جامعة البصرة

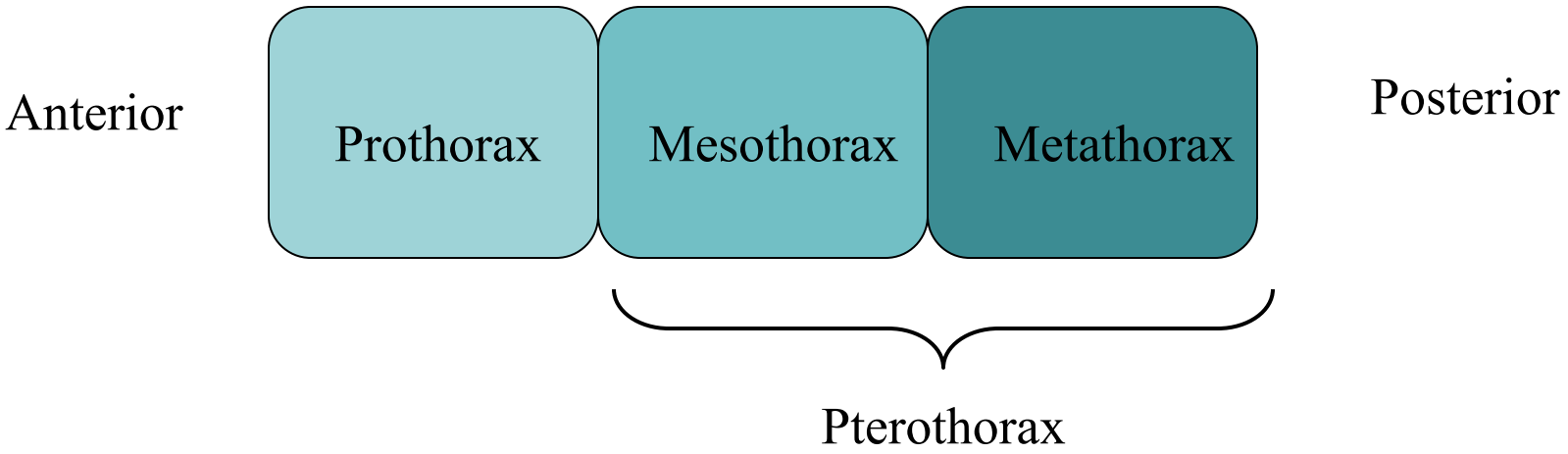
كلية التربية \القرنة \قسم علوم الحياة

- أ. م.د علي ضرب شعبان
- تركيب حشرات

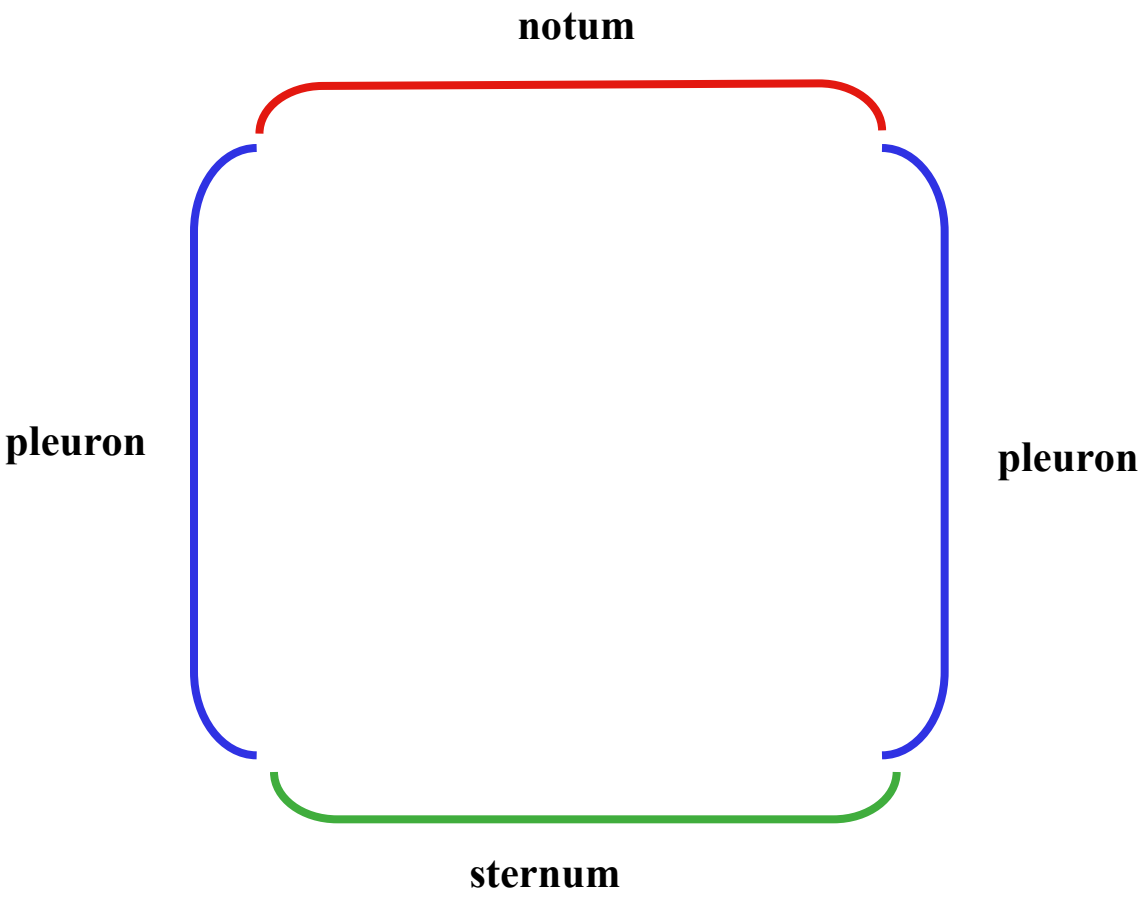
INSECT THORAX

Insect Thorax

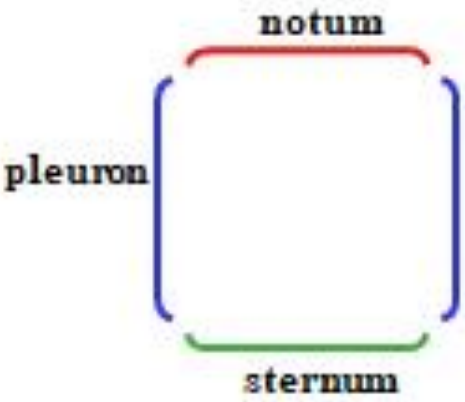
- 3 segmented

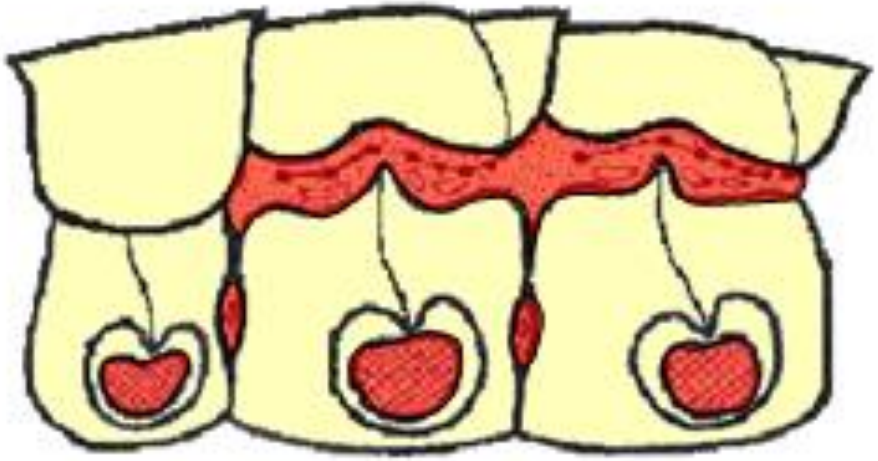


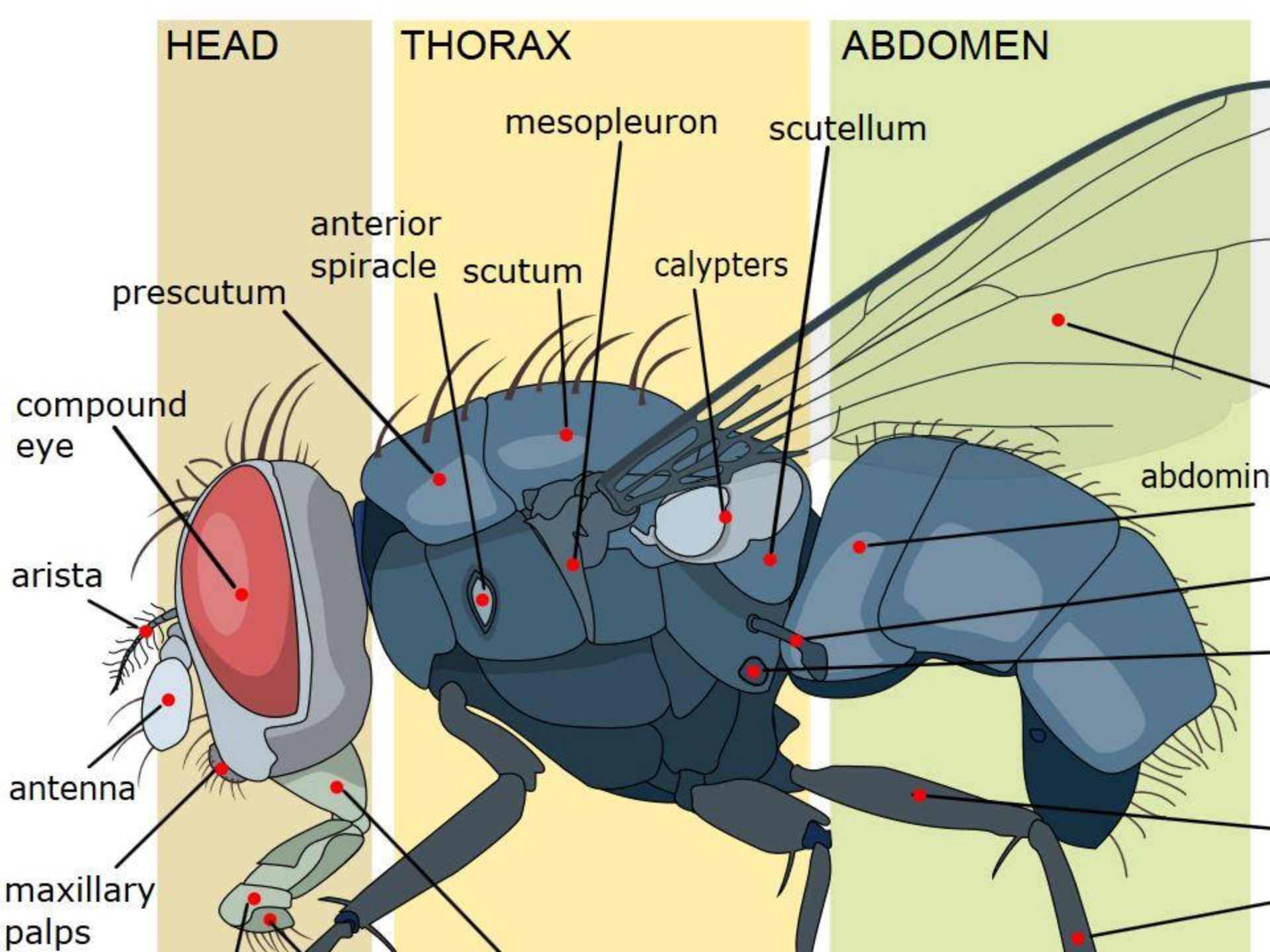
Cross section of insect thorax

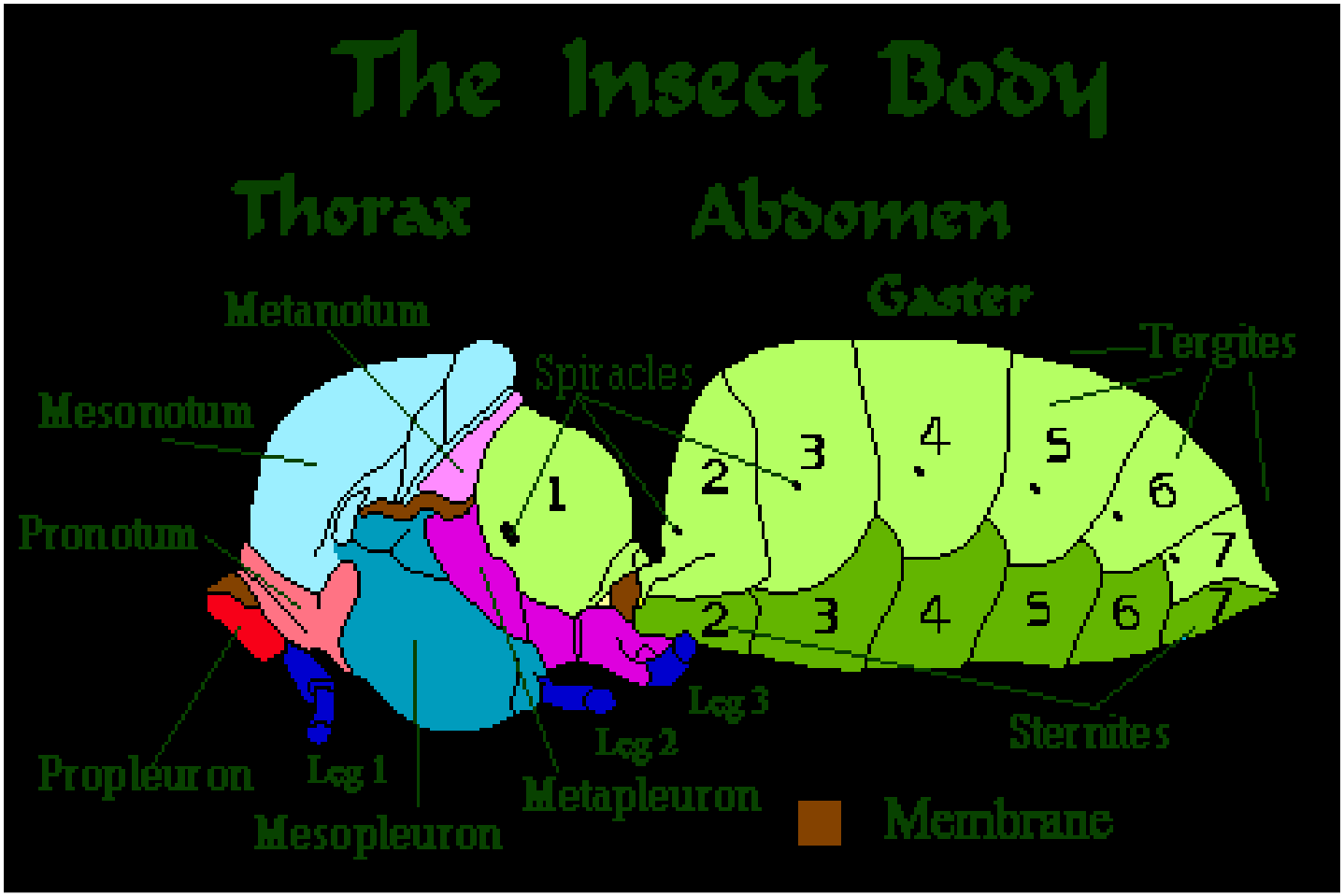


Insect Thorax

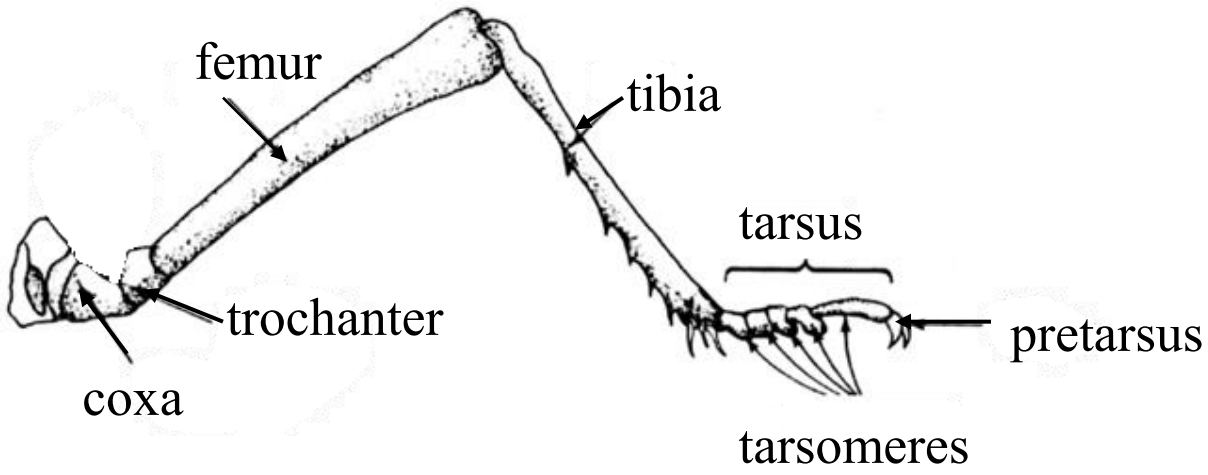


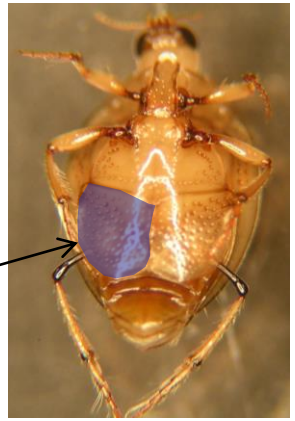



HEAD
THORAX
ABDOMEN
mesopleuron
scutellum
anterior
spiracle
scutum
calypters
prescutum
compound
eye
abdomin
arista
antenna
maxillary
palps

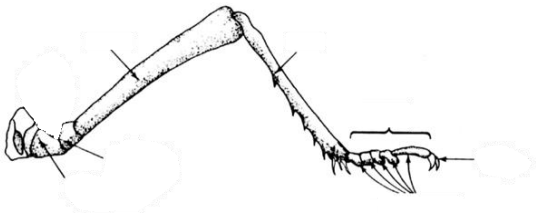

The Insect Body
Thorax
Abdomen
Gaster
Metanotum
Mesonotum
Pronotum
Spiracles
Tergites
Sternites
Propleuron
Leg 1
Mesopleuron
Metapleuron
Leg 2
Leg 3
Membrane
1
2
3
4
5
6
7
2
3
4
5
6
7

Thoracic Appendages - Legs



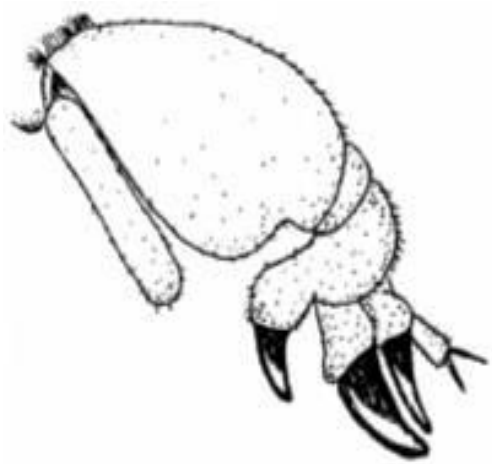


Thoracic Appendages - Legs



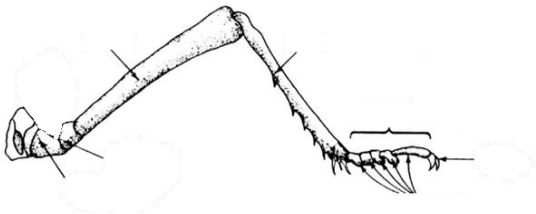
Modifications

Digging (Fossorial)



Mole cricket (Orthoptera:Gryllotalpidae)

Thoracic Appendages - Legs

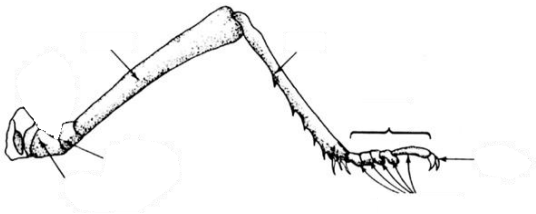


Modifications

Saltatorial (jumping)

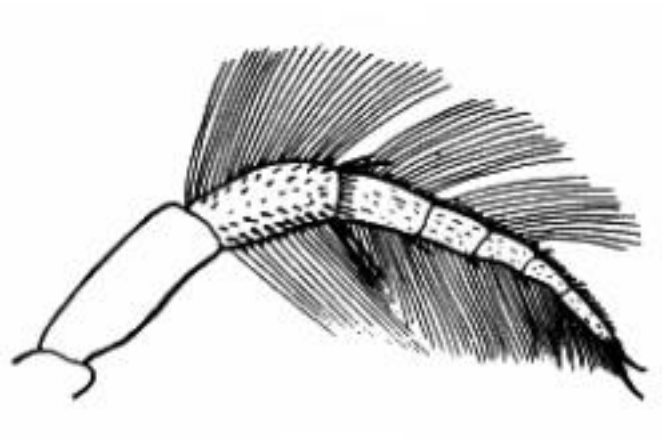
Migratory locust (Orthoptera: Locustidae)

Thoracic Appendages - Legs



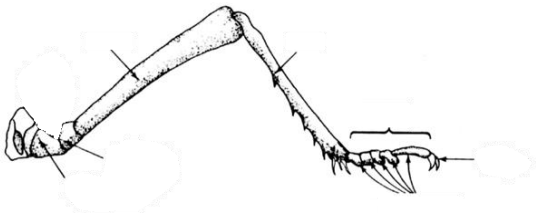
Modifications

Natorial (swimming)



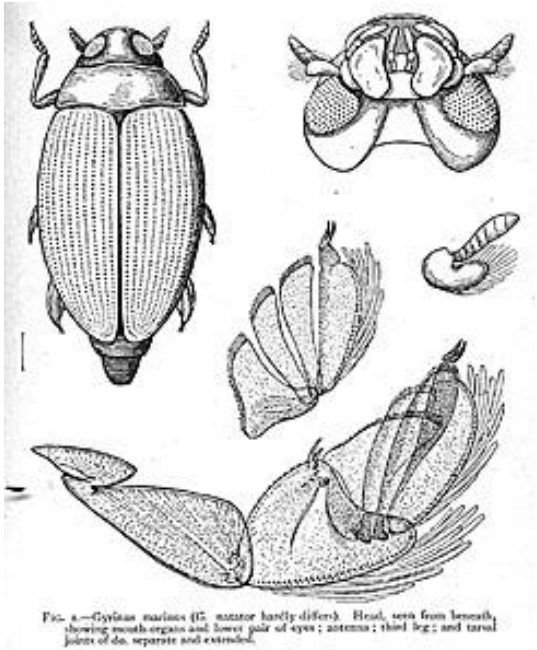
Predaceous diving beetle (Coleoptera:Dytiscidae)

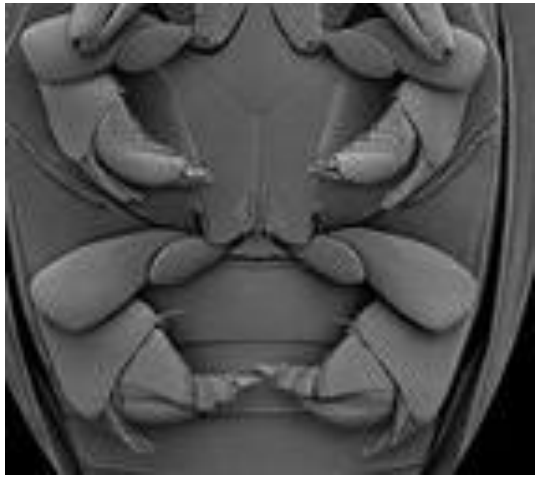
Thoracic Appendages - Legs

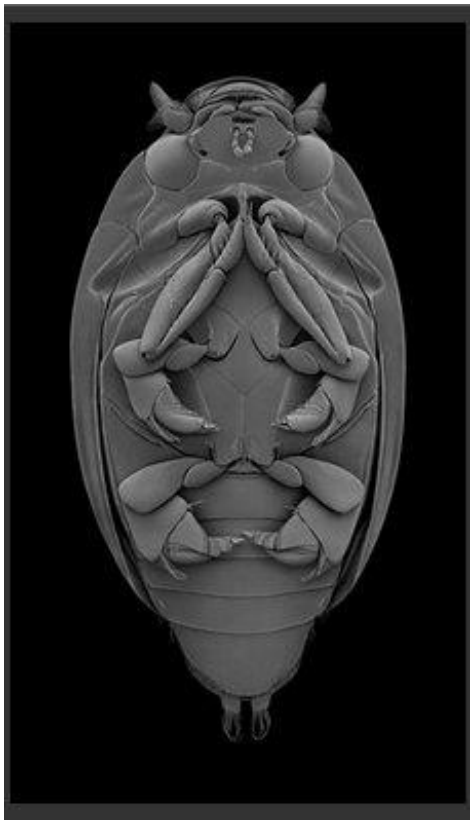


Modifications

Pneustonic (water surface)

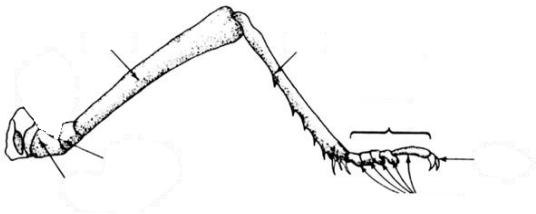






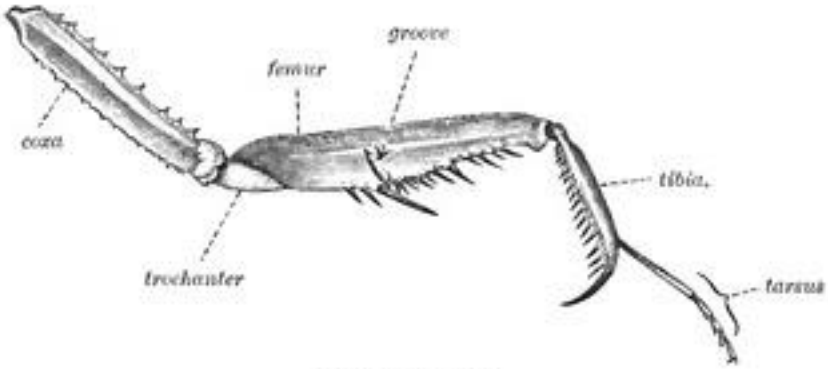
Whirlig beetle (Coleoptera: Gyrinidae)

Thoracic Appendages - Legs

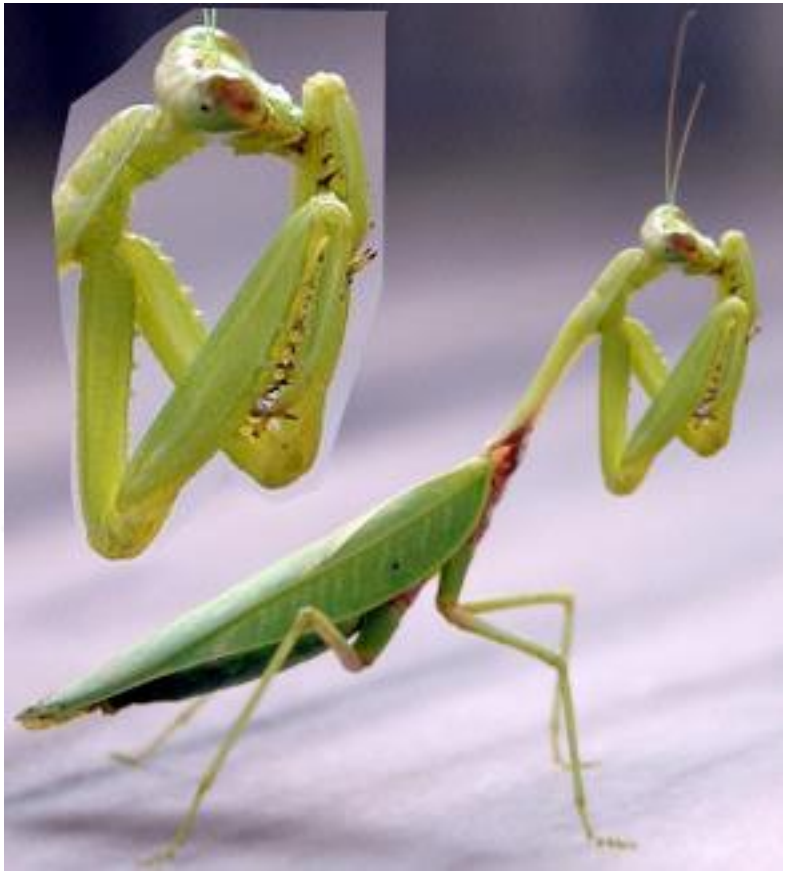


Modifications

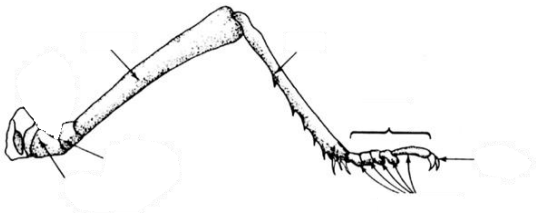
Apposition (grasping)



Leg of a Mantis.

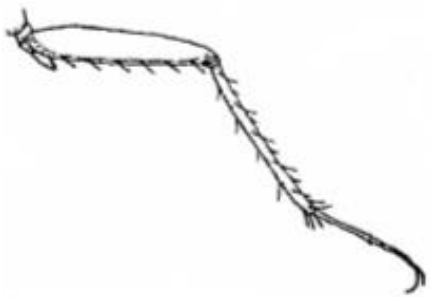


Thoracic Appendages - Legs



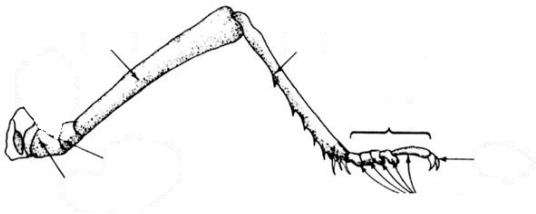
Modifications

Cursorial (running)



Tiger beetle (Coleoptera: Cicindellidae)

Thoracic Appendages - Legs



Modifications

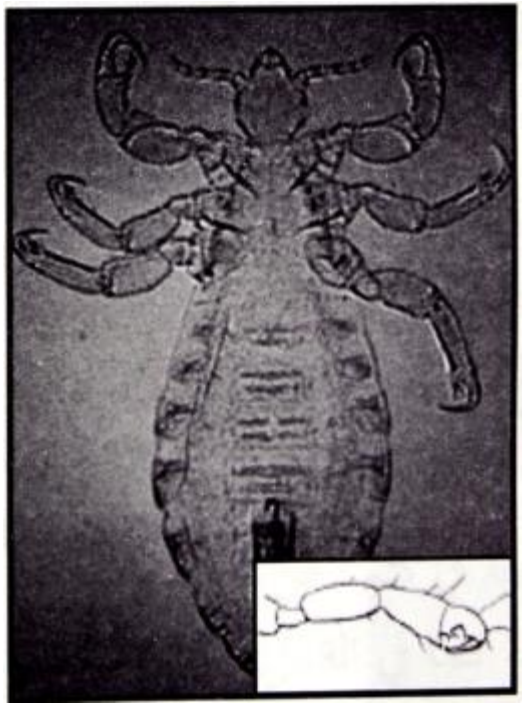
Suction (mating pads)

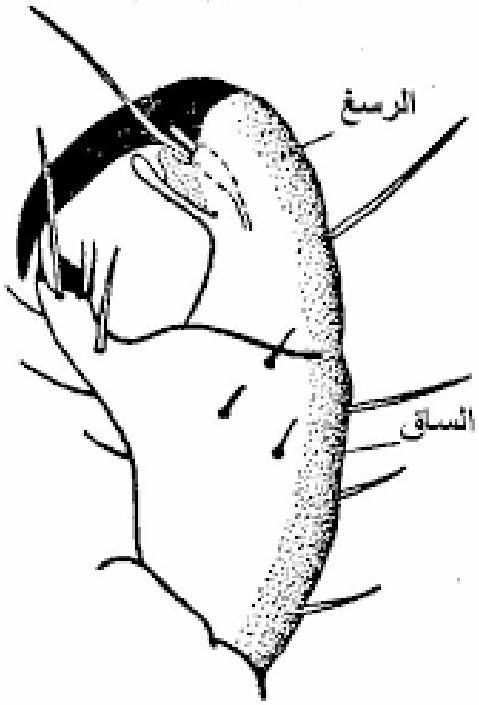
Predaceous diving beetle (Coleoptera:Dytiscidae)

Cleaning Legs

Collecting legs

Clinging legs



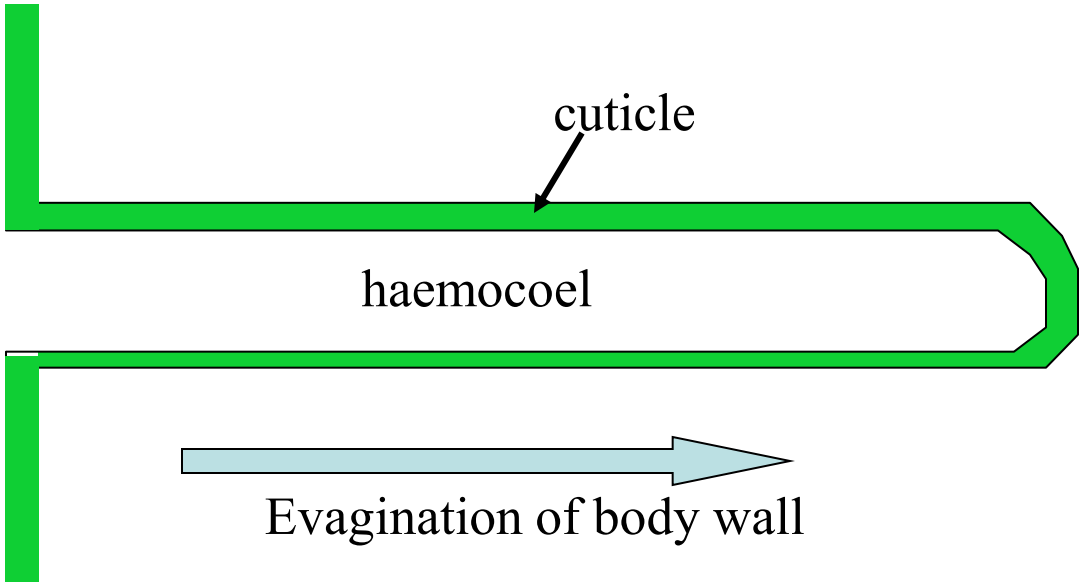

الرسغ
الساق

ارجل المشي على السطوح الملساء

Thoracic Appendages - Wings

Development

1.



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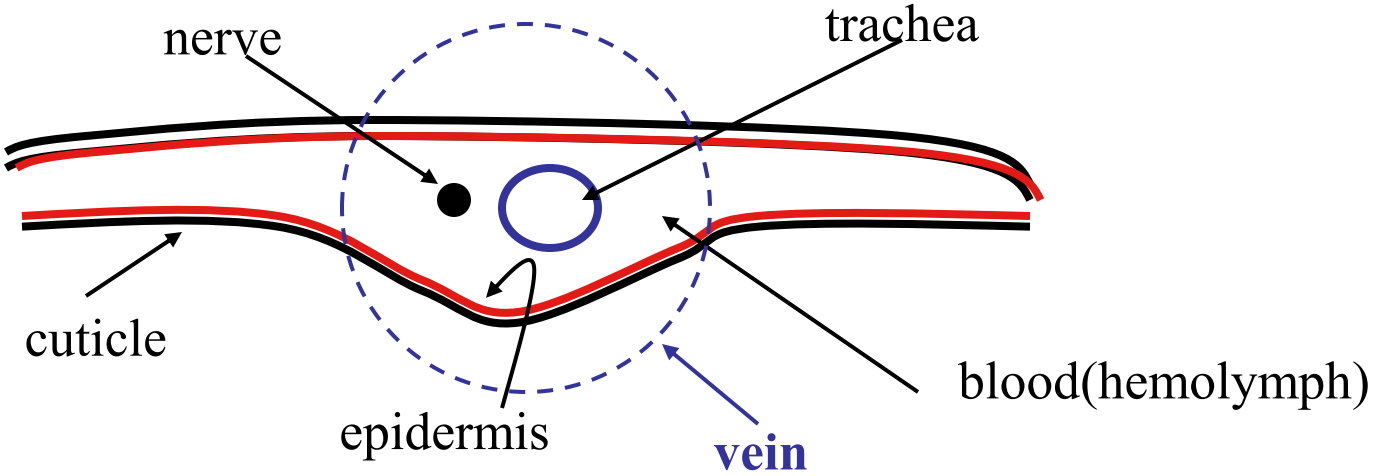
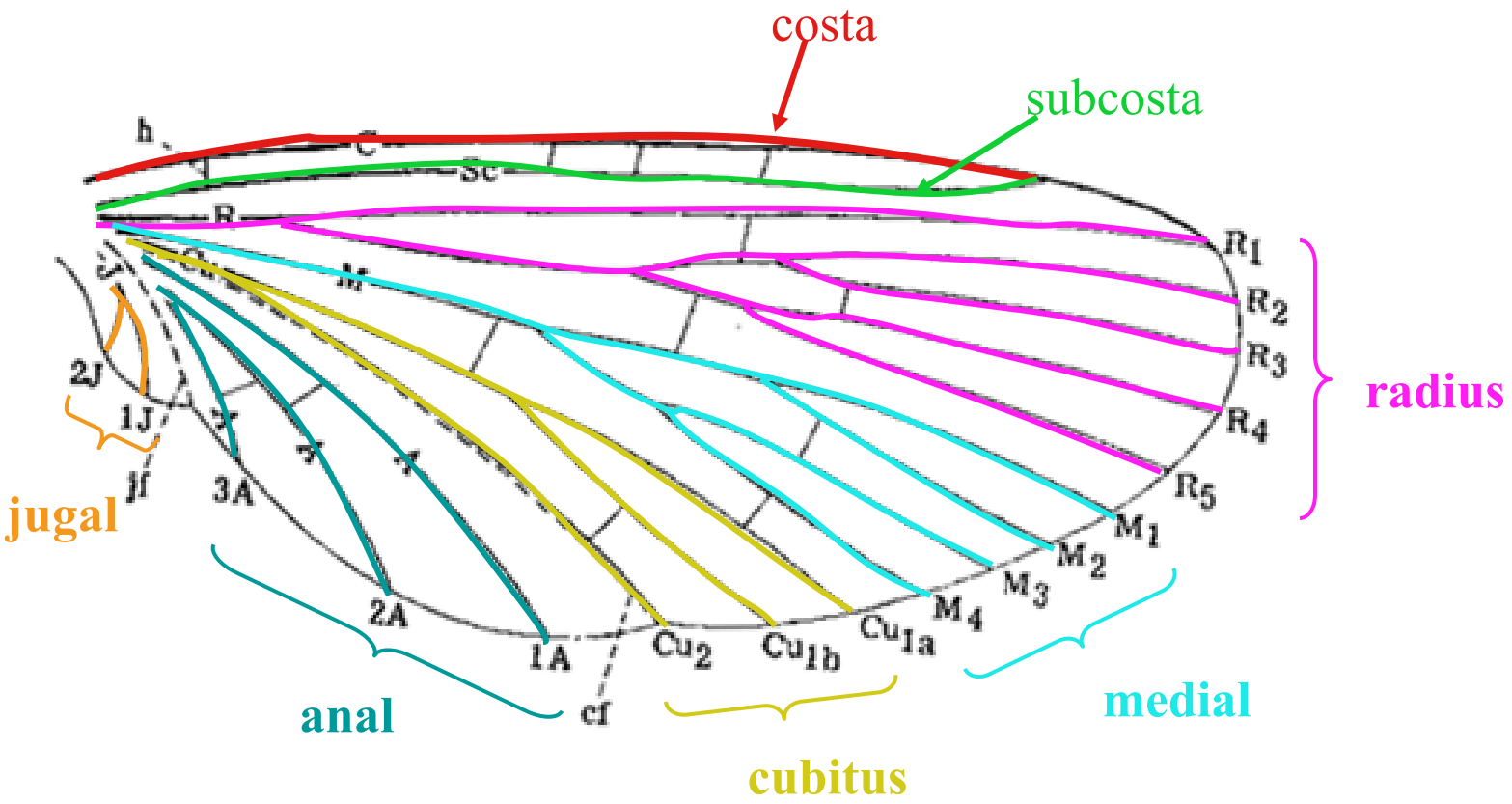
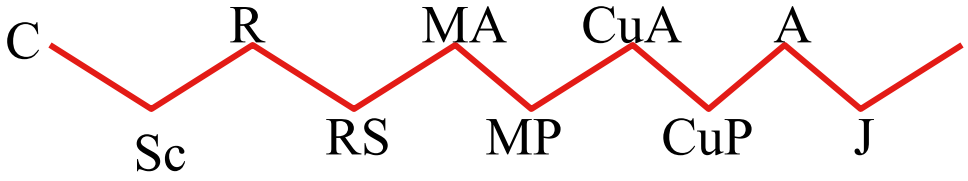


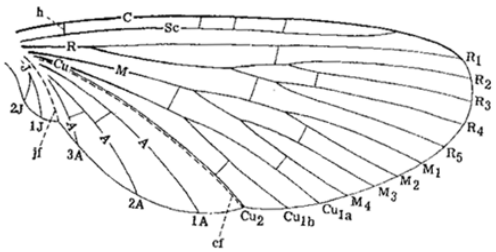
The Insect Wing

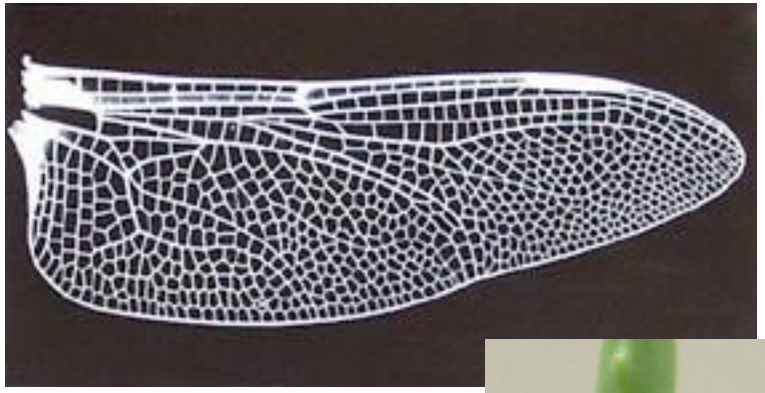


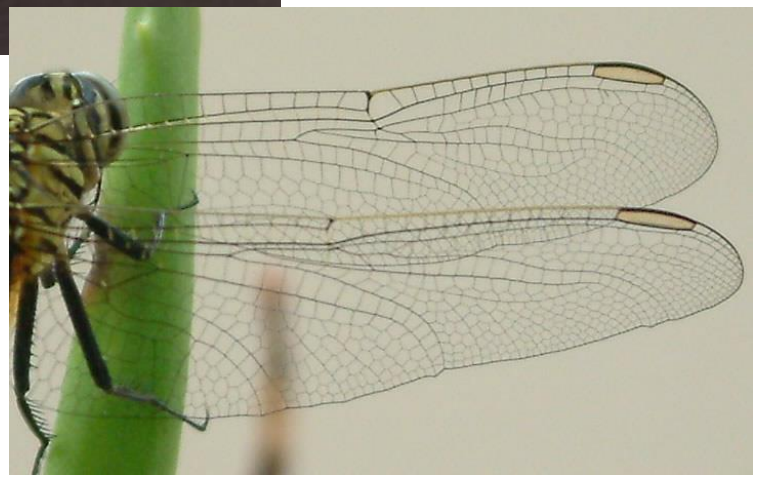


The Insect Wing

Wing modifications







Dragonfly (Odonata)
-archedictyon

Evolutionary Trends

1. Reduce number of cross veins = loss of weight

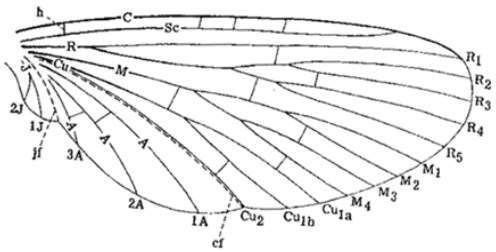
2. Fuse or lose longitudinal veins

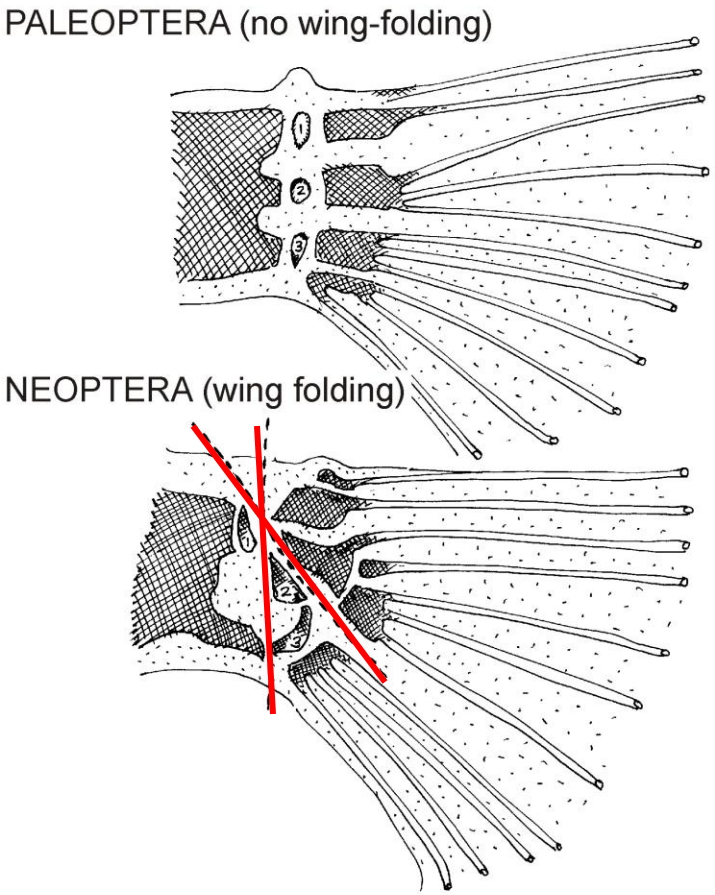
3. Less sclerotization

4. Reduce fluting except on anterior

The Insect Wing

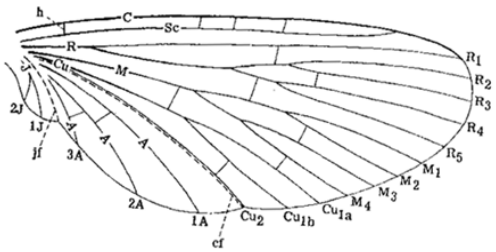
Wing folding

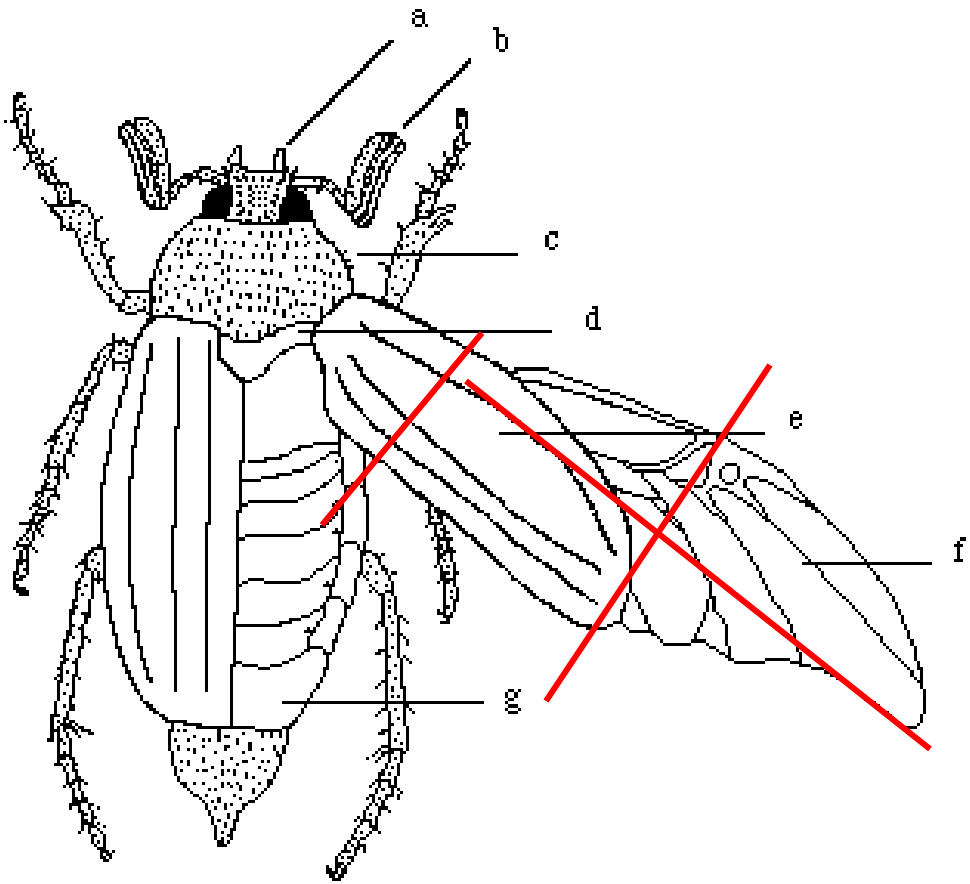




The Insect Wing

Wing folding





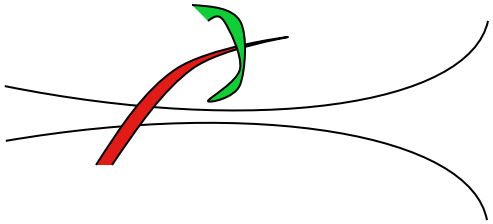
Melolontha

Wing Coupling

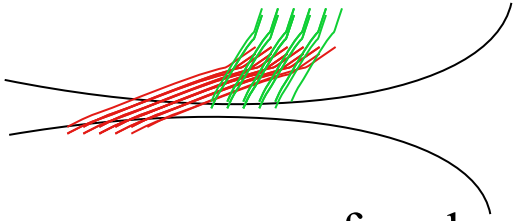
Paleoptera

Wing Coupling

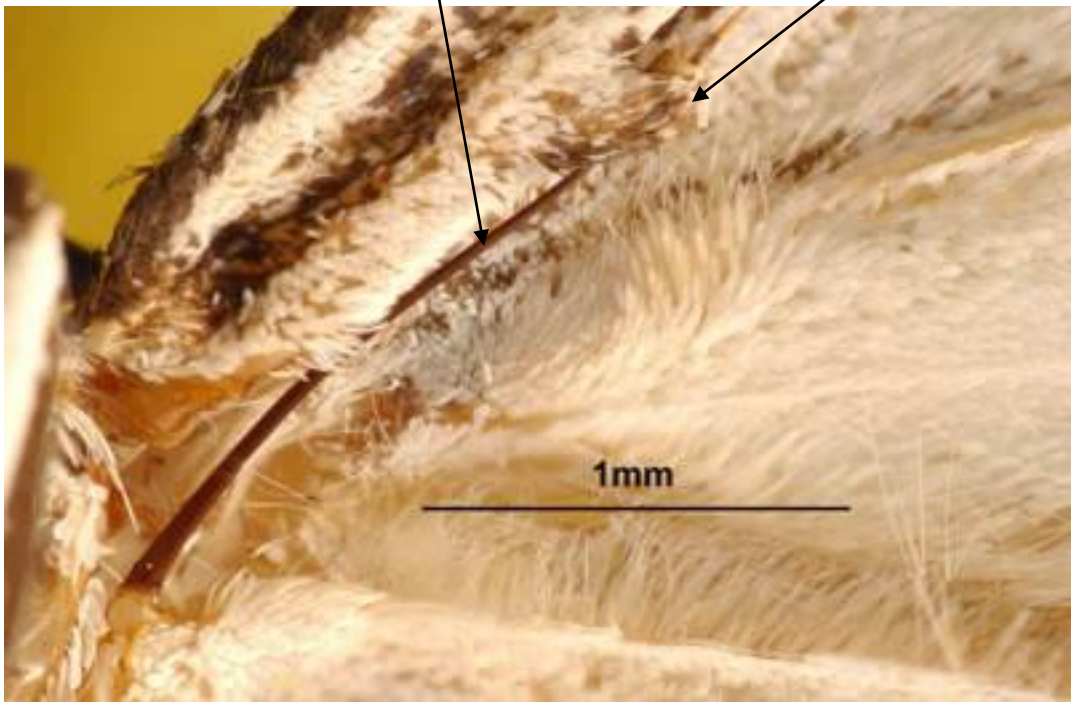
Frenate (Lepidoptera)



male



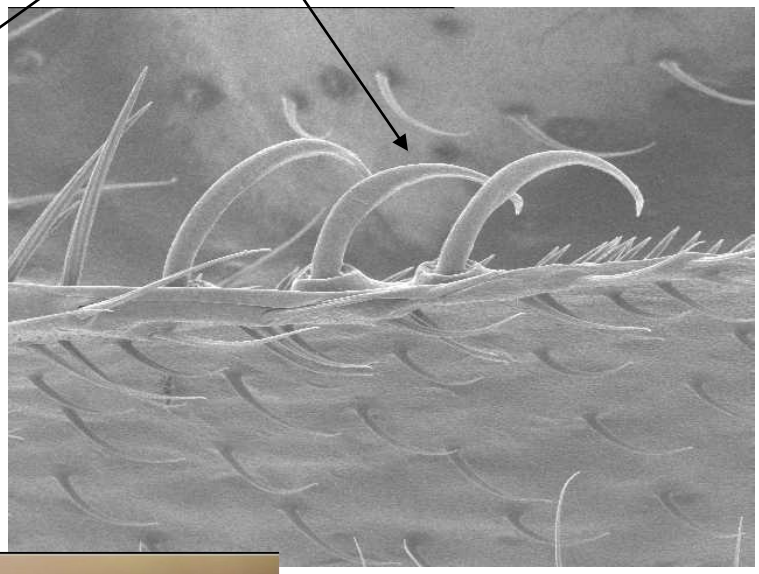
female



Wing Coupling

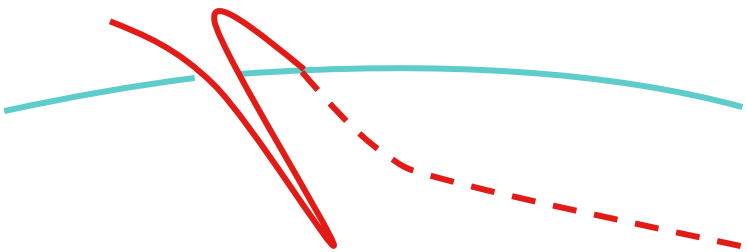
Hamuli (hooks)

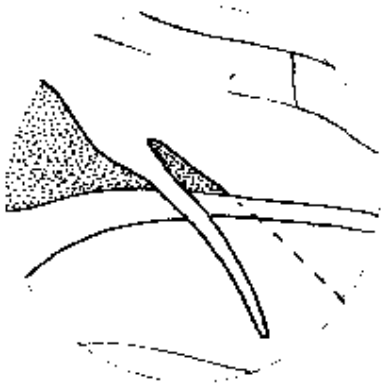
Hamate (Hymenoptera)



Wing Coupling

Jugate (Lepidoptera)

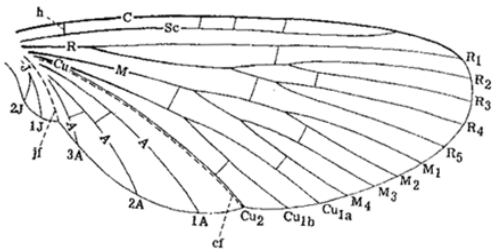




Wing Coupling

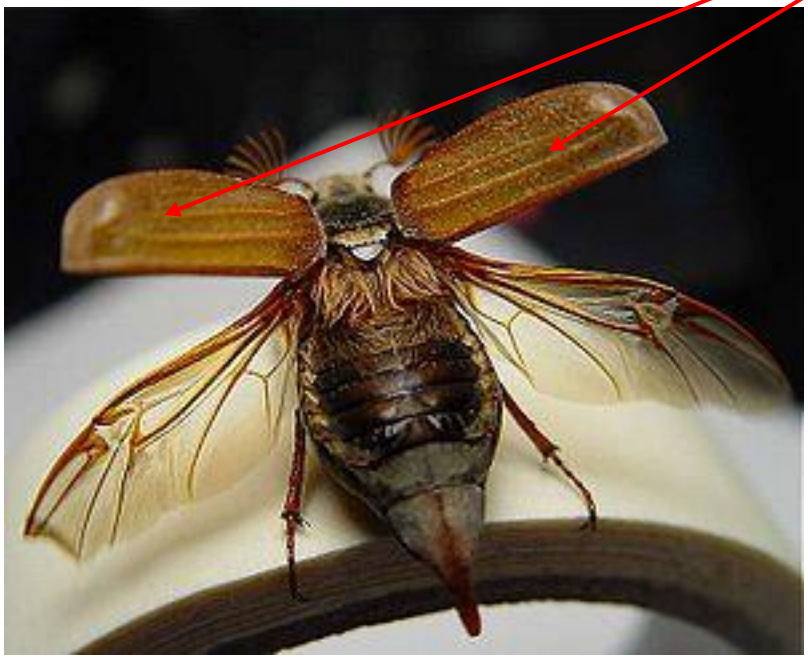
Overlap (Lepidoptera)

The Insect Wing



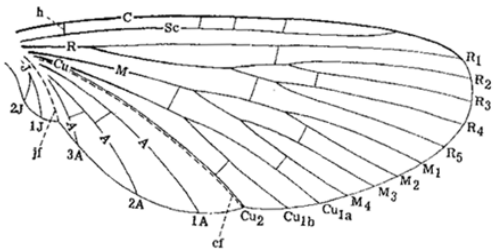
Wing modifications

Elytra (Several Orders)

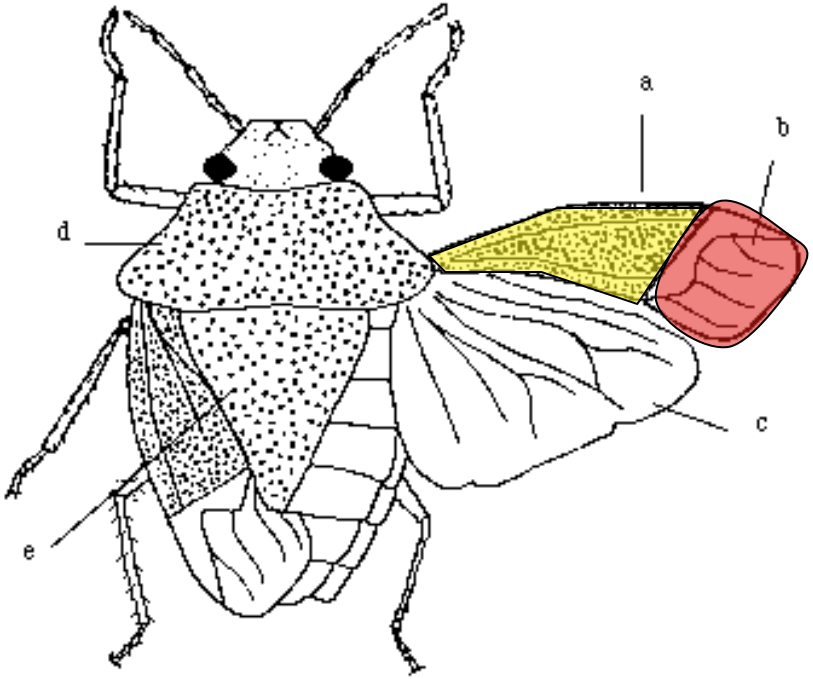


The Insect Wing

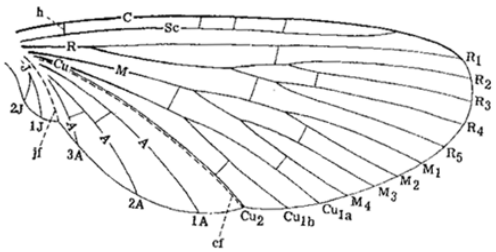
Wing modifications



Hemelytra (True Bugs - Hemiptera)

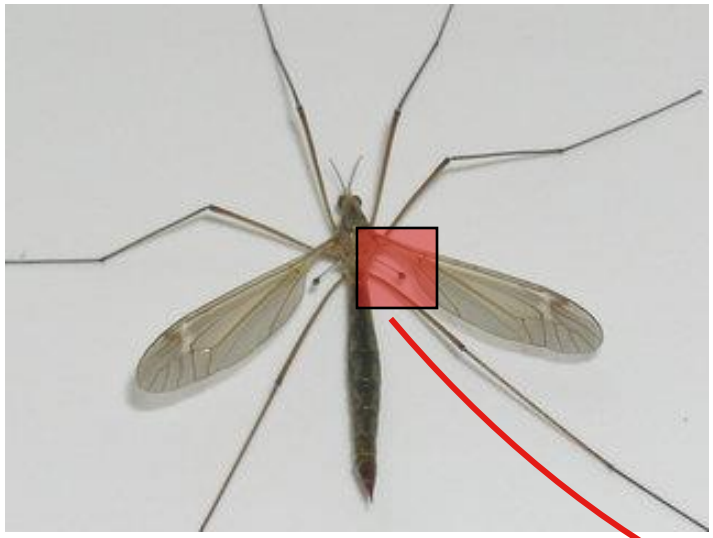


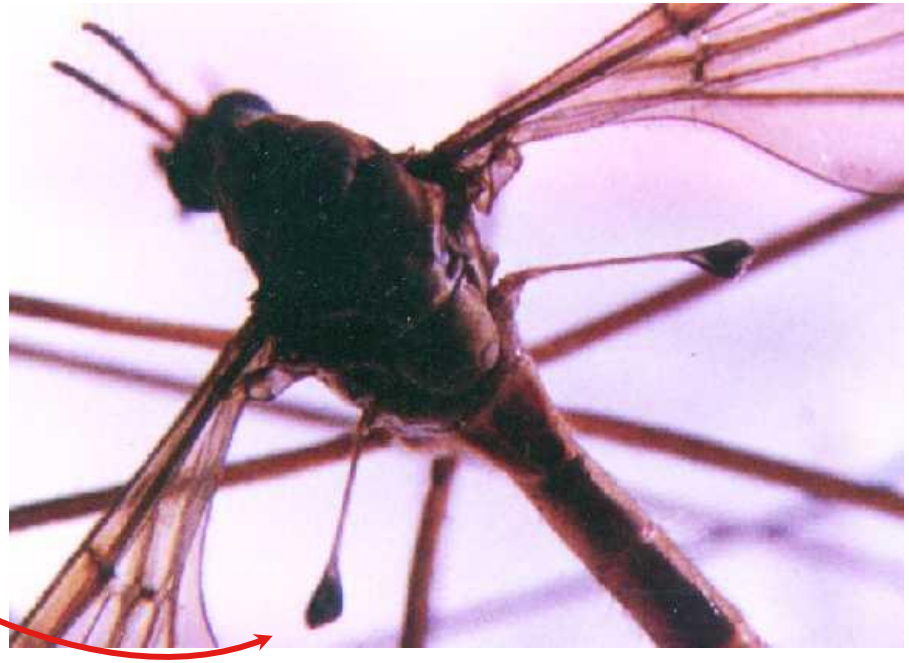
The Insect Wing



Wing modifications

Halteres





Hairy

Next time

INSECT FLIGHT