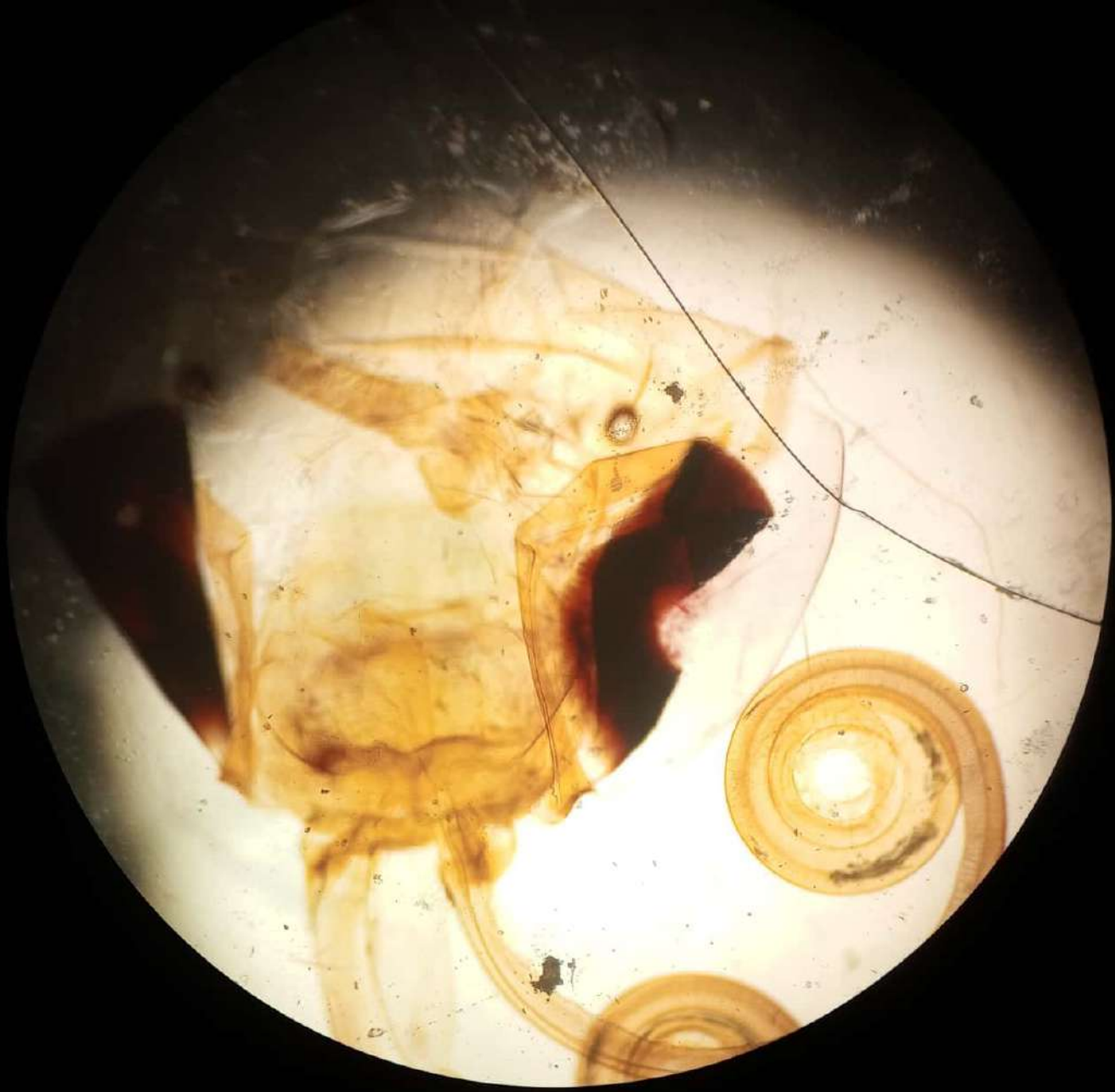




Bitting and labbing mout part



sponging mouth part



Sucking mouth part



Percing and sucking mouth part

Subject : ..... Date : / /  
موضوع الدرس ..... التاريخ / /  
ر. ج. ط. س. ر



Walking leg



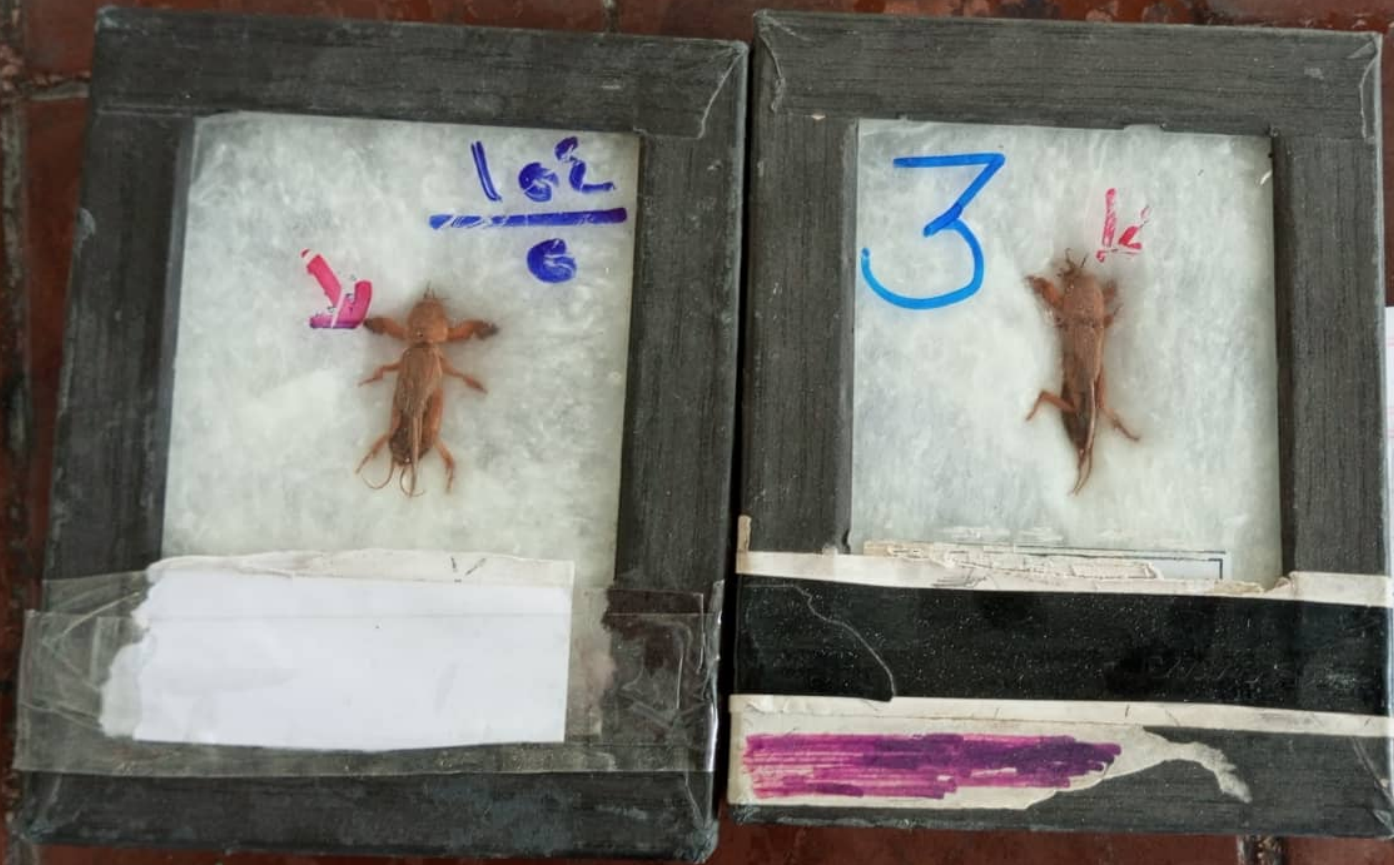
د. پ. /  
پ. ک. و  
پ. ک. و

Swimming leg

Ceio, Jp. /

siezing prey leg





موسسة الدراسات والبحوث  
ر.م.ل  
ر.ك.ف  
م.ا.ك.ف.ا.ل.ا.ف.ر.ي.ق

Digging or burrowing leg

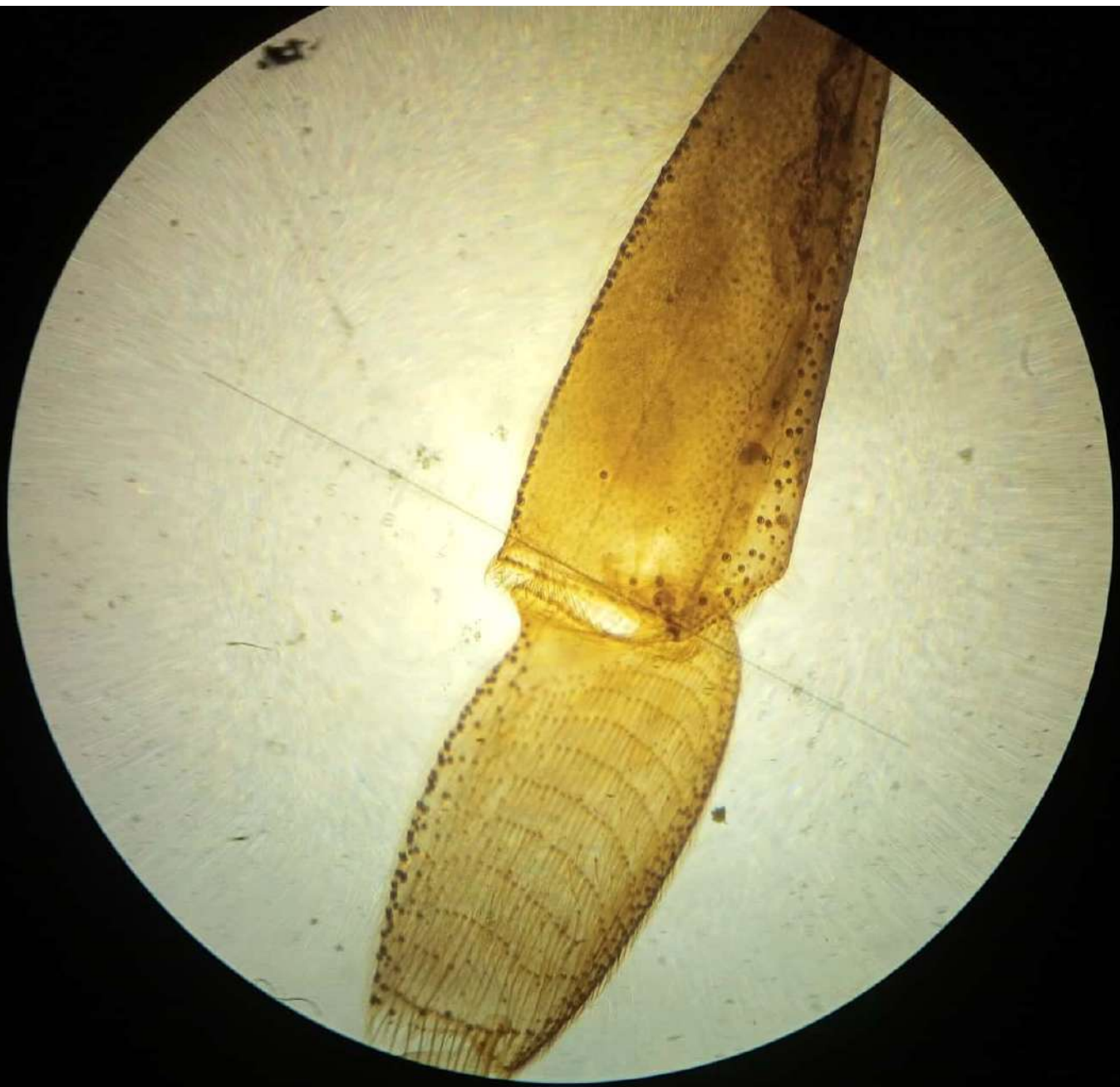


Jumping leg

الجمل  
القفر



الجراد المهاجر (رتبة مستقيمة الأجنحة)  
*Locusta migratoria*  
Acrididae : Orthoptera



Collecting food leg



Clining leg



Walking on step surface leg



Scaly wing

القارون  
صباح هرستف  
عرا القرامات

# Helter wing

ديوس المتوازيه  
١٤ الشبايه طنزلية



نبهة لعم (ر)  
age sp.  
das : Di



ذات ليل  
دبايه العم



پتاج غمدی

۱۴ شہداء، کالو سومہ

Elytra wing

۲۶۲

۱۰



# Hemi-elytra wing



هناج نصف غدی  
م، ا، لبقه، الخضراء  
م، ا، بق، ماء، بارد

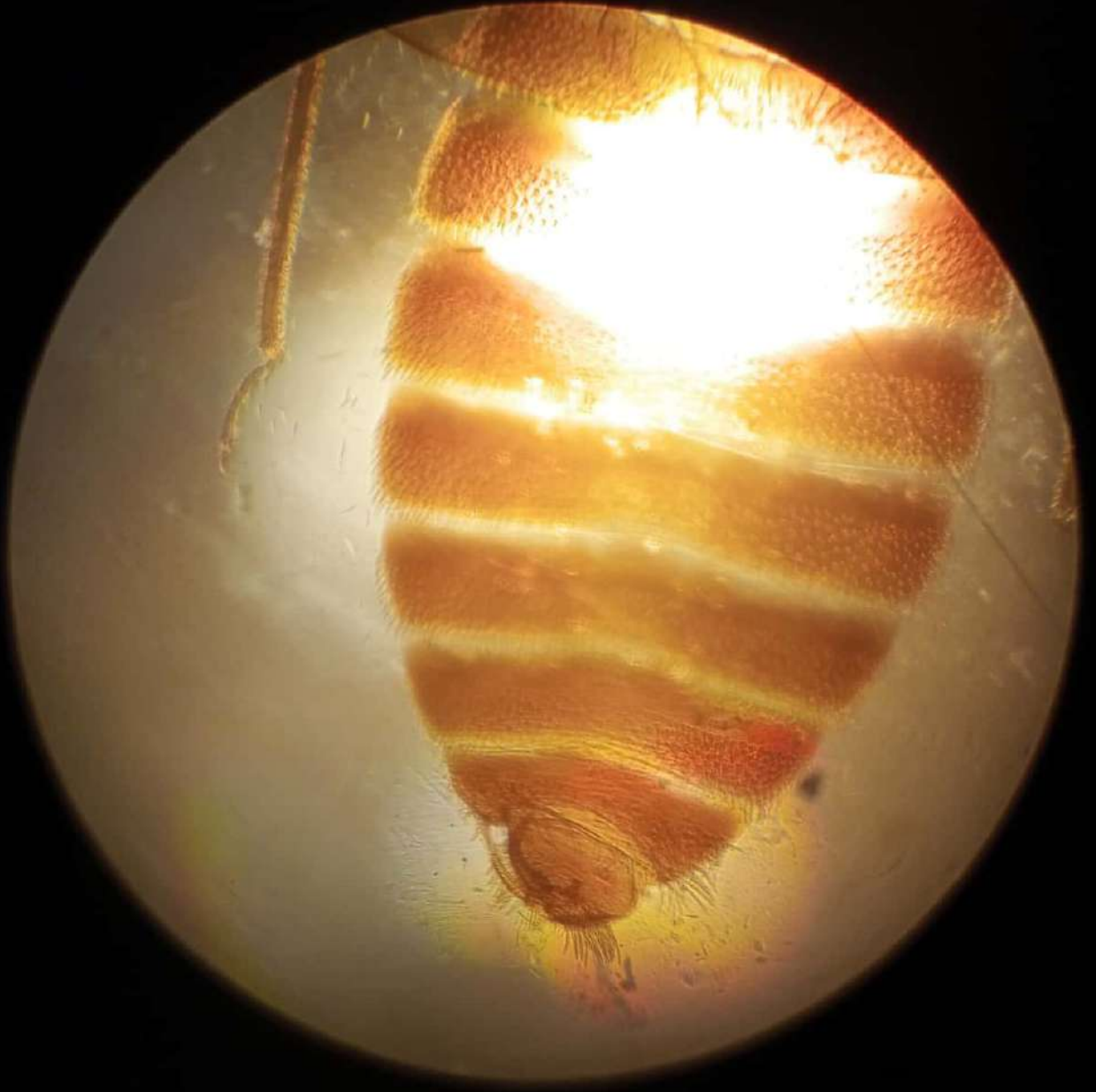




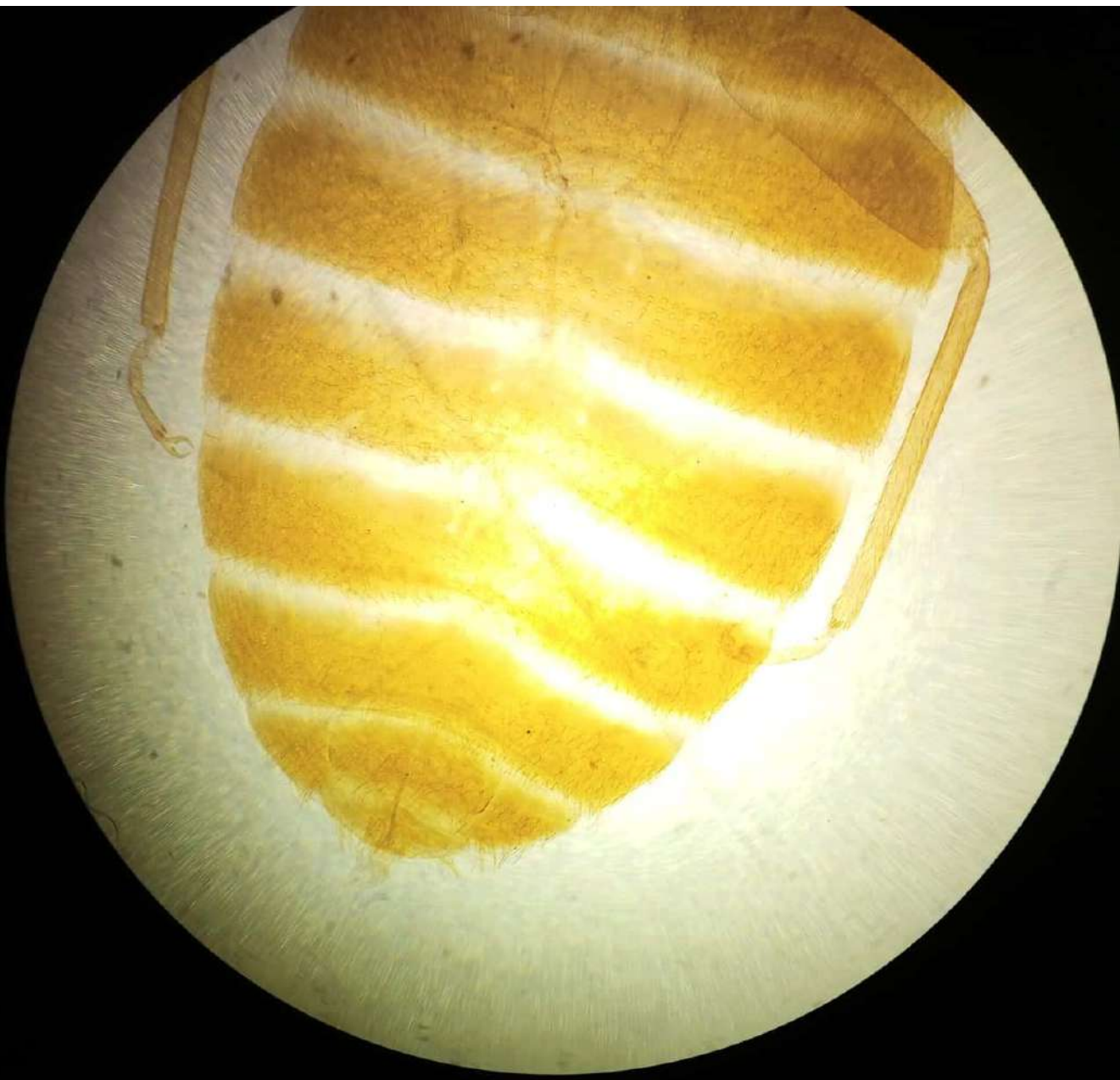
# Membranous wing



كولومبولا



# ذكر بق الفراش



انثي بق الفراش



# ذکر برغوث الإنسان



انثي برغوث الإنسان





أله اللسع



بیرقہ اُ → طوائفہ

۳۱ الفرائد ح





کے لیے سوکھانے

۱۲۰، لہذا →



یرقه دودیہ