

## *SKELETAL SYSTEM*

In biology and anatomy, the skeleton is defined as that part of the body which forms the supporting framework of the body and give a proper shape to the body. A skeleton can be anything from microscopic fibers such as the skeleton of the cell (cytoskeleton), to a well developed system of bones, joints and cartilages, as occurs in human beings. No matter what physical shape it exists in, the skeleton will perform have the supporting function. Skeleton is the collective name for all the hard and rigid structures in the body forming the framework of the body.

### **Hydrostatic Skeleton**

Some of the soft bodied invertebrates like the sea anemones and annelids etc are deprived of hard skeleton. In such animals the coelom filled with a fluid acts as a kind of skeleton and this skeletal system is called the hydrostatic skeleton. It provides support and helps in locomotion. The body of sea anemone is surrounded by muscle fibers and tentacles surround its mouth. The body and the tentacles are extended with the seawater present in the cavity of sea anemone. The pressure of muscle fibers on the liquid in the body cavity helps in maintaining the position of sea anemone in water. Hydrostatic skeleton in the earth worm enables it to move on the earth.

### **Exoskeleton**

The exoskeleton is that type of skeleton which lies outside the soft parts of the body providing a covering to them. It is in the form of hard and rigid plates composed of dead substance secreted by cells. Familiar examples of this type of skeleton are thus found in the insect, the horny scales, feathers and hairs. In many cases the exoskeleton is very rigid and heavy. It restricts the movements of the animal to the extent that the animal is passive and slow or even sessile.

One group of animals however has attained a very successful solution of the difficulty posed by the rigidity and weight of the exoskeleton. These animals are arthropods. They are completely encased in a very light substances known as chitin. In addition the exoskeleton instead of being formed of just one piece or even two pieces is divided into several distinct section. Thus the arthropods have ease of motion with a protective outer covering.

### **Endoskeleton**

Endoskeleton develops within the skin or in the deeper tissues. The vertebrate skeleton is basically an endoskeleton made up of two types of tissues; bone and cartilage. During early embryonic development the endoskeleton is composed of notochord and cartilage. The notochord in most vertebrates is replaced by vertebral column and the cartilage is replaced by bone in most adults. The endoskeleton gives shape and support to the body and provides a mean of locomotion.