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Birds in western Trans-Himalaya
Lemon-rumped Warbler
White-bellied Heron

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Photographer: Aravind Venkatraman - www.birdsforever.in

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Photographer: Soumik Biswas

Bird diversity across the western Trans-Himalaya

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Introduction

Birdlife in the western Trans-Himalaya, within India, is characterized by a marked seasonal variation, with summer visitors that breed in Ladakh (which include anatids, sandpipers, sand plovers, gulls, terns, wagtails, and rosefinches) and winter in the plains, and winter visitors from Central Asia and the northern Tibetan Plateau (Ali & Ripley 1983). Over 300 species have been recorded in the area so far (Pfister 2001). The nineteenth and twentieth centuries saw several ornithological works from the area: Ward (1906a,b), Adams (1859), Ludlow (1920), Wathen (1923), Osmaston (1925a,b), Bates & Lowther (1952), Holmes (1986), Mallon (1987), Pfister (1997a), and Mishra & Humbert-Droz (1998). Subsequently, a number of ornithological studies were carried out in different parts of Ladakh by Mallon (2002), Namgail (2005), Sangha & Naoroji (2005, 2006), Hussain & Pandav (2008), Namgail et al. (2009), and Delany et al. (2014).

Kala & Jayapal (1999) reported 225 bird species from 34 families. The ecology of the Black-necked Crane *Grus nigricollis* was extensively studied in the late eighties and nineties by Narayan et al. (1987), Gole (1993), Pfister (1997b, 1998), and Chandan, et al. (2006). The other species that have received some attention include the Mongolian Finch *Bucanetes mongolicus* for its seasonal status in Ladakh (Harrop 1988), owls (Strigidae) in Ladakh (Pfister 1999a), the White-throated Dipper *Cinclus cinclus* with its morphs (Pfister 1999b), and the Rufous-necked Snowfinch *Pyrgilauda ruficollis* (Sen & Bhardwaj 2013). Singh & Jayapal (2000) carried out a survey of the breeding birds of Ladakh. The avifauna of the Lahaul and Spiti areas of Himachal Pradesh has been explored by Blyth (1855), Stoliczka (1868), Baker (1923), Whistler (1923, 1924, 1925), Lowndes (1930), vane-Tyne & Koelz (1936), Koelz (1937, 1939), Alexander (1951), Wynter-Blyth (1952), Mahajan & Mukherjee (1974), Rana (1997), Manjrekar & Mehta (1999), Mishra (2000), Singh (2003), Chaudhuri (2004), Jha (2014), Rawal et al. (2017), Sangha et al. (2017), Abhinav & Kuriakose (2020), Abhinav & Vikrant (2020). Though a number of studies on birds of cold deserts exist, information on altitudinal movements, breeding status, ecology, distributional limits, and population trends of species are little known (Singh & Jayapal 2000). A regular, seasonal monitoring of these populations is imperative for conservation planning as they can serve as indicators of ecosystem health over the years.

The Trans-Himalaya region is being subjected to ever increasing anthropogenic disturbances like grazing, biomass collection, expanding agriculture, plantations of monocultures and non-native species, tourism, etc. Birds are sensitive to such changes in habitat (Blankespoor 1991; Raman et al. 1998; Sekercioglu 2002). Disturbance often leads to simplification of habitat structure, and the overall bird diversity generally declines significantly after habitat disturbance (MacArthur & MacArthur 1961). In places like Ladakh, there are reports of invasive species like the Long-tailed Shrike *Lanius schach* replacing its local counterpart, the Grey-backed Shrike *L. tephronotus* (Singh & Jayapal 2000). Similarly, the Common Raven *Corvus corax* is reportedly being replaced by other corvids like the Eurasian Magpie *Pica pica* near human settlements. There is an urgent need to document the effects of increasing human use of the Trans-Himalaya so that considerations of biodiversity can be incorporated into conservation planning. Little is known about the ecological impacts in these areas of extractive practices such as livestock grazing, biomass collection, expanding agriculture, etc. (Shahabuddin & Prasad 2004).

A thorough knowledge of the status, distribution, habitat utilisation, and conservation of the avifauna will be invaluable for the planning and management of natural resources in this region, which has a significant area under the protected area network system of India. To further understand the response of birds to anthropogenic activities in the Trans-Himalaya, we conducted bird surveys from 2011 to 2014 in Ladakh and the Lahaul–Spiti areas of India. We attempted to document the abundance and richness of the avifauna, including interesting sightings and different landscapes, which may be a part of base line data for future studies.

Study area

This study was conducted in the Trans-Himalaya region of Ladakh and Lahaul Spiti. The Trans-Himalaya within India extends for 1,84,823 sq. km in the Union Territory of Ladakh, and states of Himachal Pradesh and Sikkim. About 60% of the region has been included under the biographic zone 1A or Ladakh Mountains, which includes the mostly rugged areas in Kargil, Nubra, and Zanskar in western Ladakh, and Lahaul and Spiti in Himachal Pradesh (Rodgers et al. 2000). The remaining 40% of the region is the zone 1B, or the high altitude Tibetan Plateau with vast plains and rolling slopes in the Changthang region of eastern Ladakh and the northern parts of Sikkim. This cold desert is characterized by a harsh climate of long freezing winters and a short summer. The eastern area receives very little precipitation, which is less than 10 cm per year, and forms the high altitude cold desert (Singh & Gupta 1990). The vegetation in this region is sparse and productivity peaks only during the short summer. This harsh environment is home to a unique array of highly adapted flora and fauna, and harbours a number of agro-pastoral communities with varying socio-cultural ethnicity.

The vegetation, for most part, is sparse alpine steppe with a high degree of endemism (Rawat 1998). Although the

region is virtually treeless, there are remnant relictual stands of Juniper *Juniperus macropoda* and Birch *Betula utilis* in some valleys and remote river gorges. A notable aspect of the region's vegetation is the large-scale plantation of Poplar and Salix by the forest department to meet the fuel wood requirements of local communities; these plantations are suspected to facilitate colonization of lowland species like Long-tailed Shrike, Oriental Turtle Dove *Streptopelia senegalensis*, and Cinereous Tit *Parus cinereus* (Singh & Jayapal 2000).

Methods

We conducted six bird survey trips during 2011–2014 in the western Trans-Himalaya (Fig. 1). These covered Lahaul–Ladakh (September 2011), Ladakh (March–April 2012), Spiti (June 2012), Ladakh (July 2012), Spiti (June 2013), and Ladakh (June 2014). A total of 72 days were spent in the field during this period. Observations were made in the slow-moving cars with observers sitting on both sides of the vehicles. For this, we employed the following methods: visual encounter survey on road transects by vehicle, on line transects by foot, and instantaneous scan sampling at selected point transects. All birds were counted and recorded during all surveys.

The relative diversity of avian families (hereinafter, RDi) was calculated using the formula in Torre-Cuadros et al. (2007).

$$RDi = \frac{(\text{Number of species recorded in a family})}{(\text{Total number of species})} X\ 100.$$

The bird abundance data were collected by various means, but mostly from a moving vehicle, with no replication in space and time because of the vast area covered.

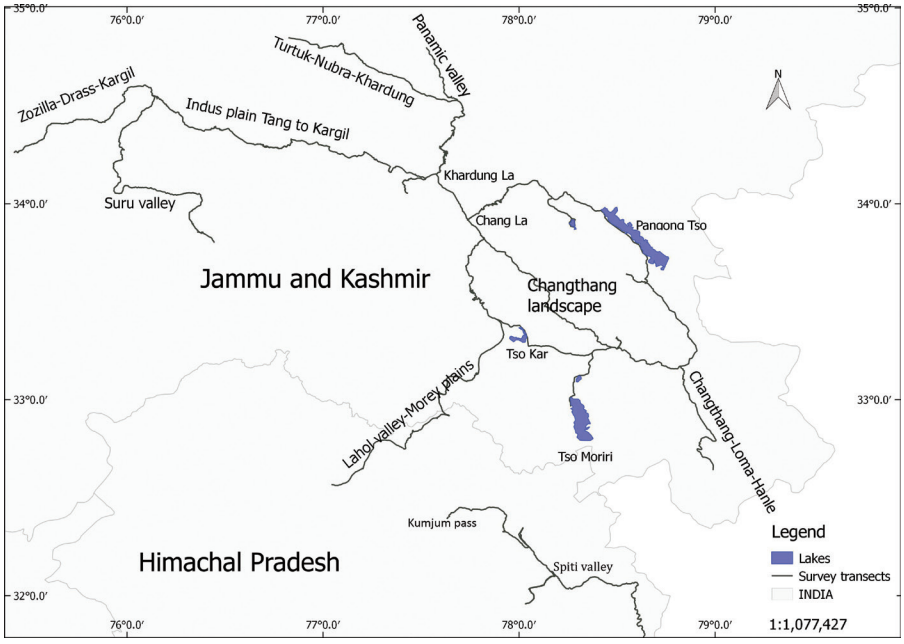

Fig. 1. Vehicular survey transects during 2011–2014 in the western Trans-Himalaya. Map: Gobind Sagar Bhhardwaj [Disclaimer: The external boundaries of India, as depicted here, may not be accurate and are not authenticated by the Government of India.]

As far as possible, surveys were conducted on clear sunny days. Birds were identified with the help of Ali & Ripley (1983), Grimmett et al. (1998), Grewal et al. (2002), and Kazmierczak (2000).

Results & discussion

During the course of our study, we made 11,456 observations of 139 species belonging to 42 avian families. The Muscicapidae had the maximum RDi (9.35), followed by the Anatidae (8.63) and the Fringillidae (7.91) (Table 1). We encountered the House Sparrow most frequently (1,450 counts), followed by the Black Redstart *Phoenicurus ochruros* (1,289), and Horned Lark *Eremophila alpestris* (985) **[127]**.

Our maximum encounter rates were as follows: Muscicapidae (n=2,343), Passeridae (n=1,930), Corvidae (n=1,580), Fringillidae (n=1,215), and Alaudidae (n=1,044).

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127. Horned Lark.

In Table 2 we present the number and overall percentage of species in various foraging guilds.

The maximum count of granivores (45%) among all feeding guilds (n=11,456) (Table 2) can be attributed to the low density of insects due to less vegetation in the region. Earlier studies have demonstrated the role of vegetation structures as one of the major factors influencing habitat selection by avian fauna in temperate regions (Cody 1981), wherein birds consume nectar, fleshy fruit parts, and seeds, and serve as pollinators and seed dispersal agents (Stiles 1978).

Ground insectivores like the Black Redstart, Desert Wheatear, and White-winged Redstart were dominant among all insectivores. The low number of trees and bushes in the surveyed landscape could be the reason why canopy insectivores were less in number. However, the reason for the abundance of Mountain Chiffchaff in the valleys, a canopy-gleaning insectivore (60% among all canopy insectivores) was the presence of large numbers of white willow *Salix alba* and *Poplar* species planted widely in the region. Though the House Sparrow was observed the maximum in overall sightings, the

Table 1. Relative Diversity Index (RDi) of avian families in the western Trans-Himalaya, along with a list of species and their encounter rate

S. No.	Family	RDi	Species	Numbers*
1	Anatidae	8.63	Bar-headed Goose *Anser indicus*	40
2			Ruddy Shelduck *Tadorna ferruginea*	159
3			Garganey *Spatula querquedula*	2
4			Northern Shoveler *Spatula clypeata*	8
5			Gadwall *Mareca strepera*	7
6			Eurasian Wigeon *Mareca penelope*	1
7			Mallard *Anas platyrhynchos*	18
8			Northern Pintail *Anas acuta*	3
9			Common Teal *Anas crecca*	19
10			Common Pochard *Aythya ferina*	5
11			Tufted Duck *Aythya fuligula*	1
12			Common Merganser *Mergus merganser*	47
13	Phasianidae	2.88	Chukar Partridge *Alectoris chukar*	131
14			Tibetan Snowcock *Tetraogallus tibetanus*	2
15			Himalayan Snowcock *Tetraogallus himalayensis*	3
16			Tibetan Partridge *Perdix hodgsoniae*	1
17	Podicipedidae	1.44	Little Grebe *Tachybaptus ruficollis*	1
18			Great Crested Grebe *Podiceps cristatus*	47
19	Columbidae	2.88	Rock Pigeon *Columba livia*	438
20			Hill Pigeon *Columba rupestris*	395
21			Snow Pigeon *Columba leuconota*	34
22			Oriental Turtle Dove *Streptopelia orientalis*	100
23	Pteroclididae	0.72	Tibetan Sandgrouse *Syrrhaptes tibetanus*	8
24	Cuculidae	1.44	Pied Cuckoo *Clamator jacobinus*	1
25			Common Cuckoo *Cuculus canorus*	15
26	Apodidae	1.44	Alpine Swift *Tachymarptis melba*	4
27			Common Swift *Apus apus*	3
28	Rallidae	1.44	Common Moorhen *Gallinula chloropus*	12
29			Eurasian Coot *Fulica atra*	9
30	Gruidae	0.72	Black-necked Crane *Grus nigricollis*	57
31	Recurvirostridae	0.72	Black-winged Stilt *Himantopus himantopus*	6
32	Ibidorhynchidae	0.72	Ibisbill *Ibidorhyncha struthersii*	1
33	Charadriidae	0.72	Lesser Sand Plover *Charadrius mongolus*	37
34	Scolopacidae	5.76	Curlew Sandpiper *Calidris ferruginea*	1
35			Temminck's Stint *Calidris temminckii*	1
36			Little Stint *Calidris minuta*	1
37			Solitary Snipe *Gallinago solitaria*	1
38			Common Sandpiper *Actitis hypoleucos*	31
39			Spotted Redshank *Tringa erythropus*	1
40			Wood Sandpiper *Tringa glareola*	3
41			Common Redshank *Tringa totanus*	33
42	Laridae	2.88	Black-headed Gull *Chroicocephalus ridibundus*	1
43			Brown-headed Gull *Chroicocephalus brunnicephalus*	104
44			Pallas's Gull *Ichthyaetus ichthyaetus*	36
45			Common Tern *Sterna hirundo*	18
46	Phalacrocoracidae	0.72	Great Cormorant *Phalacrocorax carbo*	1
47	Ardeidae	0.72	Grey Heron *Ardea cinerea*	3

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S. No.	Family	RDi	Species	Numbers*
48	Accipitridae	4.29	Bearded Vulture *Gypaetus barbatus*	29
49			Himalayan Vulture *Gyps himalayensis*	10
50			Golden Eagle *Aquila chrysaetos*	16
51			Eurasian Sparrowhawk *Accipiter nisus*	3
52			Black Kite *Milvus migrans*	5
53			Upland Buzzard *Buteo hemilasius*	15
54	Strigidae	0.72	Little Owl *Athene noctua*	1
55	Upupidae	0.72	Common Hoopoe *Upupa epops*	37
56	Picidae	0.72	Scaly-bellied Woodpecker *Picus squamatus*	1
57	Falconidae	1.44	Common Kestrel *Falco tinnunculus*	45
58			Eurasian Hobby *Falco subbuteo*	8
59	Oriolidae	0.72	Indian Golden Oriole *Oriolus kundoo*	1
60	Laniidae	1.44	Long-tailed Shrike *Lanius schach*	15
61			Grey-backed Shrike *Lanius tephronotus*	18
62	Corvidae	4.32	Eurasian Magpie *Pica pica*	614
63			Red-billed Chough *Pyrrhocorax pyrrhocorax*	307
64			Yellow-billed Chough *Pyrrhocorax graculus*	570
65			Carrion Crow *Corvus corone*	18
66			Large-billed Crow *Corvus macrorhynchos*	18
67			Common Raven *Corvus corax*	30
68	Paridae	2.16	Rufous-vented Tit *Periparus rubidiventris*	2
69			Ground Tit *Pseudopodoces humilis*	7
70			Cinereous Tit *Parus cinereus*	18
71	Alaudidae	2.88	Horned Lark *Eremophila alpestris*	985
72			Greater/Sykes's Short-toed Lark *Calandrella brachydactyla / dukhunensis*	4
73			Hume's Short-toed Lark *Calandrella acutirostris*	54
74			Oriental Skylark *Alauda gulgula*	1
75	Hirundinidae	4.32	Pale/Sand Martin *Riparia riparia/diluta*	1
76			Eurasian Crag Martin *Ptyonoprogne rupestris*	74
77			Barn Swallow *Hirundo rustica*	2
78			Red-rumped Swallow *Cecropis daurica*	1
79			Northern House Martin *Delichon urbicum*	34
80			Asian House Martin *Delichon dasypus*	3
81	Pycnonotidae	0.72	Himalayan Bulbul *Pycnonotus leucogenis*	2
82	Phylloscopidae	4.32	Hume's Warbler *Phylloscopus humei*	1
83			Sulphur-bellied Warbler *Phylloscopus griseolus*	24
84			Tickell's Leaf Warbler *Phylloscopus affinis*	10
85			Mountain Chiffchaff *Phylloscopus sindianus*	147
86			Greenish Warbler *Phylloscopus trochiloides*	1
87			Western Crowned Warbler *Phylloscopus occipitalis*	2
88	Aegithalidae	0.72	Black-throated Tit *Aegithalos concinnus*	15
89	Sylviidae	1.44	Lesser Whitethroat *Curruca curruca*	7
90			Hume's Lesser Whitethroat *Curruca curruca althaea*	16
91	Leiothrichidae	0.72	Streaked Laughingthrush *Trochalopteron lineatum*	2
92	Tichodromidae	0.72	Wallcreeper *Tichodroma muraria*	4
93	Cinclidae	1.44	White-throated Dipper *Cinclus cinclus*	21
94			Brown Dipper *Cinclus pallasii*	3

Table 1. Relative Diversity Index (RDi) of avian families in the western Trans-Himalaya, along with a list of species and their encounter rate

S. No.	Family	RDi	Species	Numbers*
95	Sturnidae	1.44	Rosy Starling *Pastor roseus*	2
96			Brahminy Starling *Sturnia pagodarum*	1
97	Turdidae	1.44	Tickell's Thrush *Turdus unicolor*	3
98			Black-throated Thrush *Turdus atrogularis*	1
99	Muscicapidae	9.35	Bluethroat *Luscinia svecica*	5
100			Blue Whistling Thrush *Myophonus caeruleus*	14
101			Himalayan Rubythroat *Calliope pectoralis*	3
102			Rusty-tailed Flycatcher *Ficedula ruficauda*	2
103			White-capped Redstart *Phoenicurus leucocephalus*	9
104			White-winged Redstart *Phoenicurus erythrogastrus*	370
105			Black Redstart *Phoenicurus ochruros*	1,289
106			Rufous-tailed Rock Thrush *Monticola saxatilis*	1
107			Blue Rock Thrush *Monticola solitarius*	71
108			Siberian Stonechat *Saxicola maurus*	5
109			Desert Wheatear *Oenanthe deserti*	527
110			Pied Wheatear *Oenanthe pleschanka*	46
111			Variable Wheatear *Oenanthe picata*	1
112	Prunellideae	1.44	Robin Accentor *Prunella rubeculoides*	147
113			Brown Accentor *Prunella fulvescens*	29
114	Passeridae	2.88	House Sparrow *Passer domesticus*	1,450
115			Black-winged Snowfinch *Montifringilla adamsi*	475
116			Rufous-necked Snowfinch *Pyrgilauda ruficollis*	1
117			Blanford's Snowfinch *Pyrgilauda blanfordi*	3
118	Motacillidae	5.76	Grey Wagtail *Motacilla cinerea*	31
119			Western Yellow Wagtail *Motacilla flava*	1
120			Citrine Wagtail *Motacilla citreola*	254
121			White-browed Wagtail *Motacilla maderaspatensis*	3
122			White Wagtail *Motacilla alba*	252
123			Tree Pipit *Anthus trivialis*	1
124			Olive-backed Pipit *Anthus hodgsoni*	2
125			Water Pipit *Anthus spinoletta*	1
126	Fringillidae	7.91	Common Rosefinch *Carpodacus erythrinus*	149
127			Blyth's Rosefinch *Carpodacus grandis*	9
128			Pink-browed Rosefinch *Carpodacus rodochroa*	1
129			Great Rosefinch *Carpodacus rubicilla*	48
130			Himalayan White-browed Rosefinch *Carpodacus thura*	2
131			Mongolian Finch *Bucanetes mongolicus*	3
132			Plain Mountain Finch *Leucosticte nemoricola*	139
133			Brandt's Mountain Finch *Leucosticte brandti*	349
134			Twite *Linaria flavirostris*	337
135			European Goldfinch *Carduelis Carduelis*	20
136			Fire-fronted Serin *Serinus pusillus*	158
137	Emberizidae	2.16	Rock Bunting *Emberiza cia*	161
138			White-capped Bunting *Emberiza stewarti*	26
139			Pine Bunting *Emberiza leucocephalos*	1
	Total			11,456

*=The number of times a species was encountered, irrespective of its numbers during each encounter.

Table 2. The number and percentage of bird species in different foraging guilds

S. No.	Guild	Number of Species	%	Species most sight in the guild
1	Granivores	25	18.3	House Sparrow (28%)
2	Frugivores	24	16.9	Ruddy Shelduck (23%)
3	Ground insectivore	23	16.2	Black Redstart (47%)
4	Water insectivore	15	10.6	White-winged Redstart (71%)
5	Canopy insectivore	11	8.5	Mountain Chiffchaff (60%)
6	Omnivore	9	6.3	Eurasian Magpie (39%)
7	Sallying insectivore	8	6.3	Eurasian Crag Martin (60%)
8	Piscivores	8	5.6	Brown-headed Gull (49%)
9	Raptor	7	4.9	Common Kestrel (48%)
10	Fruit-Seed-insectivore	6	4.2	Tickell's Thrush (27%)
11	Scavenger	2	1.4	Bearded Vulture (75%)
12	Trunk/bark gleaner	1	0.7	Scaly-bellied Woodpecker
	Total	139	100	

Eurasian Magpie remained most dominant among all large birds in valleys, which are closely associated with human activities. This is due to its omnivorous diet, which is easily available near human habitations. Resource specialists like barbets, green pigeons, sunbirds, and woodpeckers were completely absent because of the lack of large trees; the exception being a single record of a Scaly-bellied Woodpecker in the Suru Valley near Kargil.

Though opportunities for observing long term changes in natural biota are rare, referring to early literature we could draw some inferences for the Spiti Valley where we observed Indian Golden Oriole, Blue Whistling Thrush, Himalayan Bulbul, Long-tailed Shrike, Common Cuckoo, Rufous-vented Tit, Streaked Laughing Thrush, Rusty-tailed Flycatcher, etc., particularly in the groves of poplar and *Salix alba* as well as in apple orchards, which are otherwise not found naturally in the Trans-Himalaya. The White-capped Bunting was only spotted in the Spiti and Pin valleys in the months of June 2012 and 2013 **[128]**. These sightings may be attributed to the great gorge of the Sutlej River, which the Spiti River joins it—a possible a flyway for these birds to reach the cold desert of Spiti Valley (Thakur & Mattu 2011). This could also be attributed to habitat changes brought about by anthropogenic interventions, including a shift from traditional agricultural to horticulture in developing apple orchards and other fruit species coupled with plantation activities by state forest department and other agencies. These orchards in the cold desert are islands of pulsating diversity, and serve as refuges for birds.

Both: Subharanjan Sen

128. White-capped Bunting.

Some of the species that were spotted during the survey may be new, or supplement earlier reports for this landscape. These include five Black-eared Kites on the Chushul–Resangla route, Oriental Skylark in the Tsokar marshes, one Tree Pipit in Sumdo, Little Stint in Hunder, Solitary Snipe in a marsh in Tangtse, Dark-throated Thrush in Disket, Brahminy Starling near Yoma village, and Little Grebe in Starsabuk Tso—all in September 2011. We also documented a single Rufous-necked Snowfinch at 4,700 m in the same season was also documented (Sen & Bhardwaj 2013). Also spotted were: Rufous-tailed Rock Thrush was observed in the Nubra Valley in September 2011 **[129]**, eight Eurasian Wigeon and a Tufted Duck in the marshes of Disket in Nubra Valley in March 2012, a single Water Pipit adjoining a stream near the Resangla War Memorial (March 2012), Pine Bunting near Sumdo (April 2012), Curlew Sandpiper on the shores of Tsomoriri Lake in June 2012, Spotted Redshank in a marsh near the Panamik Valley, and Pied Cuckoo near Tabo (June 2013). An enormous flock of Brandt's Mountain Finch comprising roughly 3,000–4,000 birds foraged on the ground near Khardung La. We hope this study encourages future work in the region to document the effect of rapid anthropogenic changes in the habitat and its consequences on bird diversity and populations.

129. Rufous-tailed Rock Thrush.

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The distribution of Lemon-rumped Warbler *Phylloscopus chloronotus* and Sichuan Leaf Warbler *Phylloscopus forresti* in north-eastern India: An analysis based on their vocalisations

Peter Boesman & Praveen J

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Abstract

The vocalisations of the Lemon-rumped *Phylloscopus chloronotus* and the Sichuan *P. forresti* Leaf Warblers differ both, in song, and in principal call note. However, the occurrence of the Sichuan Leaf Warbler in north-eastern India has been contentious until recently, when more call recordings were made available on public sound repositories. We analysed all available principal call recordings of both these leaf warblers, across their distribution ranges and established that Sichuan Leaf Warbler indeed occurs in north-eastern India. However, we found that recordings from Arunachal Pradesh did not entirely fit one species: those from western Arunachal being acoustically closer to the Lemon-rumped, and those from eastern Arunachal, to the Sichuan. We hypothesize that this could be a result of hybridisation or introgression and should be explored further by genetic research.

Introduction

The *Phylloscopus* genus of leaf warblers is a morphologically poorly differentiated group, which has seen significant taxonomic changes in recent decades (Rheindt 2006; Martens 2010). This is largely due to the evolution of taxonomy from a museum-based science in which morphology and plumage were considered exclusive criteria for determining a taxon to a more integrative approach that includes additional assessment tools such as bioacoustics and genetic analysis. The elevation of many taxa to species level has also created a new challenge in field identification, as many of these hardly differ in plumage. Additionally, most migrating birds breed in the Holarctic region and travel long distances to wintering areas, occasionally turning up as vagrants outside their regular range, adding complexity to their field identification. Therefore the increasing sophistication of identification techniques used nowadays is quite impressive: genetic analysis correcting identification in the hand by bird-ringers in the case of Common Chiffchaff *P. collybita* taxa (de Knijff 2012); comparison of sound parameters to re-identify a Pale-legged Leaf Warbler as the first wintering record of a Sakhalin Leaf Warbler in Singapore (Yap et al. 2014); or using Principal Component Analysis (hereinafter, PCA) of vocalisations to prove the first occurrence of a Chinese Leaf Warbler *P. yunnanensis* in South Korea (Moores & Borzée 2020).

In the present paper we aim to zoom in on a closely related species-pair in order to determine their occurrence in India. An in-depth taxonomic analysis of the Pallas's Leaf Warbler *P. proregulus* complex (Martens et al. 2004) led to the recognition of four distinct species of which, the Lemon-rumped Warbler *P. chloronotus* occurs across the length of the Himalaya from Pakistan to north-eastern India, and the Sichuan Leaf Warbler *P. forresti* occurs in central western China, with the Gansu Leaf Warbler *P. kansuensis* occurring just north-westwards of it, and Pallas's Leaf Warbler in north-eastern Asia, wintering further eastwards. These two species are morphologically indistinguishable (Martens et al. 2004) and can only be identified by their voice or genetic traits. Martens et al. (2004) used data from Kashmir (India) and Nepal for the Lemon-rumped Warbler, and from Sichuan (China) for the Sichuan Leaf Warbler, but lacked information about birds in between, in the eastern Himalaya. The authors acknowledged that the exact boundaries of the breeding (and wintering) region of both species were unknown. Though there are *c.*20 museum specimens from north-eastern India (portal.vertnet.org) for genetic analysis, their status has remained largely unchanged from 2004 to date (Grimmett et al. 2011; Rasmussen & Anderton 2012; del Hoyo et al. 2020). The Sichuan Leaf Warbler was not included in the 'India Checklist' (Praveen et al. 2016) until recently (Dhyey et al. 2021; Praveen et al. 2021) despite documented claims of its presence in north-eastern India (Vercruysse 2017; but see Jayapal & Praveen 2017). Lemon-rumped Warblers are regularly observed in Bhutan, and in Arunachal Pradesh, and the other north-eastern Indian hill states, but without a detailed analysis of its vocalisation, identification in the field is based on the assumption that the species occurs all along the Indian Himalaya, while the Sichuan Leaf Warbler does not (Fig. 1).

Methods

The vocalisations of the Lemon-rumped- and Sichuan Leaf Warblers differ both, in song, and in principal call note say Martens et al. (2004), who described these differences in a qualitative way and based these on a quantitative PCA, but they did not provide any key that would allow identification of both species unequivocally.

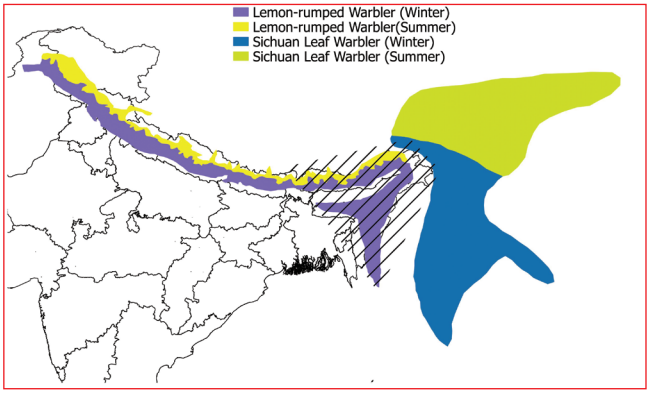

Fig. 1. Occurrence of Lemon-rumped- and Sichuan Leaf Warblers during their breeding and non-breeding periods, *based on current knowledge* (Alström et al. 2020; del Hoyo et al. 2020); the hatched area being the region of uncertainty. Map is hand-drawn using the maps of both species in *Birds of the World*. [National and international boundaries are only indicative, and may not reflect current political or geographical realities.]

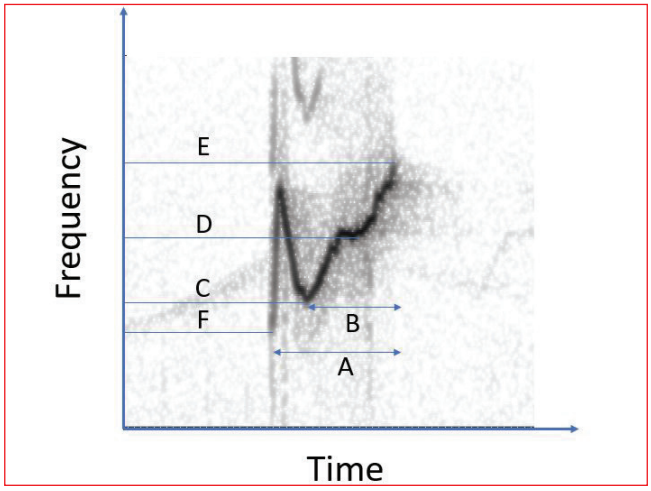

Fig. 2. Parameters of the call notes that were measured.

Given that many bird observations in the Himalaya are made in winter and early spring, when birds are not necessarily vocal and, in many cases, do not sing—as they are most likely not on their breeding grounds—we chose to focus here on identifying the call notes.

We gathered all recordings of calls available online of both, Lemon-rumped- and Sichuan Leaf Warblers from the Xeno-Canto (https://www.xeno-canto.org/) and the Macaulay Library (https://www.macaulaylibrary.org/) sound archives. We also requested additional recordings from the British Library of Natural Sounds (hereinafter, BLNS; http://cadensa.bl.uk/), including the recordings of Jochen Martens from Nepal and Sichuan, which were used in his original research study. We also received several additional sound recordings from Per Alström.

We first analysed recordings from two regions: the Himalaya westwards of Bhutan (which are assigned to the range of the Lemon-rumped Leaf Warbler, in accordance with the findings of Martens et al. 2004), and China (assigned the range of the Sichuan Leaf Warbler). We measured the following parameters: total duration of the call note, duration and minimum frequency of the final ascending part, intermediate frequency whenever a discontinuity is present, and the overall minimum and maximum frequency of the call note (Fig. 2, Table 1).

Measurements were made manually, on sonograms, using Cooledit Pro software (with settings Blackmann-Harris window and 512 Bands resolution to obtain the sharpest image). Depending on the duration of the sound recording, and the number of call notes present, we measured either one, two, or three call notes in order to include individual variation without giving too much weight to individual vocalisations that had extremely long recordings. In total, we measured 29 call notes of the Lemon-rumped- and 24 call notes of the Sichuan Leaf Warbler. We identified differences between these two vocal groups. Based on these findings, we then measured the same parameters for all available sound recordings from the intermediate region, ranging from Bhutan to extreme eastern India. Despite the relative high number of observations of Lemon-rumped type of leaf warblers in this region (eBird 2021) we could only gather the following sound recordings (Table 2):

We did a PCA on all these parameters (For D, we imputed the value for recordings that did not have a bend) to identify the clusters.

Table 1. List of acoustic parameters and their descriptions

	Parameter
A	Total Duration (in s)
B	Duration of the final ascent (in s)
C	Minimum Frequency of the final ascent (in Hz)
D	Frequency of the discontinuity/bend, if present (in Hz)
E	Maximum Frequency
F	Minimum Frequency

Table 2. List of sound recordings of Lemon-rumped/Sichuan Leaf Warblers from north-eastern India.

No	Recordist	Date	Location	Reference
1	Edward Vercruysse	December 2002	Shillong, Meghalaya	XC619183
2	Per Alström	June 2009	Jang, Western Arunachal Pradesh	Private
3	Per Alström	June 2009	Mandala road, Western Arunachal Pradesh	BLNS163715
4	Edward Vercruysse (2017)	February 2015	Saiha, Mizoram	XC346297
5	Peter Boesman	March 2018	Shillong, Meghalaya	XC426770
6	Edward Vercruysse	April 2019	Anini, Eastern Arunachal Pradesh	XC619165
7	Dhyey Shah (Shah et al. 2021)	December 2020	Tilam Top, Eastern Arunachal Pradesh	ML295353311
8	Arka Sarkar	January 2021	Tilam Top, Eastern Arunachal Pradesh	XC616399

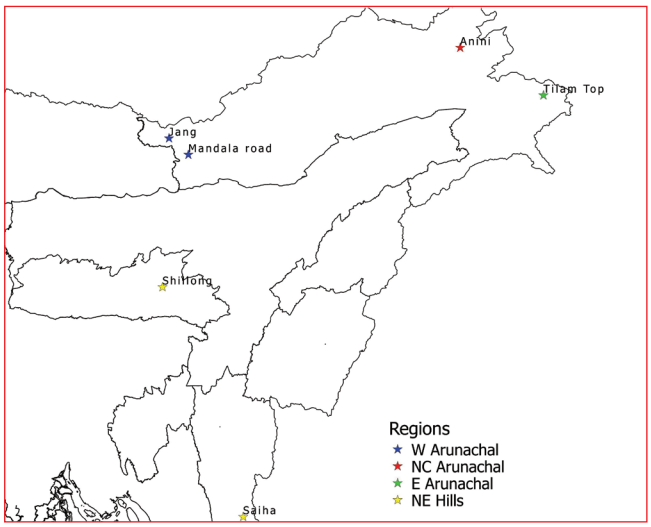

Fig. 3. Localities of sound recordings from north-eastern India

Results

Call notes of both species are quite stereotypic and are considered innate (Martens et al. 2004). Nevertheless, we found substantial variations in the note shapes on the sonograms. Figs. 4A, 4B illustrate the range of shapes for both species. Quantitatively, we found that the main differences in the call notes between the two regions are the total duration of the call note (range 0.056–0.100s for Lemon-rumped- vs 0.155–0.222s for Sichuan Leaf Warbler), and the duration of the 'final rise' (range 0.033–0.077s for Lemon-rumped- vs 0.104–0.173s for Sichuan Leaf Warbler). We used the same data in a PCA analysis. 57% (PC1) of the difference could be explained by the first principal component and 20% (PC2) by the second. Highest loading for PC1 is duration of the final ascent (0.52), and total duration (0.49) confirming our qualitative assessments. Highest loading for PC2 is maximum frequency (0.25).

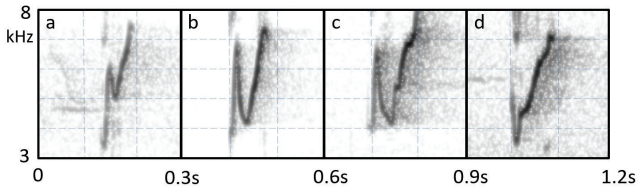

Fig. 4A. Sonograms of main call of Lemon-rumped Warbler. a: Pakistan (P. Alström), b: Uttarakhand, India (XC547671, A. Spencer), c: Uttarakhand, India (XC472909, P. Boesman), d: Nepal (WR142859, J. Martens).

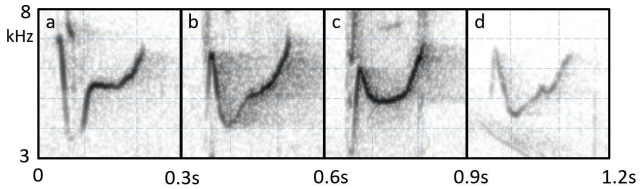

Fig. 4B. Sonograms of main call of Sichuan Leaf Warbler. a: Qinghai, China (XC491413, P. Boesman), b: Sichuan, China (WR142854, J. Martens), c: Sichuan, China (P. Alström), d: Sichuan, China (WR142857, J. Martens).

There are also differences in the average frequencies, but ranges show a partial overlap. The total absence of a bend in the 'final rise' is indicative of a Lemon-rumped Leaf Warbler, the presence of a slight bend may be either species, while the presence of a very strong bend is indicative of a Sichuan Leaf Warbler (Fig. 5).

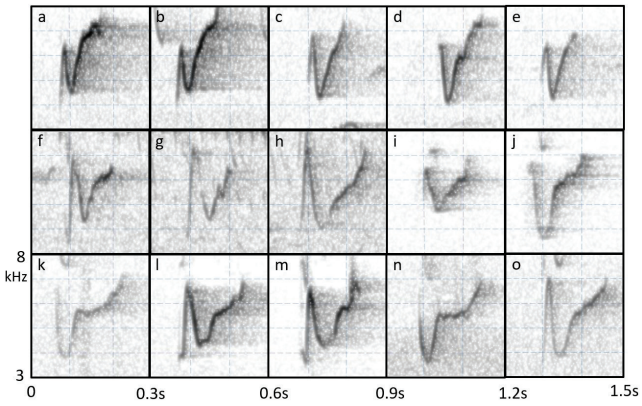

Fig. 5. Sonograms of calls from the 'intermediate region'. a–b: Jang; c–e: Mandala Road; f–h: Anini; i–k: Tilam Top; l–n: Meghalaya; and o: Mizoram.

In the 'intermediate region', we found three cases:

- Recordings that fit 100% the parameter ranges for Sichuan Leaf Warbler (recordings from Meghalaya and one from Mizoram).
- Recordings that fit the best Sichuan Leaf Warbler, but that have at least one parameter not matching it. Most calls are slightly *shorter* than typical Sichuan Leaf Warbler (recordings from extreme eastern Arunachal Pradesh).
- Recordings that fit the best Lemon-rumped Leaf Warbler, but that have at least one parameter not matching Lemon-rumped Leaf Warbler. Most calls are slightly *longer* than typical Lemon-rumped Leaf Warbler (extreme western Arunachal Pradesh).

PCA results illustrated (Fig. 6), and a boxplot (Fig. 7) clearly show the three cases for the 'intermediate region' described above.

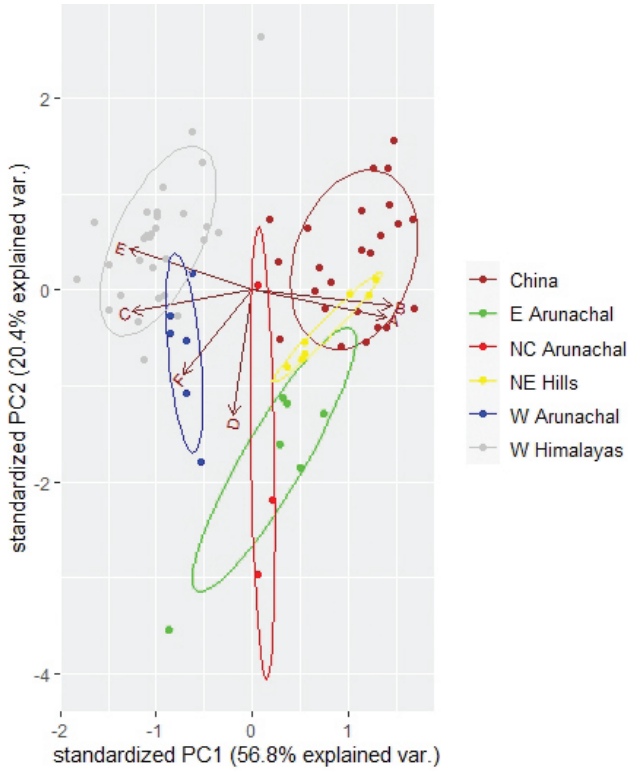

Fig. 6. Principal Component Analysis of the call parameters

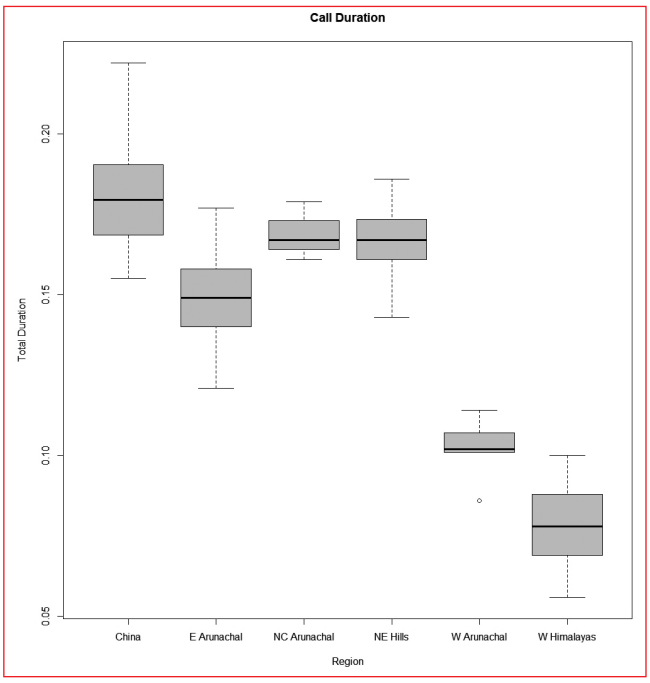

Fig. 7. Variations in the total duration of calls of Lemon-rumped- and Sichuan Leaf Warblers, across their ranges.

Discussion

In the case of two species that cannot be identified morphologically, but do have distinct songs and call notes, we expect a scenario in which any series of call notes can be assigned to either species. We did indeed find clear differences between the calls of Lemon-rumped- and Sichuan Leaf Warblers, and we did find call notes from birds observed in Meghalaya and Mizoram that fit entirely those of a Sichuan Leaf Warbler. This is, undoubtedly, the strongest evidence to date for the occurrence of the Sichuan Leaf Warbler in India. Only by taking samples from wintering birds for genetic analysis can one further strengthen the evidence. We therefore concur with the inclusion of Sichuan Leaf Warbler in the India Checklist, at least as a winter visitor.

However, we also found deviations from this 'ideal scenario'. Sound recordings from Arunachal Pradesh did not fit either species in their entirety. Vocalisations in western Arunachal were closer to a Lemon-rumped- while those in eastern Arunachal were closer to a Sichuan Leaf Warbler, albeit with some intermediate properties. We only measured a limited number of recordings from both these reference regions. It is possible that a more extensive sample set from the reference regions may encompass the variations we report in the Arunachal samples, and they may cluster cleanly within either of the species. While this may be true, it would still be remarkable that in Arunachal all Lemon-rumped type of calls tend to be of longer duration, while all Sichuan Leaf Warbler type of calls in tend to be of shorter duration.

Another explanation could be that there is a gradual cline in the call note from very short calls in the west to very long calls in the east, which would then explain the intermediate durations in Arunachal. However, when comparing recordings from Pakistan to Nepal, there is no clear gradual change, with parameter ranges being nearly equal in both sub-regions. We can, thus, also discard this hypothesis.

One may also argue that in the breeding and non-breeding periods, calls may differ slightly, as most recordings from the reference regions are from the onset of the breeding season in late spring . However, besides the possibility of uncrystallized calls in early autumn from juveniles, we should not expect this in analogy with other *Phylloscopus* species. Also, the recordings from extreme western Arunachal Pradesh are from June, and thus, deviation here cannot be explained by this hypothesis, which, as a consequence, is proven wrong.

From the western Himalaya to western Nepal is the range of the *simlaensis* Lemon-rumped Leaf Warbler. If it is indeed a diagnosable taxon, it could have a slightly different call note from the nominate that occurs eastwards from central Nepal. If all calls recorded in Arunachal Pradesh (east and west) belong to nominate Lemon-rumped (Type Locality: Nepal; restricted to Central Valley of Kathmandu by Ripley 1950: 401), these would then cover the entire range between *simlaensis* in the west and Sichuan Leaf Warbler in the east. The call of this connecting taxon would then be closest to *simlaensis* in the west while closest to Sichuan Leaf Warbler in the east. This does not seem to be a plausible explanation either, as all calls from eastern Nepal are clustering well within the calls from western Himalaya and the intermediate calls are only from Arunachal Pradesh.

A final possible explanation is that some hybridization or introgression has occurred. As a consequence, some vocal properties could have changed in this present or past contact zone and call duration may have shifted towards an average common value. This seems a plausible explanation, but hard to prove without genetic analysis. If this is the case, the region from eastern to western Arunachal Pradesh is, however, a broad zone of about 400 km, and the question arises how then would birds call in the middle of these two extremes, as we lack recordings from this region. A transition zone would be similar to e.g., the species pair Hoary-throated/Streak-throated Barwing *Actinodura nipalensis/waldeni,* for which, due to hybridisation, there is no consensus on the exact boundaries between both species, said to be either western (Collar & Robson 2020) or eastern Arunachal Pradesh if a race is moved to the other species (Rasmussen & Anderton 2012). Birds in Arunachal Pradesh may belong to a resident population only with short-range elevational migration with a wide zone of introgression. This may have implications on the existing accepted species limits for this pair, as previous studies did not consider this possibility. Wide-range hybridisation is typically a contra-argument for treating two groups as distinct species, but a stable hybrid zone where two parapatric groups meet is increasingly accepted for closely related species-pairs (Tobias et al. 2010).

Finally, it is also worth observing that we did not find two call types in any region, which could have pointed to the occurrence of both species together.

Concluding remarks

What started as a seemingly basic acoustical analysis to determine the identity of 'Lemon-rumped type' Leaf Warblers in north-eastern India has revealed that we still lack substantial knowledge about this species-pair. In his seminal overview of all *Phylloscopus* species Martens (2010) concluded with the sentence: 'Several populations presently accepted at species level need further substantiation'. This is definitely valid for Lemon-rumped Warbler

and Sichuan Leaf Warbler. Ten years later, we still know very little about the occurrence of both species in north-eastern India, although we can now conclude that there is little doubt that the Sichuan Leaf Warbler occurs at least in Meghalaya, and Mizoram in winter. Inversely, there is apparently no vocal evidence for the occurrence of Lemon-rumped Leaf Warbler in the north-eastern hill states of India and far eastern Arunachal Pradesh.

We highly recommend careful documentation of any Lemon-rumped type of leaf warbler in north-eastern India and adjacent regions in Yunnan, and Tibet in China, and Myanmar, during any period of the year, especially by making sound recordings of vocalisations. Such a larger set of samples should eventually allow one to compare also songs, to determine how birds sing and call during the breeding season when migrant Sichuan Leaf Warbler has left for its breeding grounds in China. As pointed out by Martens (2017), researchers could also perform genetic analysis of birds in this region either by using tissue samples from existing specimens, or during bird-banding activities, to establish the situation in Arunachal Pradesh.

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In Memoriam

DR AJIT KUMAR MUKHERJEE

(1924 – 2021)

Diet and foraging behaviour of three Forktail *Enicurus* species, including fish in the diet of the Slaty-backed Forktail *E. schistaceus*

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Engilis Jr., A., Lalbhai, P. S., Engilis, I. E., & Rawat, V., 2021. Diet and foraging behaviour of three Forktail *Enicurus* species, including fish in the diet of the Slaty-backed Forktail *E. schistaceus*. *Indian BIRDS* 17 (4): 109–113.
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Introduction

Forktails (Muscicapidae; *Enicurus*; 7 species) are charismatic and energetic stream-associated, terrestrial flycatchers distributed primarily in the mountains of the Indian Subcontinent, China, Taiwan, and South-east Asia through Indonesia (Collar 2005; Grimmett et al. 2011; Clement & Rose 2015; Eaton et al. 2016). Forktails are known to feed along stream edges and banks, picking invertebrates from the water margins, leaf litter and surface of streams along shallow submerged rocks, and in the splash-zones of small rapids (Rand & Fleming 1957; Tyler & Ormerod 1994; Manel et al 2000; Buckton & Ormerod 2008; Amir et al. 2020). Buckton & Ormerod (2008) conducted the only study involving forktail diets wherein fecal pellet of Himalayan species were analyzed. It is clear from the paucity of literature on forktails that these enigmatic birds remain under studied. In January 2020, we had the opportunity to observe forktails foraging in a region of the Lesser Himalaya of Uttarakhand, India, and those observations led to a broader examination of the diets and foraging behaviour of the three species occurring there. In this paper we summarize foraging strategies and prey items for three species of forktails determined from our own, and online, photographic resources.

Our field site was a small mountain stream located along the Bhatella Dhanachuli–Bhimtal Road, Nainital District (29.37ºN, 79.56ºE; 1,386 m asl; Uttarakhand, India). This stream drains into the Gaula River. This riparian stream ran through a steep canyon with Oak (*Quercus* sp.) woodland on the hillsides. Our observations took place along a 1.5 km stretch of creek on 14 and 15 January 2020. The riparian vegetation was lush and relatively intact. The stream was well shaded and narrow, ranging from 5–15 m wide, with clear, cool running water. There were several small pools interspersed with faster running water and small cascades along its length **[130]**. Along this stretch we observed three species of forktails: the commonest being the Spotted Forktail *Enicurus maculatus*, followed by the Slaty-backed *E. schistaceus*, and the Little Forktail *E. scouleri*. Studies show that stream-loving passerines co-exist, forming a characteristic avifauna of the Lesser Himalaya (Manel et al. 2000; Sultana & Kahn 2000; Buckton & Ormerod 2008; Sultana & Hussain 2010; Krishna et al. 2014). In addition to the three *Enicurus* species at our field site, we found the stream-adapted passerine community of this creek to include Plumbeous Water Redstart *Phoenicurus fuliginosus*, White-capped Redstart *P. leucocephalus*, Grey Wagtail *Motacilla cinerea*, and Western Yellow Wagtail *M. flava*.

I. E. Engilis on 15 January 2020

130. Riparian habitat along the small Himalayan stream in Nainital District, Uttarakhand where we studied the forktails.

We perused relevant literature and found only a few studies that documented foraging strategies and niche segregation for Spotted, Slaty-backed or Little forktails (Tyler & Ormerod 1994; Manel et al. 2000; Buckton & Ormerod 2008; Krishna et al. 2014; Collar 2020a,b,c), and only one study that examined the diets of the Little- and Spotted forktails (Buckton & Ormerod 2008).

The diet of the Slaty-backed Forktail, as far as we can ascertain, remains poorly understood. Since we documented dietary items of the Slaty-backed Forktail from our photographs, we decided to examine other photographs of forktails to search for identifiable prey items in their beaks. We started with examining photographs of the Slaty-backed Forktail, but then expanded our search to encompass Spotted and Little forktails. We searched three large photo archives: eBird (1,433 photos examined), Oriental Birds Images (hereinafter, OBI; 313 photos examined), and Flickr Photos (1,297 photos examined). In all, we viewed 3,043 images, and found 92 with prey items that could be identified in the beaks of Spotted, Slaty-backed, or Little forktails. We identified the prey items with the assistance of entomologists at the Bohart Museum of Entomology at the University of California, Davis. We did not explore diet descriptions in comment sections in eBird records, as we could not properly confirm the identification of prey without photographic evidence. We did not want to perpetuate unsubstantiated reports of prey items from unverified notes.

Observations

The Spotted Forktail (25 cm in length; **131a**) was the largest of the three species occurring on this creek. We observed it in a variety of conditions, sometimes even at a distance from the water's edge. This is similar to observations in Nepal by Tyler & Ormerod (1994). This species has a methodical foraging strategy, differing from the other two, which includes walking (not hopping), with very small tail wags. Spotted Forktails habitually flip leaves, debris, and small pebbles and stones in search of prey. In addition to our own observations, we reviewed videos (n=24) of foraging Spotted Forktails, and in all cases flipping debris remained a primary hunting strategy. It is also the most tranquil of the three species we observed, with deliberate feeding behavior. Although they are capable of wagging their tail high over their back, in their typical foraging posture, the tail was held horizontal or near so to the ground, and slowly wags downward. We examined 851 photos and found 31 of Spotted Forktails with identifiable prey in their beak.


131a.

Yamil Saenz


131b.

Iman Shah


131c.

Aravind Venkatraman (www.birdsforever.in)

131a–c. Typical postures of three sympatric forktails: 2a: Spotted Forktail; 2b. Little Forktail; 2c. Slaty-backed Forktail.

The Little Forktail (12–14 cm; **131b**) was the most aquatic of the three, foraging primarily in the splash zone of rapids and small waterfalls in the creek. It preferred to forage with its feet wet and in rapids or small rivulets in the stream. This species, in shape and posture, is reminiscent of dippers (Cinclidae). However, they differ greatly, with a constant and 'nervous' flicking and fanning of their tail while foraging or sitting. They dart forward to pick prey off the surface of the water. They incorporate short, walking darts with hopping, more frequently than the other two forktails. We observed one individual foraging up a small cascade and the bird often dove, dipper-like, into the water and under cascades in search of prey. Others have reported dipper-like foraging behaviour for this species (Tyler & Tyler 1996; Buckton & Ormerod 2008). We examined 1,282 images and found 36 of Little Forktails with identifiable prey in their beak.

The Slaty-backed Forktail (20–23 cm; **131c**) was an active flycatcher, using small darting maneuvers to capture prey along the stream, not unlike wagtails (Motacillidae; *Motacilla* species). We found it exclusively associated with the stream, foraging along the edge or from rocks in the middle. Foraging studies of Slaty-backed Forktail along streams and rivers in the Himalayas have documented this more aquatic behavior (Tyler & Ormerod 1994; Krishna et al. 2014). As with Spotted Forktail, this species walks instead of hopping, as it moves from one spot to another. It often darts, from rock to rock when foraging. Slaty-backed Forktail actively pumps its tail upward, sometimes at a near 90-degree

angle to the back, slowly lowering it. It does not flare its tail like the Little Forktail. While foraging, this forktail will hold its tail flat, or cocked at a 10–20-degree angle to its back, and stand tall on its long legs. It often perches on a small rock or on the shoreline next to the flowing water, scanning for prey, espying which it darts off of the rock and captures from the edge of the water or in water. It is more active than the Spotted Forktail. We did not observe it flipping leaves or stones in its search for prey. We examined 910 images and found 25 of Slaty-backed Forktails with identifiable prey in their beak.

Summary of diets

Even with our cursory observations, it became clear that these congeners reduced competition by using different strategies for hunting prey, and exploited different portions of the stream they dwelt in. Our descriptive findings are supported by quantitative studies by Tyler & Ormerod (1994), and Buckton & Ormerod (2008). Our findings further support niche separation measured amongst Himalayan aquatic passerines reported by Tyler & Ormerod (1994) and Buckton & Ormerod (2008). Table 1 lists the items we were able to identify in the beaks of all three species. We further characterize the identified prey items based on functional groups (Fig. 1). Figure 1 shows the Little Forktail's diet comprised primarily of aquatic insects of which 56% were stonefly and mayfly larvae, reflecting its more dipper-like foraging strategy. Aquatic insects made up less than 50% of the diets of Spotted- and Slaty-backed forktails, and the latter had the most diverse diet among prey items identified. The Spotted Forktail had the highest percentage of terrestrial insects in its diet, reinforcing a more terrestrial niche, and was reflected in diet studies by Buckton & Ormerod (2008). Chironomid midges and other small Diptera may be exploited, but their small size made it nearly impossible to determine if they were in the bill of the birds observed, or in photographs (a limitation to photo identification of prey items). For example, fecal analysis found small Chironomids to be an important element of the Little Forktail's diet (Buckton & Ormerod 2008).

Table 1. Prey items identified from photographs of three species of forktails

Prey Item	Little Forktail N=36	Slaty-backed Forktail N=25	Spotted Forktail N=31
Ephemeroptera (mayflies)	10	0	1
Plecoptera (stone flies)	10	1	1
Lepidoptera (butterfly and moths)	2	3	3
Diptera (Tipulidae, crane flies)	4	1	4
Diptera (Syrphidae, hoverflies)	0	0	1
Trichoptera (caddisfly)	1	3	1
Odonata (dragonflies)	1	3	4
Orthoptera (Tetrigidae, groundhoppers)	0	1	2
Coleoptera (beetles)	1	0	5
Neuroptera (antlions)	3	0	0
Arachnid	0	2	0
Centipede	0	1	0
Fish	0	5	0
Annelid	1	0	0
Mollusks	0	1	5
Unidentified	3	4	4

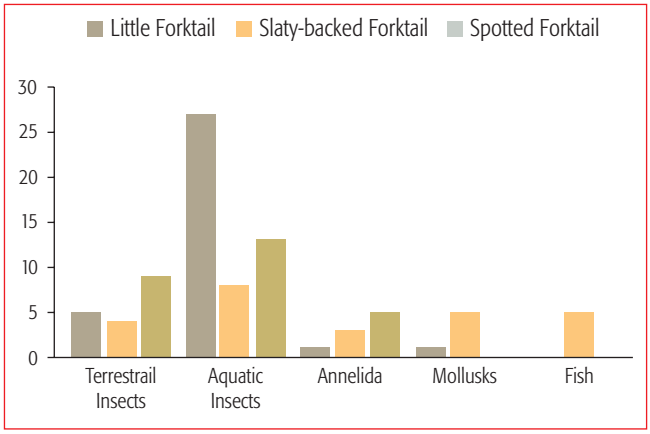

Fig. 1. Proportion of diet from photographic evidence for three species of forktails.

Of particular interest was one Slaty-backed Forktail we observed at 0730 h on 14 January 2020, foraging in a small riffle with a boulder shoreline. It darted from rock to rock as it foraged along the edge of the water, but then stopped to perch on a small rock along a calm pool, in-between riffles. We noted the bird was scanning and then it darted to the middle of the stream, splashing into the water head first, like a kingfisher. When it came out, it flew to a nearby rock with a small fish in its beak. It manipulated the fish so that its head pointed into the bird's throat, and swallowed it. It then flew back to perch on the same 'hunting' rock. It again scanned and then darted out, splashed into the water head first, and came out with another small fish. We were able to photograph the second foraging event **[XX3]**. The fish in this observation was tentatively identified as a catfish *Glyptothorax* sp., which is common in fast flowing streams of the Lesser Himalayas (Sehgal 1999; Ng & Rachmatika 2005). This is the first observation of any species of forktail foraging on fish, and is the first reported observation of a forktail hunting like a kingfisher, from stones in a creek.

In photo archives we found four additional photos of the Slaty-backed Forktail with small fish. Interestingly, all were from the Nainital District, and photos were taken between 2015 and 2019. Three of the four species of fish were identified as the same *Glyptothorax* catfish we observed. The fourth was provisionally identified as a Cyprinid in the genus *Opsarius* or *Barilus*.

We are certain that further studies and observations would add to observed behaviours and dietary items of *Enicurus*. For example, we found all three species that were photographed, foraging on vertical walls with falling water, using a picking behavior to secure prey. If there was fallen debris or leaf litter on the rock walls, Spotted Forktail seemed compelled to flick them to look for prey underneath. Examining photographs to gain insights of diet of rarely studied species proved a useful and viable technique, provided dietary items can be correctly identified. It expands on the applied use of photographs and camera traps in the study of birds (O'Brian & Kinnaird 2008). We recognize that this method only confirms a subset of prey items, which may not be reflective of preferred prey items.

Finally, the best quality images were on OBI, and Flickr. The majority of images in eBird were documentary in nature, and generally unsuitable for prey identification. Further studies to refine niche separation, competitive exclusion, community structure, foraging behaviour, and quantifying prey items would

All: A. Englis, Jr.

132. Sequence of photos showing Slaty-backed Forktail capturing a small fish in Uttarakhand, India, 14 January 2020.

help to better understand these charismatic birds and the dynamic stream-loving passerine community of the Himalaya.

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Dusky Warbler *Phylloscopus fuscatus* in Kambalakonda Wildlife Sanctuary, Visakhapatnam, Andhra Pradesh

The Dusky Warbler *Phylloscopus fuscatus* is a winter migrant to eastern India, the Andaman Islands, and other Asian countries (Rasmussen & Anderton 2012; Grimmett et al. 2011; SoIB 2020). Arriving in the non-breeding season (August–April), the Dusky Warbler is known to occur in foothill habitats, skulking in low vegetation (scrub and open plains with low bushes, trees), and edges of cultivation, frequenting long grass near water, damp cultivation, and mangroves (Clement 2020). It is commonly seen in north-eastern India and the eastern state of Orissa (Inskipp 2015). There are, however, only a handful of confirmed records of the Dusky Warbler from southern India (Table 1).

On Monday, 08 March 2021, at 0730 h, we visited Kambalakonda Wildlife Sanctuary (17.81°N, 83.33°E), Visakhapatnam, Andhra Pradesh, to look for birds. The area has a small pond that was partially dried up, with damp patches of uneven mud interspersed with small grass, where we found a breeding pair of Little Ringed Plovers *Charadrius dubius* with two recently fledged chicks. Over the course of 1.5 h we were able to observe 37 species of birds here (Rajiv R. 2021). After birding in the area, at 0815 h we returned to the road where the car was parked and stopped to take a final peek at the pond. Suddenly, a bird appeared out of the low undergrowth to investigate its surroundings. The size and shape of the bird suggested that it was a warbler, but it was distinctly smaller and darker than the Blyth's Reed Warbler *Acrocephalus dumetorum* that we saw in the area that morning. The bird sat on some leafless twigs and branches protruding over the waterbody, flicked its wings a few times, and hopped between adjacent branches. It was not disturbed by our presence and we managed to get a few photographs **[133, 134]** before it disappeared into the bushes. The bird did not call in the 4–5 min it was visible to us.

133. Dusky Warbler *Phylloscopus fuscatus* at Visakhapatnam, Andhra Pradesh.

Table 1. Consolidated details of Dusky Warbler records from southern India

Date	Place	State	Reported by	Photo (Y/N)	Reference
18 March 1946	Pune, Pune District	Maharashtra	H.G. Alexander	N	Alexander 1948
1989	Periyar, Idukki District	Kerala	Arun K. Bose, Jon Curson, and Nigel Jarman	N	Unconfirmed sighting (Bose et al. 1989)
13–16 January 2001	Mahabaleshwar, Satara District	Maharashtra	Nick Dymond	N	Dymond 2003
20 January 2002	Sanjay Gandhi National Park, Mumbai County	Maharashtra	Shashank Dalvi	N	Pandya et al. 2016; Shashank Dalvi, *in litt.,* Facebook message dated 22 July 2021
14 March 2012	Tadoba-Andhari Tiger Reserve, Chandrapur District	Maharashtra	Ameya Joshi	Y	Joshi 2012
15 December 2013	Sanjay Gandhi National Park, Mumbai County	Maharashtra	Parvish Pandya, Vikrant Choursiya, Jyoti James	Y	Pandya et al. 2016; Choursiya 2013
25 February 2014	Sanjay Gandhi National Park, Mumbai County	Maharashtra	Vikrant Choursiya	N	Choursiya 2014
01 March 2014	Sanjay Gandhi National Park, Mumbai County	Maharashtra	Yogesh Patel	N	Patel 2014
02 December 2018	Rajapalayam Water Reservoir, Virudunagar County	Tamil Nadu	Marina Sentis Vila, Aravind A. M., Bharath Kumar, Dipu Karuthedathu, Divya Subramani, Ganeshwar S. V., Josep Ramoneda, & S. Vishnusankar	Y	Vila et al. 2018
14 December 2019	Ernakulam County	Kerala	Chins Chandran	Y	Chandran 2019
08 December 2020	West Godavari County	Andhra Pradesh	Kunaparaju Shanmukha Varma	Y	Varma 2020
08 March 2021	Visakhapatnam County	Andhra Pradesh	Rajiv Ramaswamy, Sumiti Saharan, & Suvarnalata Xanthate Duggirala	Y	Rajiv R. 2021

134. Dusky Warbler *Phylloscopus fuscatus*

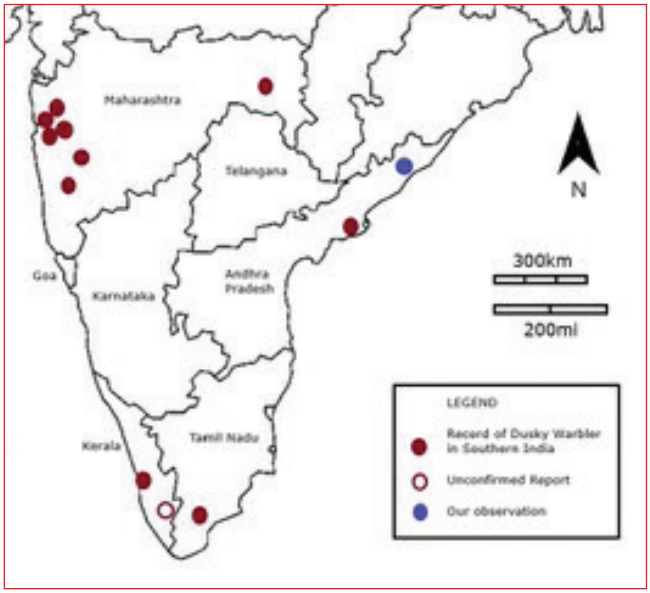

Fig. 1. Distribution of the Dusky Warbler in southern India

The bird was a medium-sized warbler with a dark brown back, pale underparts with light brown flanks, prominent supercilium projecting over the ear-coverts and contrasting with a broad dark eye-stripe, and a dark bill with a pale base to the lower mandible (Rajiv R. 2021). All these features helped us identify it as a Dusky Warbler.

This is the first report of a Dusky Warbler from Visakhapatnam, and only the second report from Andhra Pradesh (Pittie 2013) with the first sighting coming in December 2020 (Varma 2020) from Perupalem, West Godavari District, about 300 km away from our location. The authors traced other confirmed southern Indian records of the Dusky Warbler (Fig. 1) represented in field guides (Grimmett et al. 2011; Kazmierczak 2000) and other existing literature and found multiple records from Maharashtra (Alexander 1948; Dymond 2003; Joshi 2012; Choursiya 2013; Choursiya 2014; Patel 2014; Pandya et al. 2016; Shashank Dalvi, *in litt.,* Facebook message dated 22 July 2021), along with individual records from Tamil Nadu (Vila et al. 2018) and Kerala (Chandran 2019). There were no reports from other southern states such as Karnataka, Telangana, or Goa. We found one

unconfirmed report from Kerala. As per our communication with Tim Inskipp (Tim Inskipp, *in litt.,* Facebook message dated 13 July 2021), the record from Kerala in 1989 refers to an unpublished report from Periyar between 30 December 1988 and 04 January 1989 (Bose et al. 1989). However, the online copy of this publication, available in the public collections of the Inskipps (see Bose et al. 1989), is incomplete and only has details of the Nepal section of the trip report. Although represented in the field guides mentioned earlier, this record was left out of the updated checklists of the birds of Kerala (Sashikumar et al. 2010; Praveen 2015) and so should be treated as unconfirmed.

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Nesting of the White-bellied Heron *Ardea insignis* in Anjaw District, Arunachal Pradesh, India

The White-bellied Heron *Ardea insignis* is an elusive and rare bird, with an estimated population of **c**.50–250 adult individuals (BirdLife International 2021a). The White-bellied Heron (hereinafter, WBH) is classified as Critically Endangered in the IUCN Red List of Threatened Species (BirdLife International 2018), and is listed among the top 100 Evolutionarily Distinct and Globally Endangered species (EDGE 2021). Presently, its known distribution is in Bhutan, India, Myanmar, and China. It is presumed to be extinct in Nepal and Bangladesh (White-bellied Heron International Workshop 2015). According to the IUCN/SSC White-bellied Heron Working Group, there are less than 60 confirmed individuals throughout its range (Stanley Price & Goodman 2015). Owing to the limited population size, it has been rated as the rarest heron in the world and finds a mention in the Guinness Book of World Records (Price & Goodman 2015).

In India, recent sightings of the species come from Arunachal Pradesh and Assam (Stanley Price & Goodman 2015). Namdapha Tiger Reserve, Arunachal Pradesh, holds the only resident population in India (Maheswaran 2007; White-bellied Heron International Workshop 2015). Mondal & Maheswaran (2014) reported the existence of active nests in Namdapha. Subsequent studies carried out in Namdapha by Mondal (2018) showed a resident population of eight individuals. The remaining sightings were from Manas Tiger Reserve in Assam (Stanley Price & Goodman 2015), and Kamlang Tiger Reserve in Arunachal Pradesh.

The WBH's presumed range is covered by—three biodiversity hotspots: Eastern Himalayas, Indo-Burma, and South-West China (Myers et al. 2000); two Global 200 Eco-regions: Terai-Duar savannah and grasslands, and the Eastern Himalaya broadleaf and conifer forest (Olson & Dinerstein, 1998); 20 Important Bird Areas (BirdLife International 2021b); and the Himalaya global centre of plant biodiversity, possibly extending into the Indochina-China centre (Barthlottet et al. 2005).

In this note we provide first-hand information about a recent sighting, and first photographic evidence, of the WBH from the fringes of the mountainous Ditchu Reserve Forest in Anjaw District, Arunachal Pradesh. This area lies in the eastern-most corner of India and forms a tri-junction with Myanmar and China. It is a designated Important Bird and Biodiversity Area (BirdLife International 2021b) with high species diversity.

In the first week of April 2021, Kidak Lollen and Nosing Pul from the Department of Environment and Forests spotted and photographed two herons in the Walong area, on the banks of River Lohit, and informed SKR on 10 April. On 23 April 2021, the Principal Chief Conservator of Forests (Wildlife & Biodiversity), Arunachal Pradesh, formed a fact-finding committee, comprising representatives of the department, Zoological Survey of India, and Wildlife Institute of India. The team reached Walong on 13 May 2021. The ongoing pandemic prevented us from reaching the area sooner, as we needed to get ourselves tested for COVID-19 in order to travel through Assam to Arunachal Pradesh. From 14 May 2021 onwards we started observing WBH on its nest close to the Lohit.

Nest site at Walong

The nest was on a Chir Pine *Pinus roxburghii* tree, 10 m from the eastern bank of the Lohit, on a gentle slope that climbed to a 900 m high mountain. We observed it from a distance of *c.*180 m. In Bhutan, where the WBH selected lone pines for its nest, the average distance between nesting trees and the nearest waterbody was 74 m (Acharja 2019). But in Walong, the nesting tree was in close proximity (5–7 m) to other pine trees. The undergrowth was minimal, and from distance we could see only grasses. The height of the nesting tree was roughly 40 m, and the nest was on a branch that was slightly above 30 m from the ground. The nest was constructed on the extreme end of a long branch, which extended unobstructed from the main trunk **[135]**. The branch, on which the nest was constructed, was leeward (on the northern side) of the buffeting south–north winds. After spending hours incubating, the herons would walk on the long branch **[136]** before stretching and preening. The WBH had chosen a tree that was at a safe distance from main river, unlike other nearby trees that were much closer to the river and had exposed roots due to erosion, and were are risk

135. White-bellied Heron nest constructed in the lee of a Pine tree, at the end of a long branch. One bird is in the nest, the other, standing guard on an adjoining branch.

Both: Gopinathan Maheswaran

136. When relieved from incubation, a White-bellied Heron would often walk away from the nest, along the long branch, before stretching and preening.

of toppling over any time. But from its western bank, the hills are farther than 1.5 km. away. During our visit, the Lohit had shrunk to flow along its eastern bank along this stretch, leaving exposed the rest of its boulder and gravel strewn bed towards the western bank. During our stay, the area experienced a moderate to heavy rainfall throughout day and night for four days and during such time one of the adult birds was always seen incubating the egg(s).

The altitude of the nest site in Walong was 1,123 m asl, whereas in Namdapha, WBH had constructed at 390 m, slightly away from River Noa-Dihing, amidst secondary forest (Mondal & Maheswaran 2014).

There is no village on the Lohit's eastern bank, but for a small, unoccupied hut that was 100 m from the nest. Apparently, villagers cultivate this area in winter, and would be able to approach the nest easily. There were human settlements on the western bank, ***c***.300 m from the nest. People using the dirt road situated ***c***.200 m away do not disturb the herons. In Bhutan, 80% of the nests were within 200 m of a village or forest trail (Acharja 2019), as was the case at Walong.

Methods

Initial observations were from the vehicle, to avoid any investigator-induced disturbance to the birds. The distance between our vehicle and the nest was ***c***.200 m; but gradually, over the days we ventured into the open, and sat behind boulders that were *c*.170 m from the nest on the western side of the river. The fast-flowing Lohit is an ideal barrier preventing humans from crossing over to the other bank and ultimately the nest. The birds were not disturbed even when we watched them from a distance of 170 m. One bird sat constantly on the nest, probably incubating the egg. While observing the herons on nest, we followed protocols prescribed by Barve et al. (2020), and never crossed the Lohit to reach the nest. We also did not physically take any measurements, lest the birds get spooked, and abandon the nest (Mondal & Maheswaran, 2014; Acharja, 2019). We used high-end cameras and tele-lenses (Nikon Z6, D500, D7000 cameras, and Nikon 500mm and 600mm lenses with 1.4X and 2.0X tele-convertors) apart from Nikon spotting scope for photography and observation.

Observations

The birds changed incubation duties thrice during a period of 12 h, starting 0400 h. In May, mornings are alight by 0345 h in this region. From the Inspection Bungalow, Walong, at 0400 h we were able to watch the herons foraging just 100 m away from the nest, in the Lohit, and as the day progressed, the birds changed their duties every four-and-half to five hours. The bird on the nest changes its position and the position of eggs every 90 min or so, as the days were either cold, or it was raining. On all occasions, except once, we noted adult birds flying upstream to forage. On 18 May 2021 at 0615 h one of the birds flew downstream from the nest, straight to the boulders and sand on the western bank. After 20 min the bird retuned to the nest with a dry and thin material 60 cm twig. After depositing this in the nest, it repeated this exercise from the same spot after 30 min. The second time both the birds arranged the material to the nest floor, perhaps reinforcing it, as it had been raining continuously for three days. After repairing the nest, the bird that had brought the twig started incubating, and the other bird walked up the branch and stood there for a few minutes before flying off. On a few occasions we witnessed one of the birds returning to the nest after six hours, and when it arrived, both the birds 'greeted' each other by stretching their necks and clattering their bills for a very brief time. However, when a bird returned after four to four-and-a-half hours, they did not display thus.

The herons foraged within a distance of 200 m from the nest. Sometimes they flew out of sight, northwards along the river. The birds mostly tried to catch fish in the fast-flowing river, but the incessant rains over the past days had muddied the water, making hunting fish by sight difficult for them. The water level had also risen, causing the birds to spend longer periods hunting before they returned to their nest. It is quite apparent that they favoured clear water for catching adequate fishes in quick succession, rather than struggling in murkier waters. Thus, between 0400 h and 1800 h, the birds exchanged nesting duties only twice or thrice, perhaps a matter of concern, requiring further study, as catching sufficient fish in the coming monsoon months is crucial for successful nesting, when besides themselves, they have to feed their young one(s). We strongly suspect that this aspect determines the breeding success and therefore, the size of the population of WBH in the region for many decades. Shrinking suitable habitats may be pushing the species farther northwards where birds cannot get enough food, as the fast flowing rivers in the eastern Himalaya have less diversity of fishes. Furthermore, the continuous pressure from local fishing and hunting of birds (probably including WBH) pushes the species to the brink of extinction.

Competitors and predators

During our stay we saw a pair of the Chinese Pond Heron *Ardeola bacchus*, in breeding plumage, on the Lohit River near Dong, and locals have informed us that even Great Cormorants *Phalacrocorax carbo* can be seen in good numbers along the river, but mainly in winter. We did not spot cormorants, but they have been reported several times by visiting bird-watchers (eBird 2021). However, we did come across a few unidentified otters in the main river, a few meters from the nest, and have no doubt that otters are the herons' potential competitors for fish. The Large-billed Crow *Corvus macrorhynchos* seems to be the main avian predator in the area, and we often saw them perching in a nearby tree. Crows could be a threat to the eggs, and even the chicks, of WBH till the latter attain a certain size and are able to defend themselves. We did not see any raptors near the nest, which could potentially predate on heron chicks.

Conclusion and recommendation

The nesting record of WBH in Walong is significant as only a few breeding pairs have been located globally, and this nest is at a significant distance (85 km in a straight line) from the earlier known nest in Namdapha, Arunachal Pradesh, but separated by Mishmi Hills. This is also a new elevational record (1,123 m asl) for the WBH in India, as all previous records were below 400 m asl.

The origin of this WBH pair has three possibilities: (i) An existing resident population in the Walong region; (ii) Dispersal from another river system, e.g., Noa-Dihing, or from Myanmar/Yunnan; (iii) Dispersal from the Tibetan Autonomous Region

(hereinafter, TAR) along the Lohit River. It is unlikely that an existing resident population would have gone unnoticed, considering that the Walong region has been well-birded since 2013, and other focused studies e.g., Menzies et al. (2021), also did not report the species. WBH are low flyers (fly just above the rivers) and chances of them flying over the high Daphabum Range (> 4,000 m asl), which separates Walong from Namdapha, are remote. Furthermore, if Namdapha birds had indeed dispersed upto Walong, travelling along Noa-Dihing and Lohit rivers, they would have instinctively chosen secondary forest to nest in, and not the pine tree, as there are no pine trees in the lower elevations along the Noa-Dihing. In addition, the pair at Walong was reasonably tolerant to human presence, unlike the Namdapha birds (G. Maheswaran, *pers. obs*.). It is highly unlikely that the birds had flown over many of the snow-capped mountain ranges between Yunnan Province, and even neighbouring Myanmar, to arrive here. Google Earth images show that there are suitable habitats in TAR (south-western China) bordering India, and since this region is one of the remotest in China, the species might have escaped the attention of birders. WBH is well-known to disperse along the river systems and hence a breeding pair that was resident upstream of Kibithu, near the international border or within TAR, moving southwards and occupying ideal nesting sites in Walong is the most likely possibility. This is significant, as the lone Chinese record of WBH (in 2014) had come from Yunnan Province further east of Walong bordering Myanmar.

Strong trans-boundary cooperation in locating more herons across their geographic distribution is critical today, but unfortunately the numbers may not be expected to be high given the fact that there are not enough adults to produce young ones (Acharja 2019) that can disperse and find new territories elsewhere. This sighting highlights the possibilities of more birds in the nearby areas and the necessity to carry out extensive surveys to determine their population, status, and distribution in this remote and intricate eastern Himalayan landscape. The local communities also need to be sensitised about the WBH and the urgency to conserve it, as hunting for the pot is prevalent in Arunachal Pradesh. Future research and monitoring will involve assessment of physical characteristics of the riverine stretches along with their floristic diversity, habitat selection, food abundance and availability, and examining the potential threats and disturbances to the survival of the WBH in this region. In India the species is included in Schedule IV of The Wild Life (Protection) Act, 1972, and requires to be uplisted to Schedule I category which accords the highest level of protection.

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Confirmation of Chinese Sparrowhawk *Accipiter soloensis* from the Indian mainland

The Chinese Sparrowhawk *Accipiter soloensis* is a crow-sized bird, superficially resembling the widely distributed Shikra *A. badius* in India (Ali & Ripley 1968). It is known to be a winter visitor to the Nicobar Islands, though records from the Andaman Islands were considered erroneous (Mees 1981; Naoroji 2006). However, multiple records from the Andaman Islands have emerged in recent years (eBird 2020).

From the Indian mainland, there are a few published, and a few unpublished, records of the Chinese Sparrowhawk, but none of them were definitively confirmed. We report photographs of an adult male Chinese Sparrowhawk from the Kailasagiri Hills, Visakhapatnam, Andhra Pradesh. We also review the past records of the species in mainland India.

Observation and identification

At 0720 h, on 11 November 2018, while birding in the Kailasagiri Hills in Visakhapatnam (17.73°N, 83.33°E), AK & PSK observed Ashy Woodswallows *Artamus fuscus* chasing an *Accipiter* sp., similar to Shikra. In overhead flight, the dark wingtips of the bird, against pale and almost unmarked underwings, looked prominent, and immediately attracted their attention. Realizing that the identification features were unlike those of a Shikra, AK & PSK photographed the bird in flight. It could be viewed only for a few seconds before it disappeared over the horizon.

We took photographs in bright light conditions and the images had to be heavily processed to extract details. They were later shared by PSK on the Facebook group '*Ask ids of Indian Birds*' for identification. Nirav Bhatt (hereinafter, NB) suggested that the bird was an adult Chinese Sparrowhawk. For further confirmation, RB shared the images with Kiran Srivastava (hereinafter, KS) at the Raptor Research and Conservation Foundation, Chaiyan Kasorndorkbua (hereinafter, CK), at Kasetsart Laboratory of Raptor Research and Conservation Medicine, Thailand, and Nick Upton (hereinafter, NU) at www.thaibirding.com. KS further reached out to Hans Peeters and Lim Kim Chye, who concurred with the adult Chinese Sparrowhawk suggestion. Later, CK and NU confirmed the bird in question as an adult male Chinese Sparrowhawk.

Mees (1981) mentioned that *A. soloensis* is the least likely *Accipiter* to cause confusion. It is characterized by having little sexual dimorphism, either in size or in plumage, a very long wingtip, a comparatively short middle toe, and in the adult plumage, an underwing pattern almost devoid of any barring: seen from below the outer primaries are dark grey or black, the remainder of the wing is white or pale buffish with, at most, a few dark spots **[140, 141]**. In the images **[137] [138] & [139]** from Visakhapatnam, significant long tips of primaries, unbarred underparts, rufous-brownish breast, and prominent black wing tips are evident. The dark grey trailing edge to wings, a feature of an adult Chinese Sparrowhawk mentioned in Grimmett et al. (2011), is also visible in images **[137] & [138]**. All colours look a bit darker as the images are slightly over-processed to extract details. The absence of barrings on underparts, and prominent black wing tips, are the key details that eliminate a Shikra.

Premswarup Kolluru

137. Chinese Sparrowhawk from Visakhapatnam, with dark wing tips.

138. Chinese Sparrowhawk from Visakhapatnam: Rufous-brownish breast and unbarred underwings.

Both: Ashok Kolluru

139. Chinese Sparrowhawk from Visakhapatnam, showing long primary tips.

CK further suggested that the photographed individual was a male, based on the size when compared with the Ashy Woodswallow in the same image, and significant black on wingtips, square-shaped wings projecting out of the body with no bulging secondaries **[138] & [139]**. Slightly bulged secondaries of an adult female individual are noticeable in **[141]**. Naoroji (2006) mentioned eye colour differences in different sexes: dark brown to red brown in adult males **[140]** and yellow to orange-yellow in adult females **[141]**. These details are not apparent in the images captured by the authors at Kailasagiri.

Although additional features like the upperparts colouration

140. Adult male Chinese Sparrowhawk from Thailand (Hansasuta 2017a).

Both: Chuenchom Hansasuta

141. Adult female Chinese Sparrowhawk from Thailand (Hansasuta 2017b).

and indistinct gular stripe are not evident in photographs, the visible characteristics of wings and underparts are enough to negate all other accipiters.

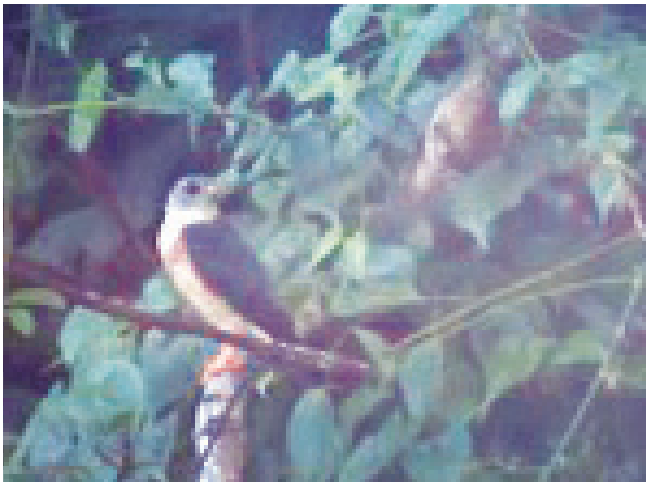
Past records from mainland India

Rahmani (1990), in his notes on the sightings of Tyabji (1990), specifically mentioned the sighting of a Chinese Sparrowhawk by Shahid Ali in Kaziranga National Park, Assam. Further investigation ascertained that this sighting was never published or discussed anywhere.

Becker & Redwanz (2012) described sightings of multiple individuals including, immature and adult birds, and one immature hunting 16 frogs in 30 min. near Malampuzha Reservoir, Kerala. However, they did not provide any definite description or identification pointers for his records. Their checklist had other doubtful species that had never occurred in Kerala, and it is quite likely that the birds seen were Amur Falcons *Falco amurensis*, a flock of which was seen in the same area in 2016 (Shaji 2016). Similarly, Robson (2001) stated that an adult male bird was seen by Nick Dymond over Rollapadu village in Andhra Pradesh. Again, the author did not provide any details describing the features of the adult male.

RB e-mailed Peter Becker and Nick Dymond requesting additional information to endorse their records. Unfortunately, no response has been received, and therefore the authors termed all these records as unconfirmed due to lack of substantiating details or descriptions of the birds sighted.

In a Facebook post, Zira LN (2016) mentioned a Chinese Sparrowhawk sighting from Mizoram. On further request, an image **[142]** of a male Chinese Sparrowhawk was provided by V. Lalchhuanawma from Lamchhip village near Aizwal, Mizoram. When requested, the identification of the individual was further confirmed as a male Chinese Sparrowhawk by CK. This is the first confirmed record of the species from mainland India with photographic evidence.



V. Lalchhuanawma

142. A male Chinese Sparrowhawk from Lamchhip village, Mizoram.

The records from Bandhavgarh National park (Tyabji 1990) and Simlipal Tiger Reserve (Prakash et al. 1989) were later found to be adult Shikra (Naoroji 2006: 373), and seem to have been cases of mistaken identity

Joby Thrissur shared a single photograph of an accipiter from November 2016 (Thrissur 2017) for identification. The bird had been photographed in Kachithodu, Thrissur. There were mixed suggestions on its identification, and NB suggested that the individual was a juvenile Chinese Sparrowhawk.. Through email communication, CK concurred with the identification (*in litt*., e-mail dated 25 March 2021). Although it was suggested as a Chinese Sparrowhawk from the single available image in flight, lack of additional photos makes it difficult to accept the record, knowing the pitfalls of identifying from single images.

There is information on the sighting of a Chinese Sparrowhawk by Trevor Price (hereinafter, TP) and Pratap Singh in February 2018 from Lambasingi, Andhra Pradesh (TP, *in litt.,* e-mail dated

April 2020). However, no further details on the sighting are provided and so the records from February 2018 is considered unconfirmed.

On the 12 February 2018, Hatiboruah (2018), along with a group of birdwatchers, claimed sighting a Chinese Sparrowhawk in Hmuifang, Mizoram. From that group, Manik Deshmukh, Geethanjali Dhar, and Ramachandra provided some additional images of the bird for identification. On verification, CK & KS suggested that the individual in question was a Shikra and not a Chinese Sparrowhawk.

The current photographic record from Visakhapatnam is the second confirmed record of Chinese Sparrowhawk from mainland India. Further field investigation and exploratory surveys in the Visakhapatnam District of Andhra Pradesh could provide more sightings.

Though this is an isolated record, there could be more vagrant records across the eastern mainland of India during winter.

We thank Nirav Bhatt and other members of the Ask ids of Indian Birds group on Facebook for their positive response to identification requests. We are also thankful to Kiran Srivastava, Hans Peeters, Lim Kim Chye, Chaiyan Kasorndorkbua, and Nick Upton for confirming the identification. We also thank Chuenchom Hansasuta for providing the photographs of the species from Thailand.

Geethanjali Dhar, Manik Deshmukh, Ramachandra, Wayne Holmes, Zina LN, and V. Lalchhuanawma were extremely supportive with photographs from Mizoram. We also thank the Birdlab team at IISER Tirupati, and the Duleep Mathai Nature Conservation Trust for their continuous support. Lastly, we thank Praveen J for his invaluable support with data collation and encouragement.

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Status of Horned Grebe *Podiceps auratus* in India

The Horned Grebe *Podiceps auratus* is a widespread species that is mostly found in North America and Europe, with a significant population in Asia. It's breeding areas include south-western Greenland, Eurasia, and north-western Europe to eastern Siberia (Stedman 2020). The Horned Grebe is a winter vagrant to India (Rasmussen & Anderton 2012). Here we review its status in the country, post the review by Praveen et al. (2014).

We collected a total 29 observations of the species from India, from published and unpublished sources, including eBird (https://ebird.org/india/species/horgre) and Facebook groups, and after removing duplicates that referred to the same birds, we distilled nine unique records (Table 1). Drijvers (1995) published a note on the Horned Grebe, recording it as a new species in India, sighted on 28 December 1993, on the Kosi River, Ramnagar, Uttar Pradesh. Subsequently, birds were spotted at Harike Wildlife Sanctuary in 2001 (Prasad 2008). During

Sanjeev Khanna

143. Horned Grebe at Harike Wildlife Sanctuary.

Table 1. Showing various sightings from different parts of India in reverse chronological order

Date	Site	District/ State	Coordinates	Observer	References
15–17 February 2021	Dighal Wetland	Jhajjar/Haryana	28.75°N, 76.63°E	Sonu Dalal	Dalal 2021
23 January 2021	Sultanpur Lodhi	Kapurthala/ Punjab	31.159N, 75.00E	Gagan Bedi	Bedi 2021
23 January 2021	Harike Bird Sanctuary	Tarn Taran/ Punjab	31.15°N, 74.97°E	Sanjiv Khanna	Khanna 2021
25 January 2018	Ballab Village	Rohtak/Haryana	28.47°N, 76.30°E	Ramit Singal	Singal 2018
20 December 2018	Bhaniyana Wetland	Jodhpur/Rajasthan		Divesh Saini	Bothra 2018
14 December 2017–27 January 2018	Dighal Wetland	Jhajjar/Haryana	28.75°N, 76.63°E	Rakesh Ahlawat	Ahlawat 2017
14 December 2016	Borit Lake	Pakistan-administered Kashmir	36.25°N, 74.52°E	Imran Shah	Shah 2016
6–10 February 2001	Harike	Tarn Taran/Punjab	31.15°N, 74.97°E	Anand Prasad	Prasad 2008
28 December 1993	Kosi River	Ramnagar/Uttarakhand	29.38°N, 79.13°E	R. Drijvers	Drijvers 1995

the last few years this grebe has been frequently observed in northern Indian states. Of the 29 observations, 23 were recorded from Dighal Wetland, District Jhajjar, Haryana (Ahlawat 2018; Vyas 2019); many of the records referring to the same set of birds. From 2017, almost every year, birdwatchers observed this bird at various sites in northern India, mainly during December–February. All birds were in their non-breeding plumage: overall black and white, and lacking the 'horn'. In its non-breeding plumage, this species needs to be carefully differentiated from the cogeneric Black-necked Grebe *P. nigricollis*. On 23 January 2021, along with a team of birdwatcher, we spotted the Horned Grebe at Harike Wildlife Sanctuary **[143]** during the annual bird count. Similarly, birds were spotted at Dighal Wetland, Jhajjar, on 17 February 2021 (Table 1).

Most of the sightings of the Horned Grebe were from northern India (Fig. 1), especially Haryana. However, the bird was also spotted in Kashmir, Punjab, Rajasthan, and Uttar Pradesh. We suggest that regular monitoring of open wetlands for this bird is needed, as it prefers stretches of water with minimum floating vegetation. Checking the growth of Water Hyacinth Eichhornia sp., would create a conducive habitat for it.

We thank Praveen J for guidance in preparing this note.

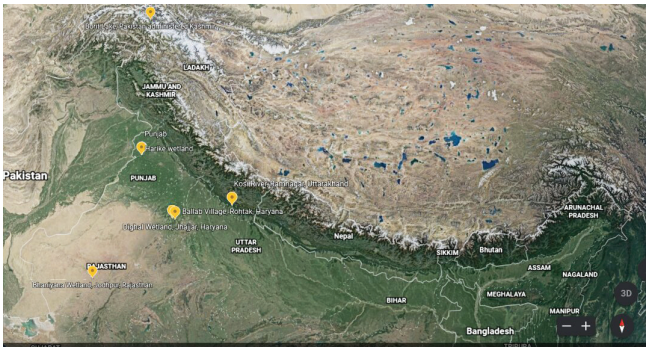

Fig. 1. Recent sightings of the Horned Grebe in northern India

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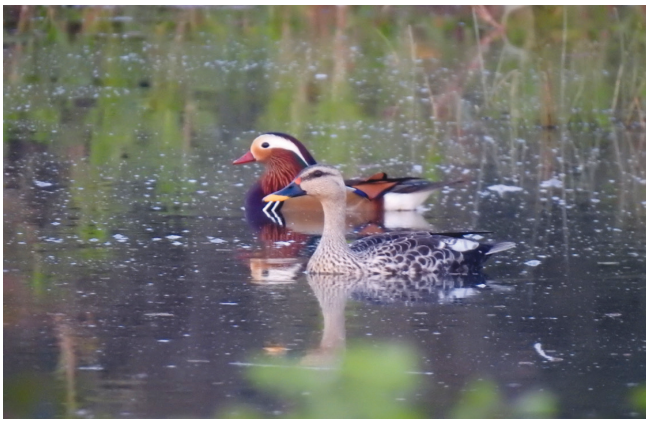
Mandarin Duck *Aix galericulata* in Maguri Beel, Tinsukia, Assam, and Sikhe Lake, Ziro, Arunachal Pradesh, and its status in north-eastern India

On 08 February 2021, we visited Maguri-Motapung Beel in Tinsukia District of Assam, while conducting a survey of the White-winged Wood Duck *Asarcornis scutulata* in Assam and Arunachal Pradesh. During the visit, at 1505 h, we observed a flock of Indian Spot-bill Duck *Anas poecilorhyncha* among the tall grasses in a pond (27.58°N, 95.37°E) adjacent to Maguri Beel **[144]**. Upon close inspection, a male Mandarin Duck was sighted amidst this flock of Indian Spot-bill Duck. We photographed it, and its identification was easily confirmed based on its distinctively colourful plumage.



Mahesh Rajpoot

144. A male Mandarin Duck swimming behind an Indian Spot-bill Duck in a small pond within the Maguri Beel areas of Assam.

The Mandarin Duck breeds mostly in north-eastern China, Japan, Korea, and far-eastern Russia (Rasmussen & Anderton 2012). It is considered a winter vagrant to India and has been reported from several sites in India in recent past (Praveen et al. 2014). Most of the records are from north-eastern India, especially from Assam (Das et al. 2015), and Manipur (Kasambe & Singh 2014). It's nearest record to Maguri-Motapung Beel is from Rangagora (Rungagora) Tea Estate (27.57°N, 95.32°E) where it was last reported in 1901 (Baker 1902).

After our sighting, the Mandarin Duck was seen for the next two days in the Maguri wetlands, after which it was not observed in the area. On 20 February 2021, a male Mandarin Duck was sighted in Sikhe Lake (27.62°N, 93.82°E) in Ziro District, Arunachal Pradesh (Anonymous 2021). This duck is probably the same bird that was sighted in Maguri wetlands earlier. The aerial distance between the two places is about 152 km.

This sighting of Mandarin Duck in Ziro Valley is the first sighting record for Arunachal Pradesh, India. Four Mandarin Ducks (one male and three female) was also spotted on the Miyong River (27.36°N, 92.27°E) of Dirang Valley in West Kameng District (Arunachal Pradesh) in 05 March 2021 (Bachung 2021). The birds remained in the area till 16 March 2021 (Panwar 2021).

The increase in birders and birding tourism in the remote areas of north-eastern India has helped in recording such rare avian visitors that had probably remained unnoticed previously (Fig. 1; Table 1). All the recent Mandarin Duck sightings in north-eastern India were first recorded by bird guides conducting birding tours in the region.

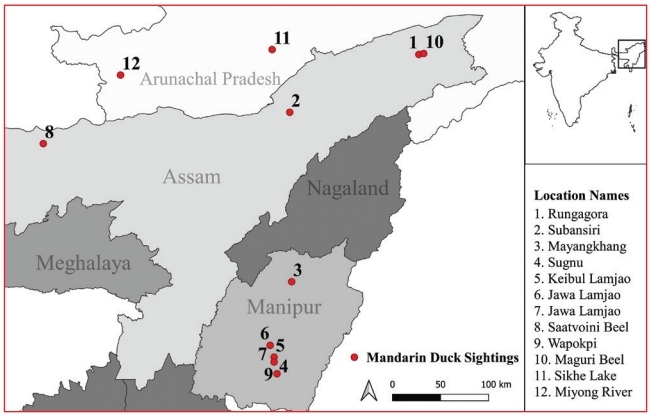


Fig 1. Locations in north-eastern India from where Mandarin Duck locations in Northeastern India. See Table 1 for details.

We thank Assam Forest Department for necessary permissions for carrying out our survey and Wildlife Trust of India for funding the survey. We also thank Vivek Menon, Rahul Kaul, and an anonymous reviewer for reviewing the short note.

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Table 1. List of sighting records of Mandarin Duck from north-eastern India

Sl. No.	Place	Coordinates	Altitude	Year of sighting	Reference
1	Rungagora TE, Tinsukia, Assam	27.57°N, 95.32°E	120 m	1901/1902	Baker 1902
2	Subansiri River, Lakhimpur, Assam	26.98°N, 94.00°E	82 m	July 1901	Baker 1902
3	Mayangkhang Valley, Senapati, Manipur	25.25°N, 94.02°E	1,100 m	March 1934	Gimson 1934
4	Sugnu, Chandel, Manipur	24.31°N, 93.87°E	770 m	1997	Rahmani & Islam 2008
5	Keibul Lamjao, Loktak Lake, Manipur	24.48°N, 93.84°E	770 m	February 2005	Barman 2021
6	Jawa Lamjao, Loktak Lake, Manipur	24.60°N, 93.80°E	770 m	December 2013	Kasambe & Singh 2014
7	Jawa Lamjao, Loktak Lake, Manipur	24.60°N, 93.80°E	770 m	February 2014	Barman 2021
8	Saatvoini Beel, Baksa, Assam	26.66°N, 91.48°E	80 m	February 2014	Das et al. 2015
9	Wapokpi, Imphal river, Manipur	24.43°N, 93.84°E	770 m	December 2020	Huidrom 2021
10	Maguri Beel, Tinsukia, Assam	27.58°N, 95.37°E	120 m	February 2021	Our observation
11	Sikhe Lake, Ziro, Arunachal Pradesh	27.62°N, 93.82°E	1585 m	February 2021	Anonymous 2021
12	Miyong River, Dirang, Arunachal Pradesh	27.36°N, 92.27°E	1530 m	March 2021	Bachung 2021

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Some scavenger birds from Periyar Tiger Reserve, Kerala

The Periyar Tiger Reserve, one of the major biodiversity hotspots in the Western Ghats is well known for its high mammal density. The major carnivores of the Periyar Tiger Reserve are Tiger *Panthera tigris*, Leopard *P. pardus*, and Dhole *Cuon alpinus*. The formation of Periyar Lake by the construction of Mullaperiyar Dam attracted wetland- and wetland dependent birds. In November 2019, a pair of camera traps (model: Cuddeback C1) was deployed near an elephant carcass for monitoring the scavenging activities for a period of ten days. During 2019 and 2020, we recorded eight instances of opportunistic scavenging by three bird species on large mammal carcasses that we monitored—specifically, kills of Gaur *Bos gaurus*, Asian Elephant *Elephas maximus*, and Sambar *Rusa unicolor*, all killed by large carnivores (Table 1). The Gaur and Sambar carcasses were monitored directly, from a distance of 20 m, through binoculars (model: Olympus 8x40) and cameras (Nikon 300 mm).

Carcasses left behind by large carnivores become an easy food source for opportunistic feeders like the three species listed in Table 1, and comprise a supplementary food chain in protected areas with large concentrations of mammalian prey species, but where the natural scavengers, like *Gyps* vultures, are absent (Allen et al. 2019).

Details of scavenging by birds in PTR

S. No.	Scavenging species	Carcass species	# Observations
1	Brown Fish Owl *Bubo zeyloensis*	Asian Elephant *Elephas maximus*	1; **145**
2	Woolly-necked Stork *Ciconia episcopus*	Gaur *Bos gaurus*	4; **146**
3	Greater Spotted Eagle *Aquila clanga*	Gaur; Sambar *Rusa unicolor*	3; **147**

145. Brown Fish Owl scavenging on the carcass of an Asian Elephant, near a Gaur carcass.

146. Greater Spotted Eagle at a Sambar carcass.

147. Wooly-necked Stork scavenging on a Gaur carcass.

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The Blue-and-white Flycatcher *Cyanoptila cyanomelana*: A new record for Telangana, India

Spotting an unexpected species boosts birdwatchers' morale towards more birding. One such recent find of significance was the sighting of two first winter males of the rare and vagrant Blue-and-white Flycatcher *Cyanoptila cyanomelana* in the Damagundam Reserve Forest (17.26ºN, 77.93ºE) in Vikarabad, on the outskirts of Hyderabad (Telangana, India), in December 2020. The most important aspect of this sighting is that most records of this migratory flycatcher, till date, have been from the Western Ghats and southern Indian states (Barve & Kamath 2016). This is the first time that it has been sighted in the Deccan region, from the south-eastern part of mainland India. We tracked the movement of the two birds in the forest area where we first spotted them on 11 December 2020, where they wintered until mid-January 2021. Another such previous record of a long stay by a Blue-and-white Flycatcher was reported by Manoj Kanakambaran from Kanthalloor, Idukki District (Kanakambaran 2018), where the individual continued to winter in the same site at least from 23 November 2018 till 28 February 2019 (Chandran & Praveen 2019).

The Blue-and-white Flycatcher is a breeding migrant in Japan and the adjacent north-eastern Asian mainland, and migrates towards the south-eastern parts of Asia in winter. Besides Japan, it breeds in Korea, parts of north-eastern China, and Russia, to the Far East (Hooper 2006). In winter, it migrates through South-east Asia, largely in Vietnam, Cambodia, and Thailand, to winter in Borneo and Java (Fig. 1). It has been recorded as a vagrant in other parts of the Indian Subcontinent too, namely, Sinharaja Rainforest in Sri Lanka in 2014 (Vidanapathirana et al. 2014), and the Jigme Singye Wangchuck National Park in Bhutan (Rinchen et al. 2019).

In India, there have been sporadic wintering records since 2012 from Maharashtra, Karnataka, Kerala, and Tamil Nadu, and also from Madhya Pradesh, Arunachal Pradesh, and the Andaman Islands in the extreme eastern parts of the country (Table 1).

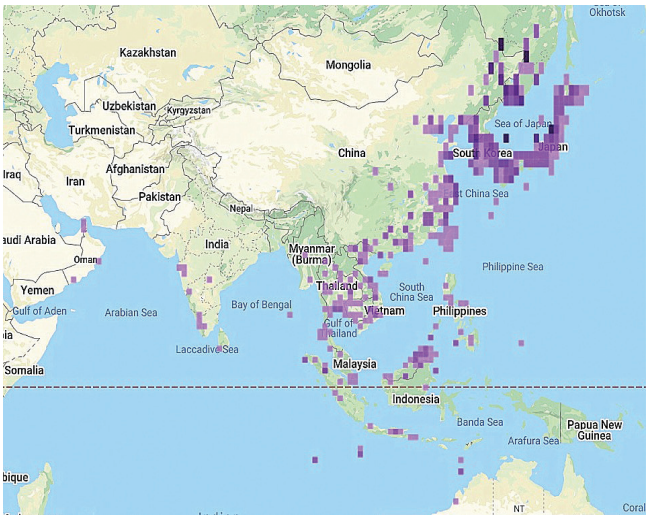

Fig. 1. The intermittent distribution of the Blue-and-white Flycatcher (eBird 2021a).

The adult males of the Blue-and-white Flycatchers have a vibrant blue back, white belly and black face, throat, and breast. The females are brown all over. An immature male, which we sighted, has the adult's blue wings but is brown otherwise. In our sighting, both the birds had grey-brown heads and upper backs, and white chests and bellies. One bird had more blue on its back than the other, a much clearer white eye ring, and also the white on its belly was more clean and prominent than the other **[148a, b]**.

Manoj Vitappu

Sudeshna Dey

148a, b. First winter male Blue-and-white Flycatcher plumages.

Zappey's Flycatcher *C. cumatilis* (Fig. 2) and the Blue-and-white Flycatcher overlap in their migration range, and the great similarity of their first winter plumages makes it impossible to separate them. However, and on the balance of probability, given that all identifiable records from mainland India have thus far been of Blue-and-white, we tentatively regard this record too as such, or until a Zappey's is confirmed. Consequently, all previous records of non-adult Blue-and-white Flycatchers and Zappey's Flycatchers (Table 1) from India would also be open to review.

Table 1. Historical records of the Blue-and-white Flycatcher and Zappey's Flycatcher from India

State	District	Site	Date	Source	Identification
Blue-and-white Flycatcher					
Telangana	Rangareddy	Damagundam Reserve Forest, Vikarabad	11 December 2020	Present record	First-winter male
Andaman & Nicobar Islands	South Andaman	Kalatang	20 February 2020	Vel, S (2020)	Adult male
Kerala	Idukki	Kanthaloor	23 November 2018	Kanakambaran (2018)	Adult male
Kerala	Idukki	Neriamangalam–Painavu Road	02 February 2018	Roddis & Loseby (2018)	Adult male
Kerala	Palakkad	Nelliyampathy Ghat Road	05 February 2017	Thekkethala (2017)	Juvenile
Maharashtra	Raigarh	Matheran	13 March 2017	Khatavkar & Gorle (2017)	First-summer male
Maharashtra	Thane	Tungareshwar National Park	18 February 2017	Katvi & Shenai (2017)	Sub-adult male
Maharashtra	Pune	Mulshi, Pune	19 February 2016	Barve & Kamat (2016)	Juvenile
Karnataka	Uttara Kannada	Old Magazine House, Ganeshgudi	18 March 2015	Toliya (2015)	Sub-adult male
Karnataka	Uttara Kannada	Ganeshgudi, Dandeli WLS, Karnataka	07/08 March 2015	Nair (2015); Rebello (2015)	Sub-adult male
Tamil Nadu	The Nilgiris	Near Jawaharlal Nehru Park	21 November 2015	Bhoopathy (2015)	Adult male
Madhya Pradesh	Umaria	Bandhavgarh	9 February 2013	Jannes (2013)	
Maharashtra	Raigad	Alibaug	10 March 2012	Kawale (2013)	Adult male
Andaman & Nicobar Islands	North Andaman	Saddle Peak National Park	05 March 2012	Rajeshkumar et al. (2014)	Juvenile
Maharashtra	Pune	Tamhini forest, Pune	27 February 2011	Barve & Kamath (2016)	Sub-adult male
Arunachal Pradesh	Upper Siang	'9 km north of Tuting'	24 November 2002	Choudhury (2006); Borang (2015)	Adult male
Zappey's Flycatcher					
Andaman & Nicobar Islands	Nicobar	Galathea, Great Nicobar	27 December 2017	Gokulakrishnan et al. (2018)	First-winter male
Andaman & Nicobar Islands	Nicobar	Dagmar, Great Nicobar	10 February 2018	Gokulakrishnan et al. (2018)	First-winter male
Andaman & Nicobar Islands	Nicobar	Kosingdone, Great Nicobar	12 February 2018	Gokulakrishnan et al. (2018)	First-winter male
Andaman & Nicobar Islands	Nicobar	Kondul Island, Nicobar Island	13 February 2018	Gokulakrishnan et al. (2018)	First-winter male
Andaman & Nicobar Islands	North Andaman	Paget Island	21 February 2018	Gokulakrishnan et al. (2018)	First-winter male

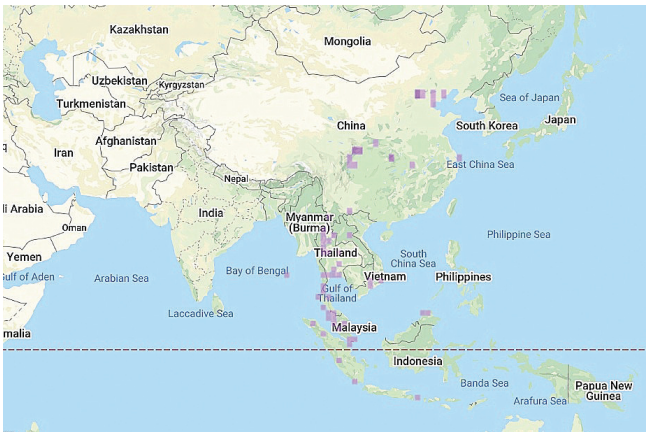

Fig. 2. The distribution of the Zappey's Flycatcher (eBird 2021b).

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A Common Ringed Plover *Charadrius hiaticula* in the Vidharbha region of Maharashtra, India

The Common Ringed Plover *Charadrius hiaticula* has a distribution that extends from northern Scandinavia and northern Russia, eastwards to the Chukotski Peninsula, where it is casual breeder. It migrates in winter to Africa, the Mediterranean Basin, the Iberian Peninsula, the Red Sea, the Persian Gulf, and possibly to China and Japan. In South-east Asia it is largely considered a vagrant (Wiersma et al. 2020). The Common Ringed Plover is a winter visitor to the Indian Subcontinent—to south-eastern and north-western India, the Pakistan coast, the Maldives, and Sri Lanka. In India, it has been sighted in all the western states of northern India: Uttar Pradesh, Himachal Pradesh, Punjab, Haryana, and Rajasthan; and all states of southern India, except Karnataka (eBird 2021). Generally, these birds are considered rare in India, but are possibly overlooked (Rasmussen & Anderton 2012).

The Sawanga Lake (20.84°N, 77.90°E, *c*.338 m) in Pohara Malkhed Reserve Forest nestles in the foothills of the Satpura–Melghat Range of Amravati District, Maharashtra, *c*.30 km from Amravati city. While birding here at 1630 h on 30 March 2018 SAG & PKN sighted the slightly larger Common Ringed Plover near a flock of Little Ringed *C. dubius* and Kentish *C. alexandrinus* Plovers. The water level was low, and the bird was foraging in its peculiar run-stop-search manner (Masero et al. 2007), on mud banks, often entering the territory of its congeners while foraging. In ensuing territorial fights, it invariably yielded, and moved away. This happened several times. This Common Ringed Plover was in breeding plumage, with a dark-tipped bright orange beak, yellowish-orange legs, and a prominent dark frontal bar **[149]** (Ali & Ripley 1987; Grimmett et al. 2011; Rasmussen & Anderton 2012). On 13 December 2018, at 1630 h we sighted another bird in non-breeding plumage, with a blackish bill and a prominent supercilium **[150]**.

We were able to observe the bird in two different seasons. During winter—December 2018–February 2019—it stayed till the end of the season; and in the pre-monsoon period—March–May 2018—it only stayed for five days (30 March–03 April 2018).

Prasad (2004) expressed doubt about records of Common

149. Common Ringed Plover in breeding plumage.

150. Common Ringed Plover in non-breeding plumage.

Both: Shubham Giri

Ringed Plover from Ujani, Pune, and recommended further verification. Other sightings of the bird in Maharashtra are from: Kawadi wetland, Pune (Koparde & Raote 2016), Alibaug, Raigad District (Kawle & Deshmukh 2018), Kelvihire grassland, pune (Sumant et al. 2019), and Sindudurg (Rao et al. 2019). It has not been reported earlier from the Vidharbha region of Maharashtra (Anon. 2009; Wadatkar et al. 2010). A few days after sighting our winter bird, another individual (same?) in breeding plumage, was spotted in neighboring Yavathmal District (Joshi 2018).

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Frugivory in the Hooded Pitta *Pitta sordida abbotti*

Members of the Pittidae are generally known to be insectivores that forage on the forest floor. They are usually heard or seen skulking in thick undergrowth and are highly active around dawn and dusk. The Hooded Pitta *Pitta sordida abbotti* of the Great and Little Nicobar Islands, India, is an endemic subspecies of the widely distributed Hooded Pitta and is found in the thick, evergreen forests of the islands (Ali & Ripley 1983: 255; Rao et al. 2013).

Hooded Pittas, like their congeners, are widely known to feed on earthworms, snails, ants, beetles, bugs, and invertebrates, and also on small skinks, frogs, and snakes (Lok et al. 2009). However, pittas have also been known to feed on fruit. Corlett (1998) found that fruits made up *c.*20% of the diet of the Rusty-naped Pitta *P. oatesi*. He opined that consumption of fallen fruit might be overlooked in other pittas. Frugivory was also reported for the Noisy Pitta *P. versicolor* by Shanahan et al. (2001).

On 13 March 2021, at 1115 h, we observed a Hooded Pitta in the forest near Zero Point, Great Nicobar Island, feeding on figs that had fallen out of a ficus tree, probably *Ficus altissima* **[151]**. The large fig tree, laden with fruits, was frequented by a plethora of bird species, like pigeons (Columbidae), drongos (Dicruridae), parakeets (Psittacidae), and orioles (Oriolidae), resulting in a large quantity of fruits dropping to the forest floor. We observed an individual Hooded Pitta feeding on the fruits, though there were at least three other conspecifics in the immediate surroundings. Though fruit might not be a significant part of its diet, unlike the Rusty-naped Pitta, it does seem that a Hooded Pitta will feed on fallen fruit if the opportunity arises. We did also consider the possibility of the pitta eating the fruit due to the presence of the fig wasps' eggs or larvae; neither is there enough evidence to prove this. The Hooded Pitta ate the entire fruit, which might have not been the case if it just wanted to eat just the larvae, or the eggs of the wasps, for obtaining which it need have just pecked them from the fruit. It would be interesting to learn if the pursuit of wasps is potentially the driving agent for these insectivores to eat fruit.

Soham Dixit

151. Hooded Pitta feeding on a fallen fig in the Great Nicobar Island.

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Sykes's Warbler *Iduna rama* from the Sikkim Himalaya

On 10 April 2021, while birding in Lachen, North Sikkim (27.72ºN, 88.55ºE; 2,987m asl), we heard a new bird call near the forest. As we pursued the sound toward the forest, we noticed a strange bird foraging on a Sea Buckthorn tree *Hippophae rhamnoidek* and photographed it **[152]**. At first we were confused whether it was a Booted Warbler *Iduna caligata* or the larger Blyth's Reed Warbler *Acrocephalus dumetorum*. When we checked in Grimmett et al. (2016), we realised that the bird looked greyer, and was distinctly longer-billed than a Booted Warbler. Whereas it seemed confusable with a Blyth's Reed Warbler; yet it had a more distinct supercilium behind the eye, paler greyish-brown upperparts, pale sides to tail and edges to remiges, square-ended tail, and shorter

Tamding Chewang Lachenpa

152. Sykes's Warbler.

undertail and upper tail coverts. Therefore, this bird seemed like a Sykes's Warbler *I. rama*. Furthermore, for identification and confirmation, we posted the photograph of the bird in the WhatsApp group of North-East Birding. After much discussion, it was finally concluded that the colour of upperparts, the horizontal stance, and the distinctly long pale bill of the bird confirmed its identification as a Sykes's Warbler.

Sykes's Warbler's breeding range extends from north-eastern Arabia to Turkestan, western China, and Afghanistan (Svensson & Kirwan 2020). Within our region, it breeds in Pakistan and north-western India (Grimmett et al. 2016). The present record may indicate that it could be a passage migrant through the Sikkim Himalaya towards China. There has not been any report of this species from the Sikkim Himalaya nor from most of the eastern Himalaya (Ali 1962; Acharya &Vijayan 2011; ENVIS Centre Sikkim 2015; Grimmett et al. 2016; Grimmett et al.2019; eBird 2021), and our sighting seems to be a new record for the avifauna of the Sikkim Himalayas. We recommend that birders in the high Himalaya look out for this species during March/April for more details about its breeding ground.

We thank the senior birder group for the identification of the species. A special thanks to members of the birder group of Sikkim Himalaya, and Bijoy Chhetri for their constant guidance and encouragement.

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