

Photographic Evidence of Avian Keratin Disorder in Indian House Crow (*Corvus spiedens*) and Indian Rock Pigeon (*Columba livia*) from Kota District, Rajasthan, India

Rohit Chouhan^{1*}, Paridhi Jain²

¹Project Fellow and Wildlife Conservationist, Department of Wildlife Science, University of Kota, Rajasthan, India

²Wildlife Conservationist, Udaipur, Rajasthan, India

Abstract: Present article reports first photographic evidence of avian keratin disorder from Kota, district Rajasthan India. Present study is the first scientific study confirming this disorder through photographic evidence. Bird species Indian house crow (*Corvus spiedens*) and Indian Rock Pigeon (*Columba livia*) were recorded in the surrounding areas of Kota district, Rajasthan, India.

Keywords: avian keratin disorder, Indian House Crow (*Corvus spiedens*), Indian Rock Pigeon (*Columba livia*), emerging disease, keratin, Rajasthan, Kota, India.

1. Introduction

Avian keratin disorder (AKD) is a new emerging worldwide disease in avian diversity an epizootic of debilitating beak deformities, first documented in black-capped chickadees (*Poecile atricapillus*) in Alaska during the late 1990s (Zylberberg, M., Van Hemert, et al. 2018). Birds afflicted by this disease called avian keratin disorder (Zylberberg, M., Van Hemert, et al. 2018). A variety of factors can contribute to beak deformities, including environmental contaminants, nutritional deficiencies, trauma, and exposure to infectious agents (Tully et al 2009). New evidence of AKD infected birds are being seen across the country. Previously the case of beak abnormality in Common myna (*Acridotheres tristis*) is recorded from Rajasthan, India (Pandey and Jangid 2018). Beak deformities in Rose-ringed parakeet (*Psittacula krameri*) from Chandigarh, India (Kulbhushan Kanwar article: Babushahi 2019) and Avian beak deformities is also recorded from Punjab, India (Soni et al 2019). Present article is the first scientific study confirming of this disorder through Photographic evidence of bird species, Indian House Crow (*Corvus spiedens*) and Indian Rock Pigeon (*Columba livia*) were recorded in the surrounding areas of Kota district, Rajasthan, India.

2. Material and Methods

During the field observation we were studying the roosting sites of Indian flying fox (*Pteropus giganteus*), and encountered

the deformed beak of Indian House Crow (*Corvus spiedens*) on 16.4.2018. Fig. 1. Photographs were taken for evidence. The second evidence of AKD is recorded in the Indian Rock Pigeon (*Columba livia*) sitting on a house roof on 30-3-2020. Fig. 2.



Fig. 1. The Indian House Crow (*Corvus spiedens*) with a curved elongated upper beak



Fig. 2. The abnormal beak of Indian Rock Pigeon (*Columba livia intermedia*)

3. Results

Photographic evidence of avian keratin disorder is recorded in Indian House Crow (*Corvus spiedens*) Fig. 1 and Indian Rock Pigeon (*Columba livia*) Fig. 2 in Kota district, Rajasthan, India. Both Species prefers Human habitat and cultivations (Grimmett et al. 2014). Abnormalities often occur as a result of rapid epidermal growth of the outer keratinized layer of the beak, the rhamphotheca (Pomeroy 1962) and may coincide with

*Corresponding author: rohit333chouhan@gmail.com

morphological changes to other keratinized tissues such as plumage, claws, and skin (Van Hemert et al. 2010, Van Hemert et al. 2012). The beak is an organ, preferably used for feeding, preening and fighting related activities (Olsen 2003).

4. Discussion

In this article, we recorded the photographic evidence of avian keratin disorder (AKD) in Indian House Crow (*Corvus splendens*) and Indian Rock Pigeon (*Columba livia*) from the surrounding areas of Kota district, Rajasthan, India. There is need to do more research and monitoring on main causes of avian keratin disorder which can elaborate the scope in field of avian research and conservation.

5. Conclusion

Beak deformities can threaten bird health by affecting feeding and preening (Van Hemert et al. 2012). We have observed that due to beak deformities individuals face difficulty in breathing and can't feed normally. Also, other members in the group excludes the deformed individual in both species. Due to lack of food and differential behaviour the individual

ultimately dies in the end.

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