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Opportunistic Mating Behaviour of an Asian Elephant Bull

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Introduction

Elephants are social animals. They live in family units led by the oldest female (Hamilton 1973; Desai 1997). The social organization of Asian elephants studied using molecular genetics has confirmed that generally families comprise of closely related individuals (Vidhya & Sukumar 2005; Fernando & Lande 2000) as suggested by the early observational studies (McKay 1973; Sukumar 1989; Baskaran *et al*. 1995). In southern India, higher levels of social organization of elephants were described as 'bond groups' and 'clans' (Sukumar 1989; Baskaran *et al*. 1995; Arivazhagan 2006). Social relationships of male Asian elephants are poorly understood due to the lack of long-term studies on known individuals. In general, males leave their natal family group gradually (Desai 1997) and are known to live a solitary life having transient associations with other males and female groups (Croze 1972; Desai 1997; Sukumar 1989, 2003). Males mostly join female herds for mating.

At Amboseli female African elephants in estrus actively solicited guarding from musth males but only rarely from non-musth males and females in mid-estrus were guarded and mated mainly by the guarding males, over 90% of whom were in musth (Sukumar 2003). Also in Amboseli, during early and late phases of estrus, females were usually not guarded and were frequently chased and sometimes mated by younger non-musth males (Sukumar 2003).

Study area

The present observation was made in the Coimbatore Forest Division, which falls under Project Elephant Reserve No. 8 of the Nilgiri Biosphere Reserve. The forest tract of this division is linear due to steep slopes on the west and closely located human habitations on the east (Fig. 1). It harbours a sizeable number of elephants, especially during the dry season (Ramakrishnan 2008). The division has two horseshoe shaped valleys due to its natural physiognomy, namely the Thadakam Valley and Bolampatti Valley (Fig. 1). The present observation was made along the Thadakam Valley. The horseshoe shaped topography encompasses the cultivated plains of Chinnathadakam, Veerapandi, Nanjundapuram, Somayampalayam and Pannimadi villages. The Annaikatti reserve forest in the west links with Attapadi valley and Silent Valley National Park of Kerala through Gopanari reserve forest which is also a part of the crucial elephant corridor in this region (Menon *et al*. 2005).

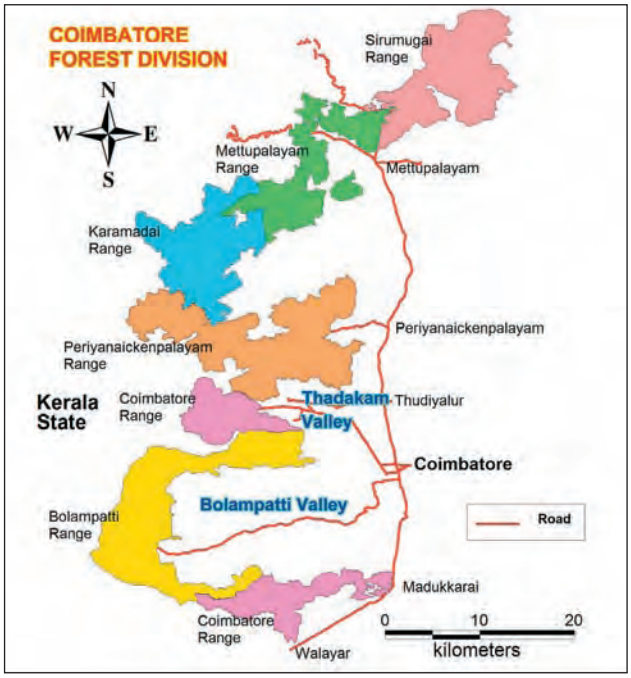

Figure 1. Map of Thadakam Valley and Bolampatti Valley in the Coimbatore Forest Division.

Bulls and female led family herds found in the fringe areas of Thadakam valley are known to indulge in crop raiding. These villages are also a hub for brick manufacturing (Ramakrishnan & Ramkumar 2008). During the past few decades, these lands were used for rain-fed crops with poor economic turnover. Presently such lands have been converted to quarries to supply soil for the brick industry. Also, most of the lands flanking the forest fringe were left fallow during the dry season. In the east, palatable crops such as banana, sugarcane are cultivated.

Lack of perennial water sources and non-availability of foraging opportunities in the crop fields along the forest fringes have sometimes led to elephants wandering far into human dominated landscapes in search of their ecological necessities. These wanderings often take place after sunset, when the village folks are settled for the night. In the darkness elephants utilize roads and dry streambeds and traverse the area to access crop fields and water sources. Sometimes they remained till morning.

Mating

On the early hours of 7th March 2009, a herd of five elephants consisting of three females and two males ventured in to the village of Somayampalayam. Their attempt to raid coconut plantations and banana fields was revealed to the farm owners by the barking of dogs. Immediately a crowd gathered and tried to chase the elephants back in to the forest by making noise, lighting fires and bursting crackers. The elephants ran in disarray until they eventually took refuge in a check dam constructed across the Sanganoor pallam. As daylight emerged the elephants were surrounded by people who stood by the comfort of the dam's embankments literally trapping the elephants within the dam. The trapped elephants had to find their way through a mosaic of agricultural fields, houses and a swarm of people to reach the nearest forest, which was at least 2-3 km away. The entrapped herd of elephants was standing in the sun and nibbling on whatever they could get. The forest department personnel were called to drive the herd back into the forest.

Figure 2. Courtship before the mating.

In the late afternoon an adult male attempted to mount an adult female without any extended pre-mating courtship. Indicators of courtship like the oestrus walk, running if pursued by the male and wariness to approaching male reported in female elephants (Moss 1983; Sukumar 2003) were not observed in this instance. The adult male did not inspect the female and show a flehmen response as usually happens with courting couples (Rasmussen & Schulte 1998; Sukumar 2003).

The adult male was clearly a non-musth male having no visual sign of musth such as the temporal gland swelling and secretion, dribbling of urine or wet hind legs (Poole & Moss 1981; Poole 1987; Desai 1997; Sukumar 2003) and did not display any aggressive attitude. However the male had his penis unsheathed and erect once before mounting and for a while after mounting. The chin was rested and placed with the extended trunk on the back of the female (Fig. 2), which is a behaviour associated with courtship, was observed just before and after mounting. Many occasions of successful copulation took place (Fig. 3).

It is quite usual that mating takes place during non-musth, but here the circumstances were unusual. In this observation, the mating took place in presumably stressful circumstances, where the herd was chased and entrapped, surrounded by people, and was standing in the heat of the sun with little forage to feed on. We conclude that it may have been an opportunistic mating by the young male.

Figure 3. Successful mating.

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