

First documented case of partially leucistic Rock Bunting (*Emberiza cia*) from Kishtwar District, Jammu & Kashmir, India

Umar Mushtaq & Kaleem Ahmed

Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh, India

*Corresponding author: umushtaq343@gmail.com

Received 15 October 2025 | Accepted 25 November 2025 | Published 01 December 2025

Abstract

Plumage aberrations in birds, particularly leucism, are rare but significant phenomena that offer insights into avian genetics and ecology. Leucism, distinct from albinism, results in partial or total loss of melanin in feathers without affecting eye pigmentation. Here, we report a new record of a partially leucistic Rock Bunting (*Emberiza cia*) from Kishtwar district, Jammu & Kashmir, India. The individual, observed on 04 February 2024 at 1163 m a.s.l., exhibited white feathers on the crown, head, throat, and tail, while maintaining normal coloration on the wings, breast, and belly. The bill, eyes, and legs appeared unaffected. It was seen foraging normally among a flock in a semi-agricultural landscape dominated by barley fields and scattered oak patches. This sighting represents a rare case of leucism in the Emberizidae family and adds to the limited records of plumage aberrations in Rock Buntings. Documenting colour aberrations in passerines is important as such records enhance our understanding of plumage variation, potential genetic or environmental influences, and their implications for species identification and ecology. Such documentation is also valuable for understanding the occurrence, survival, and ecological interactions of color-aberrant individuals in the wild.

key words: Aberrant Plumage, Albinism, Leucism, Plumage Anomalies, Unpigmented

1. Introduction

Bird plumage coloration is a fascinating element of avian biology but can sometimes seem unusual due to many reasons. It has been documented across different bird taxa (Guay *et al.* 2012; van Grouw, 2013) and has various types (van Grouw, 2006; Van Grouw *et al.*, 2016), of which leucism and albinism are best known (Sultana *et al.*, 2020). Leucism is a rare plumage mutation in birds that causes a partial or total loss of melanin pigments (eumelanin and pheomelanin) in feathers as well as sometimes legs and bill, but not in eyes (van Grouw, 2006; Van Grouw *et al.*, 2016). It is the most common heritable color aberration and is often confused with albinism (van Grouw, 2006). Albinism is the total lack of both the melanins in feathers, eyes, and skin caused by inherited absence of tyrosinase, enzyme essential for

melanin synthesis (Fox and Vevers, 1960; Harrison, 1963). Pigmentation aberrations are mostly caused by dietary issues and usually do not have a genetic cause (van Grouw, 2006). Chromatic aberrations have been documented in numerous bird families, such as Accipitridae, Anatidae, Cathartidae, Columbidae, Corvidae, Icteridae, Mimidae, and Procellariidae (Gross, 1965; Bensch et al., 2000; Bried et al., 2005; Hosner and Lebbin, 2006; Blumin, 2007; Van Grouw et al., 2016), and in shorebirds (Gross, 1965; Van Grouw et al., 2016). However, there are still few records of aberrantly plumaged individuals from the Emberizidae family. There have been reports of one House Bunting (*Emberiza sahari*) from Algeria (Chedad et al., 2022) and one Rock Bunting from Anantnag, district of Jammu & Kashmir (Khan and Lone, 2024). In India, van Grouw et al. (2016) reviewed 180 records of color aberrations and classified them into seven mutation types.

The Rock Bunting (*Emberiza cia*) is a ground-nesting passerine bird found in temperate and Mediterranean ones, as well as rocky steppe and mountainous regions of the southern Palearctic and Central Asia (Glutz von Blotzheim and Bauer, 1997; Keller et al., 2020; Cramp, 1998). It utilizes semi-arid, sparsely vegetated areas at lower and middle altitudes, favouring sunny hillsides with rocky outcrops and scattered bushes or trees. It occupies stony areas, typically nesting near larger stones (Mann et al., 1990; Cramp, 1998), and open areas with varied bush cover (Groh, 1982; Cramp, 1998). Locally, it also occurs in quarries, vineyards and other terrains with an alternation of bare soil or rocks and sparsely vegetated areas (Hagemeijer and Blair, 1997; Copete, 2016). It breeds in rugged terrain, rock gullies, ravines, and between bigger rocks (Groh, 1982; Mann et al., 1990; Cramp, 1998). It is territorial during breeding season, with adults primarily feeding on grass seeds, while young consumes invertebrates (Sanchez, 2009). Here, we report the first documented record of a partially leucistic Rock Bunting from the Kishtwar district of Jammu & Kashmir.

2. Observation and habitat description

On 04 February 2024, at 1555 h, during our biodiversity assessment, a partially white Rock Bunting was observed foraging on the ground along with normally plumaged individuals near Kurya village (33.365875°N, 75.726779°E) of Kishtwar district, Jammu & Kashmir at an altitude of 1163 m a.s.l. (Figure 1). The individual was observed from approx. 15m using 10x50 binoculars for about 10 minutes and photographed immediately with a smartphone. The crown, head, throat, and tail feathers of the bird exhibited white colorations, while the wings, breast, and belly feathers displayed normal color (Figure 2). Apart from feathers, the bill, eyes, and legs were normally colored. As it was unique among the flock, we compared it with normally plumaged individuals and determined that it was leucistic. It was foraging normally with the other individuals of the flock. The area was dominated by agricultural fields and human habitation. Due to the winter season, only dried grasses covered the ground. The agricultural fields had been sown with barley, which had grown to 3-4 inches. Patches of oak trees (*Quercus ilex*) were also visible in the area.



Figure 1. Location map of Partially Leucistic Rock Bunting sighting. (Source: Google Earth Pro)

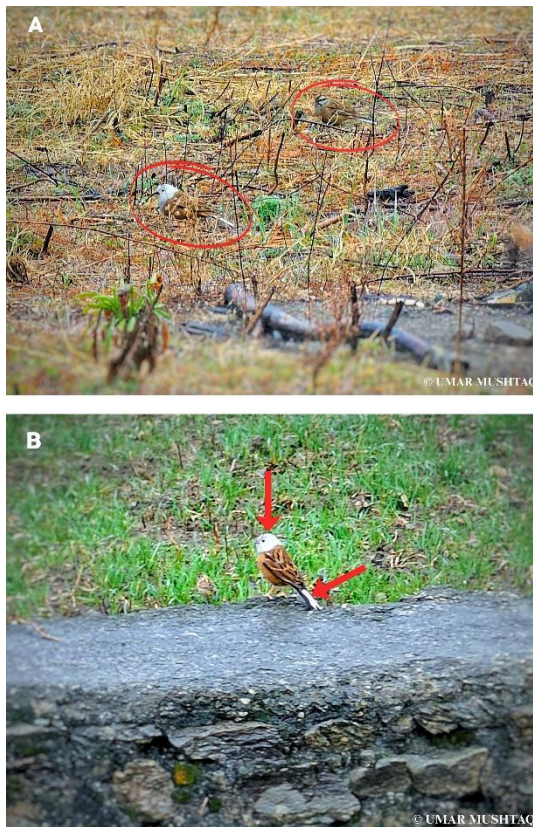


Figure 2. (A) Partially leucistic Rock Bunting beside normally plumaged individual, (B) Partially leucistic Rock Bunting perched on a wall.

3. Conclusion

Sightings of the leucistic individuals in the wild are less because it is a rare phenomenon and also possibly because they have low survival rate (Blumin, 2007). However, contrary to common opinion, color-aberrant birds do not always become easy prey to natural predators and, possibly with the exception of albinos which are vision-impaired, often survive for long time (van Grouw, 2012) and breed normally (Owen and Shimmings, 1992). Our observation therefore adds to the limited number of known cases. Importantly, this represents the first documented record of a partially leucistic Rock Bunting from the Kishtwar district of Jammu & Kashmir, contributing new regional information on plumage aberrations in this species. Continued field monitoring may help clarify the frequency, survival, and ecological implications of such color-aberrant individuals. The rarity of such records makes this observation important.

Acknowledgements

We would like to thank Prof. Satish Kumar (Chairperson), Department of Wildlife Sciences, Aligarh Muslim University, for providing the necessary facilities during the fieldwork. We are also sincerely grateful to Mr. Umair Mushtaq for his assistance in the fieldwork and to Mr. Syed Basit for his help in preparing the map.

Conflict of interest

The authors declare that they have no competing interests.

References

- Bensch, S., Hansson, B., Hasselquist, D. & Nielsen, B. (2000). Partial albinism in a semi-isolated population of Great reed warblers. *Hereditas*, 133(2), 167-170. <https://doi.org/10.1111/j.1601-5223.2000.t01-1-00167.x>
- Blumin, L. (2007). Leucistic grebe at Mono Lake an identification challenge. *Western Birds*, 38(1), 9. https://digitalcommons.usf.edu/western_birds/vol38/iss1/9
- Bried, J., Fraga, H., Calabuig-Miranda, P. & Neves, V.C. (2005). The first two cases of melanism in Cory's shearwater (*Calonectris diomedea*). *Marine Ornithology*, 33, 19-22. <https://doi.org/10.5038/2074-1235.33.1.636>
- Chedad, A., Bendjoudi, D., Beladis, B., & Guezoul, O. (2022). First case of leucism in the House Bunting *Emberiza sahari* in Algeria. *Journal of Bioresource Management*, 9(4), 12.
- Copete, J.L. (2016). Rock Bunting (*Emberiza cia*). In: J. del Hoyo, A. Elliott, J. Sargatal, D.A. Christie & E. de Juana (eds), *Handbook of the Birds of the World Alive*, Lynx Edicions, Barcelona.
- Cramp, S. (1998). *The Complete Birds of the Western Palearctic on CD-ROM*. Oxford University Press.
- Fox, H.M. & Vevers, G. (1960). *The nature of animal colours*. Sidgwick & Jackson, London, UK.
- Glutz von Blotzheim, U.N. & Bauer, K.M. (1997). *Handbuch der Vögel Mitteleuropas*. Band 14/I, Passeriformes. Aula-Verlag, Wiesbaden.
- Groh, G. (1982). Zur Ökologie, Biometrie und zum jahreszeitlichen Vorkommen der Zippammer (*Emberiza c. cia*) in der Pfalz.
- Gross, A.O. (1965). The incidence of albinism in North American birds. *Bird-Banding*, 36(2), 67-71. <https://doi.org/10.2307/4511145>
- Guay, P.J., Potvin, D.A. & Robinson, R.W. (2012). Aberrations in plumage coloration in birds. *Australian Field Ornithology*, 29(1), 23-30. <https://vuir.vu.edu.au/id/eprint/22213/>

- Hagemeyer, E.J.M. & Blair, M.J. (1997). *The EBCC atlas of European breeding birds*. Poyser, London, 479
- Harrison, C.J.O. (1963). Non-melanic, carotenistic and allied variant plumages in birds. *Bulletin of the British Ornithologists' Club*, 83, 90-96.
- Hosner, P. & Lebbin, D. (2006). Observations of plumage pigment aberrations of birds in Ecuador, including Ramphastidae. *Boletín SAO*, 16(01), 30-43.
- Keller, V., Herrando, S. et al. (2020). *European Breeding Bird Atlas 2*. European Bird Census Council and Lynx Edicions, Barcelona.
- Khan, A.I. & Lone M.I. (2024). A partially leucistic Rock Bunting *Emberiza cia* from Jammu and Kashmir. *Indian Birds*.
- Mann, P., Herlyn, H. & Unthelm, H. (1990). Bestandigung und Habitat der Zippammer *Emberiza cia* im Südschwarzwald. *Vogelwelt*, 111, 142-155.
- Owen, M. & Shimmings, P. (1992). The occurrence and performance of leucistic Barnacle Geese, *Brantaleucopsis*. *Ibis*, 134(1), 22-26. <https://doi.org/10.1111/j.1474-919x.1992.tb07224.x>
- Sanchez, S., Vaclav, R. & Prokop, P. (2009). An inter-regional approach to intraspecific variation in habitat association: Rock Buntings *Emberiza cia* as a case study. *Ibis*, 151(1), 88-98. <https://doi.org/10.1111/j.1474-919X.2008.00894.x>
- Sultana, I., Khandakar, N., Ali, M. S. & Das, D. K. (2020). Partially leucistic Common Redshank in Nijhum Dweep National Park, Bangladesh. *Wader Study Group Bulletin*, 120, 159-161. <https://doi.org/10.18194/ws.00203>
- van Grouw, H. (2006). Not every white bird is an albino: sense and nonsense about colour aberrations in birds. *Dutch Birding*, 28(2), 79-89.
- van Grouw, H. (2012). What colour is that sparrow? A case study: colour aberrations in the House Sparrow, *Passer domesticus*. *International Studies on Sparrows*. <https://doi.org/10.1515/isspar-2015-0012>
- van Grouw, H. (2013). What colour is that bird? *British Birds*, 106, 17-29
- Van Grouw, H., Mahabal, A., Sharma, R. M., & Thakur, S. (2016). How common is albinism really? Colour aberrations in Indian birds reviewed.