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Albino Babbler: A distinctive sighting in Jodhpur's green space linked to climate change

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Abstract
The recent sighting of an albino babbler in the urban green spaces of Jodhpur raises important questions about the effects of climate change on bird biodiversity. This unusual observation of a species typically seen with normal coloration highlights a rare genetic variation that may indicate underlying ecological changes. As urbanization continues and natural habitats are modified, the resilience of wildlife is increasingly put to the test.
This study examines the potential implications of the albino babbler's presence as a sign of environmental stressors associated with climate change. It explores how such occurrences can reveal broader patterns of biodiversity loss and adaptation. By analyzing the habitat conditions and human influences within Jodhpur's urban landscape, this research underscores the urgent need to understand the impacts of climate change on bird populations.
The findings aim to contribute to ongoing discussions about urban biodiversity conservation and the importance of preserving green spaces, emphasizing their crucial role in supporting ecological health in rapidly changing environments.

Keywords: Albino Babbler, albinism, avian diversity, Jodhpur, urban biodiversity, anthropogenic influence

Introduction

Albinism is characterized by a reduced production or complete absence of the pigment melanin (Gabadage *et al.*, 2015) [6]. This condition is most easily recognized by abnormal coloration in the skin, hair, feathers, scales, or eyes (McCardle, 2012) [11]. Albinism has been observed in a wide variety of species, including mammals, birds, reptiles, amphibians, fish, mollusks, and insects, essentially from whales to snails (Binkley, 2001) [4].

Melanin is produced through a complex series of chemical reactions that occur in specialized cells known as melanocytes. Since this process is intricate, many factors can influence melanin production in melanocytes (Kumar *et al.*, n.d.) [9].

The true perching birds, known as passerines, belong to the order Passeriformes, which is the largest order of birds. These birds have four toes: three directed forward and one directed backward (Cracraft *et al.*, 2009) [5]. Within this order, babblers belong to the family Leiotrichidae and represent the largest clade of babblers in terms of species diversity, with 125 species (Cibois *et al.*, 2018). This group is commonly referred to as the "Seven Sisters" (Gupta, 2014) [8].

Studies have shown that babblers have insectivorous and omnivorous feeding habits, with insects forming the predominant portion of their diet. Their plant-based diet includes fruits, berries, nectar, figs, seeds, and grains (Anthal & Sahi, 2013) [1].

Babbler species exhibit cooperative breeding behavior. Females typically remain with their natal group until they are 6 to 9 months old before dispersing. In most cases, males remain in their natal groups indefinitely, resulting in the formation of male clans (Gaston, 1978) [7].

Parihar (2015) [11] discusses a rare case of albinism observed in peafowls (*Pavocristatus*) in the Thar Desert region of Rajasthan. Albinism is a genetic condition characterized by the absence of melanin, leading to white coloration in animals. This study documents the occurrence of albino peacocks, which is notable due to the species' typical vibrant colors.

Material and Methods

Jodhpur is located in Rajasthan at the eastern edge ofthe Great Indian Desert. The town, located at 240m altitude, latitude 26º 18'N, and longitude 73º 08'E, was erected on a hilly sandstone plateau of approximately 150 km2 surrounded by flat semi-desert.

The climate is dry with maximum temperatures of 48ºC in May/June and a minimum of around 0ºC in December/January. This area receives 90% of its scanty rainfall (average 390 mm) during the monsoon in July-September. Xerophytic plants including *Prosopisjuliflora*, *Acacia senegal*, *Prosopis cineraria*, *Caparisdeciduas* and *Euphorbia caducifolia* dominate the natural open scrub vegetation. There are numerous irrigated parks and fields.

This wide range of climatic conditions has led to the formation of different habitat types for *Turdoidesm Caudatusm* around Jodhpur. After surveys of the study sites, the study was carried out at some selected regions of Jodhpur. During the study point count method, supported by photography is used. Besides this, information was also gathered from the local people living near the study regions.

Observation and Discussion

On 3rdSeptember 2024, we visited a Gold Course Field at Jodhpur. I was on the survey of faunal biodiversity in Jodhpur. At about 6:40 pm, we sighted a flock of Jungle babblers (*Turdoidesstriata*) in the field. The flock contained 6 individuals, but one among them exhibited abnormal colors. We assumed that the individual was an albino Jungle Babbler. However, we took photographs of that particular individual and followed its activities three times.

Fig 1: Albino Babbler

Fig 2: Albino Babbler

Table 1: Activity of babbler at three different time of day

Time Period	Activity Description
6:00 -8:00 AM	Foraging for insects and seeds; singing to establish territory;
12:00 -2:00 PM	Resting in shaded areas; occasionally foraging; maintaining a low profile to avoid heat stress.
6:00 – 8:00 PM	Active foraging in the evening: preparing for roosting.

Table 2: Interactive phenomenon of trees/shrub/grasses with Babbler

S. No.	Botanical name of tree, shrub, herb and grass	Common name	Part of plant used	Purpose	Remarks
1	*Senegaliasenegal*	Kumat	Pods	Feeding	They were seen feeding on the pods felt on the ground.
2	*Prosopis cineraria*	Khejari	Pods	Feeding & Roosting	Common babbler eats the pods on the tree as well dropped on the ground.
3	*Maytenussenegalensis*	Kankera	Fruits to eat and branches for roosting	Feeding & Roosting	They love to eat the fruits and are seen roosting on the branches.
4	*Salvodoraoleoides*	Kharojaal	Beneath the tree	Feeding and roosting	They were seen beneath the trees feeding and roosting on the branches.
5	*Grewiatenax*	Gangani	Fruits	Feeding	Babbler eats the fruits.
6	*Ziziphusnummularia*	Bordi	Fruit	Feeding and nesting	Commonly babbler uses heaps of liooedzizyphus plant or nesting. Love to eat this fruit.

Conclusion

The discovery of an albino babbler in Jodhpur's urban environment is not only a rare and intriguing event but also serves as a potential indicator of climate-driven changes in species distribution. Further research is needed to understand how climate change is influencing species migration patterns and what conservation measures can be implemented to protect biodiversity in urban areas.

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