

**DOMINANCE HIERARCHY AND SOCIAL GROOMING AMONG COMMENSAL FEMALE BONNET MACAQUES (*MACACA RADIATA*) IN MYSORE, INDIA**

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It has been argued that commensal primates are behaviorally different from their wild counterparts and less useful for the study of primate behavior. Several differences proposed to occur in provisioned groups are an increase in aggression and the linearity of the female dominance hierarchy and more asymmetrical grooming relationships. This paper examines dominance and social grooming among females in a troop of commensal bonnet macaques to see if they fit the species' classification of "moderately relaxed". Dominance hierarchy strength, evaluated using a modified Landau index, was 0.72 on a 0 to 1 scale, indicating moderate linearity. Rank and aggression given were positively correlated (Spearman's rho  $r = .852$ ,  $n = 11$ ,  $p < 0.01$ ) and rank and aggression received were negatively correlated (Spearman's rho  $r = -.856$ ,  $n = 11$ ,  $p < 0.01$ ). However the hierarchy contained reversals with a Directional Inconsistency Index, DII, of 13% and a Dyads Up Index of 9%. Dominance and grooming scores were converted to an interval scale using standard scores to determine the dominance categories high, middle, and low rank. Grooming given and received were not correlated with rank (Spearman's rho  $r = -.483$ ,  $n = 11$ ,  $p > 0.1$ ;  $r = 0.539$ ,  $n = 11$ ;  $p > 0.1$ ). As well, only females in the high rank category groomed adjacent individuals significantly more often than non-adjacent individuals ( $\chi^2 = 15.83$ ,  $df = 1$ ,  $p < 0.0001$ ). On the continuum of macaque behaviors from despotic to relaxed, wild bonnet macaques have been considered a level three (moderately relaxed) species and these findings are consistent. This indicates that commensality does not seem to affect the overall strength or character of bonnet macaque dominance and grooming interactions.

Keywords: *Macaca radiata*, commensal primates, grooming, social behavior