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On the neck seizing behavior of leopard in southern Rajasthan, India

Leopard or panther *Panthera pardus*, one of the large cats of the Indian subcontinent, preys on medium to small sized wild animals like langurs and other monkeys, deer, antelope, rodents, birds, reptiles and crabs, and can also take dogs, livestock and poultry (Prater, 1980; Prakash, 1994; Gurung & Singh, 1996; Roberts, 1997; Menon, 2003). A piece of shell of a unio *Parraysia* (*Radiatula*) *caerulae* was found in the stomach during the post-mortem of a subadult panther in the Jhadol area of Udaipur district during 1994 (unpublished observation of first author); this species of unio is commonly found in the perennial streams of south Rajasthan. Scat studies reveal that panthers also feed on *Tatera indica* in Rajasthan (J. Josua, pers. comm., 2010). The panther attacks the neck region of its prey, and overcomes or kills it by gripping in the region of the throat and does not leave it till the prey dies, mainly due to suffocation (Prakash, 1994; Roberts, 1997).

We had an opportunity to understand the neck seizing behaviour of a panther in Sajjangarh Wildlife Sanctuary. This is the smallest sanctuary of Rajasthan, situated at the western outskirts of Udaipur city in the southern Aravallis. A biological park is present toward the eastern foothills of the sanctuary, with an eight feet high stone wall equipped with three feet high solar fencing on top of the wall to keep the sanctuary panthers away from inmates of the biological park. During 2011, an animal introduction trial was started by releasing six female chinkara (*Gazella bennetti*) and five female blackbuck (*Antilope cervicapra*) in the newly made biological park. On December 27, 2011, due to a failure of the solar power fencing, two female panthers (probably recently separated from their mother) jumped into the biological park and killed three female chinkara and one female blackbuck. Canine marks were clearly visible on the neck of all the dead animals. On December 28, 2011, post-mortems of the dead animals were conducted by a board of veterinarians to ascertain the cause of death; it was their opinion that the animals were killed by strangulation. The grip of the leopards was on the neck, and the neck vertebrae were crushed in all the victims. The details of the cervical vertebrae found crushed in all the dead animals are given in Table 1.

Table 1: Cervical vertebrae found damaged in four dead antelopes, all the victims were adult females.

Species	cervical vertebrae crushed
chinkara	3rd and 4th
chinkara	2nd and 3rd
chinkara	3rd
blackbuck	1st

To understand more about neck seizing behavior of a leopard, a few more post mortem reports of domestic animals and a human being were studied. The findings are given in table 2.

Table 2: Neck seizing behaviour of leopard in domestic animals and human being based on postmortem reports; R, Rajsamand; U, Udaipur; F, female; M, male; A, adult.

Report No. & Date	District	Victim & age (Year)	Cervical vertebra crushed
2330/2 (19.1.2012)	R	goat (F), 4	3rd
5 (23.4.2012)	R	girl, 7	4th–6th
917/12 (28.2.2012)	R	cow, 7	2nd
519/2 (27.2.2012)	U	cow, A	3rd
519/15 (30.7.2014)	U	goat (F), A	3rd
22 (4.6.2014)	U	goat (M), 1	3rd–5th

It is evident from tables 1 and 2 that the 1st vertebra was crushed in one case, the 2nd vertebra in two cases, the 3rd in seven cases, the

4th in three cases, the 5th in two cases, the 6th in one case, and the 7th in no case.

In the case of long-necked animals like chinkara, blackbuck, goat and cow, generally the grip damages only one vertebra, the 3rd, and nos. 2 to 4 are in general most vulnerable. In case of short necked creatures like human beings, three vertebrae were damaged, as in a one year old male goat. The distance between the upper canines of a female leopard was measured at about 35 mm at the base during a postmortem in Udaipur Zoo, and the distance between the poster lower canines was about 20 mm. It is evident that the gap between the upper canines will decide the quantum of damage caused to the neck vertebrae of the victim: the greater the gap, the more the number of vertebrae will crush.

Almost all species of mammals have seven cervical vertebrae (Galis, 1999). We find that the leopard makes its grip from 1 to 6 cervical vertebrae. A maximum of three vertebrae are damaged during the grip. It is evident from the tables that panther will try to keep its grip as close to the skull of its prey as possible. This type of grip may help the panther to avoid injuries such as can be caused by the horns: when the grip is close to the skull, it is not possible for the prey to move its head, antlers or horns freely.

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