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   IFSC: CNRB0001181

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An updated ornithology of the Lakshadweep Islands

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*Manuscript received on 06 December 2020.*

**Introduction**

Islands, the natural laboratories, have always fascinated naturalists through the ages by their exclusive biogeographic features and real time exposition of more or less elusive biogeological evolutionary processes and ecosystem functioning. In terms of their origin, many of the world’s islands and island groups resulted from tectonic processes at active boundaries along ridges across the oceans. Some islands however, which lie close to the continental landmasses, vary in their origin by being part of the continental crust itself (Wagle & Kunte 1999). One such group is the Lakshadweep Islands, located on the northern part of the Chagos–Laccadive Ridge (comprising the Chagos Archipelago, the Maldives, and the Lakshadweep group of islands). Unlike the Chagos Archipelago and the Maldives, which are oceanic in origin, the Lakshadweep Islands are part of the continental block that forms India. It was during the Lower Eocene that the Laccadive Ridge became separated from the mainland (Nair et al. 2013) and the Lakshadweep Sea was formed in between.

![Fig. 1. Islands of the Lakshadweep Archipelago. Map: S. Subramanya.](image)

Lying c.300 km westwards off the southwestern coast of the Indian Peninsula, the Lakshadweep Archipelago comprises a group of 36 very small islands scattered in the Lakshadweep Sea. The total land area of all the islands is only 32 sq. km. These islands are located between 8.16º (Minicoy Atoll) and 12.36º (Beliapani Reef) northern latitude, and 71.43º (Cheriapani Reef) and 73.70º (Andrott Atoll) eastern longitude. These tropical islands receive the first touch of the south-western monsoon winds as they progress to the mainland. While the atolls of the Maldives group, located immediately on the south of the southern-most island of Minicoy, are more compactly arranged, those of Lakshadweep are strewn widely apart from each other and are irregularly scattered.

**History of ornithology in the Lakshadweep**

Historically, Lakshadweep is known from before the Common Era and has been occupied by humans from around 1500 BCE. Excavations on various islands have revealed the presence of Buddhism and related early settlements (Tripati 1999). The position of these islands on the maritime trade routes between India and North Africa made them popular among the sailors before the Common Era. Though the history of human settlement on the islands can be obtained from various sources (Tripati 2009), records of their flora and fauna, from an early period, are absent. The first scientific observations about the nature of these islands started during the British period in India. The Royal Navy ships of Britain with naturalists onboard recorded for the first time the floristic and faunal diversity of the islands besides its geology and marine life. Such surveys and records of British explorers during the 19th and 20th centuries laid the foundation for natural history studies of Lakshadweep islands.

A detailed description by W. Robinson (1848), a British civil servant, threw light, for the first time, on the socio-political, and economic aspects of the islands. Prior to that, Murray et al. (1832: 352) mentioned that the ‘Laccadives group of islands has not yet been very accurately surveyed …’. Robinson (1848) provided the first hints about the vegetation, other than the ubiquitous coconut trees of the islands. It also mentions the breeding of seabirds on Bitra Island, probably the first such record from the archipelago. Bitra was then uninhabited and huge flocks of birds used the brushwood to nest and lay eggs, but later abandoned the island for unknown reasons. The islanders’ testimony of collecting tens of thousands of eggs for food illustrates the enormity of the flocks present.

Jerdon (1862–1864) did not include the Lakshadweep Islands in his magnum opus, probably due to the lack of any direct observational data at that time. Blyth (1863: 1) noticed that his work would include ‘what little is known of the Ornithology of the Maldives and Laccadives’, but did not report anything specific about the avifauna of these islands.

Hume’s (1876) was the first dedicated work on the birds of Lakshadweep. In his report, he recorded 35 species of birds from its reefs and atolls. Legge (1878–1880) referred to all the observations of Hume (1876) while describing the...
birds of Ceylon. In the last decade of the nineteenth century, the voluminous four-volume work of Oates (1889, 1890) and Blanford (1895, 1898), all the birds of India, together with those recorded by Hume (1876) from Lakshadweep were described. After Hume, it was Alcock (1902) who, during his two months long investigations in the Lakshadweep Sea in 1891, made some observations of the island birds including the first observation of terns breeding on Pitti Island. Gadow & Gardiner (1903) dedicated a small chapter for birds, but most of their records were from the Maldives, and those for Lakshadweep were only from Minicoy.

Ellis (1924: 12–13) published a list of eleven ‘permanent residents’ (birds) of the island which, however, is contentious. He included the Common Teal Anas crecca and the Crab-Plover Dromas ardeola in this list, though they are migrants. The Chinese Crested Tern Thalasseus bernsteinii that he listed, was possibly a misidentified Greater Crested Tern T. bergii. Of the species that he listed, only the White-breasted Waterhen Amaurornis phoenicurus, Asian Koel Eudynamys scolopaceus, and House Crow Corvus splendens are now considered permanent residents. The Sooty Tern Onychoprion fuscatus is a summer breeding visitor, while the Striated Heron Butorides striata is a possible winter visitor. The Black-naped Tern Sterna sumatranana has not been recorded from the islands before or after his publication.

Col. R. W. Burton (1940) visited the northern islands, such as Chetlat, Bitra, Kadamat, and Amini, in November 1935 and observed birds on the first three. He noted an Indian Roller Coracias benghalensis and a Montagu’s Harrier Circus pygargus on the first two islands, and some gulls, terns, and waders on Bitra and Kadamat. His was the first record of gulls from the islands, though no details regarding species were given. He also observed a Pallid Harrier C. macrourus on Chetlat, and an unidentified water rail, besides, ‘whimbrel, golden plover, avocets, stints, herons and a large black and white stork’, in Bitra (Burton 1940: 503).

F. N. Betts visited a few of the northern islands in February 1938 and listed some birds including two probable new records for the islands, namely, Brown Shrike Lanius cristatus and Osprey Pandion haliaetus (Betts 1938). He also collected some terns’ eggs from Pitti Island, through the islanders, in May 1938 (breeding had not started in February when he visited), which were later identified by Stuart Baker as Sooty Tern eggs (Betts 1938). He also added an inconclusive sighting of a flock of Lesser Frigatebird Fregata ariel into the putative bird list of the island from near Minicoy.

From the second half of the 1980s, and throughout the 1990s, the birds of Lakshadweep gained increasing attention from ornithologists. Some concentrated on the breeding terns on uninhabited sandbanks while others added new species to the archipelago’s bird list. During this period the uninhabited southwestern islands of Suheli were surveyed for the first time to study its avifauna (see below). Daniels (1992) produced one of the most substantial works on the avian diversity of Lakshadweep; visiting five inhabited islands in 1988. He also compiled and updated the list of birds recorded up to that date: a total of 67 species.

Kurup & Zacharias (1995) conducted a year-long assessment from August 1985 to July 1986, during which they visited the Suheli Atoll twice and collected information on the past breeding of terns. They also noted the breeding of Grey Heron Ardea cinerea on Suheli as well as in the Bangaram group of islands for the first time (however, there are no recent updates of such breeding events), and updated the archipelago’s checklist by adding their own records.

Notwithstanding the above studies, Pitti Island remained a priority site for many ornithologists, and repeated attempts were made to elucidate the seasonality of its breeding of terns. By this time Pitti Island had become the last breeding site for terns in this region as they abandoned all other islands. Based on previous survey data, Mathew et al. (1996) tried to infer the breeding time of terns but failed to resolve it due to the lack of data from monsoon months.

Among the different islands in this group, the triple islets of Bangaram, Thinakara, and Parli, which share a common lagoon, have gained prominence as an important area for migratory shorebirds and waterfowl. Summarizing a decade of birding, Gent (2007) listed over 150 species of birds for the region. Even though some of his observations are doubtful, especially in the absence of supporting notes or photographs, his contributions were found significant in understanding the diversity of the birds visiting a single atoll.

In the past decade, a new revolution in bird observations has taken place in India with the widespread use of online bird monitoring platforms such as eBird. This trend rippled down to Lakshadweep where tourists, and now-a-days knowledgeable natives too, have begun to create checklists of birds. For a relatively remote place like Lakshadweep, every open access observation has immense importance when it comes to studying the diversity, seasonality, and population trends of migratory birds visiting these islands. When recent studies are compared with the historical observations and studies of the birds of these islands one can easily understand that these, often casual, observations seem more reliable since many of them are supported by photographs, almost the exact number of the birds observed, and the actual geographic location at which they are sighted. While compiling this checklist (see Appendix), those unpublished primary observations were found to be of utmost importance.

Current surveys

Efforts continue to update the checklist of birds of the Lakshadweep Islands by both, birders, as well as ornithologists. This section deals with our attempts to study the diversity of the archipelago’s birds, during the last two years.
Between January 2019 and January 2020 we visited Kavaratti, Chetlat, and Kalpeni and recorded 56 species including a few new records such as the eastern race of the Common Swift Apus a. pekinensis, and European Bee-eater Merops apiaster, both from the northern island of Chetlat.

The general pattern of habitats in all these inhabited islands is the same: there is a narrow sandy beach on the windward side, coral rocky outcrops towards the northern and southern corners, which sometimes extend all-round, besides the tripods and other wall structures constructed to prevent the wave action on the leeward side. Islands are almost homogenous in terms of vegetation where coconut groves are dotted with home yard plants like Carica sp., Moringa sp., Tamarindus sp., Mangifera sp., Artocarpus altilis, Thespesia populnea, Azadirachta indica, Ficus sp., Glicidia sp., Psidium sp., and Musa sp. Scaevola sp., and Hymenocallis sp., are among the common flowering plants that can be seen along the shorelines. Some of these plants are regularly grown as natural fences. Mangroves are mostly absent across the islands of Lakshadweep, though small patches can be seen in Minicoy. Patches of mangrove associates such as Derris trifoliata are quite restricted to small areas, e.g., as on Kavaratti Island. Wastelands on the extremities of the islands, formed either by uncontrolled growth of vegetation, or by accretion of coral rubble and shingles, especially after the impact of a storm, also provide extended habitat to waders and passerines.

**Methodology**

Based on all the previous observation data available in various domains such as published works, websites, and social media platforms, etc., we compiled a primary list of birds that were marked as ‘possible’ records without any screening. Then, we filtered this list based on the criteria set for confirmed occurrences. We included ‘specimens’ as one of the criteria for the final inclusion of a species in the checklist. Observations submitted to the eBird database along with associated media like photographs or sound recordings were taken as ‘other criteria’ for the final inclusion of a species. This is important as many of the recent records, spanning the past six years or so, are present only on eBird. Finally, the observations of tourists/birders who visited the islands, and made available their photographs on social media platforms, were also scrutinized for inclusion in the final checklist. Further, observations that needed explanations were separated and are discussed below.

Our own observations, conducted on the islands of Kavaratti, Chetlat, Kalpeni, and Pitti were also subjected to the same criteria. For maritime records, we included species reported from the Exclusive Economic Zone (EEZ) of the Lakshadweep Islands, and our surveys also covered the seas around these islands.

**Specimens**

The number of specimens collected from Lakshadweep, is meagre. We did not access any of them directly for examination. Hume’s (1876) visit in the nineteenth century was rich with the specimens he collected. We traced many of them in Sharpe (1896), Saunders & Salvin (1896), and Sharpe & Ogilvie-Grant (1898). Betts (1938) also collected some specimens but they remained untraced.

**Photographs**

Identifiable photographs turned out to be the most easily accessible and reliable evidence in finalizing this checklist. The photographic evidence was grouped into two: those uploaded to the Macaulay Library (www.macaulaylibrary.org), and those that were not uploaded there, but onto other platforms. We also obtained photographic records from Facebook forums such as Birdwatchers of Kerala and Indian Birds. Gent (2007) also provides some photographic evidence.

**Sight records with field notes**

Most of the works on the ornithology of Lakshadweep, published in the last two centuries, described species sufficiently for identification, and also presented the number of birds seen. These data were found to be helpful in arriving at a decision about the veracity of such observations. Lately, the observations are mostly inclined towards just recording the name and number of the species. We tried to compare the status of most of the birds we recorded with that of those in the Maldives and the British Indian Ocean Territory, to discern any resemblances in the occurrences.

There are many records that are confusing, either because of a seemingly unusual sight record for the islands, when considering its native or usual migratory range, or due to inadequate supporting data for verifying the occurrence of a species or its identity. Most of the historical observations from the islands were created either as a checklist by the observer, or an updated one based on previous studies. In addition, there have been works that recorded the occurrence of new species on the islands.

**Results**

We arrived at a checklist consisting of 145 species that can be considered as possible sightings/records from Lakshadweep. But, after screening these per our criteria mentioned above, our final list of birds for Lakshadweep stands at 115 species. Of these, 56 were observed from four islands on our recent surveys. Thus, 31 species from our original list had to be left out of the final list due to inadequate documentation. We traced the evidence of 20 specimens that Hume (1876) had collected, in Sharpe (1896), Saunders & Salvin (1896), and Sharpe & Ogilvie-Grant (1898). Out of the total 83 pieces of photographic media we obtained, 56 were found in the Macaulay Library, while the remaining 27 were on other online platforms of ornithologists/birders and photographers.

**Notes on species confirmed during field observations**

**Ruddy Shelduck Tadorna ferruginea**

A single record from Kavaratti where Kurup & Zacharias (1995) observed a bird in captivity during 1985–1986. They said that a number of species, including the Ruddy Shelduck, were snared and pinioned by the islanders. So we can assume that they are not introduced or traded from mainland India. Although this species is widespread in the Indian Subcontinent (Grimmett et al. 2011), there are only a few records from the south-western part of India, from where it may have flown to the islands. There are no records of it from the Maldives to date. From this sole record of the species, it can be considered as a vagrant, and is thus included in the checklist.
Common Teal *Anas crecca*

The first records go back to the early twentieth century (Ellis 1924), Betts (1938) was told that they were regular winter visitors, usually seen on lagoons and mosque ponds, but he only saw a dried head. Kurup & Zacharia (1995) saw captive individuals in the islands. The species is included based on the above records.

Oriental Turtle Dove *Streptopelia orientalis*

Mathew & Ambedkar (1964) recorded a single captive bird that was ‘trapped for the pot’ in Agatti Island in October 1963. They were informed that it was a regular post-monsoon visitor. Lal Mohan (1989) observed them in Kalpeni and Suheli islands between January and April. Daniels (1992) considered his sightings as stragglers. There are no recent records of this species from Lakshadweep. It was observed as an irregular visitor in the Maldives (Ash & Shafeeq 1995), but a regular visitor, though scarce, to coastal Kerala (eBird 2021). We added this species to the checklist based on the above sightings.

**Pied Cuckoo *Clamator jacobinus***

For the first time, Subiah (1978) recorded it from Lakshadweep. Gent (2007) also recorded it as a rare visitor to Bangaram. Based on these records we include this unmistakable species in the checklist.

White-breasted Waterhen *Amaurornis phoenicurus*

There are multiple records from different islands. Gadow & Gardiner (1903) sighted a young bird in a nest in Minicoy in July 1899. Almost after a century in 1988, Daniels (1992) saw one in Minicoy again. Though Ellis (1924) listed it as a resident, his source is unknown. Burton (1940) spotted an ‘unidentified Water Rail’ in Bitra in 1939 but was not sure whether it was a waterhen or not. Daniels (1992) has clearly stated that this species was not found in the archipelago other than on Minicoy, and in the nearby Maldives. In recent years it has been sighted in most of the islands such as Kavaratti, Kadamat, Kiltan, Bitra, Agatti and Amini (eBird 2020). How the founder population of this species, which is apparently less volant, first arrived on the islands can be variously hypothesised upon. Daniels (1992) was of the opinion that the Lakshadweep Islands served as a stepping-stone used by this mainland species to enter the Maldives, and evolve into a distinct race there. In this regard, whether all the islands of Lakshadweep have the mainland race is also questionable. At least in the southern atolls such as Minicoy, Suheli, etc., the presence of the widespread Maldivian race, *A. p. maldivius* can be suspected. We have included this easily distinguishable bird in the checklist.

White-faced Storm-petrel *Pelagodroma marina*

There are two records of this species from the Lakshadweep Islands; the first from May 1960, 18 km south-west of Minicoy Island, and then in September 1961, 330 km north-north-west of Suheli Par (Bourne 1960; Bailey & Bourne 1963; Praveen et al. 2013). Based on these records, we accept this species in the checklist.

Black-bellied Storm-petrel *Freggetta tropica*

There are two records of this species from around the islands, one was caught south-west of Minicoy in 1960, and a second record ‘of three birds, 250 km west-south-west of the north island, Lakshadweep’ (Bailey & Bourne 1963; van den Berg et al. 1991; Praveen et al. 2013). Based on these records, we accept this species in the checklist.

**Barau’s Petrel *Pterodroma baraui***

The only record of this species from Lakshadweep waters, as well as for India, was made in June 1985, as two independent records, from the Nine Degree Channel (between Kavaratti and Minicoy) by a Dutch research ship (van den Berg et al. 1991). Based on these two independent and well-documented sightings we include this species in the checklist.

**Western Reef Egret *Egretta gularis***

Hume’s (1876) was the first record of this species, the “blue” morph, in 1875 at Bitra. Almost after a century, Lal Mohan (1989) had multiple records from eight islands, and Santharam (eBird 2021) recorded it from Agatti and Bangaram—but neither of them mentioned the morph. However, Santharam’s Agatti record could possibly be a blue morph, as his description of the sighting was as ‘seen from the flight while landing’. Gent (2007) recorded them regularly with photographs, all of which are white morphs; however, it is not clear whether they are reef egrets or other white egret species. There are recent eBird (Karkarey 2017; Hirash 2019) records from Kavaratti and Kadamat respectively without any description about morph. The blue morph of this species is identifiable beyond doubt and based on these records, we include the species in the list.

**Masked Booby *Sula dactylatra***

Daniels (1992) assigned a resident status to it, though he did not have any observation of his own. There are a few infrequent records from the Lakshadweep Sea and nearby Indian coasts, which number over sixty observations (Kasambe 2010; eBird 2020), which are mostly windblown individuals. This species is known to breed in the Chagos Islands (Cam 2015). Ash & Shafeeq (1995) mentioned an unconfirmed breeding status based on a juvenile from Maldives. There is a January 2019 record from the Lakshadweep Sea, 87 km north-east of Cherbaniani Reef (Beleapani Reef), without supporting data to confirm the species. Very recently we found a bird at Kavaratti, which fishermen had rescued from the sea near the island, and ‘tamed’. Thus we include the species on the basis of this sighting.

**Black-winged Stilt *Himantopus himantopus***

Daniels (1992) sighted the Black-winged Stilt first, in 1988. He suspected that it was a resident, but surely it was a vagrant. There were no previous records before his. A further two observations, in 2002 and 2017, were uploaded to eBird (Raman 2002; Vel 2017). It is uncommon in the Maldives (Ash & Shafeeq 1995). Since there is no confusion in its identification, and based on the above records we confirm the sightings and include it in the checklist.

**Kentish Plover *Charadrius alexandrinus***

individuals at Kadamat with supporting notes of their features, establishing their identity beyond doubt. Gent (2007) noted them as infrequent in the Bangaram group. We include the species in the list based on the above records.

**Green Sandpiper Tringa ochropus**
The first record was made by Kurup & Zacharia (1995) at Kavaratti and Bangaram. Gent (2007) had a single sighting in Bangaram. However, there are no recent records from any of the islands. We include this species based on the above records.

**Wood Sandpiper Tringa glareola**
Kurup & Zacharia (1995) recorded it for the first time at Kavaratti and Suheli Cheriyakara. Gent (2007) noted it as infrequent at Bangaram. No recent records; we include it based on the above records.

**Marsh Sandpiper Tringa stagnatilis**
First noted by Gent (2007) at Bangaram. This and the above two sandpipers were observed in the Maldives, the Green Sandpiper being a vagrant, and the other two, uncommon (Anderson & Shimal 2020). Carr (2015) also noted the Marsh Sandpiper and Green Sandpiper as vagrants and the Wood Sandpiper as a northern winter visitor. We include this species into the checklist.

**Crab Plover Dromas ardeola**
Records from Perumal Par (Hume 1876), a pair on Bitra (Mathew & Ambekdar 1964), and ten at Suheli (Kurup & Zacharia 1995). Gent (2007) observed them occasionally on Tinnakara spit and sand bank, but not on Bangaram. Pande et al. (2007) also observed six of them on Cherbaniani. Hence, included in the checklist.

**Pomarine Skua Stercorarius pomarinus**
The first available record was made by Pocklington (RNBWS 2021) in April 1965, between Amini and Kavaratti, north-east of Patti (10.88°N; 72.75°E). Another two records were made by Chilman (RNBWS 2021): one in December 1967 (11.83°N; 73°E) north of Kilitan, and the other in November 1969 (12.75°N; 72°E) north of Cherbaniani Reef (Beleapani Reef). Pande et al. (2007) sighted one in Kavaratti Island’s offshore waters. In 1988 Daniels (1992) also sighted it but failed to give its location. This species, like the Arctic Skua, is a common winter visitor in the waters off the western Indian coast (Karuthedathu 2019). The geographical position at which the bird was sighted confirms its place in the checklist.

**Gull-billed tern Gelochelidon nilotica**
First reported by Santharam et al. (1996) from Agatti and Bangaram in the early 1990s. Shimal & Anderson (2020) listed it as ‘rare’ in the Maldives, however lacking any recent records. We include this possible vagrant to Lakshadweep in the checklist.

**Shikra Accipiter badius**
In 1988, Kurup & Zacharias’s (1995) saw it first, in Kavaratti. Gent (2007) included it as an infrequent visitor in his Bangaram checklist. The Shikra has a year-round occurrence in India (Grimmett et al. 2011). Based on these records we consider the chances of occasional birds visiting some islands fairly good, and hence the species is added in the checklist.

**White-bellied Sea Eagle Haliaeetus leucogaster**
Since the first sighting by Hume (1876), in 1875 at Amini, no other observations of this species have been made in the islands. Whether it was an adult bird or not is not known; we presume it was, otherwise he would have mentioned it. He thought it was ‘a chance visitor’. This must be true as no further records of it, as a regular seasonal migrant or resident of the islands, are available. White-bellied Sea Eagles inhabit the coastal stretches and near-shore islands of western India (Pande et al. 2011). They are known to exhibit regional migration usually across the coast (eBird 2021). Based on the Hume’s record, which cannot be erroneous for such an unmistakable species, we retain it in the checklist.

**Black Kite Milvus migrans**
Surprisingly, this species has only been recorded from Kavaratti Island by Kurup & Zacharias (1995), who described it as a winter migrant to Kavaratti. They probably observed it several times between September and March, as they have included it in a list of birds that they met once or several times during their visit. Considering the type of food or prey available in the islands the absence of this opportunistic feeder, which is a well-known migrant as well, is ‘unusual’. The same is the situation when it comes to the Brahminy Kite Haliastur indus, which has not been recorded from the islands. The Black Kite has no records from Maldives also. There are no at-sea records of this bird from the Lakshadweep Sea. It is possible that the Kavaratti bird was accidentally introduced, however no evidence to prove it exists. We include it in our checklist based on the Kavaratti record.

**Indian Roller Coracias benghalensis**
The historical record of this species includes Burton’s (1940) from Chetlat and Bitra in November 1935. Kurup & Zacharias (1995) had observed it several times between August 1986 and July 1987 in Kavaratti. There is a May 2019 record from Agatti (eBird 2020). Ash & Shafeeg (1995) recorded it as a rare winter visitor to the Maldives. As this bird is easily identifiable, we accepted the above sightings and included the species in the checklist.

**White-throated Kingfisher Halcyon smyrnensis**
The first record from Lakshadweep is by Kurup & Zacharias (1995) from Bitra Island in March 1986. In 2017 one bird was observed in Kalpeni, and in 2018, one each in Tinnakara and Kavaratti (eBird 2020). Populations are known to exhibit partial short-distance and altitudinal migration in some parts of the world (Woodall & Kirwan 2020). These Lakshadweep records could be an instance of occasional vagrancy of these otherwise mainland residents of South Asia. There are no records from the Maldives. We include this easily distinguishable bird in the checklist based on the current records from various islands.

**Common Kestrel Falco tinnunculus**
Hume (1876), in his February 1875 survey, observed it on all the islands he visited. Later, Betts (1938) in February 1938 observed a hover of three in Amini and one in Kadamat. Kurup & Zacharias
(1995) sighted one during the winter of 1985–1986, and Prince (2011), two in February 2008 in Kavaratti. Gent (2007) noted them as frequent visitors to Bangaram. There are also recent eBird records from Bangaram (eBird 2020). It is an annual visitor in the Maldives (Ash & Shafeeg 1995). It is a regular winter visitor to Kerala, with approximately one thousand eBird (2021) records till now, though a resident population F. t. objurgatus also occurs there. Based on these several records we include it in the checklist.

**Peregrine Falcon Falco peregrinus**

The Peregrine Falcon is widely distributed in the Indian Subcontinent and Sri Lanka (Döttlinger & Hoffmann 1999). Since Hume’s (1876) historic record from February 1875, no one else has sighted it in Lakshadweep. Hume described it as a common visitor, as the islanders were quite familiar with it, as it was present in the islands in almost every season. He saw four birds: a pair in Kavaratti, and one female each in Amini and Bangaram. In the Maldives, it is an infrequent visitor (Ash & Shafeeg 1995). Based on the historic records of Hume, which we assume to be the migratory race F. p. calidus, this species is added to the checklist.

**Indian Pitta Pitta brachyura**

There is only one record of this elegant bird from Lakshadweep: Santharam et al. (1996) from Kavaratti in October 1990. The Indian Pitta usually spends the non-breeding season in peninsular India and Sri Lanka (Erritzöe 2020). The records from Lakshadweep could be cases of extreme vagrancy for these small birds. Supportive to this view, Smith (1983) photographed an Indian Pitta on the decks of H.M.S. Invincible, 70 nautical miles [= 130 km] off the southern tip of India. We include this easily identifiable bird in the checklist based on the Kavaratti record.

**Blyth’s Reed Warbler Acrocephalus dumetorum**

A widespread winter visitor in the Indian Subcontinent (Ali & Ripley 1987). Recorded for the first time in Lakshadweep by Santharam et al. (1996) from Kavaratti in February 1991, where they sighted and heard three birds. In 2017 there were sightings of one or two birds from various islands (eBird 2021). We assume that most observers probably overlooked this migratory species, although a few might be present on the islands. We accept this species based on the available records from the islands.

**Notes on unconfirmed species**

These are species that have been reported in various published works, or online forums, but their occurrence is not beyond doubt.

**Anatidae**

From Bangaram alone, Gent (2007) recorded nine species of *Anas* and *Aythya* ducks, some of them sighted only once and others infrequently. Ash & Shafeeg (1995) list seven duck species from the Maldives from which five are considered infrequent or vagrant, while the Northern Shoveler *Spatula clypeata* and Garganey *Anas querquedula* were noted as regular visitors. We saw a flock of five Garganeys on Chetlat Lagoon in September 2019. From this, we can infer that some migratory ducks stray onto the islands from the Indian mainland, mostly as vagrants.

**Common Pochard Aythya ferina**

Gent (2007) found it rare in Bangaram. There are no sightings from the Maldives. eBird (2021) data show that there are only a few records from the nearby western coast of India. There have been only three records from southwards of Goa on the western flank of the Western Ghats, two from Karnataka, and one from northern Kerala (eBird 2021). As the Bangaram record of the species seems doubtful in the absence of enough data, we have eliminated it from the final list.

**Baer’s Pochard Aythya baeri**

Gent (2007) saw a flock of six in 1996 at Bangaram, but failed to provide supporting evidence for his identification. So, when considering its actual breeding and migrating range, which is confined to parts of East Asia, and with a critically endangered population (Carboneras & Kirwan 2020), this sighting from Bangaram is doubtful and not accepted here.

**Ferruginous Duck Aythya nyroca**

Daniels (1992) did not provide details of his 1988 sighting. Gent (2007) noted it as infrequent in Bangaram. In the Maldives, it was considered a vagrant (Ash & Shafeeg 1995). As none of these sightings have a strong provenance, this species is excluded from the checklist.

**Northern Shoveler Spatula clypeata**

This species is another rare visitor to Bangaram (Gent 2007). No previous or further sightings exist from Lakshadweep. Ash & Shafeeg (1995) reported it as a regular winter visitor to the Maldives. There are reports of sightings in 2017 from the Maldives (eBird 2021). Although Gent’s record from Bangaram is a possibility, lack of supportive evidence places the species out of the checklist.

**Gadwall Mareca strepera**

A rare visitor to Bangaram (Gent 2007). There are no sightings from the Maldives (Ash & Shafeeg 1995). From the southwestern coastal stretches of India there were only a few sightings (eBird 2021). We think the Bangaram record is most probably an error, thus not included in the list.

**Mallard Anas platyrhynchos**

Gent’s (2007) record from Bangaram is the only sighting from Lakshadweep, but, like all his other duck observations, without any supporting evidence. In the Maldives too, it is a rare visitor with only three or four records (Ash & Shafeeg 1995). Recent sightings of this species from Maldives, in 2017, are reported in eBird (2021). For want of definitive evidence, we excluded this species also from the list.
Lesser Flamingo *Phoeniconaias minor*
There is only one 2007 record from Kavaratti (eBird, 2021). The observer saw it flying overhead, giving no details to distinguish it from a Greater Flamingo *P. roseus*. Thus we have kept the species out of this checklist.

Indian House Swift *Apus affinis*
Only a single anonymous record from 1991 listed in Kurup & Zacharias (1995), lacking evidence to warrant inclusion in the checklist.

 Plaintive Cuckoo *Cacomantis merulinus*
Though Santharam et al. (1996) listed this species from Kavaratti, it was clarified that the species was Grey-bellied Cuckoo, which was at that point treated as a subspecies of Plaintive Cuckoo. Hence, this species may be deleted from Lakshadweep checklist.

Wedge-tailed Shearwater *Ardenna pacifica*
Bourne (1984) reported sighting 51 Wedge-tailed Shearwaters at 7.5°N, 75.53°E off Cape Comorin in July 1973 (i.e., 285 km from Minicoy). Two other records lack evidence to confirm as this species (Praveen et al. 2013). We declined this species due to the inconclusiveness of the sightings, including those in Bourne (1984).

Intermediate Egret *Ardea intermedia*
Th Gent (2007) noted them frequently on Bangaram Island, but did not provide supporting photographs. A few recent records have been submitted to eBird, from Agatti and Bangaram, without any identification notes. Because this species is very similar to the white morph of the Western Reef Egret, whose occurrence could be more possible in these oceanic regions, the existing records of Intermediate Egret are doubtful and hence not included in the checklist.

Great Frigatebird *Fregata minor*
This species is a widespread breeder in a number of islands in the Western and Eastern Indian Ocean (James 2004). Kurup & Zacharias (1995) included it in their checklist based on an anonymous sighting from 1991. There are no other records from the islands or from their immediate waters. It has been sighted multiple times across the western coast of India (eBird 2021). A satellite telemetry study found that one Great Frigatebird roosted in Maldives for a few months (Weimerskirch 2006). Different species of frigatebirds are difficult to identify, and the records in eBird (2021) do show that they are found occasionally in this region. We saw a Lesser Frigatebird *F. ariel* in captivity at Kavaratti during our visit. Since the identification of frigatebirds is not easy, single reports are not independently verifiable for accuracy. So we exclude this bird from this checklist.

Red-footed Booby *Sula sula*
Hume (1876) wrote that he saw a flock near Perumal Par, but not able to identify them properly, however, he was sure enough to rule them out as Masked Boobies *S. dactylatra*. Praveen et al. (2013) did not include this record as valid though there were possibilities of them occurring in these regions because of their breeding colonies in the nearby Chagos Islands. There are no further records of this species from the Islands to date. However, Daniels (1992) included it as a resident in his checklist, probably because of its breeding in the neighbouring Maldives, and Chagos groups. Thus, due to the lack of confirmed sightings, this species is not included in the checklist.

Great Cormorant *Phalacrocorax carbo*
The only record of this bird on the island is by Santharam et al. (1996). They observed two birds flying over Kavaratti Island in October 1991. They could not confirm whether it was a Great Cormorant or not, as the sighting was brief, although they were able to note the white throat, hooked bill, and overall dark plumage. There are no other records from the islands. We found this sighting of the species not conclusive.

Pied Avocet *Recurvirostra avosetta*
There is only a vague mention about the ‘avocets’, among other groups of birds seen by Burton (1940) at Bitra. From his narrative it was clear that birds are just another topic to mention along with all other things he observed in the islands. There are no other records to date. Thus, it is not included in the checklist.

Great Knot *Calidris tenuirostris*
This species is known to winter in southern India (Van Gils et al. 2020). However, no observations have been reported from the Lakshadweep Islands since Hume (1876: 433) in 1875 at Bitra. He saw ‘a pair of thick billed Sandpipers (T. crassirostris)’ but could not get any specimens as they flew away. There are no records of this species from the Maldives (Ash & Shafeeg 1995). Ali & Ripley (1987) included Lakshadweep in its wintering range, probably based on the sole sighting by Hume. We exclude this species in the absence of substantial evidence.

Arctic Skua *Stercorarius parasiticus*
Daniels (1992) included it as a suspected migrant in his checklist, but without the exact location of the sighting. This species has the most records among the wintering jaegers in the Indian seas, which occur between the waters of Lakshadweep and the western Indian coast (Karuthedathu 2019; eBird 2021). However, there are no confirmed sightings of the species from the immediate waters of any of the islands of the Lakshadweep group. Thus the species is not included in this checklist.

South Polar Skua *Stercorarius maccormickii*
Praveen et al. (2013) discussed the records of Catharacta skuas in South Asia, dealing with seven records from India and the Indian seas. One of those was by Daniels (1992), but without any details of confirmation and hence not considered definitive here.

Common Barn Owl *Tyto alba*
This species was recently introduced to tackle the rat menace in the islands, where coconut is a major commercial crop. Three pairs of adult Barn Owls were introduced to Kavaratti in 2019 (Rajkumar et al. 2019). There are sightings recorded in eBird (2021) of these introduced pairs. Yet, whether they have established a viable population there is not clear. In order to add a species to the checklist of a region, the presence of a viable population of the introduced species is set as a criterion (Praveen...
et al. 2019). Thus, in the absence of such data, we opt to keep this species out of the checklist.

**Brown Wood Owl Strix leptogrammica**
It was introduced to check the rat infestation of the coconut trees in the nineteenth century (Hume 1876). He noted a pair at Bitra. No other sightings thereafter. As it failed to establish a population in the islands we excluded it from the checklist.

**House Sparrow Passer domesticus**
This species has only a single sighting of two birds from Bangaram Island in 2018 (eBird, 2021). Islanders (pers. comm.) have not seen a House Sparrow there or in the nearby well-populated island of Agatti. Populations show varying degrees of seasonal movements in which juveniles tend to exhibit autumnal dispersal (Lowther & Cink 2020). However, cases of migration across the ocean have not been reported hitherto. Sighting from Bangaram also rules out the chances of a purposeful introduction as it could have been more possibly done in other populated islands. Gent (2007) made around ten visits to Bangaram, but did not spot the House Sparrow there. Anderson & Baldock (2001) mentioned a small feral population in Male till 1998, however, their origin is unknown. Then, in recent years there are multiple records from Hulhumale, Maldives (eBird 2021). We are doubtful about the record of this species in Lakshadweep and hence have not included it in the checklist.

**Grey Wagtail Montacilla cinerea**
Only a single record, by Gent (2007) from Bangaram, however not substantiated and, hence, excluded from the checklist.

**Citrine Wagtail Montacilla citreola**
Only a single record, by Gent (2007) from Bangaram. We exclude it from the checklist as it lacks enough evidence of the occurrence.

**Discussion**

**Resident and migrant birds**
It is explicit that these Islands possess a meager diversity and abundance of permanent resident birds. Even the scanty resident land birds are not distributed in all the islands as is the case with Indian White-eye, House Crow, Asian Koel, White-breasted Waterhen, or Rock Pigeon. The immigration of these species, except the Indian White-eye, appears to solely depend on colonizing humans, as they are closely associated with the latter. We have only limited information about the past vegetation of these islands. When humans arrived, coconut became the dominant as it was commercially exploited. The lack of habitat diversity in terms of flora, geography, and topography, along with very poor terrestrial faunal diversity, which would form a prey base, could be one of the constraints for the birds to colonize and flourish here. Fresh water is a major limiting factor for many of the common terrestrial birds from the mainland. Except for a freshwater lake in Bangaram, not even a single natural stream is present here. This exceptional feature made Bangaram and the surrounding regions an abode for the most number of birds in the entire archipelago. Gent (2007) spotted a number of species of birds in Bangaram and the nearby three islets of Thinakara, Parli I, and Parli II.

All the inhabited islands of this group have been completely modified by humans. Virtually no large terrestrial fauna is present here that would have, otherwise, undergone a course of insular evolution over time. That is because the land area is too small and the pressure of the increasing human population has altered the topography of the islands. In such circumstances, the chances of any colonizing species to acquire adaptations and evolve over time are almost nil. Here the avian diversity consisted mainly of species migrating from Eurasia and a few from the Indian Subcontinent. Among them, waders can be seen continuously, though in negligible numbers, throughout the post-monsoon months up to the end of the summer season. Some passerines recorded here are clearly passage migrants. The status of resident birds, like the House Crow, often changes, when compared with previous studies (Daniels 1992), in that they become locally extinct on some islands only to be reintroduced or immigrated later. Daniels (1992) assumed the total number of resident land birds and inland water birds to be about 15. However, based on our current knowledge, this number is less than ten.

A recent review of the birds of the Maldives (Anderson & Shimal 2020) listed 203 species, the majority of which are migrants either following the Central Asian Flyway or East Asia–East Africa Flyway (across the Arabian Sea). Lakshadweep too serves as either a halting station, or the destination of the migrants taking these routes, which is explicit from a number of species commonly recorded from both of these atoll groups. With respect to the regular breeders, the Maldives is also impoverished like Lakshadweep, with just about ten species. However, there is some apparent disparity in the species breeding in the two regions. For example, the two important pelagic terns—Sooty Tern and Brown Noddy—which breed regularly in Lakshadweep, have just one or few breeding records in the Maldives. Likewise, there are differences in the breeding land birds also.

With respect to seabirds, their only remaining breeding ground seems to be ‘Pakshipitti’, a protected islet. Four species of oceanic terns breed on this tiny sandbar. Analysis of historical observations made it clear that species such as Bridled Terns ceased to breed in the Lakshadweep. Pande et al. (2007) reported that Cherbanian hosted breeding colonies of some tern species a decade ago. However, an analysis of satellite pictures from recent years revealed that Cherbanian now lacks a sandbar that is well above the tidal line at least throughout the year that can reliably be used by the birds for breeding. Over centuries wind and water have shaped the islands’ fauna, and human colonizers severely modified the environment to their requirements. Rising sea levels wiped off sandbars and islets, obliterating breeding seabird colonies. Human inhabitants poached eggs and juveniles, and disturbed breeding colonies when they collected guano, directly contributing to the decline of populations, and abandonment of breeding sites. And finally, the inadvertent introduction of domestic rats early in the periods of human settlements, might have devastated breeding bird colonies on inhabited islands of Lakshadweep. Stringent management measures are the need of the hour to protect the remaining vulnerable habitat for oceanic terns in this Indian Territory.
It is interesting to look at the occurrence of certain species of White-eyes (earlier Oriented White-eye) that has been observed and is known to breed in some of the islands of Lakshadweep (Hume 1876; Betts 1938; eBird 2021). Biogeographical and phylogenetic studies have addressed the colonization by this species of various Indo-Pacific islands (O’Connell et al. 2019; Moyle et al. 2009; Wickramasinghe et al. 2017; Martins et al. 2020). The species occurring in Lakshadweep is Z. p. egregius (Mees 1957), but Mees had noted the very long tails, like that of Z. p. nilgiriensis, in the four specimens he studied. Still, he retained them as Z. p. egregius, since a large number of specimens would have to be examined to clarify whether that difference is consistent in order to confirm the identity of a separate race in Lakshadweep. It is important to study the degree of intra-archipelago variation in White-eyes on the various islands of Lakshadweep, which ought to be higher owing to their reduced dispersal ability, a trait acquired by insular bird species due to reduced predation pressure from raptors and mammals (Wright et al. 2016). Daniels (1992) opined that they had colonized the islands after humans, but we think that they arrived before humans and later got adapted to the modified habitats. However, it is intriguing that they are not found in Minicoy, Maldives, and Chagos, which points towards the fact that they are yet to colonize the more southern islands, and a possible reason for their absence might be the reduced predation pressure from the mainland. This needs to be investigated to detect the inter-archipelago movements of other related species like the Grey Heron Ardea cinerea and the Purple Heron A. purpurea. The Grey Heron is a vagrant (Carr 2015) to Chagos, but a common resident in the Maldives (Ash & Shafeeq 1995). In Lakshadweep, it was noted as breeding in Viringilli Islet (Minicoy), Suheli, Parli, and possibly Agatti (Kurup & Zacharias 1995). However, its recent status in Lakshadweep is obscure. We met a tamed bird at Kavaratti, probably taken from Suheli by the islanders. The Purple Heron is rarer in all these islands than other species of Ardeidae. In Chagos it is a vagrant (Carr 2015); a probable frequent visitor in Maldives (Ash & Shafeeq 1995), while only five records exist from Lakshadweep (Kurup & Zacharias 1995; eBird 2021). The Indian Pond Heron Ardeola grayii has been recorded in Lakshadweep post Hume (1876), but is not known to breed here, though there are sightings of birds in breeding plumage in 1991 (eBird, 2021). In Chagos, Carr (2015) identified it as a northern winter visitor. In addition to the records of vagrant grayii (Ash & Shafeeq 1995), the southern atolls of the Maldives support a population of the resident race phillipsi. Although some authors have not recognised it (Anderson & Shimai 2020), Rasmussen & Anderton (2012) wrote that birds (A. grayii) from the mainland move to Lakshadweep during winter.

As for all the Ardeidae species mentioned above, we can see that their breeding status in Lakshadweep needs further inquiries to delineate the patterns of their movement in the LMC region. The remaining possible breeding locations for them in Lakshadweep would be the uninhabited vegetated islands and islets such as the Bangaram group and Suheli. No one has recorded, hitherto, their breeding in any inhabited islands of Lakshadweep, which could be due to the complete absence of such events rather than a case of oversight.

**Raptors: Migration, breeding, and introduction**

The occurrence of raptors in Lakshadweep is more interesting than any other group. Their sightings have become infrequent over the years. Before 1950, there were records of two species of harriers (Circus sp.), and the Peregrine Falcon from different islands, and a White-bellied Sea Eagle from Amini (Kurup & Zacharias 1995). Ospreys were also recorded infrequently as were Brahminy Kite, Black Kite, and Shikra (Kurup & Zacharias 1995; eBird 2021). Now, it seems that Black-winged Kite Elanus coeruleus and Common Kestrel are the main raptors, the former more in number, visiting the islands in winter. In June this year, a pair of Black-winged Kites bred successfully on Kavaratti Island (Yasmin & Aju 2021). This is the first recorded instance of a raptor breeding in the Lakshadweep archipelago. For Black-winged Kites, domestic rats could be easy prey in these islands, as there are no observations of these small raptors, including Common Kestrel, attempting to fish. Common Kestrel can be considered a supertramp species, adaptable to various habitats and food (Orta et al. 2020). In Lakshadweep, it can be presumed that their major prey resource is the domestic rat and the Calotes sp., lizard. On the other hand, the occasionally visiting Osprey feeds regularly on fishes from lagoons in the islands; we noted it hovering twice over the lagoon at Chetlat. There exist a few records of Ospreys resorting to offshore locations for hunting (Bierregaard et al. 2020). Those species that scavenge on fishery resources, such as Black Kite and Brahminy Kite, as is the case on the mainland, are surprisingly absent in Lakshadweep as residents. The absence of a resident population of these two species in the islands can be directly correlated to the small island area which is a prominent factor in determining the establishment of a population in islands (McArthur & Wilson 1963). The absence of such natural predators, which could efficiently check the population of domestic rats in the islands, resulted in a serious problem over the years. The severe damage caused by the rats to coconut palms, and the decline in their productivity and yield, lead to the introduction of a few pairs of Barn Owls from Kerala for tackling the menace (Rajkumar et al. 2019).

**Seabirds: Breeders and migrants**

Like the neighbouring low-lying islands in the western Indian
Ocean, some atolls or islets of Lakshadweep are a hotspot for some of the common pantropical oceanic terns (Sternaidae). However, it lacks a breeding population of other pelagics like frigatebirds, shearwaters, tropicbirds, etc. It can be assumed that the very limited land area is a major factor that hinders the species richness and abundance in Lakshadweep of both seabirds and terrestrial ones. However, the neighbouring Maldives, and the British Indian Ocean Territory further southwards are known to support breeding populations of some important seabirds from the Procellariidae, Fregatidae, and Phaethontidae (Phillips 1964; Carr et al. 2020). This difference is presumably due to a large number of uninhabited islets with varying degrees and types of natural vegetation present in these archipelagos. In the case of Lakshadweep, now there is only one islet (Pitti), and the large Cherbaniani Reef with small sandbars, are known to support the breeding colonies of terns (Pande et al. 2007). The large atoll of Suheli, with two uninhabited islands, is a possible candidate for a breeding colony, but, other than the evidence provided by fishermen, no observations were carried out in Suheli after Kurup & Zacharias (1995) who learned from the fisherfolk about the breeding of terns a few years before their visit to Suheli.

This region could be considered as the dispersal or nomadic range of the large pelagic birds that breed in the Western Indian Ocean islands south of the equator. However, we hardly have any regular observation data from the islands to substantiate this. The waters around the islands are noted for their large primary, and secondary productivity facilitated by the influence of marine topography and oceanic circulation patterns (Nair et al. 1986). Despite the overall poor productivity of the tropical Indian Ocean, the existence of breeding colonies around Lakshadweep might be attributed to this exceptional productivity, where the birds can avail the extravagant marine resources. But, the limited land area in the islands could be the reason that only around four species of terns are able to breed here (Pande et al. 2007) compared to the nine species of terns breeding in the British Indian Ocean Territory (Carr et al. 2020).

Passage migrants
It is obvious from the various bird observations over the years that the small islands of Lakshadweep serve as temporary staging grounds for a handful of migrants from the northern higher latitudes. All of the passerines included in this checklist exploit the limited terrestrial resources of the islands during their onward journey to the islands in the south-western Indian Ocean, and return journeys to the northern breeding grounds. Although their number seems substantial, per the current observation data, they comprise a variety of groups such as wagtails, swallows, swifts, rollers, shrikes, flycatchers, bee-eaters, pipits, warblers, etc. Protecting the available shrub and thicket patches, which are the prime habitat used by most of these passage migrants, is vital for these populations of birds. The same situation might exist with respect to the migrating shorebirds that are utilizing the narrow shorelines of the islands seasonally.

Conclusion
A checklist of the birds of Lakshadweep Islands, comprising 145 possible species was pared down to 115 definite species based on various evidences such as specimens, photographs, and field descriptions. These islands are important in terms of valuable habitats, though small, that serve as a halting site for migratory species, and breeding sites for pelagic birds. They often host stragglers or nomadic birds, and exhausted migrants. A definitive checklist will aid in forming management and conservation plans for vulnerable ecosystems in these small atolls, and their dependent species.

Acknowledgments
We are extremely grateful to Praveen J. for the valuable guidance and comments he provided throughout the making of this checklist. Gratitude is due to all the birding enthusiasts who have been monitoring the birds of Lakshadweep and made them available to the public through various media. We retrieved relevant literature from the online ‘Bibliography of South Asian Ornithology’ (Pitie 2021).

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Table 1. Checklist of the birds of Lakshadweep. NHM: Natural History Museum (20 specimens); ML: Macaulay Library (Photographs of 56 species). There are 27 photographs collected from various other sources. 26 species are included based on substantial observational evidence. Total eBird records are 84.

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Table 1. Checklist of the birds of Lakshadweep. NHM: Natural History Museum (20 specimens); ML: Macaulay Library (Photographs of 56 species). There are 27 photographs collected from various other sources. 26 species are included based on substantial observational evidence. Total eBird records are 84.

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<td></td>
<td></td>
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<tr>
<td>105</td>
<td>White Wagtail Motacilla alba</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>Krishnan (2017b)</td>
</tr>
<tr>
<td>106</td>
<td>Black-headed Bunting Emberiza melanoccephala</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>107</td>
<td>Sykes’s Short-toed Lark Calandrella dukanensis</td>
<td>X</td>
<td></td>
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<td>108</td>
<td>Blyth’s Reed Warbler Acrocephalus dumetorum</td>
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<td>109</td>
<td>Barn Swallow Hirundo rustica</td>
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<td>X</td>
<td></td>
<td></td>
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<tr>
<td>110</td>
<td>Sand Martin Riparia riparia</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>111</td>
<td>Greenish Lea Warbler Phylloscopus trochiloides</td>
<td>X</td>
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<td>112</td>
<td>Oriental White-eye Zosterops palpebrosus</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>113</td>
<td>Rosy Starling Pastor roseus</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
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<td>114</td>
<td>Asian Brown Flycatcher Muscipula dauurica</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>115</td>
<td>Pied Bushchat Saxicola caprata</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

In the early 1980s, vultures were fairly common and widespread throughout the Indian Subcontinent. An abundant availability of feeding sources, in the form of livestock carcasses, was one of the major reasons for their stable and abundant population. Whilst vulture populations were able to exploit this food source, human society benefited from the rapid and hygienic removal of carcasses (Ali & Ripley 1987). A rapid decline in vulture populations from the Indian Subcontinent was reported over the past two decades (Prakash et al. 2003; Prakash et al. 2019). The populations of White-rumped Vulture Gyps bengalensis and Indian Vulture G. indicus declined by more than 92% between 1991 and 2000 (Prakash et al. 2003). Several studies remarked that the crucial reason for the decline was the use of the veterinary drug Diclofenac Sodium, a Non-Steroidal Anti Inflammatory Drug (NSAID) (Green et al. 2004; Prakash et al. 2008; Galligan et al. 2020) used to treat cattle, as well as other reasons including food shortages, interspecies competition, poisoning, and habitat loss (Safford et al. 2019).

The climate, topography, and forests of central India offer excellent habitats for four resident vulture species: White-rumped Vulture, Indian Vulture, Red-headed Vulture Sarcogyps calvus, and Egyptian Vulture Neophron percnopterus, and also attracts three migratory vulture species: Griffon Vulture G. fulvus, Himalayan Vulture G. himalayensis, and Cinereous Vulture Aegypius monachus. The Madhya Pradesh Forest Department has been conducting state-wide surveys, since 2016, to estimate the vulture populations in summer and winter. Between 2016 and 2019, the population has increased 12% (Ghai 2019).

The forested areas of Shahdol District connects three protected areas: Bandhavgarh Tiger Reserve and Sanjay Tiger Reserve in Madhya Pradesh, and Guru Ghasi Das National Park in Chhattisgarh. The corridor is spread over an area about 2,000

Importance of tiger corridors in conservation of vultures: A case study from the Bandhavgarh–Sanjay Corridor, Madhya Pradesh, India, with new nesting sites

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Manuscript received on 11 January 2021.
48 Indian BIRDS Vol. 17 No. 2 (Pub. 28 May 2021)

sq. km, comprising parts of North Shahdol, South Shahdol, and Umaria forest divisions of Madhya Pradesh and a part of Guru Ghasidas National Park in Chhattisgarh (Fig. 1.). The vegetation type is primarily tropical moist deciduous forests of Sal *Shorea robusta*, in association with Tendu *Diospyros melanoxylon* (Champion & Seth 1968). The terrain is hilly, undulating, and rugged over a major part within Kaimur range of the Vindhya Mountains and Maikal range of the Satpura Mountains. The altitude varies from 450 m to 900 m asl (Ministry of Home Affairs 2011).

Most of the corridor falls within the forested area of Shahdol District, where the population of vultures was 77, in 12 roosting and breeding sites per the 2019 count. The vulture counts for Bandhavgarh Tiger Reserve and Sanjay Tiger Reserve was 144 in 44 sites and 83 in 44 sites, respectively.

A corridor habitat-use survey was conducted from December 2019 to January 2020 for conservation-priority species, including large carnivores such as Tiger *Panthera tigris tigris*, Leopard *P. pardus fusca*, Sloth Bear *Melursus ursinus*, and vultures. Vultures were identified by searching for nesting and roosting sites. Ground staff of the Forest Department was approached to identify the presence of vulture species and their habitations by using photographic questionnaire for vulture species found in central India. The information provided by ground level staff about vulture location was confirmed by visiting the site along with the forest staff.

We found one nesting site of the Long-billed Vulture, and three of the White-rumped Vulture from the corridor area (Fig. 1 & Table 1). Approximately 40 nests of Indian Vultures were recorded on a cliff in the Majhauli beat of Gohparu range in South Shahdol Forest Division [59]. All the nesting sites of the White-rumped Vulture were found in North Shahdol Forest Division; six nests were recorded in Sarvahi kalan in East Beohari range. All the nests were active and located on Sal trees adjacent to the village [60]. One nest was recorded in the Ghiyar beat, and three nests in the Lakhanpur beat of Jaisinghnagar range, all on Sal trees.

These nesting sites were in the territorial forest divisions, which are multi-use areas with access to resources including dry wood, fodder, and non-timber forest produce. Socio-economic pressures in the form of illegal felling of trees for timber, lopping for poles and fodder, and man-made forest fires, are among the direct-threats to this habitat with respect to vultures. On discussion with the Forest Department staff and the local communities, we have informed them that the vulture nests are known to the locals and are not harmed. We cross-checked the records of the vulture counts of 2016 and 2019, conducted by Madhya Pradesh Forest Department, and found that all four locations were previously unrecorded. Between 2016 and 2019, the vulture numbers in the North- and South Shahdol Forest Division have increased from 40 to 71 (Jha 2017; MP Forest Department, unpublished). The mountainous tracts of Sal forests of the corridor are an ideal habitat for vultures in

![Indian Vulture nests on cliffs in Gohparu Forest Range.](image1)

![An adult White-rumped Vulture in a nest in Sarvahi kalan.](image2)
the immediate vicinity of Bandhvagarh Tiger Reserve and Sanjay Tiger Reserve. With over 144 and 83 vultures respectively, in these tiger reserves, we expect nesting sites in the corridor areas of the territorial forest divisions to gradually expand and increase, warranting protection and regular monitoring to understand the population dynamics outside the protected areas.

We recognize the state-level efforts to understand the dynamics of vulture populations on a large-scale. At finer scales, the 2019 vulture count surveys showed that 26.8% of the vulture counts were in protected areas, and 73.2% in non-protected areas; of the latter, 15.77% of the vulture counts were in forest divisions which form a part of wildlife corridors connecting protected areas. The corridors between Kuno Palpur National Park and Madhav National Park comprised 8.18% of vultures, followed by the Bandhvagarh Tiger Reserve–Sanjay Tiger Reserve corridor with 2.95%, the Bandhvagarh Tiger Reserve–Achanakmar Tiger Reserve corridor with 1.97%, the Satpuda Tiger Reserve–Pench Tiger Reserve corridor with 1.62%, and the Kanha Tiger Reserve–Pench Tiger Reserve corridor with 0.82% records. Records of vulture nests in non-protected areas indicate the potential for sustenance of vulture populations in such multi-use areas. With prioritization of conservation of wildlife corridors for large mammals taking center-stage (Anwar & Borah 2019), we encourage a dialogue on the use of corridors by endangered avian species, such as vultures, for nesting and roosting. Although data related to carcass availability for vultures is lacking, the presence of 21 Tigers in these corridor divisions (Jhala et al., 2020) indicates that animal carcasses of carnivore kills, as well as those at carcass dumps and road-kills, will be available for vultures of non-protected areas. We suggest that these might be a contributing factor in the expansion of vulture nesting and roosting sites in this corridor, although we acknowledge existing threats such as feral dogs, unconfirmed but potential use of vulture-toxic NSAIDs, and habitat degradation in this corridor.

Acknowledgement

We thank the Madhya Pradesh Forest Department for providing vulture location data, necessary permissions, and support for the field work.

Table 1. Details of nesting sites recorded from the Bandhvagarh–Sanjay Corridor

<table>
<thead>
<tr>
<th>Date</th>
<th>Forest Division</th>
<th>Range</th>
<th>Beat</th>
<th>Species</th>
<th>Nest site</th>
<th>Nest nos.</th>
<th>Nest status</th>
<th>Vultures observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 December 2019</td>
<td>North Shahdol</td>
<td>East Beohari</td>
<td>Sarvehikalan</td>
<td>White-rumped Vulture</td>
<td>Sal tree</td>
<td>6</td>
<td>Active</td>
<td>5 adults, 1 juvenile</td>
</tr>
<tr>
<td>10 January 2020</td>
<td>North Shahdol</td>
<td>Jaisinghnagar</td>
<td>Chipiyar</td>
<td>White-rumped Vulture</td>
<td>Sal tree</td>
<td>1</td>
<td>Active</td>
<td>Not seen</td>
</tr>
<tr>
<td>11 January 2020</td>
<td>North Shahdol</td>
<td>Jaisinghnagar</td>
<td>Lakhapur</td>
<td>White-rumped Vulture</td>
<td>Sal tree</td>
<td>3</td>
<td>Inactive</td>
<td>Not seen</td>
</tr>
<tr>
<td>21 January 2020</td>
<td>South Shahdol</td>
<td>Gohparu</td>
<td>Majhauli</td>
<td>Indian Vulture</td>
<td>Cliff</td>
<td>~40</td>
<td>Active</td>
<td>Not counted</td>
</tr>
</tbody>
</table>

References


Nesting behaviour and diet of the Shikra *Accipiter badius* in Ajanta, Maharashtra

Kulbhushansingh Suryawanshi


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Manuscript received on 22 October 2020.

Abstract

I observed the nesting of a Shikra *Accipiter badius* pair, from the nest building phase to the fledging of their three chicks. I report detailed observations on the roles of the sexes during nesting, prey species brought back to the nest, and interactions with other species (mainly threats) during this period. Both sexes incubated the eggs, but the male’s contribution was less than 10%. The female guarded the nest from intruders, and actively called out to her partner when a threat was serious. The male brought 66% of the prey to the nest, while the female, 33%. Lizard species (mainly Garden Lizard *Calotes versicolor*) comprised their main prey.

Introduction

The Shikra *Accipiter badius* is one of the most widely distributed Accipiters in the world. It is found across sub-Saharan Africa, the Middle East, and South- and Southeast Asia (Kemp & Kirwan 2020). It is one of the most commonly occurring raptors in the Indian Sub-continent. It uses a diversity of habitats ranging from urban gardens, green spaces in peri-urban areas, plantations, cultivations, and forests. A recent assessment of India’s birds (SOIB 2020) estimates that the population of the Shikra has remained stable over the past two decades.

The Shikra is known to nest across large parts of its distribution range with the exception of small regions in sub-Saharan Africa and parts of the Arabian Peninsula where it only occurs in the non-breeding season (Kemp & Kirwan 2020). Biddulph (1937), and Lamba (1964) provide some of the earlier detailed descriptions on the nesting of this species from India. Published records on observations of nesting Shikra are available from Armenia (Ananian et al. 2010), Indonesia (Nurza et al. 2009), Sri Lanka (Phillips 1933), and the United Arab Emirates (Cambell 2018). Kittur & Sundar (2010) reported cromism (eating an offspring) by the Shikra at a nest. Naorji (2006: 365) reported direct observations of a single nest of Shikra from India by Siddharth Singh Kumar. In spite of it being one of the commonest raptors in India, detailed observations on the nesting of the Shikra are relatively few (Naorji 1983; Naorji 2006; Barve et al 2020a). I present detailed observations on the nesting behaviour of one pair of Shikras with special emphasis on nesting duties of both sexes, the prey species brought back to the nest, and interactions with other species.

Methods

I observed one nesting pair of Shikras for 61.25 hours between 0550 h and 1945 h from 17 April to 10 June 2020, from a minimum distance of 20 m from the tree using 8 × 42 and 10 × 50 Nikon binoculars, and took pictures or recorded videos using a Nikon P900 camera. The minimum duration of observation on any given day was 30 min., and the maximum was 4.5 h. Sporadic observations on fledglings and juveniles were made till early August. To ensure that the nest remained undisturbed, I never approached it closer.

Description of the nest

I observed a Shikra carrying nesting material on 23 and 24 March 2020 near our house in Balapur village, near Ajanta, Aurangabad, Maharashtra. I saw a Shikra sitting in a nest in a *Dalbergia sissoo* tree for the first time on 01 April, and then again on 03 April. The nest was c.30 m from our house and was visible from one of the balconies. I also observed a pair of Shikras copulating on the 02 April. However, I did not notice much activity until 16 April when I saw a Shikra chasing two Large-billed crows *Corvus macrorhynchos* and then flying back to its nest. The nest was tucked between two branches, and the main trunk, of the tree at a height of c.10 m from the ground. It was primarily made of dry sticks, twigs, and pieces of bark. The female tidied the nest, adding pieces of bark and twigs, every time she got out of the nest during the early phase of incubation between 17 and 30 April. This tree was located within two metres of a small cottage [61] and within 10 m of a roadside dhaba. Other than these three buildings, the remaining landscape was primarily agricultural land that was unused during the summer months. My father, Ramesh Suryawanshi, who has lived at this location for over six years, informed me that the nest was actually built by crows (*Corvus* sp.) in the previous year.

The cottage was largely unused during this time. I followed all the precautions listed in Barve et al. (2020b) to ensure the safety of the nest and the chicks. Agricultural work like ploughing with a tractor, even when conducted right underneath the nest, did not seem to disturb the incubating female. I could not observe the nest uniformly at all hours of the day. My frequency of observations peaked at 0800 h and 1700 h (Fig. 1).

The nest was on our private property and observations did not require permits. I did not approach the nest for measurements and I could not record the number of eggs in the nest because I did not have a clear view of the inside of the nest from a safe distance (Barve et al 2020b).
Incubation

I could not observe the egg laying by the Shikra as I did not approach the nest often, fearing I might spook the birds. I started regular observations after 17 April, when the female had already started incubation. During the incubation phase, I observed the nest for a total of 24 h from 17 April till 06 May, when the chicks hatched.

Incubation was predominantly done by the female. However, the male was seen incubating on 26, 28, and 29 April, and 03 May [63]. Cumulatively, I observed the male on the nest for two of the 24 hours of observations. All these observation were between 0600 and 0900 h. The female was seen incubating at all the other times [64]. She only took a break to feed when the male brought prey, or to chase away intruders.

Results

I could distinguish the sexes primarily based on the colours of their iris, and the larger body-size of the female [62]. The iris colour of a female Shikra is golden-yellow, while that of a male is deep red. The female had a browner back and nape, while the male had a grey back and neck.

Nestling

I saw the chicks in the nest for the first time on 07 May. Over the next two–three days, I could confirm the presence of three chicks. I observed the nest for about 36 h across 35 days (minimum observation per day 30 min; maximum 4.5 h; average 1.07 h) between 07 May and 10 June. After this it became harder to locate the fledglings who spent more time in the trees surrounding the nest. Throughout this duration, it was the female who stayed close to the nest and defended the nestlings. During late afternoons the female often shaded the chicks from the sun by creating an umbrella over them with her wings [65]. As the chicks grew, the female spent less time at the nest and more time in the trees surrounding the nest, and hunting. Her hunting radius, from the nesting tree, increased as the chicks grew. The male continued to bring prey to the nest, which the female collected from the male and fed each of the three chicks [66]. Once the chicks were able to hop on the branches around the nest tree, the female
vented further from the nest to hunt. If the female was not around the nest, the male would simply drop the prey in the nest and leave immediately. I did not observe the male feeding the chicks directly. When the male dropped the prey into the nest, the nestling/fledglings would eat the prey themselves. If the female was around, when the male brought the prey, or if she made the decision to kill herself, then she fed the chicks within the nest.

Female Shikra shading her chicks from the afternoon sun

Female Shikra feeding her three chicks in the nest

Two chicks flew out of the nest for the first time on 01 June 2020 (25 days after hatching) [67]. The third chick, which was clearly smaller than the other two, left the nest for the first time on 05 June. On 07 June I saw the two larger chicks feeding together with the female on a Neem tree Azadirachta indica, which was about 15 m away from the nest tree. After feeding for about 10 min, the female went back to the nest to feed the third chick. One of the two larger chicks returned to the nest and continued feeding with the smaller chick. It became more difficult to follow the fledglings after 10 June, when all three were dispersed in different trees around the nest tree. It was around this time (35 days from hatching) that I saw one of the fledglings hunting for insects on the ground immediately after a spell of rain. I saw the male in the vicinity of the nest tree for the last time on 16 June 2020 (50 days after hatching). At least two juvenile birds were seen in the vicinity of the nest till early August (80 days after hatching).

Feeding

I observed a total of 36 prey items that the male brought to the nest for the female, or the chicks, during the observation period. During the incubation phase, I observed the female hunting around the nest on four occasions. She succeeded at hunting one Garden Lizard Calotes versicolor and one small lizard which I could not identify. She failed, twice, to hunt the Northern Palm-squirrel Funambulus pennantii. During the incubation phase, I observed the male bringing prey for the female on six occasions (Table 1). The male would always bring the prey to another Dalbergia sissoo tree, which was about 10 m from the nest tree. This became such a routine that I labeled it as the feeding tree in my notes. The male would call softly as he flew to this tree. The female would then leave the nest and collect the prey, which the male would often leave on a branch and fly away. The male never assumed incubation duty during feeding breaks of the female, although he would sometimes peep in the nest before flying away. On taking hold of the prey, the female would first preen herself thoroughly and stretch her body and wings for about five minutes each time. She would then eat the prey in the feeding tree itself or a nearby Neem tree. This pattern continued even after the chicks were born. The male continued to deliver prey in the feeding tree even after the chicks hatched, but if the female was not around the nest, he dropped the prey into the nest and flew away. If the female caught prey herself, she would still bring it back to one of these two trees, eat part of it, and then take the remaining to the nest for the chicks. In the nest, the female would pull out pieces of flesh and feed it to each chick.

The Garden Lizard was the commonest (47.2%) prey species hunted by both the sexes. Smaller species of lizards, including skinks, Fan-throated Lizard Sarada sp., and day-gecko comprised the secondary prey base (19.3%). Surprisingly, rats and birds were brought to the nest once, and twice, respectively. I could not identify the prey species on nine occasions (25%), but these are likely to be biased samples towards smaller prey species, which could have included large insects, mice, small lizards, and small birds.

Interactions with other species

A pair of Large-billed Crows Corvus macrorhynchos were also nesting on a Cassia sp. Tree, which was about 30 m southwards of the Shikra’s nest. Both, the male, and the female would chase the crows if they ventured even 10–15 m northwards of their own nest. On two occasions I saw the male shikra seemed to attack the crow’s nest, getting within touching distance of their nest. I never saw the crows get to within 100 m southwards of the Shikra’s nest. On 31 May, the female Shikra hunted a Red-vented Bulbul Pycnonotus cifer about 100 m southwards of the crow’s nest. Both the crows tried to steal it from her, but she defended it for over 10 min., after which the crows left because the commotion attracted some people from a nearby farm (Suryawanshi 2020). Interestingly, the female Shikra sat in a nearby Acacia sp., tree, ‘ignoring’ the people who tried to get a look at her from a distance of about 10 m. She quickly ate part of the prey and carried the rest to the nest, flying in a semi-circle, keeping c.100 m from the crows’ nest.

Greater Coucal Centropus sinensis were not tolerated within
calls of the Madagascar Paradise Flycatcher and Spiny-tailed Iguana (*Oplurus cuvieri cuvieri*) of predation by a Shikra. Ito & Mori (2010) found that Madagascan Red-vented Bulbuls were always one of first to call in alarm at an approaching Shikra. It would be interesting to investigate whether the lizards eavesdrop on the bulbul alarm calls to mitigate the risk of predation by a Shikra. Ito & Mori (2010) found that Madagascar Spiny-tailed Iguana (*Oplurus cuvieri cuvieri*) eavesdrops on the alarm calls of the Madagascar Paradise Flycatcher (*Terpsiphone mutata*). To detect predators such as snakes and raptors, the Northern Palm Squirrel (*Funambulus pennantii*) was another common species in the landscape that was never seen among the prey brought back to the nest. Similar to the Red-vented Bulbul, the palm squirrels were quick and loud in their alarm calls.

The Shikras boldly defended their nests from different kinds of intruders. The female coordinated with the male in defending the nest when the threat was serious. Kannan (2020) reported a Shikra defend its nest from two Sri Lanka Grey Hornbills (*Ocyceros gingolensis*) that had landed on the edge of its nest. I noticed that the Shikras made a range of different calls, but I could not measure or describe them in detail. I suspect that they communicate deeper information about the type and level of threat, and perhaps even location, and direction in their calls. Coordination between female and male Shikras, in defence of their nest and vocal communication, would be an interesting area for future research.

This article communicates observations on a single nest of the Shikra, but the details offer clear directions for future work on its nesting behaviour.

**Acknowledgement**

I would like to thank my father, Ramesh Suryawanshi, for sharing his knowledge of the local natural history, which made this experience even more rewarding.

**References**


Campbell, O., 2018. Recent sudden expansion in the breeding range of Shikra (*Accipiter badius*) in the UAE. *Trabula* 26: 65–70.


**Table 1.** Prey species brought to the nest by the male and the female Shikra during 61.25 h of observation between 17 April and 10 June 2020. The incubation phase was between 17 April and 06 May, while the nesting phase was between 07 May and 10 June.

<table>
<thead>
<tr>
<th>Prey species</th>
<th>Incubation</th>
<th>Nestling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Garden Lizard</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Small lizard sp.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Red-vented Bulbul</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bird sp.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rat sp.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unidentified</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>
A strange encounter with an unlikely visitor: A Eurasian Woodcock Scolopax rusticola in Hyderabad, Telangana

On 20 February 2021, at 1430 h, my wife Rithika, and I were driving on Hyderabad’s extremely congested Begumpet road when our eyes fell upon a strange shape overhead, adjacent to the flyover. It was a bird entangled in a kite manja (=glass coated string), struggling to break free. The closer we got to the bird, the better we could discern its ‘jizz’. That it was a wader was apparent, but which one? From that distance it seemed like a godwit (Limosa sp.). Barely had we reached a consensus when we realised that it was impossible to pause, or slow down on the road because of the traffic, and if we were to attempt to rescue the bird, or even take a good look at it, we would have to negotiate a lengthy U-turn to return to the spot. By the time we did so, a crowd had gathered there, and the bird was missing! To our relief we learned that a Good Samaritan, Raja Rajput, had managed to stall traffic, disentangle the bird, and retrieve it from the manja. Rithika collected the bird from him, brought it to the car, and we carefully wrapped it in a spare towel [68]. By the time the creature was in our hands, we had been able to decipher that it was a snipe, but both of us being a bit rusty with our waders, could not zero down on a species. Provisionally, we assumed that it could have been either a Common Gallinago gallinago or a Pintail Snipe G. stenura, the likeliest snipes to visit the polluted drain that flows through Begumpet.

Following frantic phone calls to Farida Tampal of World Wide Fund for Nature—Hyderabad, and Shreya Paropkari of Humane Society International India’s Hyderabad chapter, we decided that the best recourse for this injured winter visitor would be to hand it over to the veterinarian, Dr Syed Asaduddin, at the Nehru Zoological Park. We coordinated with Laxmi Narayan, the park biologist, who received the bird from us, and promptly administered first aid. He noted the details of the bird, and allotted it an enclosure in the company of a few injured herons and hornbills. After learning that Dr Asaduddin was busy tending to a critical case at the veterinary unit, we left the bird in the care of Laxmi Narayan and left.

We may had been relieved that the bird was in safe hands, but our thrill was barely quelled, as we had yet to figure out which species of snipe we had just had this tryst with. No sooner did we reach home than I settled with my field guide in one hand, and www.orientalbirdimages.org open on my web browser, matching references, illustrations, and pictures with the mobile photographs of the bird we had taken whilst it was in our hands. Looking at the bold horizontal bars on the crown and nape, the unusually long eye-stripe and the characteristic grey blotches on the bird’s wings, it did not take us long to deduce that the bird was among the unlikeliest of surprises to spring in Hyderabad: a Eurasian Woodcock Scolopax rusticola. Cryptic, large, and unusual snipes that inhabit dense forests and forage along forest streams, woodcocks are known in India from the upper Himalayas where they breed, and the lower Himalayas and the Western Ghats where they spend their winters. The range maps on eBird yielded no records from Hyderabad or the south-eastern parts of the country. I had seen this bird once before in the Eaglenest Wildlife Sanctuary, Arunachal Pradesh.

Ali & Ripley (2001: 294) observed that ‘From striking paucity of records in Peninsular India, probably journey from Himalayas performed in a single non-stop flight,’ and then, uncharacteristically contradicted that with, ‘Indications suggest that the birds reach their southern winter quarters mainly by the Eastern Ghats route.’ Grimmert et al. (2011: 154) have a map that shows an isolated record from northern Telangana State, which is inexplicable (Tim Inskipp confirmed the ‘circle’ in Andhra Pradesh being based on Abdulali’s ’Paderu’, pers. comm., e-mail dated 26 February 2021). Rasmussen & Anderton (2012: 126) show a two-way migration along the Eastern Ghats, across the peninsular plains, to the Western Ghats (Map 58.9). Historical records from the Eastern Ghats are few: McMaster (1875: 14) stated, ‘I have flushed a woodcock in the hills of the Northern Districts near Goodurn, in the Golconda Zemindary (=Golugonda, Visakhapatnam District, Andhra Pradesh; 17.68°N, 82.47°E) …’ (McMaster 1871: 111); Hume & Marshall (1881: 312) footnoted, ‘Guddam in the Golconda Zemindari—McMaster’; Arbuthnot (1915: 777) recorded L. T. Harris shooting ‘birds’ at Salabam (18º10’N, 82º45’E), Eastern Ghats, on 26 February [1915]; and Abdulali (1945: 346) quoted the Gazetteer (sic) “… the Woodcock has been seen around Paderu” [=Paderu]. Paderu is in the hills, west of Sankarametta. I did not see a single snipe during Christmas—the soil is perhaps too sandy.’ Raju (1985: 6) listed ‘Paderu’, most probably, based on this source. Taher & Pittie (1989: 10) listed it under ‘Eastern Ghats’ based upon Abdulali (ibid). It was Abdulali (1953: 747) who first wondered whether “… the paucity of data regarding the movements of the woodcock from the ornithologically better investigated Deccan and Western Ghats indicate that the birds may perhaps reach the Nilgris by way of the Eastern Ghats?’ The only published record of the Eurasian Woodcock that I could locate, from the peninsular plains, was that of one seen on 28 October 1991 in Bengaluru (Daniels 1991: 14). That bird would have been on its way to the Western Ghats, whereas the one recorded here, may have been returning to its breeding grounds. It does show, however, that the amazing cryptic plumage of this wader, and its crepuscular and nocturnal feeding habits have fooled birders in the peninsular plains, for decades.

Little did Rithika and I know that the bird wrapped in our spare towel would prove to be an ornithological marvel!

Correspondence

A strange encounter with an unlikely visitor: A Eurasian Woodcock Scolopax rusticola in Hyderabad, Telangana

On 20 February 2021, at 1430 h, my wife Rithika, and I were driving on Hyderabad’s extremely congested Begumpet road when our eyes fell upon a strange shape overhead, adjacent to the flyover. It was a bird entangled in a kite manja (=glass coated string), struggling to break free. The closer we got to the bird, the better we could discern its ‘jizz’. That it was a wader was apparent, but which one? From that distance it seemed like a godwit (Limosa sp.). Barely had we reached a consensus when we realised that it was impossible to pause, or slow down on the road because of the traffic, and if we were to attempt to rescue the bird, or even take a good look at it, we would have to negotiate a lengthy U-turn to return to the spot. By the time we did so, a crowd had gathered there, and the bird was missing! To our relief we learned that a Good Samaritan, Raja Rajput, had managed to stall traffic, disentangle the bird, and retrieve it from the manja. Rithika collected the bird from him, brought it to the car, and we carefully wrapped it in a spare towel [68]. By the time the creature was in our hands, we had been able to decipher that it was a snipe, but both of us being a bit rusty with our waders, could not zero down on a species. Provisionally, we assumed that it could have been either a Common Gallinago gallinago or a Pintail Snipe G. stenura, the likeliest snipes to visit the polluted drain that flows through Begumpet.

Following frantic phone calls to Farida Tampal of World Wide Fund for Nature—Hyderabad, and Shreya Paropkari of Humane Society International India’s Hyderabad chapter, we decided that the best recourse for this injured winter visitor would be to hand it over to the veterinarian, Dr Syed Asaduddin, at the Nehru Zoological Park. We coordinated with Laxmi Narayan, the park biologist, who received the bird from us, and promptly administered first aid. He noted the details of the bird, and allotted it an enclosure in the company of a few injured herons and hornbills. After learning that Dr Asaduddin was busy tending to a critical case at the veterinary unit, we left the bird in the care of Laxmi Narayan and left.
While this note was being written, the woodcock, diagnosed with a fractured left wing, was being treated for injuries, had recovered from its initial shock, and had begun feeding on grasshoppers and worms being served to it by the zoo authorities. In the coming days, we hope with our fingers crossed that the visitor will be able to spring back to good health, and return to its breeding grounds in the Himalayas. And if all goes well, may this woodcock, on its next journey to the Eastern Ghats from its breeding grounds in the Himalayas, pause at Hyderabad to reminisce Hyderabad hospitality!

I would like to thank Raza Kazmi and Praveen J., for helping locate online, the works of McMaster, which helped understand this woodcock, on its next journey to the Eastern Ghats from its breeding grounds in the Himalayas. And if all goes well, may this woodcock, on its next journey to the Eastern Ghats from its breeding grounds in the Himalayas, pause at Hyderabad to reminisce Hyderabad hospitality!

References

An Indian Scops Owl Otus bakkamoena breeding in an artificial wooden nest box

The Indian Scops Owl Otus bakkamoena is widely distributed from the Indus Valley in Pakistan, eastwards till south-western West Bengal and across the entire Indian peninsula southwards of the Himalayas (Ali & Ripley 1983). They generally nest in tree hollows and at times in abandoned buildings near habitation (Holt et al. 2020). We report an instance of the Indian Scops Owl breeding in an artificial wooden nest at the Punjabi University Campus (30.36ºN, 76.45ºE), Patiala—1,278 sq km wooded campus adjacent to the NH7 Rajpura-Patiala Road.

In 2016, a total of 200 artificial wooden nest boxes were installed at different locations in the campus, under the activities for Corporate Social Responsibility. These nest boxes were installed on the trunks and branches of trees, at various heights between at 2.5 m and 6.0 m, depending on the heights of trees. The nest boxes were roughly of two sizes, 20x22x25 cm (lxbxh) and 15x12x7 cm, with a 5.5 cm opening, with two hooks for fixing the boxes on a tree. Most of the nest boxes were occupied by Common Mynas Acridotheres tristis, Brahminy Starlings Sturnia pagodorum, House Sparrows Passer domesticus, and Spotted Owlets Athene brama. However, a pair of Indian Scops Owls Otus bakkamoena occupied one that was fixed on a Shisham Tree Dalbergia Sissoo.

The nest box was found occupied on 23 April 2018 and we subsequently monitored it every day. Opportunistic observations were made from 0600 h to 2200. The pair remained in the nest during most of the day, becoming progressively active from the evening, into the night. They left the nest box for foraging in the night. On 28 April 2018, we saw them collecting dry twigs of plants, and small stones, presumably to construct a nest. After that day, we invariably saw one bird at the nest. The pair aggressively mobbed any other bird in the periphery of the nest. On 02 July 2018, two juveniles were spotted in the nest. They appeared greyish in colour with dark brown horizontal stripes on the belly. Plumage around eyes was absent, and they lacked ear tufts. The bill was greyish in colour, nostrils were not covered with feathering, colour of eyes was bluish and wings were under developed.

Akshay Singh

[Editor’s note: The Eurasian Woodcock succumbed to its injuries in the second week of April 2021.]
On 13 July 2018, one of the chicks fell out of nest, onto the ground below. It was rescued and handed over to the rehabilitation team of the Department of Wildlife, Patiala District. They later informed that it had survived and they used to feed it raw egg in warm water [70]. On 08 September 2018, we saw the other juvenile flying around the nest, and from then on, the nest box was unattended.

There is some evidence that artificial nest boxes positively influence the breeding of birds including owls. Prior studies have shown a larger clutch size in artificial nests occupied by Barn Owls *Tyto alba* and Tengmalm’s Owls *Aegolius funereus* in Norfolk, England and western Finland (Johnson 1994; Korpimäki 1984). Whether nest boxes would benefit tree cavity nesting owls like *Tyto alba* in Norfolk, and Tengmalm’s Owls shown a larger clutch size in artificial nests occupied by Barn Owls in Norfolk, England, or not, is yet to be determined. Prior studies have shown that artificial nest boxes positively influence the breeding of birds including owls. Prior studies have shown a larger clutch size in artificial nests occupied by Barn Owls *Tyto alba* and Tengmalm’s Owls *Aegolius funereus* in Norfolk, England and western Finland (Johnson 1994; Korpimäki 1984). Whether nest boxes would benefit tree cavity nesting owls like *Tyto alba* in Norfolk, or not, is yet to be determined.

We thank the Department of Wildlife, Patiala District (Punjab) for their help to rescue the young one.

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### Ground nesting of Brahminy Kite *Haliastur indus* at Chilika Lagoon

The Brahminy Kite *Haliastur indus* is found throughout India, inhabiting coastal areas, lakes, large rivers, tidal creeks, jheels, and reservoirs (Ali & Ripley 1978; Rasmussen & Anderton 2012). It breeds between December and May, on large trees like *Ficus* sp., *Tamarindus* sp., *Casuarina* sp., etc., preferably near water, and 6–15 m above the ground. The nest is usually a platform of twigs; clutch size varies between two to three greyish-white eggs marked with dull reddish spots (Ali & Ripley 1978). Occasionally, these raptors show some flexibility regarding their breeding behaviour, which are quite rare and unusual (Ellis et al. 2009).

Panchakudi is a small island (hereafter ‘islet’) (19.61°N, 85.21°E) situated in the southern sector of the Chilika Lagoon, Odisha (India). The islet is completely submerged during the monsoon and gradually appears in winter and summer. Every year, River Terns *Sterna hirundo*, Gull-billed Terns *Gelochelidon nilotica*, and Black-winged Stilts *Himantopus himantopus* breed here. To study the breeding ecology of ground-nesting birds, the islet was surveyed in January–June 2019 and January–March 2020. We visited it once in three days, in the early morning, to minimise disturbance.

On 01 March 2019, a Brahminy Kite’s nest was sighted there while surveying ground-nesting birds. We began observing it, following protocols per Barve et al. (2020). The platform nest was made up of stems of dried aquatic plants, grass, and aquatic weeds *Potamogeton* sp. It contained one egg. But it was on the ground along with other colonial ground nesting birds. The nest was loosely constructed, and the cup region was lined with aquatic weeds. It was 45 cm in diameter and 09 cm deep. The nest was situated on the highest part of the islet, c.30 cm asl and 110 cm from the water. The egg hatched on 24 March 2019. Both parents shared parental duties. The fledgling was observed till 27 April 2019, after which it was not seen. It may have been affected by the extremely severe cyclonic storm ‘Fani’, which made landfall near Satapada of Chilika Lagoon on 03 May 2019. Small to medium-sized fishes and, interestingly, remains of a tern chick were also found near the nest.

Ground nesting by raptors is an exceptional event, but it has been recorded in some species such as Pallas’ Fish Eagle *Haliaeetus leucoryphus*, Bald Eagle *H. leucocephalus*, Ferruginous Hawk *Buteo regalis*, Black-chested Buzzard-Eagle *Geranoaetus melanoleucus*, Osprey *Pandion haliaetus*, Golden Eagle *Aquila chrysaetos*, Egyptian Vultures *Neophron percnopterus*, Peregrine Falcon *Falco peregrinus*, and the Barred Owl *Strix varia* (Ferrer 2019; Postupalsky 2001). Basically, occasional ground nesting by raptors occurs on remote islands, in the absence of predators (Ferrer 2019). The ground nesting of a Brahminy Kite was reported in 1990 and 1991 from Point Calimere, Tamil Nadu (Morrison et al. 1992; Balachandran & Sakthivel 1994). Both those nests were made up of twigs of *Prosopis chilensis* and *Suedea* and the inner cup lined with small pieces of dried mud. In contrast to them, at Chilika wetland, the kite used the stems of aquatic plants and lined the inner cup with dried aquatic weeds *Potamogeton* sp., due to the unavailability of trees and dried mud near the nesting site. Nest morphometric data and nesting site preferences matched with Ali & Ripley (1978). But nesting site fidelity was not observed during the subsequent breeding season, unlike Point Calimere, Tamil Nadu (Balachandran & Sakthivel 1994). The distance between the nesting colony of terns and the nest of the Brahminy Kite was about 4.5 m. We noticed the terns occasionally mobbing the kites, especially the River Terns. Food, in the form of fishes and birds (tern chicks) were brought to the nesting, as was observed at in the Causerv Delta, India (Sivakumar & Jayabal 2004) and New South...
The possible reasons for the unusual ground nesting of Brahminy Kite at Panchakudi are: it is remote, without the presence of any large trees and, except Bandicoot rats Bandicota sp., no other mammals exist there, so there is no predation pressure on the kite. It is fairly well known that a breeding site of raptors is influenced by the availability of prey items (Graham & Redpath 1995; Marzluff et al. 1997; Ontiveros et al. 2005) as well as accessibility to them (Widen 1994). This could, possibly, be the reason for the choice of the kites’ nest location, among the colony of ground nesting birds.

We would like to thank Susanta Nanda, IFS, Chief Executive, and Khushwant Singh, IFS, Additional Chief Executive, Chilika Development Authority, for their constant encouragement and support. Thanks to DFO, ROs, and other Forest Department staff of Chilika Wildlife Division for necessary permission and on field help. We convey our gratitude to S. Balachandran, Deputy Director, Bombay Natural History Society, for his support. We thank to Saras Kumar Behera and other technical staff of Society’s bird-ringing centre, Chilika, and boatmen for their help during the work.

References

The Red-flanked Bush Robin *Tarsiger cyanurus* in eastern Arunachal Pradesh—an overlooked species

The Himalayan Bush Robin *Tarsiger rufilatus* and the Red-flanked Bush Robin *T. cyanurus* were, until recently, considered conspecific (Collar et al. 2020). The former has a range that extends from north-eastern Afghanistan and northern Pakistan, eastwards through the Himalayas to north-eastern India (Arunachal Pradesh); northwards to central and southern China, migrating down to lower altitudes, southwards from its breeding grounds and north of South-east Asia (Collar et al. 2020). The Red-flanked Bush Robin has a breeding range from Finland and north-western Russia, and Ural mountains, eastwards to the northern Sea of Okhotsk, Kamchatka, southwards to Altai, northern Mongolia, Japan, north-eastern China, and Korea, and migrates southwards all the way till eastern and south-eastern China, Taiwan, Hainan, and northern South-east Asia (Collar et al. 2020). To summarise, the Himalayan Bush Robin is a short-distance migrant whereas the Red-flanked Bush Robin is quite a long distance migrant.

The Red-flanked Bush Robin has been considered a winter vagrant (Rasmussen & Anderton 2012). There have been only two confirmed historical records of the species, the first, a skin collected by Baker on 02 February 1896 (Baker 1894), while the second, from Saiha, Mizoram, collected by Rupchand Thakur on 20 March 1953 (UMMZ birds #180734). The fact that Himalayan Bush Robin and Red-flanked Bush Robin were considered as same species and their morphological features being similar, the rarer Red-flanked Bush Robin has been overlooked in India. Males are easier to identify: the Red-flanked Bush Robin has a white (versus bluish) pre-ocular supercilium, paler turquoise-blue (versus darker and rich cobalt blue) upperparts, and buffier (versus white) underparts (Rasmussen & Anderton 2012; del Hoyo et al. 2020). The females and first-winter birds are harder to tell apart: they tend to be much warmer brown overall, with more prominent, browner breast band, and dull blue rump and tail, than Himalayan (Rasmussen & Anderton 2012). The most likely area where this species can occur in winter, or during migration, is in extreme north-eastern India, which is comparatively less visited by birders.

Observations
We planned a trip to the Walong region of Arunachal Pradesh, with a plan to search for the Red-flanked Bush Robin in the Lohit and Anjaw Districts of Arunachal Pradesh. Before visiting, we had geared ourselves up with all the identification information. While birding at Udayak Pass (27.91°N, 96.33°E, c.1,640 m), we saw a peculiar looking Bush Robin with a white pre-ocular supercilium [71] (Shah 2020a). Quickly looking through the camera’s viewfinder, DS exclaimed, ‘Red-flanked Bush Robin!’ We were ecstatic and the bird gave us several good views.

We reconnoitred the Walong region for four days, during which we visited Helmet Top and Tilam Top several times. We encountered Red-flanked Bush Robins approximately six times in the montane forests. The males were quite easy to identify, but the females were harder, and were left unconfirmed. During the entire visit, we only encountered one male Himalayan Bush Robin whose picture we were unable to click. The male showed prominent cobalt-blue upperparts and a bluish preocular supercilium. The male was observed along with a female Red-flanked/Himalayan Bush Robin. While on the other hand, all the

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Red-flanked Bush Robins [72] (Shah 2020b) were sighted in mixed flocks with fulvettas, tits, minlas, and yuhinas. Several people, who visited Walong afterwards, found the Red-flanked Bush Robin (e.g., Islam 2021; Saikia 2021). The last sighting of a Red-flanked Bush Robin in Anjaw District was on 24 February 2021 (Mekola 2021). This indicates that the Red-flanked Bush Robin was present in eastern Arunachal Pradesh in the winter of 2020–2021. Additionally, after our trip, a Red-flanked Bush Robin sighted in Changlang was retrospectively identified (Abhyankar 2020). The bird was at first identified as a Himalayan Bush Robin, but later identified as Red-flanked.

While browsing through the images of Himalayan Bush Robin from India, those of a female, or a first-winter bird, are very hard to tell apart from Red-flanked. There have been reported sightings from Bhutan (Fraser 2018) but without supporting media.

In conclusion, the Red-flanked Bush Robin could be a regular winter visitor to extreme corners of eastern India.

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Arboreal feeding by Grey Junglefowl Gallus sonneratii
The Grey Junglefowl Gallus sonneratii is endemic to the hills of peninsular India, and is found in different habitats ranging from evergreen to deciduous forests, bamboo thickets, tea plantations, and forest edges. It is omnivorous and chiefly feed on bamboo seeds, grains, berries, termites, and insects.

The Grey Junglefowl is normally known to feed by gleaning on the forest floor or plucking from ground vegetation (Ali & Ripley 1983). But I report here an instance of Grey Junglefowl feeding in tree’s canopy in Kootikkal, Thattekkad Bird Sanctuary (10.13°N, 76.69°E), southern Western Ghats, Kerala. At 0845 hrs on 24 April 2019, I saw one male and two females feeding on fruits/seeds in the middle to top canopy of a Macaranga peltata tree (locally known as Vatta), at a height of about 20 m from the ground [73, 74]. The tree stood in a mixed teak plantation and the junglefowl were seen feeding in the canopy along with Green Imperial Pigeon Ducula aenea and Black-hooded Oriole Oriolus xanthornus for nearly 1.5 h.
Arboreal feeding of Grey Junglefowl appears to be a novel behaviour as earlier studies on its foraging ecology did not document this behaviour (Gokula & Vijayan 2000; Gokula 2001; Karthikeyan 2007; Somasundaram & Vijayan 2008; Subramanian et al. 2008; Ramesh & Sathyarayana 2009; Nirmala 2016; Pankaj, 2017; McGowan & Kinwan, 2020). This also adds Macaranga peltata to the known food plants consumed by Grey Junglefowl in the wild.

Acknowledgement
I thank the Assistant Wildlife Warden, Thattakkad Bird Sanctuary and Wildlife Warden, Idukki Wildlife Division for support.

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Yellow-throated Bulbul Pycnonotus xantholaemus feeding on the aril of Acacia auriculiformis

On 02 November 2020, at 1109 h, we came across a pair of Yellow-throated Bulbuls Pycnonotus xantholaemus (hereinafter, YTB) while watching birds on a trail leading to the monolithic rocks at Kutagal (12.78°N, 77.23°E), Ramanagara District, Karnataka. The bulbuls were first spotted among the foliage of an Acacia auriculiformis tree from where they flew to another tree of the same species, and one bird began consuming the orange-coloured aril, surrounding the seed [75]. Over the next couple of minutes, we observed the YTB visit multiple seedpods and consume the arils. Subsequently, the birds flew into nearby shrubs and went out of sight.

The YTB is endemic to parts of southern India and has a disjunct distribution despite being known from nearly 100 localities (Jha & Vasudevan 2020). It is a habitat specialist, found in scrub forests in rocky, boulder-strewn landscapes and is currently listed as a vulnerable species (BirdLife International 2021). The YTB is known to consume a higher proportion of fleshy berries compared to insects (Subramanya et al. 2006). The Acacia auriculiformis is an exotic tree native to Australia, which has been planted extensively in India. It produces seeds that are enclosed in pods that open when ripe, exposing the hard dark seeds attached to a red-orange coloured thread-like funicle. The funicle, often referred to as the aril, is believed to be sweet and several frugivorous birds such as the Red-whiskered bulbul Pycnonotus jocosus (Devashyam & Rema 1991), and the Yellow-vented Bulbul P. goiavier (Fishpool et al. 2020) are known to consume it. The Olive-winged Bulbul P. plumosus has been observed to consume arils surrounding seeds of an alloyed exotic tree, A. mangium, as well (Tang 2013).

The A. auriculiformis, an exotic tree, is an addition to the list of plants from which, the YTB is known to consume berries or fruits. The landscape around Kutagal is arid and dry and in several parts, exotic plants such as A. auriculiformis have been planted in the valleys between the rock escarpments. It would be useful to systematically study the diet of the YTB in this region, and in other parts of its range, to understand how much of their diet comprises exotic plants. It would also be insightful to study the vegetation, and examine if the exotic plant is being dispersed by birds such as the YTB, and is subsequently being recruited. The rocky scrub habitat, to which the YTB is restricted, is threatened by large-scale land-use change, rampant granite quarrying, unregulated cattle grazing, and fire (Subramanya et al. 2007). Although the YTB is consuming the aril of A. auriculiformis, the introduction of exotic species may further alter the vegetation profile in the long term. It is plausible that the YTB consuming parts of an exotic plant is an indicator of a dietary shift, induced by the absence of native food sources in its preferred landscape. Further focused research may reveal more insights about its foraging and feeding behaviour.

We thank S. Subramanya and S. Karthikeyan for sharing insights about the bird and its ecology.

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The Rufous-gorgeted Flycatcher Ficedula strophiata and the Black-throated Accentor Prunella atragularis from Punjab, India

Siswan (Sahibzada Ajit Singh Nagar District, Punjab, India) is a small village (30.87°N, 76.75°E), about 22 km from Mohali and 15 km from the state capital, Chandigarh, on the Chandigah–Baddi road, and is located in the foothills of the Shivalik Range. There is a reservoir behind the village, formed due to construction of a check dam on a seasonal rivulet. Hill forests surrounds the reservoir. The Department of Forests & Wildlife Preservation, Punjab, in 2017 declared an area of c.1,295 HA as a community reserve which, along with the reservoir, is a unique blend of forest and wetland ecosystems.

On 26 January 2021, during a visit to the area, I spotted a small bird that seemed unfamiliar to me. It was perching on a low branch of a bush. It was catching insects in the air. Initially, I thought that it was a Bluethroat Luscinia svecica. However, examination of my photographs [76, 77] revealed a different bird. After consulting Gurpartap Singh, we identified it as a male Rufous-gorgeted Flycatcher Ficedula strophiata. The identification of a male of the species is straightforward. The photographs showed a white forehead, olive-brown upperparts, white bases to black tail, orange-rufous patch below the blackish throat, ashy belly grading to white on vent (Ali & Ripley 1998: 158–159). Apparently, the nominate subspecies is what is expected in this region, but I did not attempt subspecies identification based on these photos.

On 14 February 2021, during a visit to the area, I spotted another small bird that I could not identify. Also, I didn’t get a clear view as it kept within the branches of a bush. However, I managed to click a single photo. As I tried to get a better view by getting closer, it quickly disappeared in the thickets. I was fortunate to photograph this bird at same spot on 21 February 2021 [78], with the help of which Gurpartap Singh and I identified it as a Black-throated Accentor Prunella atragularis. The photograph showed an accentor with a prominent white supercilium, a black line above it with black face and throat — a combination that is not shown by any other accentor species (Kazmierczak 2000: 298–299; Grimmett et al. 2011: 486–487). Other features like streaked flanks and yellowish neck-sides are also visible.

Two subspecies are mentioned in the extant literature; however, no attempt is being made here to identify subspecies. On both occasions, I immediately checked on eBird, and enquired with several birding groups of Punjab, about the birds’ novelty. Apparently, nobody had earlier recorded these two species from Punjab, India. I retrieved relevant literature from (Pittie 2021). In a list of 233 species of birds recorded from four small natural wetlands, within a range of 10 km around Gurdaspur, Punjab, India, the Rufous-gorgeted Flycatcher has been mentioned by Bal & Dua (2010). In response to my e-mail, R. Bal confirmed that ‘I have searched my database but didn’t find any picture’ and no further details could be obtained (in litt., e-mail dated 27 February 2021). The nominate race is known to descend to lower altitudes after breeding (Clement 2020). Distribution maps in Grimmett et al. (2011) and Kazmierczak (2000) show
was a Rufous-tailed Rock-Thrush, which is an *Monticola saxatilis* and Kumar, co-authors of Balar et al. (2016) confirmed that it was a rock-thrush but the exact species was slightly ambiguous. Saikia, a collision injury. The bird appeared to be a female, or juvenile, but the exact sex was not confirmed. The bird was unable to stand, or open its eyes, possibly due to the injury. The bird was unwell but not at risk of complete recovery. Upon release, the bird’s flight was strong, indicating a complete recovery.

References


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The Rufous-tailed Rock-Thrush *Monticola saxatilis* from Bengaluru, Karnataka

On 25 December 2020, the Avian and Reptile Rehabilitation Centre (hereinafter, ARRC) received a bird-rescue SOS regarding an injured bird in HSR Layout, Bengaluru (12.91°N, 77.65°E). The bird was unable to stand, or open its eyes, possibly due to a collision injury. The bird appeared to be a female, or juvenile, rock-thrush but the exact species was slightly ambiguous. Saikia, and Kumar, co-authors of Balar et al. (2016) confirmed that it was a Rufous-tailed Rock-Thrush *Monticola saxatilis*, which is an uncommon visitor to southern India. This individual is likely to be a first winter bird based on its plumage characteristics: mainly prominent white tips on the greater covert feathers and worn-out feathers with dark centers (Grimmett et al. 2011).

The bird weighed 43 g when admitted to ARRC and after rehabilitation reached a weight of 46.5 g. It was able to perch and feed on its own after being treated for a few days [79]. On 09 January 2021, it was released in Ragihalli State Forest near Bannerghatta National Park, which was chosen as the ideal habitat for it to feed and continue its migratory journey when it was ready. Upon release, the bird’s flight was strong, indicating a complete recovery.

Although considered a regular passage migrant in northern India (Grimmett et al. 2011), there are limited records of the species southwards of Jammu and Kashmir, from other states of India, which include Gujarat, Himachal Pradesh, Karnataka, Kerala, and Rajasthan (Balar et al. 2016; eBird 2021). The Rufous-tailed Rock-Thrush possibly breeds in northern Kashmir as well (Zahler et al. 1998). This is the first record of a Rufous-tailed Rock-Thrush from Bengaluru, Karnataka. The nearest previous sighting was ~240 km away (aerial distance) south-eastwards from Bengaluru, at Bhagamandala, Karnataka, in late November 2013 (Balar et al. 2016). There is also a single record from Kerala, which is from November 2015 (Balar et al. 2016). This record suggests that juvenile birds of this species could be migrating even in December.

We are grateful to the residents of HSR Layout who alerted ARRC to the injured bird. We thank Pranjal J. Saikia and Prashant Kumar S.R. who helped confirm the bird’s identity.
05 October 2020 happened to be one of those mornings—set apart from almost every morning that we would go for birding. Little did we realise that a sighting that day, which was otherwise an uneventful day at Jaipurdoddi, would stand out in posterity.

At 0500 h that morning we MR and NMR, packed up the gear to leave for Jaipurdoddi (12.68°N, 77.57°E), near Bannerghatta National Park, Bengaluru, Karnataka. We reached Jaipurdoddi a little before sunrise at 0600 h and waited in the car, sipping some hot tea, on a short stretch of a mud road in the jungle. The area was quieter than usual. We waited patiently for bird activity to begin as the sun rose from between the trees to a glorious cold morning. Sunrise there in itself is not as dramatic as the wait in anticipation. Little did we know in the waiting however, on this morning is that we would probably be blessed by beginners luck in the sighting and all our skills that we had developed over the last one year of noticing the slightest of the rustle of the leaves from the corner of the eye, spotting the so well camouflaged bird and also getting the camera ready, focusing and clicking in the fraction of a second, would all come together to record a lifer.

After a wait of about a couple of hours or so, moving back and forth on the narrow dirt road in the car at Jaipurdoddi, we were mindful of the elephants who frequent the place. The morning was unusually and eerily quiet and what we did not realise for a while was that there were no birds and there was no bird activity, except an occasional Red-vented Bulbul flitting around.

At 0745 h, we decided to call it a day and turn homeward, mindful of the hour-long drive. Just as we decided to leave, NMR spotted a medium-sized yellow bird that was pretty far off, while I was at the wheel. The bird just flew out of nowhere and perched on a branch providing us a glimpse of its gaudy yellow colour. She exclaimed with joy, "Quick, there’s a yellow bird there", not wanting to lose a chance to click something on a rather uneventful day. I made an attempt to shoot the bird from inside the car itself. As this beautiful little bird hopped from one branch to the other before taking off deeper into the jungle. A couple of seconds is all I must have had, to spot, focus, and click, and luckily, I didn’t miss the shot [80, 81]. Unable to recognise the bird from that distance, and as usual arguing about whether it was Nischitha’s hawk-like spotting skills or my photography, which allowed us to get the picture, we immediately did a google lens search of the pic. It threw up a name, Korean Flycatcher or the Yellow-rumped flycatcher. Not knowing the significance of the sighting, we were just extremely happy to have spotted and recorded yet another beautiful flycatcher to our birding list. It was only later, when we consulted some of the experts, to confirm the identification of the bird, did we realise the significance of the sighting, that it happened to be the first one from Karnataka. There have been less than ten sightings from across India, most of them from the southern parts of India, from Kerala, and the Andaman & Nicobar Islands.

References


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The Yellow-rumped Flycatcher Ficedula zanthopygia in Jaipurdoddi, Bengaluru, Karnataka

05 October 2020 happened to be one of those mornings—set apart from almost every morning that we would go for birding. Little did we realise that a sighting that day, which was otherwise an uneventful day at Jaipurdoddi, would stand out in posterity.

At 0500 h that morning we MR and NMR, packed up the gear to leave for Jaipurdoddi (12.68°N, 77.57°E), near Bannerghatta National Park, Bengaluru, Karnataka. We reached Jaipurdoddi a little before sunrise at 0600 h and waited in the car, sipping some hot tea, on a short stretch of a mud road in the jungle. The area was quieter than usual. We waited patiently for bird activity to begin as the sun rose from between the trees to a glorious cold morning. Sunrise there in itself is not as dramatic as the wait in anticipation. Little did we know in the waiting however, on this morning is that we would probably be blessed by beginners luck in the sighting and all our skills that we had developed over the last one year of noticing the slightest of the rustle of the leaves from the corner of the eye, spotting the so well camouflaged bird and also getting the camera ready, focusing and clicking in the fraction of a second, would all come together to record a lifer.

After a wait of about a couple of hours or so, moving back and forth on the narrow dirt road in the car at Jaipurdoddi, we were mindful of the elephants who frequent the place. The morning was unusually and eerily quiet and what we did not realise for a while was that there were no birds and there was no bird activity, except an occasional Red-vented Bulbul Pycnonotus cafer, Drongo Dicurus sp., Indian Robin Copsychus fulicatus, and a Green Bee-eater Merops orientalis, flitting around.

At 0745 h, we decided to call it a day and turn homeward, mindful of the hour-long drive. Just as we decided to leave, NMR spotted a medium-sized yellow bird that was pretty far off, while I was at the wheel. The bird just flew out of nowhere and perched on a branch providing us a glimpse of its gaudy yellow colour. She exclaimed with joy, “Quick, there’s a yellow bird there”, not wanting to lose a chance to click something on a rather uneventful day. I made an attempt to shoot the bird from inside the car itself. As this beautiful little bird hopped from one branch to the other before taking off deeper into the jungle. A couple of seconds is all I must have had, to spot, focus, and click, and luckily, I didn’t miss the shot [80, 81]. Unable to recognise the bird from that distance, and as usual arguing about whether it was Nischitha’s hawk-like spotting skills or my photography, which allowed us to get the picture, we immediately did a google lens search of the pic. It threw up a name, Korean Flycatcher or the Yellow-rumped flycatcher. Not knowing the significance of the sighting, we were just extremely happy to have spotted and recorded yet another beautiful flycatcher to our birding list. It was only later, when we consulted some of the experts, to confirm the identification of the bird, did we realise the significance of the sighting, that it happened to be the first one from Karnataka. There have been less than ten sightings from across India, most of them from the southern parts of India, from Kerala, and the Andaman & Nicobar Islands.

Praveen et al. (2017) considered this species as tentative in their Karnataka checklist, though there is a sight record from Bandipur National Park on 15 July 2006; despite the description being ‘probably sufficient to be sure of the identification’. We list all confirmed records from India in Table 1. Though it is mainly an East Asian species that may be expected in north-eastern India (no records) and the Andaman & Nicobar Islands (two records); other records are from the southern Western Ghats (three), the Deccan (this record), Central India (one), and eastern India (one). There is no specific pattern on the timing of the bird’s vagrancy: records from October (one), December (two), January
(one), February (one), and April (three) indicate that it could turn up anywhere in peninsular India or in the Andamans during its non-breeding season.

References

Griffon Vulture Gyps fulvus, an addition to the checklist of the birds of Kerala

On 28 December 2020, around 1800 h, we were informed about a vulture found in the compound of a house in Chakkarakal, Kannur District (11.89°N, 75.46°E). The bird seemed to be in an exhausted condition. Sandeep M. C., the rescuer at Malabar Awareness and Rescue Centre for Wildlife (MARC) in Kannur, was informed, and went immediately to the place and rescued the bird. Later the bird was brought to the rehabilitation facility of MARC in Kannur. It was identified as a juvenile Griffon Vulture (Eurasian Griffon) Gyps fulvus, which was confirmed by Vibhu Prakash (Deputy Director Bombay Natural History Society and Principal Scientist, BNHS Vulture Breeding Programme) from the photographs and videos of the bird that we sent him. According to him, its primaries, secondaries, and wing coverts had pointed tips and all these feathers were of the same age indicating a first year bird [82, 83, 84].

Table 1. Yellow-rumped Flycatcher records from India

<table>
<thead>
<tr>
<th>No</th>
<th>Date</th>
<th>Location</th>
<th>Reference</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30 April 1989</td>
<td>Melghat Tiger Reserve</td>
<td>Haribal (1992)</td>
<td>A male described</td>
</tr>
<tr>
<td>3</td>
<td>25 December 2006 &amp; 15 February 2007</td>
<td>Gurukula Botanical Sanctuary, Periya, Wayanad, Kerala</td>
<td>Sashikumar et al. (2011)</td>
<td>A male videographed and later seen by others</td>
</tr>
<tr>
<td>4</td>
<td>15 February 2016</td>
<td>Thattekkad WLS, Kerala</td>
<td>Athri (2016)</td>
<td>A male photographed from a hide. Seen on two days</td>
</tr>
<tr>
<td>5</td>
<td>20 April 2018</td>
<td>Panchalingeswar, Odisha</td>
<td>Das (2018)</td>
<td>A male photographed</td>
</tr>
<tr>
<td>7</td>
<td>27 April 2020</td>
<td>Boat Is., Andaman &amp; Nicobar Islands</td>
<td>Krishnan (2020)</td>
<td>A male photographed</td>
</tr>
<tr>
<td>8</td>
<td>5 October 2020</td>
<td>Jaipur Doddii</td>
<td>This work</td>
<td>A male photographed</td>
</tr>
</tbody>
</table>
This bird had upperparts pale brown with a rufous tinge, indistinct pale streaks on the upperwing coverts, and contrasting black remiges and rectrices, and rufescent medium-brown with pale streaked underparts. Its open wings showed rufous-tinged lesser underwing coverts and a whistled central bar and greater underwing coverts; axillaries brownish. Head and neck fully covered with white down, with a brown ruff with lanceolate feathers. The inner side of its tibia had white feathers and the lateral side had pale-streaked brown feathers. It’s bill, cere, and eyes were dark. All the above are characters matched those of a Griffon Vulture (Alström 1997; Naoroji 2006). The feathers of the upperwing coverts and secondaries had pointed tips, typical of the young bird.

The rufous-tinged pale brown upperwing with indistinct pale streaks, differentiated this vulture from juveniles of the Himalayan Vulture G. himalayensis and Indian Vulture G. indicus, which have a dark brown upperwing with clear white streaks. The underparts and the lateral feathers of tibia had distinct pale streaks [82, 83], unlike an Indian Vulture, which has these feathers without the streaks and are much paler. This bird had an all-black bill and cere, and a fully white down-covered head and neck; the Indian Vulture has a darker, less feathered head, pale cere, and a pale-tipped upper mandible and culmen (Alström 1997). We measured its wing (73 cm), tail (31 cm), and tarsus (11 cm); it weighed 6 kg.

The vulture was rehabilitated as per instructions from Vibhub Prakash. It was kept in a large aviary (3 m x 3m x 4 m) with a 1.5 m high perch from the ground. It was provided with a constant supply of water to drink and to bathe in. The bird was fed daily with half a kilogram of meat for the first week, and later one kilogram of meat thrice a week. During the first week, it usually sat on its haunches, on the floor of the aviary, and stood on its feet only while feeding. By the second week, it flew up to its perch, a horizontal bamboo pole wrapped with ropes [82]. The bird also bathed occasionally. During this rehabilitation period, we ensured that human contact was kept at a minimum. After about a month in confinement, it regained its health and became active: flapping its wings, preening, and feeding well. Before releasing it to the wild, patagial tags (L-8), and a colour band (10), were fitted [83] for future identification.

The bird was taken to Wayanad Wildlife Sanctuary (the only place in Kerala with a vulture population—mainly White-rumped Vulture Gyps bengalensis and Red-headed vultures Sarcogyps calvus) on 31 January 2021 and released at Muthanga on the same day. It was released near a partially eaten carcass of a Spotted Deer Axis axis. The vulture was not present at the release spot that evening and was not seen on the subsequent days. On 28 February, a forest-watcher saw the tagged bird at a carcass, amongst a group of vultures, near the release site.

Two subspecies, G. f. fulvus and G. f. fulvescens are generally recognised but their distribution is poorly known (Alström 1997; Naoroji 2006). G. f. fulvescens is resident in Afghanistan and Pakistan. It migrates to the Indian Subcontinent from the lower north-western Himalayan foothills and northern India to Himachal Pradesh, Nepal, and Assam. The birds are commonest in the arid regions of western India: the Thar Desert of Rajasthan, Kachchh, and Saurashtra in Gujarat. Lack of information and chances of misidentification with the Himalayan Vulture has caused confusion in wintering and breeding range of this species in India (Naoroji 2006). Ferguson-Lees (2001) says that fulvescens is ‘paler and more rufous, crop more cinnamon’, but does not mention the difference in plumage between the races. Genetic studies have found that fulvescens is more closely related to G. himalayensis than to fulvus, and further analysis has been suggested as the two races may turn out to be distinct species (Johnson et al. 2006; Campbell 2016).

In southern India the first sight record of this species was on 02 January 1990 at Sriharikota Island, Andhra Pradesh (Pittie 1990). A bird was photographed on 26 March 2017 from Asurammattam Tower in the Nilgiris, Tamil Nadu (Gajamohanraj 2020). The species was reported as absent in the Western Ghats and the coastal zones of peninsular India (Naoroji 2006), but these recent records suggest that they probably stray more frequently southwards in the subcontinent.

We acknowledge the support of the members of Malabar Awareness and Rescue Centre for Wildlife and their effort in rescuing and rehabilitating the bird. Special thanks to the wildlife rescuers Sandeep M. C., for rescuing the bird, and Sreejith Harvest and Pradeep Alavil for taking care of the bird. We thank Vibhu Prakash, head of Jatayu Conservation and Breeding Centre, Pinjore, for his valuable advice and also for providing the tags and ring. We thank Chief Wildlife Warden Surendra Kumar IFS for giving us the permission to ring the bird. We also thank D. M. Vinodkumar IFS (Chief Conservator of Forest), P. Karthick IFS (Divisional Forest Officer, Kannur), and Range officers Ratheeshan E., Solomon Thomas George, and Jayaprasad for their timely intervention and support. We thank the Wildlife Warden and the Range Officer, Muthanga Range of Wayanad Wildlife Sanctuary, for coordinating the release of the vulture.

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