

Birds in urban human habitations and the case in Dharwad, northern Karnataka

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Abstract

An overview is presented of bird species, both known residents of cities and towns in southern India, and recent immigrants (as well as migratory passage migrants) which have been pressured to adapt to such recent expanding urban habitats for food availability and even breeding sites. Also of those species which have fled the human and domestic animal population 'bomb' in such habitations, when living became dangerous or unsuitable for privacy, food and nesting. M.D. Lister's (1952, 1953) seminal works on some bird associations of Indian built-up areas, and of Indian cultivated and waste lands, are suggested as markers: models of existing situations from then and now, for comparison. Murton's (1971) work is recommended for overall thematic and scientific considerations. He had emphasised that man is the agent initiating changes, that this was evolution in progress and that we are witnessing natural selection at work; it is the duty of the conservationist to understand such change, and certainly not deplore change out of hand. He had hoped that we learn to treat birds as an important component of our environment, even if being a small percentage of human numbers in cities compared to at least twice human numbers in the country, farmland and jungle. Urban population in India stands at 54% in 2014 (http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/), and by 2060 it is generally predicted that a majority of humans would be living in built-up urban areas.

My experience in Dharwad during the last ten years is elaborated, and a list presented of urban avifauna noticed in this small, university-, foothill-town, which could be compared to those observed by Lister (1952, 1953) in Delhi. These Dharwad birds include several surprising species apparently adapted here even to house compounds, which would not even be looked for in the currently ungainly metropolis Bengaluru where I had lived for the first 60 years of my life, 40 of them engaged in bird-watching on our family farm, the agricultural university campus and city transit halts and visits, in between. A total of 208 species have been recorded from Dharwad city and district, both in literature published from 1968 to 2010 (though 24 of them are gross misidentifications and are noted as such; see Appendix 2), and my own observations from 2006. Around 185 of them can be termed city (urban) and suburb adapted species here, with identities confirmed, and are discussed briefly.

Introduction: Urban avifauna

I quote Murton (1971) below, and use Lister's (1952, 1953) works as examples of analyses and provide my lists from Dharwad (earlier Dharwar) city and surrounds as comparison.

Murton (1971: xix) had written "...the fundamental issue in conservation [emphasis mine—K.G.] is whether man should maximise his own numbers at the expense of wild-life, as he could easily do, or whether he should regulate his numbers at a level which will allow him to enjoy something of his natural heritage." I myself strongly feel that human populations are a great and perhaps irreversible threat to other wildlife on earth, and to a sustainable human *lifestyle*, not 'development' only. But, curiously, current thought, influenced primarily by commerce, feels otherwise and encourages population growth!

In the Indian context, it will be helpful to quote some select passages from Lister (1953: 369–370):

"The larger and faster a town grows the greater is its impact upon the avifauna of the land swallowed up by it, and the more effectively is the character of the surrounding country submerged, so that eventually many of the birds which used to inhabit the place when the settlement was only small are driven out—though they are rarely expelled entirely—and a less varied avifauna, better adapted for survival in the modified conditions, takes its place. Even when the climax avifauna of a large town has been reached

it does not necessarily remain static. A town, after all, is a living organism. The town council may in its wisdom decide to make public gardens when the rows of houses occupying a certain site fall or are pulled down; or an acre of two of undeveloped waste land may be allocated for the erection of a factory. Basically, no doubt, the climax urban avifauna undergoes little alteration, though within its limits local changes do take place."

About cultivated and waste land in and around our habitations, Lister (1952: 19) had written:

"I am dealing with cultivated and waste land together, as in many cases there is not such a very great deal of difference between them from the point of view of a bird, and very often the two are so interwoven as to be ecologically almost inseparable. Both are open, with occasional trees and bushes. The waste land is usually covered with grass and often weeds, even though the growth be only meagre, while the cultivated land is either covered with crops, many of which are low-growing and provide considerable areas of uniform cover, or else are lying fallow or newly-ploughed. There are usually more bushes and other similar cover on the waste land, and the vegetation is often much more uneven than in the acres of similar crops."

In British (undivided) India, the ten largest cities were Ahmedabad, Amritsar, Bombay (Mumbai now), Calcutta (Kolkata), Cawnpore (Kanpur), Delhi, Hyderabad, Lahore, Lucknow, and Madras (Chennai). Today these and many others are as big or much bigger. The Indian human population in 1941 was 318,660,580 and only 14% of its people then lived in cities. In this century the population has risen more than three-fold to 1,228,737,436 and rising, and twice the number (28%) now reside in urban areas (*vide* Oxford School Atlas, 2011, OUP, New Delhi). In 2014 urban population was 54% (http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/), and by 2060 it is generally predicted that a majority of humans would be living in built-up urban areas. However, India is a huge country and it is still a relief to find almost three-fourth of its human population village- and countryside-based, for their occupations.

Forest areas have been drastically reduced. When the British left in 1947, almost 50% was still under jungle and now hardly 3% remains after six decades of Indian administration! Devastation of the Indian natural biodiversity has been tremendous. My 'Guru,' the late M. Krishnan (1989), had summed up his life's wisdom (as a naturalist) thus,

"The only natural heritage that we have (though we have the vandalistic power to destroy or mutilate it), is the wholly natural physical character and entity of the land, its native flora, fauna and geomorphology. It is only this that has an authentic and truly Indian quiddity, only this that can provide a stable basis for the continuity of the entity of India...We should safeguard this natural identity of our country at least in representative, revivable or still unspoiled bits of it, for future generations to have any sense of national identity or continuity with the past—at least in, say, 10% of the total land area. If

we cannot meet the needs of our peoples with 90% of the land, then there is something seriously wrong with our administrative efficiency."

Today the situation is depressing and 'depauperate' (as late Zafar Futehally had written me on 25 June 2013, as a new word describing, himself!). Even the House Sparrow has left for richer and quieter grounds in still calm villages, far away from modern, noisy 'civilization.' Only Black Kites circle slaughterhouses, garbage dumps for carrion and other eateries, rock pigeons nest in high-rise buildings and in sports stadia, and there is a cacophony of House and Large-billed (yes, these too) Crows searching for eats in garbage dumps all over the city, along with packs of pariah dogs, or pigs as here in Dharwad. The Common Myna hobbles with its Jungle cousin. Yes, this too which has invaded food (garbage)-rich cities. In small town Dharwad I found Yellow-billed Babbler common in house compounds waiting for home refuse to be thrown out before domestic help arrived to wash and clean vessels. The bird guides I use, when and if required, to confirm species identifications are Grimmett *et al.* (1999), Kazmierczak (2000), and Rasmussen & Anderton (2005).

Dharwad and surrounding country flora, fauna

This paper is another effort towards a future updated documentation of the Ornithology of what was known as the "Bombay Deccan and southern Mahratta Country" (Butler 1881; and map). The references listed at the end of this paper include most of the major works available on birds, *etc.*, of this area, but some have not been cited in the text deliberately. Sykes (1832a–b), Jerdon (1839a–b, 1840a–d, 1841, 1843, 1844, 1845, 1846, 1862, 1863, 1864), and Blyth (1845a–c, 1847, 1852, 1866a–b, 1867a–b) were the pioneering ornithologists who wrote on the birds of this area and discoveries of its bird life, publishing between 1832 and 1867 or so. Davidson & Wenden (1878) worked the Poona–Sholapur–Gulbarga—



Photo: Indrajit Chopade

Raichur transect (Bhima Valley) after the Reverend Fairbank (1876) had published on the birds of the ghats, from Khandala south to Belgaum. Ghorpadé & Loksha (2011) updated the Raichur District and Bhima River valley ornithology recently. Vidal (1880) had written on birds of the south Konkan, and Captain Butler (1881) had compiled all information then available on the ornithology of the Bombay Deccan and South Mahratta Country, which is very helpful as a major base (429 confirmed species included, inclusive of those of the ghats). Macgregor (1887) added to Butler's list. Davidson (1898a, b) wrote a detailed paper on North Kanara ornithology. But after them there have hardly been any significant publications, except for Koelz (1942) on the Londa neighbourhood birds (I have Abdulali's annotations on this paper hardcopy, from T.R. Bell's collection, which he presented to me), Neginhal (1971) on avifauna in the vicinity of the Tungabhadra River, and Uttangi (2003) on the Anshi National Park area. I have searched Abdulali's (1968, 1969, 1970, 1972, 1983, 1988) catalogue for species taken in this present area of focus. My Sandur taluka ornithology (Ghorpade 1974) is another detailed local area study.

Dharwad town and district (15.417°N, 75.35°E; 727 m alt.), straddles an area of 200 km² and has 45 villages in five talukas. Human population is just over 1.6 million, 1.2 million of them in the Hubli–Dharwad twin city area. Rainfall is about 90 cm per annum, most falling in July and ranging from June

end to early September, with 27°C–36°C average temperature. West of the city is an undulating foothill of Western Ghats tract (400–800 m) with red to greyish-brown soil, and to the east the Deccan plain with red loams to black cotton soil. Flora is disturbed deciduous forest, reduced to low scrub, interspersed with cultivation. The tropical dry deciduous forest begins some 20km west of Dharwad. See Ghorpadé *et al.* (2013) for more details of the Dharwad area.

Each large city in India has its 'backyard biodiversity' bank, e.g., the Ridge forest in Delhi, Borivli jungle in Mumbai, Bannerghatta NP in Bengaluru, Malliabad and the two rivers in Raichur, and so on. All relatively undisturbed habitats with some useful biota for our use or maintenance of healthy ecosystem back-ups near human habitations are the urban area's 'Backyard Bank.' The biota of these backyard banks needs also to be well surveyed, sampled and documented for use by humans in future, for better-managed developmental plans for a more *sustainable lifestyle*. The Western Ghats foothills, a few kilometres to the west of Dharwad, from a little north of Mugad south to Kalghatgi, is this city's backyard biodiversity and needs study of its bird species diversity, and their populations, through each year, as a back-up data bank.

About Dharwad, Chakravarthy (1993) had suggested, "It seems to me that if Town Planners make use of the edge effect in an appropriate manner, they will succeed in attracting a large



Photo: Indrajit Ghorpade

64. Great Indian Bustard *Ardeotis nigriceps*

number of birds of different species. I would suggest that other birdwatchers when they visit Dharwad, pay special attention to the abundance of bird species where there is a mix of different habitats."

James Channabasappa Uttangi (1997), the ninety-plus year old senior most pioneer bird man of Dharwad (who passed away in 2014), had written, "Essentially, the vegetation of this forest edge community of Dharwad consists of grass, shrubs and scattered trees with open ground and meadows. Birds adapted to live in ecotones or forest-edge community show a close relationship with the arrangement of standing crops."

This city of Dharwad, earlier spelt 'Dharwar,' and c. 1000 years old—the British had annexed it in 1818 (Ladawa *undated*), has had very few resident naturalists or bird-watchers, and documentation of its avifauna is poor, careless, amateurish and presumptuous (in my studied opinion), notwithstanding academics and professors like Drs Uttangi and Desai being the main bird men and contributors here. Butler (1881: 367) had given "Kolapur, Dharwar, Kaladgi" of the "*Southern Deccan*" as being "Ornithologically unexplored" in his tentative catalogue of the birds of the Deccan and South Mahratta Country. The bird lists of Uttangi (1985) and Desai *et al.* (1999, 2000) are the only fairly detailed attempts, but suffer from many errors. I attempt to analyse these, update status of the urban avifauna

now predominant here, and add my own first-hand observations of birds made in Dharwad, from late 2006 onwards (see Appendix 2).

Birds in house compounds, waste lands, parks and campuses in Dharwad

A thorough search of Indian bird literature resulted in the 50 or so papers and notes appended in the References below. Uttangi (1985), and Desai *et al.* (1999, 2000) attempted to compile a list of species seen in and around Dharwad and the latter stated that, "In the present study as well as [that] by Uttangi (1985) 129 species of birds belonging to 44 different families have been recorded." A careful study has revealed these lists to be inclusive of misidentified and unlikely species (see Appendix 2). Many species are doubtful and require to be confirmed by new, properly identified records, or then rejected as errors, as done here (Appendix 2). Others that are very evident and common in Dharwad have been curiously omitted (!), like the Black Kite and the Shikra, as well as others pointed out below and in Appendix 2. My compilation and analysis of the data available prompts me to suggest a total of 208 species so far authentically recorded (or doubtful) in Dharwad city and district, either in earlier publications or from my own first-hand observations. A



Photo: Indrajit Chorpade

more detailed “Annotated List” will be published separately (Ghorpadé, *in prep.*), and just a simple list of species (185) found in Dharwad city is given in this article (Appendix 2). Below I attempt to just update Uttangi’s (1985) comprehensive paper on Dharwad–Hubli birds and so pre-empt a more detailed text, this to be published later, after more serious and focused bird-watching here in many other habitats and locations.

Uttangi’s (1985) introduction and notes on Dharwad topography, climate and plant species is useful background reading. I will comment on birds he had listed under six subheadings (habitats) in that paper, and update the reader with the current scene in Dharwad. This small town still has the ‘old fashioned’ houses and bungalows with adequate walled compounds and plenty of plants, mainly useable coconut and other fruit trees, like mango, sapota, and guava. Home gardens are rare as in most parts of independent India, generally. Apartment blocks are few and rare, but now getting increasingly apparent with builders choosing construction of such clustered living spaces to provide housing for a growing ‘modern’ population. Like Uttangi wrote, both crow

species, two mynas and occasional sparrows are usually seen in such house compounds. However, I have found the Yellow-billed Babbler very frequently around houses and in layouts, searching kitchen waste for suitable food, in noisy groups. No bird-watcher had mentioned this bird here earlier. Perhaps the most successful of urban adapted birds is the Red-vented Bulbul, among the first to wake you up with early morning calls around 6am. The Greater Coucal, Koel and White-throated Kingfisher are also early risers, and the small bird with a loud voice, our Tailorbird, is also active in the early mornings. Black Kites soar in air above, looking for food, and the ‘clapping’ of wings of the Rock Pigeons is a familiar sound, and then sight, also. Like the Red-vented Bulbul, the Ashy Prinia is another abundant city bird, even more visible than the Tailorbird. Dharwad also has good populations of Red-whiskered Bulbuls, which is interesting. Occasional sightings of White-browed Bulbuls happen, and their loud calls are also heard. Uttangi had mentioned in one of his papers that the elimination of *Lantana* bushes in Dharwad was a factor in this bulbul’s reduced presence, but we now have plenty of lantana bushes



Photo: Indrajit Ghorpadé

with their all-year flowering, so critical for nectar feeding birds and insects, especially butterflies. Elsewhere, I (Ghorpadé 1997) had written in some detail about the usefulness or otherwise of this introduced exotic plant in India. Ioras, with their beautifully melodious voices, are a pleasure when seen and heard as they search large trees for food. The Magpie-Robin is also common in built-up colonies and is another melodious singer. The Red-wattled Lapwing is also often heard and seen.

The bird community in houses and built-up colonies vascillates over the seasons. The Pied Bushchat is such a notable local migrant in its preferred season, post-monsoon. Obviously in the post-monsoon colder months we have many local or distant migrant birds like swallows, orioles, hoopoe, flycatchers, warblers, iora, white-eye, minivets, hornbills, shrikes, etc., swelling the city's bird life. A pair of White-throated Fantails frequents my bungalow compound. They are tame and confiding, and again have not been mentioned by earlier bird-watchers. Other flycatchers seen are the beautiful male Paradise, frequently, as well as the Brown and Red-breasted, these in winter months. The bulbuls are also familiar 'neighbours' and Greater Coucals too. A few more years of records of bird species seen in each month will provide a more accurate log of the presence of breeding residents and local migrants. In open wastelands used as grazing ground by cattle, goats and sheep, the Cattle Egret is yet another dominantly adapted urban bird, like Pond Herons. Grazing cattle have Black Drongos, Common- and Jungle Mynas, crows, Scaly-breasted Munias, and Greater Coucal joining them for disturbed insects taken by these birds as food. The House Swift has a common presence in the air and is joined in winter by Barn, Red-rumped, and Wire-tailed Swallows, which latter use power lines for resting. I have noticed very few White-browed Wagtails in Dharwad, though they are abundant in Bengaluru. Grey Wagtails are frequent in Dharwad in

winter along with Yellow- and White Wagtails which hunt insects on the many open lawns and in crop field stubble in our UASD campus. But the Rufous Treepie's raucous, rasping call is rarely heard here. The Indian Roller is also not that common on electric lines but more evident in open country. There is heightened presence of the Jungle Myna here, and the Brahminy Starling often joins them. The crowds of Rosy Starlings are frequent in their season and I have rare sightings of the Bank Myna also here (Taher *et al.* 2010). Cinereous Tits are also fairly frequent, but Uttangi's (1996a) surprising records of the White-naped Tit and White-eared Bulbul need to be confirmed (see Appendix 2). Hanging Parakeets are very common during parts of the year, looking for food on flowering trees in noisy flocks. The Indian Robin, a 'double endemic,' both genus and species (Rasmussen 2013), is the Deccan endemic and I have found it in more open and stony areas in our agricultural college campus, and also saw one pair in a vacant city colony plot on a single occasion. Blyth's Starling is rarely seen. Pavan also has a record from the same campus. The Purple-rumped Sunbird is another successful urban adapter, singing and chirping away while taking nectar from all kinds of flowers of herbs (like *Stachytarpheta*, *Indigofera*, and *Sida*), shrubs (*Lantana*, which is found in town, *Crotalaria*, and *Gliricidia*) and high up in flowering trees as well (see Appendix 1 for a list of predominant Dharwad flora and other larger fauna). Flowerpeckers are found near mango trees with the arboreal *Viscum* or *Loranthus* plant parasites on them, and also white-eyes in such small birds 'hunting parties.' The Purple Sunbird, like the Indian Robin, is selective; opting for areas that are less crowded with people, and in open land with *Lantana*, and thus is rarer in town. Woodpeckers are pretty rare, so are Coppersmith Barbets, which are less vocally evident here than they are in Bengaluru. Spotted- outnumbers Laughing Doves, and the stately Eurasian



67. Blyth's Starling *Sturnia malabarica blythii*.

Collared Dove keeps more to open country in the eastern city suburbs and to our Agricultural University (UASD) campus. I need to do more critical surveys of this campus for other open country birds. My erstwhile postgraduate student Sabbithi Pavan (*in prep.*) has just sent me a list of birds he had observed in the campus and other Dharwad areas and has recorded ten species for the first time here (see Appendix 2).

Fruit-eating birds, like Rose-ringed Parakeets, Asian Koels, and bulbuls are also fairly evident, and the Grey Hornbill is often seen. The Brown Shrike is seen here regularly in winter and both the resident and the migratory Long-tailed Shrike (in winter months) are also frequent. In winter one waits for the first 'chuck-chuck' call of the migratory Blyth's Reed Warbler, which shares its wintering period in southern India with the Brown Shrike. The Great Grey Shrike avoids crowded areas with humans, like the Bay-backed Shrike and most babblers, larks, pipits, and sparrow lark. The Spotted Owlet is most often heard at night; I also heard a Collared Scops Owl once from my 'barsati' room in Narayanpur in June. Raptors are visitors often, and those recorded are listed (Appendix 2). Harriers are rare, seen only in open country, but the Shikra is always evident in town, and was mentioned by Uttangi (as 'Sparrow hawk'). The Baya Weaver nests over old wells and in trees on tank edges, but is not that common.

There are a few tanks in town and many others outside Dharwad. The cited literature below has species sighted at these (see also Appendix 2). Besides the Little Grebe, Common Coot, and egrets, the usual sandpipers, stilts, etc., do occur in winter, but in small numbers, especially on nullahs polluted with municipal sewage, where the kingfishers and larger herons, pipits and wagtails abound, hunting for food. The Brahminy Kite (adults and immatures) breeds here and is sometimes seen soaring over town, with Black Kites. I have not done critical, sustained studies

of waterbodies in and around Dharwad yet.

The Dharwad city 'country market' area, with the main police station and a large park nearby, has thousands of screeching myna species roosting on large trees there each evening; also sparrows. Dharwad is a dominantly 'vegetarian' city and the few slaughter houses and meat markets have their bird communities, mainly Black Kites, crows, mynas, and the odd shrike.

In closing, may I point out that much more substantial, careful work needs to be done of Dharwad—Hubli Ornithology, and of the forest areas to their west (Western Ghats), and the grasslands and open cultivation to their east (Deccan Plateau). What has been done is fairly indicative of Dharwad avifauna, but finding small, special, and undisturbed habitats may turn up more surprises in this peaceful area, with still minimal urban disturbance, vehicular traffic, industrial noise and pollution. Hubli is the second largest 'market,' industrial, town in Karnataka. Its large 100+-year-old Unkal Lake (250+ acres area, planned by the celebrated engineer, late Sir M. Vishwesharayya) is poorly conserved and little planted with suitable aquatic vegetation, for birds and other waterbody wildlife. Birds on the larger farms around Dharwad would also help log interesting smaller bird species (like warblers, flycatchers) through an almost daily effort by resident bird-watchers living on them or doing weekend visits. My farm 'habitat' for some 30 years outside Bengaluru, had revealed a wonderfully diverse bird life—and I assume a similar experience awaits me in and around Dharwad!

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I appreciate some relevant literature received from Neginhal and the late Uttangi, and wish to warmly thank Aasheesh Pittie for help with critical papers on Dharwad birds accumulated by this invaluable bird bibliophile, no more available with the above two. The bird list of Sabbithi Pavan (and photographs) sent to me recently for identifications

Photo: Indrajit Ghorpade



68. Great Grey Shrike *Lanius excubitor*

and peer review is gratefully acknowledged. For the excellent photographs selected for this article, I am beholden to my younger brother, Indrajit Ghorpade, him thereby adding some 'colour' to this effort of mine.

References

- Abdulali, H., 1968. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—2. Anseriformes. *Journal of the Bombay Natural History Society* 65 (2): 418–430.
- Abdulali, H., 1969. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—4. Megapodidae, Phasianidae, and Turnicidae. *Journal of the Bombay Natural History Society* 66 (2): 251–285.
- Abdulali, H., 1970. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—7. Scolopacinae (part), Phalaropinae, Rostratulidae, Recurvirostridae, Dromadidae, Burhinidae, Glareolidae, Stercorariidae, Laridae. *Journal of the Bombay Natural History Society* 67 (2): 279–298.
- Abdulali, H., 1972. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—10. Cuculidae. *Journal of the Bombay Natural History Society* 68 (3): 756–772.
- Abdulali, H., 1983. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—26. Muscipidae (Timaliinae) (contd.). *Journal of the Bombay Natural History Society* 79 (3): 607–719.
- Abdulali, H., 1988. A Catalogue of the Birds in the Collection of the Bombay Natural History Society—33. Muscipidae (Turdinae). *Journal of the Bombay Natural History Society* 85 (1): 118–134.
- Bharathi, S. G., & Shivalingaradhya, M. V., 1966. Flora of the Karnataka University campus and its immediate environs. *Karnatak University Journal of Science* 11: 182–206.
- Blyth, E., 1845a. Synopsis of the Indian Fringillidae. *Journal of the Asiatic Society of Bengal* 13 (Part 2 No. 156 New Series 72): 944–963 (1844).
- Blyth, E., 1845b. Notices and descriptions of various New or Little Known species of Birds. *Journal of the Asiatic Society of Bengal* 14 (Part I No. 159 New Series 75): 173–212.
- Blyth, E., 1845c. Notices and descriptions of various new or little-known species of birds. *Journal of the Asiatic Society of Bengal* 14 (Part II No. 164 New Series 80): 546–602.
- Blyth, E., 1847. Notices and descriptions of various new or little known-species of birds. *Journal of the Asiatic Society of Bengal* 16 (Part I No 185 New Series No V): 428–476.
- Blyth, E., 1852. *Catalogue of the birds in the Museum Asiatic Society (sic)*. 1st ed. Calcutta The Asiatic Society. Pp. i–xxxiv, 1–403.
- Blyth, E., 1866a. The Ornithology of India. - A commentary on Dr. Jerdon's 'Birds of India'. *Ibis* 2: 225–258.
- Blyth, E., 1866b. The Ornithology of India. - A commentary on Dr. Jerdon's 'Birds of India'. *Ibis* 2: 336–376.
- Blyth, E., 1867a. The Ornithology of India. - A commentary on Dr. Jerdon's 'Birds of India'. *Ibis* (2) 3: 1–48.
- Blyth, E., 1867b. The Ornithology of India. - A commentary on Dr. Jerdon's 'Birds of India'. *Ibis* (2) 3: 147–185.
- Butler, E. A., 1881. A tentative catalogue of the birds of the Deccan and South Mahratta country. *Stray Feathers* 9 (586): 367–442.
- Chakravarthy, A. K., 1993. Birds of Dharwad. *Newsletter for Birdwatchers* 33 (1): 5.
- Davidson, J. A. G., 1898a. The birds of North Kanara. *Journal of the Bombay Natural History Society* 11 (4): 652–679.
- Davidson, J. A. G., 1898b. The birds of North Kanara. Part II. *Journal of the Bombay Natural History Society* 12 (1): 43–72.
- Davidson, C. S., & Wenden, C. E., 1878. A contribution to the avifauna of the Deccan. *Stray Feathers* 7 (1-2): 68–95.
- De Niceville, L., 1900. The Food-plants of the Butterflies of the Kanara District of the Bombay Presidency, with a revision of the species of Butterflies there occurring. *Journal of the Asiatic Society of Bengal* 69 (2) 187–277.
- Desai, G., 2002. Notes on Adjutant Storks and Barheaded Geese in north Karnataka. *Newsletter for Birdwatchers* 42 (2): 28–29.
- Desai, M. C., & Murthy, N. N., 1950. Some grasses of Dharwar Agricultural College estate. *Dharwar Agricultural College Magazine* 4: 27–28.
- Desai, R. N., 1994. Migration of the Common Pochard *Aythya ferina* and the Common Pintail *Anas acuta* to the tanks of Dharwad District (Karnataka state: India). *Newsletter for Birdwatchers* 34 (2): 39–40.
- Desai, R. N., 1995. Incubation pattern in the Red-vented Bulbul *Pycnonotus cafer* in relation to atmospheric temperature and the phase of development of eggs. *Newsletter for Birdwatchers* 35 (2): 35–36.
- Desai, R. N., 1996. Rare visits of some ducks, Painted Stork and Glossy Ibis to the tanks of



69. Cinereous Tit *Parus cinereus*

Photo: Indrajit Ghorpade

- Dharwad (Karnataka: India). *Newsletter for Birdwatchers* 36 (4): 78–79.
- Desai, R. N., 1997. A case of an unusually delayed breeding activity of the Red-vented Bulbul *Pycnonotus cafer*. *Newsletter for Birdwatchers* 37 (2): 27.
- Desai, R. N., & Kallur, G. S., 2001. Rare visits of some wetland birds to some tanks of Dharwad (sic) (Karnataka State, India). *Newsletter for Birdwatchers* 41 (5): 64.
- Desai, R. N., Mummigatti, U. G., & More, M. P. 1999. A check list of birds in and around Dharwad city (Karnataka state: India). Coimbatore, SACON: i–ii, 1–15.
- Desai, R. N., Mummigatti, U. G., & More, M. P. 2000. Checklist of birds in Dharwad region (Karnataka state, India). Coimbatore, SACON: 1–3.
- Desai, R. N., Yeri, V. V., & Kallur, G. S., 2005. Some aspects of the breeding cycles of the Indian Robin *Saxicoloides fulicata fulicata* (L.) of Dharwad (Karnataka: India). *Newsletter for Birdwatchers* 45 (1): 9–10.
- Dhulkhed, M. H., 1959. On some Longicorn Beetles of Dharwar (Mysore). *Journal of the Bombay Natural History Society* 56 (2): 354–357.
- Fairbank, S. B., 1876. List of birds collected in the vicinity of Khandala, Mahabaleshwar, and Belgam, along the Sahyadri Mountains; and near Ahmednagar in the Dakhan. *Stray Feathers* 4 (4,5&6): 250–268.
- Ghorpadé, K., 1997. The status of Insect diversity in the Indian sub-continent. Introduction and Overview. Part one. *Indian Journal of Biodiversity* 1 (1+2): 49–89.
- Ghorpadé, K., 2010. The “cryptic” warblers in Kanha Reserve, central India, with a detailed commentary on identifications and modern guides. *Newsletter for Birdwatchers* 50 (1): 7–13.
- Ghorpadé, K., 2011. Current species identities and scientific names of Indian birds: doubts, queries and counsel. *Current Science* 100 (7): 981–983.
- Ghorpadé, K., 2011. On identification, amateur bird-watchers, professional ornithologists. *Pardicula* 4: 3–6.
- Ghorpadé, K., 2012. On the taxonomy of the Rufous Treepie, *Dendrocitta vagabunda* (Latham, 1790) in the Indian subcontinent. *Pardicula* 6: 8–11.
- Ghorpadé, K., & Lokesh, R., 2011. A prefatorial survey of birds in the Raichur Doab, with reference to the Bhima river valley, Deccan Plateau. *Humea* 5: 1–19.
- Ghorpade, K., Patil, R.R., & Chandaragi, M. K., 2013. Notes on Hawk Moths (Lepidoptera–Sphingidae) in the Karwar–Dharwar transect, peninsular India: a tribute to T.R.D. Bell (1863–1948). *Colemania* 33: 1–16.
- Ghorpade, K. D., 1974. Preliminary notes on the ornithology of Sandur, Karnataka. *Journal of the Bombay Natural History Society* 70 (3): 499–531.
- Ghosh, S. K., Mandal, D. K., & Chaudhury, M., 1990. Butterflies of Maharashtra and Karnataka, India. *Records of the Zoological Survey of India* 86 (1): 15–38.
- Grimmett, R., Inskipp, C., & Inskipp, T., 1999. *Pocket guide to the birds of the Indian Subcontinent*. New Delhi: Oxford University Press. Pp. 1–384.
- Jerdon, T. C., 1839. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* X (24): 60–91.
- Jerdon, T. C., 1839. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* X (25): 234–269.
- Jerdon, T. C., 1840a. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* XI (26): 1–38.
- Jerdon, T. C., 1840b. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* XI (27): 207–239.
- Jerdon, T. C., 1840c. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* XII (28): 1–15.
- Jerdon, T. C., 1840d. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. *Madras Journal of Literature and Science* XII (29): 193–227.
- Jerdon, T. C., 1841. *Catalogue of the birds of the peninsula of India arranged according to the modern system of classification: with brief notes on their habits and geographical distribution, and descriptions of new, doubtful and imperfectly described species*. 1st ed. Madras: J.B. Pharoah. Pp. i–xxiv, 1–203 (1839).

Photo: Indrajit Ghorpade

70. Yellow-eyed Babbler *Chrysomma sinense*

- Jerdon, T. C., 1843. *Illustrations of Indian ornithology*. 1st ed. Madras: J. B. Pharaoh. Vol. I of IV vols. 22 ll., pll. I–XII (col.) (3 November 1843).
- Jerdon, T. C., 1844. Supplement to the catalogue of birds of the peninsula of India. *Madras Journal of Literature and Science* 13 (30): 156–174.
- Jerdon, T. C., 1845. *Illustrations of Indian ornithology*. Church Street, Vepery, India: R. W. Thorpe, Christian Knowledge Society's Press. Vol. II of IV vols. 25 ll., pll. XIII–XXV (col.) (March 1845).
- Jerdon, T. C., 1846. Second supplement to the catalogue of the birds of southern India. *Madras Journal of Literature and Science* 13 (31): 116–144 (1845).
- Jerdon, T. C., 1862. *The birds of India being a natural history of all the birds known to inhabit continental India: with descriptions of the species, genera, families, tribes, and orders, and a brief notice of such families as are not found in India, making it a manual of ornithology specially adapted for India*. 1st ed. Calcutta: Published by the author at the Military Orphan Press. Vol. I of 2 vols. Pp. i–xlv, 1–535.
- Jerdon, T. C., 1863. *The birds of India being a natural history of all the birds known to inhabit continental India: with descriptions of the species, genera, families, tribes, and orders, and a brief notice of such families as are not found in India, making it a manual of ornithology specially adapted for India*. 1st ed. Calcutta: Published by the author (Printed by The Military Orphan Press). Vol. II.-Part I. of 2 vols. Pp. 1–439.
- Jerdon, T. C., 1864. *The birds of India: being a natural history of all the birds known to inhabit continental India; with descriptions of the species, genera, families, tribes, and orders, and a brief notice of such families as are not found in India, making it a manual of ornithology specially adapted for India*. 1st ed. Calcutta: Published by the author (Printed by George Wyman and Co.). Vol. II.-Part II. of 2 vols. Pp. i–iv, 2 ll., 441–876, i–xxxii.
- Jerdon, T. C., 1871. Supplementary notes to "The Birds of India". *Ibis* 1: 335–356.
- Jerdon, T. C., 1872. Supplementary notes to "The Birds of India". *Ibis* (3) 2 (5): 1–22.
- Jerdon, T. C., 1872. Supplementary notes to "The Birds of India". *Ibis* (3) 2: 114–139.
- Jerdon, T. C., 1872. Supplementary notes to "The Birds of India". *Ibis* (3) 2: 297–310.
- Kanamadi, R. D., Bhuttewadkar, N. U., & Hiremath, C. R., 1990. Onset of breeding season in some anuran amphibians of Dharwad, Karnataka. *Journal of the Bombay Natural History Society* 87 (1): 156–157.
- Kazmierczak, K., 2000. *A field guide to the birds of India, Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh and the Maldives*. 1st ed. New Delhi: Om Book Service. Pp. 1–352.
- Koelz, W., 1942. Notes on the birds of the Londa neighbourhood, Bombay Presidency. *Journal of the Bombay Natural History Society* 43 (1): 11–33.
- Krishnan, M., 1989. India—A wildlife's apprehensions. *Hornbill*, April–June 1989: 12–14.
- Ladawa, B. N., (ed.). Undated. Hubli–Dharwad city guide and commercial directory. Pp. 1–274. Hubli.
- Ladwa, H. R., & Patil, R. M., 1961. Compositae of Dharwar and its vicinity. *Journal of the Bombay Natural History Society* 58 (1): 68–80.
- Lister, M. D., 1952. Some bird associations of Indian cultivated and waste lands. *Journal of the Bombay Natural History Society* 51 (1): 19–28.
- Lister, M. D., 1953. Some bird associations of Indian built-up areas. *Journal of the Bombay Natural History Society* 51 (2): 369–377.
- MacGregor, J., 1887. Notes supplementary to Major Butler's catalogue of birds of the Deccan and south Mahratta country (*Stray Feathers*, Vol. IX., p. 367). *Stray Feathers* 10: 435–442.
- Murton, R. K., 1971. *Man and Birds*. London: Collins. Pp. i–xx, 1–364 pp.
- Neginhal, S. G., 1971. Tungabhadra Reservoir birds. *Newsletter for Birdwatchers* 11 (5): 6–8.
- Neginhal, S. G., 1981. Status and distribution of Wildlife in Karnataka. *Myforest* 17: 231–235.
- Pavan, S., *in prep*. Some birds seen in the Agricultural University campus at Dharwad, northern Karnataka, and nearby areas.
- Pittie, A., 2002. Comments on the Newsletter. *Newsletter for Birdwatchers* 42 (2): 29.
- Rasmussen, P. C., & Anderton, J. C., 2005. *Birds of South Asia: the Ripley guide*. 1st ed. Washington, D.C. and Barcelona: Smithsonian Institution and Lynx Edicions. 2 vols. Pp. 1–378; 1–683.
- Rasmussen, P. C., 2013. Then and now: new developments in Indian systematic ornithology. *Journal of the Bombay Natural History Society* 109 (1&2): 3–16 (2012).
- Razi, B. A., 1955. An account of the vegetation of semi-arid tracts of Mysore State and Karnataka. *Journal of the Mysore University B.*, 15: 1–6.
- Razi, B. A., 1972. Vegetation and floristic composition of the Deccan Trap areas of Mysore State. *Bulletin of the Indian National Academy of Science B.*, 45: 168–177.
- Shashidhar, H. S., & Ghorpadé, K., *in prep*. Birds observed in the Dandeli area of North Kanara District, peninsular India. 4 ms pp. [Unpublished.]
- Sykes, W. H., 1832a. Catalogue of birds of Raptorial and Insectorial Orders (systematically arranged,) observed in the Dukhun by Lieut. Colonel W. H. Sykes, Bombay Army. *Proceedings of the Committee of Science and Correspondence of the Zoological Society of London XVIII* (2): 77–99.
- Sykes, W. H., 1832b. Catalogue of birds (systematically arranged) of the Rasorial, Grallatorial, and Natatorial Orders, observed in the Dukhun by Lieut. Colonel W. H. Sykes, Bombay Army. *Proceedings of the Committee of Science and Correspondence of the Zoological Society of London XXIII* (2): 149–172.
- Taher, H., Sreekar, R., Anguru, S., & Taher, S. A., 2010. Range extension of Bank Myna *Acridotheres ginginianus* in southern India with new records from Andhra Pradesh. *Indian Birds* 5 (5): 153–154.
- Uttangi, J. C., 1985. Bird fauna in the urban habitats of Hubli and Dharwad. *Myforest* 21 (3): 151–161.
- Uttangi, J. C., 1996a. A rare occurrence of the globally threatened White-naped Tit, *Parus nuchalis*, in areas of Dharwad, Karnataka, India. *Newsletter for Birdwatchers* 35 (6): 114–115.
- Uttangi, J. C., 1996b. Reporting on the 1996 Asian Waterfowl Census conducted in areas of Dharwad District on 21st January 1996. *Newsletter for Birdwatchers* 36 (2): 29–31.
- Uttangi, J. C., 1997. Mango trees and loras. *Newsletter for Birdwatchers* 37 (2): 23–24.
- Uttangi, J. C., 2003. Conservation of the Avifauna of Anshi National Park (India). *Newsletter for Birdwatchers* 43 (6): 83–84.
- Vidal, G. W., 1880. First list of the birds of the South Konkan. *Stray Feathers IX* (1,2&3): 1–96.

Appendix 1

Dharwad area flora

[See Desai & Murthy (1950), Razi (1955), Ladwa & Patil (1961), Bharathi & Shivalingaradhya (1966), Razi (1972), and Uttangi (1985: 154–155) for more details of local flora. The most frequent, commonly seen plant species here are listed below, by alphabetical order of genus and species names]

Acacia chundra (Rottler) Willd.
A. concinna L.
A. leucophloea (Roxb.)
A. nilotica (L.) Del. ssp. *indica* (Benth.) Brenan
Acalypha indica L.
Acanthospermum hispidum DC
Achras sapota L.
Achyranthes aspera L.
Adhatoda vasica Nees
Aegle marmelos (L.) Corr. Serr.
Ageratum conyzoides L.
Albizia amara (Roxb.) Boivin
Albizia lebbek (L.), Benth.

Aloe vera (L.) Burm. F.
Amaranthus viridis L.
Anacardium occidentale L.
Annona squamosa L.
Anogeissus latifolia (DC) Wallich ex Beddome
Artocarpus heterophyllus Lam.
Azadirachta indica Adr. Juss.
Bauhinia purpurea L.
B. racemosa Lam.
Bidens pilosa L.
Bombax ceiba L.
Boswellia serrata Roxb.
Bougainvillea glabra Choisy

Butea monosperma (Lam.) Taubert in Engl. & Prantl.
Cassia auriculata L.
C. fistula L.
Casuarina equisetifolia Forster & Forster f.
Chloroxylon swietenia DC.
Cocos nucifera L.
Crateva magna (Lour.) DC.
Crotalaria retusa L.
Croton bonplandianus Baillon
Dalbergia latifolia Roxb.
Datura metel L.
Diospyros melanoxylon Roxb.
D. montana Roxb.
Dodonaea angustifolia L. f.
Duranta erecta L.
Embilica officinalis Gaertn.
Eucalyptus spp.
Euphorbia rothiana Sprengel
Ficus benghalensis L.
F. racemosa L.
F. religiosa L.
Gliricidia sepium (Jacq.) Kunth ex Walp.
Gloriosa superba L.
Gmelina arborea Roxb.
Grevillea robusta A. Cunn ex R. Br.
Guizotia abyssinica (L. f.) Cass.
Hardwickia binata Roxb.
Hibiscus spp.
Impatiens fruticosa Leschen. ex DC
Indigofera cordifolia Heyne ex Roth.
Ipomoea pes-caprae (L.) R. Br.
Ixora spp.
Jasminum angustifolium (L.) Willd.
Lagascea mollis Cav.
Lagerstroemia parviflora Roxb.
Lantana camara L.
Lawsonia inermis L. Willd.
Leucas aspera (Willd.) Link
Loranthus spp.
Mangifera indica L.
Manilkara hexandra (Roxb.) Dubard
Michelia champaca L.
Millingtonia hortensis L. f.
Mimosa pudica L.
Mimusops elengi L.
Momordica charantia L.
Moringa oleifera Lam.
Morus alba L.
Murraya koenigii (L.) Sprengel
Nerium oleander L.
Nyctanthes arbor-tristis L.

Ocimum basilicum L.
Opuntia monacantha (Willd.) Haw.
Ougenia dalbergoides Benth.
Pandanus odoratissimus L. f.
Parthenium hysterophorus L.
Peltophorum pterocarpum (DC) Backer ex K. Heyne
Phoenix sylvestris (L.) Roxb.
Phyllanthus emblica L.
Physalis minima L.
Pithecolobium dulce (Roxb.) Benth.
Plumeria spp.
Polyalthia longifolia (Sonnerat) Thw.
Pongamia pinnata (L.) Pierre
Premna latifolia Roxb.
Prosopis cineraria Druce
Pterocarpus marsupium Roxb.
P. santalinus L. f.
Randia dumetorum (Retz.) Poirer
Samanea saman (Jacq.) Merr.
Santalum album L.
Sapindus emarginatus Vahl
Scutellaria violacea Heyne ex Benth.
Semecarpus anacardium Linn.f.
Shorea talura Roxb.
Sida cordifolia L.
Solanum nigrum L.
Sonchus oleraceus L.
Spathodea campanulata P. Beauv.
Stachytarpheta mutabilis (Jacq.) M. Vahl
Stereospermum personatum (Hassk.) Chatterjee
Strychnos nux-vomica L.
Syzygium cuminii (L.) Skeels
Tamarindus indica L.
Tectona grandis L.
Terminalia arjuna Wight et Arn.
T. bellerica Roxb.
T. catappa L.
T. chebula (Gaertn.) Retz.
T. paniculata Roth.
T. tomentosa Wight et Arn.
Thespesia populnea (L.) Sol. ex. Corr. Ser.
Thunbergia spp.
Tridax procumbens L.
Viscum spp.
Vitex negundo L.
Xanthium indicum J. Koenig
Ziziphus mauritiana Lamk.
 And several unidentified grasses*

*See Desai & Murthy (1950) for some grass species recorded from UAS, Dharwad campus

Frequent Dharwad fauna

[See Neginhal (1981) for some general details]

Frogs, *Microhyla ornata*, *Polypedatus maculatus*, *Rana limnocharis*, *Tomopterna breviceps*
 Fivestriped Palm Squirrel, *Funambulus pennanti* Wroughton
 Threestriped Palm Squirrel, *F. palmarum* (Linnaeus)
 Indian Mongoose, *Herpestes edwardsi* (Geoffroy)
 Hanuman Langur, *Semnopithecus priam* (Blyth)
 Ghats Langur, *S. hypoleucos* (Blyth)
 House Rat, *Rattus rattus* (Linnaeus)

Bandicoot, *Bandicota indica* (Bechstein)
 House Mouse, *Mus musculus* Linnaeus
 Field Mouse, *M. booduga* (Gray)
 Pipistrelle, *Pipistrellus coromandra* (Gray)
 Large Fruit Bat, *Pteropus giganteus* Linnaeus
 Jackal, *Canis aureus* Linnaeus
 Blacknaped Hare, *Lepus nigricollis* F. Cuvier
 Blackbuck, *Antelope cervicapra* (Linnaeus)

Butterflies (Lepidoptera: Rhopalocera) of North Kanara were treated by Lionel de Niceville (1900), and of the Dharwad area by Ghosh *et al.* (1990).
 Dhulkhed (1959) listed the long-horned beetles (Coleoptera: Cerambycidae) of Dharwar [sic]
 Ghorpadé *et al.* (2013) wrote an account of the hawk moths (Lepidoptera: Sphingidae) of the Karwar–Dharwar [sic] transect.
 Kanamadi *et al.* (1990) wrote on common anuran amphibians prevalent in Dharwad.

Appendix 2

List of bird species recorded in Dharwad City and District

A total of 208 species are here confirmed from Dharwad and surrounds, including 24 doubtful ones [included in a separate section]; the recent work by my student Sabbithi Pavan (*in prep.*) has confirmed 105 species, and he has added ten more species to this list from the Dharwad city and district. The bird guides I use, when and if required to confirm species identifications, are Grimmett *et al.* (1999), Kazmierczak (2000), and Rasmussen & Anderton (2005).

Non-Passeriformes

- Lesser Whistling Duck *Dendrocygna javanica*
 Bar-headed Goose *Anser indicus*
 Ruddy Shelduck *Tadorna ferruginea*
 Common Pochard *Aythya ferina*
 Ferruginous Duck *A. nyroca*
 Tufted Duck *A. fuligula*
 Garganey *Spatula querquedula*
 Northern Shoveler *S. clypeata*
 Eurasian Wigeon *Mareca penelope*
 Indian Spot-billed Duck *Anas poecilorhyncha*
 Northern Pintail *A. acuta*
 Common Teal *A. crecca*
 Comb Duck *Sarkidiornis melanotos*
 Cotton Teal *Nettapus coromandelianus*
 Indian Peafowl *Pavo cristatus*
 Common Quail *Coturnix coturnix*
 Jungle Bush Quail *Perdica asiatica*
 Rock Bush Quail *P. argoondah*
 Grey Francolin *Francolinus pondicerianus*
 Grey Junglefowl *Gallus sonneratii*
 Greater Flamingo *Phoenicopterus roseus*
 Little Grebe *Tachybaptus ruficollis*
 Rock Pigeon *Columba livia*
 Eurasian Collared Dove *Streptopelia decaocto* [72]
 Red Collared Dove *S. tranquebarica*
 Spotted Dove *S. chinensis*
 Laughing Dove *S. senegalensis*
 Yellow-legged Green Pigeon *Treron phoenicopterus*
 Asian Palm Swift *Cypsiurus balasensis*
 Alpine Swift *Tachymarptis melba*
 Pacific Swift *Apus pacificus* [Pavan *in prep.*]
 Indian House Swift *A. affinis*
 Greater Coucal *Centropus sinensis*
 Asian Koel *Eudynamis scolopaceus*
 Pied Cuckoo *Clamator jacobinus* [Pavan *in prep.*]
 Plaintive Cuckoo *Cacomantis passerinus* [Pavan *in prep.*]
 Common Hawk-Cuckoo *Hierococcyx varius* [65]
 Indian Cuckoo *Cuculus micropterus* [Pavan *in prep.*]
 White-breasted Waterhen *Amaurornis phoenicurus*
 Purple Swampphen *Porphyrio porphyrio*
 Common Moorhen *Gallinula chloropus*
 Common Coot *Fulica atra*
 Demoiselle Crane *Grus virgo*
 Great Indian Bustard *Ardeotis nigriceps* [64]
 Lesser Adjutant *Leptoptilos javanicus*
 Painted Stork *Mycteria leucocephala*
 Asian Openbill *Anastomus oscitans*
 Black Stork *Ciconia nigra*
 Woolly-necked Stork *C. episcopus*
 Cinnamon Bittern *Ixobrychus cinnamomeus*
 Indian Pond Heron *Ardeola grayii*
 Cattle Egret *Bubulcus ibis*
 Grey Heron *Ardea cinerea*
 Purple Heron *A. purpurea*
 Great Egret *A. alba*
 Intermediate Egret *Egretta intermedia*
 Little Egret *E. garzetta*
 Black-headed Ibis *Threskiornis melanocephalus*
 Eurasian Spoonbill *Platalea leucorodia*
 Indian Black Ibis *Pseudibis papillosa*
 Glossy Ibis *Plegadis falcinellus*
 Little Cormorant *Microcarbo niger*
 Black-winged Stilt *Himantopus himantopus*
 Yellow-wattled Lapwing *Vanellus malarbaricus*
 Red-wattled Lapwing *V. indicus*
 Pheasant-tailed Jacana *Hydrophasianus chirurgus*
 Bronzewing Jacana *Metopidius indicus*
 Eurasian Curlew *Numenius arquata*
 Black-tailed Godwit *Limosa limosa*
 Sanderling *Calidris alba*
 Common Snipe *Gallinago gallinago*
 Common Sandpiper *Actitis hypoleucos*
 Common Greenshank *Tringa nebularia*
 Common Redshank *T. totanus*
 Wood Sandpiper *T. glareola*
 Barred Button Quail *Turnix suscitator*
 Little Pratincole *Glareola lactea*
 Little Tern *Sternula albifrons*
 River Tern *Sterna aurantia*
 Black-winged Kite *Elanus caeruleus*
 Oriental Honey Buzzard *Pernis ptilorhynchus*
 Egyptian Vulture *Neophron percnopterus*
 Crested Serpent Eagle *Spilornis cheela*
 Tawny Eagle *Aquila rapax*
 Western Marsh Harrier *Circus aeruginosus*
 Shikra *Accipiter badius*
 Brahminy Kite *Haliastur indus*
 Black Kite *Milvus migrans*
 White-eyed Buzzard *Butastur teesa* [63]
 Long-legged Buzzard *Buteo rufinus*
 Barn Owl *Tyto stertens* [Pavan *in prep.*]
 Spotted Owlet *Athene brama*
 Collared Scops-Owl *Otus bakkamoena*
 Great Hornbill *Buceros bicornis*
 Malabar Pied Hornbill *Anthraceroceros coronatus*
 Malabar Grey Hornbill *Ocyroceros griseus*
 Indian Grey Hornbill *O. birostris*
 Common Hoopoe *Upupa epops*
 Indian Hoopoe *U. ceylonensis*
 Lesser Golden-backed Woodpecker *Dinopium benghalense* [66]
 Copper Smith Barbet *Psilopogon haemacephalus*
 Green Bee-eater *Merops orientalis*
 Blue-tailed Bee-eater *M. philippinus*
 Indian Roller *Coracias benghalensis*
 Common Kingfisher *Alcedo atthis*
 Pied Kingfisher *Ceryle rudis*
 White-throated Kingfisher *Halcyon smyrnensis*
 Common Kestrel *Falco tinnunculus*
 Plum-headed Parakeet *Psittacula cyanocephala*
 Rose-ringed Parakeet *P. krameri*
 Vernal Hanging Parrot *Loriculus vernalis*

Passeriformes

- Indian Pitta *Pitta brachyura*
 Small Minivet *Pericrocotus cinnamomeus*
 Large Cuckooshrike *Coracina javensis*
 Black-headed Cuckooshrike *Lalage melanoptera*
 Indian Golden Oriole *Oriolus kundoo*

Common Woodshrike *Tephrodornis pondicerianus*
 Common Iora *Aegithina tiphia*
 Black Drongo *Dicrurus macrocercus*
 Ashy Drongo *D. leucophaeus*
 White-throated Fantail *Rhipidura albicollis*
 Brown Shrike *Lanius cristatus*
 Bay-backed Shrike *L. vittatus*
 Rufous-backed Shrike *L. erythronotus*
 Long-tailed Shrike *L. schach*
 Great Grey Shrike *L. excubitor* [68]
 Rufous Treepie *Dendrocitta vagabunda*
 House Crow *Corvus splendens*
 Large-billed Crow *C. macrorhynchos*
 Indian Paradise-flycatcher *Terpsiphone paradisi*
 Thick-billed Flowerpecker *Dicaeum agile*
 Pale-billed Flowerpecker *D. erythrorhynchos*
 Plain Flowerpecker *D. concolor* [Desai et al. 2000; Pavan in prep.]
 Purple-rumped Sunbird *Leptocoma zeylonica*
 Purple Sunbird *Cinnyris asiaticus*
 Blue-winged Leafbird *Chloropsis cochinchinensis*
 Baya Weaver *Ploceus philippinus*
 Indian Silverbill *Eodice malabarica*
 White-rumped Munia *Lonchura striata*
 Scaly-breasted Munia *L. punctulata*
 House Sparrow *Passer domesticus*
 Paddyfield Pipit *Anthus rufulus*
 Western Yellow Wagtail *Motacilla flava*
 Grey Wagtail *M. cinerea*
 White-browed Wagtail *M. maderaspatensis*
 White Wagtail *M. alba*
 Grey-necked Bunting *Emberiza buchanani*
 Cinereous Tit *Parus cinereus* [69]
 Rufous-tailed Lark *Ammomanes phoenicurus* [71]
 Ashy-crowned Sparrow Lark *Eremopterix griseus*

Oriental Skylark *Alauda gulgula*
 Sykes' Lark *Galerida deva*
 Grey-breasted Prinia *Prinia hodgsonii* [Pavan in prep.]
 Ashy Prinia *P. socialis*
 Plain Prinia *P. inornata*
 Common Tailorbird *Orthotomus sutorius*
 Sykes' Warbler *Iduna rama*
 Blyth's Reed Warbler *Acrocephalus dumetorum*
 Red-rumped Swallow *Cecropis daurica*
 Wire-tailed Swallow *Hirundo smithii*
 Barn Swallow *H. rustica*
 Dusky Crag Martin *Ptyonoprogne concolor*
 Red-whiskered Bulbul *Pycnonotus jocosus*
 Red-vented Bulbul *P. cafer*
 White-browed Bulbul *P. luteolus*
 Tytler's Leaf Warbler *Phylloscopus tytleri*
 Yellow-eyed Babbler *Chrysomma sinense* [70]
 Oriental White-eye *Zosterops palpebrosus*
 Large Grey Babbler *Turdoides malcolmi* [Pavan in prep.]
 Common Babbler *Argya caudata*
 Jungle Babbler *Turdoides striata* [Pavan in prep.]
 Yellow-billed Babbler *T. affinis*
 Rosy Starling *Pastor roseus*
 Brahminy Starling *Sturnia pagodarum*
 Blyth's Starling *Sturnia malabarica blythii* [Pavan in prep.] [67]
 Common Myna *Acridotheres tristis*
 Bank Myna *A. ginginianus* [see Taher et al. (2010)]
 Jungle Myna *A. fuscus*
 Indian Robin *Saxicoloides fulicatus*
 Oriental Magpie Robin *Copsychus saularis*
 Asian Brown Flycatcher *Muscicapa dauurica*
 Red-breasted Flycatcher *Ficedula parva*
 Pied Bushchat *Saxicola caprata*
 Indian Blackbird *Turdus simillimus*

71. Rufous-tailed Lark *Ammomanes phoenicurus*

List of deleted species with explanatory notes

Common Goldeneye *Bucephala clangula* Desai *et al.* (1999) mentioned sighting of this duck here, but misidentification is certain for some pochard; this species is unknown from below the Indo-Gangetic plains.

Baer's Pochard *Aythya baeri* Uttangi (1996b) curiously mentioned this species from here but this is obviously a mistake since there are no records south of the Indo-Gangetic plains except for a record from Chilka Lake in Orissa on the east.

Red Junglefowl *Gallus gallus* The record by Desai *et al.* (1999) is unacceptable for this species of 'sal' jungle above the Godavari and east of the Wainganga River.

Black-necked Grebe *Podiceps nigricollis* The records of Uttangi (1985), and Desai *et al.* (1999) are unlikely for this species but there is a record from Pune.

Emerald Dove *Chalcophaps indica* (Desai *et al.* 1999) have noted many species from the Dharwad area, which are highly unlikely, and this forest pigeon will hardly frequent this area and must be taken as incorrect.

Oriental White Stork *Ciconia boyciana* Desai *et al.* (1999) again have erred with this record here; it is only known from north-eastern India.

White-bellied Heron *Ardea insignis* Desai & Kallur (2001) gave this unlikely record for a north-eastern Indian species; see also Pittie (2002).

Curlew Sandpiper *Calidris ferruginea* Desai *et al.* (1999) recorded this from here but pending confirmation it is better to omit this coastal species, although apparently seen in the Goa area and at Bengaluru (Kazmierczak 2000: 124).

Northern Goshawk *A. gentilis* [Pavan *in prep.*] Record needs confirmation.

European Roller *Coracias garrulus* Desai *et al.* (1999) mentioned a sighting, but I prefer to treat that as doubtful, even though there have been recent sightings in southern India from Goa, Kanakpura, etc.

Black-capped Kingfisher *Halcyon pileata* Desai *et al.* (1999) give a record of this here,

which is doubtful for this largely coastal species, though accidentals (?) have been seen in southern Karnataka and Tamil Nadu.

Scarlet Minivet *Pericrocotus flammeus* Though there are several records from here (Uttangi, 1985; Desai *et al.* 1999; Pavan, *in prep.*), confirmation is required for this forest (ghats) species.

Black-headed Shrike *Lanius tricolor* Desai *et al.* (2000) again probably erroneously mention this species, lumped under Long-tailed Shrike, *L. schach*, and found only in eastern India.

Citrine Wagtail *Motacilla citreola* Desai *et al.* (1999) mention this but better to question it from here pending confirmation.

White-capped Bunting *Emberiza stewarti* Desai *et al.* (1999) apparently misidentified this for Grey-necked?

Black-faced Bunting *Schoeniclus spodocephala* Desai *et al.* (1999) apparently misidentified this for Grey-necked?

White-naped Tit *Parus nuchalis* (Uttangi 1996a) was sure he identified this from here but his record needs confirmation.

Zitting Cisticola *Cisticola juncidis* Desai *et al.* (1999)—record needs confirmation.

Broad-tailed Warbler *Schoenicola platyurus* Desai *et al.* (1999)—record needs confirmation.

Bristled Grass Warbler *Chaetornis striata* Desai *et al.* (2000)—record needs confirmation.

Black-throated Tit *Aegithalos concinnus* Desai *et al.* (1999) documentation again, of a highly unlikely species here!

Black Bulbul *Hypsipetes leucocephalus* Desai *et al.* (1999)—record needs confirmation.

Rusty-tailed Flycatcher *Muscicapa ruficauda* Desai *et al.* (1999)—record needs confirmation.

Pied Thrush *Geokichla wardii* Desai *et al.* (1999)—record needs confirmation.



Photo: Indrajit Chorpade