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Giant Shrike
Tiger Shrike

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Photographer: C. Abhinav

Ornithological results of the Siang Biodiversity Expedition 2022, Arunachal Pradesh, India

Puja Sharma, Priya Singh, Vivek Ramachandran, Rajkamal Goswami, Sanjay Sondhi, Nilanjan Mukherjee, Jagdish Krishnaswamy & Sandesh Kadur

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Abstract

In 2022, we conducted a multi-taxa survey of the sites covered during the colonial Abor Expedition of 1911–12 in the Siang Valley of Arunachal Pradesh. The survey included birds from locations in the East Siang, Siang, and Upper Siang Districts. The bird survey conducted between February and May 2022 involved cataloguing all bird species reported in the region through direct or indirect sightings, including documenting bird data obtained on camera traps as incidental captures and encounters of dead or hunted bird specimens. A total of 267 checklists and 94 bird species' vocalizations were contributed to the citizen-science eBird portal as a result of the survey. A total of 285 species (plus one hybrid) were recorded with some additions to the avifauna of the Upper Siang and Siang Districts. This included 26 species that were recorded as dead or hunted. However, 12 species reported in the 1911–12 study from the same sites were not recorded at this time. Important records include Temminck's Tragopan *Tragopan temminckii*, Blyth's Tragopan *Tragopan blythii*, Sclater's Monal *Lophophorus sclateri*, and migrating flocks of Common Cranes *Grus grus*. This survey from human-modified habitats of Arunachal Pradesh would be a baseline to compare against the bird richness of intact habitats at similar altitudes in the state.

Introduction

In 1911–12, a team of British explorers, surveyors, and military personnel collected numerous zoological specimens, including birds, from southern parts of the Siang Valley in present-day Arunachal Pradesh, the findings from which were published as the 'Zoological Results of the Abor Expedition 1911–12'; these included 192 bird specimens, representing 111 species collected by multiple officers, and catalogued by Baker (1913). In 2022, we resurveyed the same valley with additional areas to conduct a comparative multi-taxa study aimed at understanding how changing landscapes over relatively large temporal scales influence biodiversity.

In this study, we documented the avifauna of the Siang Valley (Fig. 1) from February to May 2022 and present an annotated checklist of birds reported in the region during this period. In addition to direct sightings, we documented bird data obtained on camera-traps as incidental captures during the mammal surveys of the study. We also documented any encounters of dead or hunted bird specimens during the course of our study. Finally, we discuss significant ornithological records and noteworthy sightings with respect to previously published literature and records of the region. We compared our findings with all previously published literature and checklists for the region, including the eBird Basic Dataset up to December 2022 (eBird 2023a), and report new additions of bird species to the Upper Siang and Siang Districts of Arunachal Pradesh.

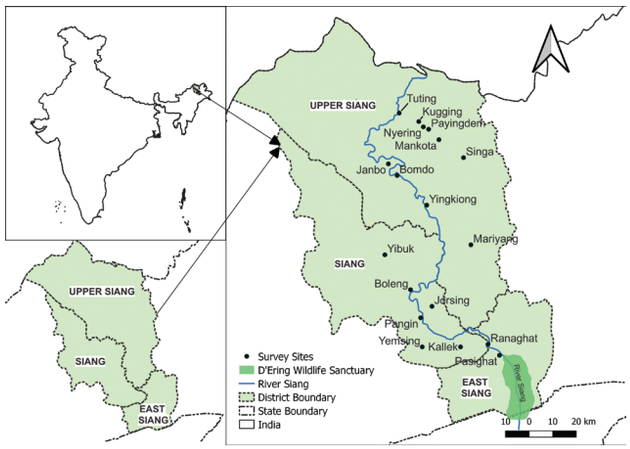

Fig 1. Map of the study area and the field sites (map prepared using QGIS v.3.26.3).

Methods

Study Area

The Siang Valley, located in the state of Arunachal Pradesh, is recognized as a part of the Assam Plains and the Eastern Himalaya Endemic Bird Areas (Stattersfield et al. 1998) and includes several Important Bird Areas (IBAs) (Birdlife International 2023a). Our study area within this region is spread across three districts of the state: Upper Siang, Siang, and East Siang, and therefore extends

beyond the spatial extent of the area previously surveyed during the Abor Expedition in 1911–12.

The data were collected in three districts of the state: Upper Siang, Siang, and East Siang, with a primary focus on four sites in the Yangsang Chu River Valley in Upper Siang. In addition to the locations mentioned (Table 1), birds recorded anywhere within the Siang Valley during the course of our survey were documented.

Table 1. Details of locations surveyed in the Siang Valley, Arunachal Pradesh, India

Location	District	Coordinates	Elevation (m asl)
Kugging	Upper Siang	28.956°N, 94.991°E	800–1,400
Nyering	Upper Siang	28.936°N, 95.011°E	1,200
Payingdem	Upper Siang	28.927°N, 95.031°E	1,500
Tuting	Upper Siang	28.998°N, 94.896°E	500
Singa	Upper Siang	28.816°N, 95.187°E	1,500
Yingkiong-Mariyang	Upper Siang	28.718°N, 94.956°E	400–800
Boleng-Jorsing	Siang	28.257°N, 95.046°E	400–1,000
Kallek	Siang	28.108 °N, 95.169°E	900
Yemsing-Pangin	Siang	28.132°N, 94.956°E	600–1,400
Yibuk	Siang	28.463°N, 94.837°E	800
D'Ering Wildlife Sanctuary	East Siang	27.994°N, 95.439°E	100
Pasighat-Ranaghat area	East Siang	28.112°N, 95.287°E	100–400

The habitat at these locations in the Upper Siang and Siang Districts is primarily tropical wet evergreen forest in the lower areas of the Siang gorge and subtropical broadleaf hill forest at low to mid-elevations up to 1,500 m and Himalayan moist temperate forest at higher elevations, depending on the aspect of the slope (Choudhury 2006). Our field work in these areas primarily focused on private and community-managed lands and forests near the said villages outside the protected areas. In addition to the data obtained via camera traps, our survey sites were all located within an elevation gradient of 100–1,500 m asl throughout the three districts, with 1,500 m asl as the upper limit of our sampling elevation. This included a variety of habitats, such as primary and secondary forests; agricultural lands, including *jhum* shifting cultivation fields and fallow areas; plantations at the edge of secondary forests; and riparian areas in valleys. Habitat in high-elevation areas with temperate coniferous forests, subalpine scrubs, and alpine meadows was not included in our survey sites.

Data collection and analysis

Birds were observed with binoculars and documented using non-invasive methods such as photographs and sound-recordings. Bird checklists were carefully maintained using the eBird app following its recommended protocols during the entire study period from 21 February to 21 May 2022. A dedicated eBird group account, 'Siang Expedition 2022', was managed for this purpose, on which checklists prepared on individual eBird accounts were collectively shared (Siang Expedition 2022). Separate lists were maintained for different habitat-types and for different times of day. Double counting was avoided by maintaining separate lists while backtracking. Field work mainly consisted of walks along accessible hiking trails or established tracks or roads near settlements.

Both direct sightings and vocalizations were used for bird identification. All direct sightings, including direct encounters with dead or freshly hunted/snared birds, along with sound-recording bird vocalizations, were utilised for documentation of records. All indirect sightings of dead or hunted birds from preserved specimens (such as body parts, feathers etc.) were substantiated with photographic evidence, in addition to indigenous knowledge that included descriptions of their habitats and the hunting methods employed by the local population. Avifauna data obtained via 22 camera-trap stations placed between 734–2,189 m asl, primarily aimed at photographing mammals, were also incorporated. Separate lists were manually maintained for both camera-trap data and for dead/hunted bird specimens as per the eBird protocol, which recommends reporting only living wild birds on an eBird Checklist (eBird 2023b).

Bird vocalizations were sound-recorded to understand and study the vocal repertoire of birds found in the region. A total of 742 raw sound-recording files amounting to a total duration of 19.6 hours (19 hours 40 minutes) of field sound-recordings of 94 species were collected between 26 February and 31 March 2022. All sound recordings were made with Tascam DR-100MKIII and Sennheiser ME66/K6 and are archived at the Macaulay Library.

All eBird lists as well as all media collected from different sources were vetted for accuracy by PUS. All records were treated on their merits and substantiated with either sound recordings or photographs; some sight records supplemented with conclusive descriptions were accepted. Records that were inconclusive or unconfirmed for want of more evidence were treated as provisional and not included in the final list documented in this work. Data management and analysis of the dataset downloaded from our eBird group account were performed using MS Excel. Our taxonomy followed the Clements Checklist (Clements et al. 2022) for uniformity with our eBird data during the consolidation and analysis stages of our data. We subsequently converted the nomenclature and taxonomy to follow the 'India Checklist' (Praveen & Jayapal 2024).

Results & Discussion

A total of 267 eBird checklists (178 complete and 89 incomplete checklists as per eBird protocols) were contributed amongst eight observers during the span of this study. To quantify this effort, our field surveys amounted to a total duration of 266.3 hours (266 hours and 18 minutes) and covered a distance of 350.05 km and involved 178 complete eBird checklists. A total of 285 species (plus one hybrid) were reported from the region from February to May, sampling a limited elevation range (<1,500 m). Of the total species, 94 species were sound-recorded, making this study the first of its kind to document the avian bioacoustics of the region.

A total of 111 species were listed in Baker (1913), of which only 81 species were listed from our study area, with a majority of specimens collected from the Rotung, Kallek, and Mishing areas. The remaining 30 species were not considered because they were collected from locations outside our study area, such as the Mishmi Hills and Lower Dibang Valley District in Arunachal Pradesh and the Sadiya Ghat and Kobo Chapori areas in Assam. Of the 81 species listed by Baker (1913) from our study area, 12 species were not detected during our survey period (Table 2).

In comparison with previously published ornithological works and checklists for the region, our study added 20 (plus one hybrid) and 32 species to the avifauna of the Upper Siang and Siang Districts, respectively. Some details of noteworthy ornithological records and significant sightings are briefly described below in taxonomical order. A full list with all the details is available in the

Table 2. List of species in Baker (1913) not encountered during this study
*Locations correspond with map illustrated in Plate I in Kemp (1912: 6)

Species	Locations
Lesser Coucal *Centropus bengalensis*	Abor Hills
Pale-headed Woodpecker *Gecinulus grantia*	Rotung
Greater Yellownape *Chrysophlegma flavinucha*	Between Kallek and Mishing
Large Cuckooshrike *Coracina macei*	Sirpo
White-spectacled Warbler *Phylloscopus intermedius*	Between Kallek and Mishing
White-breasted Parrotbill *Psittiparus ruficeps*	Rotung
Black-crowned Scimitar Babbler *Pomatorhinus ferruginosus*	Rotung
Little Forktail *Enicurus scouleri*	Yembung
White-crowned Forktail *Enicurus leschenaulti*	Mishing
Rufous-breasted Bush Robin *Tarsiger hyperythrus*	Rotung and Bipani
Snowy-browed Flycatcher *Ficedula hyperythra*	Between Kallek and Mishing
Blue Rock Thrush *Monticola solitarius*	Mishing

supplementary information on Zenodo (https://doi.org/10.5281/zenodo.11051941). Several birds (44 individuals belonging to 26 species) were recorded as dead/hunted specimens (Table 3), and camera-trap records are available in the supplementary information (https://doi.org/10.5281/zenodo.11051941). Photographs of dead/hunted specimens are available from the authors upon request.

Noteworthy observations

Some migrating waterfowl and shorebirds: At least three Northern Pintails *Anas acuta*, together with at least two Green Sandpipers *Tringa ochropus*, and a Common Snipe *Gallinago gallinago*, were seen in a small pond at Payingdem (1,500 m) between 20 and 27 March 2022. The first two species were previously reported only from Bomdo (Datta-Roy et al. 2018), while the latter was previously reported only from Tuting (Naoroji & Sangha 2006). While previously reported in the region, a flock of at least 12 Ruddy Shelducks *Tadorna ferruginea* flying low at Nyering in inclement weather was observed on 26 March 2022, and three Bar-headed Geese *Anser indicus* and four Ruddy Shelducks were also observed in the Pasighat-Ranaghat area on the river bank on 26 March 2022.

Blyth's Tragopan *Tragopan blythii* (likely ssp. *T. b. molesworthi*): While previously reported from Mouling National Park (Sen & Jayahari 2017; Datta-Roy et al. 2018), a dead male specimen was encountered near Yibuk village near Mouling National Park on 01 May 2022. As per the local hunter it was hunted in the nearby forest, but the date could not be ascertained. The skin of this specimen with intact plumage was in pristine condition, suggesting that it was hunted in the recent past, and a keychain was attached to its beak, possibly for use for display or decorative purposes. The species is also reported to occur in suitable habitats in Upper Siang District (Choudhury 2010).

Temminck's Tragopan *Tragopan temminckii*: This species was identified based on a photographic record of a dead specimen dated 26 May 2018; a male hunted near the temperate forests of Titapuri located north of Kugging on its northern ridge. Parts of this area fall under the Dihang-Dibang Biosphere Reserve, one of the two IBAs identified in the Upper Siang District (BirdLife International 2023b). A common hunting technique is to lure the birds by mimicking their calls, luring them to an extensive network of snares or traps strategically set up, and effectively fencing off a

Table 3. Records of dead or hunted bird specimens in 2022
*Recorded from the survey sites outside survey period

Common Name	Count	Location	Date of encounter
Dead/hunted bird specimens (direct encounters)			
Blyth's Tragopan *Tragopan blythii*	1	Yibuk	01 May
Kalij Pheasant *Lophura leucomelanos*	1	Kugging	10 March
Grey Peacock-Pheasant *Polyplectron bicalcaratum*	1	Yemsing	27 April
Orange-breasted Green-Pigeon *Treron bicinctus*	1	Bomdo-Janbo	04 January*
Square-tailed Drongo-Cuckoo *Surniculus lugubris*	1	Ramsing	09 May
Golden-throated Barbet *Psilopogon franklinii*	1	Bomdo-Janbo	04 January*
Blue-naped Pitta *Hydrornis nipalensis*	2	Kugging	10 March
Common Green-Magpie *Cissa chinensis*	1	Tuting-Kugging	03 March
Grey-throated Babbler *Stachyris nigriceps*	1	Kugging camp	06 March
Grey-throated Babbler *Stachyris nigriceps*	1	Kugging	10 March
Eyebrowed Wren-Babbler *Napothera epilepidota*	1	Kugging	10 March
Long-billed Wren-Babbler *Napothera malacoptila*	1	Kugging	10 March
Striated Laughingthrush *Grammatoptila striata*	1	Kugging	10 March
Blue-winged Laughingthrush *Trochalopteron squamatum*	1	Kugging camp	06 March
Long-tailed Sibia *Heterophasia picaoides*	1	Kallek	27 February
Beautiful Sibia *Heterophasia pulchella*	1	Kallek	27 February
Silver-eared Mesia *Leiothrix argentauris*	1	Kallek	27 February
Silver-eared Mesia *Leiothrix argentauris*	1	Yibuk	02 May
Lesser Necklaced Laughingthrush *Garrulax monileger*	1	Kugging camp	06 March
Long-tailed Thrush *Zoothera dixoni*	1	Kugging	10 March
Dead/hunted bird specimens (indirect records/photo evidence by local peoples)			
Rufous-throated Partridge *Arborophila rufogularis*	4	Kugging	10 February
Temminck's Tragopan *Tragopan temminckii*	1	Titapuri	26 May*
Kalij Pheasant *Lophura leucomelanos*	4	Kugging	27 February
Red-headed Trogon *Harpactes erythrocephalus*	1	Kugging	21 November*
Long-tailed Broadbill *Psarisomus dalhousiae*	8	Kugging	10 February
Common Green-Magpie *Cissa chinensis*	1	Mankota-Yortong	11 March
Grey Treepie *Dendrocitta formosae*	1	Mankota-Yortong	11 March
Red-faced Liocichla *Liocichla phoenicea*	1	Kugging	10 February
Scaly Thrush *Zoothera dauma*	1	Kugging	10 February
Blue Whistling-Thrush *Myophonus caeruleus*	1	Kugging	01 March
Total Number of Individual Specimens	44		

large area of the bird's habitat for successful capture. It occurs in temperate conifer and broadleaf forests and in subalpine scrub, and is reported to occur in such suitable habitats in the Upper Siang District (Choudhury 2006, 2010).

Sclater's Monal *Lophophorus sclateri*: On 12 and 13 March 2022, a single female and a single male were photo-captured on our camera traps at two sites in Singa at elevations of 1,988 m and 2,144 m, respectively **[35, 36]**. These photographs confirm that it is the nominate subspecies *L. s. sclateri,* and our records are consistent with its known range and distribution (Kumar & Singh 2004). Although the species is reported to occur in Upper Siang District (Choudhury 2006, 2010), there are only two previous records of its primary sightings from Upper Siang District: one recent photographic record of a male during an expedition to Eko Dumbing from April 2021, during which a male Himalayan Monal *Lophophorus impejanus* was also photographed (Ghosh 2021); and an older record likely of a hunted male whose tail was being used as a fan at a local person's house in Mankota, which was documented in December 1999-January 2000 (Newton 2002).

35. A male Sclater's Monal captured on a cameratrap at Singa site 1, at 2,144 m asl, 13 March 2022.

Both: Felis Creations

36. A female Sclater's Monal captured on a cameratrap at Singa site 2, at 1,988 m asl, 12 March 2022.

Grey Peacock-Pheasant *Polypectron bicalcaratum:* While previously reported from Mouling National Park (Sen & Jayahari 2017), we came across the tail feathers of this species being used as a fan in Yemsing village on 30 April 2022. According to the hunter, the bird was trapped from the forests near Yemsing using a snare approximately one year prior to this date. The hunter mentioned that the species is usually found in pairs or small family parties and was once common but has become increasingly difficult to trap.

New cuckoos for Siang District: Eight species of cuckoos were reported, which are new additions to the avifauna of Siang District. These include the Asian Emerald Cuckoo *Chrysococcyx maculatus*, Plaintive Cuckoo *Cacomantis merulinus*, Square-tailed Drongo-Cuckoo *Surniculus lugubris*, Large Hawk-Cuckoo *Hierococcyx sparverioides*, Lesser Cuckoo *Cuculus poliocephalus*, Indian Cuckoo *C. micropterus*, Himalayan Cuckoo *C. saturatus*, and Common Cuckoo *C. canorus*. All species were reported in April and May, with a majority of sightings in May, with the exception of Large Hawk-Cuckoo, which was detected by mid-March, as it started singing inconsistently from the third week of March onwards and was sound-recorded regularly in late March, especially during wet weather. There are no previously documented records for the district for these species, as previous surveys in the region were restricted to winter months, a time when it is usually difficult to detect cuckoos. As per previously published literature and records on eBird, of the eight aforementioned species all have been recorded in the Upper Siang District, except for the Plaintive Cuckoo (Datta-Roy et al. 2018). Banded Bay Cuckoo *Cacomantis sonneratii*, however, is a new addition to the Upper Siang District from our list.

Common Crane *Grus grus*: On 01 March 2022, at 1230 h, a flock of at least 300 individuals was observed circling over the Siang River at Pasighat (150 m) **[37]**. After circling low for 6 minutes, the flock did not settle but split into two large groups and started flying high and further north. On 04 March 2022, at approximately 1215 h, a large flock of vocalising Common Cranes were sound-recorded and observed flying just over the northern ridge of Kugging village (800 m). The flock was sound-recorded from an elevation of 1,200 m, as seen through the forest canopy, for which the numbers were conservatively estimated at 100. This is a significant addition to the avifauna of both the Upper Siang and East Siang Districts and confirms that the Siang River valley is used as a migration route by Common Crane. Our sighting at Kugging suggests that the Yangsang Chu River valley is used as a migration route further north, particularly the valley of Apong Asi (the tributary between the Nyaming and Kugging villages, which joins the Yangsang Chu River on its north bank). In addition to recent sightings of this species reported from Dibang valley (eBird 2023a), the only previously confirmed record of this species from Arunachal Pradesh east of West Kameng District is from the Lower Dibang Valley District of large flocks photographed over the Dibang River near Nizamghat on 07 March 1993 (Choudhury 1994, Choudhury 2006), and another from Mouling but without any details (Sen & Jayahari 2017). Our record also corroborates the suggestion that the Siang River valley is used as a migratory route by cranes, based on a sighting of an unidentified crane flying over the river by Datta-Roy et al. (2018). The first half of March appears to be the time when this species migrates through this region in large numbers, and regular surveys in the area in March should prove productive for monitoring this migration route. It would be useful to bear in mind that both our sightings were at midday, when the birds were likely utilizing thermal updrafts for energy-efficient migration—a phenomenon fundamental for the migration of large species of birds over long distances. The initial low circling that we observed at Pasighat may also suggest that the birds might be testing the thermal efficiency for their onwards flight.

Puja Sharma

37. A part of a flock of 300 Common Cranes (133 in the photograph) in flight, Pasighat, 01 March 2022.

Sandesh Kadur

38. Ringed Great Cormorant record bearing details 'Beijing, China. Box 1928 M01-4260', Yibuk, 01 Jan 2020.

Black Stork *Ciconia nigra*: Another species new for Upper Siang District, though it is regularly reported in the plains of the D'Ering Wildlife Sanctuary. Two individuals flying over the Siang River between Yingkiong and Mariyang, likely migrating through the region towards their breeding grounds, were photographed. Previous records include migrating birds along the Dibang River and small numbers recorded in Mechuka, where one was shot in November 2002 (Choudhury 2010).

Great Cormorant *Phalacrocorax carbo*: On a reconnoitre visit to the region in January 2020, a soft-part specimen of a bird's foot with an attached ring bearing details 'Beijing, China. Box 1928 M01-4260' was found at Yibuk (800 m), bordering Mouling National Park **[38]**. Based on the preliminary descriptions of the bird by the local hunter and from the morphological features of the specimen, it was provisionally identified as a Cormorant sp. These details were then shared with the officials of the BNHS, Wetlands Programme, who further corresponded with the Beijing Ringing Scheme for more information on the ringing details. The banding agency subsequently confirmed that the ring record was of a Great Cormorant, banded as a nestling at Qinghai Lake, China (36.860°N, 100.129°E), on 14 June 2006. Unfortunately, we were unable to establish the exact date of death of this individual. The only two previous records of ring recoveries of this species from Arunachal Pradesh were documented from Seijosa, Pakke-Kessang District and Yazali, Lower Subansiri District, from October-November 1999, and both of those individuals were banded as nestlings at Qinghai Lake in June 1999 (Kumar 2003). Our recovery of this ringed specimen further corroborates the suggestion that some populations of the subspecies *P. c. sinensis* may be regularly wintering in the region and likely migrating through the eastern flyway across the Eastern Himalayas (Kumar 2003).

Oriental Bay-Owl *Phodilus badius*: A new addition to the avifauna of Siang District; a single individual was encountered at dusk, perched on a fence at the edge of a *jhum* field, between Yemsing and the neighbouring forest (650 m) on 28 April 2022. It was a small owl with short ear tufts and an angular face with square facial disks. It flew across the road, giving us an opportunity to see the underparts that were pale buff with some spotting. The angular facial discs eliminated other possible nocturnal species, such as Eastern Grass-Owl *Tyto longimembris* and Short-eared Owl *Asio flammeus*, which have broad, round facial discs. It was also distinguishable from Barn Owl *T. alba*, which is relatively smaller with shorter wings and buff underparts. Barn Owl has been previously reported from Bomdo, Upper Siang District (Datta-Roy et al. 2018), and it is known to be sympatric with Oriental Bay-Owl across parts of their range (Bruce et al. 2020).

Amur Falcon *Falco amurensis* and Eurasian Hobby *Falco subbuteo*: At least 31 Amur Falcons were observed flying at dusk over the Yamne River on 19 May 2022 near Yingkiong-Mariyang, while six were observed at midday, along with one Eurasian Hobby, perched on poles and trees within a wet rice paddy field in the river valley. A few individuals were observed hawking on insects by performing aerial sorties and swoops. It is likely that Amur Falcon uses this route for short-stop overs during its spring migration. Both species are new additions for the Upper Siang District.

Long-tailed Broadbill *Psarisomus dalhousiae*: While reported previously for the region, we reported this species from multiple locations, and at least eight individuals were documented as hunted by catapults near Kugging on 10 February 2022. Such large numbers of this species may easily be targeted due to its behaviour of congregating in large flocks in the non-breeding season in winter. Other conspicuous, brightly coloured, or commonly occurring species near human habitations, such as Grey Treepie *Dendrocitta formosae*, Green Magpie *Cissa chinensis*, Blue Whistling Thrush *Myophonus caeruleus*, Silver-eared Mesia *Leiothrix argentauris*, and various other species, were also easy targets of catapults (Table 3).

Blue-naped Pitta *Hydrornis nipalensis*: While previously reported for Upper Siang District (Ritschard 2006; Datta-Roy et al. 2018), this species was detected when it started vocalizing mid-March onwards and was sound-recorded near Kugging (1,000 m) on 12 and 15 March 2022. On 10 March 2022, we encountered two dead specimens, of a male and a female, that were freshly snared near this area. The local name for this species is 'Pejik' in the Adi Tangam language, a much sought after species, as it is considered a delicacy due to its high fat content and larger size. The locals, including children, use the method of mimicking its fluty whistle-like call to lure the bird, either to hunt it with a catapult or trapping it in bamboo snares placed on the ground. Interestingly, Baker (1913) reported that 'the Abor name for this bird is 'Pajuk'', along with local mythology and folklore associated with this species.

Russet Bush Warbler *Locustella mandelli*: Between 20 and 28 March 2022, at least five very vocal birds were observed and

sound-recorded at Payingdem (1,500) meadows in a small area of 0.4 sq. km, suggesting a healthy population of breeding birds here. The birds were using dense ferns, bushes, and shrubby habitats around the meadows in open areas at the edge of primary forest. However, it was noted that the same land was allocated for an upcoming cardamom plantation by the horticulture department, which may threaten the current breeding habitat of the species at this location. The plantation could instead be reallocated to an abandoned *jhum* field with the support of the local people and the Forest Department to protect the natural habitat of dense ferns and scrub in the meadows. The only two previous records for the species from the Upper Siang District are from Jengging (Alström et al. 2015: 16) and Mouling National Park (Sen & Jayahari 2017), suggesting that it may be an uncommon breeding bird in the region owing to its specific habitat needs.

Grey-headed Parrotbill *Psittiparus gularis*: A new addition for Upper Siang, a flock of seven individuals were sound-recorded in a secondary forest near Kugging (1,100 m) on 08 March 2022, and observed feeding in a mixed flock with Black-chinned *Yuhina nigrimenta* and White-naped Yuhinas *Y. bakeri*. On the same trail, Grey-sided Bush Warbler *Cettia brunnifrons* and Long-billed Wren-Babbler *Napothera malacoptila* were also sound-recorded, the latter two also new additions for the Upper Siang District.

Long-tailed Sibia *Heterophasia picaoides* and Beautiful Sibia *Heterophasia pulchella* (possibly ssp. *H. p. nigroaurita*): Both species were encountered as dead specimens hanging from bamboo/wire snares that were placed on a single orange tree in an orange orchard plantation on 27 February 2022 at Kallek. The tree was deliberately left unharvested with all its fruits either ripe or rotting, primarily for hunting purposes. It is also possible that by leaving one tree unharvested, the orchard owner wanted to prevent crop damage by birds; however, no mesh-net coverings were used in the fruit orchards for this purpose.

Long-tailed Thrush *Zoothera dixoni*: Although previously reported from Bomdo in Upper Siang District (Datta-Roy et al. 2018), this was the only species that was reported across all types of detections that we used in our data: one direct observation of a bird feeding in a cabbage patch at a house in Nyering (1,200 m) on 04 March 2022; one direct encounter of a dead specimen of a freshly snared bird was found near Kugging (1,100 m) on 10 March 2022. Finally, videos from two consecutive days, 16 and 17 March 2022, were subsequently recorded at one camera-trap site of the species feeding on the ground at Simuling (1,939 m), possibly the same individual. These multiple records suggest that this species may not be uncommon in this area in March.

Alpine Thrush *Zoothera mollissima*: Although previously reported in the region, we recorded it only once during our survey, as it usually inhabits elevations above 1,500 m. After a bout of inclement weather with constant rain, one Alpine Thrush was found feeding at an edge of a muddy canal in Kugging village (800 m) on 07 March 2022.

Scaly Thrush *Zoothera dauma*: A new addition to the avifauna of the Upper Siang District, this species was identified from a dead specimen of a bird trapped in a bamboo snare at Kugging village (800 m) on 10 February 2022.

Chestnut Thrush *Turdus rubrocanus*: Although previously reported in the region, one male Chestnut Thrush was recorded at Payingdem village (1,500 m), feeding in large oak trees behind the Payingdem Monastery, along with White-collared Blackbirds *T. albocinctus*. The bird showed a very dark blackish-grey head with a bright yellow bill but without an evident collar and showed a striking contrast to chestnut on the back with dark wings and body in flight. These features matched those of the subspecies *T. r. gouldii*. The photograph of an individual, a female, previously reported from the Yangsang Chu River Valley in early March 2014, also appears to indicate this subspecies (Datta-Roy et al 2018).

Dusky x Naumann's Thrush *Turdus eunomus* x *T. naumanni* (hybrid): On 28 March 2022, while observing some Red-throated *T. ruficollis* and Black-throated *T. atrogularis* Thrushes at Payingdem, a different individual was photographed that showed overlapping features of both Dusky and Naumann's Thrush **[39]**. Due to extremely wet and foggy conditions, it could not be located again after the initial brief sighting. It showed bright rufous underparts with a pale whitish belly; a prominent broad, pale supercilium extending from the bill; a dark greyish face and head pattern with dark ear-coverts patch, dark lores; a whitish chin and throat with no malar stripes or markings; breast and flanks broadly scalloped rufous on an off-white background; extensive rufous on the wings and tail; and a blackish bill with basal half paler. The dark face and head pattern are features of Dusky Thrush, while extensive orange rufous on the breast and flanks is a feature of Naumann's Thrush. Based on these features and because the strong face pattern was more than expected for pure Naumann's Thrush, it was concluded that this individual was a hybrid. Although this hybrid has been recently reported from three districts, West Kameng, Tawang, and Lower Dibang Valley, with a total of only seven records from Arunachal Pradesh (Abhinav et al. 2022), it is a new addition to the avifauna of Upper Siang District.

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39. Hybrid Dusky x Naumann's Thrush, Payingdem, 28 March 2022.

Maroon-backed Accentor *Prunella immaculata*: Previously reported from the region, up to four individuals were observed feeding on Kodo millet grains *Paspalum scrobiculatum* nearly throughout the day at a house in Nyering village during an extremely wet spell on 29 and 30 March 2022, together with one Rufous-breasted Accentor *P. strophiata*. It is likely that the birds were fuelling up during inclement weather before moving on to their breeding grounds at higher elevations. The millets are used by locals to extract alcoholic beverages such as Arak and Apong, and the birds were observed feeding on the fermented grains that were discarded after the extraction process.

Conclusion

Our study provides important ornithological and ecological information on the avifauna of the Upper Siang and Siang Districts of Arunachal Pradesh. Despite high anthropogenic pressures and relatively greater population density than in protected areas in the region, we recorded a total of 285 species (plus one hybrid). The deep valleys of the River Siang that cut across the taller ranges of the Eastern Himalaya are probably acting as an excellent migratory corridor for several species from the lower plains of the Brahmaputra River, including Common Cranes. Our survey also highlights important conservation issues through systematic documentation of dead specimen records, particularly for mountain pheasants and brightly coloured woodland passerines. Major conservation issues currently faced in the region include hunting for food, local trade and trafficking; habitat loss and degradation due to multiple factors, such as the expansion of various forms of agriculture, such as shifting cultivation (*jhum*), wet cultivation, monoculture plantations, logging and felling for various purposes, including local-level use, timber trade, and the construction of mega dams (Choudhury 2010). Urbanization is an emerging phenomenon that is likely to directly or indirectly impact bird habitats (Mandal et al. 2022). The impacts of climate change on landcover and on people-nature relationships are another phenomenon of concern (Saikia et al. 2020). Our results, when compared to similar surveys wholly located in Protected Areas, would contribute in revealing a true picture of the effects of anthropogenic pressures on this region. Our study, therefore, demonstrates the value of documenting birds outside protected areas in relatively heavily populated areas with higher anthropogenic pressure.

Previous surveys and published literature of the region (listed in Choudhury 2006, Choudhury 2010) and recently published studies and checklists for the Mouling National Park (Sen & Jayahari 2017) and for the Upper Siang region (Datta-Roy et al. 2018) have significantly contributed to understanding the incredible avian diversity of the region. Periodic, comprehensive surveys that systematically document data focused on multiple taxonomic groups for a given region are essential for long-term biodiversity monitoring. This study further underscores the avian diversity of this landscape, and we hope our data can be used as a baseline to address its conservation issues.

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Ornithological collections at the Department of Zoology, University of Dhaka, Bangladesh

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Abstract

The Emeritus Professor Kazi Zaker Husain Museum of the Department of Zoology, University of Dhaka, holds one of Bangladesh's largest natural history collections, with specimens collected before the 1970s, yet needs to be properly catalogued. In this study, we documented the ornithological collection of the museum. This collection contains a total of 1006 specimens from 198 different species belonging to 61 families and 19 orders–about 30% of the bird diversity reported from Bangladesh. It includes 11 IUCN Threatened and Near Threatened species and 27 species listed in CITES, such as the Critically Endangered White-rumped Vulture *Gyps bengalensis* and four Vulnerable species: Common Pochard *Aythya ferina*, River Tern *Sterna aurantia*, Great Hornbill *Buceros bicornis*, and Great Slaty Woodpecker *Mulleripicus pulverulentus*. With the collection being digitized and information systematically archived, the museum can assist in future research, such as examining the ecological history of many rare, threatened, and less-studied birds in the country.

Introduction

Natural history collections are one of the primary sources of information about the biogeography, taxonomy, systematics, and evolution of living organisms (Winker et al. 2010; Kress 2014). The collection of specimens across a wide spatiotemporal scale helps in understanding biodiversity as well as changes in biodiversity. With the advent of technology and increased accessibility to data-sharing platforms, such as the Global Biodiversity Information Facility (GBIF), decade-to-century-old natural history collections act as baseline biodiversity inventories (Jonson 2005; Cooper et al. 2019).

Bangladesh is a small South Asian nation with an area of 147,610 sq. km bordering the Indo-Burma and Eastern Himalaya biodiversity hotspots (Khan 2018). Although one of the densest countries in the world with little forest cover remaining, remarkably, the country harbours more than 700 species of birds. The assemblage is approximately 7% of the world's total bird species. (Grimmett et al. 2021; Khan 2018).

In Bangladesh, of the approximately 50 museums that hold a decent collection of birds and other wildlife, most are owned and maintained by public universities and graduate colleges (Abbas 2016). The Emeritus Professor Kazi Zaker Husain Museum of the Department of Zoology, University of Dhaka, Dhaka, a public museum, also holds a large collection. However, the cataloguing or evaluation of these collections has not been attempted, even though such information is available and well maintained in different natural history collections in other countries within the Indian subcontinent (Chavan & Krishnan 2003).

In this paper, we attempted a systematic evaluation of bird collections in the museum of the Department of Zoology, University of Dhaka. We provide our results as summaries, while the complete details are provided in the supplementary material.

Materials and methods

All specimens were dry skins and were kept in exhibition chambers and reserve cabinets. We cleaned them with blow brushes following the dry-cleaning method of Palumbo (2012) and Moore (2015). We restored specimens with mild damage following Davie (1894). Precautionary measures were followed using Davie (1894) due to the presence of pesticidal arsenic compounds (Marte et al. 2006).

We found no register that tracked the collection. Henceforth, we examined all the bird skins for identification purposes and associated field slips attached to the tarsus for any available information. We added new tags to all the specimens following contemporary taxonomy (del Hoyo & Collar 2014; 2016) while retaining the old tags. However, in the case of severe deterioration and disfigurement, we separated the specimens and labelled them unidentifiable. Wherever available, we extracted the date and place of the collection from the field slip. The data were digitized, and all locality details were georeferenced. In addition, we provided a new data card for every specimen containing an individual accession number, scientific name, vernacular name, and, depending on the availability, the date of collection, locality, habitat, and name of the collector, as well as the date of re-evaluation and name/s of re-evaluators. Finally, we shelved the specimens according to the taxonomic clustering in del Hoyo (2020) and stored them in separate cabinets–coded in conjunction with the accession numbers.

For this work, we updated the taxonomy following Praveen et al. (2024). Here, we provide a catalogued list of species, number of specimens, and pertinent collection information. We also checked the conservation status of each species following the IUCN Red List of Threatened Species (IUCN 2024). A complete catalogue with all the details has been uploaded to Zenodo.

Results

In the Emeritus Professor Kazi Zaker Husain Museum, we found a total of 1006 specimens comprising 198 species belonging to 61 families under 19 orders (Appendix 1, https://doi.org/10.5281/zenodo.11410463). The order Passeriformes was the most diverse (n = 83), followed by 49 species of waterbirds belonging to 12 families and five orders. Sixteen raptor species from three different orders were present in the collection. Piciformes has 12 species of woodpeckers and barbets. There are nine species of Coraciiformes (kingfishers, rollers, and bee-eaters). There are eight species each of Columbiformes (pigeons and doves) and Cuculiformes (coucals and cuckoos). The remaining five orders (Galliformes, Caprimulgiformes, Bucerotiformes, Psittaciformes, and Trogoniformes) were represented by fewer than five species (Fig. 1).

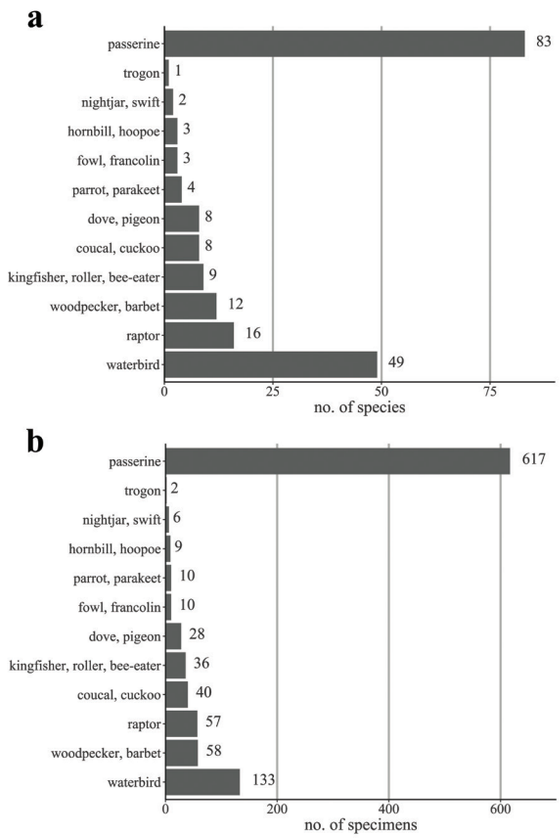

Fig. 1. Different groups of birds in the ornithological collections of the Emeritus Professor Kazi Zaker Husain Museum, Department of Zoology, University of Dhaka, Bangladesh. **a.** Total number of species; **b.** Total number of specimens.

The museum has specimens of 11 Threatened and Near Threatened birds as per IUCN: Critically Endangered White-rumped Vulture *Gyps bengalensis* apart from four Vulnerable (Common Pochard *Aythya ferina*, River Tern *Sterna aurantia*, Great Hornbill *Buceros bicornis*, and Great Slaty Woodpecker *Mulleripicus pulverulentus*) and six Near Threatened (Ferruginous Duck *Aythya nyroca*, Oriental Darter *Anhinga melanogaster*, Grey-headed Fish Eagle *Haliaeetus ichthyaetus*, Green Imperial Pigeon *Ducula aenea*, Blossom-headed Parakeet *Psittacula roseata*, and Red-breasted Parakeet *P. alexandri*) species. We found 27 species listed in the CITES (one in Appendix I, 24 in Appendix II, and two in Appendix III) (see Supplementary material).

All bird species were collected from Bangladesh, of which 149 were residents and 49 were migrants (three summer breeders and 46 were wintering species). According to Thompson & Chowdhury (2023), there were specimens of 18 species considered rarities in the country (14 residents, four wintering species), such as the Black Francolin *Francolinus francolinus* from Savar, a peri-urban area near Dhaka, the capital of Bangladesh (EPKZHMDU#Dis_Francolinus_francolinus_01) and the Grey Peacock Pheasant *Polyplectron bicalcaratum* from Chattogram (EPKZHMDU#Dis_Polyplectron_bicalcaratum_01); both of these specimens were collected in 1970.

Among 1006 bird specimens, only 698 specimens (69.38%) had adequate spatiotemporal data. The available data revealed that specimens were largely collected from central, northern, and eastern Bangladesh, which encompasses wetlands, riverine grasslands, mixed evergreens, and wet deciduous forests (Fig. 2). Only six specimens came from the mangrove forests.

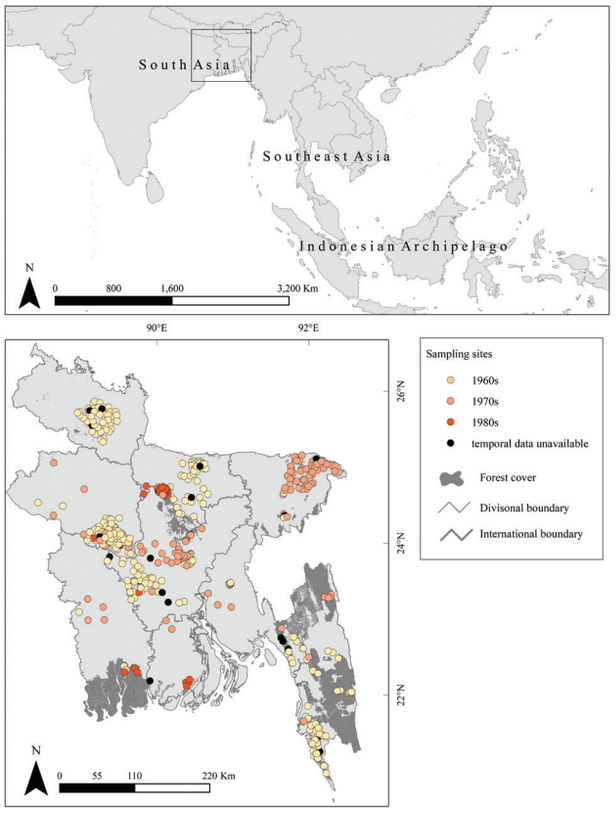

Fig. 2. The geographical distribution of sites where collections were carried out based on the spatial records extracted from the old field tags of 698 bird skins.

In the 1960s, 382 specimens of 131 species were collected. It gradually decreased to 281 specimens and 98 species in the 1970s and 53 and 31 in the 1980s. The latest specimens were dated back to 1993 (Fig. 3). Most collections were made in winter (396 specimens, 134 species), following that is monsoon (187 specimens, 69 species), and lastly in summer (134 specimens, 76 species).

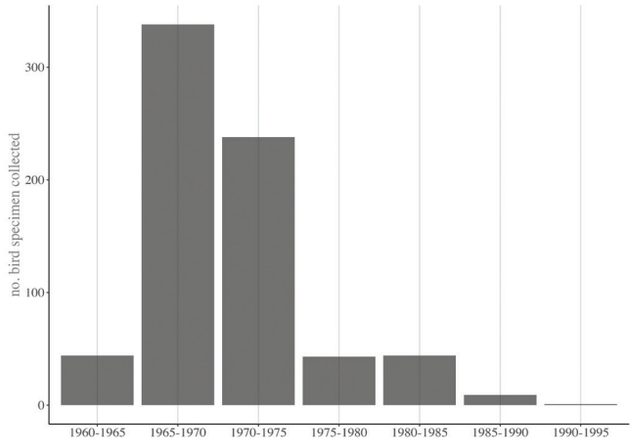

Fig. 3. The time periods of collection of bird specimens were based on the temporal records extracted from the old field tags of 698 bird skins.

Discussion

The study catalogues the current state of the largest and oldest ornithological collection archived at a public university in Bangladesh. The collection contains nearly 30% of the 721 species reported in Bangladesh to date (Thompson & Chowdhury 2023).

Natural history collections are becoming increasingly difficult to sustain. This practice is curtailed by statutory laws or even criticized for compromising bird diversity (Minteer et al. 2014; Waeber et al. 2017). In this museum, we also observed a decline in specimen accumulation over the years, and this timeline coincides with the legislation of the conservation acts in Bangladesh and the formation of CITES, the global regulatory body to regulate wildlife trade. In contrast, similar to the study of Zarrin (2023) that examined the bird collection of the Lucknow State Museum, Uttar Pradesh, India, this bird collection also has historical value in providing an overview of the biodiversity of Bangladesh during 1960–80, a period when biodiversity inventorization was hardly a norm in the country. In developing countries, where wildlife research and conservation practices are still evolving, such scientific collections will prove to be gap filler. As the world is facing a massive biodiversity decline and Bangladesh is no different in this respect, old specimens such as this can be particularly useful for understanding the ecological history of certain sites that have undergone some massive alteration due to human activities (Monteiro et al. 2016). For example, a specimen of the Black Francolin *Francolinus francolinus*, a species of grassland and shrubland, was collected near Dhaka, the capital of Bangladesh. The site is now completely urbanized, and the species has lost 95% of its range in Bangladesh (Sourav 2014).

This study necessitated systematic cataloguing to maintain the value of scientific collections. It also highlights the precarious state of the collection, which was previously well catalogued, with more than half of the specimens requiring a curative or preventive conservation approach. Many field tags were partially or completely deteriorated or missing, depriving science of vital information. The present digitised catalogue will now enable proper archiving, facilitate future research, and be coupled with open-source biodiversity archives such as the GBIF. More effort should be expended to quickly bring out catalogues for other existing collections in the country. Taken together, these works will provide an opportunity to compare the previous and present bird diversity of the country.

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Appendix 1. Total number of bird skins per species present in the ornithological collections of the Emeritus Professor Kazi Zaker Husain Museum, Department of Zoology, University of Dhaka, Bangladesh. Supplementary material 1 provides a detailed description of each specimen.

Sl No.	Common Name	Count
1	Black Francolin *Francolinus francolinus*	1
2	Grey Peacock Pheasant *Polyplectron bicalcaratum*	1
3	Red Junglefowl *Gallus gallus*	8
4	Fulvous Whistling Duck *Dendrocygna bicolor*	3
5	Lesser Whistling Duck *Dendrocygna javanica*	1
6	Tufted Duck *Aythya fuligula*	3
7	Common Pochard *Aythya ferina*	1
8	Ferruginous Duck *Aythya nyroca*	3
9	Gadwall *Mareca strepera*	2
10	Common Teal *Anas crecca*	7
11	Northern Pintail *Anas acuta*	2
12	Garganey *Spatula querquedula*	1
13	Northern Shoveler *Spatula clypeata*	1
14	Ruddy Shelduck *Tadorna ferruginea*	1
15	Cotton Pygmy Goose *Nettapus coromandelianus*	3
16	Little Grebe *Tachybaptus ruficollis*	1
17	Watercock *Gallicrex cinerea*	2
18	White-breasted Waterhen *Amaurornis phoenicurus*	4
19	Common Moorhen *Gallinula chloropus*	1
20	Eurasian Coot *Fulica atra*	2
21	Purple Swamphen *Porphyrio porphyrio*	8
22	Eurasian Spoonbill *Platalea leucorodia*	1
23	Little Cormorant *Microcarbo niger*	3
24	Oriental Darter *Anhinga melanogaster*	2
25	Purple Heron *Ardea purpurea*	1
26	Yellow Bittern *Ixobrychus sinensis*	1
27	Cinnamon Bittern *Ixobrychus cinnamomeus*	3
28	Black-crowned Night Heron *Nycticorax nycticorax*	2
29	Indian Pond Heron *Ardeola grayii*	12
30	Striated Heron *Butorides striata*	3
31	Cattle Egret *Bubulcus ibis*	6
32	Little Egret *Egretta garzetta*	2
33	Intermediate Egret *Ardea intermedia*	2

Sl No.	Common Name	Count
34	Kentish Plover *Charadrius alexandrinus*	1
35	Greater Sand Plover *Charadrius leschenaultii*	4
36	Pacific Golden Plover *Pluvialis fulva*	1
37	Grey-headed Lapwing *Vanellus cinereus*	1
38	Red-wattled Lapwing *Vanellus indicus*	4
39	Greater Painted-snipe *Rostratula benghalensis*	2
40	Bronze-winged Jacana *Metopidius indicus*	4
41	Pheasant-tailed Jacana *Hydrophasianus chirurgus*	2
42	Common Sandpiper *Actitis hypoleucos*	1
43	Green Sandpiper *Tringa ochropus*	3
44	Common Greenshank *Tringa nebularia*	1
45	Wood Sandpiper *Tringa glareola*	9
46	Temminck's Stint *Calidris temminckii*	1
47	Whimbrel *Numenius phaeopus*	1
48	Pintail Snipe *Gallinago stenura*	3
49	River Tern *Sterna aurantia*	1
50	Brown-headed Gull *Chroicocephalus brunnicephalus*	1
51	Pallas's Gull *Larus ichthyaetus*	1
52	Asian Emerald Dove *Chalcophaps indica*	1
53	Eurasian Collared Dove *Streptopelia decaocto*	1
54	Red Collared Dove *Streptopelia tranquebarica*	4
55	Rock Pigeon *Columba livia*	8
56	Spotted Dove *Spilopelia chinensis*	10
57	Orange-breasted Green Pigeon *Treron bicinctus*	2
58	Yellow-footed Green Pigeon *Treron phoenicopterus*	1
59	Green Imperial Pigeon *Ducula aenea*	1
60	Great Eared Nightjar *Lyncornis macrotis*	1
61	Large-tailed Nightjar *Caprimulgus macrurus*	5
62	House Swift *Apus nipalensis*	8
63	Green-billed Malkoha *Phaenicophaeus tristis*	2
64	Greater Coucal *Centropus sinensis*	7
65	Asian Koel *Eudynamys scolopaceus*	16
66	Common Hawk Cuckoo *Hierococcyx varius*	8

Sl No.	Common Name	Count
67	Indian Cuckoo *Cuculus micropterus*	2
68	Chestnut-winged Cuckoo *Clamator coromandus*	1
69	Pied Cuckoo *Clamator jacobinus*	2
70	Banded Bay Cuckoo *Cacomantis sonneratii*	2
71	Brown Fish Owl *Ketupa zeylonensis*	4
72	Brown Boobook *Ninox scutulata*	2
73	Collared Scops Owl *Otus lettia*	4
74	Oriental Scops Owl *Otus sunia*	1
75	Asian Barred Owlet *Glaucidium cuculoides*	1
76	Spotted Owlet *Athene brama*	6
77	Common Barn Owl *Tyto alba*	5
78	Black Kite *Milvus migrans*	8
79	Black-winged Kite *Elanus caeruleus*	4
80	Brahminy Kite *Haliastur indus*	5
81	Crested Serpent Eagle *Spilornis cheela*	7
82	Eurasian Sparrowhawk *Accipiter nisus*	1
83	Grey-headed Fish Eagle *Haliaeetus ichthyaetus*	4
84	Pied Harrier *Circus melanoleucos*	1
85	White-rumped Vulture *Gyps bengalensis*	1
86	Common Kestrel *Falco tinnunculus*	3
87	Red-headed Trogon *Harpactes erythrocephalus*	2
88	Great Hornbill *Buceros bicornis*	1
89	Oriental Pied Hornbill *Anthracoceros albirostris*	4
90	Eurasian Hoopoe *Upupa epops*	4
91	Green Bee-eater *Merops orientalis*	16
92	Blue-tailed Bee-eater *Merops philippinus*	1
93	Chestnut-headed Bee-eater *Merops leschenaulti*	1
94	Indian Roller *Coracias benghalensis*	3
95	Indochinese Roller *Coracias affinis*	5
96	Common Kingfisher *Alcedo atthis*	2
97	Stork-billed Kingfisher *Pelargopsis capensis*	2
98	White-throated Kingfisher *Halcyon smyrnensis*	4
99	Pied Kingfisher *Ceryle rudis*	2
100	Blue-eared Barbet *Psilopogon duvaucelii*	2
101	Blue-throated Barbet *Psilopogon asiaticus*	5
102	Coppersmith Barbet *Psilopogon haemacephalus*	8

Sl No.	Common Name	Count
103	Lineated Barbet *Psilopogon lineatus*	8
104	Eurasian Wryneck *Jynx torquilla*	2
105	Grey-capped Pygmy Woodpecker *Yungipicus canicapillus*	2
106	Fulvous-breasted Woodpecker *Dendrocopos macei*	8
107	Rufous Woodpecker *Micropternus brachyurus*	6
108	Streak-throated Woodpecker *Picus xanthopygaeus*	4
109	Black-rumped Flameback *Dinopium benghalense*	11
110	Greater Flameback *Chrysocolaptes guttacristatus*	1
111	Great Slaty Woodpecker *Mulleripicus pulverulentus*	1
112	Blossom-headed Parakeet *Psittacula roseata*	1
113	Red-breasted Parakeet *Psittacula alexandri*	3
114	Rose-ringed Parakeet *Psittacula krameri*	4
115	Vernal Hanging Parrot *Loriculus vernalis*	2
116	Ashy Woodswallow *Artamus fuscus*	4
117	Common Iora *Aegithina tiphia*	14
118	Ashy-crowned Sparrow Lark *Eremopterix griseus*	3
119	Bengal Bushlark *Mirafra assamica*	2
120	Greater Short-toed Lark *Calandrella brachydactyla*	1
121	Barn Swallow *Hirundo rustica*	2
122	Sand Martin *Riparia riparia*	2
123	Black-headed Cuckooshrike *Lalage melanoptera*	5
124	Black-winged Cuckooshrike *Lalage melaschistos*	3
125	Common Woodshrike *Tephrodornis pondicerianus*	13
126	Large Cuckooshrike *Coracina macei*	6
127	Scarlet Minivet *Pericrocotus speciosus*	1
128	Small Minivet *Pericrocotus cinnamomeus*	7
129	Swinhoe's Minivet *Pericrocotus cantonensis*	1
130	Brown Shrike *Lanius cristatus*	13
131	Grey-backed Shrike *Lanius tephronotus*	2
132	Long-tailed Shrike *Lanius schach*	10
133	Ashy Drongo *Dicrurus leucophaeus*	5
134	Black Drongo *Dicrurus macrocercus*	40
135	Bronzed Drongo *Dicrurus aeneus*	6
136	Greater Racket-tailed Drongo *Dicrurus paradiseus*	1
137	Hair-crested Drongo *Dicrurus hottentottus*	7
138	House Crow *Corvus splendens*	8

Sl No.	Common Name	Count
139	Large-billed Crow *Corvus macrorhynchos*	5
140	Rufous Treepie *Dendrocitta vagabunda*	12
141	Abbott's Babbler *Malacocincla abbotti*	9
142	Chestnut-capped Babbler *Timalia pileata*	2
143	Greater Necklaced Laughingthrush *Pterorhinus pectoralis*	4
144	Jungle Babbler *Argya striata*	11
145	Pin-striped Tit Babbler *Mixornis gularis*	8
146	Puff-throated Babbler *Pellorneum ruficeps*	3
147	White-crested Laughingthrush *Garrulax leucolophus*	1
148	Orange-headed Thrush *Geokichla citrina*	3
149	Tickell's Thrush *Turdus unicolor*	1
150	Blue Whistling Thrush *Myophonus caeruleus*	1
151	Golden-fronted Leafbird *Chloropsis aurifrons*	2
152	Common Tailorbird *Orthotomus sutorius*	10
153	Indian White-eye *Zosterops palpebrosus*	1
154	Black-crested Bulbul *Rubigula flaviventris*	4
155	Cachar Bulbul *Iole cacharensis*	3
156	Red-vented Bulbul *Pycnonotus cafer*	21
157	Red-whiskered Bulbul *Pycnonotus jocosus*	11
158	White-throated Bulbul *Alophoixus flaveolus*	3
159	Asian Glossy Starling *Aplonis panayensis*	1
160	Asian Pied Starling *Gracupica contra*	71
161	Bank Myna *Acridotheres ginginianus*	2
162	Chestnut-tailed Starling *Sturnia malabarica*	15
163	Common Hill Myna *Gracula religiosa*	1
164	Common Myna *Acridotheres tristis*	41
165	Jungle Myna *Acridotheres fuscus*	68
166	Black-hooded Oriole *Oriolus xanthornus*	11
167	White-throated Fantail *Rhipidura albicollis*	3
168	Verditer Flycatcher *Eumyias thalassinus*	1

Sl No.	Common Name	Count
169	White-rumped Shama *Copsychus malabaricus*	4
170	Black Redstart *Phoenicurus ochruros*	1
171	Black-backed Forktail *Enicurus immaculatus*	1
172	Bluethroat *Luscinia svecica*	1
173	Blue-throated Flycatcher *Cyornis rubeculoides*	3
174	Siberian Stonechat *Saxicola maurus*	1
175	Grey-headed Canary-flycatcher *Culicicapa ceylonensis*	4
176	Oriental Magpie Robin *Copsychus saularis*	17
177	Pied Bushchat *Saxicola caprata*	2
178	Black-naped Monarch *Hypothymis azurea*	12
179	Indian Paradise-flycatcher *Terpsiphone paradisi*	3
180	Crimson Sunbird *Aethopyga siparaja*	1
181	Little Spiderhunter *Arachnothera longirostra*	2
182	Purple Sunbird *Cinnyris asiaticus*	7
183	Purple-rumped Sunbird *Leptocoma zeylonica*	2
184	Van Hasselt's Sunbird *Leptocoma brasiliana*	3
185	Orange-bellied Flowerpecker *Dicaeum trigonostigma*	1
186	Great Tit *Parus major*	11
187	House Sparrow *Passer domesticus*	7
188	Chestnut Munia *Lonchura atricapilla*	2
189	Indian Silverbill *Euodice malabarica*	2
190	Red Munia *Amandava amandava*	2
191	Scaly-breasted Munia *Lonchura punctulata*	3
192	Baya Weaver *Ploceus philippinus*	9
193	Forest Wagtail *Dendronanthus indicus*	1
194	Paddyfield Pipit *Anthus rufulus*	11
195	Citrine Wagtail *Motacilla citreola*	7
196	White Wagtail *Motacilla alba*	8
197	White-browed Wagtail *Motacilla maderaspatensis*	1
198	Western Yellow Wagtail *Motacilla flava*	3

Correspondence

A Giant Shrike *Lanius giganteus* at Bumla Pass, Arunachal Pradesh – An addition to the South Asian Avifauna

On 28 March 2024, I visited Bumla Pass (4,633 m asl) and Sangetsar Lake (3,708 m asl), located in the Tawang District of Arunachal Pradesh in India, near the Indo-China border, with my family. It was a cloudy, overcast day, but I was intently watching for any bird activity enroute.

At 1125 h, at location (27.677°N, 91.858°E), approximately 13 km from Bumla Pass, while driving towards Sangetsar Lake, I noticed a black and white bird fly by the side of the vehicle and perch on a pole ahead. Immediately, I requested the driver to stop the vehicle to photograph the bird, thinking that it could be something unusual. The roads in that area are narrow with considerable traffic, with little possibility of parking the vehicle to get off for photography. Fortunately, there was some stalled traffic ahead, which gave me time to observe and photograph the bird. In flight, and from a distance, I had noticed white patches on the wings and dark, longish tail, and the impression it gave was of a Eurasian Magpie *Pica pica*. However, looking at the bird through the camera, I realised that it was a shrike, possibly a Great Grey Shrike *Lanius excubitor*. It changed perch, allowing me to photograph from the back, front and side angles **[40–43]**. As I had not previously encountered a Great Grey Shrike at this altitude, I checked the Merlin Bird ID App for its distribution. Surprisingly, I found that it had no distribution near Arunachal Pradesh. In the late afternoon, I asked Salehin Md Habib for previous records of the Great Grey Shrike near Bumla Pass, and apparently, there were none. I shared the images with Salehin to check the possibility of any other similar shrike species. Salehin shared the images further with Sandeep Biswas, and after deliberation, they were quite certain that it was a Giant Shrike *L. giganteus*. Sandeep posted the images on the eBird India editors WhatsApp group, where it was confirmed as a Giant Shrike, the first record for South Asia.

Identification of this image as a Giant Shrike required elimination of several large, long-tailed shrikes with grey upper parts and white underparts and a black mask. Although now a separate species, it was formerly considered a subspecies of Chinese Grey Shrike *L. sphenocercus*, from which it can be separated by its darker grey upperparts **[42]**, absence of a prominent white supercilium **[41, 43]**, and reduced white on its wings **[41, 42]**. Great Grey Shrike of any subspecies will also have much more white portions on the wings as well as paler grey rump **[42]**. Northern Shrike *L. borealis* can be eliminated by its proportionately longer tail and grey rump **[42, 43]**. Although smaller, a non-breeding Lesser Grey Shrike could also pose confusion in photos, but that species can be eliminated by the white scapular fringing and darker rump **[42]**, as well as the comparatively longer bill than that species **[43]**. My photos also show a rosy tinge to the underparts **[40, 43],** which is concordant with a Giant Shrike.

The Giant Shrike occurs in eastern Xizang and the surrounding provinces in China (Yosef et al. 2021), which share a border with Arunachal Pradesh in India. It is considered uncommon to rare throughout its distribution range, with only 144 other documented

40. Giant Grey Shrike showing a dark mask with rosy tinge to white underparts.

41. Giant Grey Shrike showing a dark mask with a faint white supercilium and black primaries.

42. Giant Grey Shrike showing dark grey upperparts, including the rump, little white on wings and longer tail.

Ali: Kayani Kapdi

43. Giant Grey Shrike showing a faint white supercilium, longer tail, longer bill and rosy tinged white underparts.

observations on eBird, all of which are from China. It appears to be a resident bird, undertaking only local and altitudinal movements. It is found at high elevations (3,000–5,200 m asl) in open habitats with stunted shrubs such as Rhododendron and often uses tall, exposed perches (Yosef et al. 2021). The nearest records are from two locations in Xizang (Ko 2017; Wang & Guan 2017; Shen 2023), the last two being from the same site. These are *c.* 180–250 km away from the current site, as calculated from linear distances on Google Maps. The area where I saw the bird is heavily patrolled by the military and access is limited. There is also limited scope for birding on foot, making regular birding and species documentation challenging. However, this record encourages the possibility of the occasional presence of the species in the area.

I am grateful to Salehin Md Habib from Kolkata for helping me identify this and other species I photographed during the trip and to Sandeep Biswas and members of the eBird India editors WhatsApp group for ID confirmation. I would like to thank two anonymous referees who enhanced this manuscript with several finer details. I am obliged to Praveen J for his invaluable input.

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A Tiger Shrike *Lanius tigrinus* from Bakkhali, West Bengal – A new species for India

On a sunny morning on 14 May, 2024, at Kargil Beach (21.571°N, 88.201°E), Bakkhali, South 24 Parganas, West Bengal, I set out with hopes of capturing some striking photographs of waders in their breeding plumage, such as the Ruddy Turnstone *Arenaria interpres*, Tibetan Sand-Plover *A. atrifrons*, and Greater Sand-Plover *A. leschenaulti*, among others. Amidst my observations, a particularly agile passerine caught my eyes. I took several photos, initially believing it to be a Brown Shrike *Lanius cristatus*. However, upon reviewing the photographs at home, I began to suspect my identification. For clarity, I sent the images to Ashwin Viswanathan and Kanad Baidya. Based on discussion with others, the bird was identified as a female Tiger Shrike *L. tigrinus*.

Identification of this shrike as a Tiger Shrike is straightforward. The only regionally occurring shrike with such a grey crown and reddish mantle is a male Red-backed Shrike. Among other things, a male Red-backed Shrike in an adult-like plumage always has a black and white tail, unlike this bird. Bay-backed Shrike in adult plumages have black forecrown, quite unlike this bird, and never show barred flanks. The proportionally larger bill, grey crown, and barred flanks and upperparts are consistent with those of a female Tiger Shrike. Additionally, an adult male can be ruled out by the presence of white lores and pale white supercilium apart from the crown and back being duller. A juvenile would have had

44. Tiger Shrike showing grey crown and upper mantle, barred rufous-brown back, thick bill, pale lores, and pale supercilium.

45. Tiger Shrike showing barred flanks and upperparts.

All: Tisha Mukherjee

46. Tiger Shrike showing a clean white breast and belly grading to dirty white flanks with a dense barring.

a brown head and back and would have moulted out into an adult-like plumage by May. Even males in their second calendar year would show clean-white breast and flanks, unlike this bird, where there is dirty suffusion from the centre of the belly to the flanks. Hence, this particular bird is an adult female Tiger Shrike.

The Tiger Shrike breeds in south-eastern Russia, north-eastern and eastern China, Korea, and Japan and winters mainly in Southeast Asia; in the countries of Myanmar, Malaysia, Singapore, Laos, Vietnam, and Indonesia (Yosef et al. 2020). Recently, a female Tiger Shrike was reported from Bhutan on 09 July 2020

at an elevation of 3,097m asl; this was the first record for the Indian subcontinent (Rinchen & Koirala 2022). There are no other reports of the species from South Asia, and my bird would be the second for the region, while it is the first for the country. Upon learning this, I was overjoyed, and it was incredibly fulfilling.

The findings in both West Bengal and Bhutan suggest that the species is likely to be discovered again in the eastern Indian subcontinent. This record in May perfectly matches the timing of the return migration of Tiger Shrike to its breeding ground, and an odd individual could have strayed to India. However, the July sighting from Bhutan at such a high altitude is intriguing, as the bird should have been breeding by then, much further north.

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Rufous-bellied Niltava *Niltava sundara* and Small Niltava *N. macgrigoriae* in southern West Bengal

The Rufous-bellied Niltava *Niltava sundara* is a small passerine species in the *Muscicapidae* family. It prefers the middle and upper layers of broadleaf and mixed hill forests, where it often associates with other species in mixed flocks (Grimmett et al. 2011). It gives a series of high, piercing metallic whistles. In India, it ranges from Jammu & Kashmir to northern West Bengal and Northeast India. Outside India, it is found in Bangladesh and Southeast Asia (Clement 2020). There were no confirmed records of this species from southern West Bengal, which is part of the Ganges and Hooghly River floodplains.

On 16 February 2019, MK recorded one male individual from Amta (22.576°N, 88.000°E) in the Howrah district of West Bengal. The bird was dark blue with almost blackish upperparts, a brilliant blue crown and shoulder patch, a black throat, and a bright orange underpart **[47]**. This plumage is strikingly different from that of a Large Niltava *N. grandis* or a Small Niltava *N. macgrigoriae*. It was also distinct from Chinese Vivid Niltava *N. oatesi*, as the latter possesses an orange throat with blue sides, a darker and duller crown, and a much duller shoulder patch (Grimmett et al. 2011). Additionally, there are no reports of Chinese Vivid Niltava from West Bengal. This is the first record of Rufous-bellied Niltava from southern West Bengal. The closest records are from Hazaribagh, Jharkhand (Goswami 2022) and Bhagalpur, Bihar (Rani 2023).

Mridulkanti Kar

47. Rufous-bellied Niltava, Howrah District of West Bengal

Similarly, the Small Niltava is another small passerine species in the *Muscicapidae* family. It prefers the lower and middle levels of hilly and montane forests, usually found singly or in pairs (Grimmett et al. 2011). The known range is similar to the Rufous-bellied Niltava, except that it does not extend into Jammu and Kashmir (Clement 2020). On 06 March 2022, SM and MKC recorded one Small Niltava while birding at Garh Jungle, Durgapur, Paschim Burdwan district of West Bengal (23.595°N, 87.426°E). The recorded bird had bright purplish-blue upper parts, a blue nape and crown, a black chin, a blue throat, and a light blue forehead **[48]**. The breast was blue, and the lower underparts were white. This species is easily differentiated from Large Niltava, which is much larger and has dark purplish-blue underparts, a black face, chin, and throat, and a dark blue crown with a black band on the forehead (Grimmett et al. 2011). This is the first record of this species from southern West Bengal. This bird was subsequently recorded many times from the Rabindra Sarovar area of Kolkata in 2022 and 2023, the first of such sightings being in November 2022 (Malhotra 2022).

Although uncommon, the observation of these two Niltava

Table 1. Interesting records of Himalayan birds from southern West Bengal, India

Species	Latest Report	Location	Source
White-tailed Robin *Myiomela leucura*	October 2014	Rabindra Sarovar, Kolkata	Manna (2014)
Black Baza *Aviceda leuphotes*	November 2020	Bakkhali, South 24 Parganas	Banerjee (2020)
Himalayan Swiftlet *Aerodramus brevirostris*	December 2020	Baruipur Marshes, South 24 Parganas	Biswas (2020)
Jerdon's Baza *Aviceda jerdoni*	March 2022	Henry's Island, South 24 Parganas	Mandal (2022)
Himalayan Bush-Robin *Tarsiger rufilatus*	March 2022	Garh jungle, Paschim Bardhaman	Dan (2022)
Violet Cuckoo *Chrysococcyx xanthorhynchus*	March 2022	AD Block, Canal side Park, North 24 Parganas	Manna (2022)
Dollarbird *Eurystomus orientalis*	October 2022	Sundarban Tiger Reserve, South 24 Parganas	Choukidar (2022)
White-capped Redstart *Phoenicurus leucocephalus*	October 2022	Ajodhya Hill, Purulia County	Mahato (2022)
Common Hill Myna *Gracula religiosa*	March 2024	Chandrolok Complex, Bhatchala, Purba Burdwan	Chatterjee (2024)
Ruby-cheeked Sunbird *Chalcoparia singalensis*	March 2024	Hijuli Forest, Nadia	Ghosh (2024)

Manish Kumar Chattopadhyay

48. Small Niltava, Paschim Burdwan District, West Bengal

species in southern West Bengal aligns with reports of other Himalayan birds found outside their typical range in this region. The growth of the local birdwatching community, coupled with the extensive adoption of platforms such as eBird, has led to consistent unexpected species sightings in this region. Table 1 lists several of these recent records.

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Addition of the Pied Wheatear *Oenanthe pleschanka* to the avifauna of Punjab, India

On 05 November 2023, while birding near the Siswan Dam (30.869°N, 76.746°E), *c.*22 km from Mohali and *c.*15 km from Chandigarh, on the Chandigarh-Baddi Road, Sahibzada Ajit Singh Nagar District, Punjab, India, PB observed and photographed a wheatear **[49–52]**. It caught insects and perched on dry bushes and on the ground. However, it did not stay on a single perch for much time.

Initially, thought to be a Desert Wheatear *Oenanthe deserti*, the identity was eventually established as Pied Wheatear *O. pleschanka* first-winter male. This was based on a long primary projection, a buff supercilium, a dull grey-brown head and upper parts, blackish-brown wings with broad pale buff-brown fringing, and some black on the face and throat. The last characteristic is usually concealed by buff or whitish fringes (Clement & Rose 2015), but it showed well in this individual. Pinkish-buff breast (Shirihai & Svensson 2018) is another characteristic feature of a Pied Wheatear first-winter male that is evident in this individual. We sought opinions (in litt., emails dated January 2024) from several experts to confirm the identification. Nigel Collar, Richard Grimmett, Peter Alfrey, Raffael Ayé, Mohammad Kaboli, Shaobin Li, E. N. Panov, and Fares Khoury agreed with our assessment, identifying the bird as a first-winter male Pied Wheatear.

It must be noted that the observed individual has a rather small amount of fine pale buff fringing in the upper parts, thus forming only a faint scalloping pattern. Peter Clement noted in an email dated 26 January 2024 that it was unexpected for a first winter Pied Wheatear's upper parts to lack a prominent scalloped pattern with pale tips in November or December. He observed that while this bird shows some minimal or vestigial tips on the upper parts, the amount of wear seemed unusually extensive for the season, especially since the pale fringes on the wing coverts were still well-defined. Despite this anomaly, he identified the bird as a first-winter male Pied Wheatear. Therefore, this individual provides new insights into the moulting patterns of a first-winter male.

Pushkar Bali

49. Pied Wheatear first-winter male.

50. Another view of Pied Wheatear first-winter male.

51. Pied Wheatear first winter male showing pinkish-buff breast.

All: Pushkar Bali

52. Pied Wheatear first winter male showing creamy-white upper tail-coverts (a feature common with adults).

Pied Wheatear adult male in fresh plumage (autumn/winter) has crown and nape buffish-brown (may show white bases), black mantle and upper back partially or fully concealed by grey-brown tips, wings black with fine pale buff fringes and tips to wing-coverts forming two wing bars, and pale edges to tertials and inner secondaries; face to throat black finely tipped cream or whitish; rest of the underparts pale to sandy or orange-buff, becoming white on belly to undertail. First winter and adult females in fresh plumage (autumn/winter) have mantle and scapulars prominently scalloped with broad pale buff fringes (Clement & Rose 2015). Therefore, Pied Wheatear adult male and female in fresh plumage and first-winter female were ruled out. Desert Wheatear was eliminated because the observed individual exhibited a white side to the tail, whereas Desert Wheatear (Kazmierczak 2003) has a black tail contrasting with a white base and buff-tinged rump. Variable Wheatear *O. picata* forms do not have a supercilium, unlike this individual. Plumage features clearly eliminate the possibility of Isabelline Wheatear *O. isabellina* as well. Adult female and first-winter Northern Wheatear *O. oenanthe* can also be ruled out because they differ from Pied Wheatear by their slightly larger size and generally brown to warm brown (not predominantly dull grey-brown) on the head and upperparts, pale buff or whitish supercilium and dark eye stripe (Clement & Rose 2015). Peter Clement (in litt., email dated 26 January 2024) commented that the first winter Eastern Black-eared Wheatear *O. melanoleuca* can resemble a first winter Pied Wheatear in its drab grey-brown upperparts but lacks the pale-tipped scalloped effect. It is also typically paler, brighter, or sandy-tinged, rarely matching the colder grey-brown hue observed in the Pied Wheatear. It also features orange to orange-buff colouring on the breast and sides of the breast (unlike the observed bird).

Pied Wheatear is a Palearctic breeder, with the areas closest to the India being Afghanistan and N Pakistan. Within India, it breeds in the NW Himalayas. It winters in NE Africa and the SW Arabian Peninsula (Collar 2020). There are no previously published records of Pied Wheatear from Punjab, India (Pittie 2023). Additionally, there are no records in popular field guides (Grimmett et al. 2011; Rasmussen & Anderton 2012) nor on eBird (eBird 2023). We also did not find any records in Facebook birding groups. However, according to the distribution map by Grimmett et al. (2011), the Pied Wheatear is a passage migrant in the adjacent Punjab province of Pakistan. Thus, the present observation constitutes the first record of Pied Wheatear from Punjab, India. This individual might have been on passage to its wintering grounds. We visited the location several times over the next few days but did not find the species again.

We thank Nigel Collar, Richard Grimmett, Peter Alfrey, Raffael Ayé, Mohammad Kaboli, Shaobin Li, E. N. Panov, and Fares Khoury for confirming the identification as Pied Wheatear. Special thanks are due to Peter Clement who gave detailed observations on the identification.

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Nesting of the Little Bittern *Ixobrychus minutus* from Jhajjar, Haryana, India

The Little Bittern *Ixobrychus minutus* has a wide geographic range spanning Europe, Africa, and Asia, including the Indian Subcontinent (Birdlife International 2022; Grimmett et al. 2011). The nominate subspecies *I. m. minutus* occurs in central and southern Europe and northern Africa east to western Siberia and through Iran to north-western India; it winters mainly in Africa (Martínez-Vilalta et al. 2020). In South Asia it is considered a summer visitor to Afghanistan, Pakistan in the Sindh, Gilgit, and Khyber Pakhtunkhwa regions, and India in the Kashmir and Simla, Himachal Pradesh regions; it is a scarce winter visitor but mostly a passage migrant in the Indus Valley, Pakistan and elsewhere in India, and some records are confounded with Yellow Bittern *I. sinesis* (Rasmussen & Anderton 2012). In India, the breeding of the Little Bittern has been conclusively confirmed only from Kashmir, with several works on the nesting and ecology of the species (Bates & Lowther 1952; Holmes & Hatchwell 1991; Fazili 2010; Fazili et al. 2014). Suspected and probable breeding have been reported from the Delhi area and from Gujarat, respectively (Trivedi & Parasharya 2019; Vyas 2019). In this note, we document conclusive, video-recorded evidence of the species nesting in the wetlands of Mandothi village, Jhajjar, Haryana, India.

Mandothi wetlands (28.709°N, 76.849°E; 230 m asl), which cover more than 100 ha, are as a result of rainwater accumulation in local village agricultural land (Rai & Yadav 2023). Most of the area is privately-owned, and large parts of the area become temporarily inundated during the monsoon season; however, the entire area is currently unprotected and not formally designated a wetland. The wetlands provides an important wintering grounds for many migratory species and boasts of high bird diversity, with at least 265 bird species reported to date (eBird 2023a). The Little Bittern was first reported from Mandothi wetlands when a male was spotted and photographed on 22 August 2021 (Rajiv 2021; Pati 2021). The species was sighted regularly in the area by several birders throughout September that year **[53, 54]**, with the last reported sighting on 02 October 2021 (eBird 2023b). The following year, on 02 September 2022, at approximately 0700 h, while birding around the wetlands of Mandothi village, we spotted a pair of Little Bitterns. The male showed a bright red flush to the bill and was observed to be very active in one patch of *Phragmites karka* grass along the village road. We suspected it was nesting at this patch and decided to thoroughly scan this area with binoculars. After 15 min, we finally discovered a nest with five chicks of differing sizes, presumably at different growth stages. The nest was placed in *Phragmites karka* grass at a distance of 1 m above the ground. Upon discovery of this active nest, we were unable to immediately ascertain which species it belonged to, whether Little Bittern or Yellow Bittern, as the chicks of the two species are undistinguishable. We took some photographs of the nest and the nest site while maintaining an appropriate distance and left the area within a minute to avoid any disturbance, following protocols and guidelines listed in Barve et al. (2020a).

53. Little Bittern in breeding plumage.

54. Little Bittern pair in breeding plumage dated 25 August 2021.

Both: Sonu Dalal

In the Delhi NCR region, there have been previous records of the species reportedly in breeding plumage or breeding season records during the monsoon period and also suspected breeding in the past (Ganguli 1975; Harvey et al. 2006; Vyas 2019; eBird 2023b). However, no records from this region have been supported with conclusive or direct evidence of confirmed breeding and nesting. Previously published literature has provided greater insight into the nesting of the species from Kashmir and Gujarat (Fazili 2010; Fazili et al. 2014; Trivedi & Parasharya 2019). This inspired us to further investigate whether there was any possibility of the Little Bittern breeding and nesting in the Mandothi area. We decided to use a time-lapse video camera (Brinno T2C 200 f1.2 model) to record the activities at the unknown nest that we had found on 02 September 2022 by video-recording the behaviour of the chicks and adults without impacting them, following recommended field guidelines (Barve et al. 2020a; Barve et al. 2020b). On 10 September 2022, at approximately 1630 h, we placed the camera at a distance of approximately 4–5 m away from the nest to minimize disruption. The time-lapse duration was set at 1 frame per 2 sec for a period of 24 hours. The next day, we collected the camera from the site and filtered the data. While reviewing the recorded footage, we found a male Little Bittern that appeared at the nest-site, approaching the nest and chicks at 0608 h, dated 11 September 2022, presumably for feeding the chicks. In the video (https://

www.youtube.com/watch?v=oKmM94y5k4s), the bird suddenly appears near the nest, first perching at a grass blade at a distance of 0.5 m from the nest, then jumping to approach the nest directly, and subsequently taking off and flying away; the entire event of the male approaching and leaving the nest lasted for 20 sec in the video **[55, 56]**. We also recorded the chicks walking out of the nest independently and exploring their surroundings. The chicks were also recorded walking outside the nest, begging for food and trying to snatch the food from the adults instead before the adults could feed them at the nest. Our inference from these behaviours was that the chicks were probably mature enough to start fledging in addition to the increased level of food competition between them. Our time-lapse video of the nest, showing a male Little Bittern approaching the nest and chicks, along with other circumstantial evidence described in this note, conclusively proves the nesting of the Little Bittern at this location. Our record appears to be the first documented and videographed record of Little Bittern nesting in Haryana, India.

55. Little Bittern male at the nest showing its black back and tail.

All: Time-lapse video camera

56. Little Bittern male perched over at the nest showing bill and wings.

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The Critically Endangered Sociable Lapwing *Vanellus gregarius* from Ratnagiri, Maharashtra

The Sociable Lapwing *Vanellus gregarius* is a Critically Endangered migratory bird species known for its rapid population decline due to habitat loss and other threats (Wiersma et al. 2020). In India, Sociable Lapwing is considered a winter migrant and is mainly reported from parts of Gujarat and Rajasthan (Tiwari 2010; Kasambe 2011). There is only one confirmed record of Sociable Lapwing from Maharashtra, and it dates to 2001 in the Pohara-Malkhed Reservoir, Vidarbha region (Kasambe 2001; Wadatkar & Kasambe 2002). Hence, any new observation is a noteworthy event.

On 18 November 2022, two Sociable Lapwings were seen by Prasad Gokhale and me during a routine birdwatching expedition at Champak ground (17.001°N, 73.315°E) in the Ratnagiri District. Both were characterized by an olive-brown back, black crown and lores, thin dark line behind the eye, and bold, white supercilia that met at the forehead and nape. Both individuals had a buff wash to the supercilium and neck, indicating non-breeding plumage. One individual had a clear breast with a hint of black in the belly **[57]**.

This lack of strong colour and contrast could imply a young bird or a female. The other individual had a heavily streaked breast, indicating a juvenile bird **[58]**. The lapwings foraged gracefully in the partially burnt grasslands, providing a captivating spectacle. The excitement was palpable as we carefully approached the birds, maintaining a respectful distance to avoid disturbance. We carefully observed and photographed the lapwings. They were feeding on seeds, plant matter, and insects. We observed them picking up grass and seeds with their bills. Both individuals stayed in the same area for the next two days.

57. Sociable Lapwing from Ratnagiri district, Maharashtra

Both: Viraj V Athalye

58. Juvenile Sociable Lapwing from Ratnagiri district, Maharashtra

Ratnagiri district is a stopover site for many migratory species during their long-distance journeys (pers obs.): species such as Great Knot *Calidris tenuirostris*, Bar-tailed Godwit *Limosa lapponica*, Eurasian Curlew *Numenius arquata*, Ruff *C. pugnax*, Dunlin *C. alpina*, and Broad-billed Sandpiper *C. falcinellus* have been recorded here. We also note that many species of shorebirds, as well as our Sociable Lapwing record, have been from the lateritic plateaus of the district. Lateritic plateaus, found along the Konkan coast and northern Western Ghats, are barren, and weathered iron-rich soils characterize their flat tops (Giri & Mukherjee 2023). They support a unique ecosystem and contain grasslands that may attract bird species that prefer open habitats. The observation of two Sociable Lapwings in Ratnagiri is a significant contribution to the records of this species in India. The accumulated observations over the years highlight the area's importance as a crucial habitat and migratory stopover for diverse bird species. Therefore, it is essential to amplify conservation initiatives and research in this region to guarantee the preservation of its flora and fauna.

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The Black-legged Kittiwake *Rissa tridactyla* from Assam and Arunachal Pradesh, India

On 21 December 2021, at 0910 h, while birding at Deepor Beel (26.114°N, 91.655°E; *c.*100 m asl), Assam, PK, PM, and RK observed an unfamiliar gull flying alongside Brown-headed Gulls *Chroicocephalus brunnicephalus* and cormorants. PK took a few photographs of the unidentified gull. In flight, the bird showed a prominent black collar, black ear spots, grey upper wings with black tips, a broad black band across median coverts, a black-tipped tail, and a black bill. After analyzing and discussing the photographs with several expert birders, we confirmed its identification as an immature Black-legged Kittiwake *Rissa tridactyla*. This observation is only the second record from Assam after Chatterjee (2012), who photographed an immature individual near Majuli Island on the Brahmaputra River.

On 14 January 2024 at 0800 h, RM and BD photographed a Black-legged Kittiwake along the banks of the Noa-Dihing River near Miao, Changlang district, Arunachal Pradesh (27.497°N, 96.210°E; *c.*280 m asl). The bird is likely to be an adult because of the dull yellow bill, dark spot behind the ear, grey in the nape and back of the head (breeding adults have an all-white head), lack of nuchal collar, and overall, less black in the head and nape than a second cycle bird (Hatch et al. 2020). This observation is the first record of this species from Arunachal Pradesh.

The Black-legged Kittiwake is a small pelagic gull primarily distributed in North America and Europe. It breeds mostly along the coastlines of the North Pacific and Atlantic Oceans, while it winters in the open sea, away from the mainland (Hatch et al. 2020). In India, Black-legged Kittiwakes have been reported from Goa, Rajasthan, Maharashtra, Gujarat, West Bengal, Chhattisgarh, and Kerala (Kasambe et al. 2020). Rasmussen & Anderton (2012) mentioned the sighting of an immature bird from Goa

and added that the species, though known to typically winter within its pelagic range, may be found as a rare vagrant far inland during migration such birds blown inland by storms, or if its ill.

Black-legged Kittiwake has two sub-species: *R. t. tridactyla* (Atlantic population) and *R. t. pollicaris* (Pacific population). As India is almost equidistant from the populations that winter in the Pacific and Atlantic regions and most sightings in the subcontinent have been from either the west coast or eastern India and Bangladesh (eBird 2024), it is an interesting possibility that both subspecies may occur in the Indian subcontinent.

59. Ventral view of an immature Black-legged Kittiwake from Deepor Beel, Assam

Both: Prasanna Kalita

60. Dorsal view of the same individual from Deepor Beel, Assam

Ravi Mekola

61. Immature Black-legged Kittiwake from the Noa-Dihing River, Arunachal Pradesh

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A Painted Stork *Mycteria leucocephala* feeding on carrion

Diet is an important part of a species' biology, and opportunistic observations often provide new insights into the breadth of a species' diet and trophic ecology. Birds belonging to the order Ciconiiformes (Storks) are large, wading, and primarily carnivorous birds (Winkler et al. 2020). The Painted Stork *Mycteria leucocephala* is distributed in the tropical plains of the Indian Subcontinent and sparsely distributed in the Southeast Asian countries of Myanmar, Thailand, Lao PDR, Vietnam, Malaysia, and Cambodia (BirdLife International 2023). It usually inhabits inland shallow lakes, jheels, ponds, marshlands, and riverbanks. Although the bird is chiefly considered piscivorous, it feeds on a variety of foods, including insects, crustaceans, and amphibians (Ali & Ripley 1987; Kalam & Urfi 2008; Urfi 2011a). Moreover, it has been reported to consume snakes and hatchling Mugger crocodiles (Urfi 1988; Somaweera et al. 2013). In this note, we provide conclusive evidence of carrion feeding by a Painted Stork.

Amey Paranjape

62. Painted Stork feeding on carrion at the Mula-Mutha River, Pune, Maharashtra, India.

On 25 December 2023, at approximately 0700 hours, while birding at the Mula-Mutha River (18.542°N, 73.882°E), near

the Bund Garden of Pune, Maharashtra, India, we came across a Painted Stork feeding on carrion from a plastic bag. The bird was trying to remove a chunk of meat from within the bag. We watched the stork for approximately 45 min of which, for about 21 min the individual was trying to feed on the contents of the bag. A few photographs and videos of the observations were taken using a Nikon P900 digital camera **[62]**. We also observed a few House Crows *Corvus splendens* and a Black Kite *Milvus migrans* attempting to steal the carrion from the Painted Stork. After thorough inspection, the carrion appeared to be a goat offal. After a few days of this incident, we visited the place twice, but no carrion feeding by Painted Storks was recorded, although four Painted Storks were observed feeding in the shallow water in the area.

Previously published studies have shown that among Indian storks, Adjutant Storks *Leptoptilos* sp. (Greater Adjutant *L. javanicus* and Lesser Adjutant *L. dubius*) are well-known scavengers and carrion feeders (Winkler et al. 2020). The Woolly-necked Storks *Ciconia episcopus* have also been observed to scavenge on carcasses (Sivakumar et al. 2011). Previously, Painted Storks have been reported to pick up floating dead fish from the water surface in the Bhindawas Bird Sanctuary (Urfi 2011b). However, members of the tribe Mycteriini (which Painted Storks belong to) predominantly feed on fish, and the birds have never been reported to feed on carrion or carcasses, making our observation noteworthy.

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Status of the Chinese Bush Warbler *Locustella tacsanowskia* in the Indian subcontinent with a recent song recording from eastern Assam

The Chinese Bush Warbler *Locustella tacsanowskia* is a winter migrant to the lowland grasslands of southern Nepal, Bhutan, north-eastern India, Vietnam, and south-western China. This species breeds from eastern Russia and adjacent northern Mongolia and in parts of China. During the breeding season, it prefers grassy upland meadows and open areas within larch forests, including wide clearings with a variety of shrubby thickets, tall grasses, and herbs; typically, these areas are between 2,800 and 3,600 m asl. In the non-breeding season, it mainly occurs at the edge of plains in lowland grasslands (elephant grasses), reedbeds, paddy fields, and scrubby edges of lowland cultivation (Madge 2020).

On 05 February 2023 at 0749 h, we were birding in the Maguri grassland (27.583°N, 95.352°E), eastern Assam, a lowland area that has *Auundo donax* and *Phragmites karka* grasses **[63]**. We were attempting to photograph the Grey-sided Bush Warbler *Cettia brunnifrons* that was expected there. After photographing that species, we explored further with the intention of documenting other warblers in that patch. We kept hearing a '*zack-zack-zack*' call reminiscent of a Paddyfield Warbler *Acrocephalus agricola* as well as the typical song of Baikal Bush Warbler *Locustella davidi*. Along with those, an insect like '*treeeeeep*' call was also heard that we initially assumed to be just an insect. We started recording the vocalization of the presumed Paddyfield Warbler. Luckily, the same raspy, insect-like vocalisation was heard again, and our recorder picked it up (Fig. 1). It was then that we realised that a third bush/reed warbler was also present in the vicinity; its call obviously distinct from what we knew of the typical calls/songs of Paddyfield Warbler and Baikal Bush Warbler. We could not place it to any species then, and we started searching for it. For some time, we did not see the Paddyfield Warbler, and it created some confusion that the '*zack-zack-zack*' call and the new vocalisation were being produced by the very same bird. We then played back the newly recorded vocalization in an attempt to lure the species out. The bird responded, and we were able to see the movement of the bird in the grasses—a small warbler producing a low '*truk*' rasps with minimal pauses in between. We recorded this vocalisation as well (Fig. 2), and then the bird offered a glimpse. It was an overall dark Locustella-type warbler; dirt-brown above, with a white throat with some streaks across the upper chest, and flanks appeared dusky. After that, we also saw a Paddyfield Warbler in the vicinity there by making us believe that the '*zack-zack-zack*' calls were, after all, from that bird. In summary, we obtained average views of a Locustella-type warbler and recorded two of its vocalizations.

Having not been able to nail down the species, we transmitted the vocalizations to Ashwin Viswanathan, who later confirmed it to be a Chinese Bush Warbler. We verified this ourselves and found the first insect-like '*treeeeeep*' to be a part of its diagnostic song (e.g., Thomas 2017; Stork 2022), while the '*truk*', perhaps also produced by other bush/reed warblers, was one of its calls.

Runap Jyoti Gogoi

63. Arundo donax and Phragmites karka grasses in the Maguri grassland, Tinsukia, Assam.

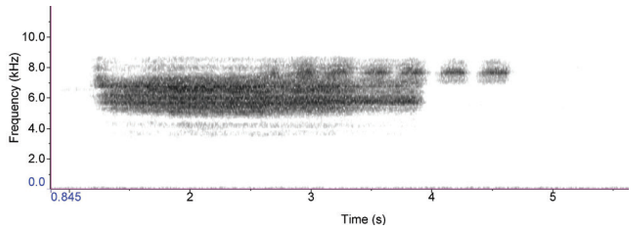

Figure 1. Spectrogram of the song recording of the Chinese Bush Warbler.

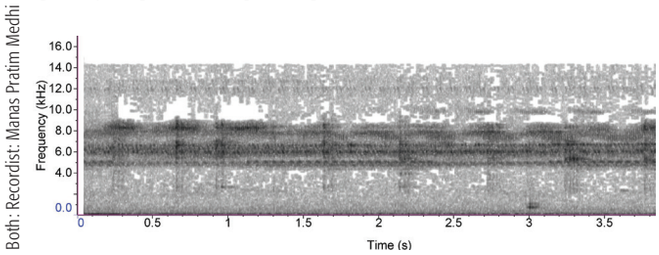

Figure 2. Spectrogram of the call recording of the Chinese Bush Warbler.

As a part of the literature survey, we were able to obtain 18 prior reports that included 12 specimen reports and eight observations (Table 1). All dated reports were during the northern winter, from November to April. In each case, we attempted to track the original records to ensure that the same records were not listed twice. The specimen records collected from the same site on the same or adjacent dates were treated as a single record because they likely represented a population at that site.

The first references to this species in the Indian literature were by Oates (1889) and Baker (1926) in their Fauna of the British India series; both listed only a single specimen from Bhutan Dooars (now in northern West Bengal) that was apparently with Seebohm. Ali & Ripley (2001) listed an old specimen by Louis Mandelli (1833–1880) from Bhutan Dooars, most likely the same one mentioned by Baker and Oates. However, Seebom (1881) does not list such a specimen in his catalogue of warblers at the NHM, London. However, that is understandable, as Mandelli's collection was purchased by Hume, and they reached London only in 1885 (Pinn 1985). We did not have a chance to examine this collection. This specimen must certainly qualify as the first record for the Indian subcontinent. The year is dated as the same period when Mandelli collected specimens around Darjeeling; however, it is more likely closer to 1880.

Inskipp & Inskipp (1985) list a record by Bailey in 1938 as the first record for Nepal; probably that specimen is also in the NHM. Both Inskipp & Inskipp (1985) and Ali & Ripley (2001) list records from the Koshi Barrage area in Nepal, while Ali & Ripley

Table 1. Records of Chinese Bush Warbler from the Indian subcontinent

Sl. No	Dates	Type of Record	Observer	Location	Country	Reference(s)	Notes
1	1869–1880 (?)	Specimen	Mandelli (?)	Bhutan Dooars, West Bengal	India	Oates (1889), Baker (1924), Ali & Ripley (2001)	Specimen in Seebohm's collection, but apparently obtained through Mandelli as mentioned in Ali & Ripley (2001).
2	15 February 1923	Specimen	H V O'Donel	Bhutan Dooars, West Bengal	India		YPM #043173
3	21 January 1932	Specimen	C M Inglis	Haldibari [=Huldibari], West Bengal	India	Inglis (1957)	Presumably YPM #043174 is the same mentioned in Inglis (1957).
4	20 February 1938	Specimen	F M Bailey	Hariancha, Koshi Province	Nepal	Bailey (1938), Inskipp & Inskipp (1985)	Presumably a specimen that is now in the NHM, London.
5	27 November 1949	Specimen	W Koelz	Bamunigaon [=Bamanigaon], Kamrup Rural district, Assam	India		UMMZ#230757
6	30–31 December 1949	Specimens	W Koelz	Bamunigaon [=Bamanigaon], Kamrup Rural district, Assam	India		UMMZ#230758–760.
7	06–07 January 1950	Specimens	W Koelz	Hahim Bazar, Kamrup Rural distrct, Assam	India		UMMZ#230761–762
8	17 January 1950	Specimen	W Koelz	Phulbari, West Garo Hills district, Meghalaya	India		UMMZ#230763
9	12 April 1950	Specimen	W Koelz	Phulbari, West Garo Hills district, Meghalaya	India		UMMZ#230764
10	20 November 1951	Specimen	W Koelz	Mawryngkneng, East Khasi Hills, Meghalaya	India		UMMZ#230765
11	02 April 1952	Specimen	W Koelz	Agia, Goalpara district, Assam	India		UMMZ#230766
12	25 February 1961	Specimen	R L Fleming	Sunischare, Jhapa, Koshi Province	Nepal	Fleming (1968), Inskipp & Inskipp (1985), Ali & Ripley (2001)	Presumably FMNH#268296, as the dates match.
13	13 March 1981	Observation	Tim Inskipp	Koshi Barrage, Koshi Province	Nepal	Inskipp & Inskipp (1981), Inskipp & Inskipp (1985), Ali & Ripley (2001)	No further details. Observer assumed to be the first author.
14	16 February 1994	Observation	Per Alström	Kaziranga National Park, Golaghat district, Assam	India	Alström et al. (1994), Robson (1994), Barua & Sharma (1999)	Original reference is unpublished and hence could not be accessed. Observer assumed to be the lead author. No other details available for assessment.

Table 1. Records of Chinese Bush Warbler from the Indian subcontinent

Sl. No	Dates	Type of Record	Observer	Location	Country	Reference(s)	Notes
15	16 February 2006	Observation	Sanjib Acharya	Koshi Tappu Wildlife Reserve, Koshi Province	Nepal	Acharya (2006)	No details available for assessment.
16	06 April 2008	Observation	Carol Inskipp	Koshi Tappu Wildlife Reserve, Koshi Province	Nepal	Inskipp (2008)	One bird. No other details available for assessment.
17	13 April 2015	Observation	Alan Knue & James Eaton	Bhalukpong South at 26th Kilometre, Sonitpur district, Assam	India	Knue (2015)	One bird is seen singing. Description of the bird and of the song provided.
18	Undated	Observation	Asad Rahmani	Kaziranga National Park, Golaghat district, Assam	India	Rahmani et al. (2023)	As per the authors, the bird was 'heard' in the central range. No other details of the sightings or dates provided. Observer assumed to be the first author.
19	05 February 2023	Audio recording	Tomal Gogoi, Manash Pratim Medhi & Runap Jyoti Gogoi	Maguri Beel, Tinsukia district, Assam	India	This work	Both song and call recorded as well as a bird was seen.

(2001) mention additional records from Shuklaphanta that lies in western Nepal; the sources of those latter records were not traceable. Rasmussen & Anderton (2012) reviewed numerous specimens from East-central Nepal through Dooars (i.e., northern West Bengal), the central Assam valley, and the northern Meghalaya; their assessment revealed that it is a fairly common species in its range that includes the northern West Bengal and western Assam. We reviewed specimen records in the GBIF (www.gbif.org) and found approximately a dozen old specimens from India and Nepal, and the range provided by Rasmussen & Anderton included all these specimens. There are no specimens listed in the Bombay Natural History Society collection (Abdulali 1986), and none exist in the Zoological Survey of India (Praveen J, in litt. 09 May 2024).

In summary, traceable specimen-based records were obtained from the Koshi Province of Nepal, Jalpaiguri (or perhaps Alipurduar) and Cooch Behar districts in northern Bengal, the Goalpara and Kamrup Rural Districts of western Assam, and from the West Garo Hills and East Khasi Hills Districts of Meghalaya. Interestingly, there were no specimens from central or eastern Assam.

There were no records of the species between 1961 and 1981 until it was again reported from the Koshi Barrage (Inskipp & Inskipp 1981). Later, it was reported from the central Assam districts of Golaghat (Alström et al. 1994) and Sonitpur (Knue 2015). Observation-based records are difficult to assess, and none of them have any field notes, with the exception of Knue (2015). However, records from known sites such as the Koshi Tappu Wildlife Reserve are likely to be correct. It is clear that ours is the first record of this species to be documented with media evidence as well as the first from eastern Assam.

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Blue-and-white Flycatcher *Cyanoptila cyanomelana* from Bondla WLS: An addition to the avifauna of Goa

The current Goa checklist (Baidya & Bhagat 2023) includes 486 species of birds. This note reports the first known record of the Blue-and-white Flycatcher *Cyanoptila cyanomelana* from Goa, India. On 27 December 2023 at 1057 h, a single immature individual was observed and photographed **[64]** at the Bondla Wildlife Sanctuary (WLS). It was initially overlooked as a juvenile Tickell's Blue Flycatcher *Cyornis tickelliae*. Another bird, possibly the same individual, was spotted on 02 January 2024 at 1035 h **[65]** at the Bondla WLS. The bird was identified in the field as an immature Blue-and-white Flycatcher with the help of Merlin. The immature of this species is distinct from any other species found in the area.

Aidan Fonseca

64. Immature Blue-and-white Flycatcher, Bondla WLS

Omkar Dharwadkar

65. Immature Blue-and-white Flycatcher, Bondla WLS

The forest at the Bondla WLS (15.442°N, 74.111°E) is a mix of secondary moist deciduous and semi-evergreen forests. The bird preferred to be in the middle canopy and was not in the company of any other species during both sightings. At first glance, the bird looked larger than any other flycatcher in the region. It had a white belly and a greyish-brown head and mantle, and the color extended to the upper breast. The upper body was blue with dark primaries. The bird did not vocalize. On both occasions, sightings were brief.

The Blue-and-white Flycatcher breeds in northeastern Asia, from Korea to Japan, and winters in Taiwan and Southeast Asia (Clement & Marks 2020). Most sightings within Indian limits occurred between December and March (Barve & Kamat 2016; Vittapu & Dey 2021; eBird 2024), which could mean that this species is a rare winter visitor to India. The migration ranges of Zappey's Flycatcher *Cyanoptilia cumatilis* and Blue-and-white Flycatcher overlap. However, it is impossible to distinguish between immature individuals of both species due to the great similarity in their plumages. Since all records within the Indian limits have been identified as Blue-and-white Flycatchers, we consider this to be the same species until there is a confirmed record of Zappey's flycatcher within the Indian limits.

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Anthropogenic nesting material in the nest of a Laggar Falcon *Falco jugger*

The Laggar Falcon *Falco jugger* is a large, resident, Near Threatened falcon (Cade 1982; Naoroji 2006; BirdLife International. 2020), which is widely distributed across the Indian subcontinent. Its distribution extends from the extreme ends of south-eastern Iran to north-western Myanmar (Ferguson-Lees & Christie 2005; Rasmussen & Anderton 2012). This species prefers open arid habitats up to an elevation of 1,000 m asl (Ali & Ripley 1983; Naoroji 2006; Finlayson 2011; Grimmett et al. 2011; Clark et al. 2020). Here, we describe a unique nesting substrate for this species.

On 20 January 2024, we were birding at 1130 h at Rundera (24.613°N, 74.082°E), in the Udaipur district of Rajasthan. The area is a mix of scrubland and farmlands dotted with transmission towers, and is situated very close to the Udaipur-Chittorgarh Highway. We saw a Laggar Falcon sitting in a nest on a transmission tower. On closer observation, we observed that along with dry sticks and twigs, the nest also contained various anthropogenic materials, such as different types of ropes, pieces of clothes, different types of threads, and pieces of hosiery and woolen clothes.

The guidelines for nesting biology (Barve et al. 2020) were carefully followed during our documentation. We spent approximately 45 min at the location. At this time, the individual was continuously sitting in the nest (assumed to be incubating eggs). During this time, we saw a Common Kestrel *Falco tinnunculus,* trying to mob the falcon sitting on the nest. A few minutes later, another Laggar Falcon (assumed to be the partner) brought a kill (a half-eaten unidentified bird) on a nearby tower and ate it. It then proceeded to mob an Eastern Imperial Eagle *Aquila heliaca,* which ventured close to the nest and then took off in the opposite direction.

66. Various anthropogenic materials in the nest.

Both: Rajat Chordia

67. Laggar falcon with kill of an unidentified bird.

Although falcons are not known to use such materials in their nest, Egyptian Vulture *Neophron percnopterus* nests are known to contain many anthropogenic items such as pieces of clothes and other plastic items (Mori 2019). This area is frequented by Egyptian Vultures. Laggar Falcons are known to take over empty and abandoned nests of other birds, such as Egyptian Vultures (Mori et al. 2023); therefore, it is possible that the nests we observed initially belonged to an Egyptian Vulture. However, urbanization can affect different aspects of nest design of birds (James et al. 2019). Several studies have highlighted a change in nesting materials along an urbanization gradient (e.g., Wang et al. 2009; Radhamany et al. 2016; Reynolds et al. 2016). The proximity of the nest site to a Highway along with farmlands in this situation made such nesting materials more readily available. Further studies are required to understand the effect of such anthropogenic materials in the nest of Laggar Falcon.

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Pectoral Sandpiper *Calidris melanotos*: A new species for Goa, and a review of its status in the Indian mainland

On 06 January 2024, SF and AF visited the Maina-Curtorim wetlands opposite the Sonbem Lake in Curtorim (15.299°N, 74.006°E) to conduct a birding trip. At approximately 0810 h, SF noticed a medium-sized wader with a flat back, pot belly, long rear end, small head, and slightly decurved bill tip actively feeding in a mixed flock of other waders, such as the Pin-tailed Snipe *Gallinago stenura*, Marsh Sandpiper *Tringa stagnatilis*, Wood Sandpiper *Tringa glareola* and a few Common Redshanks *Tringa totanus*. It was initially difficult to identify as we were unfamiliar with it. The bird looked like a Ruff *Calidris pugnax* but was different. Gradually, it made its way onto the bund **[68]**, allowing SF to obtain good photographs. The bird was repeatedly observed in the area for 17 days, from 06 January to 22 January 2024, during which it was photographed by MD and OD **[69–71]**.

The photos were subsequently uploaded to social media, where the species was identified as a Pectoral Sandpiper *Calidris melanotos*. We also used literature (Hayman et al. 1986; Harrop 1993; Grimmet et al. 2011; Vinicombie et al. 2014) to confirm the identification. This bird appeared slightly larger than Dunlin *Calidris alpina*, with a small head on a neck that appeared

Savio Fonseca

68. Pectoral Sandpiper (front) standing on a bund with a Marsh Sandpiper (back). 06 January 2024.

Omkar Dharwadkar

71. (L-R) Pectoral Sandpiper, Wood Sandpiper, and Ruff together on 18 January 2024.

Mangirish Dharwadkar

69. Pectoral Sandpiper adopting an erect stance, 14 January 2024.

Omkar Dharwadkar

70. Pectoral Sandpiper in flight, 14 January 2024.

short while feeding. It resembled a small Ruff, particularly when it adopted an erect stance with its neck stretched **[69, 71]**. Its bill was similar to a Curlew Sandpiper *Calidris ferruginea* but shorter and thicker at the base, with a blackish tip to the slightly decurved bill and a brownish-yellow base to the lower mandible **[68, 69]**. The bird's distinct 'pectoral' band of brown streaks on the buffy breast formed a gorget that was sharply demarcated and contrasted with the unmarked white belly, although a few streaks extended below the gorget at the extreme sides of the breast **[69, 71]**. At rest, the closed wings reached beyond the tail, and the primary projection was longer than that of Dunlin or Ruff **[68]**. In flight, it resembled a Reeve (female Ruff), where the wing stripe is virtually undetectable to the naked eye **[70]**. It also had a broad, black-centered rump and tail, with prominent white sides, and the toes did not project beyond the tail tip **[70]**.

The Maina-Curtorim wetlands (Fig. 1), locally known as 'Aadis,' measure approximately 40 ha. They are cultivated twice a year utilizing stored water from the nearby Sonbem Lake, producing a high yield of paddy crops (Pandit et al. 2022). This wetland system serves as a wintering ground for numerous residents and migratory birds. More than 260 species of birds, both resident and migratory, have been recorded here (eBird 2024). Species such as Lesser Flamingo *Phoeniconaias minor* (Dumadag 2020) and Collared Pratincole *Glareola pratincola* (Pandit et al. 2022) were recorded from these wetlands in January 2020 and December 2021, respectively, both of which are the first records for Goa. This emphasizes the conservation value of the Maina-Curtorim wetland ecosystem, justifying its protection by the state administration.

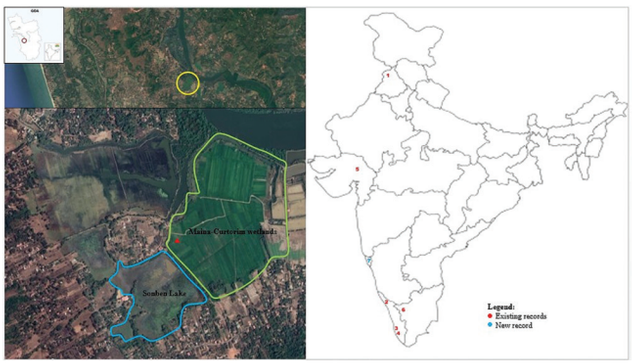

Fig 1. The red triangle marks the location of the Pectoral Sandpiper within the Maina-Curtorim paddy fields. The inset map shows all the sightings in India.

The Pectoral Sandpiper breeds in the Arctic Tundra, extending eastwards from Siberia's Taimyr Peninsula to Canada's Hudson

Table 1. Records of Pectoral Sandpiper from India, listed statewise and chronologically. S – Sight; P – Photograph

S. No.	Month & Year	Place	District	State	Type	Reference	Accompanying species
1	May 1998	Harike wetlands	Ferozepur	Punjab	S	Undeland & Sangha (2002)	Not mentioned.
2	September 2013	Madayippara	Kannur	Kerala	P	Rajeevan et al. (2014)	Lesser Sand Plover *Charadrius mongolus* Little Stint *Calidris minuta* Curlew Sandpiper *Calidris ferruginea* Broad-billed Sandpiper *Limicola falcinellus*
3	September 2017	Kadamakudy	Ernakulam	Kerala	P	Reghuvaran (2017)	Common Redshank *Tringa totanus* Spotted Redshank *Tringa erythropus* Broad-billed Sandpiper *Limicola falcinellus*
4	October 2018	Kottayam	Kottayam	Kerala	P	Sreedevi (2018)	Little Stint *Calidris minuta*
5	December 2020	Pariej wetlands	Kheda	Gujarat	P	Patel (2022)	Not mentioned
6	October 2021	Achankulam Lake	Tuticorin	Tamil Nadu	P	Gajamohanraj & Sarang (2022)	Little Stint *Calidris minuta* Wood Sandpiper *Tringa glareola*.
7	January 2024	Maina-Curtorim wetlands	South Goa	Goa	P	Present record Fonseca (2024)	Pin-tailed Snipe *Gallinago stenura* Marsh Sandpiper *Tringa stagnatilis* Wood Sandpiper *Tringa glareola* Common Redshank *Tringa totanus* Ruff *Calidris pugnax*

Bay, migrating largely to spend the winter in South America, with a small number wintering in Southeast Asia, Australia, and New Zealand (Farmer 2020). The migratory path of the Pectoral Sandpiper into the Indian subcontinent is unknown. One possibility is that some individuals or small flocks probably drifted into the Indian Subcontinent while migrating from their breeding grounds to Australia and SE Asia via the East Asian-Australasian Flyway (Rajeevan et al. 2014). More studies are required to determine the movements of this species to the Indian Subcontinent and across it. With more than 1,760 occurrences in Britain alone between 1958 and 1992, the Pectoral Sandpiper is the most common transatlantic vagrant to Europe (Harrop 1993, Undeland & Sangha 2002). The Pectoral Sandpiper is a rare vagrant in the Indian Subcontinent (Grimmett et al. 2011; Kazmierczak 2000; Rasmussen & Anderton 2012; Rajeevan et al. 2014). In India, the Pectoral Sandpiper was first recorded in the wetlands of Harike in Punjab (Undeland & Sangha 2002). Other records in the country exist from Gujarat (Patel 2022), Kerala (Rajeevan et al. 2014; Reghuvaran 2017; Sreedevi 2018) and Tamil Nadu (Gajamohanraj & Sarang 2022). Previously, there were only six records of this species in India, which can be attributed to the difficulty of correctly identifying it in the field. Since this species has not been included in Goa's avifaunal checklist of Goa (Baidya & Bhagat 2018, 2023), the sighting of this rare vagrant at the Maina-Curtorim wetlands makes it the first record for the state and possibly the seventh record for India. All records of Pectoral Sandpiper in India are shown below (Table 1, Fig. 1).

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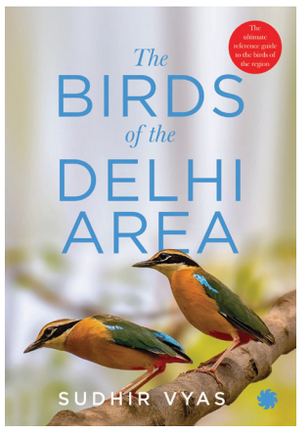
Book review



The Birds of the Delhi Area
Sudhir Vyas.
2023.

Published by Juggernaut, 2023.
Pp. 1–320.

Delhi has the distinction of being the second most bird-rich national capital in the world, second only to Nairobi, Kenya. With a multitude of habitats, ranging from the sandbanks of the Yamuna River to the rugged hills of the Aravallis the metropolis is truly a birder's paradise. Fortunately, as the nation's capital for more than a century, Delhi has continually had a stream of bird enthusiasts and ornithologists who have helped document the avifauna of the region through the years, and one such birder is Sudhir Vyas.

Sudhir's latest book, *The Birds of the Delhi Area*, is a comprehensive guide that documents the region's avian life until 2023. Building upon his previously published, *The birds of the Delhi area: An annotated checklist* (Vyas 2019), this book incorporates the latest records and provides detailed insights into the status of each species found in the region. The book amalgamates historical works, including Major General Hutson's *The Birds About Delhi* (Hutson 1954) and Usha Ganguli's *A Guide to the Birds of the Delhi Area* (Ganguli 1975), with more recent works such as the *Bird Atlas of Delhi and Haryana* (Harvey et al. 2006) and *Birds about Delhi* (Devasar & Suvarna 2018). However, it is essential to note that this is not just a compilation of literature. Sudhir Vyas's dedication shines through as he meticulously curated this checklist through years of his own field observations and interactions with fellow birders. He has painstakingly maintained a record of every species sighted in the region, ensuring the integrity of his annotated checklist. This level of detail is not achieved overnight but is the result of years of diligent record-keeping and follow-ups with birders to verify sightings. I have had firsthand experience contacting Vyas to discuss the status of certain species or report rare sightings, witnessing his unwavering commitment to ensure accurate documentation.

The book is divided into several sections, including an introduction to the Delhi area, a detailed annotated checklist, a section for historical and expunged records, and a short section on the birding hotspots in the area. The annotated checklist forms the crux of the book, offering an account for every species recorded in the region. Each account provides detailed insights into the status of the species, including its residency status, migratory patterns, and relative abundance. For rarities and vagrants, this section also includes details of when and where each species was reported. However, it is important to note that this is not a typical field guide. If you are seeking a book that provides intricate bird identification tips, this is not the book for you. Instead, this book serves as an indispensable resource for two distinct groups of bird enthusiasts. First, local Delhi birders who are keen to gain more insight into the avian population of the region, augmented with detailed historical records. Second, birders who are visiting Delhi and those who are looking for a comprehensive checklist, along with invaluable tips on where to spot these winged wonders. Complementing the checklist are captivating images, predominantly captured by Amit Sharma. The author's careful curation ensures that most images have been clicked in the Delhi area, which adds a nice touch to the book.

Great care has been taken to maintain the integrity of the checklist by including only confirmed records that were personally verified by him, taking multiple opinions into account through direct interactions. Any records of rare birds that are questionable or lack substantial evidence have been segregated into an expunged records section. For instance, the 1968 record of a White-bellied Heron *Ardea insignis*, a critically endangered species teetering on the brink of extinction, with only a few hundred individuals remaining, and at present restricted to the fast-flowing Himalayan rivers in Bhutan and northeastern India, has been added to this list.

What I found particularly interesting were the historical records. As someone who has been birding in the Delhi area for more than a decade, this section provides a window into what birding in the region was like a century ago. The historical records offer glimpses of a bygone era, including sightings such as a flock of more than 300 Pin-tailed Sandgrouse *Pterocles alchata* in 1875, the critically endangered Great Indian Bustard *Ardeotis nigriceps* in the 1920s, and the rare appearance of the now locally extirpated Siberian Crane *Leucogeranus leucogeranus* in 1875. The Critically Endangered Siberian Crane was a regular winter visitor to Keoladeo Ghana National Park in Bharatpur, Rajasthan, and was last reported in India in the winter of 2001-02 from that location. The western/central population of the species is on the brink of extirpation with only one individual, named 'Omid' (meaning 'hope' in Persian), known to be regularly wintering in Iran until 2023. The eastern population, though threatened with rapid habitat loss, is relatively stable and breeds almost exclusively in the east-central Siberia and winters in south-eastern China. The mere thought of encountering some of these avian treasures in today's Delhi seems almost incredulous! The checklist also offers a fascinating insight into the region's transient avian visitors that have since disappeared from its skies – from the endangered Greater Adjutant *Leptoptilos dubius* last recorded in the 1980s to the once abundant White-rumped Vultures *Gyps bengalensis* that were extirpated in the early 2000s. Additionally, a plethora of vagrants listed in the checklist serve as reminders for birders to keep their eyes peeled and ears open, as you never know which rare birds can turn up!

Despite its comprehensive coverage, reference books of this nature face the challenge of remaining current in the face of the evolving birding landscape. The recent surge in birders and photographers has accelerated the pace of new bird sightings and additions to the Delhi area checklist. Therefore, it would be beneficial to release updated editions with revisions periodically,

perhaps every 3–5 years, to ensure that this resource remains pertinent and up-to-date. Additionally, while the book features some stunning images, readers may desire a broader selection, especially for birds that are considered rarities not only in Delhi but also across India, such as Horned Grebe *Podiceps auritus*, Song Thrush *Turdus philomelos*, and Sharp-tailed Sandpiper *Calidris acuminata*. Furthermore, while the book touches on birding hotspots, enriching this section with more comprehensive details could further increase its use as an indispensable resource for many birders.

In conclusion, *The Birds of the Delhi Area* stands as more than just a reference book—it is a testament to the rich avian heritage of Delhi. With its wealth of historical insights, detailed species accounts, and captivating images, this book serves as an essential reference for both seasoned local birders and curious visitors alike. As Delhi's avian landscape continues to evolve, may this book inspire new generations of bird enthusiasts to explore, cherish, protect, and document the diverse birdlife that graces the skies of the capital city.

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Letter to the Editors

A visit to the Museum of Comparative Zoology and a Brandt's Mountain Finch *Leucosticte brandti* specimen from Ladakh

On a personal visit to Boston in the United States, I was curious to visit the Museum of Comparative Zoology (MCZ) at Havard University, as it houses several skins from India. On 12 and 13 April 2023, I visited the museum with the intent of understanding their scientific collections but also planned to examine certain specimens at the request of Praveen J. I was warmly received by Kate Eldridge, the Curatorial Assistant and Jeremiah Trimble, the Collections Manager, and I had an excellent opportunity to see their collections firsthand. I wish to share the details of the clarifications I sought in this collection as well the results of my investigation. Amongst this, the details of Brand's Mountain Finch *Leucosticte brandti* would be most interesting for ornithologists of the western Himalaya.

This ornithology collection began with the founding of the MCZ by Louis Agassiz in 1859. Starting with the department's first accession of a small group of birds purchased by Agassiz at the Boston Market in 1846, the collection has grown into one of the largest and most important ornithological collections in the world, currently housing nearly 400,000 scientific specimens with representatives of nearly every genus of birds and over 85% of the species of birds. The MCZ is the largest university-based ornithological collection in the world and the fifth largest overall. The collection distribution covers the globe but has a good representation from North America, the Neotropics, and, of course, Asia.

Praveen had supplied me with the Global Biodiversity Information Facility (GBIF) links of all three specimens I needed to check, and indeed, two of the specimens had incorrect details, as he suspected. The first was an Oriental Magpie Robin *Copsychus saularis* specimen (#89132) of *musicus* subspecies that was labelled with a collection locality as Nilgiris [=Neelgherie], Tamil Nadu, India. The subspecies identity must be incorrect, as *musicus* occurs only in Southeast Asia, and the subspecies in Nilgiris should be *ceylonicus*. The difference between the subspecies is only in the plumage of the female (Collar et al. 2020), a fact that was less useful here, as this particular specimen is unsexed. The second was a Blue-winged Pitta *Pitta moluccensis* (#33812) that had 'India' listed as the country. Evidently, the tag clearly indicated that the specimen was taken from Krasom [=Kossoom] in peninsular Thailand, a part of the Malay Peninsula (see Deignan 1961:502), and not from India. In both cases, I recommended that the museum database be corrected and that the specimens be retagged.

The third specimen (#166798) was a male Brandt's Mountain Finch of *haematopygia* subspecies recorded by F. A. Peter on 12 January 1934 from Khaltse [=Khalatse], Ladakh **[72–73]**, the default subspecies expected in most of Ladakh. Charles Vaurie analysed the subspecific variation of this species by procuring a collection of 118 specimens from several museums, including the MCZ (Vaurie 1949:24). He commented that "… Stresemann may have been in error in considering his four comparative specimens from Ladak to have been *haematopygia*. Stresemann's specimens had narrow rosy edges on the lesser upper wing coverts, and since they were collected on January 15 may have been winter visitors of *pamirensis*. I have examined a specimen taken by the same collector at the same locality (Khalatse) on January 12, 1934. This specimen is similar in its general coloration to specimens in fresh winter plumage of *haematopygia* from Ladak and Rupshu (fresh specimens of *pamirensis* not seen), but has the narrow rosy edges on the lesser upper wing coverts of *pamirensis*, whereas these markings are lacking altogether in 49 specimens of *haematopygia*, in both fresh and worn plumage, from Ladak and Rupshu." Here, several things may be noted. First, the date mentioned by Vaurie is exactly the same as that in #166798, and the locality tag 'Khalatse' also matches. A deeper examination revealed that this specimen also seems to have narrow rosy edges on the lesser upper wing coverts **[73]**. Hence, this is most likely the same specimen that Vaurie examined as an *L. b. pamirensis* from Ladakh. This discovery assumes significance, as the subspecies to date has been reported only from Gilgit, as a winter visitor, and not yet from the Indian side of the Line of Control. While Streseman's specimens may also relate to this subspecies, neither Vaurie nor anybody else seems to have reassessed them. In fact, I do not

72. Brandt's Mountain Finch from Khalatse, Ladakh.

Both: Subramanian Sankar

73. Brandt's Mountain Finch shows narrow rosy edges to lesser coverts.

know where those four Streseman specimens are now; probably they are in the Berlin Museum, whose catalogue I do not have access to, and there are no online catalogues available.

Apart from this discovery, I was also curious to see the specimen of Naga Wren Babbler *Spelaeornis chocolatinus* as I was involved in the discovery of the new population of *Spelaeornis* from south-eastern Arunachal Pradesh. They had a male specimen collected by S. D. Ripley from Mt. Japfo in Nagaland.

I wish to thank Jeremiah for having me on short notice and obliging with the specimens and Kate for conducting me around the museum on a tour of an astounding avian collection.

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Leg colour in male breeding plumaged Watercock *Gallicrex cinerea*

After the publication of the Gujarat field guide (Ganpule et al. 2022), the Bird Conservation Society, Gujarat, started work on making a Gujarati field guide. In relation to this work, translations of species descriptions are being carried out. While working on the description of Watercock *Gallicrex cinerea*, I made a surprising discovery. The reference text describes the leg colour in the breeding male Watercock as bright red (see Table 1).

However, on cross-checking with photographs of breeding plumaged male Watercock in 'eBird' (eBird 2024) and on social media **[74, 75]**, the leg colour in breeding male Watercock appears greenish-yellow, yellow or greyish-yellow.

There are no photographs showing a bright red or red leg colour in breeding plumaged Watercocks. Only Puan et al. (2020) reported that the legs and feet of a male are briefly red at the height of breeding but are usually greenish yellow. Such a brief change in bare skin parts during courtship has been reported in

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74. Male Watercock with greenish legs.

Table 1. Details of leg colour in breeding plumaged male Watercock in various references

Reference	Description of leg colour in text	Details of leg colour in illustration or photographs
Dharmakumarsinhji (1955)	Red	Greyish yellow
Ali & Ripley (1980)	Bright red	Not illustrated
Sonobe & Usui (1993)	Bright red	Bright red
Kazmierczak (2003)	Not mentioned	Red
Grimmett et al. (2011)	Bright red	Bright red
Rasmussen & Anderton (2012)	Red	Red
Taylor & Kirwan (2020)	Bright red	Bright red
Ganpule et al. (2022)	Bright red	Greenish-yellow (in photographs)
Puan et al. (2020)	Bright red	Not illustrated

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75. Male Watercock with greenish legs.

other bird species; for e.g., the legs of the Great Egret *Ardea alba* turn reddish, and those of the Cattle Egret *Bubulcus coromandus* turn pinkish-red (Grimmett et al. 2011). Through this note, I would encourage photographers to keep a look out for and to document red legged Watercock to understand more about this interesting and little-known phenomenon.

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