

First record of Small Indian Civet *Viverricula indica* in the Kashmir Himalaya, India

S. A. CHAROO¹, L. K. SHARMA¹, S. SATHYAKUMAR^{1*} and R. Y. NAQASH²

Abstract

The Small Indian Civet *Viverricula indica* is distributed throughout India apparently excepting the high and trans-Himalayan regions. Although previously reported to be distributed up to the Shiwaliks in the Jammu region of Jammu and Kashmir State and not across the Pir Panjal mountain range, we camera-trapped a Small Indian Civet in Dachigam National Park. This confirms its distribution further north than the Pir Panjal, up into the Kashmir region of Jammu and Kashmir State.

Key words: camera-trap, Dachigam National Park, extension of known range, habitat use

The Small Indian Civet *Viverricula indica* is one of the most widely distributed and adaptable civets in the Indian subcontinent (Roberts 1997). It is reported to be continuously distributed from the Indus valley in Pakistan east through India and south China (north to Sichuan and the lower Yangtze), south through Indochina to West Malaysia, and on Sumatra, Java, Hainan, Taiwan, Sri Lanka and various small islands. It has been introduced to Madagascar, the Comoro Islands and Socotra (Corbett & Hill 1992). The species is listed as Least Concern in the *The IUCN Red List of Threatened Species* (IUCN 2010), in Appendix III (India) of CITES and in Schedule II, Part II, of the Indian Wildlife (Protection) Act 1972 as amended in 2003.

In India, the Small Indian Civet is reported almost throughout the country (Prater 1980, Johnsingh 1986, Mudappa 2002, Menon 2003), apparently excepting the Kashmir portion of Jammu and Kashmir State in the north-west of the country (Chakraborty 1983). Modern information on distribution and ecology of Small

Indian Civet in India is rather limited except for in the Western Ghats (e.g. Johnsingh 1986, Xavier 1994, Mudappa 1998, 2002). It is reported to occur in various forest types of India ranging from tropical rainforests, scrubland and savannas to bamboo forests (Mudappa 2002).

The Dachigam National Park (34°05'–11'N, 74°54'–75°09'E) is located in the Zabarwan Hills, Zaskar mountain range of the Greater Himalaya (Fig. 1). Earlier surveys and studies at the park (Schaller 1969, Holloway *et al.* 1971, Kurt 1978, Iqbal *et al.* 2005, Ahmad 2006) did not report Small Indian Civet; but they were mostly confined to mammals larger than small carnivores, so this may not be particularly significant.

During our research on Asiatic Black Bear *Ursus thibetanus* in Dachigam National Park (2007–2010), we used camera-traps for the first time in this area. They were placed at hair-snare stations used for population estimation studies for bears, based on individual identification and non-invasive genetic sampling. We had 23 such camera- and hair-trap stations placed in a grid (cells of 4 km²) of the Lower Dachigam area (about 90 km²). In each hair-snare station, we placed honey as bait in an earthen container to attract bears.

We got one photo capture of a Small Indian Civet in riverine forest of the Lower Dachigam (34°07'57"N, 74°56'15"E; 1,770 m) on 16 July 2008 at 22h25 (Fig. 2). The characteristic streaks on the back and croup and presence of distinct ringed tail (Prater 1980, Menon 2003) confirm it to be a Small Indian Civet. Vegetation of the Lower Dachigam is classified as Himalayan Moist Temperate Forest (Champion & Seth 1968). The riverine forest is composed of a mixture of *Parrotiopsis jacquemontiana* and *Prunus* with a tree cover of about 80% and with shrubs such as *Rosa* and *Rubus* (Charoo *et al.* 2009). Ground cover at the photo capture site was represented by species such as *Dipteracanthus* spp. and *Hemoralcalus fulva* (70%), rock cover (20%) and the remaining was litter cover. Dachigam experiences an irregular climate, with variation in annual precipitation and in seasonal occurrence, and the length of dry periods. Conditions are sub-Mediterranean, with, generally, two dry periods in June and September–November, and high precipitation in winter with an average snow depth of at least 1 m.

In parts of India, Small Indian Civet is farmed (e.g. Balakrishnan & Sreedevi 2007); however there are no such farms in Kashmir. This photo capture of Small Indian Civet is the first record of this species in Kashmir region of Jammu and Kashmir State, although it occurs in the plains and foothills (< 1,000 m) of Jammu, to the south of Kashmir. The Jammu and Kashmir re-

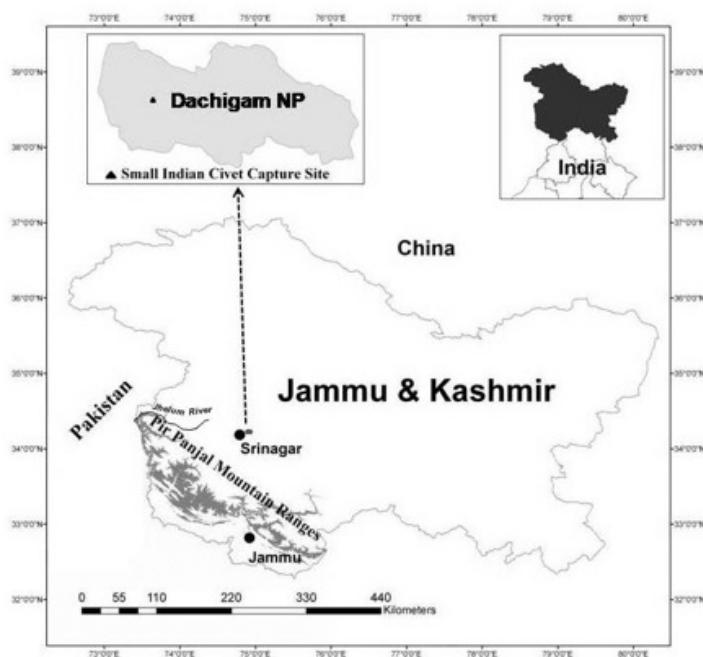


Fig. 1. Jammu and Kashmir State, showing Jammu, Srinagar, and the Dachigam National Park along with the location of the Small Indian Civet *Viverricula indica* photo capture.



Fig. 2. Camera-trap picture of Small Indian Civet *Viverricula indica* at Dachigam National Park, Jammu and Kashmir, India.

gions are separated by the Pir Panjal mountain range which has an average altitude of over 3,000 m. In adjoining Pakistan, Roberts (1997) reported that there was no evidence of Small Indian Civet in the Himalayan regions of Pakistan and indicated its distribution up to where the River Chenab enters Pakistan (about 34°N). We propose that exclusive surveys for small carnivores be carried out using camera-traps in this region to gather further information on their status and distribution considering the fact that the information is very scarce for small carnivores in this region.

References

- Ahmad, K. 2006. *Aspects of ecology of Hangul (Cervus elaphus hanglu) at Dachigam National Park, Kashmir, India*. Forest Research Institute University (Ph.D. thesis), Dehradun, India.
- Balakrishnan, M. & Sreedevi, M. B. 2007. Husbandry and management of the Small Indian Civet *Viverricula indica* (É. Geoffroy Saint-Hilaire, 1803) in Kerala, India. *Small Carnivore Conservation* 36: 9–13.
- Chakraborty, S. 1983. Contribution to the knowledge of the mammalian fauna of Jammu and Kashmir, India. *Records of the Zoological Survey of India (miscellaneous publications, occasional papers)* 38: 1–129.
- Champion, H. G. & Seth, S. K. 1968. *A review survey of the forest types of India*. Government of India Publication, Delhi, India.
- Charoo, S. A., Sharma, L. K., & Sathyakumar, S. 2009. *Asiatic Black Bear – Human conflicts around Dachigam National Park, Kashmir. Technical Report*. Wildlife Institute of India, Dehradun, India.
- Corbett, G. B. & Hill, J. E. 1992. *The mammals of Indomalayan Region: a systematic review*. Oxford University Press, Oxford, U.K.
- Holloway, C. W., Schaller, G. B. & Wani, A. R. 1971. Dachigam Wildlife Sanctuary, Kashmir, with special reference to the status and management of Hangul. *IUCN Publications New Series* 19: 109–112.
- Iqbal, S., Qureshi, Q., Sathyakumar, S. & Inayat Ullah, M. 2005. *Predator–prey relationship with special reference to Hangul (Cervus elaphus hanglu) in Dachigam National Park. Final Report*. Department of Wildlife Protection, Jammu & Kashmir Government, Srinagar, and Wildlife Institute of India, Dehradun, India.
- IUCN 2010. *IUCN Red List of Threatened Species*. Version 2010.2. <www.iucnredlist.org>. Downloaded on 10 August 2010.
- Johnsingh, A. J. T. 1986. Diversity and conservation of carnivorous mammals in India. *Proceedings of the Indian Academy of Sciences (Animal Sciences/Plant. Sciences)* Supplement: 73–89.
- Kurt, F. 1978. Kashmir Deer (*Cervus elaphus hanglu*) in Dachigam. Pp. 87–108 in Scott, P. (ed.) *Threatened deer*. IUCN, Morges, Switzerland.
- Menon, V. 2003. *A field guide to Indian mammals*. Dorling Kindersley (India), Delhi, India.
- Mudappa, D. 1998. Use of camera-traps to survey small carnivores in the tropical rainforest of Kalakad-Mundanthurai Tiger Reserve, India. *Small Carnivore Conservation* 18: 9–11.
- Mudappa, D. 2002. Observations of small carnivores in the Kalakad-Mundanthurai Tiger Reserve, Western Ghats, India. *Small Carnivore Conservation* 27: 4–5.
- Prater, S. H. 1980. *The book of Indian animals*. Bombay Natural History Society and Oxford University Press, New Delhi, India.
- Roberts, T. J. 1997. *The mammals of Pakistan*. Oxford University Press, Oxford, U.K.
- Schaller, G. B. 1969. Observations on the Hangul or Kashmir Stag (*Cervus elaphus hanglu* Wagner). *Journal of Bombay Natural History Society* 66: 1–7.
- Xavier, F. 1994. *A study on Small Indian Civet (Viverricula indica) as a sustainable wildlife resource*. University of Kerala (Ph.D. thesis), Thiruvananthapuram, India.

¹Wildlife Institute of India, P.O. Box 18, Chandrabani, Dehradun 248 001, Uttarakhand, India

²Department of Wildlife Protection, Government of Jammu & Kashmir, Pollution Control Board Campus, Rajbagh, Silk Factory Road, Srinagar 190001, Jammu and Kashmir, India.

*Corresponding author email: ssk@wii.gov.in