

Exploring anomalies in urban avifauna: Bald Indian House Crow (*Corvus splendens* Vieillot, 1817) observations in Kerala, India

Pathissery John SARLIN^{1*}, Sandie MORRIS², Sancia MORRIS³, Savio MORRIS⁴ & Polycarp JOSEPH²

Received: December 01, 2024 – Revised: May 26, 2025 – Accepted: May 24, 2025



Sarlin, P. J., Morris, S., Morris, S., Morris, S. & Joseph, P. 2025. Exploring anomalies in urban avifauna: Bald Indian House Crow (*Corvus splendens* Vieillot, 1817) observations in Kerala, India. – Ornis Hungarica 33(2): 411–417. DOI: 10.2478/orhu-2025-0044

Abstract The Indian House Crow (*Corvus splendens*), commonly observed in urban habitats, is the subject of this study presenting opportunistic observations of three bald individuals in coastal urban habitats, shedding light on their behaviour and potential causes of baldness. Furthermore, the absence of scientific literature on baldness in Indian House Crows highlights the novelty of this report. The lack of comprehensive studies on this topic underscores the need for further investigation into the causes and implications of bird baldness.

Keywords: Indian House Crow, baldness, deformities, plumage anomalies, urban birds

Összefoglalás Az indiai varjú (*Corvus splendens*), amely madárfaj gyakran megfigyelhető városokban, adja tárgyát jelen tanulmányunknak. Három hiányos tollazatú (kopasz) egyedet is megfigyeltünk egy tengerparti város nyújtotta élőhelyen. A madarak viselkedése mellett a kopaszság okának lehetséges magyarázatait is tárgyaljuk. Az irodalomban nagyon kevés információ áll rendelkezésre a témában, ami tovább emeli rövid közleményünk fontosságát. Átfogó tanulmányok hiányában a madarak kopaszságának okai és következményei alig ismertek, ezért további vizsgálatok indokoltak.

Kulcsszavak: indiai varjú, kopaszság, tollazati eltérések, városi madarak

¹ PG and Research Department of Zoology, Fatima Mata National College (Autonomous), University of Kerala, Kollam, India

² Kollam Birding Battalion, Kollam, India

³ Institute of Chemical Technology Mumbai, IOC Bhuvneshwar, Odisha, India

⁴ Trinity Lyceum, Kollam, India

* corresponding author; e-mail: sanciamorris@yahoo.com

Introduction

Baldness in birds poses interesting concerns regarding the health, behaviour, and ecology of birds, even if it may not be as common or obvious as in mammals. Birds' plumage serves a variety of purposes, including insulation, water resistance, flight facilitation, camouflage, and participation in aggressive and sexual displays (Dawson 2015). Unlike human baldness linked to aging, avian baldness stems from different causes, with birds experiencing brief periods of feather loss. Bird baldness is a unique abnormality that is significant due to its rarity attributed to its transient nature and its effects on several plumage-related processes.

These anomalies have the potential to have a substantial impact on affected birds, with implications on their general well-being, social connections, and chances of survival. In this report, we document the observations of baldness in Indian House Crows (*Corvus splendens*), a synanthropic bird species flocking urban and rural habitats in Kerala, India (Jayapal *et al.* 2022). Its general look earned it the scientific name, *Corvus splendens*, which translates to ‘shining raven’.

The Indian House Crow is a slender bird with a long neck and relatively large bill. It is glossy black except for a well-defined smoky-grey “collar”, from the hind crown to mantle and breast, the shade of which varies among the five subspecies. Sexes are alike, with males being slightly larger (Rasmussen & Anderton 2005). It is an omnivorous and highly opportunistic scavenger that feeds heavily on human food remains and is generally confined to man-made habitats and conurbations due to its highly commensal nature. The Indian House Crow has successfully invaded tropical and subtropical regions well beyond its native range, reaching pest proportions in many areas (Brook *et al.* 2003). This species presents great ecological flexibility, as well as an obligate association with human presence, to the extent that no populations are known to live independently of man (Nyári *et al.* 2006). They are highly social, staying in a locality for perhaps their whole life. Movement into new areas is often because of major disturbances (e.g. attempted unorganised control) on nest or roost sites, however, adult birds regularly travel up to 20 km per day to known feeding areas (Global Invasive Species Database 2024).

Observation

During a bird-watching trip on Kollam Beach (8°52’32.6’’N – 76°35’23.6’’E) on 25th March 2024, the team spotted a bald Indian House Crow among a murder and several Little Egrets (*Egretta garzetta*) foraging near a hauled fishing net. The bizarre bird with a vulture-like appearance, seen walking and occasionally hopping could be easily identified from its size, shape and colour. Photographs were taken to record the abnormalities in its plumage (Figure 1). The neck was devoid of feathers and bore remnants of feathers. The head was sparsely feathered with several bare patches around the nape, beak and orbital region. Ears and nostrils were partially covered. However, the bird had normal plumage from the breast downwards. We could see other crows in the flock with missing feathers on the throat and breast. We could also see most of the crows in the vicinity with gaps in the outline of the tail and wings, pointing to the moulting season. The baldness in the crow could be caused either by moulting or some feather parasites. The bird #1 documented is presumed to be an adult as we could see the bird carrying food on its beak while flying away.

Another partially bald Indian House Crow was spotted almost 500 m from the beach on 3rd April 2024 nesting on a sacred fig tree (*Ficus religiosa*). The bird’s nape appeared shaven, and the rest of the head was thinly plumaged with a ruffled appearance (Figure 1). The remaining plumage of the bird appeared normal except for a few missing flight feathers. It was frequently spotted in pairs, flying short distances from tree to tree or utility poles. The accompanying bird was its juvenile which was discerned from the calls and appearance and was seen feeding the pestering bird.



Figure 1. a – bald crow (bird #1) on the beach; b and c – partially bald crow (bird #2) with its pair; d – another partially bald crow (bird #3)

1. ábra A kopasz varjak fotói

While photographing bird #2, we could see a different individual (bird #3) flying around in the locality with incomplete plumage on its head. The crow had an almost bare neck and bald patches on its head (Figure 1). Unlike the other two birds, we could not determine the reproductive status of the bird. The bird is assumed to be an adult from its size and behaviour.

A Google image search with key words “Bald bird,” “Baldness in birds” and “bald crow” yielded some images, mostly Blue Jays (*Cyanocitta cristata*), Northern Cardinals (*Cardinalis cardinalis*) and couple of crows (Table 1).

Table 1. Google image search result of bald birds
1. táblázat Google képkeresés eredményei kopasz madarakra

No	Species	Source
1	Blue Jays (<i>Cyanocitta cristata</i>), Northern Cardinals (<i>Cardinalis cardinalis</i>) and couple of crows	u/AcidRotten 2022
2	Male pattern baldness (MPB) in the Wattled Starling (<i>Creatophora carunculate</i>) and Ruff (<i>Philomachus pugnax</i>)	van Oordt & Junge 1936, u/MilkshakePoultry 2024,
3	Gouldian Finches (<i>Erythrura gouldiae</i>)	Marshall 2009
4	Gouldians	Gelis 2003
5	Blue Jays and Northern Cardinals	Burt 2004, Kieffer 2014, Project Feeder Watch (a) (n.d.), Cornell Lab 2024
6	Hooded Oriole (<i>Icterus cucullatus</i>)	Project Feeder Watch (b) (n.d.)
7	Wattled Starling (<i>Creatophora carunculate</i>)	Chapin 1954

Discussion

There is energy costs associated with feather loss. Fewer feathers mean less efficient flight leading to incompetence with prey and predators, and reduced insulation thereby loss of body heat and other fitness consequences (Tucker 1991, Murphy & King 1992, Swaddle & Witter 1997, Dawson 2015). The phenomenon of baldness in birds has been ascribed to various factors, encompassing genetic disorders, hormonal imbalances, ectoparasite infestation, nutritional deficiencies, or moulting (Kasambe *et al.* 2010, Surender *et al.* 2015).

In laboratory settings, some birds exhibit baldness, seemingly induced by androgenic stimulation (Hamilton 1959) as evidenced by examination of preserved specimens from diverse species at the American Museum of Natural History that revealed pronounced male pattern baldness (MPB) in the Wattled Starling (*Creatophora carunculate*) (Chapin 1954) and the Ruff (*Philomachus pugnax*) (van Oordt & Junge 1936). A syndrome of baldness and facial feather loss commonly seen in Gouldian Finches (*Erythrura gouldiae*) (Gelis 2003). A common disease, the Airsac Mite (*Sternostoma tracheacolum*) infection results in baldness in gouldieans (Marshall 2009). The presence of mycobacteria in the dermis in some finches which have exhibited feather loss in the head and face also points to the underlying microbial roles (Bauck & Brash 1999).

Conspicuously, there has been a lack of scientific studies in this field, leaving the exact causes behind such cases yet to be revealed. It is uncommon to come across a bald bird in the wild. Plumage colouration is of great importance to birds as it helps them in camouflage (Barragán-Farías *et al.* 2019), mate selection (Hill *et al.* 1999), social signaling (Senar

2006) and various other physiological and behavioural processes. When the colour of the plumage itself is very important for the fitness of a bird, loss of feathers on the head or any other part could have greater negative consequences for the bird (Sarlin *et al.* 2024).

It turns out that bird baldness is common in Blue Jays (*Cyanocitta cristata*) and Northern Cardinals (*Cardinalis cardinalis*). According to Cornell Lab (Project Feeder Watch 2024), many of these strange-looking birds may be juveniles undergoing their first prebasic moult, which produces the first winter adult plumage. For Blue Jays, this moult pattern is considered normal, and this moult pattern also happens with enough frequency in Northern Cardinal populations to be considered within the normal range.

In India, reports of baldness in birds are predominantly confined to Common Mynas (*Acridotheres tristis*), and Rose-ringed Parakeets (*Psittacula krameri*) (Kasambe *et al.* 2010). Multiple instances of bald Common Mynas have been documented in diverse locations across India, including Maharashtra, Chandigarh, Tamil Nadu, and Madhya Pradesh (Kasambe *et al.* 2010, Ali *et al.* 2013, Sagar *et al.* 2013, Kumar & Kushwaha 2019). Additionally, a bald Pied Starling (*Gracupica contra*) sighting was reported in the Nalgonda District, Telangana, in 2012 (Surender *et al.* 2015).

Conclusion

While baldness in birds has been reported in other species across India, its occurrence in Indian House Crows is relatively unexplored. Astonishingly, no report of baldness in Indian House Crow, a common species in Kerala exists in the scientific literature. It must be noted that Kerala had conducted systematic surveys of various bird species with the participation of over 1,000 volunteer bird watchers as a citizen science-driven exercise spread over 60 days a year for five years (2015–2020) releasing The Kerala Bird Atlas (KBA), the first-of-its-kind state-level bird atlas in India (Kerala Bird Atlas 2022). We believe that it must be due to non-detection and the Least Concern status in the International Union for Conservation of Nature (IUCN) red data book of such birds. Had anyone observed such unusual birds, they might have naturally reported it in scientific journals, or in the Bird Watchers forum, which are active on multiple social media platforms. To the best of our knowledge, this note describes the first confirmed sighting of a bald Indian House Crow from Kerala, India.

Acknowledgements

We thank Fatima Mata National College (Autonomous), Kollam for facilitating our field work.

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