



Five Cases of Albinism and Leucism in Snakes from Nagpur, Maharashtra, India

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Manuscript details:

Received: 12.01.2024
Accepted: 25.02.2024
Published: XX.XX.2024

Cite this article as:

Bawaskar Kiran, Bhandakkar Nitish, Sonkule Akash, Parate Amit, Chaudhari Sagar and Khalode Lucky (2024) Five Cases of Albinism and Leucism in Snakes from Nagpur, Maharashtra, India, *Int. J. of Life Sciences*, 12 (1): 17-20.

Available online on <http://www.ijlsci.in>
ISSN: 2320-964X (Online)
ISSN: 2320-7817 (Print)



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ABSTRACT

This short note highlights the rare occurrence of albinism and leucism in snake populations from various parts of Nagpur, India. Five distinct cases were documented, involving unique specimens of partial albino Common Trinket Snake (*Coelognathus helena helena*), albino Common Kukri Snake (*Oligodon arnensis*), albino Common Sand Boa (*Gongylophis conicus*), albino Checkered Keelback Water Snake (*Xenochrophis piscator*), and a leucistic Indian Rat Snake (*Ptyas mucosa*). These cases were observed and rescued, showcasing the diversity of genetic anomalies within the snake community in Nagpur.

Keywords: Albinism, Leucism, Snakes and Nagpur.

INTRODUCTION

Coloration in animals can play a vital role in camouflage, mimicry, warning (Aposematism), and physiological functions (Caro 2005). Coloration of animals can be changes due to age, season, diet, health and environmental conditions (Mahabal et al. 2019). A genetically inherited condition in which a recessive gene affects enzymes involved in the metabolism of various chromatophore pigments (Spadola and Toro 2007). Abnormal variations in color include albinism, leucism, melanism, and piebaldism (Lucati and López Baucells, 2017). Various aberrant colours and patterns in reptiles are expressed and the most striking colour pigment anomaly is albinism and leucism (Gamble et al., 2006). Inherited color defects, such as albinism and leucism, are well known in several animal species including snakes (Bechtel, 1991). Wild albino and leucistic animals are rare (Walter, 1938). Albinism, derived from a Latin word 'albus' which means 'White', is a form of hypopigmentary congenital disorder, characterized by lack of melanin pigment and an animal with such a condition could have either pure or partial albinism (Cyril, 2009).

Albinism is a genetic disorder which is caused by single mutation which actually stops the formation of tyrosinase, an enzyme that changes tyrosine into a compound that eventually gives rise to melanin (Dolinska MB, et al. 2014). True or complete albinism is the total absence of integumentary and retinal pigmentation (Sandoval et al., 2006). While Leucism is a form of partial albinism characterized by the normal pigmentation of eyes, legs and beak, while skin or feathers present lowered or absent coloration (Sage, 1962; Forrest and Naveen, 2000). Leucistic snakes have a diminished number of iridophores and probably very low number or no melanophores and xanthophores (Bechtel, 1991). Leucistic snakes have lack eumelanin and phaeomelanin (Bechtel 1995, Van Grouw 2006). The skin has either reduced coloration or lacks it entirely In Leucistic animals (Sage 1962, Bechtel 1995). Leucistic animals present eyes normally pigmented, usually black, or blue (Wareham 2005).

Alike in the region of Vidarbha, situated in the state of Maharashtra, India. An Albino and Leucistic snakes are rare and enchanting phenomenon that has captured the attention of wildlife enthusiasts and herpetologists. Previous studies has been done from vidarbha region, included six snakes species rescued from different part of Vidarbha they covers an Albinism or Leucistic snakes an albino juvenile Common Sand Boa (*Eryx conicus*), Leucistic Green Keelback (*Rhabdophis plumbicolor*), Albino Checkered Keelback (*Xenochrophis piscator*), Leucistic common Wolf Snake (*Lycodon aulicus*), Common Kukri Snake (*Oligodon arnensis*) and an Albino Common Krait (*Bungaeus caeruleus*) (Deshmukh et al. 2020). A Leucistic Green keelback snake (*Micropistodon plumbicolor*) recorded from Amrarvati district (Amjad Hussain, et al. 2016). A Leucistic Common Wolf snake (*Lycodon aulicus*) rescued near Bhugaon Village, Nagpur (Reyhan Motiwala, et al. 2022).



Figure. a) Partial Albino Common Trinket Snake (*Coelognathus helena helena*) rescued by Lucky Khalode, b) Albino Common Kukri Snake (*Oligodon arnensis*) caught by Nitish Bhandakkar, c) Albino Common Sand Boa (*Gongylophis conicus*) captured by Amit Parte, d) Albino Checkered Keelback Water Snake (*Xenochrophis piscator*) rescued by Sagar Chaudhary, e) Leucistic Indian Rat Snake (*Ptyas mucosa*) rescued by Akash Sonkule.

Nestled in the heart of this diverse landscape in the city of Nagpur, where the remarkable presence of albinism and leucism snakes has been recorded, this short note presents a remarkable occurrence of albinism and leucism snake specimens. These snakes was observed and rescue across various part of Nagpur, including Common Trinket Snake (*Coelognathus helena helena*) location lies between Lat-21.125689° Long-79.141284°, Common Kukri Snake (*Oligodon arnensis*) sighted at Lat-21.104564° Long-79.159647°, Common Sand Boa (*Gongylophis conicus*) rescued at Lat-21.374259° Long-79.110219°, Checkered Keelback Water Snake (*Xenochrophis piscator*) rescued at Lat-21.165024 Long-79.172666, and Indian Rat Snake (*Ptyas mucosa*) respectively. Each case exhibited distinct morphological characteristics, ranging from partial to complete absence of pigmentation to varying degrees of hypomelanism. Adding a touch of mystique to the rich biodiversity of this region? These findings provide valuable insights into the genetic diversity of snake populations and the intriguing manifestation of albinism and leucism in this unique ecological context. The Nagpur is known for its diverse ecosystems and unique wildlife, has become a hotspot for the study and observation of these intriguing creatures. We will delve into the captivating world of albino and leucism snakes recorded in the wider region of Nagpur, shedding light on their rescue, habitat, and the efforts undertaken to conserve and understand these enchanting serpents.

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Acknowledgment

We would like to express our deepest gratitude to all those who contributed to the successful completion of this research paper on an albinism and leucism in snakes. Our sincere thanks go to the various snake enthusiasts namely Pankaj Badule, Gaurang Waikar, Amol Kothe, Sahil Sharnagat, Rakesh Bhojar, Anup Satpute, Abhishek Sawane, Ankit Khalode and Pritam Karonde who generously provided valuable insights, observations, and data crucial for the comprehensive understanding of albinism and leucism in snakes. The collaborative efforts of Wildlife Welfare society were facilitating access to research facilities enhancing the scope and depth of our study.

Conflict of interest: The authors declare that they have no conflict of interest.

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