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RESEARCH ARTICLE

REPORT ON COLOUR ABERRATION FOUND IN WILD ANIMALS AT PENCH TIGER RESERVE, MAHARASHTRA, INDIA

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Abstract

Pench Tiger reserve, Nagpur, Maharashtra is 25th Tiger reserve of India, located in central Indian landscape and spreads over 741.41 sq. Km. There are 71 mammal species reported by Zoological Survey of India (ZSI, 2004).The coat/fur colour of animals is considered as general character in morphological features to identify the animals. But sometimes colour variation is observed in wild animals due to variation in melanin pigment concentration due to various reasons. There are six different terms used for morphological variations found in wild animals as Albinism, Leucism, Piebaldism, Melanism, Hypomelanism and Blue eyed morph (Mahabal, 2019). Out of these, there are three examples of variations such as Leucism in Sambar deer & Piebaldism, Melanism in Spotted deer found in Pench tiger reserve, Maharashtra.

Introduction:-

Pench tiger reserve, Maharashtra is 25th Tiger reserve of India, declared in 1999. It is located in Central Indian landscape, encompassing area of 741.22 sq. Km in river basin of Pench, Kanhan and Teliya in foothills of Satpuda ranges. (Deokar, 2022) This area harbours 71 species of mammals including Tiger, spotted deer and Sambar, (ZSI, 2004) 310 species of birds and 44 species of odonata (Deokar, 2021). The characteristic skin in mammals is clothed with fur or hair and its concealment may be effected by the colour and pattern of the coat. Generally, the coat colour change depends on the surrounding seasonal climate conditions and also the geographic regions where they are found (Menon2003).Besides this, the age, sex, health, and nutrition play important roles in the looks of an animal.

Observation:-

During regular patrolling, author observed a white coloured Sambar deer *(Rusa unicolour)*, a partial white coat (at neck portion) Spotted deer *(Axis axis)* and a blackish fur spotted deer (more black pigmentation at Neck portion and more dark brown coloured coat) than normal one in spotted deer in Pench tiger reserve, Maharashtra. All these animals are photographed without disturbing them and keeping sufficient distance. The herd of species was found very normal in behaving with these special individuals.

Results and Discussion:-

The phenomenon of colour variation is common in birds and mammals. Melanin is the main pigment found in mammals which is responsible for the color of hair and fur. There are different types of melanin (eumelanin and pheomelanin), and they produce a huge color range, from black to sandy to red in different combinations. The

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development of melanin is depend upon biochemical process called melanin synthesis which is affected by any disturbance or the heritable cause, i.e., genetic mutation, at every stage of melanin synthesis affects the concentration and distribution of melanin resulting in an aberrant colour.(van Grouw 2013).

Table 1:- Terminology used to describe colour aberrations adopted from van Grouw (2006, 2013), Abreu et al. (2013), Lucati & Lopez-Baucells (2016), and Mahabalet al. (2016) except blue-eyed white morph (Mahabal et al, 2019).

Aberration	Effect on melanin	Effect on Eyes	Effect on Skin	Effect on Hairs
Albinism	Total lack of both melanins in skin, hair follicles and eyes due to the heritable absence of the enzyme tyrosinase in pigment cells.	Red	Pale	White
Leucism	Total lack of both melanins in all of the hair follicles and skin due to the heritable absence of pigment cells caused by the failure of melanocytes to migrate to the skin and hair follicles.	Normal	Pale	Whitish
Piebaldism	Total lack of melanin in part of the skin and/or hair follicles due to the heritable absence of melanocytes in the affected part.	Normal	Normal	Normal except white patches
Melanism	Abnormal deposition of melanin (not necessarily an increase of pigment) in the skin and/or hair follicles.	Normal	Normal	Black or reddish-brown
Hypomelanism	Mutations affecting melanin biosynthesis, pigment granule trafficking, or membrane sorting.	Normal	Normal	Brown, Golden, Beige
Blue-eyed white morph	Pheomelanin is largely absent; eumelanin is present in the eyes and in the hairs of stripes. Mostly seen in tigers and leopards.	Blue	Pale	White stripes/ spots, Brown spots

Table No. 2:- Showing photographs of wild animals and colour aberrations.

1)	Leucism observed in Sambar deer	

2)	Piebaldism in Spotted deer	
3)	Melanism observed in Spotted deer	

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