

3. INSECT WINGS





introduction

- Insect wings are adult outgrowths of the insect exoskeleton that enable insects to fly.
- They are found on the second and third thoracic segments (the Mesothorax and Metathorax).
- The two pairs are often referred to as the **Forewings** and **Hindwings**.
- The wings are strengthened by a number of longitudinal veins.

Structure of insect wings

- According to current dogma, the archedictyon contained 6-8 longitudinal veins.

- They are

Costa (C)- The leading edge of the wing.

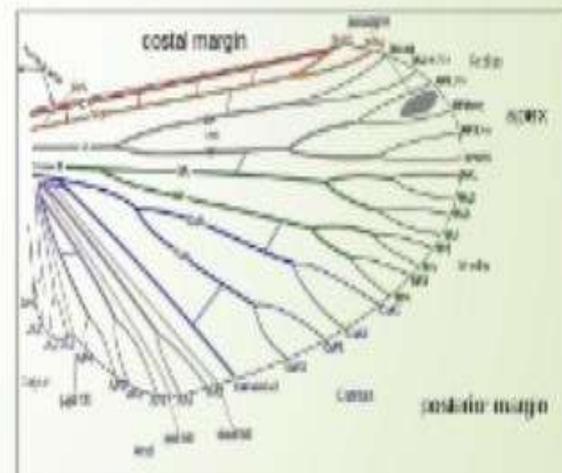
Subcosta (Sc)- Second longitudinal vein.

Radius (R)- Third longitudinal vein.

Media (M)- Fourth longitudinal vein.

Cabitus (Cu)- Fifth Longitudinal vein.

Anal veins (A)- Unbranched veins behind the cabitus.



TYPES OF WINGS

- ELYTRA
- HEMIELYTRA
- MEMBRANOUS
- TEGMINA
- HALTERES
- PSEUDO HALTERES
- FRINGED
- HAIRY
- SCALY
- HAMULI
- FRENULUM

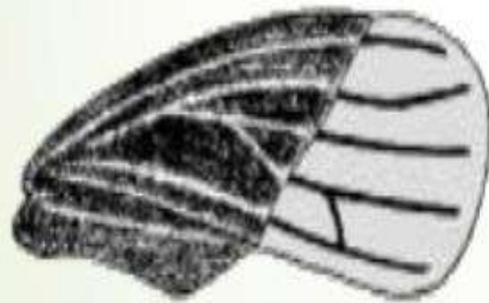
Modifications of insect wings

- **Elytra**- Wing is tough and protective in function. It protects the hindwings and the abdomen. E.g. Forewings of Beetles and Weevils.

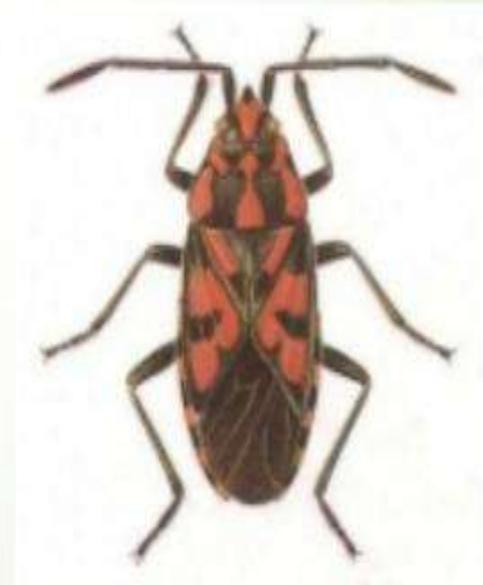


Modifications of insect wings

- **Hemelytra**- The basal half of the wing is thick and leathery. The distal half is membranous. E.g. Red Cotton Bug.

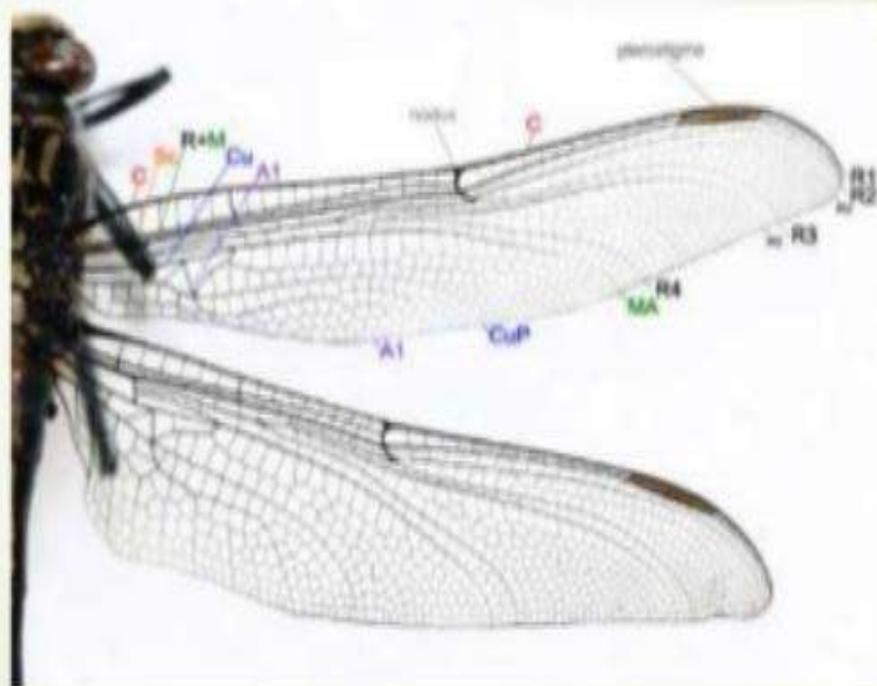


Hemelytra



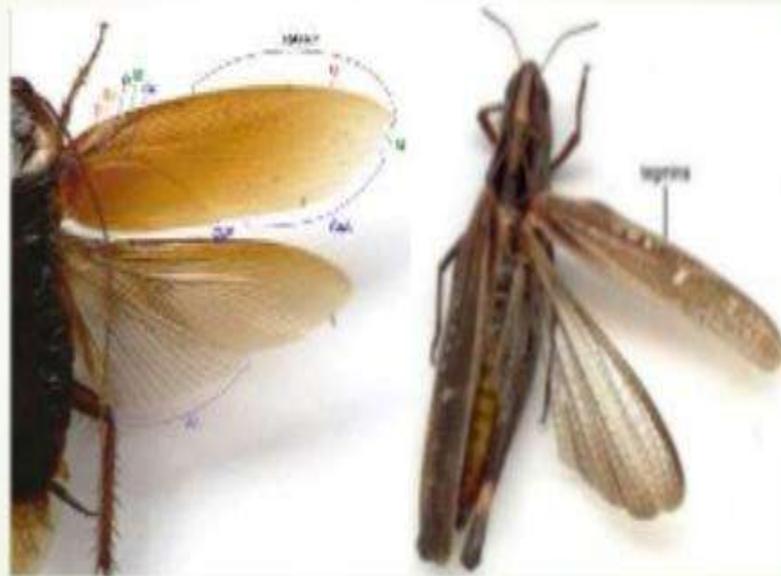
Modifications of insect wings

- **Membranous-** Wings are thin and transparent. E.g. Dragon Fly, Honeybee and Termites.



Modifications of insect wings

- **Tegmina**- Wings are leathery or parchment like and protective in function.
E.g. Forewings of Grasshopper and Cockroach.



Modifications of insect wings

- **Halteres-** Wings are modified into small knob like. E.g. Hind Wing of Housefly.



HALTERES



Modifications of insect wings

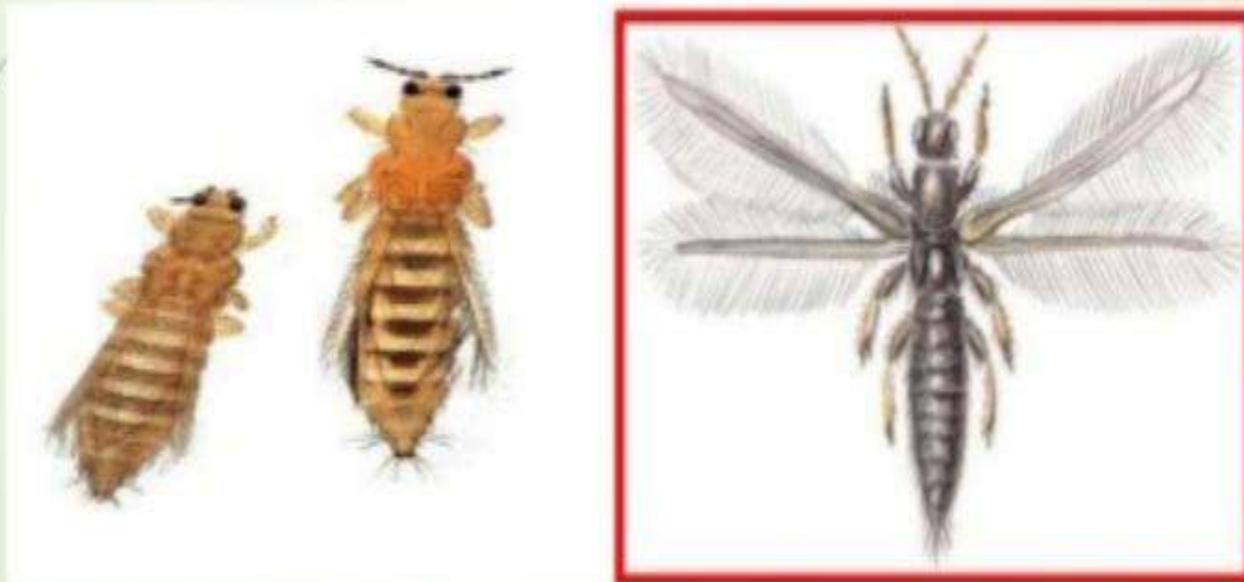
- **Pseudo Halteres**- Similar to Halteres but different in Location.
E.g. Fore wings of Stripsiptera.



Modifications of insect wings

- **Fringed-** Wing lamina is usually reduced in size. Wings are feather like.

E.g. Thrips.



HAIRY:- front and hind wings are clothed with hairs. Example:- trichoptera(caddis flies)



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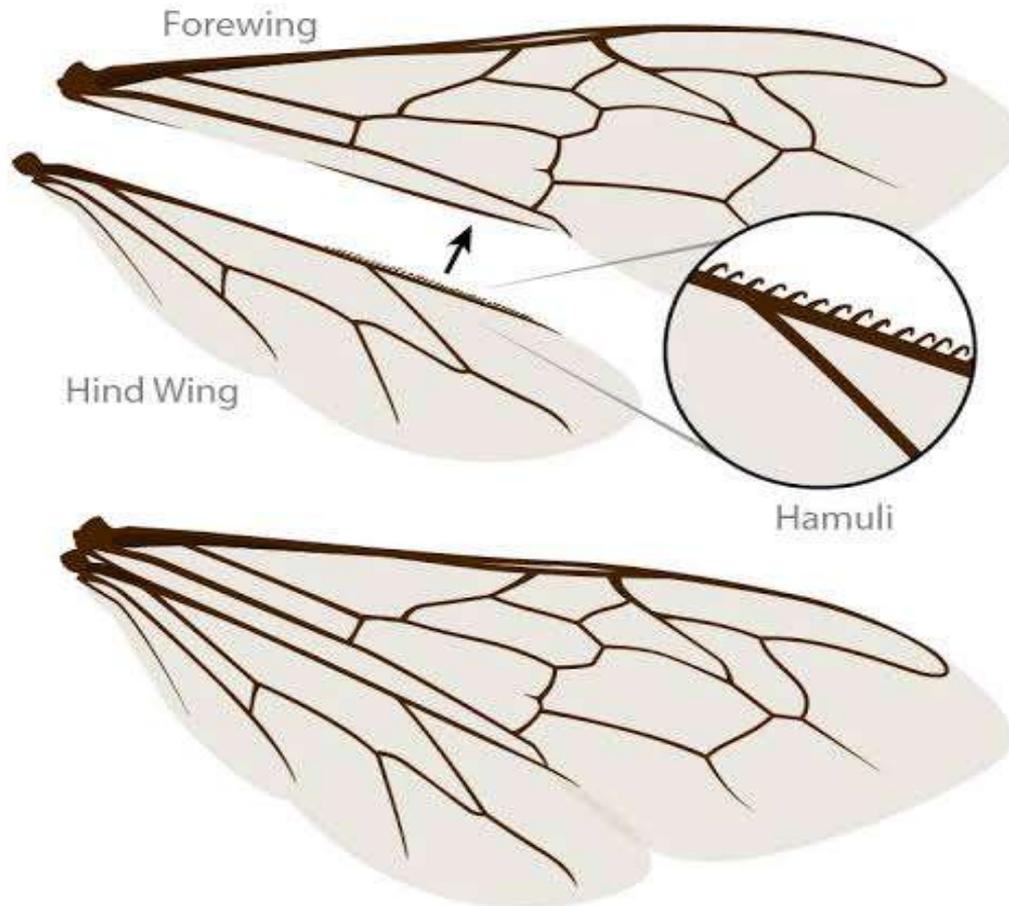
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Modifications of insect wings

- **Scaly-** Wings are covered with unicellular scales.
E.g. Moths and Butterfly.



HAMULI:- tiny hooks on hind wing that hold front and hind wings together. Example:-
Hymenoptera (bees, wasps)



FRENULUM:- bristle near the base of hind wing that holds front and hind wing together.
Example:- Lepidoptera(butterflies)

