# MOUTH PARTS OF INSECTS

- Insects arc well suited to live in different ecological habits; the feeding habits of insects are associated with ecological habits.
- Mouth parts of insects are best examples to **homologus organs.**
- Organs which are similarin their origin and structure are called homologous organs.
- In insects, mouth parts are variously modified to meet the requirement of their feeding habits.

## TYPES OF MOUTH PARTS

- Biting and chewing mouth parts of cockroaches, grasshoppers, Dragon Hies and beetles arc of most primitive type.
- The larvae of mosquitoes, houscflies, butterflies and honeybees have biting and chewing type mouth parts.
- Piercing and sucking type - Female mosquitoes, bedbugs, head louse, tsetse fly and Lac insect.

1. Sucking type - male mosquito
2. Sponging and sucking type - Housefly
3. Siphoning type - Butterfly

## MOUTH PARTS OF FEMALE MOSQUITO

- Female mosquitoes are **sanguivorous** insects as they suck blood from vertebrate animals.
- Mouth parts are piercing and sucking type.
- Labium or lower lip is modified to form **proboscis** which is elongated.
- The sensory lobes present at the tip of proboscis are known as **labellae** and they are connected by **Dutton's membrane.**
- Hypopharynx is also elongated. The salivary duct opens on the surface of Hypopharynx. It helps in liberating saliva into the blood of man to prevent blood clotting.
- The anticoagulant present in the saliva of mosquito is **Haemolysin** (anticoagulant).
- Mandibles and maxillae are long and styliform (needle shaped) which help in piercing the skin of vertebrate animal.
- Serrated tip of maxillae keep the wound open.
- The food channel is formed by the opposition of **labrum epipharynx and hypopharynx.** Hypopharynx is free.
- Due to sucking action of pharynx, mosquito sucks the blood from vertebrate animal through its food canal.

## MOUTH PARTS OF MALE MOSQUITO

- The mouth parts are of sucking type.
- Mouth parts are suitable to suck the plant juices only.
- In male mosquitoes **mandibles** arc absent and first maxillae arc vestigial..
- Hypopharynx is fused with proboscis.

## MOUTH PARTS OF HOUSEFLY

- Housefly mouth parts arc of **sponging and sucking type.**

- In Housefly, **labium** is modified into proboscis.The proboscis consists of 3 parts.
- Proximal - rostrum
- Middle - Haustcllum
- Distal - Labellum
- The rostrum distally articulated with haustellum by **hinge joint.**
- Haustellum is ventrally supported by **mentum or theca.**
- The labellum consists of 2 lobes known as labellae. Minute channels present on labellae are known as **pseudotrachea.**
- Psuedotrachea are supported by chitinous rings. They help in taking the liquid food material by absorption or capillary action.
- Pre oral opening is present between the two labclla.
- Preslomial teeth, present on the under surface of labclla help in crushing larger particles into small particles.
- Labellum has sense organs of taste and smell.
- Mandibles are totally absent.
- Maxillae are represented by a pair of unjointed maxillary palps.
- The food channel or tube is formed by opposition of labrum epipharynx and hypopharynx.
- The housefly cannot lake solid food directly; it liberates saliva through hypopharynx, the solid is dissolved in saliva.
- The liquid food enters pseudo trachea by capillary action.
- Liquid food is sucked through food channel into mouth and form there to oesophagus.

**SIPHONING TYPE OF MOUTH PARTS:**

- Mouth parts of butterfly and moths are **siphoning type.**
- They are modified for sucking the juices from flowers or nectar from flowers
- The proboscis which helps in sucking the food is formed by apposition of **two galea** of 1st maxillae..
- Maxillary palps and labial palps are present in reduced condition.
- Labium or upper lip is reduced.
- Mandibles are absent
- Hypopharynx is absent.
- Labium is reduced to a triangular plate represented by a pair of labial palps.
- During the resting phase proboscis is highly coiled and is situated beneath the head, it is also called watch spring like proboscis.
- While ingesting the food material proboscis is uncoiled and inserted into the interior part of flower to suck the nectar due to flow of haemolymph into it under high pressure.