

Paternity assessment in wild groups of toque macaques *Macaca sinica* at Polonnaruwa, Sri Lanka using molecular markers

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Abstract

Genetic variation at four microsatellite loci in conjunction with that at a highly variable allozyme locus was used to analyse paternity over a 12-year period in 13 social groups of toque macaques *Macaca sinica* inhabiting a natural forest in Polonnaruwa, Sri Lanka. Paternity exclusion analysis revealed that the set of offspring produced by a female usually consists of half-siblings because few males father more than one offspring with a particular female. No evidence of offspring produced by matings between first degree relatives was found. The social unit in toque macaques was not identical to the reproductive unit and the possibility of paternity by males outside the social group should be considered when estimating male reproductive output. Although it was common for multiple males to father offspring in a social group each year, reproduction within a group during a breeding season tended to be limited to a few males. The mean number of males reproducing per group per year was independent of the number of males in a group. The paternity data suggests that many males may father relatively few offspring during their entire lives and that the effective population size for toque macaques may be much smaller than indicated by demographic data.

Keywords: microsatellites, paternity, reproductive output, toque macaques

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