HARMFUL INSECTS - HOUSEFLY

Class **Insecta**

Order **Diptera**

- Indian housefly scientifically called as Musca nebula.
- M. domestica is world wide in distribution.
- 3 segmented antenna consists of 3 parts - scapc, pedicel and flagellum.
- Mouth parts are of sponging and sucking type.
- Only one«pair of mesothoracic wings are well developed and useful for flight.
- The 2nd pair of wings are small and rod like known as **halters or balancers.**
- The halters or balancers assist in balancing.

LIFE CYCLE

- The life cycle of housefly includes 4 stages
- Egg larva ---pupa --- Imago
- After copulation female housefly liberate at a time eggs 100-125 on dirty places.
- The larva of housefly is called **Maggot.**
- The maggots donot possess distinct head and show small stumpy legs called **spiniferous pads.** These maggots feed on organic matter.
- The maggots undergo two moults to become pupae.
- The pupa metamorphose into adult.
- The type of metamorphosis is **Holometabolous** (complete metamorphosis)

DISEASES SPREAD BY HOUSEFLY

- Adult housefly has the habit of setting on decaying organic matter as well as foodstuffs. Due to this habit it acts as a disease-spreading agent.
- The legs being hairy, can easily carry many eggs of roundworms and several pathogens.
- Thus it acts as an agent of **contamination or paratenic** host of disease causing pathogen.
- The diseases that are spread by housefly include **amoebic dysentery** (Enmtamoebahistolytica), **ascariasis** (Ascaris lumbricoides), **Typhoid** (Solmonella typhi), **Cholera** (Vibrio cholerae) and **tuberculosis** (Mycobacterium tuberculosis).
- Sometimes housefly lays eggs on open wounds. Maggots hatch out of these eggs and they invade the human subcutaneous tissues causing a cavity like pathological condtion called **myiasis.**

MOSQUITO

Order Diptera

- Mosquitoes are most harmful insects as they spread several diseases.
- Mosquitoes are world wide in distribution.
- In India three genera Anopheles, Culex, Aedes of family culicidae act as vectors.

STRUCTURE

- The body of mosquito is divisible into 3 parts head, thorax, abdomen.
- Head possess a pair of antennae, a pair of compound eyes and mouth parts.
- Mouth parts in female mosquito are piercing and sucking type where as in male they are sucking type.
- Thorax possess 2 pairs of wings and 3 pairs of legs.
- The 1st pair of wings (mcsothorax wings) are well developed and **useful for flight.**
- The seecond pair of wings arc modified into halters or balancers. They act as organs of balance and assist in **sound production.**
- Mosquitoes arc sangivorous, intermittent ectoparasites.

LIFE CYCLE

- The life cycle of mosquito includes 4 stages, they are egg - larva - pupa - imago.
- After copulation, female mosquitoes liberate eggs on stagnant waters.
- Eggs hatch into larva within a short period.
- The larva of mosquito is callcd **wriggler.**
- The larva and pupae respire through **respiratory siphon and respiratory trumpet** respectively.
- **The** pupa of mosquito is callcd **Tumbler.**
- Type of metamorphosis is **Holometabolous.**
- The larva feed on organic matter in water.

DISEASES TRANSMITrED **BY** MOSQUITOES

- Female mosquitoes are responsible for spread of several diseases in human beings as they arc sanguivorous animals.
- Anopheles sps spread Malaria parasites.
- Culcx spread Filaria, encephalitis and bird malaria.
- Aedes aegypti spreads viral fevers callcd Dengue fever & yellow fever. (Break bone fever etc.
- Psorophora transmits the eggs of **botfly** that causes **dermatobiasis in cattle.**

BED BUG

Order Ilemiptera

- Zoological name of Bed bug is Cimcx lectularis. Cosmopolitan in distribution.
- Indian tropical bug is C.rotundus or C.hemiplerus.
- Bed bug lives as intermittent, sanguivorous , ectoparasitic on man.
- Bed **bug is** a **nocturnal** insect

MORPHOLOGY

- The body of Bed bug is divided into head, thorax and abdomen.
- Head possess a pair of antennae, one pair of eyes.
- Mouth parts arc of **piercing and sucking type.**
- The reduced mesothoracic wings are called **hemielytra** (2nd pair of wings absent).
- **Stink glands** are present at the base of legs on the ventral side of the **metathorax.**
- Abdomen is broad and dorsoventrally compressed.
- It resorts to **cannibaalism** in starvation.
- It includes 3 stages Egg - Nymph - Adult.

- Bed bug is **hemi metabolous** insect.
- Eggs hatch into nymph and the Nymph moults several times.
- Bed bug acts as a vector for pathogens that cause diseases like
- Rickettisia Prowazckii - Typhus fever.
- Borrelia sp - Relapsing fever
- Rickcttisia quintana - Trench fever.
- Yersinia pestis - Bubonic plague .
- Mycobacterium leprae - leprosy

HEAD LOUSE

- Common head louse is Pediculus humanus capitis.
- It is **wingless, sanguivorous ectoparasite** on humn beings.
- The body is divided into head, thorax, abdomen.
- In head louse mouth parts are **piercing and sucking type.**
- Thorax possess 3 pairs of legs which ends with curved claws.
- The female lays nearly **80-100** eggs that attach to the hair firmly.
- The whitish eggs are called **Nits.**
- Eggs hatch into nymphs in seven days.
- After 3 **moults** the **nymphs** become adults. They spread one from one person to another person either by contact or through combs.
- Head lice transmit pathogens that cause diseases such as **relapsing fever and Typhus fever.**