



First Record of Albino Common Kukri Snake (*Oligodon arnensis*) (Shaw, 1802) from Uttarakhand, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The discovery of an albino *Oligodon arnensis* in Dehradun, Uttarakhand, marks a significant addition to the known distribution of this species. Previously, *Oligodon arnensis*, a rare variant of the kukri snake, had been observed only once before in Rudrapur, Uttarakhand, making this find particularly noteworthy. Such records are crucial for understanding the biodiversity and distribution patterns of reptiles in India, contributing to the conservation efforts and scientific knowledge of herpetofauna in the region.

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1. INTRODUCTION

In India, there are 432 species of amphibians, including 391 species of Anura, 2 species of Caudata, and 39 species of Gymnophiona. For reptiles, 572 species have been recorded, comprising 3 species of crocodiles, 34 species of turtles and tortoises, 231 species of lizards, and 304 species of snakes [1]. Unfortunately, in contrast to other reptiles, snakes have not gotten as much ecological research, and what little has been done may not be adequately represented in the literature (Seigel [2], Bonnet et al. 2002; Maurya et al [3], Maurya et al. [4], Nishad and Vipul, [5].

Almost all vertebrate species on Earth have rare albinism, and wild animals continue to exist in the wild despite this seemingly unfavorable condition [6]. Animals that are albinistic exhibit both positive and negative reactions to their traits. Herpetologists hypothesized that, in addition to heredity, albinism may manifest due to genetic mutations, diet, living circumstances, poor habitat, age, illness, or trauma [7,8].

Over the past century, there have been sporadic reports of albinism in reptiles (e.g., Hensley [9], Dyrkacz 1981 and references therein). However, multiple reports for a single species continue to be the exception rather than the rule Bechtel and Bechtel 1981; Krecsák [10]. The primary cause is the rarity of albinos; in wild populations of a given species, as few as 1 in 30,000 individuals may have the condition [11]. The rarity of albinism in snakes is reflected in the limited data available, highlighting the need for further research in this area. As far as albinism is concerned, certain snakes are frequently only known from one or a small number of specimens. Still, there is little information on albinism in animals, particularly snakes Nivalkar et. al. [12], Kumbar et. al. [13], Takhur [14], Fellows [15], Maurya et. al. [3], Deshmukh et. al. [16], Dethé and Ranshoor [17].

2. METHODOLOGY

The reconnaissance survey was conducted at Dehradun Forest Division (DFD) in Uttarakhand spans an area of 454.95 km², between latitudes 30° 24' to 30° 0' North and longitudes 77° 20' to

78° 10' East. The DFD is organized into eight ranges: Asarori, Malhan, Lachhiwala, Malsi, Jhanjara, Thano, Barkot, and Rishikesh. The division features various types of forests, including bamboo forests, Khair-Shisam forests, open hill forests (miscellaneous forests), Sal plantations, and Teak-Eucalyptus plantations. During the survey, an albino snake hatchling was found Lacchiwala Range of the Dehradun Forest Division on the Dudli-Doiwala road, in a vulnerable position that posed a high risk of mortality due to vehicular traffic. To mitigate this risk, the hatchling was promptly and carefully relocated to a safer nearby area within the same habitat range, minimizing stress and harm. Detailed notes and photographs documented this sighting and relocation, contributing valuable data for ongoing wildlife monitoring and conservation efforts in the Dehradun Forest Division.

3. RESULTS AND DISCUSSION

The discovery of an albino *Oligodon arnensis*, commonly called the kukri snake, in Uttarakhand is indeed a significant find. On March 10, 2023, a rare albino snake hatchling was spotted on the Dudli-Doiwala road, within the jurisdiction of the Lacchiwala Range, Dehradun Forest Division, Uttarakhand (Fig. 1). This young snake, measuring approximately 5 " in length, displayed a unique cream coloration, contrasting the typical black to dark brown hues commonly reported for the species in the region (Figs. 2 & 3). Fortunately, the snake was safely rescued from the road and subsequently released back into the nearby forest area, ensuring its safety and the continuation of its natural life cycle in its native habitat. Such occurrences highlight the rich biodiversity of the area and the importance of wildlife conservation efforts [18]. The observation of an albino Khukri snake in this region is highly significant due to the rarity of such occurrences, especially among snakes. Typically, the common Khukri snake exhibits a greyish-brown dorsal coloration with black bands extending from the neck to the tail. Previously, only a single albino cobra had been recorded in the Haldwani region of Uttarakhand [19]. This new finding not only adds to the biodiversity records of the area but also provides valuable insight into the genetic variations and anomalies present within local snake populations.

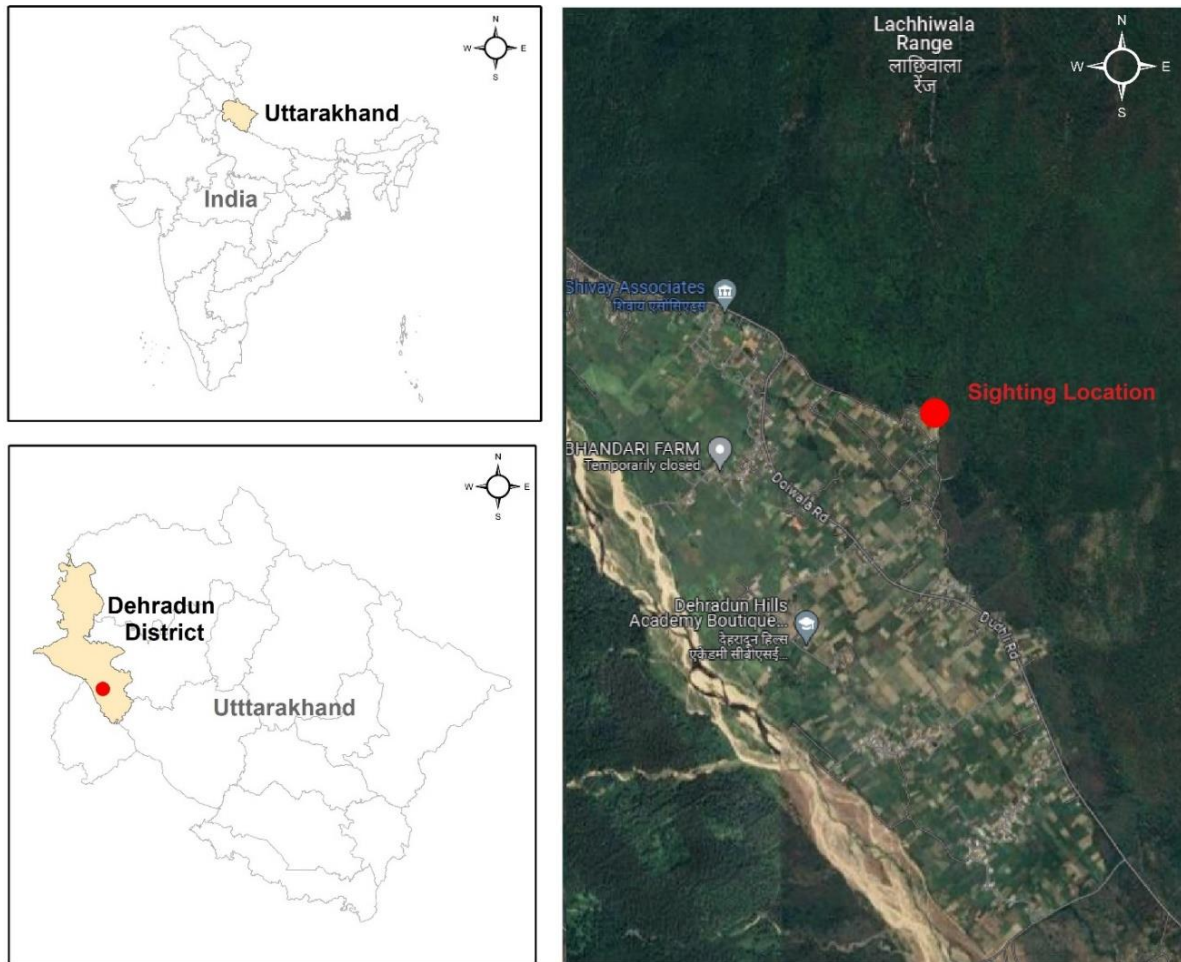


Fig. 1. Map of the observing location



Fig. 2. A typically coloured Common Kukri Snake (*Oligodon arnensis*). Photo by: Aditya Tiwari



Fig. 3. An albino Common Kukri Snake from Uttarakhand. Photo by: Pravesh Kumar

4. CONCLUSION

Documenting this occurrence contributes valuable information to the herpetological community and aids in understanding the genetic diversity and adaptability of the species. It also highlights the importance of biodiversity conservation, especially in regions like Uttarakhand, which are rich in wildlife but face threats from habitat loss and climate change. By increasing our knowledge of local species, we can better implement conservation strategies to protect these ecosystems and ensure their resilience in the face of environmental changes.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Khandla Y, Parmar H, Trivedi V. An inventory of herpetofauna diversity in urban ecosystem, Western India. *Uttar Pradesh Journal of Zoology*. 2019;40(4):154-168.
2. Seigel RA. 1993. Summary: future research on snakes, or how to combat lizard envy. Pages in R. A. Seigel and J. T. Collins, editors. *Snakes: ecology and behavior*. McGraw-Hill, New York, New York, USA. 1993;395-402.
3. Maurya V, Singh JP, Dhakate PM. First record of Coral Red Khukri Snake (*Oligodon kheriensis*) from Uttarakhand, India: Expanding the current known dispersal range of the species. *International Journal of Science and Research (IJSR)*. 2017;6:276-278.
4. Maurya V, Kumar P, Dhakate PM. First sighting record of albino Spectacled cobra *Naja naja* (Linnaeus, 1758) from Uttarakhand, India" In *Biological Forum—An International Journal*. 2020;12(2):51-53.
5. Nishad, Rahul, Vipul Maurya. First record of an albino Spectacled Cobra (*Naja naja*) from Uttar Pradesh, India. *Reptiles & Amphibians* 31.1. 2024:e21413-e21413.
6. Gamble T, Aherns JL, Card V. Tyrosinase activity in the skin of three strains of albino Gecko (*Eublepharis macularius*), Gekko. *Spencer*. 2006;5(1):39 – 44.
7. Sage BL. Albinism and melanism in birds, *Br. Birds*. 1962;55(6):201 – 220.
8. Hayley McCardle BS. Albinism in wild vertebrates. Thesis Presented to the Graduate Council of Texas State University-San Marcos in Partial Fulfillment of the Requirements; 2012.
9. Hensley M. Albinism in North American amphibians and reptiles. *Publ. Mus. Michigan State Univ., Biol. Ser.* 1959;1: 133–159.
10. Krecsák L. Albinism and leucism in European Viperinae: A review. *Russ. J. Herpetol.* 2008;15:97–102.

11. Bechtel HB. Reptile and amphibian variants: Colors, Patterns and Scales. Krieger Publishing, Malabar, Florida. 1995;206.
12. Nivalkar A, Patil V, Paul M, Shinde V. Report of an Albino Beaked Worm-Snake *Grypotyphlops acutus* (Dumeril and Bibron, 1844). Journal of the Bombay Natural History Society (JBNHS). 2012;109(3):206-207.
13. Kumbar SM, Ghadage AB, Patil SS, Lad SB. Record of albino sand boa (*Gongylophis conicus*) from Sangli district, western Maharashtra, India. Russian Journal of Herpetology. 2016;23(1):70-72.
14. Thakur M, Trivedi K. Albinism in snakes rescued in Surat, India. Reptiles & Amphibians. 2018;25(1):63-67
15. Fellows S. New records of albino spectacled cobra snakes (*Naja naja*) in Madhya Pradesh. Entomology, Ornithology & Herpetology. 2018;7(215):2161-0983.
16. Deshmukh RV, Deshmukh SA, Badhekar SA, Rewatkar J, Pachare VP, Kawale SB. First records of albinism or leucism in six species of snakes from central India. Reptiles & Amphibians. 2020;26(3): 174-179.
17. Dethle VD, Ranshoor SB. Record of albino Trinket Snake from Nashik, Maharashtra, India. Zoo's Print. 2021;36 (12):15-16.
18. Bechtel HB. Inherited color defects: comparisons between humans and snakes. Int. J. Dermatol. 1991;30:243–246.
19. Dyrkacz S. The second recorded occurrence of an albino *Thamnophis radix* (Baird and Girard). Herpetol. Rev. 6(1):10. 1981. Recent instances of albinism in North American amphibians and reptiles. SSAR Herpetol. Circ. 1975; 11:1–31.

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