



GENERAL CHARACTERS OF INSECTS AND CLASSIFICATION

MEDICAL ACADEMY NAMED BY S.I.GEORGIEVSKY "CFU NAMED BY V.I.VERNADSKY

DEPARTMENT OF MEDICAL BIOLOGY

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Phylum

ARTHROPODA

General Characters

www.easybiologyclass.com

What is an insect?



Dragonfly



Cricket



House Fly



Flea



Hawk Moth



Giant Water Bug



Assassin Bug

An insect is an arthropod. That means it has a hard exoskeleton with jointed appendages. Insects have six legs and three body regions. (Head, Thorax, Abdomen)

The head has two antennae and two compound eyes. The mouthparts can be adapted for different activities such as chewing or piercing-sucking. The thorax has the legs and two pair of wings on most insect adults. The abdomen is segmented and somewhat flexible.

Breathing holes, called spiracles, line each side of the body.

As it develops, it goes through different life stages in a process called metamorphosis.



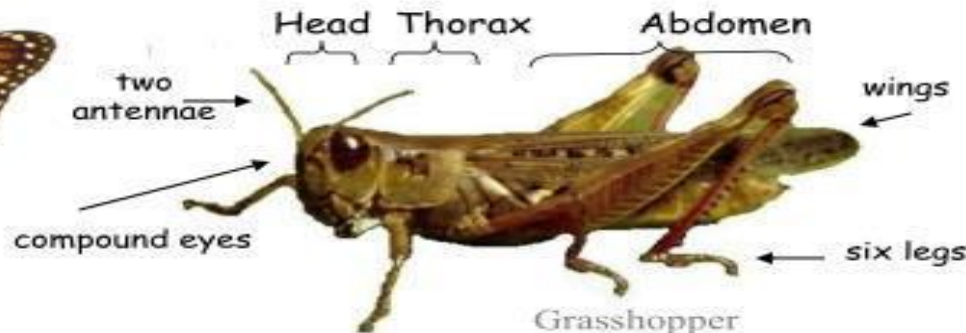
Earwigs



Ground Beetle



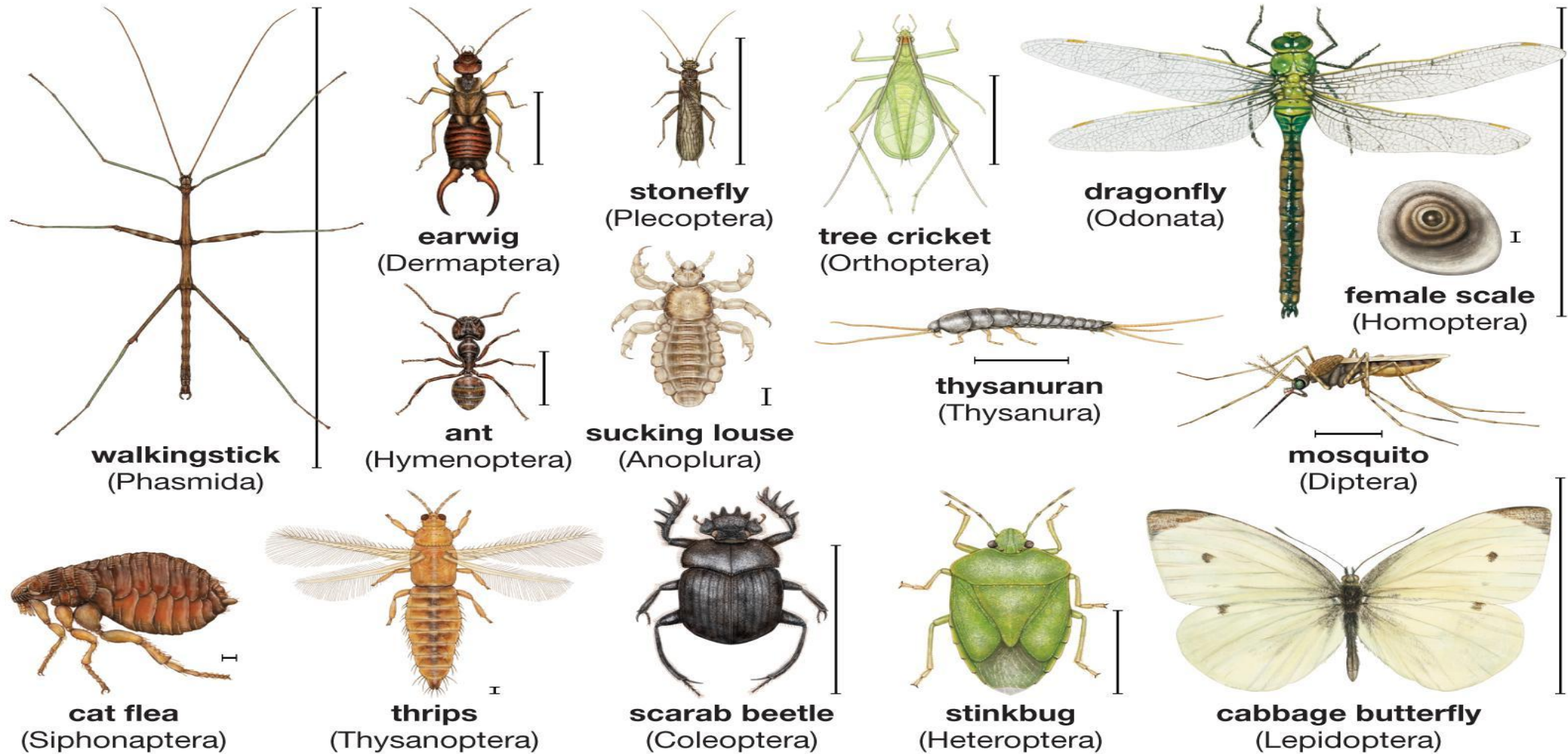
Monarch



Grasshopper



Luna Moth



Body :-

Divided in to three distinct regions

Head , thorax and abdomen

Head :

One pair of antennae (olfactory)

One pair of compound eyes and many simple eyes called ocelli

Mouthparts variously modified for piercing and sucking, siphoning, sponging,

biting and chewing

Thorax :-

Three segmented

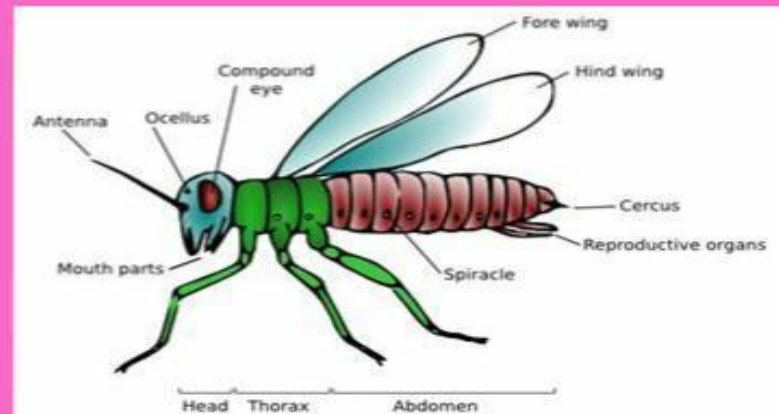
Each segment with a pair of legs

Two pair of wing on meso and metathorax

Abdomen :-

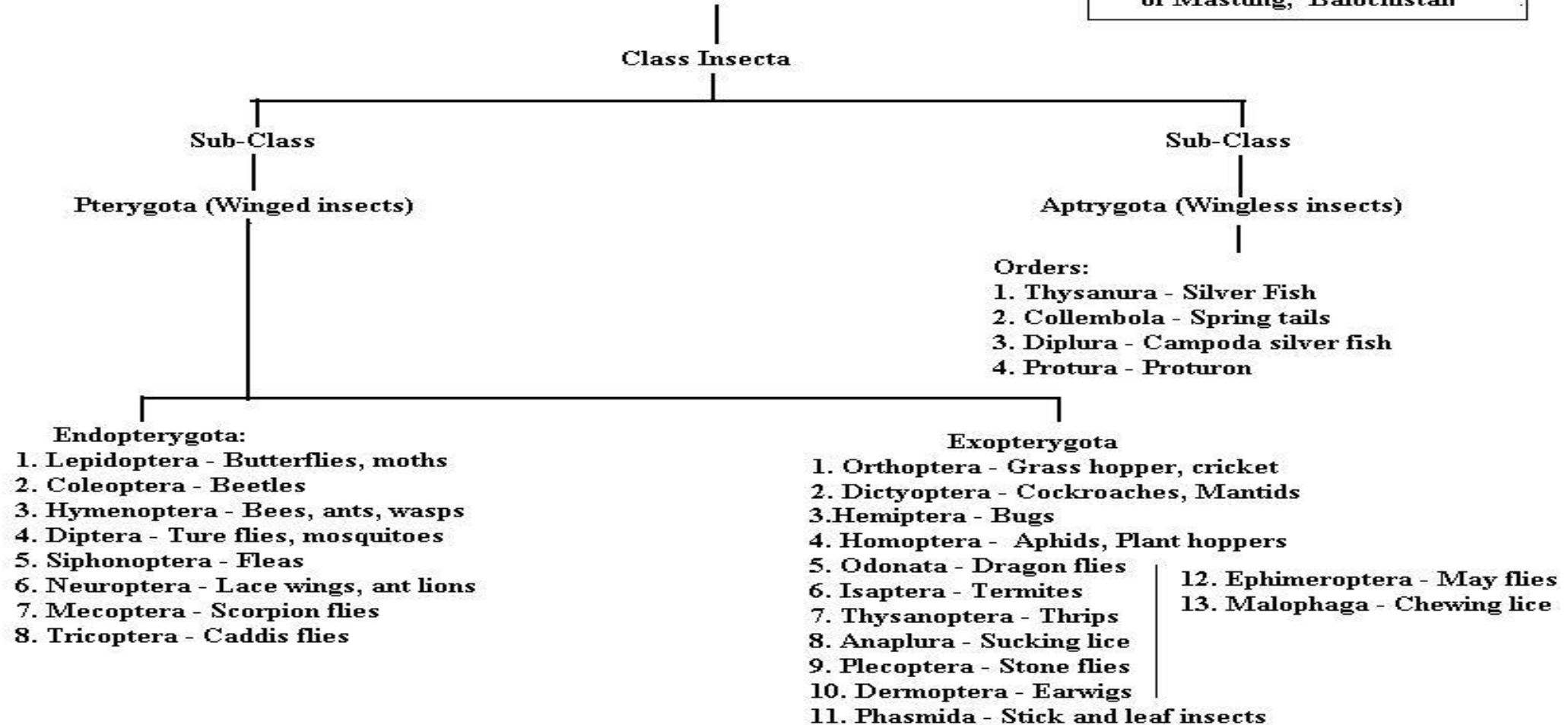
Consist of eleven or fewer segments ,
with out appendages Except a pair of
anal cerci on last segment

Gential opening at posterior
end of abdomen



Classification of Class Insecta

Naeem Javid M. Hassani
of Mastung, Balochistan



Familiar Insect Orders



Hymenoptera: bees, wasps & ants; many social species



Coleoptera: beetles; hardened wings called **elytra**



Lepidoptera: moths and butterflies; nectar-feeding (proboscis)



Orthoptera: grasshoppers, crickets and locusts



Diptera: “true” flies, mosquitoes, gnats

The Hymenoptera is divided into two suborders: the Symphyta and the Apocrita.

Symphyta (sawflies and horntails)



**thorax broadly
joined to abdomen**



**ovipositor
of horntail wasp**



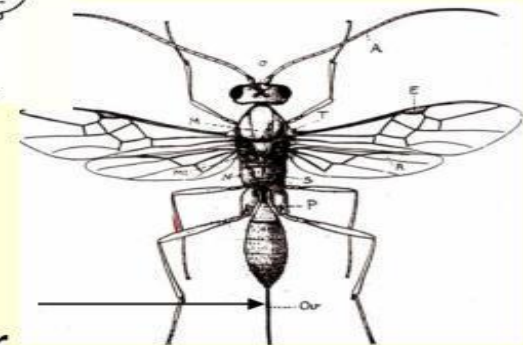
**ovipositor
saw-like in
sawflies**

Apocrita (bees, ants, parasitoids etc.)

**thorax narrowly
joined to abdomen**



**ovipositor
modified
into stinger**





HYMENOPTERA (SAWFLIES, PARASITIC WASPS, ANTS, WASPS, AND BEES)

- Antennae: Long and filiform (hairlike) in Symphyta; many forms in Apocrita
- Other characteristics: Abdomen is broadly joined to the thorax in Symphyta; constricted to form a "waist"-like propodeum in Apocrita.



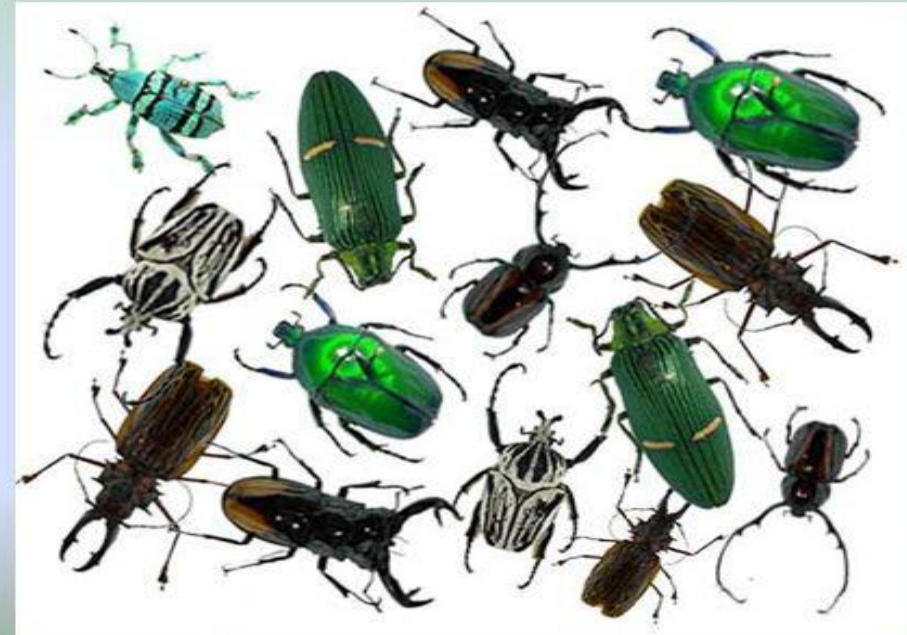
CREATURES OF THE ORDER COLEOPTERA



1. SCARLET LILY BEETLE 2. PINK SPOTTED LADY BEETLE 3. TWENTY-TWO SPOT LADYBEETLE 4. VARIOUS CARPET BEETLE 5. RUBY GRAY LADY BEETLE 6. PHOTURUS LUCIDIPENNIS 7. PHAENOSOMA 8. ONYCHASPIS CAMPIDIPENNIS 9. BLUE FUNGUS BEETLE 10. VIOLIN BEETLE 11. STRIPED WILLOW LEAF BEETLE 12. GOLDEN SCARAB BEETLE 13. GREEN TIGER BEETLE 14. ACURUS SULCATUS 15. BANNED CUCUMBER BEETLE 16. GRAPVINE BEETLE 17. CRYPTOPHAGUS PSEUDOMACULUS 18. MACRODONTIA POLYPHEMUS 19. GOLDEN GROUND BEETLE 20. LADY BEETLE 21. GOLDEN SOLDIER BEETLE 22. MACRODONTIA UNIMACULATA 23. STAG BEETLE 24. HORSE-HEAD LONGHORN BEETLE 25. COLORADO POTATO BEETLE 26. TEMNOPHATHA ALTERNATA 27. EUPHOLUS SCHONMERRII 28. HERCULES BEETLE 29. MACRODONTIA CERVICORNIS 30. RED SHOULDER LYCH BEETLE 31. GOLIATH BEETLE

Order Coleoptera

- This order is commonly called **Beetles**.
- Its name derived from Greek *koleos*, "sheath"; and, *pteron*, "wing", thus "sheathed wing", which contains more species than any other order in the animal kingdom.
- largest orders of insects, with 350,000–400,000 species. No other group of animals vary as much in size, shape and color.



ORDER: Coleoptera – Beetles

- Suborder Adephaga: notopleural suture (seam) on prothorax
 - aquatic; hind legs fringed with hairs and flattened, metasternum without transverse suture anterior to coxae
- Suborder Polyphaga: notopleural sutures absent
 - Superfamily Scaraboidea:
 - antennae with an asymmetrical club of 3-8 segments
 - fore coxae large, projecting below prosternum
 - fore tibia flattened, with 1 or more teeth on outer edge
 - antennal segments of club can't close

4. Passalidae – Bessbugs

5. Lucanidae – Stag Beetles (24)
- dorsal surface evenly rounded
 - mentum simple

Feed on fluids of decaying wood;
Male mandibles for combat

[video](#)



CREATURES OF THE ORDER LEPIDOPTERA

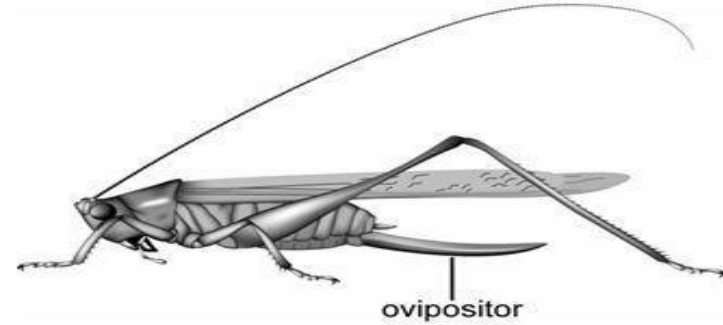


1. LUNA MOTHS 2. VIRGIN TIGER MOTHS 3. HIEROGLYPHIC MOTHS 4. GRAY HAIRSTREAK 5. BELLA MOTHS 6. GLAISY TIGER 7. MONARCH 8. COMMON SOOTYWING 9. SAPHO LONGWING 10. BLACK SWALLOWTAIL 11. DANUBE CLOUDED YELLOW 12. CECROPIA MOTHS 13. POPLAR HAWK-MOTHS 14. ISABELLA TIGER MOTHS 15. GARDEN TIGER MOTHS 16. JULIA BUTTERFLY 17. DEATH'S HEAD HAWK-

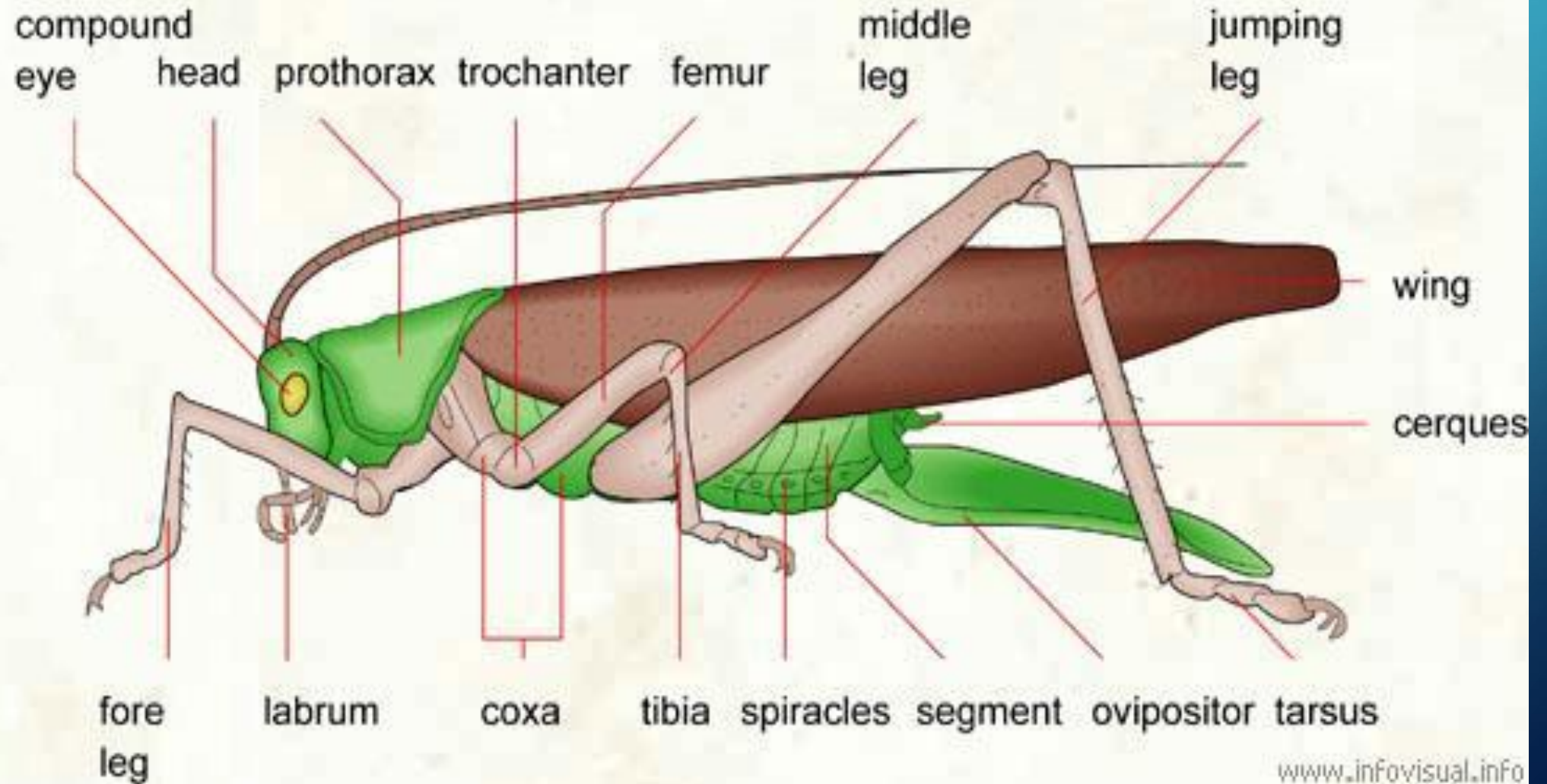
MOTHS 18. 10. MOTH 19. RAJAH BROOKE'S BIRDWING 20. FOREST MOTHER-OF-PEARL 21. DELAWARE SKIPPER 22. EMPEROR MOTHS 23. CINNABAR MOTHS 24. SACORICA HIEROGLYPHICA 25. LONG-TAILED SKIPPER 26. COMMON BUCKEYE 27. ZEBRA LONGWING 28. BLUE MORPHO 29. DORCAS COPPER

Orthoptera

- Grasshoppers, locusts, crickets, katydids
- Very long bodies
- Rear legs modified for jumping
- Females with egg laying tube (ovipositor on end of abdomen)
- Often communicate with chirping sounds



MORPHOLOGY OF AN ORTHOPTERA





ORDER DIPTERA

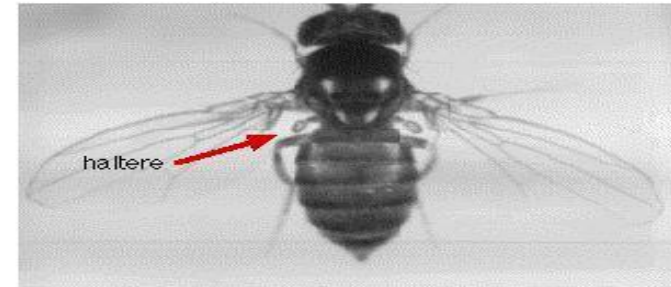
Reduced hind wings

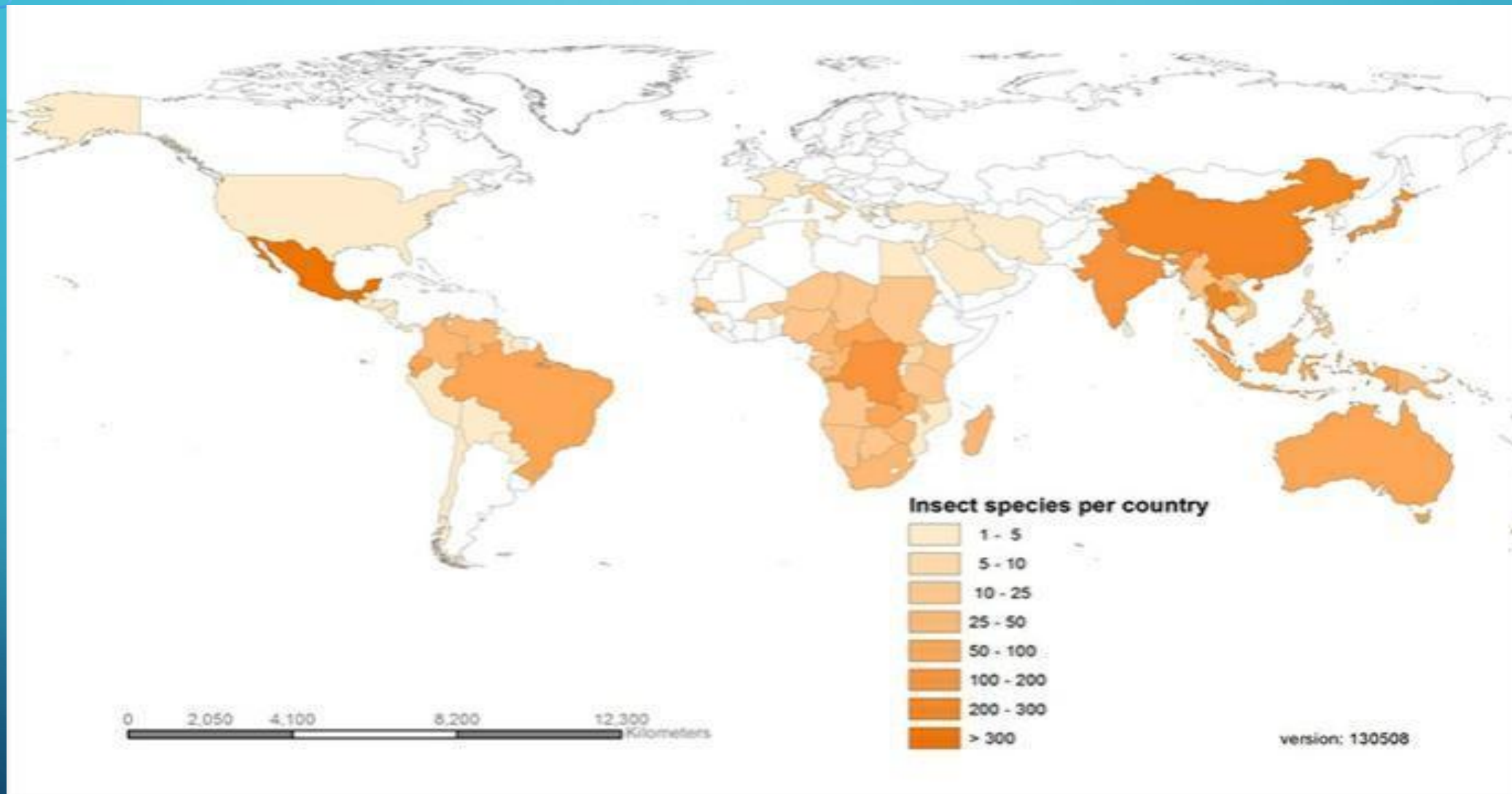
Suction mouths

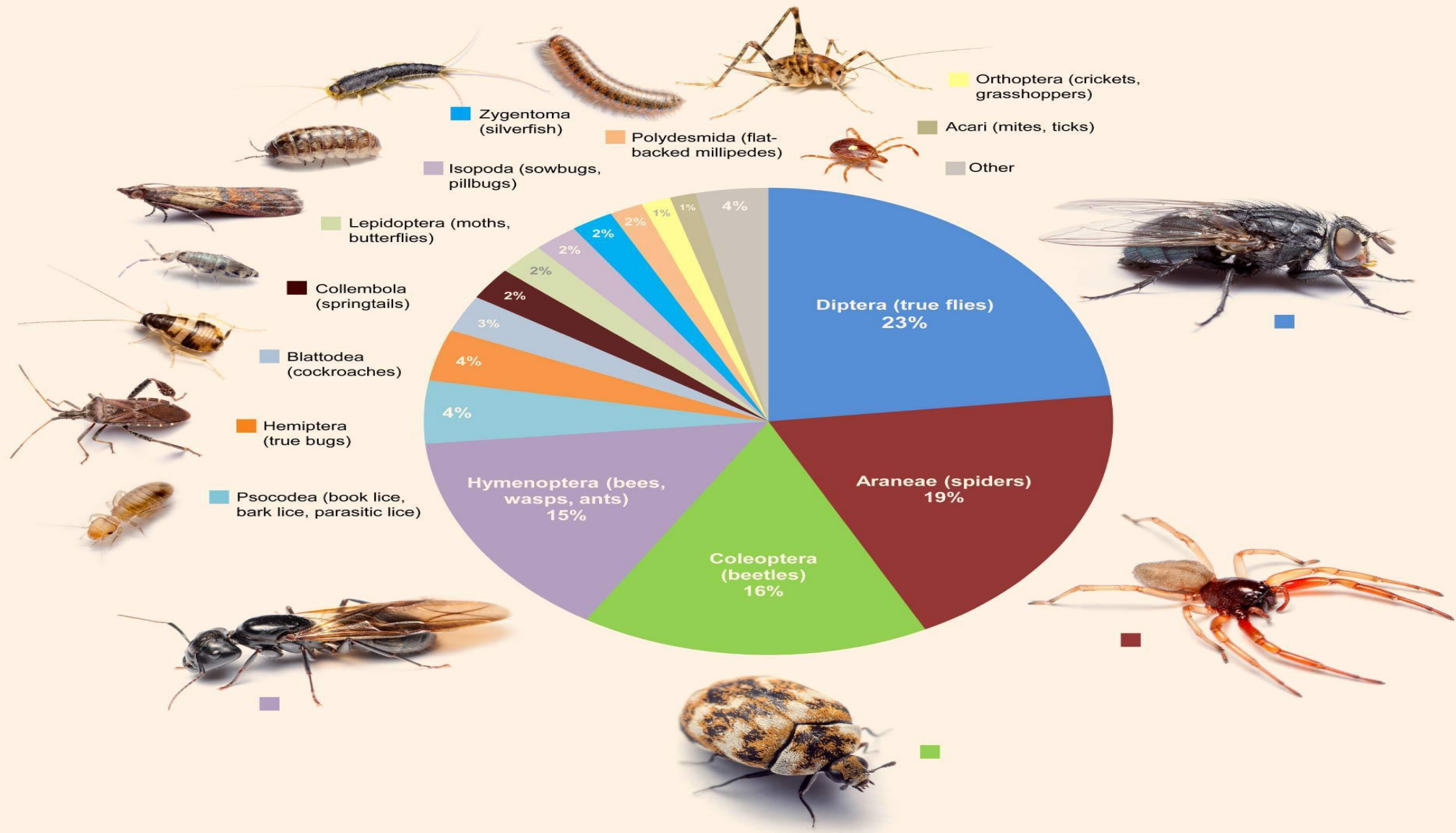
Larvae called maggots

General Characteristics of Diptera

- Holometabolus
- One pair of flight wings, one pair of halteres
- Many larvae are aquatic/semiaquatic
- Adult mouthparts are usually adapted for taking liquid food (some are non-functional or absent).







VIDEO LINKS

- https://youtu.be/dwmJ8yt_3pY
- https://youtu.be/QL906_79HJM
- <https://youtu.be/PZtT9SLOzYU>

