27/04/2020

Class - DIS

- Dr Dipanka...

Mouth parts of insects

(1) Piercing and sucking type -

- Mouth parts are characterised by a tubule usually jointed enclosing several needle like stylets

- The outer tube is formed by the labium which is the protective structure for the other parts and has nothing to do with the piercing the tissue

- The mandibles and maxillae some times replaced by the labrum, epipharynx and hypopharynx are greatly enlongated and slender structure which serve the purpose of piercing the skin of an animal or the epidermis of the plant and also as food channel.

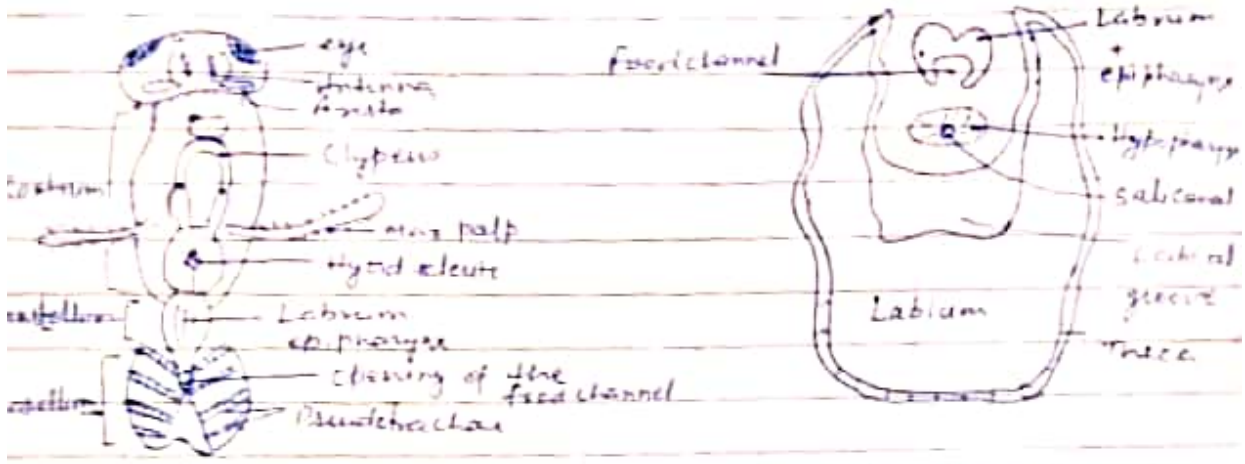
T.S. of mouth parts of mosquito.

Ex- Piercing and sucking type

(2) Sponging type :- It is modified for sucking up the liquid food. The mandible are altogether absent the maxilla are represented only by five segmented maxillary palp. The labium is greatly modified to form the so called proboscis. Proboscis is divided into 3 parts —

1. Proximal cone like, rostrum bearing the maxillary palp.
2. Middle brustellum with a mid dorsal groove serving as the food passage & a ventral heart shaped plate called Lucca
3. The distal or labellum (oral disk) consisting of two expanded lobes labellae, the underside of which is made up of numerous transverse channel in its membranous wall. These channels are called as Pseudotrachea.

it leads to the feed passage. The liquid feed is first collected to the pseudotrachea and then passed on the feed channel formed by labrum, epipharynx and hypopharynx lying in mud dorsal groove of the haustellum



T S of M P of Housefly

M P of Housefly

Fig - Sponging type

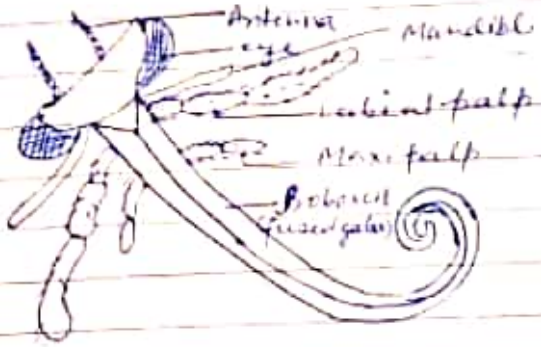
(3) Siphoning type :- 1. Labium greatly reduced maxillary palps rudimentary and the mandibles usually entirely wanting.

2. The labium is represented only by the large laing or scaly 3 segmented labial palps and a very small triangular basal plate.

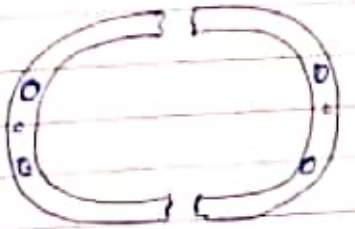
3. The essential working parts are formed by the maxillae parts of which the galae are greatly elongated & jointed to form a slender inelline tube (proboscis) which is coiled up under the head like a watch spring when not in use Proboscis is not capable of piercing the skin of an animal or the epidermis of a leaf or fruit except in rare instances.

4. Feeding is done by unrolling the tube & approaching the tip into some

exposed liquid such as the nectar in the nectary of a flower and then sucking the liquid through the proboscis
Ex - Moth & butterflies.



Mouth parts of Butterfly



T.S of Proboscis of butterfly

Eg - Siphoning type

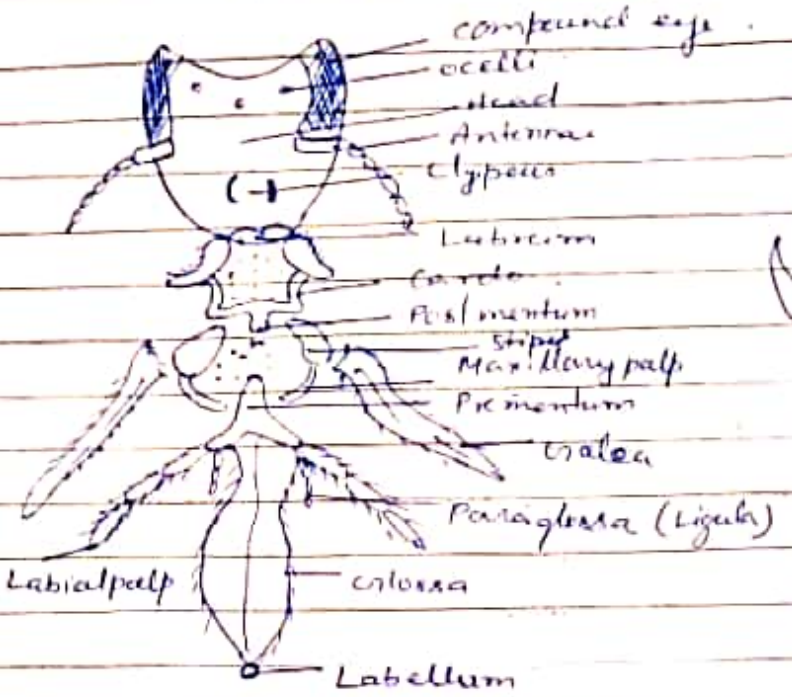
(4) CHEWING AND LAPPING TYPE :-

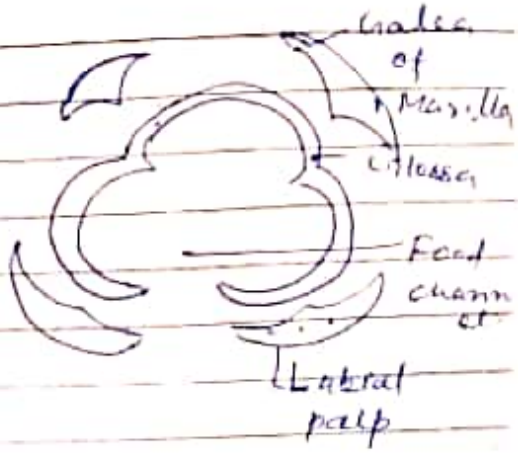
This type is modified for collecting nectar and pollen & liquid food from flower & molding the wax. - Bees & wasp.

1. The Labrum lies beneath the clypeus.
2. The mandibles are situated on either side of the labrum and are smooth & spatulate.
3. In the maxilla the lacinia is absent.
* The maxillary palp is vestigial but the galea has become elongated & blade like.
4. The labium is jointed basally to the triangular post mentum or submentum and the muscle filled prementum or mentum.

The paraglossa are greatly reduced while the glossa are united and hairy. It is greatly elongated forming the retractile lingular tongue which terminates distally in a pore - spoon or labellum. The

labial palp are also elongated





T.S of tongue of a worker honey bee.

fig- Head & a mouth parts of worker honey bee (in front view)

fig chewing and lapping type

(5) Rasping - Sucking type eg = Thrips.

The mouth parts are somewhat intermediate in structure between piercing and cutting & chewing type. They are also asymetrical. The right mandible is reduced while the left one is elongated along with the maxilla and perhaps also hypopharynx to form the stylets of the piercing type. They are adapted to move in and out through a circular opening at the apex of cone shaped head. Each stylets are contained in a separate pouch. The

stylet do not enter deeply into the wound rather they rasp to much & suck the syrup that goes out on the surface by the mouth, rather than the mouthparts (stylets). Both part of palp (maxillary & labial) are present. It is found in female thrips.

(6) Degenerate type :- The mouth parts of nymphs are very similar to these of the adult. The mouthparts of larvae are basically of chewing type, regardless of the nature of the mouthparts of their parent. They become somewhat reduced in the larvae of certain order. Eg - Lepidoptera Diptera, Trichoptera & Hymenoptera.