



ORIGINAL ARTICLE

Studies on Territorial Behavioural and Interaction of Rhesus Monkey with Other Species in Urban Agra**Rakesh Babu and Ajay Capoor**

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Email: drrakeshchaudharyaca@gmail.comReceived: 23rd May 2018, Revised: 24th July 2018, Accepted: 2nd August 2018**ABSTRACT**

Present study deals with major fauna and interaction of rhesus monkey with other species found in study area which is very relevant as it affects rhesus monkey behavior in terms of food and shelter. The holistic approach is used to study the territorial behavioural aspects and behavioural interactions with species and surrounding environment of monkeys in study area. Major fauna is listed in research article with a discussion on species interaction of rhesus monkeys.

Key words: Territorial Behaviour, Interaction, Rhesus Monkey

INTRODUCTION

The present study was carried out in urban area in Agra City. The population of monkey is distributed in different types of group structures. Monkey a term used to denote any higher primates (Sub- order-Anthropoidea) that is not an ape or man. It indicates any member of the infra order Platyrrhina (New world monkey and marmosets) as well as any member of super family Cercopithecoidea (Old World Monkeys), family-Cercopithecoidae and sub-family- Cercopithecinae of the infra order catarrhina. "Monkeys" apparatus, most member being quadrupedat; but even this is very ape like in some species. The term "ma" derived from the medieval " Moncks" (meaning- mannikin-a little man, a Pigmy, a dwarf, anatomical model of the human body). A recent ingenious alternative has been proposed, that the name is misreading of the Greek for monkey or ape, pithecos, in Greek Script. The macaques in general are the most familiar monkey to the general public both in zoological gardens and in medical research institutions; the rhesus monkeys being the commonest. In India they are known by different names in various states. They are called Bandar in Hindi, Markot in Oriya, Suhu in Lepcha, Kothi in Telugu, Baandar in Punjabi. This is the species which is commonly seen with "bazigars" in North India.

Macaca mulatta is primarily arboreal but also live on the rooftops and secluded places of the buildings from where they can easily escape the danger. In Agra city (urban area) they are mainly concentrated in congested and crowded area with thick human population especially Raja Ki Mandi Railway Station, Pipal Mandi, Kinari Bazar, S.N. Medical College, Rawat Para and Agra College playground. For the present study in the urban area the selected study site is Raja Ki Mandi Railway station which is in the heart of the city. The study was chosen because of the following factors:

1. Sizeable population of *Macaca mulatta* reside in the urban and rural region of Agra District without any definite programme to maintain their number
2. These regions have a variety flora, fauna and artificially supplied food by the local population. Thus conditions are suitable for the study of these macaques.

MATERIAL AND METHOD

The present investigation has been undertaken to study the behavioural assessment and intraspecific relationship of the North Indian monkey *Macaca mulatta* in some localities of Agra region specially in the Raja ki Mandi railway station. The monkeys are closely related to the baboons. Since time immemorial, they have been closely living with human populations.

DESCRIPTION External Features: Rhesus monkey is medium sized 20- 40"(50-60 cms.) head and body length, and tail 8-12"(20-30 cms.) long. It has simple hair pattern, with the hair on the crown directed backwards from the brows, it is brown with brighter orange-red hind.

FOCAL SAMPLING:

Focal sampling involves the observation of behaviour of a single animal for a specified amount of time. All instances of the animal's behaviour and its interaction with other animals in a group are recorded. During observation period the individual may get partially obscured or may go out of sight. In such a case, recording is stopped until it is visible again. Using this technique, the animal is observed from atleast of two hours to a maximum of twelve hours a day. Each observation hour is divided into four equal parts of fifteen minutes sample period. Each sample period has a sample time of ten minutes followed by a sample interval of five minutes.

STUDY SITE:

Raja Ki Mandi Railway Station

GROUP TYPES:

In the three studied groups all individuals were identified according to their ages and sex, they were grouped into six categories as adult male, sub adult male, female, juvenile and infant. Some important adult males and females were identified. Census of all groups were done by visual inspection, facilitated by the identification of individual group members. Complete counts were made at least two times during each observation schedule. Individual characteristics, such as permanent injury makes and scars or missing digits of hand or feet, were recorded for each animal to minimise the possibility of recounts. Age and sex were recorded separately to account for all individuals. The final troop counts were the result of many cross checks.

RESULTS AND DISCUSSION

Climatic Conditions:

The climate of study area is semiarid, premonsoon season (April to June)in Agra is characterized by hot dry weather, dust storms, low humidity and rare scanty drizzles of only a few millimeters. Monsoon sets in during mid July extending upto early October. The transitional period between the rainy season and the winter, i.e. the postmonsoon is characterized by decrease in temperature and occasional showers. Winter is very cold and chilly, high pressure develops during this season and scanty rain also occurs.

- 1. Atmospheric Temperature:** During the year 2002 the average atmospheric temperature was maximum i.e. 44.60°C in June and minimum of 15.28°C in January while in the year 2003 the maximum average temperature was noted to be 45.80°C in June and minimum of 17.23°C in January.
- 2. Humidity:** The relative humidity was maximum i.e. 99% in august and minimum of 40% in May 2002 while in the year 2003 the maximum relative humidity of 97% was noted in August and minimum of 41% in the month of May.
- 3. Rainfall:** In the year 2002 the average maximum rainfall was 222.3 mm in August and minimum rainfall was noted to be 0.0 mm in December. Burt in the year 2003 the maximum average rainfall was 210.8 mm and 0.0 mm in the month of August and November respectively.
- 4. Wind:** The average wind velocity was maximum (8.2 km./hr.) in June and minimum (2.1km./hr.) in October in year 2002,while in 2003it was noted to be maximum (8.0 km./hr.)in June and minimum (2.2 km./hr.) in November.

Other faunal species:

Important vertebrate species found along with *Macaca mulatta* in the selected study area of Agra are Monitor lizard (*Varanus bengalensis*), Garden lizard (*Calotes*), Peacock (*Pavo cristatus*), Pigeon (*Columba livia*), Parot (*Psittacula sp.*) House sparrow (*Parer domesticus*), Rabbit (*Oryctolagus cuniculus*) Squirrel (*Funambulus sp.*) Mongoose (*Hepestes spp.*). Common Langur (*Presbytis*

entellus). Indian Porcuphine (*Hystrix indica*) and Indian hare (*Lepus nigricollis*) are also present besides the human population in the study region.

Home Range:

Monkey groups dwell in well marked area, known as home range is the area in which activities of the group are restricted. The home range of rhesus monkey increases with the complexity of habitat to which it is directly Proportional. In R1 group (Raja ki mandi station) home range varied from .80 to 1.50 sq.km.

Territorial Behaviour:

Adult male macaques were found to be very particular about there territory and never allowed any one to trespass into it and to guard it they even indulge in severe fights with the intruders of same or different species. The dominant adult male called alfa male headed all the groups. He was observed not to guard the movements and other activities of various troop members at most of the times but always remained in the closed vicinity of the troop. Adult females remained in the main group but kept some distance while pregnant. Movements of sub-adult animals, juvenile and infants were not much synchronized in except During movement and while resting. Juveniles continuously Play amongst themselves and with elder members of the troop. They stray away from the main group while playing but immediately return and merge in the main troop if sense danger. For the purpose of feeding the adult and sub-adult members may move away to quite some distance from the main group at time. It was observed that at the site of food the monkey become very conscious and try to snatch away from what ever source from the individuals and haw chars. Monkey are very greedy, they stuff food in the gular pouch as they can not eat whole of it at a time.

Interaction with Other Species:

In all the three study sites selected for the present study in urban and rural environment, monkey groups live with human population, dog, goats, cattles etc. In urban study site stry pigs also shared their habitat while in the rural area peacock and squirrels also lived in the adjoining area. Monkey are regarded as the descended of God hanuman in India thus most of local population regard them as deity of worshipped and normally they are not harassed by people. They are frequently fed by the local people, monkey feeding is common in and around the temples, especially in the temples where God Hanuman is worshipped. They are fed with variety of food and parsad, they also feed on the flowers used in garlands for the purpose of worship in the temples. But it was also observed that if denied food than they behave in very mischevious manner by snatching and tearing clothes and only part with them when given some food or chased away. Few instances of monkeys inflicting injury to human being have also been observed in struggle for food.

Macaques are scared of dogs that chase them away from residential areas. Monkeys are intelligent enough to know that dogs cannot climb, thus they escape on the trees and over the buildings to avoid the chasing dogs. Instances of monkeys feeding along with goats and cattles have been observed. At times stray pigs and monkeys were seen to search for food in garbage dumps in the urban study sites. Once it was noticed that few monkeys from some other troops strayed at raja ki mandi railway station to which the local birds reacted by making noise and flying away of mourning by entire troop members who blocked the road, after some time an adult female took away the corpse by grabbing it her mouth towards a near by canal followed by the entire troop. Once an infant death was noticed in the group R1 at Raja Mandi railway station due to some unknown reasons. It was observed that the dead infant was carried by mouth by the mother who placed it in a open area while various members of the troop sat around the dead body and mourned, this ritual continued for several hours while the mother changed locations of the dead infant.

In the present study regular interaction of monkeys with human beings, dogs, goats, cattles, pigs, certain birds and squirrels have been observed in the two selected study habitat of the rural and urban areas. Their interaction with human being, was most common, it was more frequent in urban area as compared to rural study site, it occurred mainly for food and also if the territory of the monkeys was invaded. Such interaction with human beings of artificial feeding, snatching food and articles have also been reported by Malik (1986) and Seth (1984). Monkeys negative Interaction

with dogs as reported by Pirta (1984) was also observed in the present study in both urban and rural habitat while in the present investigation certain instance of adult male monkeys becoming more adventures to cautiously invade into dogs territory have also been observed.

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