CHAPTER – 8

Body Movements

- **Locomotion:** Movement of organisms from place to place.
- **Locomotion in human body:**

(i) **Human skeleton:** It forms a framework that gives shape and support to the body. It consists of 206 bones. It protects internal organs.

(a) **Skull:** It protect the brain. It is rigid box made up of plates of bone firmly joined together.

(b) **Rib cage:** It is flexible case of ribs. Each rib curves round the side of the chest from the backbone and is joined in front to a plate of bone called sternum. Ribs are conneceted to one another by the muscles. Two lower most pairs of ribs are called 'floating ribs'.

(c) **Backbone:** It is also called the spine or vertebral column. It is a chain of small bones called **vertebrae**. It protect the spinal cord, which carries maessages between the brain and body. It also support the skull, ribs and limbs.

(d) **Limbs:** It is made up of long bones with joints that allows them to move. They are mainly for support.

(i) **Arms:** fore-arms is made up of two bones and hands have several small bones. Shoulder bones have a pair of collar bones in front and a pair of shoulder blades.

(ii) **Legs:** Lower leg is made up of two bones and feet have several small bones. Hip bones or gridles bear weight of body and are attached to thigh bones.

(ii) **Joints:** The point where two bones meet. Allow movement to take place. Bones are held together by ligaments.

(a) **Movable Joints:** It allows movement between bones and have cartilage between them. Type of movable joints are:

(i) **Hinge Joints:** It allow movement only in one plane backwards and forwards. Example: elbow joints, knee joints and joint between phalanges of fingers and toes.

(ii) **Ball and Socket Joints:** It permit a circular movement. Example: the shoulder.

(iii) **Gliding Joints:** It allow bones to slide a little. Example: bones inside wrists and feet.

(iv) **Pivotal Joints:** Joint where the neck joins the head. It allows head to move backward and forward and turn to right and left.

(b) **Immovable or Fixed Joints:** The bones cannot move at these joints. Example: bones in skull, joint between upper jaw and rest of skull.

- **Locomotion in other animals:**

(i) **Fish:** Locomotion achieved by lateral contractions of the muscular body with a final thrust by the tail. Fish swim by forming loops alternately on two sides of the body.

(ii) **Birds:** When the large flight muscles contract, they pull the wings down.

(iii) **Snails:** The muscular foot helps in locomotion.

(iv) **Earthworms:** Move by stretching out body in front and keeping the hind end fixed to the ground.

- The bones are moved by alternate contractions and relaxations of two sets of muscles.
- The bone joints are of various kinds depending on the nature of joints and direction of movement they allow.
- Strong muscles and light bones work together to help the birds fly. They fly by flapping their wings.
- Snakes slither on the ground by looping sideways. A large number of bones and associated muscles push the body forward.
- The body and legs of cockroaches have hard coverings forming an outer skeleton. The muscles of the breast connected with three pairs of legs and two pairs of wings help the cockroach to walk and fly.