

Photographic evidence of albino Sambar in Uttarakhand, India

Albinism is typically a recessive trait found in many animals including mammals, birds, reptiles, amphibians and fish. Albino animals do not have the gene for normal colouration and do not produce the enzyme responsible for skin, hair, and tissue colouration (Fertl & Rosel 2009). The coloration of skin, hair, and eye mainly depends on the quantity, quality, and distribution of the pigment called melanin (Fertl & Rosel 2009). Alterations or mutations in the gene can result in a deficiency or decrease of melanin (Acevedo & Aguayo 2008). Such conditions have been categorized as albinism (total absence of body, hair and eye coloration), leucism (total or partial absence of pigmentation in whole body except for the eyes), and piebaldism which is a condition characterized by absence of melanocytes in certain areas of the body and normal eye colouration (Fertl & Rosel 2009; Mahabal et al. 2019).



Albino Sambar in Pakhro Range of Sonanadi Wildlife Sanctuary on 19 March 2020. © Corbett TR & WWF-India.



Albino Sambar in Pakhro Range of Sonanadi Wildlife Sanctuary with normal colour individual in the back. © Corbett TR & WWF-India.

Even though the colour aberration has been reported in many species, these events

are still considered to be rare. In India, the only detailed work on colour aberration

in mammals was carried out by Mahabal et al. (2019), who compiled a checklist of all reported cases of colour abnormalities across the country. A total of 239 cases of colour aberration (albinism, leucism, piebaldism, melanism, & hypomelanism) over a period of 130 years have been reported in as many as 56 mammalian species such as Tiger *Panthera tigris*, Leopard *Panthera pardus*, Golden Jackal *Canis aureus*, Asian Elephant *Elephas maximus*, Sloth Bear *Melursus ursinus*, Sambar *Rusa unicolor*, Spotted Deer *Axis axis*, Hog Deer *Axis porcinus*, Nilgai *Boselaphus tragocamelus*, and Gaur *Bos gaurus* (Mahabal et al. 2019) as well as in avian species such as Rose-ringed Parakeet *Psittacula krameri* and House Crow *Corvus splendens* (Mahabal et al. 2015).

One such event of albinism in Sambar recorded in the camera trap from Sonanadi Wildlife Sanctuary (SWS) of Corbett Tiger Reserve (CTR) in the state of Uttarakhand, India. These are the first photographic evidence of the albinism in Sambar from SWS and second from CTR. Spread over 1,288 km², the CTR is managed into two protected areas (PAs) namely Corbett National Park (CNP) and SWS. Administratively, the CTR comes under the Nainital and Pauri districts in the foothills of Himalaya. Camera traps were deployed in a grid framework of 2 km² size, primarily for the yearly monitoring of the tigers across the CTR. Study was carried out between 1 December 2019 and 30 April 2020. A total of 525 pairs of camera traps were kept operational 24x7 into different terrain and habitat types and altitude ranging 270–1,200 m in the entire

TR. On 19 March 2020 at 1819 h, an adult female Sambar with completely white body coat and pinkish ears and eyes was photo-captured in Pakhro Range of SWS (Camera ID CTR 518, 29.621°N, 78.694°E, alt 376 m). Camera trap recorded five multi-shot images of the same albino individual within a span of two minutes. In one of these consecutive images, another individual with normal colour coat was also recorded along with albino Sambar. Rarity of sighting of albino Sambar in the CTR could be understood well as such individual recorded only once in an effort of more than 25,000 trap nights.

Ten years ago, an albino fawn of the Sambar also sighted (at 452 m) and photographed by Pande et al. (2010) in the National Park side of the CTR, and that sighting occurred roughly 27 km away from the location of the present record. A very few instances of colour aberrations in Sambar have been highlighted from various parts of India so far (Mahabal et al. 2019). However, pelage aberrations in Sambar other than albinism include leucism and partly leucism with normal eyes, which has been documented by Tehsin (2006) in an individual kept in Archaeological Museum of Udaipur and by Kumar et al. (2021) in Mukurti National Park, Tamil Nadu. Champion (1938) reported an albino individual in mixed Sal and Chir pine forest near Lansdowne, Uttarakhand at an elevation of 457 m, while Pillay (1953) claimed sighting of two albino individuals in northern Coimbatore. Mahabal et al. (2019) cited the reporting of an albino Sambar at Manipur Zoological Garden and in Bandipur Tiger Reserve in 2010 and 2016, respectively.

Recently, The Times of India on 14 Jan 2020 (<https://timesofindia.indiatimes.com/city/nagpur/albino-sambar-sighted-in-navegaon-national-park/articleshow/73235410.cms>) and The Hindu newspapers on 15 June 2020 (<https://www.thehindu.com/news/national/tamil-nadu/biologists-flag-mutation-in-nilgiris-wildlife/article31829361.ece>) had also published the records of albinism in Sambar from Navegaon National Park, Maharashtra and Nilgiris Reserve, respectively.

In both of the reports from CTR, albino animals were accompanied with other Sambar having normal colour coat and provides information about social acceptance among the members of the herd. No abnormal behaviour of the albino Sambar along with other individuals seen in the photographs taken by camera trap. Information on their social behaviour with in the herd and predator-prey relationships of such albino individuals is scanty in the available literature. Therefore, radio tracking of such animals will surely add information to the science on these issues. Genetic study of albino animals may answer the cause of aberrations in their colour coat.

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