

Unique mating behaviour of Asiatic lion (*Panthera leo persica*) in the Gir Forest, Gujarat

Lions (*Panthera leo*) are the only social felids¹. Pride females and their dependent cubs, coalition males, nomadic males and nomadic females form the various elements of the lion's social life¹. Male coalitions form associations with related males and hold tenure over female prides for a definite period of their lifetime during which they sire cubs².

Schaller³ and Joslin⁴ have described lion mating behaviour in detail. At the beginning of the mating period, an oestrous female advertises her presence by vocalization or scent marking (pers. obs.). The first male to find the female consorts with her during the mating period that lasts 3–7 days (pers. obs.).

During this period, the male is aggressively protective of the female and the pair rest in close proximity throughout the mating period. The female initiates mating by growling⁴. This low frequency growl lasts more than 1.2 s on an average⁴. The female rises, directs her posterior toward the male and moves a short distance before allowing the male to mate. The termination of mating is abrupt accompanied by some amount of aggression directed towards the male. The female rolls over before resuming her resting position whereas the male continues standing for another 30–60 s. On some occasions, either the mating pair or the male roars (pers. obs.). Males have been observed to vocalize after each mating especially at the beginning of the mating period (pers. obs.). A large number of matings are required before a female can be successfully fertilized³. Therefore, matings occur at frequent intervals throughout the mating period with the frequency diminishing towards the end of the mating period (pers. obs.).

Since courting lions seldom hunt, pride members dissociate and range away from the mating pair. The females on their part, break away from the pride members (female groups) and re-join them only after the mating period is over. Schaller³ observed that 20–25% of the courting males had another male 30–200 m away whereas 25% had several pride members within 200 m.

I studied the reproductive strategies of male Asiatic lions (*Panthera leo persica*) from April 2002 to January 2007 in the Gir forest, Gujarat, western India. During the fieldwork, lions were located through radio-telemetry and opportunistic cues such as vocalization, location of prey carcass, secondary information and by following spoor tracks. I recorded all mating episodes including information on location, identity of male and female based on distinct body markings and characteristic vibrissae spots⁵, duration of mating, mating behaviour, frequency of mating along with behaviour and identity of associated partners. A total of 51 mating episodes were recorded during the study period.

Male Asiatic lions were found to form small coalitions of 2–3 individuals and usually avoided fighting over oestrous females⁶. Comparable to observations on African lion³, females mate with two or more males in succession, if unattended. If a courting male were to leave the female unattended, the associated male would take over mating. The associate coalition partner was found to be in the vicinity of the mating pair 48% of the time and did not challenge the mating male.

On 30 May 2006 while locating a radio-collared male lion, 6–8 years of age, I observed a unique mating behaviour. The male was resting under a *Carissa congesta* thicket next to a prime female, about 5–7 years of age, whereas another younger female, about 4–6 years of age, rested 5 m away from the pair. As is typical with mating pairs, when the older female stood up and walked away, the male walked with her in a manner that indicates that he is protective of her. The younger female too stood up but walked in another direction. At 13:30 and 13:38 h, the pair mated. The pair came back to the thicket and rested. At 13:52 h the younger associate female approached the male and presented herself. The male stood up to mate but she rolled over and lunged at him after which he sat down close to the older female, 2 m away from the younger female. At 13:54 h, when the younger female once again approached

the male, they mated. The older female did not show any aggression towards the mating female.

This behaviour of a single male mating two females at the same time is unusual among Gir lions. This observation was the only record from five year monitoring of the Asiatic lions. Considering that this observation was made in the revenue area outside the protected area (PA) boundary, it is unclear whether this is an established strategy in areas of fewer male lions or just a one-time occurrence. Studies in Africa have shown that oestrous synchrony is a strategy adopted by females against invading infanticide males¹ but simultaneous mating by a single male is rare. Schaller³ observed a male accompanied by two oestrous lionesses on only three occasions based on his observations of African lions from 1966 to 1969. Plasticity and variability in the social and reproductive strategy is responsible for adaptive survival of lions across their range⁷ and whether this unique behaviour is one such strategy requires detailed comparative studies.

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