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Short Communication

Rare Documentation of Beak Deformity in Jungle Crow *Corvus culminatus* Sykes, 1832 from Odisha, India

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ABSTRACT

Beaks of birds are intricate, highly specialized structures that, if changed, might negatively impact many facets of avian life. Adult birds rarely have anomalous beaks, and populations within regions or across species don't frequently exhibit them. Animal populations with high incidence of gross malformations are frequently signs of underlying environmental health issues. Here in we have recorded a rare instance of beak deformity in an adult jungle crow spotted in Odisha while bird watching, this could have an impact on the feeding behavior and overall survival chances of the individual. The reason for this deformity is not clear but needs to be well studied in the neighboring populations also.

Keywords: Rhamphotheca; Deformed beak; Feeding behavior; Natural selection; Epizootic agents

INTRODUCTION

Deformities may be caused by the rhamphotheca's abnormally fast growth impacting its keratin layer. Black capped chickadees (*Poecile atricapillus*) have been recognized to suffer from avian keratin disease for the past ten years in Alaska, where it is estimated that 6.5 percent of the adult population is affected on a yearly average [1-3]. Other, mostly resident Alaskan species, such as Northwestern crows (*Corvus caurinus*) throughout their range in coastal Alaska, have lately developed morphologically identical abnormalities. Where the territories of Northwestern crows and American crows (*C. brachyrhynchos*) intersect, coastal British Columbia and Washington have also reported cases of aberrant beak development.

In affected birds, the beak's keratin layer overgrows, causing a notably elongated, frequently crossed appearance. Skin and feather abnormalities can also occasionally coexist with this condition. Crows with malformations imply that this epizootic is not isolated to a certain region or species and those etiological agents may appear along a broad environmental gradient, affecting both land and coastal systems [4,5].

The variety of shapes and sizes found in avian beaks is astonishing, and they serve as excellent examples of how natural selection works. Scientists have long been interested in gross beak anomalies because they are both intrinsically fascinating and uncommon in the wild due to their crippling effects.

Even minor differences in beak morphology can have a significant impact on what foods individuals can access and how well they can defend against ectoparasites. Because beaks are under such strong selection pressure, there has been a lot of interest in figuring out what controls their morphology. Recent research has revealed that changes in a few key morphogenetic proteins can result in a wide range of beak shapes by influencing the embryonic development of the underlying bones. However, more than just the underlying skeletal structure influences the shape and function of the avian beak.

Beak abnormalities are frequently difficult to diagnose, but they can result from improper bone growth, malocclusion (misalignment) of the maxilla and mandible, or disruption of the beak's germinative layers. Beak deformities in wild and domestic birds have been linked to a variety of factors, including trauma or improper rhamphotheca wear; nutritional deficiencies, particularly those related to vitamins or calcium metabolism; and bacterial, viral, fungal, or parasitic infections [6-9].

DESCRIPTION

At about 10:00 hrs on 18th July, 2022 near Siripur, Odisha university of agriculture and technology (20° 15' 55 " N, 85° 48'

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37" E) Odisha while the first author was doing random bird watching, he got to observe a pair of jungle crows *Corvus culminatus* perched on a tree canopy. One of the jungle crows had a peculiar, elongated beak structure. This was a curious sighting upon which we further enquired about this observation and confirmed it as a deformation, the exact reason for which is unknown and further observation needs to be done in this area for checking upon the health status of jungle crows (Figure 1) [10-12].

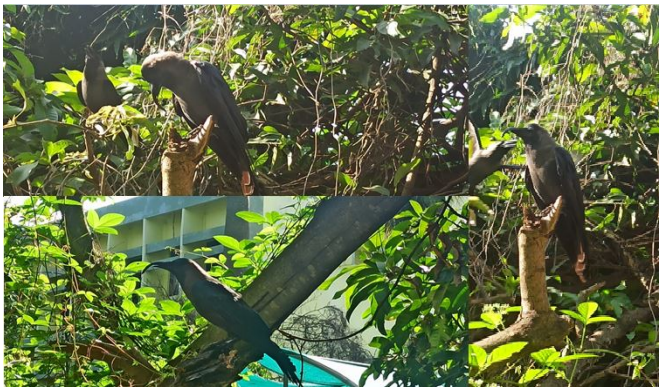

Figure 1: Rare documentation of beak deformity in a jungle crow *Corvus culminatus* from Odisha, India.

CONCLUSION

After documenting the sighting, the site was left undisturbed. This was an interesting and rare instance of observation of deformed beak structure in Jungle crow from Odisha, India. The damage or malformation of beaks in birds has severe effect on the ecological aspect of the bird ranging from its nesting behavior, feeding habits and so on.

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CONFLICT OF INTEREST

The authors declare no conflict of interest during the preparation of this article.

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