

PRIMATES

Primates includes highest evolved mammals, which however possess some primitive characters as well as some specialized adaptation. Their return from arboreal to terrestrial habitat is the secondary adaptation.

With arboreal habitat the following adaptive changes occur.

- (i) reduction of olfactory organs and bulb
- (ii) with reduction in snout eye becomes suitable to forward vision.
- (iii) Grasping hand and opposable thumb evolved.
- (iv) Size and Complexity of brain increased.
- (v) Plantigrade progression, the number of digits was 5.
- (vi) Complete orbital ring, etc.

The above changes make them suitable for terrestrial life.

Order Primate divided into 3 sub-orders.

Sub-order 1. Lemuroidea

Sub-order 2. Tarsiodea

Sub-order 3. Anthropoidea.

Sub-order 1 - Lemuroidea:

Lemuroidea includes nocturnal primates with flat nailed digits except the first digit which is provided with a pointed claw. They have a long tail. Lemurs are confined to Madagascar only.

Lemur show primitive, specialized as well as arboreal characters.

Primitive characters are —

- (i) Low brain case with uncovered cerebellum.
- (ii) Lateral direction of orbit.
- (iii) Four or even five ethmoidal bones (normal number is three).
- (iv) Backward extension of Jugal, largest nasal
- (v) Duplex uterus.

The specialized characters are —

- (i) Although dentition is primitive tribusculosectorial plan yet it undergoes specialization in different forms.

(1) Incisiform lower canines

(2) Sharp claw in the second pedal digit, second finger is also clawed. Some other digit has flat nail.

Sub-order 2. Tarsioidae:-

Tarsioidae has at present only one genus, *Tarsius* found in East India. Their characters place them between Lemurs and anthropoids. Their main different from Lemurs are —

(1) Orbits directed forward and separate from temporal fossa.

(2) Single olfactory foramen

(3) Femur with third trochanter

(4) Jugal does not extend backwards.

They can be separated from anthropoids —

(1) Due to presence of greatly elongated navicular and calcaneum, the digits of hand has nails.

(2) All toes have also nail except the 2nd and 3rd which have claws.

(3) The hand has head is more like anthropoids than lemuroids.

(4) The great enlargement of the eye is taken place.

(5) Lemur-like snout is has been replaced by short face.

Sub-order 3 - Anthropoidea.

(1) Anthropoidea includes apes, monkeys and man which make it an important group of primates. They are cosmopolitan in distribution and they are not usually nocturnal. The body is generally covered with hair. The pinna are round to some extent and are pressed to the head.

(2) Cranium has expanded with the development of cerebral hemisphere overhanging the cerebellum and the medulla. Neopallium is greatly convoluted due to Sylvian fissure and other sulci.

(3) The eyes are directed forward, binocular vision, retina richly supplied with cones and a macula lutea is always present.