

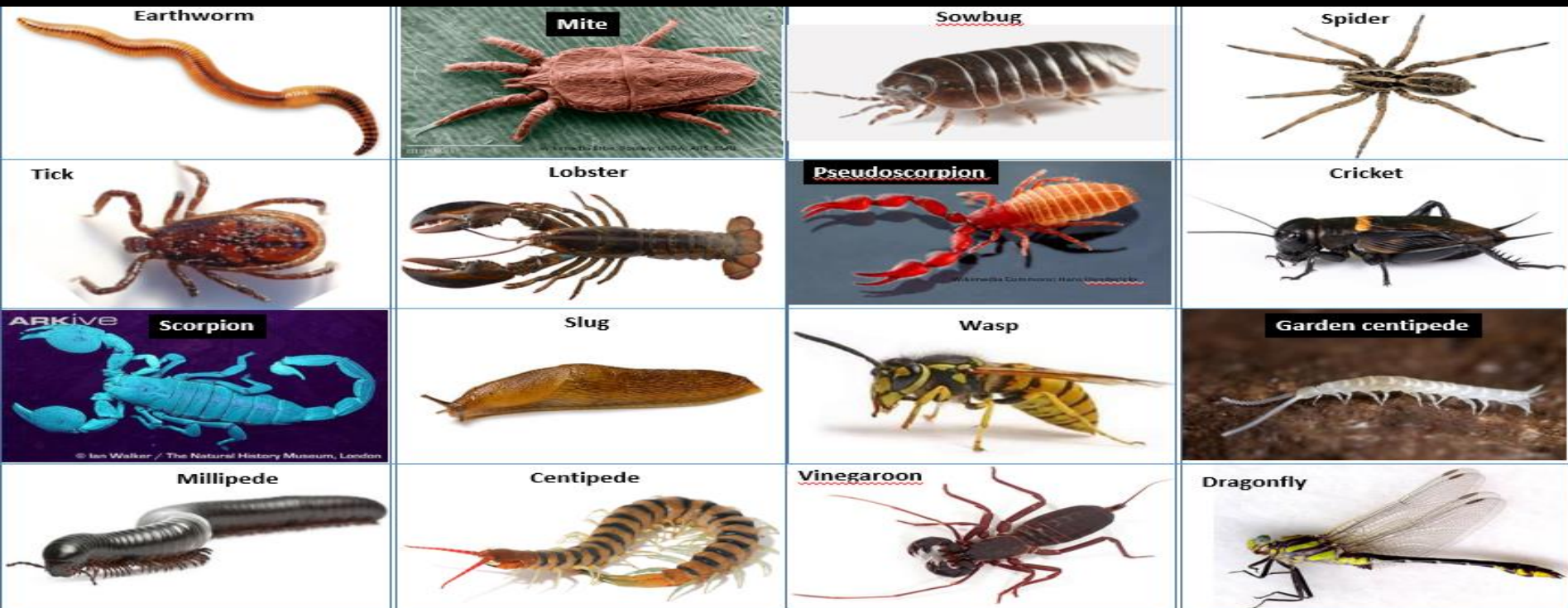


Entomology for Beginners

General Entomology ENT 100

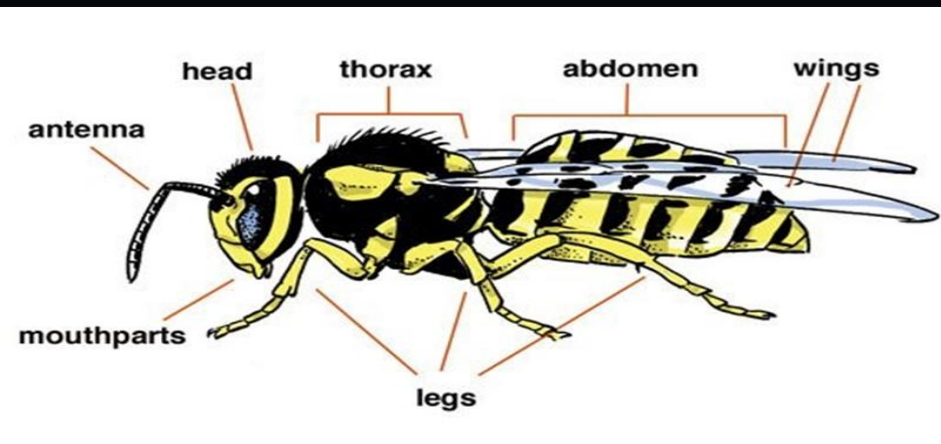
Insects and their relatives

- Insects are a class of arthropods.
- All Arthropods, have exoskeletons, segmented bodies, and jointed appendages.



All insects must have

- 3 body parts: head, thorax and abdomen
- 6 jointed legs (Hexapoda)
- 2 antennae to sense the world around
- An exoskeleton (outside skeleton)
- **If all four of these things are not true, the animal cannot be called an insect!**



Insects and their relatives

- Many people call spiders, centipedes, ticks, scorpions by insects. This is not correct because ticks, spiders, scorpions and centipedes have more than 6 legs
- They are close relatives of the insects in one phylum (Arthropoda).



Main subclasses of insects

✓ **Apterygota**
(primitive and wingless).



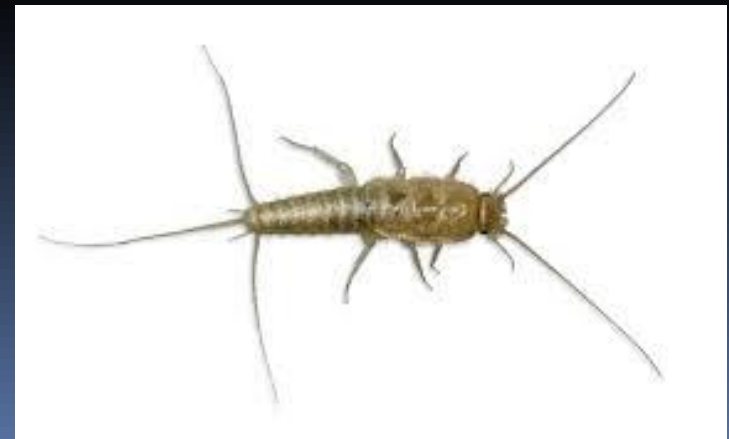
✓ **Pterygota**
(advanced and winged).



✓ Insects are divided up
to 32 orders, or
groups.

Apterygota

- ✓ The most primitive insects.
- ✓ Usually unseen by people.
- ✓ Small insects widely found in soil.
- ✓ Most of them feed on decaying remains of other organisms.
- ✓ For example, silverfish.



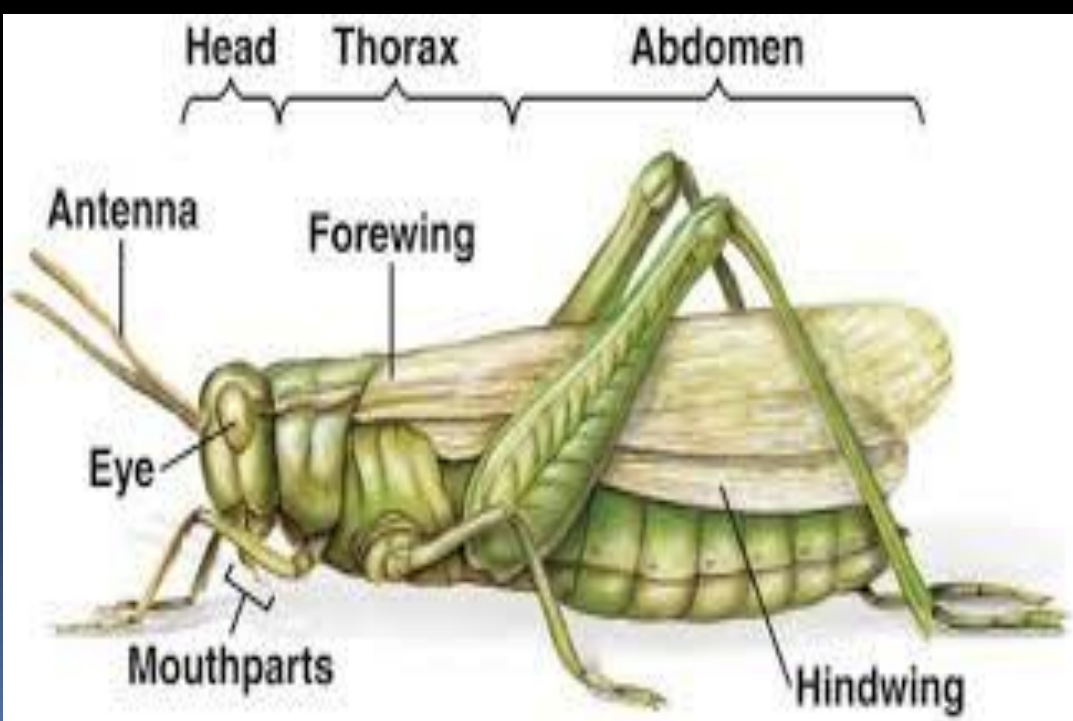
Pterygota

- ✓ More a advanced insects.
- ✓ Adults have wings.
- ✓ Some species lost their wings because they adapted themselves to a specific way of life.
- ✓ For example, bedbugs, lice, and fleas.

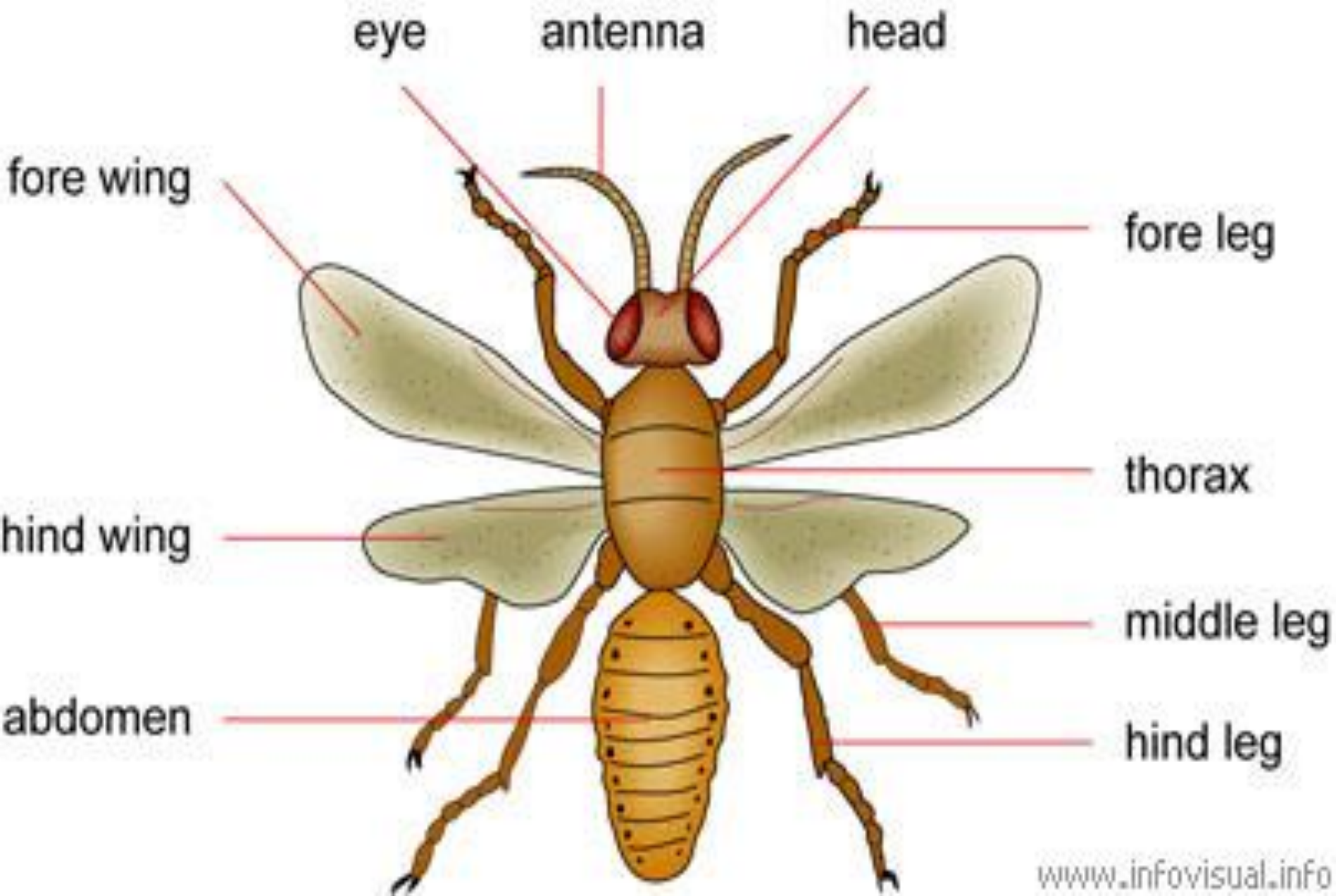


EXTERNAL ANATOMY

- Insect body is divided into three main parts (the head, thorax, and abdomen) each of which composed of several smaller segments.



MORPHOLOGY OF A FLYING INSECT

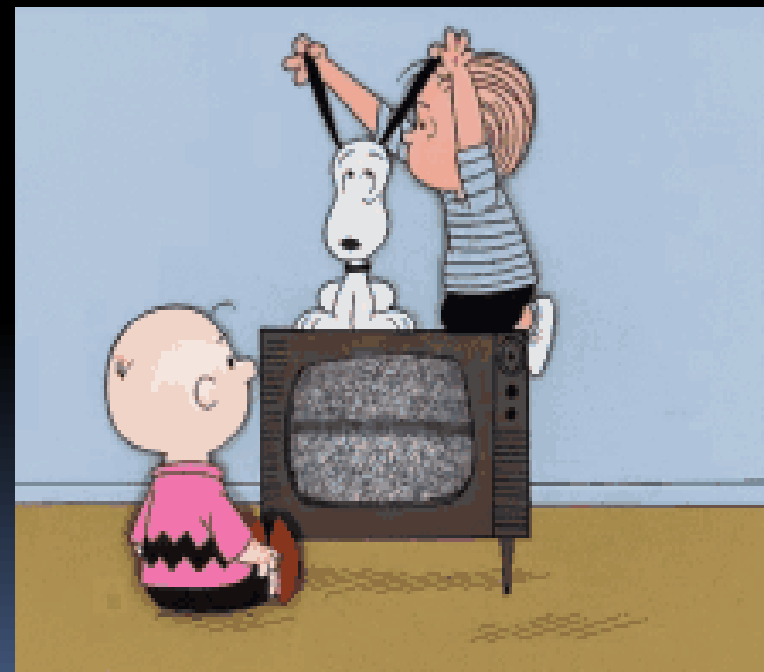


The head of insects

- The head capsule houses the brain, mouth opening, mouthparts, and major sense organs as antennae, compound eyes & simple eyes (ocelli).

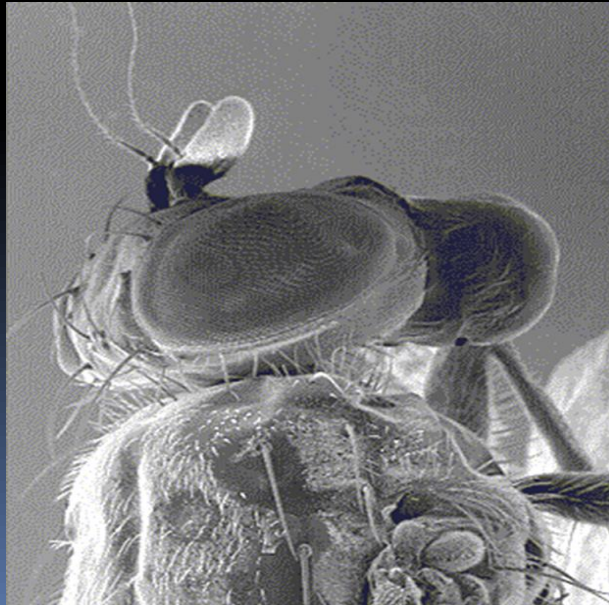


Insect Antennae



Insect Antennae

- Insect head bears 2 antennae.
- Antennae may be short as in flies (only 3 segments)
- or longer than the body and consist of a large number of segments.



Insect Antennae

Antennae have different forms and shapes



Insect Antennae

- ✓ Insects use antennae for detecting odors
- ✓ Insects can smell and find food or partners for a large distance (may be more than 11 Km).
- ✓ Antennae are used as tactile organs for measuring the temperature and humidity.



Insect Eyes



- ✓ **Insects have two compound eyes.**
- ✓ **Each compound eye is composed of several individual units (between hundreds and thousands).**

Insect Eyes

- ✓ Most insects have a few numbers of simple eyes (ocelli).
- ✓ There are insects with very small eyes or with no eyes, for example worker termites living underground.
- ✓ Completely blind insects are found also in caves.



