

Introduction



- Orthoptera, derived from the two **Greek word** “**ortho**” meaning **straight** and “**ptera**” meaning **wing**.
- Definition :-orthopterans have a generally **cylindrical body**, with elongated hindlegs and musculature adapted for jumping.
- **Synonyms** of **orthoptera** is **saltatoria** or **saltatoptera**.
- Example :-**Crickets , Grasshoppers, Locusts.**

Scientific classification



Kingdom	Animalia
Phylum	Euarthropoda
Class:	Insecta
Order:	Orthoptera

Some important characters of orthoptera



- Have **biting/chewing mouth parts** with well **developed mandibles** .
- Head is :- **hypognathous**
- **hind legs modified for jumping.**
- Most Orthopterans have a **long ovipositor**, used for laying eggs.
- Antenna is **filliform.**
- Metamorphosis simple or incomplete .
- **Tarsi** in orthopterans **3- or 4-segmented.**

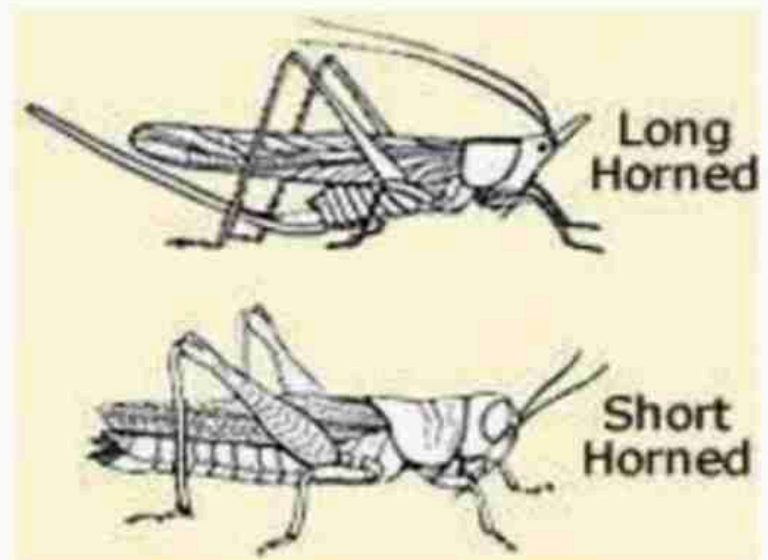
Types of orthoptera



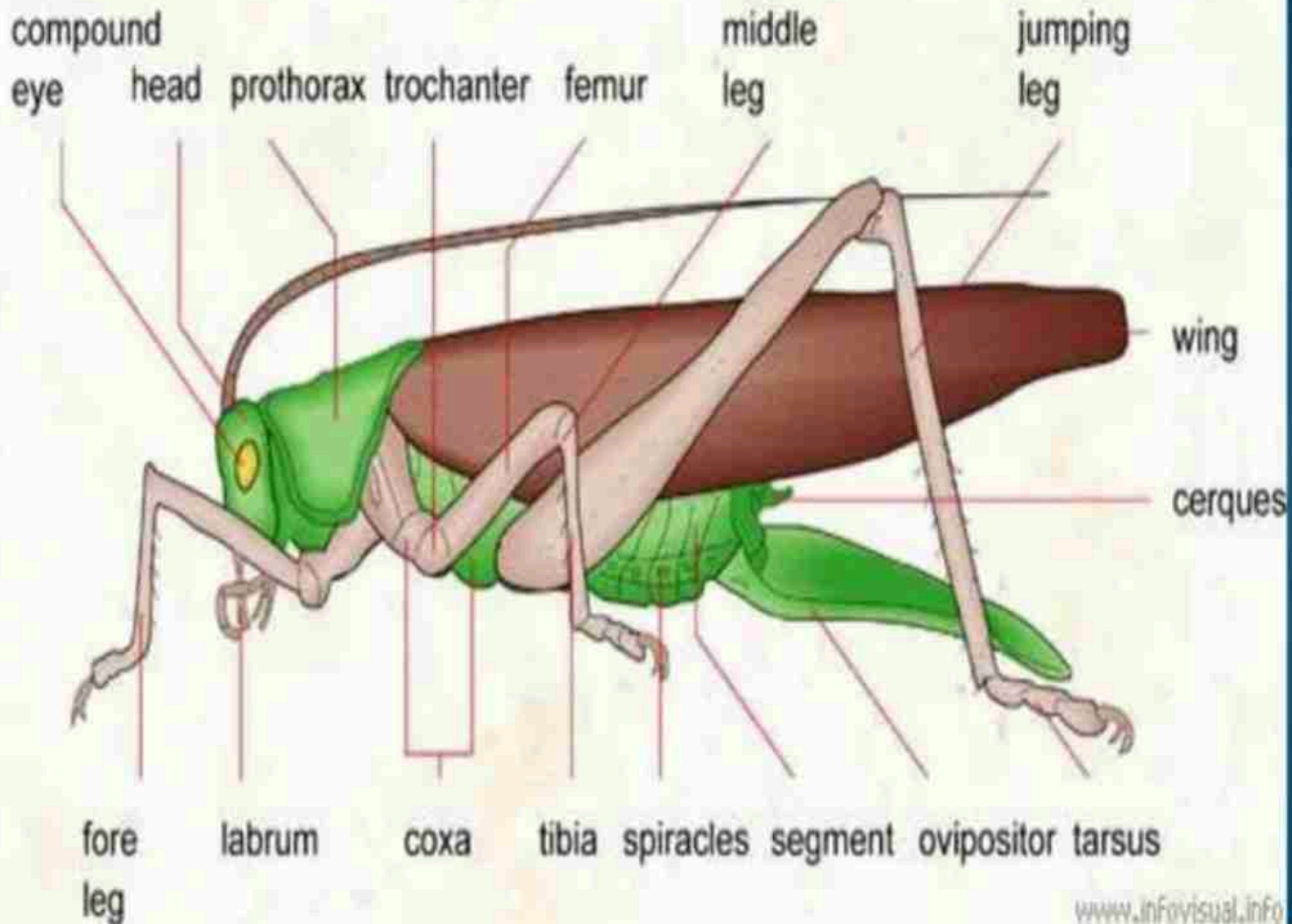
Orthoptera is divided into **two suborders**:-

1:- **Ensifera** (Long-Horned Grasshoppers).

2:- **Caelifera** (Short-Horned Grasshoppers).



MORPHOLOGY OF AN ORTHOPTERA



➤ Tarsus are four segmented .

➤ Example :- Surface grasshopper-*Conocephalus indicus*



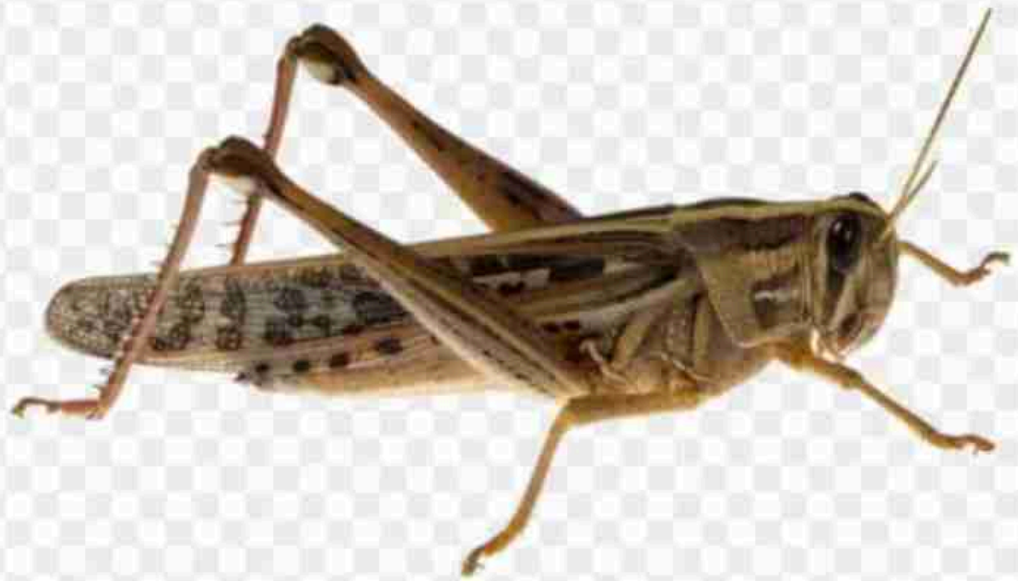
Tettigoidae (long horned grasshopper)



- All members of this family, with the exception of the **shield-backed grasshopper**, are **green** in colour, have long wings.
- Tettigonids are distinguished by having the **hearing organs (tympanums)** located on the front legs,
- When the **male rubs his wing** covers together, he **produces a song** that is used to attract females.
- Each species has its own characteristic song.
- Most long-horned grasshoppers spend the winter in the egg stage.

Example :- Cotton grass hopper.

Rice grass hopper.



Acrididae (short horned grasshopper)



- **Tarsus** are **three** segmented.
- They are herbivorous and include some of the most destructive agricultural pests known.
- The plague, or migratory, species are called **locusts**.
- Short-horned grasshoppers range in size from 5 mm to 11 cm length.
- Hind legs are adapted for jumping, with greatly enlarged femurs.
- Most species have a pair of **tympanal (hearing)** organs at the base of the abdomen