



Albinism in a Spectacled Cobra, *Naja naja* (Linnaeus 1758), in Nepal

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Normal skin pigmentation in snakes is formed by the active presence and distribution of specialized skin cells called chromatophores (Borferio et al. 2021), of which snakes have four different types. Melanophores, erythrophores, and xanthophores produce and store black, red, and yellow pigments, respectively. Iridophores do not produce any particular pigment, but employ reflectance that affects how colors are perceived (Prüst 1984). Complete or partial failure of these pigment systems results in various color aberrations (Bechtel 1978).

Albinism is a color aberration caused by a congenital lack of melanin (Bechtel 1978; Prüst 1984). Albinos have white or yellowish skin (and scales) and red eyes (Gezova et al. 2018). The estimated ratio of albinism in wild vertebrates is 1:10,000–30,000 (Bechtel 1995), and is rare in adult snakes, presumably because the resultant lack of crypsis would result in high juvenile mortality (Krečsák 2008). Herein we report a case of complete albinism in the Spectacled Cobra (*Naja naja*), the first record for the genus and a second instance of complete albinism in any Nepalese reptile.

At around 1000 h on 19 February 2023, a brightly colored snake attracted a crowd in Srijana Chowk, Haldibari Rural Municipality, Jhapa, Nepal (26.57795N, 88.00844 E; elev. 105 m asl). We visited the site hoping to see the snake, but were too late. However, we were able to acquire photographic and video documentation from a local resident. The available materials clearly depicted an albinistic Spectacled Cobra (*Naja naja*). The subadult or young adult snake (total length ~65–70 cm) was pale but had a discernible pattern and red eyes (Fig. 1), traits associated with albinism (Henle et al. 2017). The typical spectacle-shaped (binocellate) mark on its hood differentiated it from Monocled Cobras (*Naja kaouthia*), which also occur in the area.

The area where the snake was encountered was agricultural, with cultivated fodder plants (*Avenia sativa*) and haystacks and the closest human settlements about 50 m away.

Inquiries of local residents indicated that this snake had been seen at least once about a month earlier. Although snakes are generally killed on sight (Kästle et al. 2013), this snake was never harmed but instead worshipped from a distance owing to its atypical coloration. People considered this to be some form of deity, given that snakes are portrayed as close to gods in Hindu mythology (Schleich and Kästle 2002).

Several records of albinism in Spectacled Cobras have been documented (e.g., Mahabal and Thakur 2014; Thakur and Trivedi 2018; Harpal et al. 2021; Mohalik et al. 2023). Based on published photos, records of albino cobras by Fellows (2018) and Maurya et al. (2020) might have been normal color variants, usually associated with variations in environment (Prüst 1984). Nonetheless, Spectacled Cobras have the greatest frequency of color aberrations among the eight species of recognized color aberrant elapids in the Indian herpetofauna (see Mahabal and Thakur 2014; Devkota et al. 2020; Ray and Pandey 2020; Dutta et al. 2021).

Color aberrations in venomous snakes can hinder appropriate medical responses to snakebites, including the adminis-

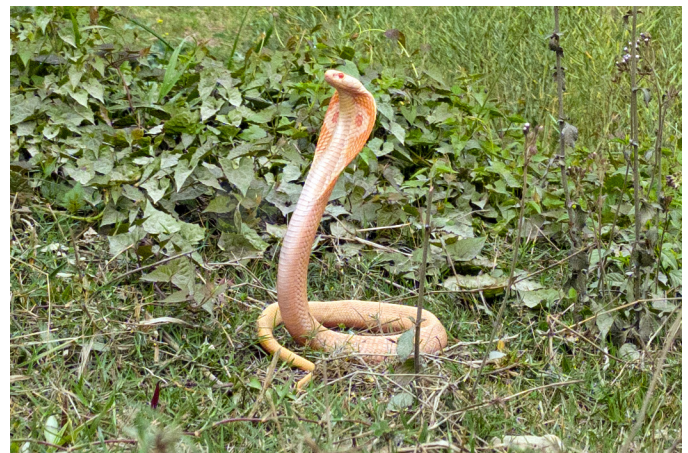


Figure 1. An albino Spectacled Cobra (*Naja naja*) from Haldibari, Jhapa, Nepal. Photograph by Sushan Budhathoki.

tration of species-specific antivenin. Aberrant individuals also attract attention, such as in this case, gathering a crowd. Such attention can constitute harassment, which can be dangerous. Consequently, we conducted a quick informative session advising local residents about the potential danger and proper responses to snakebites.

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