

6. PHYSICAL FEATURES

6.1. Introduction

The age and sex characteristics are of great importance in behavioural studies. It would be very difficult to study behaviour of a species in which all animals looked morphologically identical. Fortunately, most animals exhibit some structural differences among the different age-sex classes. The distinctions of physical features among different age-sex classes in rhesus monkeys are discussed in this chapter.

6.2. Methods

Determination of age and sex are often difficult in the field. There is no universal method by which one can determine the age and sex of wild animals in their natural habitat. Southwick et al., 1961a determined age and sex of rhesus in the wild from direct observation depending on some of the morphological characteristics such as, body size, weight, colour, condition of the tail, fur and skin of the rump, external genitalia, mammary glands etc.

6.3. Results and Discussions

6.3.1. Age

Like all other moderate body-size primates the accurate determination of age in case of rhesus macaques is not easy. Tooth eruption and replacement although serves well in determining age in the laboratory condition, the process is not suitable in the free-ranging rhesus macaques. It is, however, possible to have a reasonably accurate workable age-scale of rhesus based on some easily visible morphological features such as body-size, weight, sexual skin, crown and some specific behavioural patterns as used by Southwick (1961). Individuals were categorised into four groups : adult male, adult female, juvenile and infant (Table.6.1.).

6.3.2. Morphological Features

6.3.2.1. Adult

In macaques sexual dimorphism is generally well marked. Rhesus monkeys usually become sexually mature when they began to show the dimorphic characters following their third years of age. Adults are with a moderate tail, usually about half of the body length. Tail is uniformly covered with hair from the base to the tip. Hairs of the crown are directed backwards from the brows without a whorl and not forming a definite crest on the cheek but usually a whorl low down on the cheek. The face which is bare, is light pink, flesh or reddish in colour. The head, shoulders, arms and fore back are generally olive coloured, but speckled with duller or brighter buff while the loins, rump and the base of the tail are reddish in varying intensities. The skin of the face, hands and feet is pale although the face is sometimes suffused with red. The males are with large penis with elongated gland. There is no catamenial swelling in the female but the skin of the rump is often bright red. The vagina is situated just beneath the anus and is normally covered by the tail. The mammary glands are with two nipples that hang down from the breast region between the forearms. The glands can be seen in an anterior view. The body length including tail of the adults is given in Table.6.1. The glands and the nipples are prominent in the lactating condition. Among macaques males in general are quite a bit larger and heavier than females.

6.3.2.2. Juveniles

The juveniles of this species having a smaller body size than adult categories and they are usually one to three years of age. Body colour ranges from blackish to grey with prominent flesh to light tan colour in the hind quarters. Juveniles were identified as young which were largely independent of the mother. Body length, weight, tail length etc. are given in Table.6.1.

The juveniles are often seen to be associated with their mother and they were also found to play with infants.

6.3.2.3. Infant

The infants were generally less than one year old. Their body length, body weight etc. are shown in Table.6.1. The infants have a light grey to whitish body colour in the hind-quarters. Most of the time they remained closely associated with their mothers but frequently moved some distance from mother particularly during play and feeding.

Data on body size and weight of different categories of individuals of rhesus were recorded by Shortridge (1914), Schultz (1933, 1969), Napier and Napier (1967) and Fodden (1971).

6.3.3. Sex

In arboreal primates dimorphism of sex is weak or absent (Mohnot, 1975). In general, males are larger than females in less arboreal or semi-terrestrial primates, such as baboons and macaques (Schultz, 1969). They are capable of defending the group from predators. Adult rhesus macaques are rather easy to sex in the wild because the external reproductive organs of both sexes could be seen from a distance. But it was difficult to determine the sex of young ones because of their less prominent sex organs. As such no attempt was made to determine their sex in order to avoid bias.

Table.6.1. Age and sex classes of rhesus macaques depending on some morphological characters (measurements are approximate).

Age Class	Age (in Years)	Body Colour	Colour of hind quarters	Head and body length (in cm.)	Total length (in cm.)	Body weight (in Kg.)
Adult Male	Above 3	Light blackish grey	Bright red	46.5 – 62	19.7 – 29.2	5.2 – 10.3
Adult Female	Above 3	Light blackish grey	Bright red	45 – 54	18.3 – 27.1	3.4 – 10.1
Juvenile	Above 1 less than 3	Blackish grey	Flesh coloured red to light tan	26.1 – 31.8	10.9 – 15.7	2.2 – 5.1
Infant male	Less than 1	Light grey to whitish	Pale grey with slight blackish	15.9 – 21.8	6.0 – 9.8	0.27 – 0.69
Infant female	Less than 1	Light grey to whitish	Pale grey with slight blackish	14.7 – 21.2	5.2 – 9.1	0.23 – 0.61

Table.6.2. Body size and body weight in different Macaque species (measurements are approximate).

Name of Species	Average head and body length (in cm.)		Average tail length (in cm.)		Average body weight (in Kg.)	
	Adult Male	Adult Female	Adult Male	Adult Female	Adult Male	Adult Female
<i>Macaca arctoides</i>	64.5	50.35	7.0	3.5	12.0	10.0
<i>Macaca assamensis</i>	52.8	48.35	28.2	22.5	8.5	5.7
<i>Macaca fascicularis</i>	53.0	47.7	51.5	47.5	5.0	4.1
<i>Macaca nemestrina</i>	74.5	48.85	20.25	16.5	10.35	7.65
<i>Macaca radiata</i>	55.75	43.5	60.0	55.75	8.65	5.0
<i>Macaca silenus</i>	56.0	46.0	32.0	38.7	6.8	4.2
<i>Macaca sinica</i>	48.7	43.7	58.5	51.7	6.4	3.85