

AVIAN FAUNA OF PUNJAB UNIVERSITY, LAHORE

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Abstract: Punjab University Campus (701.24 hectares) is located South-east of Lahore. Thousands of students from different areas of the Punjab came for higher studies. Its habitat has great diversity by having a canal, botanical garden, agricultural fields and residential colonies. Due to its habitat and avian fauna surveyed from December, 1996 to September, 1997, revealed, sixty-four species of birds belonging to 51 genera, 31 families and 12 orders. Twenty species were migratory (6 species winter visitors, 12 summer visitor, 2 species were irregular round visitor) while 42 species were resident. Of these 64 species, 31 species are non-Passeriformes while 33 are Passeriformes. Provision of artificial nesting sites, display of lectures about wildlife with special reference to birds and even the institute of wildlife studies is suggested in Punjab University.

Keywords: Avian fauna, Punjab University, Lahore, Pakistan.

INTRODUCTION

Punjab University Campus area is located in South-east of Lahore city between 31° 31' north latitude and 74° 18' east longitude. Out of total 721 hectares area, development has been completed over 324 hectares while remaining 397 hectares is used for agricultural purposes. The boundaries of the area are shown in map. Since its very beginning, Punjab University has been providing facility for higher education. Thousands of students from different localities of Punjab and even abroad come for higher studies. The area has been developed into multitude of habitats like canal, botanical garden, hostels lawns, playgrounds, residential colony, graveyards, a small village and agricultural fields. Surface of Campus area is flat and soil is dark brown in colour, a characteristic of alluvial plains of Indus basin uplands.

Climate of the area is subject to considerable fluctuations. Maximum temperature may rise to 46°C in June/July. The average temperature for June is 38°C. Minimum temperature may fall to 4-6°C and average temperature for December is 9°C.

The area, few decades ago, was a natural jungle having variety of habitats and wild animals. Campus was located outside the Lahore city. But with the passage of time as the city expanded it surrounded whole of the Campus area.

The existing bird fauna of the Campus area is influenced both directly or indirectly by a number of factors like habitat loss, development of academic blocks, hostels and avenues, expansion of residential colony, pollution both noise and water, disturbance, urbanization in the surroundings and conversion of land into agricultural field. Bay affecting a large part of avian and mammalian fauna. But regardless of environmental and landscape changes, Campus area still exhibits great diversity in its avian and mammalian fauna.

The main object of the work done was to identify and enlist various species of birds visiting and residing in the area and to observe the behaviour of bird species from September 1996 to December 1997.

MATERIALS AND METHODS

Campus area was surveyed for the analysis of avian biodiversity with special references to avian fauna once or twice a week from December 1996 to October 1997. For this purpose area was mapped into six types of habitats (i.e., canal and its surroundings, residential areas, departments, botanical garden, agricultural land, and playgrounds). Birds were observed using the binoculars 7x35 and 8x40 and identified upto species level by using Woodcock (1980) and Ali & Ripley (1987). Their status was determined by following Robert (1991).

Common means invariably seen in appropriate season. **Frequent** means birds were not seen invariably even when visiting appropriate habitat and region, only in one visit out of three. **Abundant** indicates that it is invariably seen and also inconsiderable numbers. **Scarce** means that it is only likely to occur in very restricted areas and even in such areas it occurs in small numbers. **Rare** indicates even less likelihood of occurrence. **Vagrant** means that its future occurrence is highly unpredictable and it does not occur anywhere in the region on the regular basis. Flora of Campus area were identified by following Nasir and Ali (1972).

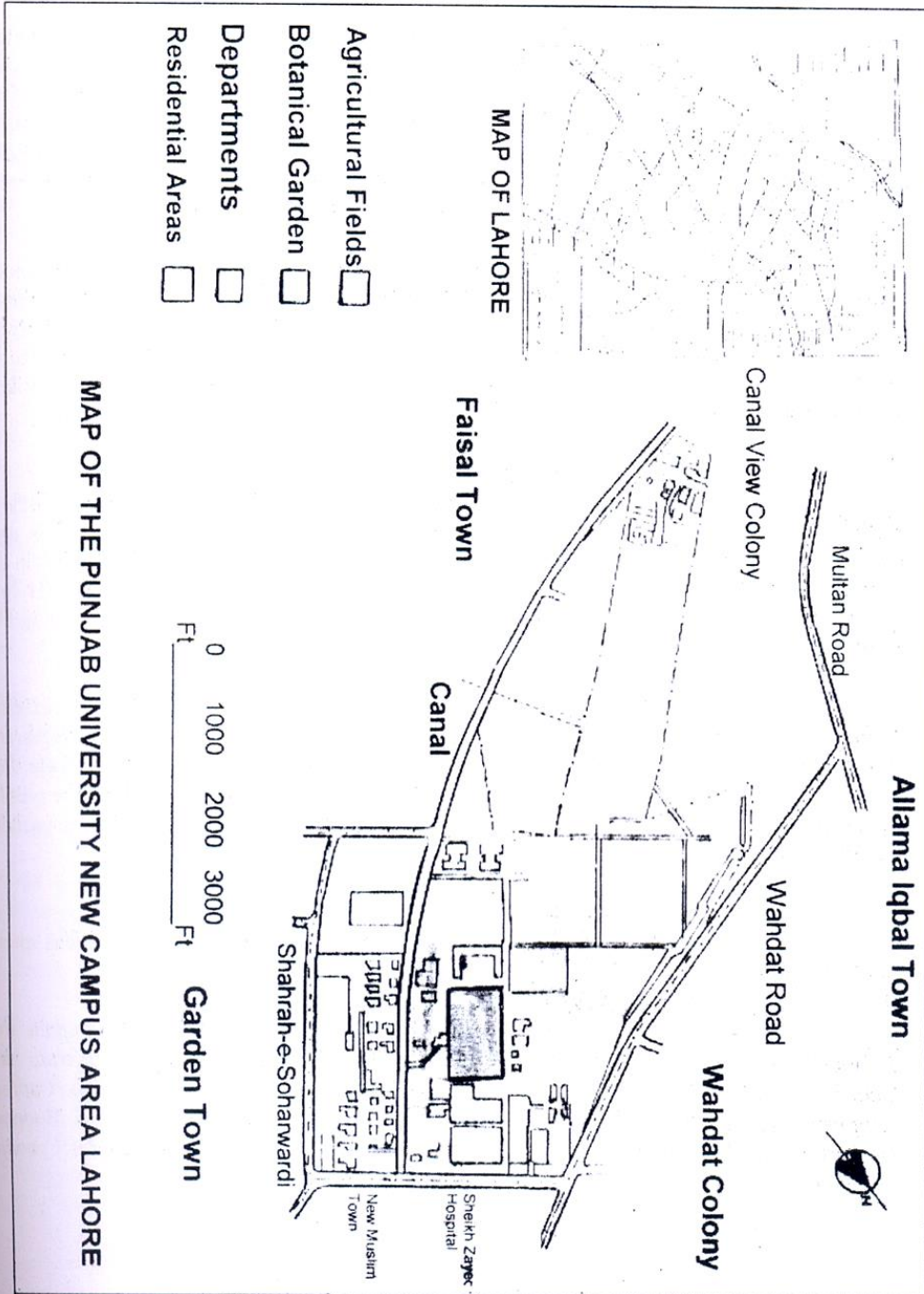
RESULTS AND DISCUSSION

Punjab University Campus area exhibits a wide diversity in fauna and flora.

HABITAT

Natural vegetation is that of tropical thorn forest type. Due to the diversity in habitat, vegetation map was drawn after visiting the habitat. Following types of habitats were surveyed. A brief description is given below:

1. **Botanical Garden**



Botanical garden is spread over 50 acres. It is purely a wild habitat left undisturbed for study purposes. The area has potentially suitable habitat for a wide diversity of fauna. Reptiles, birds and small mammals were also seen in the garden. Tree composition of the botanical garden is dominated by *Acacia arabica*, *Acacia nilotica*, *Dalbergia sissoo*, *Melia azadarach*, *Pinus longifolia roxburghii*, *Heterophrgama adenophyllum* and *Cupress sempervirens*. Moreover, fruits of peepal, mulberry, neem and shisham have attraction for frugivorous species like Parakeets and bulbuls.

Typical shrubs include *Saccharum spontaneum*, *Pterosperum acerifolium*, *Carissa grandiflora*, *Bougainvella spectabilis*, *Typha australis*, *Saccharum munja* and *Prunus persia*. Herbs and grasses of some important types are *Hibiscus rosasinensis*, *Mazus regusus*, *Clatropus procera*, *Cynodon dactylon*, *Avena sativa*, *Oxalis sp.* And *Poa annua* provies best habitat for patridges, quails, larks, chats and shrikes. Variety of plant species is given in Table 1.

2. Canal Surroundings

Canal passing through the Lahore city also covers 337 acres area in Punjab University New Campus and is not included in the University Campus area (701.24 hectares). Most of the plant species are exotic in this area. Important trees in the surroundings of canal are sufeda, Lagistonia, shisham, kikar and hybrid popular (Hybrid popular C-214). Many fruit trees have also been planted along the canal surrounding like *Psidium guyava*, *Mangifera indica*, *Eugenia gambolana* an shatoot.

Similarly, typical shrubs include *Thuja accidentalis*, *Murrya exotica*, *Punica granatum*, *Saraca indica*, *Carissa grandiflora* and *Tecoma stans*. Herbs and grasses of some types are *Cynodon dactylon*, *Petuma sp.*, *Nicotiana plumbaginifolia*, *Poa sp.* and a variety of plant species given in Table 2. Hostels and departments are present on both sides of canal having different array of plantation. This presents a pseudo-ecotone. In this ecotone a variety of avian fauna was observed (Table-2).

3. Residential Areas

It includes hostels, colony and a small village. Residential areas spread over 358 acres.

i) Hostels

A variety of plant species is seen in this area. The main tree composition includes neem, drek, papal, Eucalyptus, shisham, *Bursa surrata* and *Cedrella toona*. Shrubs of some important types are *Morrya exotica*, *Thuja spp.* *Cupress sempervirens* and *Salva officinalis*. Many birds like Myna, bulbuls, Drongos, Hoopoes etc., are adapted to human dewellings. Herbs dominating in this area includes *Cynodon dactylon*, *Poa annua* and *Dicanthium annulatum*.

ii) **Colony Area**

Colony area is well developed and a variety of plants are present along the roads inside the colony in the form of grooves, or linear array of plants. The main types of trees are shisham (*Dalbergia sissoo*), Drek (*Melia azadarach*), sufeda (*Eucalyptus citriodara*), Neem *Azadirachta indica*, Kikar (*Acacia arabica*), and many ornamental plants. Shrubs and grasses dominating in colony area are *Thuja orientalis*, *Citrus medica*, *Nyctanthes arbertristis*, *Poa* sp., *Cynodon dactylon* and *Saccharum bengalensis*. Two small graveyards are also present in Campus area. One near botanical garden and other is present near hostel No.10. Most dominating trees in graveyards are *Acacia arabica*, *Acacia milotica*, *Dalbergia sissoo*, while shrub and grasses included *Capparis deciduas*, *Cynodon dactylon*, *Dicanthium annulatum*, *Poa* and *Imperata* species.

4. **Departments**

Departments covers 93 acres area. Lawns of departments are best habitats for many birds like Babblers, Blue rock pigeons, Mynas, present In the lawns of departments of immediate vicinity selected plantation was Shatoot, Shisham, Drek, Pipal and many ornamental plants.

5. **Playgrounds/Open Areas**

Open grounds and some uneven areas covers 253 acres. Different types of plants are present on the boundaries of these grounds. The major tree species around the grounds are sumbils, kikar (*Acacia arabica*), shisham (*Dalbergia sissoo*) and toot (*Morus alba*). Many birds like crow, weavers etc., are seen roosting and nesting in these trees. *Thuja* sp. And *Morrrya exotica* are important shrubs, while grasses dominating are *Poa annua*, *Imperata* sp. and *Dicaznthum* sp.

6. **Agricultural Fields**

Development of New Campus has completed over 804 acres and still 977 acres area is used for agriculture. Soil is very fertile and different type of crops (Maize, Jawar, Rice, Barley, Wheat) and Vegetables are grown. Berseen and fodder for cattle are also grown. These crops are inhibited by small passerine birds which feeds upon grains.

During the present survey, a total of 64 species of birds belonging to 51 genera, 31 families and 12 orders were recorded. Twelve species were summer visitors, 6 winter visitor, 2 species are monsoon visitor, 42 species are resident birds while remaining 2 are rare vagrant (**Table 2**).

Summer visitors include, Koel, Pied rested Cuckoo, Purple sunbird, Black throated weavers, Streaked weaver, Baya weaver, Wood shrike, Pied myna, Indian pipit, Blue checked bee-eater, Blue tailed bee eater, and Little green bee eater.

Three members of the Cuculidae family namely Koel, Pied crested cuckoo and Common hawk cuckoo are blood parasites on House crow in Pakistan. Koel comes from India but also has some resident population (Chaudhry *et al.* 1992 a). These are reported as summer visitor by Baig (1992) however, Ali and Ripley (1983) reported Common hawk cuckoo as resident bird but apt to be overlooked in winter. Baya weavers are less restricted to marshy areas than Black throated and Streaked weavers. Roberts (1992) reported Baya weaver as common in extensive rice growing tracts such as Sheikhpura, Gujranwala and Gujrat. Roberts (1992) found colonies in partial plumage on canal side in Lahore. Ali and Ripley (1987) found the black throated weavers as resident species but subject to local movements. Purple sunbirds were recorded only in summer according to Ali and Ripley (1987) and Roberts (1991). Chaudhry *et al.* (1992), however reported it as resident bird. Blue tailed bee eaters and blue checked bee eaters are Oriental species widely occurring in South East Asia migrating from Indo-China and are summer migrant to North eastern parts of Pakistan. Little green bee eater was reported as resident bird by Ali and Ripley (1987) but was found to be summer visitor in accordance with Roberts (1991) and Chaudhry *et al.* (1992). Most of the little green bee eaters migrate to warmer regions from North Punjab where insect food is available in abundance.

Among the winter visitors are Large pied wagtail, White wagtail, Common starling, Brown chiffchaff, Stone chat and Common swallow. White wagtail breeds in Himalayas and is a common winter visitor south to Sri Lanka (Woodcock, 1980). Brown chiff-chaff and common starling breed in former Soviet Union but Common starling also has some resident population in Indus plains (Roberts, 1992). Common starling is abundant winter visitor to Punjab, Sindh, Baluchistan and Northern India (Roberts, 1992). Brown chiff-chaff is abundant winter visitor and on passing through the Western Himalayas and Northern Baluchistan affects bushes, especially Acacia, Zizypus and water side plantation. Brown chiff-chaff was recorded only in October (1997) and November (1996).

Typical monsoon visitors include Paddy birds and Cattle egrets. During monsoon the rainwater creates large and small puddles and ditches with reeds and tall grasses growing around them in abundance, especially in botanical garden. This environment favours the propagation of insects, water beetles, amphibians and other ground dwelling organisms. These conditions attract a large number of birds like Egrets, Paddy birds, kingfishers and Bee-eaters.

Among the resident birds collard dove, red turtle dove, Bay backed shrike, Rufous backed shrike, Spotted owl, White breasted kingfishers, Magpie-robin, were found commonly during the survey. Grey partridge, Alexandrine parakeet, Pied myna, Wood shrike, Pied bush chat and Cuckoo were scarcely seen. Small population of Grey partridges and Alexandrine parakeet indicates netting and poaching of these birds. Being the cage bird these are under the severe stress.

Ali and Ripley (1987) reported Magpie-robine as resident bird while Roberts (1992) reported it as scarce but was found common during the survey. Pied myna found rare, was not reported by Roberts (1992) during his survey but Baig (1992) recorded pied myna from jallo Recreational Park. Mirza (1982) has also reported small flocks of pied myna near Lahore.

Ali and Ripley (1987) reported spotted owl as resident in Northern Peninsula. Roberts (1991) also recorded it as resident, sedentary and wide spread in Indus plains. Canal and roadside plantation favours its increase. Spotted owl was found common during the summer. Roberts (1992) reported Rufous backed shrike as widespread and common bird throughout the watery places. Ali and Repley (1987) recorded it as common winter visitor in Punjab. Rufous backed shrike was found a common resident bird. Bay backed shrike is resident bird but shows marked seasonal movements. (Ali and Ripley, 1987). Robbers (1992) recorded it as common throughout the Indus basin, which migrates to Central and Northern Baluchistan during summer. It was found a resident bird but commonly seen during September and October.

Birds like Common myna, House crow, Blue rock pigeon, Jungle babbler Pariah kite were recorded abundantly. Hoopoe was recorded as resident bird but it also has migrant breeding population which winters in East Africa (Roberts, 1991).

Besides natural and exotic plantation a large area is under cultivation. The main crops growing are maize, rice, jawar, barley etc. Cultivated lands are important source for the diversity of avian fauna, which depend upon food in the form of seeds, grains, weeds or insects. Agricultural crops favour many insectivorous and grainivorous birds like Bee-eaters, Black drongo and many small passerine birds.

SUGGESTIONS

Punjab University Campus area is well maintained yet there are provisions for the improvement of habitat favouring the birds species.

1. Effective legislation for netting and poaching of cage and game birds is required.
2. Indiscriminate cutting of bushes and wild grasses should controlled.
3. Cattle grazing should prohibited in the Campus area.
4. Thousands of students come from different localities of the Punjab for study purposes. Lectures and seminars should be arranged in different departments, highlighting the importance of wild life, with special reference to ornithology. Environmental educational programs should be started for general public.
5. University roads should not be used as thoroughfares.
6. Suitable exotic and native flora should be planted that favour the increase in number of birds.

7. Keeping in view the importance of wild life, a zoological garden along with botanical garden should be established in Campus area.
8. A separate wild life institute in Punjab University should be established.

Table 1: Plant Species Collected From The Campus Area.

Sr. No.	Family	Scientific Name	Habit
1.	Sapotaceae	<i>Diosapyros embryopteris</i>	Tree
2.	Euphorbiaceae	<i>Putrangiva roxburghii</i>	Tree
	--	<i>Acalypha wilkesiana</i>	Tree
	--	<i>Sapium sabiferum</i>	Tree
	--	<i>Phyllanthus</i>	Shrub
	--	<i>Euphorbia poinsettia</i>	Shrub
	--	<i>Euphorbia pencil</i>	Shrub
3.	Combretaceae	<i>Terminalia belerica</i>	Tree
		<i>Terminalia arjuna</i>	Tree
4.	Bignoniaceae	<i>Jacaranda avalifolia</i>	Tree
		<i>Atrobatro</i>	Shrub
		<i>Tecoma stans</i>	Shrub
5.	Proteaceae	<i>Grevillea robusta</i>	Tree
6.	Malvaceae	<i>Hibiscus rosinensis</i>	Shrub
		<i>Salmalia malabarica</i>	Tree
7.	Myrteaceae	<i>Callistemon lanceolatus</i>	M. Tree
8.	Moraceae	<i>Ficus nitidavariegata</i>	M. Tree
		<i>Broussoneta papyrifera</i>	Tree
		<i>Ficus retusa</i>	Tree
		<i>Ficus elastica</i>	Tree
		<i>Banana</i>	Tree
		<i>Morus alba</i>	Tree
9.	Curticaceae	<i>Heterophragma adenophllum</i>	Tree
10.	Lythraceae	<i>Lagerstroemia flosreginae</i>	Tree
		<i>Lagerstemia flosreginae</i>	Tree
10.	Myrtaceae	<i>Eucalyptus citriodara</i>	
		<i>Psidium guyava</i>	Tree
		<i>Eugenia jambolana</i>	Tree
11.	Apocynaceae	<i>Phumeria rubra</i>	Tree
		<i>Tabernae Montana</i>	Shrub
		<i>Carissa grandiflora</i>	Shrub
12.	Caesalpinaceae	<i>Cassia fistula</i>	Tree
		<i>Bauhinia variegata</i>	Tree
		<i>Cassia Victoria</i>	Shrub

		<i>Haematoxylon campechvumum</i>	Tree
		<i>Cassia elata</i>	Shrub
		<i>Cassia glauca</i>	Shrub
13.	Boraginaceae	<i>Ehretia acuminata</i>	M. Tree
		<i>Cordia rothii</i>	M. Tree
14.	Tillaceae	<i>Grewia asiatica</i>	Tree
15.	Mimosaceae	<i>Albizzia lebbek</i>	Tree
16.	Leguminoseae	<i>Brynia nivosa</i>	Shrub
		<i>Acacia arabica</i>	Tree
		<i>Acacia nilotica</i>	Tree
		<i>Dalbergia sissoo</i>	Tree
17.	Araliaceae	<i>Schefflira trijuga</i>	Tree
18.	Meliaceae	<i>Cedrella toona</i>	Tree
19.	Nyctaginaceae	<i>Bougainvella spectrbilis</i>	Climber
20.	Verbenaceae	<i>Lantana camara</i>	Bush
21.	Tamaricaceae	<i>Tamarix aphylla</i>	M. Tree
22.	Mimoseae	<i>Leucaena lecocephyla</i>	M. Tree
23.	Caricaceae	<i>Carica papaya</i>	Tree
24.	Annonaceae	<i>Polyalthia longifolia</i>	Tree
25.	Solanaceae	<i>Cestrum nocturmum</i>	Bush
26.	Oleaceae	<i>Nyctanthes rbortris-tis</i>	Shrub
		<i>Jasminum sambac</i>	Bush
27.	Rutaceae	<i>Murraya exotica</i>	M. Tree
		<i>Citrus medica</i>	M. Tree
28.	Rusinaceae	<i>Hamelia patens</i>	Shrub
29.	Celastraceae	<i>Euonymus japonicus</i>	Bush
30.	Rosaceae	<i>Prunus persica</i>	Tree
		<i>Rosa indica</i>	Bush
31.	Sterculiaceae	<i>Pterospermum acerifollum</i>	Tree
32.	Cupressaceae	<i>Thuja orientalis</i>	Tree
33.	Cecythidaceae	<i>Barringtonia acutangula</i>	Tree
34.	Salicaceae	<i>Populus euphorbia</i>	Tree
35.	Palmaceae	<i>Phoenix sylvestris</i>	Tree
		<i>Phoenix dactylifera</i>	Tree
		<i>Phoenix chinensis</i>	Tree

Table 2: Bird species recorded for Punjab University Campus area, Lahore from October, 1996 to October, 1997.

Order	Family	Scientific name	Habitat	Colour	Habits	Status
1. Ciconiiformes	1. Ardeidae	1. <i>Ardeola grevii</i> (Paddy bird)	Canal surrounding, marshy areas, near water	Above, head and neck dark, streaked with yellowish buff	Solitary, in pairs and in parties	Abundant
		2. <i>Egretta garzetta</i> (Little egret)	Water marshes ponds, watery places	Snow white	In flocks	Common
		3. <i>Bubulcus ibis</i> (Cattle egret)	Marshy areas, ponds, cultivation areas	Snow white	Solitary and in small parties	Common
2. Accipitriformes	2. Accipitridae	4. <i>Gyps bengalensis</i> (White backed vulture)	Throughout Pakistan, open areas, forests etc.	Brownish black, white back	In small groups	Common
		5. <i>Milvus migrans</i> (Pariah kite)	Throughout Pakistan, open areas, forest etc.	Dark fibrous	Useful scavenger	Common
		6. <i>Aquila rapax</i> (Tawny eagle)	Resident and breeding bird found sitting on ground & cliffs	Blackish brown	Social in habit, Scavenger in feeding habit	Common
		7. <i>Francolinus pondicerianus</i> (Grey partridge)	Foothills, long grassy areas, jungle, plains and villages	Greenish brown and chestnut on upper parts of belly	Solitary, in pairs, cage bird	Common
		8. <i>Coturnix coturnadella</i> (Rain quail)	Cultivated land, grassy field lawns	Sandy colouration with blackish breast	Gregarious than common quail	Frequent
4. Charadriiformes	4. Charadriidae	9. <i>Vanellus indicus</i> (Red-walled lapwing)	Jheels, tanks, swamps, rivers and ditches	Bronze brown above, white below, black breast	Loose flocks	Common
		10. <i>Columba livia</i> (Blue rock pigeon)	Old city buildings	Slaty blue grey	In loose groups	Resident, Abundant
5. Columbiformes	5. Columbidae					

		11. <i>Streptopelia decaocto</i> (Collared or Ring dove)	Open cultivated fields and dry deciduous countries	Pale grey and brown	Pairs of small parties	Resident, Abundant
		12. <i>S. tranquebarica</i> (Red turtle dove)	Open scrub jungle and cultivation deciduous biotope	Stocky-rufous	In pairs	Summer visitor, Abundant
		13. <i>S. senegalensis</i> (Little brown dove)	Open cultivated fields and dry deciduous countries	Pinkish brown and grey	In pairs	Resident, Abundant
6. Psittaciformes	6. Psittacidae	14. <i>Psittacula krameri</i> (Rose ringed parakeet)	Well-wooded countries, cultivated human habitat and deciduous biotope	Grass green body	In pairs or in group	Resident, Abundant
		15. <i>Psittacula euphratica</i> (Alexandrine parakeet)	Forest, wall wooded country	Grass grow body but slightly dark grayer toned than rose ringed parakeet	Territorial, often in small flocks or family parties and have loud calls	Common
		16. <i>Clamator jacobinus</i> (Pied crested cuckoo)	Woodland migratory bird come in monsoon	Black above white below and banded wing	Found in small group insectivore	Common
7. Cuculiformes	7. Cuculidae	17. <i>Hierococcyx bartus</i> (Common hawk cuckoo)	Prefer wooded tracts, especially irrigated forest and plantation	Colour smoky grey brown on head, ear covers	Arboreal, hunt among bushes for insects pupae and larvae	Summer breeding visitor, common
		18. <i>Ficedula scolopacea</i> (Koel)	Wooded countries and grooves of tree in villages	Male metallic black all covers, female dark brown	Solitary or in pairs on trees and shrubs	Summer visitor, common
		19. <i>Centropus sinensis</i> (Concal / Crow pheasant)	Gardens, irrigated fields and jungles	Clusmy glossy black, conspicuous chestnut wings	Solitary	Resident, Common

8. Strigiformes	8. Strigidae	20. <i>Athena brama</i> (Spotted owl)	Found around canal & pond	Brown and white colour	Nocturnal and carnivore, in social habit	Resident, Common
9. Coraciiformes	9. Alcedinidae	21. <i>Halcyon smyrenensis</i> (White breasted Kingfisher)	Ponds, paddy fields, flooded pits, roadside ditches and village tanks	Blue with white breast	Solitary or in pairs	Resident, Common
	10. Meropidae	22. <i>Ceryle rudis</i> (Pied Kingfisher)	Large fresh water bodies, canals and rivers	Black and white spotted	Solitary or in pairs	Resident, common
	11. Upupidae	23. <i>Merops orientalis</i> (Little green bee-eater)	Open and cultivation areas, semi deserts and grazing lands	Grass green, reddish brown on head	Keeps in loose parties or flocks	Resident, Abundant
	12. Coraciidae	24. <i>Merops philippinus</i> (Blue tailed bee-eater)	Cultivation areas, semi deserts, forests and grazing lands	Brownish green, tail blue	Keeps in loose parties or flocks	Summer, visitors
		25. <i>Merops superciliosus</i> (Blue cheeked bee-eater)	Sandy banks of lakes and rivers	Bright green, blue cheeks	In small groups and parties	Summer visitors, Common to Abundant
		26. <i>Upupa epops</i> (Hoopoe)	Cultivation areas, light forests, villages and deciduous biotopes	Black and white zebra marking	Solitary or in pairs	Resident Common
		27. <i>Coracias benghalensis</i> (Indian roller)	Cultivated fields, often seen on electric wires close to track	Ear covers, chin and throat vinaceous or violet grey with pale shaft streaks. Fore crown whitish buff, mid crown turquoise blue	Often solitary rarely seen in pairs	Summer breeding visitor, Common
10. Piciformes	13. Capitonidae	28. <i>Megalaima zeylanica</i> (Green barbet)	Wooded garden and fruit bearing trees	Grass green, head neck brown	Solitary or in loose small parties	Resident, Common

14. Picidae	29. <i>Dinopium benghalensis</i> (Golden backed Woodpecker)	Gardens, tall deciduous ever green forests	Reddish brown	Keeps in parties	Resident Common
11. Apodiformes	31. <i>Apus affinis</i> (House swift)	Urban habitat and old forests	Brownish yellow crown smoky brown neck, scarlet crest, blackish brown wing	Solitary adapt easily to domestic environment	Frequent
12. Passeriformes	32. <i>Alauda gulgula</i> (Small skylark)	Prefer grassy region crop and margin of lacks	Smoky black body, white throat	Gregarious, areal in small loose party	Resident, Common
16. Alaudidae	33. <i>Galerida cristata</i> (Crested lark)	Dry and barren areas	Black brown wings pale lower plumage	Grainvore and insectivore in habit	Abundant
17. Hirundinidae	34. <i>Hirundo rustica</i> (Common Swallow)	Agricultural fields especially during cutting season of maize	Pale sandy brown streaked with blackish	In pairs	Resident, Abundant
18. Laniidae	35. <i>Lanius vittatus</i> (Bay-backed shrike)	Gardens and vegetated open areas	Upper, glistening metallic blue. Throat and fore crown are patched with rusty red small patches	Often in flocks, flight is not so high, very quick, like to fly all time	Common
	36. <i>Lanius schach</i> (Rufous-backed shrike)	Cultivation areas, gardens and open plains	Headed white and grey black bands, maroon chestnut	Solitary or in pairs	Resident, Common
	37. <i>Lanius excubitor</i> (Indian grey shrike)	Thorn and dry deciduous forests	Scheme colour dark brown bars	Solitary or widely spread pair	Resident, Common
			Bull headed silvery grey with black and white tail	Solitary or in pairs	Resident, Common

19. Oriolidae	38. <i>Oriolus oriolus</i> (Golden oriole)	Summer deciduous forest, woody opened dry country	Golden yellow male, yellowish green female	Solitary arboreal furtive habit	Common
20. Muscicapidae	39. <i>Saxicola copriata</i> (Pied bush chat) 40. <i>Saxicola torquata</i> (Stone chat)	Cultivation areas, hedges, open fields and scrub land) Agricultural fields, scattered plantation	Jet black with a white wing patch Brownish black, white patch on wing	Solitary Solitary, in pairs of small groups	Resident common Abundant Common
	41. <i>Saxicoloides fulicata</i> (Indian robin)	Bushes, desert edge of cultivation area	Crown black brown white	Solitary or in pairs	Resident, Common
	42. <i>Phylloscopus collybita</i> (Brown Chiffchaff)	Long bushes, grassland and scrub forest	Upper parts brownish or olive brown, lower, brownish grey	Solitary also like small parties	Winter visitor, Common
	43. <i>Rhipidura aureola</i> (White browed fantail)	Close to pond, large bushes, trees and also on electric wires	Upper part dark grey brown, with long graduated tail, conspicuous like a fan	Very beautiful flight, still for few seconds in air to catch an insect	Common
21. Turdidae	44. <i>Cisticola juncidis</i> (Streaked fantail warbler)	Irrigated green crops	Rufous brown	Solitary or in pairs	Resident, Common
	45. <i>Caprychus saularis</i> (Magpie robin)	Garden, village and deciduous forest	Black white	Solitary or in pairs	Irregular, year round visitor scarce
22. Corvidae	46. <i>Corvus splendens</i> (House crow)	Human habitat, gardens, open areas	Clossy black, dusky grey	Scavenger, keeps in flocks	Resident, Very Abundant

23. Dicruridae	47. <i>Dicrurus adsimilis</i> (Black drongo)	Open areas, cultivations wood country	Slim, glossy jet black	Solitary or in pairs	Resident, Abundant
24. Sturnidae	48. <i>Sturnus contra</i> (Pied myna)	Damp grazing grounds, tanks, dump sewage)	Trim black	Keeps in small parties	Resident, Rare
	49. <i>Acridotheris tristis</i> (Common myna)	Cultivation, towns, cities	Dark brown glossy black head	Keeps in flocks	Resident, Very Abundant
	50. <i>Acridotheris gingianus</i> (Bank myna)	Neighbourhood of human habitats	Pale bluish grey, black head	Keeps in flocks	Resident, Abundant
	51. <i>Sturnus vulgaris</i> (Common starling)	Damp grasslands, cultivations, marshes and fheeds	Rump green purple	Keeps in parties	Resident, Rare
25. Pycnonoridae	52. <i>Pycnonotus cafer</i> (Red vented bulbul)	Deciduous biotopes and evergreen patches	Earth brown, scarlet vent	In pairs or loose flocks	Resident, Abundant
26. Motacillidae	53. <i>Anthus novaezelandiae</i> (Indian Pipet)	Mostly seen in grassland, close to agricultural land and swamps	Above, dark brown marked with fulvous, Below, buff streaked with brown on breast	Like to feed singly or in pairs, song consists of a wheezy trill or feeble (seep). Also like to sit on electric wires	Common
	54. <i>Motacilla alba</i> (White wagtail)	Along rivers, streams, wheat fields and paddy fields	Slim black, white grey	Solitary or in pairs	Winter visitor, Abundant
	55. <i>Motacilla madagascariensis</i> (Large pied wagtail)	Rocky streams, irrigated tanks and paddy fields	Black and white	In pairs or in loose flocks	Resident, Common
27. Ploceidae	56. <i>Ploceus manvar</i> (Streaked weaver)	Along river, cultivation areas, marshy areas	Bright golden yellow crown, dark brown face, white belly	In pairs	Resident, Abundant

		57. <i>Ploceus benghalensis</i> (Black throated weaver)	Along side rivers and canals, when irrigated cultivated tracts	Throat black	In pairs or small parties	Resident, Frequent
		58. <i>Ploceus philippinus</i> (Baya weaver)	Marshy areas, along canal, lakes, jheels and rice cultivation	Yellow on breast, face brown	In pairs and small parties	Resident, Abundant
	28.	59. <i>Lonchura punctulata</i> (Spotted munia)	Bushes, deciduous forests, gardens	Chocolate brown	Grainivorous, cereals, insects	Irregular year round visitor frequent
	Nectariniidae	60. <i>Nectarinia asiatica</i> (Purple sunbird)	Deciduous gardens	Metallic dark blue and purple	Keeps in small parties	Summer visitor, Common
	29.	61. <i>Passer domesticus</i> (House sparrow)	Throughout the areas	Black rufous chestnut, below dark brown	In pairs and small parties	Resident, Very Abundant
	Passeridae	62. <i>Turdus striatus</i> (Jungle babbler)	Gardens, bushes, cultivation areas	Earth brown, creamy white eye patch	Keeps in flocks	Resident, Abundant
	30.	63. <i>Turdus caudatus</i> (Common babbler)	Tree grooves along roadside, bushes, gardens	Earthy brown / grey brown, streaks on feathers.	Keeps in flocks	Common, Abundant
	31.	64. <i>Tephrodornis pondicerianus</i> (Common wood shrike)	Roadside plantation canal bank, lawns.	Fawn brown, dark brown streaks from lores to eyes	Single or in pairs	Scarce, Common
	Campophagidae					

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