

Nectar in the diet of the Red-naped Ibis *Pseudibis papillosa*

Neha SINHA^{1*}

¹Bombay Natural History Society, Hornbill House, SB Marg, Mumbai, 400001, Maharashtra, India

*Corresponding author; e.mail: nehahnhs@gmail.org

Abstract I report observations of Red-naped Ibis *Pseudibis papillosa* feeding on the nectar of *Bombax ceiba* in Delhi city. This appears to be the first observation of any ibis species feeding on nectar. Between 2020-2023, one juvenile and two adult Red-naped Ibis were seen seemingly taking nectar from the flowers of *Bombax ceiba* beside a busy road in New Delhi. Spare little has been written on the habits and requirements of the Red-naped Ibis, and my observations support previous observations of this ibis species changing food habits depending on availability. My observations also adds to growing evidence of the importance of cities and urban trees for this species.

Keywords *Bombax ceiba*, Delhi, nectaring.

Introduction

The Red-naped Ibis *Pseudibis papillosa* is a widespread and common waterbird species endemic to south Asia (Ali and Ripley ; Hancock *et al.* 1992). However, it remains one of the least studied waterbird species of the world, though there is now an increasing number of studies and anecdotal observations on its habits that are helping to build a better picture of its requirements (Ameta *et al.* 2022; Juvvadi 2022; Tere 2022). Natural history observations on the behaviour of this species are surprisingly sparse despite the value of such observations to help construct initial understanding of such poorly studied species (e.g. Charan *et al.* 2022; Tere 2022). In this note, I describe a new item in the diet of this species.

Study Area and Methods

Observations were made in the city of Delhi, India in an *ad-hoc* fashion between 2020 and 2023 while

Article history

Received: 26 February 2023,

Accepted: 02 March 2023,

Published online: 07 March 2023.

documenting the bird species that visited flowers of *Bombax ceiba* – a native, common tree species planted across the city (pers. obs.). The *B. ceiba* in Delhi were observed to flower synchronously once a year in February and March (pers. obs.). This allowed regular monitoring of the same trees over multiple years by planning visits during this flowering period. Delhi is among the largest mega-cities in the world that is rapidly expanding but retains high bird diversity in large part due to the extensive tree cover and other remnant habitats that are retained across the city (Tiwarly and Urfi 2016; Rawal *et al.* 2021).

Results

In March 2020, I discovered a flock of Red-naped Ibis roosting on two *B. ceiba* trees on the side of Africa Avenue, a busy road with heavy traffic flow in South Delhi. On March 18, 2020, I began regular observations of birds visiting the flowers by standing across the road and conducting observation through binoculars and a camera. On March 19, I observed and documented a juvenile Red-naped Ibis (recognized by the absence of bright red on the head; Figure 1) dipping its bill delicately and repeatedly into flowers. The ibis was not destroying the flowers, like a bird seeking insects would likely do. Instead, it was apparently



Figure 1. Juvenile Red-naped Ibis feeding on nectar from *Bombax ceiba* flowers on 19 March 2020 in Delhi. The series of photographs shows the bird gently dipping its bill into the flower rather than tearing into it as insectivores sometimes do. (Photographs taken from a video shot by Neha Sinha.)

feeding on the nectar of the *B. ceiba* flowers. The bill dipping occurred multiple times over 5 seconds and was filmed. The bird poked the flower gently with its bill, then opened its bill inside the flower. It would then repeat probing of the flower, and opening of the bill. At this time, there were a total of five ibises on the tree. Adult ibises kept flying and returning intermittently, while the juvenile ibis remained on the tree feeding on nectar. I observed the birds for forty minutes. Longer observation periods were not possible as the birds were only visible from the side of the road where traffic was a hazard.

On 20 March 2020, I returned to find an adult ibis feeding on nectar from the *B. ceiba* flowers of the same tree (Figure 2). I watched the birds for forty minutes again. I also watched the birds on 21 March 2020 for forty minutes. Eleven ibis were present on the tree but no feeding or nectar taking was observed, potentially because the birds were being mobbed by House Crows *Corvus splendens* (Figure 3). Further observations could not be made in March 2020 because of the global COVID-19 pandemic and the subsequent lockdown in Delhi.

I visited the same trees multiple times in 2021 and 2022 during March. The ibises were not present during all visits, but when present, nectar feeding from flowers was not observed in these years. In 2023, blossoming of *B. ceiba* occurred a little

earlier than usual (pers. obs.) and I returned on 24 February 2023 to the same location for additional observations. Seven Red-naped Ibis were on the tree (Figure 4), with two more perched on a streetlamp beside the tree. An adult Red-naped ibis was observed feeding on nectar of *B. ceiba* flowers for about three seconds (Figure 5). Very good photo documentation was not possible because of heavy road traffic.



Figure 2. Adult Red-naped Ibis feeding on nectar from *Bombax ceiba* flowers on 20 March 2020 in Delhi. (Photograph by Neha Sinha.)

Discussion

Nectar has never been observed to be a dietary item of the Red-naped Ibis, or any ibis species (Ali and Ripley ; Hancock *et al.* 1992). Observations on the diet of Red-naped Ibis have been greatly uncommon and every new publication on diet





Figure 3. Eleven Red-naped Ibis roosting on the *Bombax ceiba* tree on 21 March 2020 in Delhi. They were being mobbed by House Crows. (Photograph by Neha Sinha.)

appears to add new dietary items suggesting that this species' habits are far more plastic and variable than previously understood (Charan *et al.* 2022). *B. ceiba* has been common in many parts of Delhi for a long time. The tree has been observed to produce seedlings naturally but has also been a long-favoured horticultural tree for parks and roadsides in Delhi (pers. obs.). It is therefore plausible that the Red-naped Ibis have been taking nectar from this tree species before my observations, though I was unable to find any photographic or literary record of this behaviour. My observation of a juvenile Red-naped Ibis taking nectar for a longer period than adults raises the possibility that younger birds of this species are more adventurous or flexible in their feeding habits. From my observations over four years, it is clear that Red-naped Ibis feed on nectar regularly and that this was not a temporary or a one-time occurrence. Since I visited trees in the same location, and because Red-naped Ibis are likely territorial (K. S. G. Sundar, pers. comm.) and were seen on the same tree, it is possible that I observed the same adults and their young of multiple years. It is, however, likely that this habit will now spread as young ibises disperse, as is common in several waterbird species, and ibis feeding on flowering trees in Delhi may well become common in the near future.

The observation also adds to increasing number of observations of Red-naped Ibis using cities, villages and other human-dominated areas such as farmlands for critical activities such as breeding and feeding (Charan *et al.* 2022; Juvvadi 2022; Katuwal and Quan 2022; Tere 2022). Though broadly described as being a “waterbird”, these



Figure 4. Seven Red-naped Ibis roosting on a *Bombax ceiba* tree on 24 February 2023 in Delhi. There were four birds in the large branch on the extreme right side. (Photograph by Neha Sinha.)

new observations underscore previous observations that the species can adapt to diverse conditions, including learning to secure a new food source in one of the most populated cities of the world. Given the delicate nature of bill dipping into the flower (see Figure 1), it seems highly possible that the Red-naped Ibis is a novel pollinator of *B. ceiba* and that my observations likely provide a new example of mutualism. Discoveries of such multi-species interactions in heavily crowded urban areas or other human-modified areas such as agricultural landscapes are greatly uncommon. One recently discovered example was that of Woolly-necked Stork *Ciconia episcopus* nests being commensally reused by Dusky Eagle-owls *Ketupa coromanda* in an ancient but intensively farmed landscape in northern India (Sundar *et al.* 2022). The small but growing number of documentations of such multi-species interactions from south Asian urban and farmland landscapes are suggestive of the absence of directed persecution of large waterbirds such as the Red-naped Ibis by people.

Feeding habits of few ibis species around the world have been carefully studied, and none have ever been seen eating nectar (Hancock *et al.* 1992). *B. ceiba* has been observed being used by the Olive Ibis *Bostrychia olivacea* as a roosting tree, but there are no published records of nectar feeding (Hancock *et al.* 1992). Vegetarian items in ibis diet appears to be generally very rare. Ali and Ripley (2007) reported finding mushy vegetative material in stomachs of Black-headed Ibis *Threskiornis melanocephalus* in India. Soni (2008) reporting Red-naped Ibis feeding on groundnuts *Arachis*





Figure 5. Adult Red-naped Ibis feeding on nectar of *Bombax ceiba* flowers on 24 February 2023 in Delhi. (Photograph by Neha Sinha.)

hypogaea and other crops in India. My observations of Red-naped Ibis feeding on nectar are the only other known instance of ibises feeding on vegetarian items. All existing vegetarian feeding of ibises are currently from India suggesting that increasing observations on ibis behaviour in other locations around the world is likely to add more such examples.

Acknowledgments

I thank Vallari Sheel for her help during field visits (and help in blocking traffic briefly on the road for observations!). I also thank Dr. Gopi Sundar for his help with this note.

References

- Ali, S. and S. D. Ripley. 2007. *Handbook of the Birds of India and Pakistan. Volume I. Divers to Hawks*. Oxford University Press, New Delhi, India.
- Ameta, H., V. K. Koli, S. Kittur and K. S. G. Sundar. 2022. Is the Red-naped Ibis *Pseudibis papillosa* a “waterbird”? Distribution, abundance and habitat use in landscapes with two different dominant land uses in Udaipur district, Rajasthan. *SIS Conservation* 4: 30-39.
- Charan, M., P. Sharma, M. Singh, S. Kittur and K. S. G. Sundar. 2022. Natural history and behavioural observations of Red-naped Ibis *Pseudibis papillosa* in Dhariawad and Sikar cities, Rajasthan. *SIS Conservation* 4: 55-59.
- Hancock, J. A., J. A., Kushlan and M. P. Kahl. 1992. *Storks, Ibises and Spoonbills of the world*. 1st ed. Academic Press, London, United Kingdom.
- Juvvadi, P. S. 2022. Nesting substrates of Red-naped Ibis *Pseudibis papillosa* in human dominated landscapes of Telangana, India. *SIS Conservation* 4: 48-54.
- Katuwal, H. B. and R.- C. Quan. 2022. Status of the Red-naped Ibis *Pseudibis papillosa* in agricultural landscapes in Nepal. *SIS Conservation* 4: 24-29.
- Rawal, P., S. Kittur, M. K. Chatakonda and K. S. G. Sundar. Capital ponds: site-level habitat heterogeneity and

management interventions at ponds regulate high landscape-scale bird diversity across a mega-city. *Biological Conservation* 260: 109215.

Soni, K. C. 2008. *Study on the population, foraging, roosting and breeding activities of the Black Ibis / Red-naped Ibis Pseudibis papillosa inhabiting the arid zone of Rajasthan*. Ph. D. Thesis, Maharshi Dayanand Saraswati University, Ajmer, India.

Sundar, K. S. G., R. Ahlawat, D. S. Dalal and S. Kittur. 2022. Does the stork bring home the owl? Dusky Eagle-owls *Bubo coromandus* breeding on Woolly-necked Stork *Ciconia episcopus* nests. *Biotropica* 54: 561-565.

Tere, A. 2022. Observations of colonially nesting Red-naped Ibis *Pseudibis papillosa* at Amla, Gujarat: nest tree preference and breeding success. *SIS Conservation* 4: 40-47.

Tiwary, N. and A. J. Urfi. 2016. Spatial variations of occupancy in Delhi: the significance of woodland patches in urban centers. *Urban Forestry & Urban Greening* 20: 338-347.

