

BIRDS AND THEIR HABITATS IN THE CULTIVATED AREAS OF LYALLPUR DISTRICT AND VICINITY

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A total of 80 species of birds was recorded from three habitats—as cropland, canalside vegetation, and forest plantation—in the cultivated areas around the Lyallpur city. The avifauna of these cultivated lands was found to be an admixture of species from a variety of habitats.

The district, Lyallpur, lies in the centre of Rechna Doab—an area bounded by the rivers, Ravi and Chenab. Prior to the commencement of agriculture, the Doab was an expanse of alkaline waste and thorn scrub. But, with the introduction of canal irrigation in 1890, agricultural crops and planted vegetation replaced the thorn scrub. As a result of these alterations in the landscape, considerable changes in the fauna of the area have taken place. Taber *et al.* (1967) have pointed out the effect of habitat changes by man upon mammalian fauna of the Doab. As for birds, little information has been published that relates to this area. Earlier investigations pertain mostly to the north-western part of the Punjab (Currie, 1916; Whistler, 1916; Ahmad, 1963, 1965; Mirza, 1965). Hussain and Bhalla (1937) who pioneered ornithological research in the Doab provide a list of birds recorded from Lyallpur and vicinity. The present paper lists birds from three habitats, i.e., cropland, canalside vegetation and forest plantation found in the cultivated lands around Lyallpur.

MATERIALS AND METHODS

The study was initiated in January 1970 and carried till March 1971. During this period, 26 field trips were undertaken into the cultivated lands within a 30-mile radius of the Lyallpur city. The birds were identified with the help of 7X field glasses and notes taken on them and their habitats.

STUDY AREA AND HABITATS

Less than a century ago, the Doab comprised a succession of alkaline wastes which were often covered with low bushes of saltwort tribe or with a

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scrub of thorny bushes of the acacia family and of *Salvadora oleoides*. But, since the introduction of agriculture in 1890, the Doab has been largely transformed into a fertile agricultural land. The remnants of the original vegetation now occur in small untilled alkaline tracts and on uplands that are too high to be irrigated. Today, 87 percent of the total land area of Lyallpur District is under cultivation. (Anon, 1961). In these cultivations, three kinds of habitats are recognizable.

Cropland: In the cropland, which formed the principal feature of the cultivation crops like wheat, maize, cotton, sugarcane, gram, pulses, and fodder were grown. Depending upon the season, tracts of varying size of these crops were so distributed that they formed a sort of mosaic pattern in the cropland. Beside this vegetational heterogeneity that might be present in the cropland in any given season, there took place regular floral and physiognomic changes in it at the end of each season.

Canalside Vegetation: Main irrigation canals in our study area have vegetation strips along their banks. For the purpose of the present study, a four-mile long strip (starting northeast from the point where Lyallpur-Sheikhupura Road crosses the canal) was selected along the Rakh Branch. Over almost the entire length of this strip, *Dalbergia sissoo* and *Acacia arabica* formed more or less a continuous canopy. Young *D. sissoo*, *S. oleoides* and *Capparis decidua* were the common understory shrubs. At places where the soil was alkaline and trees were lacking, low shrubs of *S. oleoides*, *C. decidua*, and *Sueda frutescens* were present.

Forest Plantation: The Ghatwala Forest Plantation which is located 10 miles northeast of Lyallpur was selected for the study of forest birds. The plantation is essentially an assemblage of distinct blocks of *D. sissoo*, *Morus alba*, and *A. arabica*. However, in some blocks all the three species were found intermixed. The forest blocks not only varied in their floral composition but were also different with respect to the age and density of the trees present in them. Some of the blocks, especially the ones consisting of young trees were so dense that hardly more than 15 percent of the forest floor received direct sun rays, whereas others which comprised large trees were relatively open and rich in understory vegetation.

RESULTS AND DISCUSSION

Table 1 presents a list of birds recorded from three habitats-cropland, canalside vegetation, and forest plantation. A cursory look at this table

reveals that avifauna in the cultivated lands is an admixture of species from a variety of habitats. Thus, there could be seen in the cultivated areas 1) birds of bush and scrub country, like the White-eyed Buzzard, Grey partridge, Wryneck, Ashycrown Finchlark, Crested Lark, Grey Shrike, Plain Longtail Warbler, Orphean Warbler, and Lesser White-throat, 2) grassland species such as, Black-winged Kite, Yellow-eyed Babbler, Stonechat, and Bushchat, 3) birds of savannahs and open woodland such as Shikra, Indian Roller, Hoopoe, Pygmy Woodpecker, Bay-backed Shrike, and Black Dorongo, 4) birds of dense woodlands and shady ravines such as Koel, Scarlet Minivet, Small Minivet, and Paradise Flycatcher, and 5) birds which are tied up with water or wet habitats such as, Lesser pied Kingfisher, Common Kingfisher, White-breasted Kingfisher, Blue-tailed Bee-eater, Yellow Wagtail, Grey Wagtail, White Wagtail, and Large Pied Wagtail, and 6) birds of tamarisk thickets and reedbeds such as, Crow Pheasant, Streaked Paintail Warbler, and Streaked Weaver.

This extra-ordinary variety in the avifauna of cultivated lands is due largely to vegetational heterogeneity. The cropland which forms the largest habitat in the cultivated areas is essentially a mosaic of a variety of crops where each crop has its own micro-environment and, therefore, a slightly different assemblage of birds. The occasional trees and shrubs present at the edges of the fields impart to the cropland the look of savannahland. Many of the birds of the cultivated areas require them for nesting sites or observation posts yet they feed largely on the ground in the crops. Clearly, their niche requirements are met in thus formed artificial sayannah and not in tracts of uniform fields. Again, saline tracts and scrublands, which are scattered through the cropland favour birds of dry habitats while forest plantation and well-watered shady canal-banks bring into the cultivated areas species that are generally tied up with dense forest and/or water.

Many of the birds of cultivated lands have made rather rapid extensions in their range in our study area after the introduction of irrigation over the last century. Of these new enterants, the Koel, Pygmy Woodpecker and Paradise Flycatcher entered the area rather very recently as they affect shady groves of large trees.

TABLE 1. List of birds recorded from cultivated area around Lyallpur (1 cropland, 2 canal-side vegetation, 3. Forest Plantation)

Species	Habitat		
	1	2	3
Black-winged Kite <i>Elanus caeruleus</i>	x	x	—
Shikra <i>Accipiter badius</i>	x	x	—
White-eyed Buzzard <i>Butastur teesa</i>	x	x	—
Tawny Eagle <i>Aquila rapax</i>	x	x	—
White-backed Vulture <i>Gyps bengalensis</i>	x	x	—
Egyptian Vulture <i>Neophron percnopterus</i>	x	x	—
Grey Partridge <i>Francolinus pondicerianus</i>	x	x	—
Red-wattled Lapwing <i>Vanellus indicus</i>	x	—	—
Blue Rock Pigeon <i>Columba livia</i>	x	—	—
Red Turtle Dove <i>Streptopelia tranquebarica</i>	x	x	x
Little Brown Dove <i>Streptopelia senegalensis</i>	x	x	x
Collared Dove <i>Streptopelia decaocto</i>	x	x	x
Rose-ringed Parakeet <i>Psittacula krameri</i>	x	x	x
Koel <i>Eudynamis scolopacea</i>	x	x	x
Crow Pheasant <i>Centropus cinensis</i>	x	x	x
Spotted Owlet <i>Athene brama</i>	x	x	x
House Swift <i>Apus affinis</i>	x	—	—
Lesser Pied Kingfisher <i>Cyrule rudis</i>	—	x	—
Common Kingfisher <i>Alcedo atthis</i>	—	x	—
White-breasted Kingfisher <i>Halcyon smyrnensis</i>	x	x	x
Blue-tailed Bee-eater <i>Merops philippinus</i>	x	x	—
Green Bee-eater <i>Merops orientalis</i>	x	x	x
Indian Roller <i>Coracias benghalensis</i>	x	x	x
Hoopoe <i>Upupa epops</i>	x	x	x
Wreneck <i>Jynx torquilla</i>	—	x	x
Pygmy Woodpecker <i>Picoides nanus</i>	—	x	x
Golden-backed Woodpecker <i>Dinopium benghalense</i>	—	x	x
Pied Woodpecker <i>Dendrocopos mahrattensis</i>	x	x	x
Ashycrown Finchlark <i>Eremopterix grisea</i>	x	—	—
Crested Lark <i>Galerida cristata</i>	x	—	—
Crag Martin <i>Hirundo rupestris</i>	x	x	—
Swallow <i>Hirundo rustica</i>	x	x	—
Wire-tailed Swallow <i>Hirundo smithii</i>	x	x	—
Great Grey Shrike <i>Lanius excubitor</i>	x	—	—
Bay-backed Shrike <i>Lanius vittatus</i>	x	x	x
Rufous-backed Shrike <i>Lanius schach</i>	x	x	x
Golden Oriole <i>Oriolus oriolus</i>	—	x	x
Black Drongo <i>Dicrurus adsimilis</i>	x	x	x

Rosy Pastor <i>Sturnus roseus</i>	—	x	x
Common Starling <i>Sturnus vulgaris</i>	x	x	x
Common Myna <i>Acridotheres tristis</i>	x	x	x
Bank Myna <i>Acridotheres ginginianus</i>	x	—	—
Indian Tree Pie <i>Dendroclitta vagabunda</i>	x	x	x
House Crow <i>Corvus splendens</i>	x	x	x
Jungle Crow <i>Corvus macrorhynchos</i>	x	—	—
Common Wood Shrike <i>Tephrodornis pondicerianus</i>	—	x	x
Scarlet Minivet <i>Pericrocotus flammeus</i>	—	x	x
Small Minivet <i>Pericrocotus cinnamomeus</i>	—	x	x
Red-vented Bulbul <i>Pycnonotus cafer</i>	x	x	x
Yellow-eyed Babbler <i>Chrosoma sinensis</i>	x	x	x
Common Babbler <i>Turdoides caudatus</i>	x	x	x
Jungle Babbler <i>Turdoides striatus</i>	x	x	x
Red Breasted Flycatcher <i>Muscicapa parva</i>	x	x	x
White-browed Fantail Flycatcher <i>Rhipidura aureola</i>	x	x	x
Paradise Flycatcher <i>Terpsiphone paradisi</i>	—	x	x
Streaked Fantail Warbler <i>Cisticola juncidis</i>	x	x	x
Plain Longtail Warbler <i>Prinia subflava</i>	x	x	—
Ashy Longtail Warbler <i>Prinia socialis</i>	x	x	—
Tailor Bird <i>Orthotomus sutorius</i>	x	x	x
Orphean Warbler <i>Sylvia hortensis</i>	—	x	x
Lesser Whitethroat <i>Sylvia curruca</i>	—	x	x
Bluethroat <i>Erithacus svecicus</i>	x	—	x
Black Redstart <i>Phoenicurus ochruros</i>	x	x	x
Stonechat <i>Saxicola torquata</i>	x	—	—
Pied Bushchat <i>Saxicola caprata</i>	x	x	—
Indian Robin <i>Saxicoloides fulicata</i>	x	x	x
Blue-headed Rock Thrush <i>Monticola cinclorhynchus</i>	x	—	—
Grey Tit <i>Parus major</i>	—	—	x
Paddyfield pipit <i>Anthus spinoletta</i>	x	—	—
Yellow Wagtail <i>Motacilla flava</i>	x	—	—
Grey Wagtail <i>Motacilla caspica</i>	x	—	—
White Wagtail <i>Motacilla alba</i>	x	—	—
Large pied Wagtail <i>Motacilla maderaspatensis</i>	x	—	—
Purple Sunbird <i>Nectarinia asiatica</i>	—	—	x
White-eye <i>Zosterops palpebrosa</i>	x	—	x
House Sparrow <i>Passer domesticus</i>	x	x	x
Baya <i>Ploceus philippinus</i>	x	—	—
Streaked Weaver <i>Ploceus manyar</i>	x	x	—
Common Rosefinch <i>Carpodacus erythrinus</i>	—	x	x
Yellow-throated Sparrow <i>Petronia xanthocollis</i>	—	x	x

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