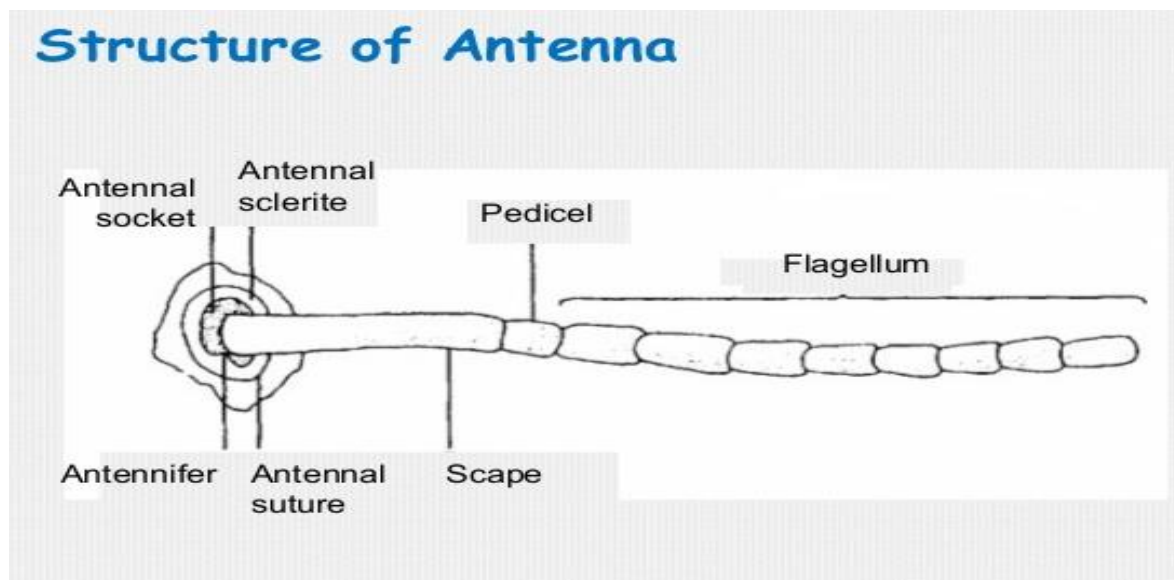


Types of insect antennae

Structure of insect antenna:– Antennae are also called feelers. They are paired, highly mobile and segmented. Antennae are located between or behind the compound eyes. All insects except protura have a pair of antennae. Antennae are well developed in adults and poorly developed in immature stages. The antenna is set in a socket of the cranium called antennal socket. The base of the antenna is connected to the edge of the socket by an articulatory membrane. This permits free movement of antennae. The basal segment is called **scape**. It is conspicuously larger than succeeding segments. The second antennal segment is called **pedicel** which immediately follow the scape. A mass of sense cells called **Johnston's organ** is present in the pedicel, which is used as a chordatonal organ in some of the insects like mosquitoes. Both scape and pedicel are provided with intrinsic muscles. The remaining annuli or flagellomeres are known as **flagellum** or **clavola** which lack individual muscle. Surface of the flagellum is supplied with many sensory receptors that are innervated by the duetocerebrum of brain. Flagellum may vary in size and form.



Function:

1. Antenna is useful to detect chemicals including food and pheromones (chemicals secreted into air by opposite sex).
2. It perceives smell, humidity changes, variation in temperature, vibration, wind velocity and direction. Antenna is useful to perceive the forward environment and detect danger.
3. It is useful for hearing in mosquitoes and communication in ants.
4. Rarely, it is also useful to clasp the mate (e.g. Flea) and grasp the prey.

Types of antennae:

1. **Setaceous:** (Bristle like) Size of the segments decreases from base to apex. e.g. Leafhopper, Dragonfly, Damselfly.

2. **Moniliform:** (Beaded) Segments are either globular or spherical with prominent constriction in between e.g. Termite.
3. **Filiform:** (Thread like) Segments are usually cylindrical. Thickness of segments remains same throughout. e.g. Grasshopper.
4. **Serrate:** (Saw like) Segments have short triangular projections on one side. e.g. Longicorn beetle
5. **Unipectinate:** (Comb like) Segments with long slender processes on one side e.g. Sawfly
6. **Bipectinate:** (Double comb like) Segments with long slender lateral processes on both the sides e.g. Silkworm moth
7. **Clavate:** (Clubbed) Antenna enlarges gradually towards the tip. e.g. Blister beetle
8. **Capitate:** (Knobbed) Terminal segments become enlarged suddenly e.g. butterfly
9. **Lamellate:** (Plate like) Antennal tip is expanded laterally on one side to form flat plates e.g. lamellicorn beetle
10. **Aristate:** The terminal segment is enlarged. It bears a conspicuous dorsal bristle called arista e.g. House fly
11. **Stylate:** Terminal segment bear a style like process e.g. Horse fly, Robber fly.
12. **Plumose:** (Feathery) Segments with long whorls of hairs e.g. male mosquito
13. **Pilose:** (Hairy) Antenna is less feathery with few hairs at the junction of flagellomeres. e.g. Female mosquito.
14. **Geniculate:** (Elbowed) Scape is long remaining segments are small and are arranged at an angle to the first resembling an elbow joint. e.g. Ant, weevil and honey bee.



SETACEOUS



FILIFORM



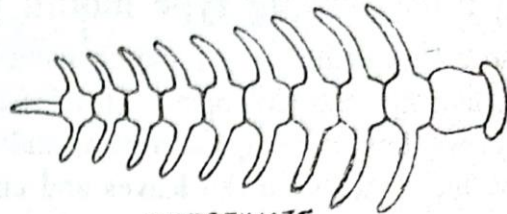
MONILIFORM



SERRATE



PECTINATE



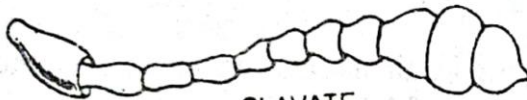
BIPECTINATE



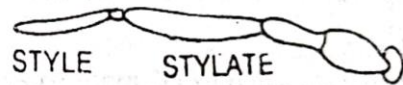
FLABELLATE FLABELLA



PLUMOSE



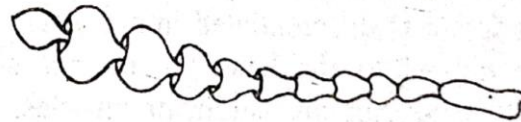
CLAVATE



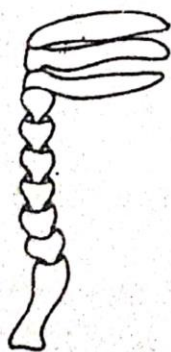
STYLE STYLATE



WHORLED



CAPITATE



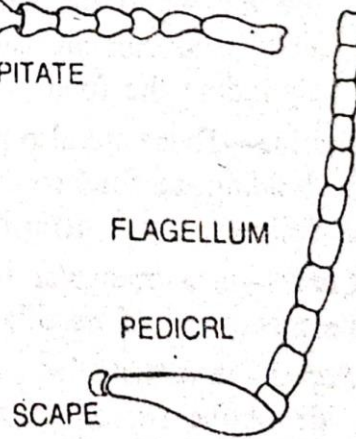
LAMELLATE

LAMELLA



ARISTATE

ARISTA



GENCULATE

FLAGELLUM

PEDICRL

SCAPE