

2. LITERATURE REVIEWED

A huge body of information is available on different aspects of this important animal both in the wild and in captivity. Rhesus monkey is the most important and widely used non-human primate in bio-medical research throughout the world for over 85 years. Many researchers worked on this animal as also on its close relatives in different parts of Asia, specially in India and in some transplanted populations in U.S.A. However, only several patchy and stray observations have so far been made on the Rhesus macaques in North Bengal region. As has been rightly pointed out by Southwick (1961, 1962) and others that behaviour pattern of groups of the same species vary considerably in different habitat types.

Distribution of this species in India was extensively studied by Zimmermann (1780), Jerdon (1874), Mann (1938), Pocock (1932), Prater (1948), Prakash (1958, 1962), Mandal (1964), Louch (1964), Mukherjee and Gupta (1965), Neville (1966, 1968), Mukherjee (1969), Lindburg, (1969, 1971), Krishnan (1972) and Southwick et.al, (1961, 1962, 1965, 1967, 1968, 1972 and 1976).

Occurrence of this species and its relatives outside India has been reported by some workers, such as Zimmermann (1780) in Nepal, Bhutan, Thailand, Laos, Cambodia, Vietnam and China ; Milne - Edwards (1876) in Tibet ; Pocock (1932), Puget (1971) in Afghanistan and Pakistan; Ellerman and Morrison -Scott(1951) ; Fodden (1964); Napier and Napier (1967) in South Asian countries; Southwick and Siddiqui (1970) ; Hills (1972); Southwick and Cadigan(1972), in Malaysia.

Information regarding the evolution and phylogeny of the genus *Macaca* has been studied by Simpson (1945), Gregory (1916), Colbert (1969), Young (1962) . They also described the emergence of the ancestors of both oldworld monkeys and apes. Medway (1970) described the evolution of *Macaca arctoides*, *M. nemestrina* and *M. fascicularis* besides *M. mulatta*.

Morphological data regarding body size, weight, colour and specific structure in different age and sex classes have been discussed by Shortridge (1914), Schultz (1933, 1969), Southwick and Siddiqui (1961), Napier and Napier (1967), and Fodden (1971).

Studies pertaining to age and sex determination of rhesus monkey in the field was done on the basis of body size and special structures including sex organs, lactating or nonlactating nipples, dependence on the mother, coat colour in the breeding season, specific behavioural activities such as play, dominance and sexual by Collias (1951), Carpenter (1960), Prakash (1958, 1962), Southwick, Ghosh and co-workers (1951, 1961, 1970, 1971) and Mukherjee - Mukherjee (1972).

Particulars of rhesus habitat type in India has been reported by McCann (1933), Southwick and co-workers (1961, 1962, 1965, 1970, 1971), Mandal (1964), Mukherjee and Gupta (1965), Neville (1968), Lindburg (1971) and Puget (1971) in Afghanistan.

Population estimates and dynamics of rhesus monkey in India and abroad is known. Population survey on village was done by Jerdon (1874) and Mann (1933); on abundance, distribution, group structure and ecology of rhesus monkeys were done by Dodsworth (1914), Nottle (1955), Prakash (1958, 1962), Mandal (1964), Koford (1963, 1965, 1966), Altmann (1962, 1965, 1967), Neville (1968), Mukherjee and Gupta (1968), Mukherjee (1969), Lindburg (1971), Puget (1971), Carpenter (1942, 1958, 1964, 1972), Mohnot (1975), Southwick et. al. (1961, 1964, 1965, 1967, 1968, 1970, 1971, 1980), and Bernstein and Carolyn (1986).

Social organization of rhesus was studied by Prakash (1958, 1962), Koford (1963), Mandal (1964), Sade (1965), Mukherjee and Gupta (1965), Southwick et. al., (1965), Altmann (1965), Mukherjee (1969), Lindburg (1971), Puget (1971), Ojha (1974), Wilsons (1986) and Dewall and Luttrell (1986). Social organization among other primates was studied by Carpenter (1942), Jay (1965), Nishada (1966), Neville (1968), Dittus (1974), Sugiyama (1976), Oppenheimer (1977), Green and Minkowski (1977), Whitmore (1984)

and Toru Oi (1989).

Ecology and behaviour of rhesus were studied by Mukherjee and Gupta (1965), Southwick et al., (1965), Neville (1968), Mukherjee (1969), Lindburg (1971), Bernstein and Carolyn (1986) and Tartabini (1989). The ecology and behaviour of other primates were studied by Eaton et al., (1987). Behavioural repertoire and profile of rhesus as well as other primate species has also been done by Hinde and Rowell (1962), Bernstein (1970), Mohnot (1971), Oppenheimer (1973, 1976), Teas (1978) and Berman (1980).

Various aspects of food habits and feeding behaviour of rhesus monkey was studied by Roonwal (1956), Mukherjee and Gupta (1965), Lindburg (1971), Puget (1971), Krishnan (1972), Clutton and Brock (1977), Mohnot (1977), Oppenheimer (1977), Teas (1978), Teas et. al., (1980) and Johnson (1986).

The dominance behaviour of this animal has been studied by various workers, e.g., Carpenter (1942, 1953), Altmann (1962), Koford (1963), Southwick and co-workers (1965, 1967, 1972), Singh (1966, 1968, 1969), Neville (1968), Vessey (1968), Mukherjee (1969), Lindburg (1971), Sade (1967, 1971), Drickamer (1971), Wilson (1972), Rhine (1973), Gabow (1973), Loy (1975), Seyfarth (1976, 1980), and Berman (1980).

Reproductive behaviour of rhesus monkey was noted by Heape (1896 - 1897), Dodsworth (1914), Hingston (1920), Carpenter (1942), Prakash (1958, 1960, 1962), Altmann (1962), Southwick, Beg and Siddiqui (1965), Lancaster and Lee (1965), Prater (1965), Kaufman (1965), Koford (1965), Sade (1968), Vanderbergh and Vessey (1968), Loy (1970, 1971), Tanaka (1990), Lindburgh (1971), Vanderbergh (1972), Wilson (1972), Drickamer (1974), Sade et. al., (1976), Oppenheimer (1976), Wilson et. al., (1978), Altmann (1978), Wolfe (1981), Teas et al., (1981), Yamagiwa (1985), and Henzi and Lawes (1987).

Mother infant relation has observed by Dodsworth (1914), Prakash (1962), Kaufmann (1966), Mukherjee (1969) and Lindburg (1971). Quantitative data on mother-infant

relationships in the field was reported by Southwick et al., (1965), Mohnot (1971), White and Hinde (1975), Berman (1978, 1980), Fossey (1979), Altmann (1980), Kumar and Kurup (1981), Tartabini (1981), Johnson and Southwick (1984), Johnson (1986), Simpson and Simpson (1986), Johnson and Rodney (1987), and Deng and Jhao (1989). Parental behaviour of primates in general was studied by Eaton et al., (1985), Tanaka (1990), and Kempes et al., (1990).

Conservation problems and management of wildlife including monkeys and their natural haunts were discussed by Bermant and Chandrasekhar (1971), Southwick et al., (1975). Moreover several workers worked in Indian subcontinent on some species of macaques declared threatened by IUCN such as Dittus (1975) on *M. sinica*, Deag (1975) on *M. sylvanus*, Green and Minkowski (1975) on *M. sylvanus*, while Dunbar (1977), worked on Gelada babon in Africa. Various aspects of conservation was discussed by Schaller (1972), Altmann and Altmann (1972), Nair and Gadgil (1980), Tikader (1983), Chakraborty (1991) and Nandi (1991).

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